

LONDON SATURDAY JANUARY 22 1949

HAEMOLYTIC DISEASE OF THE NEWBORN:
CRITERIA OF SEVERITY

BY

P. L. MOLLISON, M.D., M.R.C.P. AND MARIE CUTBUSH, B.Sc.Melb.

(From the Medical Research Council Blood Transfusion Research Unit, Department of Obstetrics,
Postgraduate Medical School of London)

Haemolytic disease of the newborn can now be diagnosed with certainty at the moment of birth by means of the direct Coombs test. However, since this test seems to be positive in all cases of haemolytic disease, criteria are needed to assess the severity of individual cases. Such criteria are not only desirable for the purpose of deciding whether a case requires treatment but are essential for the orderly presentation of data. Of course it is possible to divide cases into the broad classes of hydrops foetalis, icterus gravis neonatorum, and congenital anaemia of the newborn, but close study of the disease reveals every possible gradation between these classes, and any division between them must be arbitrary. Because of this difficulty of grading it is impossible to tell whether different published series of affected infants include similar proportions of severe, moderate, and mild cases; and it is thus impossible to form precise conclusions on the value of different methods of therapy.

Wiener (1946) suggested that the form of anti-Rh in the mother's serum determines the clinical manifestations of haemolytic disease in her infant, but he has recently modified this opinion and now suggests that "blocking" antibodies play the dominant part and that their titre is roughly proportional to the severity of the disease (Wiener and Gordon, 1948); and Davidsohn and Stern (1948) have presented evidence that "blocking" antibodies are associated with more severe forms of the disease than are α agglutinins. Nevertheless, present opinion has probably been fairly summed up by Diamond (1947): "A prognosis based on antibody tests . . . must be offered with reservations."

Doubtless the search for measurable criteria of severity has been discouraged by the general belief that, in some cases at least, the disease "comes on," or at least increases in severity, after birth. If this were true it would be extremely difficult to make comparisons between cases in view of the variable changes in haemoglobin and bilirubin values that occur after birth as normal phenomena. However, close study of the disease suggests that in fact the haemolytic process is maximal at birth.

This paper presents evidence that the haemoglobin value of the cord blood, determined by an accurate method, is a satisfactory criterion of severity and that knowledge of this value enables one, within limits, to give a reliable prognosis.

Clinical Material

Normal Infants.—In the course of this work cord blood was collected from 52 healthy full-term infants; in addition, venous samples were taken from many of these infants some hours after birth. In 12 of these latter cases the cord was deliberately clamped immediately after the birth of the

infant, and in a further 12 cases the cord was left for a full five minutes after birth. Finally, capillary blood of blood were taken on the first day of life from 33 healthy infants, including 22 from whom venous blood were taken simultaneously.

Infants with Haemolytic Disease.—Seventy-four infants were studied, although not all of the tests described below were made on every case. All these infants were born to D-negative mothers whose sera contained (with or without traces of anti-C or anti-E). In most cases the presence of antibody was first detected by routine during pregnancy. Sixty-nine of the infants were alive, and all were demonstrated to be positive to the Coombs test; in a few cases in which the mother had been tested during pregnancy, and in which the infant was seen by us only after it had developed signs suggestive of haemolytic disease, the diagnosis was first established by the finding of a positive direct Coombs reaction in the blood of five stillborn infants was not tested.

TABLE I

No of Cases	Hb first Determined	Treatment		
		Nil	Simple Transfusion	Exchange Transfusion
50	Cord	10 (3 moribund)	1	19
	Few hours after birth	0	0	20
	2-5 days	2	13	2
	30 days	1	0	0
	Untested (5 stillborn, 1 moribund)	6	0	0
74		19	14	41

Fifty infants were seen and tested on the day of birth (see Table I), and the findings in this group form the basis from which our main conclusions have been drawn. Ten of these infants were not treated—in three cases because they were moribund and in seven because they were considered to be too mildly affected; all of these seven recovered uneventfully. In one further mild case a simple transfusion of Rh-negative blood had to be given on the first day of life because the infant bled from its cord. The remaining 39 cases in this group were treated by exchange transfusion. Thus treatment was essentially uniform, and it seems justifiable to draw conclusions about the severity of the individual cases from the outcome.

In 18 further cases the infant was not tested until after the first day of life. The findings in this group have been used to supplement conclusions reached from the first 50 cases.

Of the 74 cases, 63 formed the material for a previous communication on treatment (Mollison and Cutbush, 1948).

As is well known, petit mal attacks frequently coexist with major seizures: about two-thirds of children beginning with petit mal develop grand mal. If, however, such children remain free of major seizures the attacks may cease entirely after a few years, with no impairment of mentality even after many thousands of attacks. This pure form was described by Adie (1924) and others as "pyknolepsy." Lennox (1945a) prefers the name "pyknolepsy" to emphasize that they are not something different from epilepsies. Since they are now recognized as identical with petit mal there is no need to retain either of these additional names.

The nature of the petit mal is especially obscure. An epileptic discharge in an area of complex activity such as a speech area causes, as already noted, a loss of function—not the production of words but speechlessness. Pure loss of consciousness seems to indicate an inhibitory discharge in the highest level of integration in the nervous system. The electrical changes both during and between petit mal seizures are the most constant and characteristic of all types of epileptic discharge, and they arise symmetrically and synchronously over a wide area of the cortex but chiefly in the frontal lobes. Penfield (Penfield and Erickson, 1941) argues, however, that there can be no final re-representation of sensorimotor functions in the frontal lobes, since the removal of large parts of these does not abolish conscious processes in man, and he suggests that the level of final integration lies in the region of the hypothalamus.

Release Phenomena in Epilepsy

After a major epileptic attack the patient may for a time exhibit co-ordinated activity, which is, however, obviously uncontrolled, or unconscious in the sense that the patient has no awareness of what he is doing. Similarly, certain attacks occur which are characterized solely by abnormal behaviour except that at the onset there may be clonic movements of the jaws, grimacing or muttering, occasionally a writhing or turning movement of the trunk. Such attacks, which are not uncommon, have in the past usually been explained as post-epileptic automatism, the assumption being that they were sequels of a brief petit mal seizure. It is doubtful, however, whether there is any unconsciousness, though there is an alteration of consciousness indicated by complete amnesia for the whole episode. The term "psychomotor attack" or "psychic equivalent" is now usually used for them: their clinical distinction from other types of seizures is supported by distinctive electroencephalographic tracings.

These attacks of elaborate but purposeless activity, whether they constitute the whole attack or follow a recognizable epileptic incident, must be due to release of lower mechanisms from conscious control. The highest centres, whatever may be their neural site, are either inactivated directly by an epileptic discharge or exhausted by such a discharge, as a limb may be paralysed after a local motor seizure.

The type of activity shown in automatism is of great variety, but tends to repeat itself in successive attacks in the same patient. Usually harmless, it may include violence or indecent exposure and thereby assume serious social or medico-legal significance.

Epileptic Myoclonus

Many patients subject to major epilepsy exhibit between attacks sudden sharp myoclonic jerks, usually limited to movements of the upper limbs, and commonly described by patients or relatives as "he jumps." They occur

Rarely, an attack may jerk the patient suddenly to one side and bring him to the ground. Of considerable value in diagnosis, and occasionally the sole manifestation of an epileptic tendency, they are difficult to explain, for they are usually bilateral and associated with bilateral cortical discharges in the electro-encephalogram and yet are unaccompanied by any loss of consciousness.

Status Epilepticus

In this condition the patient has attacks of major epilepsy recurring for hours or days without recovery of consciousness. Isolated attacks, however frequent, with recovery between attacks, are not status epilepticus.

ESSENTIAL MECHANISMS

Irritation (positive discharge), inhibition (negative discharge), and release—these seem to be the essential mechanisms in epilepsy: they are seen most clearly in local epilepsy, but are also detectable in generalized attacks. Conceived and elaborated by the philosophical mind of Hughlings Jackson, they are not invalidated by later researches, and remain sound hypotheses which help in the interpretation of clinical phenomena.

Diagnosis of Epilepsy

The separation of epilepsy from other paroxysmal disorders is a common clinical problem. Gowers (1907) included within "the borderland of epilepsy" fainting or syncope, vasovagal attacks, vertigo, migraine, and certain disturbances of sleep, including narcolepsy; he was, however, careful to say that these troubles seem to be "near epilepsy, but not of it." Twenty years ago, in his Lumsden Lectures, Collier (1928) went further, feeling that these disorders, as well as tetany, were closely related to epilepsy and that some metabolic dyscrasia might underlie them all. However, such biochemical changes as have been found in epilepsy cannot be regarded as primary or causative.

Purdon Martin (1945) has expanded Jackson's theory of the discharging lesion, applying it to a wide variety of paroxysmal disorders as well as to some conditions of continuing irritation such as the thalamic syndrome. He does not suggest that any of these is epileptic. Gibbs and Lennox (1938), however, suggest that a disturbance which is essentially epileptic—involving abnormal rhythmic activity—may start in any portion of the nervous system. In clinical epilepsy this is in the cortex: but this conception extends to chorea, Parkinsonism, neuralgia, etc.

There seems a danger here of theory outrunning experience. There may well be many types of discharging lesion, but it does not follow that all these phenomena are epileptic. Williams (1944) sees a similar danger in the presence of electro-encephalographic disturbances of an epileptic kind in many conditions not usually considered epileptic—for example, faints and toxic convulsions. If all these electrical changes are to be regarded as epileptic "the limits of epilepsy will become so wide as to make the term meaningless."

In the uncertain state of knowledge of these various disturbances of nervous function, classification should rest on clinical distinction. Viewed in this light the resemblances between migraine, faints, etc., and epilepsy become less impressive than the differences between them. For a clinician a diagnosis of epilepsy carries certain implications: it means that there may be serious intracranial disease, and involves the possibility of progressive mental deterioration and always of certain social implications which do not arise in other paroxysmal conditions.

in doubtful cases, for in many the answer is obvious—between epilepsy and the fainting or syncopal attack. According to Lewis (1933), in a faint there are two distinct but simultaneous processes—namely, a slowing of the heart by increased vagal tone, and a fall of blood pressure by vascular relaxation, chiefly in the splanchnic area. These reactions are produced reflexly through a central nervous mechanism. The term vasovagal attack is therefore used by Lewis as an alternative to fainting or syncope, and such attacks are not epileptic, for they are not primarily neurogenic and they carry none of the implications of epilepsy. Between fainting and petit mal as formerly defined a careful history should distinguish, but between fainting and the akinetic type of epileptic attack, with loss of consciousness and falling but without convulsion, the resemblance is close. On the other hand, in a faint there may be clonic movements; they are usually slight in spontaneous faints, but are well known in cardiac syncope. Experience with blood donors has shown that they are sometimes marked (M.R.C. Report, 1944). In a recent paper dealing with attacks of unconsciousness in five hundred members of the Royal Air Force, Rook (1947) observes that "the occurrence of twitching or even major convulsions in association with loss of consciousness does not justify a diagnosis of epilepsy on these grounds alone."

The one feature which is almost diagnostic is that a faint is a reactive phenomenon, a fit rarely so. The stimulus in the great majority of cases is emotional, though fatigue, recent blood loss, or other factors impairing the general health may facilitate the reaction. Difficulty arises because persons predisposed to fainting the emotional stimulus may be a very slight one. Epileptic attacks are only rarely due to a direct emotional or reflex stimulus, but, as already noted, such a sequence does occur occasionally. Fox (1941) observes that as a generalization the statement that excitement causes fits is false: boredom, anxiety, and worry do, however, predispose in certain cases. He reported that when the patients under his care were subjected to frequent air raids there was no increase whatever in the frequency of their attacks. Shafar (1941) found this equally true of out-patients attending a London hospital throughout the war years.

The Syndrome of Gowers

Unfortunately the name "vasovagal" was given by Gowers (1907) to a syndrome of a different order which is certainly not a simple syncope, and whose relationship to epilepsy is also unconvincing. The picture in these attacks is not a uniform one, and this probably accounts for varied reports about their frequency. The features of a severe attack include extreme pallor, coldness, difficulty in breathing, pain of anginal distribution, and the *angor animi* or sense of impending death which Ryle (1939) stresses as the foremost feature. The attacks may last half an hour or more. In nearly all the patients there is a strong background of anxiety. Personally I have seen only a few cases in which the pattern of the attack corresponded closely to this severe type, but many in which a state of anxiety was associated with milder manifestations of the same order. Though there is no evidence of cortical disturbance and no unconsciousness or amnesia, they have been held to be epileptic variants in which autonomic disturbances dominate the picture instead of constituting only subsidiary features as in major epileptic attacks (Wilson, 1928). An occasional patient has also had epilepsy, and a family history of epilepsy, but does not have psychosis is quite frequent: 2 parts in 3 with epilepsy. The view place these attacks is thus estimated to be epilepsy. The measure of the 16.2 g. (the measurement of the

tent evidence of either vasomotor change or vagal inhibition. The term vasovagal attack, if used at all, should therefore be employed in Lewis's sense as an alternative to syncope or fainting due to transient cerebral anaemia.

Laryngeal "Epilepsy" and Breath-holding Attacks

Also more closely allied to syncope than to epilepsy are attacks due to respiratory obstruction. One type is the so-called laryngeal epilepsy first described by Charcot as laryngeal vertigo. The attack follows coughing, and the subjects are usually of plethoric type with chronic laryngitis or bronchitis. In spite of an absence of previous or family history of epilepsy Whitty (1943) thinks that these attacks are primarily neurogenic—that is, caused by venous congestion in a predisposed person. Rook (1946) saw four cases in the Royal Air Force due to coughing or choking, in three electro-encephalograms were done and were normal. A predisposition must be admitted, since chronic coughs are so common and these attacks infrequent, but, as in predisposition to fainting, this is not a convincing argument for an epileptic basis.

Not so rare are the breath-holding spells of young children: in the North of England mothers call them "the kinks." Bridge and others (1943) reported 83 cases from the Johns Hopkins Hospital, of whom 60% became unconscious and 40% had convulsions. Two of these children became epileptic and two probably did. But this is not epilepsy. It seems to me that great caution is needed in diagnosis, but if this is correct the treatment is of the psychological causes of the habit.

Narcolepsy and Cataplexy

Narcolepsy is theoretically nearer to epilepsy, as it is certainly a neurogenic disorder. Again some have sought to include this syndrome within the all-embracing concept of epilepsy, but we must separate it decisively on clinical grounds. Electro-encephalographic reports are contradictory, some showing an epileptic type of change (Cohn and Cruvant, 1944) and some only sleep changes. Narcolepsy means attacks of irresistible sleep or of a condition which resembles sleep (Nattiss, 1938). They are preceded by an intense feeling of fatigue, and can often be resisted for a time but seldom prevented: they last usually a few minutes, but it may be only a few seconds, and, exceptionally, if the patient is undisturbed he may continue to sleep. He is usually awakened easily and is alert at once. Frequency of attacks varies, but is usually fairly constant in each patient: there may be two or three daily or one every few minutes.

Cataplexy means attacks of loss of power and of tone induced by emotion of any kind, but especially hearty laughter. There is no loss of consciousness, but the patient sinks to the ground, unable to move or speak for perhaps half a minute. During the attack, as I have verified on several occasions, in striking contrast to inhibitory epilepsy, the tendon jerks are abolished and the plantar reflexes normal; the jerks return instantly when the attack is over. If a cataplectic attack is resisted it may pass into sleep.

The combination of narcolepsy and cataplexy which occurs in the majority of cases is unmistakable. If either type of attack occurs alone, confusion with epilepsy is possible. No case exhibiting the complete syndrome of sleep attacks plus cataplexy has been reported as developing epilepsy.

Other Types of Immobility

In cataplexy inhibition of postural tone is an essential feature. Certain other states of immobility occur in which tone is unaffected and posture maintained. This is called catalepsy, which in association with "waxy flexibility" is one of the motor phenomena of schizoid

Here the immobility is present at Rudolf (1946a, 1946b, 1947) has drawn a condition which seems best explained as *trance*, and which is known to nurses as "night myiasis." In an attack the individual becomes suddenly in either a standing or a sitting position, unable to move but fully conscious and able to see. The attack may last for a few seconds or a few minutes. A similar fixity may result from intense fear; but anxiety is not concerned in the attacks under consideration, nor are they apparently induced by fatigue. It has been found that such attacks occur in others besides epileptics, especially in people whose work keeps them standing for long periods of time, and not a condition of great significance, and not a condition which medical advice is sought, it is occasionally met with in the case of a naval officer who had to be on the ridge of a vessel because he was unable to prevent an imminent collision. Such a state will be mistaken for petit mal, but there is absolute loss of consciousness.

"Sleep paralysis" is a condition occurring when a person awakes from sleep less frequently, just before he falls asleep. It is a condition in which narcoleptic subjects and occasionally in normal people in the case of post-epileptic paralysis is sometimes induced as a cataplectic attack induced by a terrifying event which awakens the subject but leaves him unable to move for several minutes.

Paroxysms

Labyrinthine vertigo is a condition of much interest to physicians, as it comes to the attention of the physician more often than to the otologist. The attack there is a powerful sensation of movement, surrounding objects, is frequently of the patient's usual rotatory, to right or left, sometimes vertigo, occurrence of vomiting, staggering, or falling is a feature of severity of the attack. Difficulty in diagnosis arises in various ways. First, some attacks are extremely sudden and brief: the patient is flung to the ground, but picks himself up at once without serious consequences. Secondly, there may be deafness or tinnitus: these appear to be in labyrinthine disease, or they may be because the lesion is in the ear but in the central nervous system, the labyrinth in disseminated sclerosis or other brainstem lesions. Thirdly, with the vertigo there is a transient loss of consciousness. I believe this is a very infrequent, and the presence of any unconsciousness, any of convulsive movements distinguishes it from any type of epileptic attack.

Migraine

Clinically a certain similarity between migraine and epilepsy is due to the occurrence of focal cortical disturbances in both. While typically symptoms in migraine precursors of headache, occasionally occur independently of headache, and tend to do so in later life. However, they differ from epilepsy markedly in several respects. The scotomata, and fortification spectra of migraine are not focal or temporal phenomena which occur in local attacks, both in the visual aura and in the pre-headache character and in their duration. Pre-headache symptoms of migraine are of a much slower speed, lasting about 10 minutes, and their predilection is for the face, lips, and with infrequent involvement of the leg, and as Gowers (1907) pointed out, in that they are generally, as in both

panies a migraine attack is perhaps more difficult to distinguish from other cortical lesions. Those who are impressed by a close association between migraine and epilepsy seem to me to have overstressed the clinical resemblance between the two.

Aetiologically the relationship of migraine and epilepsy is puzzling. There is impressive evidence (Schumacher and Wolff, 1941; O'Sullivan, 1936) that the cortical phenomena of migraine are due to constriction of cerebral arteries, and that the subsequent headache results from dilatation and excessive pulsation, chiefly of branches of the external carotid. The occasional persistent hemianopia which follows a migraine attack (Adie, 1930) seems likely to be due to prolonged constriction. Vascular changes of this nature have no counterpart in epilepsy, and the pathogenesis of the two kinds of attack seems to be entirely different.

On the other hand there is undoubtedly a genetic relationship between the two disorders. The strongly hereditary character of migraine is not in doubt, but there is also a high incidence of migraine in the families of epileptics. Ely (1930) reported that of 171 persons suffering from epilepsy only 14% gave a family history of epilepsy but 60% gave a history of migraine in a former generation. There is, however, no special incidence of epilepsy in the families of sufferers from migraine. This seems to suggest that migraine is possibly the morbid ancestor of both migraine and epilepsy. Electro-encephalographic studies of migraine subjects have yielded varying results (Lennox, 1946; Dow and Whitty, 1947).

It is doubtful whether any practical deductions can be drawn from these observations connecting epilepsy and migraine. Migraine, though it causes an immense volume of suffering, is a much less serious disease than epilepsy. Lennox says that the two are emphatically not brothers but only some order of cousins. Nevertheless, in his admirable book *Science and Seizures* (Lennox, 1946) he calls migraine "headache seizures" and rather stresses a relationship to epilepsy because he feels this is encouraging for epileptics. No doubt this is true, but it is surely no less discouraging for the much more numerous migraine subjects to be given the idea that their headache attacks are akin to epilepsy. I do not think it is justifiable to speak of a "migraine-epilepsy syndrome."

The Practical Problem

In the present state of knowledge, even if electro-encephalographic records are available, the diagnosis of epilepsy is a clinical decision based on a summary of the evidence. It is therefore helpful to follow a simple plan, beginning by talking with the patient alone, and thereafter interviewing relatives or other observers separately. Children of school age can often give the necessary information as well as adults.

What can the patient tell us about an epileptic fit? Sometimes absolutely nothing, not even that he has fits. For example, the patient may be unaware that he is subject to convulsions in sleep or that he has petit mal during the daytime. In most cases he knows he has had an attack, seizure of some sort, or a series of attacks. He is asked, "What is the first thing you notice when the attack occurs?" A minority of patients have no warning and become instantly unconscious. But in most cases the question is a vital one, for it brings out information about the aura or first stage of the major fit, and precise localizing significance; while in some cases the patient can describe the whole attack.

Secondly, the patient can tell us

Principles of

attacks; prominent among these are headache and a desire to sleep, signs of injury, tongue-biting, incontinence of urine, vomiting, and soreness of muscles.

Then we can hear from the patient of the time of attacks, in particular their relation to sleep and to menstruation. As to sleep, the attacks may (1) occur during sleep, which is virtually diagnostic—of these the patient usually knows by his condition on waking; (2) if diurnal, show a marked predilection for the early morning hours; (3) occasionally occur just as the patient falls asleep. Further, an account of morning myoclonus is common and helpful.

Finally, though the patient cannot tell us of his actions in a state of automatism, he is often aware of this condition through circumstantial evidence, such as finding he has fallen into some strange place. The second part of the history from relatives, may be decisive, but is often inconclusive.

Aids to Diagnosis

The Electro-encephalogram.—Only if attacks are induced artificially, or if the patient is having frequent attacks under observation, is it possible to observe the distinctive seizure patterns. Confirmation of a clinical diagnosis, or help in a doubtful case, therefore depends on any variations from the normal which may be found in the resting record. Certain paroxysmal discharges seen in this record are virtually diagnostic of epilepsy: clearly defined "larval" attacks—i.e., electro-encephalographic but not clinical attacks—were never found by Williams (1944) in non-epileptic subjects, and the only case in 8,000 in which a wave-and-spike outburst (the type associated chiefly with petit mal) was seen in a non-epileptic was the identical twin

The Harvard workers found this type of attack in only 1 in 500 of non-epileptic subjects but in 100% of persons with a history of seizures a routine electro-encephalogram is of great value in diagnosis, and in 42% it is of little or no value. The results depend on the frequency of examinations. They are of great value in the diagnosis of petit mal, in which class of clinical diagnosis is most often in doubt. It must also be recognized that not infrequently successive records in the same patient are inconsistent—a fact which has disturbed a number of clinicians (Holmes, 1946; Rook, 1947). The interpretation of records is a specialized and skilled procedure, and the results must be evaluated only in conjunction with the clinical picture.

Induction of Fits.—Two methods may be used to induce fits for the purpose of diagnosis. The first is the production of alkalosis by overbreathing, the second to cause a positive water balance by forced ingestion of water and the administration of pitressin (Blyth, 1943). A couple of minutes' overbreathing may confirm a diagnosis of petit mal or bring out paroxysmal discharges in the electro-encephalogram. Otherwise these tests are formidable and have little place in ordinary practice.

The Clinical Decision.—Doubts and mistakes are inevitable after the most painstaking analysis of the clinical picture, which is free from the complications encountered in the Services, the bias of a doubtful case should, in my view, be towards the diagnosis of epilepsy. If there is a history of recurrent attacks suggestive of epilepsy, though certainty is lacking, the diagnosis is more likely to be epilepsy.

Final judgment may be reserved, but a diagnosis should be instituted.

ANTIHEMIPLEGIC DRUG TREATMENT OF ACUTE NEPHRITIS

JOHN CRAIG, M.B., Ch.B., F.R.C.P.Ed.

Professor of Child Health, Aberdeen University

N. S. CLARK, M.B., Ch.B., B.Sc., M.R.C.P., D.C.H.

Lecturer in Child Health, Aberdeen University

AND

J. D. CHALMERS, M.B., Ch.B.

Supernumerary Housephysician, Royal Aberdeen Hospital for Sick Children

This paper is a preliminary report on the use of "anthisan" in the treatment of acute nephritis in children. The number of cases so far treated is small, but the results have been so striking that we feel it is advisable to publish them at this stage in order to stimulate further work on the subject.

No specific treatment has yet been found which will abort acute nephritis or even appreciably modify its course. Treatment up till now has been directed towards providing rest both for the patient and, so far as this can be achieved by dietary restriction, for his kidneys, in the hope that these organs have not already been irreparably damaged and will eventually recover spontaneously. If the response we have observed to treatment with anthisan can be confirmed over larger series of cases a very material advance will have been made in the treatment of acute nephritis. In a centre such as this will be some years before we see enough cases for the proper evaluation of the treatment with adequate controls. Therefore it is advisable that this work should also be undertaken at other and larger centres.

The well-known tendency for acute nephritis to occur at an interval of a week or two after an acute bacterial infection suggests that nephritis may be in the nature of an allergic response to bacterial toxins. The relationship which seems to exist between acute nephritis and some cases of anaphylactoid purpura lends further support to this theory. It would therefore appear reasonable to test the effect of an antistamine drug in this condition. So far as we are aware the only published work on this subject is that of Reji (1946), who has claimed good results from treatment with "antistin" both in a few cases of experimentally induced nephritis in rabbits and in a small series of cases of acute nephritis in human beings. As might be expected he found that antistin had no effect on chronic nephritis where the kidneys are already irreparably damaged.

We have used anthisan in the treatment of eight successive cases of acute nephritis admitted to the Royal Aberdeen Hospital for Sick Children. The course of these cases has been very similar to that of the nine consecutive cases of this condition admitted immediately preceding the institution of treatment. Two cases of nephritis which were nephrotic from the outset have not been included, but, of the remaining six, all fresh cases of nephritis admitted to hospital between October, 1946, and October, 1948, included in either the anthisan or the control group.

The groups differ in one important respect—i.e., the cases were not admitted during the same period of time—although it is of course possible that the later cases were suffering from a relatively benign form of nephritis. The two groups are, however, closely comparable as regards the duration

oedema, hypertension, blood urea, and urinary output. The average age of the control group was 9 years and of the anthisan group 6 years.

Four cases in the control group and two in the anthisan group showed signs of active infection in the throat or ears on admission; the same number of cases in each group showed evidence of recurrent or persistent throat infection during the course of treatment. Whether or not these persistent infections had any effect on the course of the disease it is difficult to say. All patients in both groups who showed signs of active infection were given courses of penicillin or sulphonamide, but this did not seem to influence materially the course of the nephritis. Hypertensive convulsions, which occurred in one control and two anthisan cases, were treated on the usually accepted lines by lumbar puncture, hypertonic magnesium sulphate enemata, and sedatives. No other treatment was employed in either group apart from complete rest in bed until abnormal constituents had remained absent from the urine for several weeks and restriction of protein intake as long as azotaemia persisted.

For the purposes of comparison the two groups have been subdivided into "mild" and "moderate or severe" cases. Cases were classified as "mild" if there was no hypertension or oedema other than slight puffiness around the eyes and if azotaemia was absent or minimal. On this basis three cases in the control group and two cases in the anthisan group were mild, leaving six cases in each group which were moderate or severe.

Brief summaries of the important clinical and laboratory findings and of the course of all cases in both groups are given. The figure for "duration" shown at the end of each case history signifies the duration of activity of the nephritic process from the first day of treatment until the last abnormal signs had disappeared. Albuminuria or microscopical haematuria were the most persistent abnormal signs in all cases except No. 16, in which the blood urea remained raised after the urine had returned to normal.

Case Histories

Control Group: Mild Cases

Case 1.—A boy aged 11 was admitted on Feb. 28, 1948, with a six-day history of headache, giddiness, and haematuria. He had had a similar but milder attack in February, 1946. Since then, however, he had been very well, and no albumin had been found in his urine. Examination showed no oedema apart from slight puffiness around his eyes. The throat was healthy. B.P. 110/65. No other abnormality was detected. Urine: smoky, albumin ++, output normal. Blood urea 32 mg. per 100 ml. Sixteen days later his urine was free from albumin, and no red blood cells were seen on microscopical examination. Only once since then has his urine contained any abnormal constituents—namely, a few granular casts. He was discharged on April 3, and was very well when seen at the follow-up clinic two months later. *Duration:* 16 days.

Case 2.—A girl aged 10 was admitted on Feb. 6, 1948, with a history of having developed a sore throat ten days previously. Seven days later she had persistent headache, and on the day before admission her B.P. was 140/90 and her urine contained albumin ++ and scanty red blood cells and pus cells. Examination showed no oedema; the throat was healthy; there were signs of a congenital cardiac defect—probably a patent ductus arteriosus. B.P. 120/80. Blood urea 29 mg. per 100 ml. Urine: no albumin, scanty pus cells, culture sterile. Next day her urine again contained albumin, and this persisted for seven days. At no time during her stay in hospital were casts or red blood cells noted. She was discharged on Feb. 27. *Duration:* 8 days.

Case 3.—A girl aged 8 was admitted on June 19, 1947, with a history of haematuria for two days. There was no history of a throat infection, but she had been vaguely unwell for a

week before admission. Examination showed no oedema; tonsils were mildly inflamed; physical examination otherwise negative. B.P. 115/85. Blood urea 58 mg. per 100 ml. Urine: macroscopic blood, albumin ++, occasional granular casts. Her urine became free from albumin 26 days after admission, but a few red blood cells were present microscopically until the 39th day. Tonsillectomy was performed on Aug. 8 under cover of a course of penicillin, and she was discharged on Aug. 14. *Duration:* 39 days.

Anthisan Group: Mild Cases

Case 4.—A girl aged 5 was admitted on June 13, 1948, with a history of haematuria and puffiness of her eyelids for two days. She had had an attack of otitis media two months previously, and this had been followed by haematuria, but her symptoms had cleared in ten days, and she had been back at school for two weeks. Examination showed slight puffiness below the eyes. Tonsils were moderately enlarged but not inflamed. No other abnormality was detected. B.P. 132/70. Blood urea 50 mg. per 100 ml. Urine: macroscopic blood, albumin ++.

Anthisan, 0.1 g. t.i.d., was given from June 13 to June 21 inclusive. By the latter date her symptoms had completely subsided and her urine was free from albumin and red blood cells. She was discharged on June 29 to rest in bed at home for one month. She returned to the follow-up clinic on Aug. 2, having just recovered from an attack of mumps. Her urine showed a trace of albumin, but this had disappeared by her next visit to the clinic on Aug. 30, and she has had no albuminuria since. *Duration:* 8 days.

Case 5.—A boy aged 2 was admitted on Aug. 30, 1948, with a history of listlessness, pallor, and puffiness of the eyelids for two days. There was no history of an upper respiratory infection or of haematuria. On examination he was a pale, listless child with puffy eyelids but no oedema elsewhere. Apart from a soft apical systolic murmur and some enlargement of the tonsils, no other abnormality was detected. B.P. 106/76. Blood urea 20 mg. per 100 ml. Urine: albumin +, scanty red blood cells. Haemoglobin 54%.

Anthisan, 0.1 g. t.i.d., was given from Aug. 30 to Sept. 3 inclusive, and within four days his urine was free from albumin and red blood cells. On Sept. 4 albumin was again present in his urine, but thereafter no abnormality was detected. He was discharged on Sept. 15, and has since been seen twice at the follow-up clinic, his urine being normal on both occasions. This attack of nephritis was accompanied by a fairly severe microcytic hypochromic anaemia, which responded to iron therapy. *Duration:* 6 days.

Control Group: Moderate or Severe Cases

Case 6.—A girl aged 4 was admitted on June 2, 1948. Two weeks before admission she developed a respiratory infection which responded to treatment with sulphathiazole; her right ear then became painful and started to discharge. Two days before admission her urine became dark brown in colour. Examination showed no oedema apart from some puffiness around her eyes. Her throat was healthy, but her right tympanic membrane showed a loss of lustre. An x-ray film of her right mastoid showed a loss of translucency, suggesting mastoiditis. No other abnormality was found on physical examination. B.P. 125/80. Blood urea 66 mg. per 100 ml. Urine: albumin ++, no cellular deposit, output 7 (197 ml.) in first 24 hours. On June 7 gross haematuria present and there was a purulent discharge from the ear. The discharge from her ear gradually dried up, urinary output increased, and her haematuria disappeared. She was discharged on June 22, with a trace of albumin present in the urine. At the follow-up clinic, 10 days later the albuminuria had disappeared. *Duration:* over 20 days.

Case 7.—A girl aged 11 was admitted 10 weeks before admission she developed a generalized scarlatiniform rash, two weeks. On the day before admission she was puffy and she passed a small quantity of urine. On examination there was some

Her throat was healthy. A few rales were present at her left lung base. No other abnormality was detected. B.P. 176/80. Blood urea 51 mg. per 100 ml. Urine : albumin + + +, macroscopic blood. On Dec. 21 the blood urea was 38 mg. per 100 ml., B.P. 110/65; albuminuria was still marked, but no red blood cells were present. The albumin persisted until Feb. 26, 1948, when for the first time the urine showed no abnormality. She was discharged on March 4. *Duration*: 80 days.

Case 8.—A girl aged 4 was admitted on March 20, 1947, with a history of swelling of her face and abdomen and of passing dark-coloured urine for three days. On examination oedema of the face and limbs was present and the throat was inflamed. Physical examination was otherwise negative. B.P. 102/65. Blood urea 156 mg. per 100 ml. Urine : albumin + +, macroscopic blood, output 8 oz. (227 ml.) in first 24 hours. By April 1 the oedema had practically disappeared; the blood urea was 82 mg. per 100 ml. and frank haematuria had ceased. Her blood urea on April 27 was 23 mg. per 100 ml. An acute tonsillitis on May 3 caused an increase in the haematuria and albuminuria. The red blood cells gradually diminished, and on May 19 the urine was free from albumin. A few red blood cells, average 2 per high-power field, persisted till the date of her discharge on July 2. These were still present at her first visit to the follow-up clinic on July 24, but had disappeared by Sept. 4. Her urine has been normal on several occasions since that date. *Duration*: over 126 days.

Case 9.—A girl aged 10 was admitted on Oct. 2, 1946. Three weeks before admission she developed swelling of the eyelids and face. A week later haematuria was first noticed; this gradually became more marked, being accompanied by oliguria. On examination no oedema was present and her throat was healthy. B.P. 155/95. No other abnormality was detected. Blood urea 52 mg. per 100 ml. Urine : albumin + +, macroscopic blood, numerous granular casts, output 15 oz. (425 ml.) in first 24 hours. Blood urea on Oct. 19 was 28 mg. per 100 ml. The albuminuria and haematuria persisted, and the blood pressure was 140/90 on Dec. 15. On March 14, 1947, for the first time red blood cells were not seen on microscopical examination of the urine, but the albuminuria persisted. B.P. 120/70. A trace of albumin was still present in the urine when she was discharged on June 22, and again on her return to the follow-up clinic on July 16. *Duration*: over 287 days.

Case 10.—A boy aged 9 was admitted on Nov. 16, 1946. Three weeks before admission he developed a sore throat, followed a week later by a purulent discharge from his left ear. Five days before admission swelling of his eyelids was noted, and three days later there was haematuria and oliguria. On examination oedema of his face and ankles was present, tonsils infected, left suppurative otitis media. No other abnormality was detected. B.P. 140/100. Blood urea 221 mg. per 100 ml. Urine : albumin + + +, macroscopic blood, numerous granular casts, output 14 oz. (397 ml.) in first 24 hours. On Dec. 4 he developed chicken-pox and was transferred to an isolation hospital. At this time his blood urea was 50 mg. per 100 ml. and his B.P. 126/74. Frank haematuria persisted and was present on his readmission to this hospital on Dec. 27. A flare-up of his chronic tonsillar sepsis caused a further increase in the haematuria, and on Feb. 3, 1947, tonsillectomy was performed under cover of a course of penicillin. Gradual improvement took place in spite of an attack of measles starting on March 5. Red blood cells were last seen in the urine on April 28, but traces of albumin persisted until May 25. He was discharged on June 7, and until his last visit to the follow-up clinic on Dec. 24, 1947, his urine remained normal. *Duration*: 190 days.

Case 11.—A girl aged 11 was admitted on Dec. 31, 1946, having developed a sore throat three weeks previously. Four days before admission her face became swollen, and two days later her urine became dark brown in colour and she had convulsions. There were four further convulsions on admission. On examination she was drowsy and had generalized oedema; the throat was healthy. B.P. 170/120. Blood urea 45 mg. per 100 ml. Urine : albumin + + +, macroscopic blood, output was not diminished.

Urine : albumin + +, macroscopic blood. She had no further fits after admission, and by Jan. 12, 1947, her blood pressure had fallen to 120/80: the urine still contained albumin and red blood cells, but there was no longer obvious haematuria. Albumin and red blood cells were persistently present in the urine till March 8. Thereafter scanty red blood cells and traces of albumin were occasionally present. She was discharged on April 14. *Duration*: 67 days.

Anthisan Group: Moderate or Severe Cases

Case 12.—A girl aged 5 was admitted on June 21, 1948, with a history of having developed a sore throat two weeks previously. On the night before admission her face became puffy and she passed dark urine. On examination there was definite oedema of her face and slight oedema of her legs: follicular tonsillitis was present with enlarged tonsillar nodes. Physical examination was otherwise negative. B.P. 154/100. Blood urea 58 mg. per 100 ml. Urine : albumin + +, macroscopic blood, output in first 24 hours 12 oz. (340 ml.). A throat swab showed haemolytic streptococci.

Anthisan, 0.1 g. t.i.d., was given from June 21 to July 6. The oedema disappeared and the blood pressure rapidly returned to within normal limits. On July 1 her urine was free from albumin and no red blood cells or casts were seen on microscopical examination. She was discharged on July 6, and at her subsequent visits to the follow-up clinic on Aug. 16 and Sept. 28 she remained well and her urine was normal. *Duration*: 10 days.

Case 13.—A boy aged 9 was admitted on July 15, 1948, with a history of having developed a sore throat two weeks previously. Eleven days later he complained of headache and sickness, and his urine was dark brown in colour. Two days before admission his face became swollen and his urinary output was considerably diminished. On examination he was drowsy, and oedema of his face and sacrum was noted; his tonsils were enlarged and inflamed and the tonsillar nodes were palpable; no other abnormality was detected. B.P. 130/108. Blood urea 138 mg. per 100 ml. Urine : albumin + +, 20 red blood cells per high-power field (uncentrifuged specimen), output 13 oz. (368 ml.) in first 24 hours.

He was given anthisan, 0.1 g. four-hourly, from July 15 to 23. His oliguria persisted, and on July 18 his blood pressure rose to 158/120 and he developed a series of convulsions. He had another short convulsion on July 20, but next day his urinary output increased and his blood pressure began to drop. He had no further convulsions, but still complained of headache and vomited occasionally. By July 28 he was symptom-free, his blood urea was 41 mg. per 100 ml., his blood pressure 130/75, and his urine showed no abnormal constituents. He was discharged on Aug. 10. *Duration*: 13 days.

Case 14.—A boy aged 7 was admitted on Sept. 29, 1948, with a history of puffiness of his face and haematuria for three days. Three weeks previously he had complained of a sore throat accompanied by earache. On examination oedema of his face and ankles was present; his throat and ears were healthy and no other abnormality was found. B.P. 150/116. Blood urea 25 mg. per 100 ml. Urine : albumin + +; macroscopic blood.

Anthisan, 0.1 g. t.i.d., was given from Sept. 29 to Nov. 11. On Oct. 6 his urine was still smoky and contained albumin, but his oedema had subsided and his B.P. was 110/70. On Oct. 20 the albuminuria had cleared up and no red blood cells were present on microscopical examination. Routine examinations of his urine since Oct. 20 have on only two occasions shown an abnormality. Once a trace of albumin was noted, and five days later 6 red blood cells per high-power field were found on microscopical examination. *Duration*: 21 days.

Case 15.—A boy aged 5 was admitted on Oct. 21, 1948, with a history of swelling of his face for six days. Three days before admission the swelling became more pronounced and was accompanied by headache and vomiting. There was no history of sore throat or haematuria. On examination his face was oedematous, his throat was infected, and his tonsillar nodes enlarged; no other abnormality was found. B.P. 150/110. Blood urea 45 mg. per 100 ml. Urine : albumin + +,

macroscopic blood, occasional red cell and granular casts. His urinary output was normal.

He was given anthisan, 0.1 g. t.i.d., from Oct. 21 to Nov. 12. On Oct. 23 his urine contained no microscopical blood, but albumin was still present: the facial oedema had almost completely subsided. On Nov. 3 his urine showed no abnormality, and his blood pressure was 105/70. On only one occasion since Nov. 3 has a trace of albumin been found in his urine. *Duration: 13 days.*

Case 16.—A girl aged 6 was admitted on Oct. 22, 1948, with a history of swelling of her face and abdomen and some diminution in her urinary output for seven days. She had recently been a patient in the ear, nose, and throat ward of this hospital, suffering from otitis media, and had been discharged only seven days before her present admission. On examination there was some oedema of her face; her throat and ears were healthy. No other abnormality was noted. B.P. 185/145. Blood urea 60 mg. per 100 ml. Urine: albumin +, no cellular deposit, output 9 oz. (255 ml.) in first 24 hours.

She was given anthisan, 0.1 g. t.i.d., from Oct. 22. On Oct. 30 the blood pressure was 95/55; examination of her urine showed no abnormality, but her blood urea was still 60 mg. per 100 ml. On Nov. 12 the blood urea was 39 mg. per 100 ml. At the time of writing (Nov. 17) she is still having anthisan, and her urine has remained normal on daily examination. *Duration: 20 days.*

Case 17.—A girl aged 9 was admitted on July 5, 1948, with a history of vomiting and abdominal pain for three days. Physical examination on admission was negative, but her urine was found to contain albumin and a few pus cells. Three days after admission she complained of headache, and there was a suggestion of swelling of her face. Her blood pressure was 140/98. On July 10 she developed convulsions. B.P. 182/130. Blood urea 43 mg. per 100 ml. Her urinary output was 16 oz. (454 ml.) in 24 hours, and the urine continued to show albumin and a few pus cells with occasionally a few red blood cells.

Anthisan, 0.1 g. t.i.d., was given from July 11 to Aug. 3. On July 27 her blood pressure was 90/60 and her urine contained no abnormal constituents. Her urine remained normal until Aug. 27, when albumin and red blood cells were again found. Anthisan was again given in dosage of 0.1 g. t.i.d. from Aug. 27 to 31 and 0.1 g. four-hourly from Sept. 1 to 13. From Sept. 6 till her discharge on Oct. 29 no abnormality was found on daily examination of her urine, and her blood pressure and blood urea remained normal. *Duration of initial attack: 16 days. Duration of relapse: 10 days.*

Comment

After the first one or two cases had been treated with anthisan the clinical impression was formed that these cases were clearing up more quickly than would have been expected, and this impression became stronger as more cases were treated. A study of the figures given for the duration of the signs of activity in each case confirms this clinical impression, for not only is the average duration in the anthisan group (13 days) much less than that in the

control group (92 days) but if the mild and the moderate or severe cases are considered separately the least satisfactory case in the anthisan group has cleared up as quickly as the most satisfactory in the control group (see accompanying Table).

After the conclusion of anthisan treatment urine examination was made daily in every case up to the date of discharge from hospital, and occasional examination at the follow-up clinic thereafter.

In Case 17 the patient had a recurrence of albuminuria and microscopical haematuria after her urine had remained normal for one month. She was given another course of anthisan, and her urine again cleared after ten days; it has now remained normal for over two months.

In two other anthisan cases a trace of albumin was present on one occasion, and in one of these scanty red blood cells were seen on another occasion. All other urine examinations were normal.

It is of course too early as yet to speak of complete cure in any of the cases in the anthisan group, and all will be followed up so far as is possible. It seems probable, however, that as a general rule the longer signs of activity persist the greater are the chances of permanent renal damage. There would appear, therefore, to be reasonable grounds for hope that the further progress of the cases in the anthisan group will prove equally satisfactory.

Anthisan did not prevent the development of hypertensive convulsions in Case 13, in which they developed two days after the beginning of treatment. The patient's subsequent progress was, however, unusually satisfactory for such a severe case.

We have so far formed no definite opinions on optimum dosage or duration of treatment. In some cases the administration of anthisan was stopped when all abnormal signs disappeared; in others it was continued for a further week or two.

Acute nephritis is a disease which may run a very variable course, and with such a small series of cases it would obviously be unjustifiable and premature to advance any definite claims with respect to the efficacy of a particular line of treatment. Much further work will be necessary before the place of anthisan in the treatment of acute nephritis can be accurately assessed, and it is obviously desirable that this work should go forward as speedily as possible. Treatment with anthisan is simple, and toxic manifestations with this drug seem to be few and relatively unimportant. If its value in acute-nephritis can be proved a considerable advance in the management of this disease will have been achieved.

Summary

An account is given of the treatment with anthisan of eight cases of acute nephritis in children.

The course of these cases is compared with that of nine consecutive cases of this condition seen in the same hospital during the period immediately preceding the use of this treatment.

The duration of activity of the disease, as shown by abnormal findings in the urine, is notably shorter in cases treated with anthisan than in those of the control group.

REFERENCE

Reubi, F. (1946). *Helv. med. Acta*, 12, 1.

Table Showing Duration of Activity of the Nephritis in Each Case

	Control Group		Anthisan Group	
	Case No.	Duration	Case No.	Duration
Mild cases	1	16 days	4	8 days
	2	8 "	5	6 "
	3	39 "		
	Average 21 days		Average 7 days	
Moderate or severe cases	6	Over 20 days	12	10 days
	7	80 "	13	13 "
	8	Over 126 "	14	21 "
	9	Over 287 "	15	13 "
	10	190 "	16	20 "
	11	67 "	17	16 "
	Average 128 days		Average 15 days	
Average duration of whole group	92 days		13 days	

A recommendation for the building of a hospital of 100 beds, at a total cost of £38,000, has been passed by the Council. This first health centre will be expected to serve a population of about 20,000. There is to be a team of five general practitioners. Eventually it is expected that between 40 and 50 health centres in the area will serve 15,000 people.

CEREBRAL EMBOLISM FOLLOWING
CONTUSION OF THE HEART

BY

GERALD PARSONS-SMITH, O.B.E., M.B., M.R.C.P.

First Assistant

AND

DENIS WILLIAMS, M.D., D.Sc., F.R.C.P.

Assistant Physician

Neurological Department, St. George's Hospital

Damage to the heart resulting from non-penetrating blows to the chest wall is not rare, and several series of these cases have been recorded (Barber, 1944; Bright and Beck, 1935; Kahn and Kahn, 1929; Warburg, 1940; Hawkes, 1935; Arenberg, 1943; Sigler, 1945). The heart and pericardium, lying close behind the chest wall, are very vulnerable to severe blows in the region of the praecordium, but generally any damage which may be caused is mild and not recognized. In children and youths, however, there is perhaps a greater chance of cardiac trauma than in adults, because the heart is behind a resilient sternum and can be the more easily compressed against the spinal column. Although many cases of cardiac damage have been described we have not been able to find a case recorded in the literature in which a cardiac contusion was followed shortly afterwards by a cerebral embolism. As cardiac trauma may not be recognized as a cause of unexplained hemiplegia in childhood, since the condition has not been described before, and as several points arise from it, the following case is described in detail.

Case Report

The patient was a very robust, well-developed schoolboy aged 15½, who weighed 11 st. 5 lb. (72.12 kg.).

He had lived in Tanganyika until he was 5, and whilst there had had several attacks of fever. He had otherwise been healthy, and in September, 1946, March, 1947, and March, 1948, had been found fit in routine school medical examinations. There was no history suggesting rheumatic fever.

The first incident occurred about one year before the present illness. In March, 1947, when he was boxing at school in a competition, the fight had to be stopped in the first round as he was in severe pain following concentrated punishment to the region of his heart. This pain, which was dull and aching character, continued for the next week or so. It was aggravated by exercise, and the patient remembered that he had to stop in a cross-country run and walk home because of the severe dyspnoea and pain in his left chest which the exercise had produced. After this there was no recurrence of the pain, and for the next year he played the various school games, of which football, with some distinction and without restriction, and basketball took part in competitive boxing on March 29, 1948, 2 parts in 5 when the boy who had beaten him so thoroughly this estimated to be 28% (the measure-

the previous year. Again he received severe punishment to the left chest, and at the end of the first round he complained to his seconds of dull and sickening pain over his heart. The fight was stopped in the second round, as the boy was in agony. He thinks that he received only one glancing blow to the left side of his head, and he was in no way dazed or confused. The dull pain persisted, and some hours later he noticed sharp pain, which from his description was pleuritic in type over his praecordium. He slept badly that night, but the next morning the pain was less, though he felt generally ill and very stiff. He took things quietly, as he found that exercise brought on the pain. On March 31 he had improved considerably but was still afraid to exert himself. During that afternoon he was sitting watching the boxing finals, when he became aware that his left leg had suddenly become dead below the hip and that he felt very faint. Two hours later his arm became affected, and shortly afterwards he had a general convulsion followed by confusion and headache. No further convulsion occurred, and during the next few days his condition was stationary.

He was admitted to St. George's Hospital five days after the injury. The boy was alert, right-handed, intelligent, and co-operative. The skull was normal in shape and was not tender. Neck movements were full and there was no limitation of straight leg raising. The cranial nerves were perfectly normal and in particular there was no papilloedema and no field defect. Speech was normal. On the affected left side the leg

was very spastic, there was ankle clonus, tendon jerks were increased, and there was an extensor plantar response. Voluntary movements and co-ordination were considerably impaired in the leg. The arm was similarly affected, but to a much smaller degree. Sensation was normal on full testing. The pulse rate was 80 and was irregular. The blood pressure was 130/70. There was no clinical enlargement of the heart. The heart sounds were distant and difficult to hear. A soft systolic murmur was heard over the mitral area, and a basal pericardial rub. Blood count was normal: red cells, 5,250,000; white cells, 6,800 per c.mm. with normal differential count. B.S.R., 2 mm in 1 hour (Westergren).

The blood Wassermann and Kahn reactions were negative. X-ray photographs of skull, heart, ribs, and lung fields showed no abnormality.

The electro-encephalogram on April 5 (Fig. 1, A) was abnormal. There was a low-voltage alpha rhythm of 10 c/s that underlay a generalized symmetrical abnormality which consisted of runs of high voltage 1 c/s and medium voltage 3-4 c/s. There was no evidence of focal abnormality, nor of one side being worse than the other. An electrocardiogram taken at the same time was also abnormal. The curve showed evidence of partial heart-block due to two distinct lesions. First, there was an occasional omission of auricular systole, though the auricular beats were for the most part regular. This would indicate some partial sino-auricular block. Secondly, the P-R interval was prolonged and variable (Fig. B). It varied from 0.2 to 0.4 second in length, which would indicate partial disturbance of conduction of the auricular-ventricular system. The ventricular rate was 84. The T deflections in the three limb leads were normal.

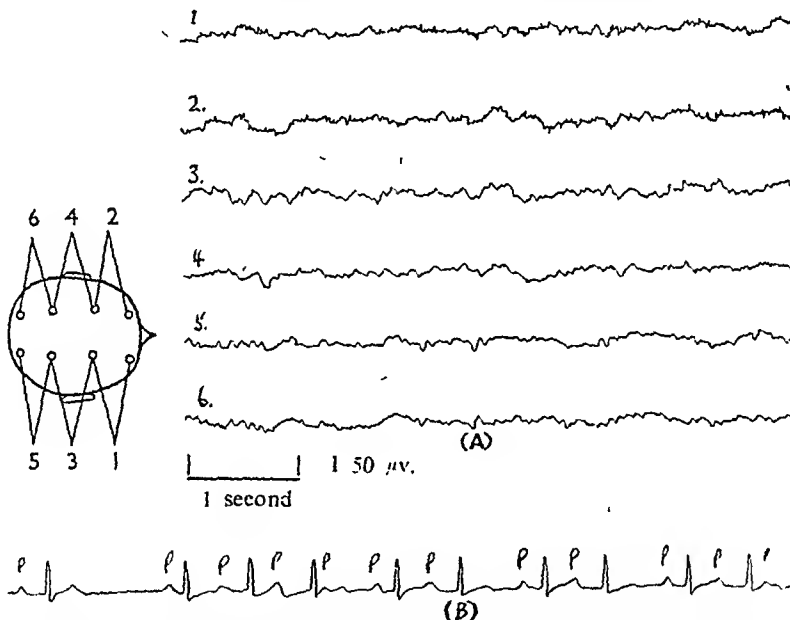


FIG. 1.—(A) April 5, 1948. E.E.G. abnormal. A low-voltage alpha rhythm of 10 c/s underlies a generalized symmetrical abnormality consisting of runs of high-voltage 1 c/s and medium-voltage 3-4 c/s. (B) Electrocardiogram recorded from lead I on the electro-encephalogram. The E.C.G. shows evidence of sino-auricular block and varying conduction time. The paper speed and amplification in Fig. 1 were used for all the E.E.G. records.

He was kept in bed and given occupational therapy, with resultant improvement in the power of his left upper limb after a week, though the leg was still very spastic. The cardiac arrhythmia persisted, but the heart sounds improved in quality. The systolic murmur increased in intensity; it became harsh and occupied almost the entire systolic period. It was audible all over the praecordium, and was maximal in the left third and fourth interspaces 2½ in. (6.25 cm.) from the mid-sternal line. The pericardial rub was heard only during the first two days in hospital.

An E.E.G. taken on April 13 showed a considerable change. Whereas there were generalized slow waves in the record taken on April 5, these persisted in the left hemisphere and there was suppression of all waves in the right parietal region (Fig. 2).

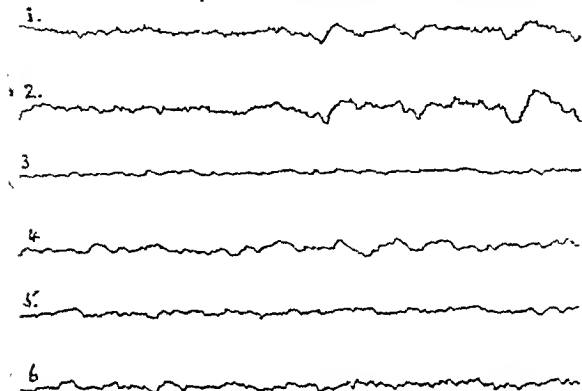


FIG. 2.—April 13, 1948. E.E.G. abnormal. Persistence of abnormal slow waves in the left hemisphere and suppression of all waves in the right parietal region. Recording as in Fig. 1

On May 4 an E.E.G. showed a slight improvement. A low-voltage dominant frequency of 12 c/s had returned. There were more 6 c/s waves on both sides, and runs of 3 c/s were seen which were more evident on the right than on the left. The records were still far from normal, but showed slight and gradual improvement (Fig. 3). Further E.C.G. recordings were

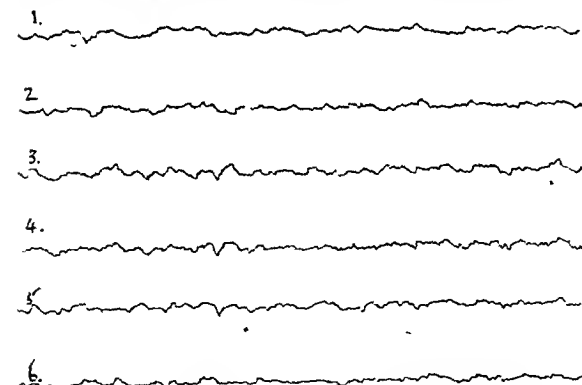


FIG. 3.—May 4, 1948. A low-voltage dominant frequency of 12 c/s is returning: 6 c/s are seen on both sides and runs of 3 c/s were more evident on the right than on the left. The records are still far from normal. Recording as in Fig. 1.

made, and these showed very little change. On May 4 an intramuscular injection of 1/50 gr. (1.3 mg.) of atropine sulphate caused an increase of pulse rate to 120, the rhythm became normal, and the P-R interval shortened to 0.16 second.

The hemiplegia continued to improve so that he was fit to be discharged from hospital on May 14. Since then his convalescence has been controlled and uneventful.

An E.C.G. taken on June 10 by Dr. Alastair Hunter (Fig. 4) was reported by him to show partial heart-block of varying character without the usual Wenckebach's periods. The auricular and ventricular complexes appear normal, but the auricular rate was not regular. It appeared, therefore, that

there was a disturbance of sino-auricular activity as well as A-V conduction. On Aug. 19, nearly five months after the injury, examination showed that improvement still continued. There were only residual signs of the hemiplegia, which caused him very little disability. The E.E.G. showed a further slight improvement, the records from the hemispheres being symmetrical. The heart was not enlarged, the sounds were of

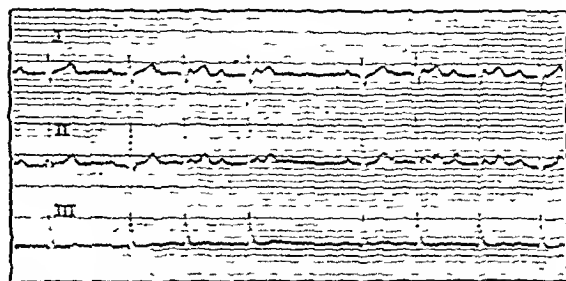


FIG. 4.—June 10, 1948. E.C.G. showing disturbance of sino-auricular activity as well as A-V conduction.

good quality, and no murmurs were heard. The pulse was still irregular, rate 78. The E.C.G. still showed sinus and A-V block, but the P-R interval was shorter than had been seen previously and varied between 0.18 and 0.22 second. He was fully ambulant and was due to start on a sedentary engineering course of instruction.

Discussion

If a non-penetrating blow to the chest is severe enough there may be various cardiac sequelae. The commoner of these include pericarditis, myocardial damage including coronary thrombosis and rupture of the heart, alterations of rhythm, and disturbances of conduction. The clinical picture which results may in severe cases be similar to that seen in myocardial infarction and may be accompanied by the corresponding physical signs and electrocardiographic changes. Injuries of this type have been produced whilst playing various sports. These include cricket (Priest, 1939), football (Lee, Ussher, and Houck, 1943), steeplechasing (Anderson, 1940), golf ("Queries and Minor Notes," 1933), boxing (Jokl, 1941), and surf-bathing (Leinoff, 1940-1). Jokl (1941) reports that professional boxers have found that the effects of well-placed hooks to the heart last for a considerable period, usually for the rest of the fight. He also considers that chest injuries in boxers are very much more common than is generally assumed. In many cases there is no evidence of fracture of the thoracic cage, and there may be no bruising of the chest wall. Kellert (1917) cites the case of a man engaged in digging in a sandbank when it suddenly caved in and he was engulfed up to his waist. When dug out he was dead. A laceration 5 cm. in length extended through the interventricular septum. Rupture of the heart was described by Hamilton (1934) in a child of 7, and by Bilderbeck (1919) in a young Gurkha rifleman without any other evidence of trauma. Bannister and Osborn (1941) recorded a large contusion of the ventricle which caused death in five hours and was a lesion.

Experimental work has been performed on the heart and Beck (1935), Moritz and Atkins (1935), Fidler, and Koons (1937). The last-named author stated that the most frequent cardiac lesions following injuries to the chest were subendocardial haemorrhages. Necropsies on boxers and on soldiers with tears and contusions of the chest (Bilderbeck, 1919) obtained a heart which showed lesions following cardiac massage (Bannister and Osborn, 1941) described bruising on the right auricle near the entrance of

tending to spread upwards. This type of lesion is of considerable significance in relation to disorders of rhythm, as it can readily spread towards the sino-auricular or auriculo-ventricular nodes. In the case in which death followed a blow from a cricket ball (Priest, 1939) the anterior surface of the heart was oedematous and bruised and there was a tear near the interventricular septum. In many cases the damage to the myocardium results in electrocardiographic changes similar to those of coronary thrombosis, though this is not invariable. Barber (1942) found an abnormal terminal complex in 12 out of 20 accident cases. Other changes were inverted P waves, supraventricular tachycardia, slurred R waves, and partial heart-block. In one case the P-R interval was 0.35 second five months after an accident. Rosenson (1924) recorded the case of a child of 10 who developed heart-block following a hard punch with the fist over the praecordium inflicted by one of his playmates, the E.C.G. returning to normal three months later. Wood (1948) describes the case of a woman aged 36 who had previously been healthy. In 1941 she was buried for one hour by a bomb explosion, and was almost asphyxiated. When examined shortly afterwards she was found to have a tremor in her left arm and also complete heart-block, both of which disabilities have proved to be permanent. Coffen, Rush, and Miller (1941) described the case of a patient aged 21 with auriculo-ventricular dissociation which developed after a chest injury received at the age of 3. Tuohy and Boman's case (1931) had bundle-branch block.

In the present case, a healthy boy received repeated heavy blows to his chest wall, following which signs and symptoms of cardiac damage were noted. These included severe pain in his left chest, pericarditis, a loud systolic murmur which was barely audible one month later, and evidence of partial heart-block. It is very probable that his heart had been bruised one year previously and was more susceptible to damage as a result of this. It is unlikely that both the sino-auricular and the auriculo-ventricular block were present before the injury. He had been medically examined previously on three occasions, and no comment was made about his cardiovascular system. The prognosis for the cardiac condition is uncertain. The diminution in the degree of heart-block following injection of atropine is a favourable finding, as is also the shortening of the P-R interval during the five months the boy has been under observation. Bruenn (1937) studied 22 patients with acute rheumatic fever who had impairment of auriculo-ventricular conduction time and found that intravenous injection of atropine sulphate abolished the conduction defect in 19. Acceleration in ventricular rate did not necessarily parallel decrease in conduction time. He concluded that in acute rheumatic fever the impairment of auriculo-ventricular conduction is due, in part at least, to an increase in "vagal tone" and that the site of this disturbance lies in the medulla.

There can be no proof of the site of origin of the embolus which caused the hemiplegia in this case, but in view of the other cardiac lesions it is possible that a small piece of a mural thrombus became detached. As the main was to the right auricle, for this to happen there either have been a spread of the bruising through to left auricle or else a septal defect. A localized pulmonary lesion is another possibility. In favour of this is the pleuritic type of pain which he had during the first few days after the blows, but against it are the negative x-ray appearances and absence of other symptoms of a pulmonary lesion. The third possibility is one of fat embolism from y damage, but very careful radiology of the ribs and am showed nothing suggestive of fracture. The hemiplegia, from its character, was clearly the result of an embolus, and the nature of the E.E.G. supports this view.

It is impossible to escape the conclusion that the embolus was the direct result of the myocardial damage which was so clearly demonstrated in the E.C.G., and that the actual cause of the embolus was a mural clot. The story of cardiac damage was obtained only by careful questioning after other causes for the hemiplegia had been excluded. The patient was an intelligent, observant boy, and the circumstances of his injury are dramatic. It is likely that the cardiac cause of other cases of hemiplegia in childhood may be obscured by the severity of the resulting hemiplegic picture. Although the E.C.G. produced striking changes in the present case, these are unusual, and if records are not made shortly after an injury evidence of it may be slight.

Sudden hemiplegia is not a common catastrophe in childhood. When not the result of direct brain injury, it usually occurs in the course of an acute infectious illness, particularly pertussis. Here it is the result of a haemorrhage, whereas in other infectious illnesses, such as pneumonia or diphtheria, it is thought to be embolic. Much attention has been paid in the past few years to cerebral venous thrombosis complicating infections or debilitating illnesses in children and giving rise to hemiplegia. Pyogenic infections bacterial endocarditis, and blood diseases, also the cause of embolic hemiplegia, were excluded in the present case.

The most frequent cause of a sudden hemiplegia in an apparently healthy child is congenital heart disease although, of course, the catastrophe is more likely to occur if bacterial endocarditis supervenes. There was nothing in the present case to suggest any congenital heart lesion; but the nature of the pathological process—an otherwise normal child with an abnormal endocardium, mural thrombus, embolus, hemiplegia—differed only in that the heart lesion was acquired. Our case suggests that when all causes of sudden hemiplegia in childhood have been considered the possibility of unsuspected cardiac trauma should be raised.

Summary

A case is reported of a boy who sustained myocardial damage while boxing, with a resulting cerebral embolus. The electroencephalographic and electrocardiographic findings are related to the clinical findings.

REFERENCES

- Anderson, R. G. (1940). *British Medical Journal*, 2, 307.
 Arenberg, H. (1943). *Ann. intern. Med.*, 19, 326.
 Barber, H. (1942). *Brit. Heart J.*, 4, 83.
 — (1944). *Quart. J. Med.*, n.s. 13, 137.
 — and Osborn, G. R. (1941). *Brit. Heart J.*, 3, 127.
 Bilderbeck, A. C. L. (1919). *British Medical Journal*, 1, 675.
 Bright, E. F., and Beck, C. S. (1935). *Amer. Heart J.*, 10, 293.
 Bruenn, H. G. (1937). *Ibid.*, 13, 413.
 Coffen, T. H., Rush, H. P., and Miller, R. F. (1941). *Northw. Med.* 40, 195.
 Hamilton, J. A. (1934). *British Medical Journal*, 2, 1101.
 Hawkes, S. Z. (1935). *Amer. J. Surg.*, 27, 503.
 Jokt, E. (1941). *The Medical Aspects of Boxing*. Pretoria.
 Kahn, M. H., and Kahn, S. (1929). *Ann. intern. Med.*, 2, 1013.
 Kellert, E. (1917). *J. Lab. clin. Med.*, 2, 726.
 Kissane, R. W., Fidler, R. S., and Koons, R. A. (1937). *Ann. intern. Med.*, 11, 907.
 Lee, R. V., Ussher, N. T., and Houck, G. H. (1943). *Amer. J. med. Sci.*, 206, 722.
 Leinoff, H. D. (1940-1). *Ann. intern. Med.*, 14, 653.
 Moritz, A. R., and Atkins, J. P. (1938). *Arch. Path.*, 25, 445.
 Osborn, G. R. (1943). *Lancet*, 2, 277.
 Priest, R. (1939). *J. R. Army med. Cps.*, 73, 125.
 "Queries and Minor Notes" (1933). *J. Amer. med. Ass.*, 100, 155.
 Rosenson, W. (1924). *Amer. J. Dis. Child.*, 28, 594.
 Sigler, L. H. (1945). *Amer. Heart J.*, 30, 459.
 Tuohy, E. L., and Boman, P. G. (1931). *Ann. intern. Med.*, 4, 137.
 Wood, P. H. (1948). Personal communication.
 Warburg, E. (1940). *Brit. Heart J.*, 2, 271.

A subcommittee of the Food Standards Committee of the Ministry of Food has been set up to consider the available evidence on the effect of ingesting foods contaminated with minute traces of metals or other injurious elements, and the possibility of prescribing limits for such contamination. A number of scientific bodies and research associations, including the Medical Research Council, are co-operating in the inquiry.

ANTI-HISTAMINE DRUGS IN TREATMENT OF NAUSEA AND VOMITING DUE TO STREPTOMYCIN

BY

J. R. BIGNALL, M.D., M.R.C.P.

AND

JOHN CROFTON,* M.D., M.R.C.P.

(From the Brompton Hospital)

Nausea and vomiting occur in a proportion of patients undergoing prolonged treatment with streptomycin (Heilman and others, 1945; Committee on Chemotherapeutics, National Research Council, 1946; Nichols and Herrell, 1946; Farrington and others, 1947; Streptomycin Committee of Veterans Administration, 1947; Medical Research Council, 1948). This toxic manifestation has been observed in 17 (35%) of 49 patients treated at the Brompton Hospital during the Medical Research Council trials of streptomycin in pulmonary tuberculosis, but in only four have symptoms been severe and persistent.

Such toxic symptoms as urticaria are probably due to hypersensitivity either to streptomycin or to impurities in the preparations used. It was thought that the nausea and vomiting might be caused in the same way and might therefore respond to antihistamine drugs. In the first few cases in which "benadryl" was tried there appeared to be some response, but the symptoms were too slight and transient to assess it accurately. It was possible to carry out controlled investigations in four patients with more severe toxic symptoms.

The symptoms were abolished or considerably reduced when benadryl capsules were given and returned when they were withheld.

Case Reports

Case 1.—A woman, aged 23, with bronchopneumonic pulmonary tuberculosis complained of transient nausea and vomiting on the 10th day of treatment with 0.5 g. of streptomycin hydrochloride six-hourly. Symptoms recurred on the 29th day and rapidly increased in severity. Ten days later the nausea was intense and she vomited after every meal. Benadryl, 50 mg., was given eight-hourly. There was an immediate response, and during the next seven days she had only slight early-morning nausea. Benadryl was discontinued; morning vomiting then returned, lasting for four days until the benadryl was resumed, when it ceased abruptly. Twelve days later benadryl was once more stopped; after three days the severe nausea and vomiting returned. Again benadryl had an immediate effect and the vomiting ceased.

Case 2.—A man, aged 23, with bronchopneumonic tuberculosis developed an urticarial rash on the 18th day of treatment with 0.5 g. of streptomycin hydrochloride six-hourly. On the 23rd day benadryl, 50 mg., was given, and this dose was continued eight-hourly for four days. The rash disappeared. Two days after stopping benadryl he complained of giddiness and vomited once. Benadryl, 50 mg., was given four-hourly and there was no further vomiting during the next two days. Benadryl was discontinued; four days later slight morning nausea occurred. The nausea increased whilst the giddiness decreased. After ten days benadryl was restarted in doses of 50 mg. eight-hourly. The nausea disappeared, but it recurred two days after benadryl was stopped. Three days later benadryl was again given and the nausea at once subsided.

Case 3.—A man, aged 49, with pulmonary tuberculosis and tuberculous bronchitis complained of abdominal discomfort and flatulence on the 10th day of treatment with 0.5 g. of streptomycin hydrochloride six-hourly. Five days later the symptoms became worse, particularly after the midday meal. Benadryl, 50 mg., was given at noon and 6 p.m. This controlled the afternoon abdominal discomfort, but five days later severe giddi-

ness and early-morning nausea developed. The nausea improved after the midday dose of benadryl. The dosage was increased to 100 mg. at 6 a.m. and 50 mg. at noon and 6 p.m. There was considerable improvement in the morning nausea, but the giddiness was unaffected. The nausea remained moderately well controlled, but several times the omission of a dose led to an immediate increase in the discomfort.

Control Tests

It seemed possible that suggestion might have played a part in the apparent response. Capsules identical with those containing the benadryl were filled with lactose. These were substituted for the benadryl capsules without the patients' knowledge. Each time the inert capsules were used the symptoms returned, but they disappeared when the capsules containing benadryl were resumed.

Case 1.—On the 74th day the patient had remained free from nausea and vomiting for three days with a dose of 50 mg. of benadryl eight-hourly. Lactose capsules were substituted. Next day the symptoms reappeared with their former severity and continued without remission for two days. The lactose capsules were withdrawn and benadryl capsules substituted. Vomiting ceased after the first dose. Thereafter benadryl was continued until streptomycin treatment ended on the 144th day; no further vomiting occurred, although there was occasional slight nausea. She remained free from toxic symptoms during the next seven weeks. A second course of streptomycin treatment was then started, and after three days the severe and persistent vomiting recurred. Streptomycin was discontinued, the patient's condition being too desperate to warrant its continuance.

Case 2.—On the 59th day the patient had remained free from nausea and vomiting for one day with a dose of 50 mg. of benadryl eight-hourly. Lactose capsules were substituted. The following day the nausea and vomiting reappeared and remained for three days. The lactose capsules were withdrawn and benadryl capsules substituted. There was no further nausea or vomiting. Twice more, on the 76th and 91st days, benadryl was discontinued without substitution of inert capsules; the symptoms recurred within two days and each time ceased abruptly when benadryl was restarted. On the 98th day lactose capsules were again substituted. Symptoms reappeared two days later and disappeared rapidly when the benadryl capsules were resumed. Thereafter there was no further vomiting or nausea, benadryl being stopped at the time of the last streptomycin injection on the 123rd day.

To eliminate the slight sedative action of benadryl as a cause of the response a similar experiment was carried out with identical capsules containing $\frac{1}{2}$ gr. (32 mg.) of phenobarbitone. Substitution of these for the benadryl capsules was followed by immediate exacerbation of the symptoms, and resumption of benadryl capsules by an equally dramatic return to the original condition.

Case 3.—On the 90th day the nausea and vomiting had been moderately well controlled for over eight weeks with a dose of 100 mg. of benadryl at 6 a.m. and 50 mg. at noon and 6 p.m. Substitution of phenobarbitone capsules began at the evening dose. The following morning there was considerably increased nausea and the patient vomited once. The severe nausea lasted two days. Benadryl was then resumed and the nausea decreased after the first dose. Thereafter slight occasional nausea remained up to and beyond the end of streptomycin treatment. The dose of benadryl was gradually reduced, but four weeks after stopping streptomycin there was still slight morning nausea when the benadryl dose was omitted. The severe giddiness was still present.

The experiment was repeated in another case with similar results, both benadryl and "antistin" being used. This was the only one of the severe cases of nausea in which it was possible to withdraw antihistamine drugs before the end of streptomycin treatment.

Case 4.—A woman, aged 20, with bronchopneumonic pulmonary tuberculosis complained of slight giddiness 21st day of treatment with 1 g. of streptomycin by

*In receipt of a grant from the Medical Research Council.

single daily injection. On the 27th day slight morning nausea appeared and four days later she began to vomit. Benadryl, 50 mg. eight-hourly, was started on the following day. During the next twelve days there was no nausea and she vomited only once. Identical capsules containing phenobarbitone were substituted. Twenty-four hours later the vomiting reappeared. The next day the same capsules containing 100 mg. of antistim were substituted; vomiting ceased after the first dose. Antistim in tablet form was continued for ten days. After its withdrawal neither nausea nor vomiting reappeared and she remained free from these symptoms throughout the remainder of the 32 weeks of streptomycin treatment.

In at least three of these cases we would have had to stop the streptomycin if we had not been able to control the nausea and vomiting. With the continuous administration of benadryl it was possible to complete the full four-months course. We would emphasize, however, that giddiness due to streptomycin was not relieved by the antihistamine drugs.

Summary

Antihistamine drugs were found to relieve the nausea and vomiting which sometimes occur during treatment with streptomycin. This conclusion was supported by control tests in four severe cases. Giddiness due to streptomycin was not relieved.

We are grateful for the co-operation of the physicians of the Brompton Hospital under whose care the patients were admitted. We also wish to thank the hospital pharmacists for help with the control tests and Messrs. Parke, Davis and Co. for a supply of empty capsules.

REFERENCES

- Committee on Chemotherapeutics, National Research Council (1946). *J. Amer. med. Ass.*, 132, 70.
Farrington, R. F., Hull-Smith, H., Bunn, P. A., and McDermott, W. (1947). *Ibid.*, 134, 679.
Heilman, D. H., Heilman, F. R., Hinshaw, H. C., Nichols, D. R., and Herrell, W. E. (1945). *Amer. J. med. Sci.*, 210, 576.
Medical Research Council (1948). *British Medical Journal*, 2, 769.
Nichols, D. R., and Herrell, W. E. (1946). *J. Amer. med. Ass.*, 132, 200.
Streptomycin Committee of Veterans Administration (1947). *Amer. Rev. Tuberc.*, 56, 485.

TETANY FOLLOWING REMOVAL OF A PARATHYROID ADENOMA WITH BONE DISEASE: FINALLY ALLEVIATED WITH CALCIFEROL

BY

NANCY S. CONWAY, M.B., Ch.B.

Hall Tutorial Fellow in Medicine, University of Glasgow
(From the Gardiner Institute of Medicine, University of Glasgow, and the Western Infirmary, Glasgow)

When a parathyroid adenoma has caused extensive bone disease its removal is followed by severe tetany. This report illustrates the value of calciferol and the uselessness of parathormone in the treatment of such a case.

Case History

The patient, a woman aged 43, was admitted on June 1, 1947, with backache dating from 1940 and general weakness which had caused her to become bedridden. She had kyphosis and sacral deformity, and radiographs revealed extreme decalcification of the entire skeleton. The blood calcium was 12.2 mg. per 100 ml., phosphorus 3 mg. per 100 ml.; alkaline phosphatase 45 King-Armstrong units per 100 ml., and urea 32 mg. per 100 ml.

A diagnosis of hyperparathyroidism was made, and on July 15 Professor C. F. W. Illingworth removed a small adenoma from one parathyroid gland.

After operation the serum calcium fell abruptly (Fig. 1) and tetany developed. Parathormone was started on the day after operation, 60 units being given intramuscularly. The dose was

increased until 200 units were given daily, but no rise in the serum calcium occurred even after the initial doses. During this period the patient received intravenous calcium gluconate (10-20 ml. of a 20% solution two or three times a day) and 12 g. of calcium lactate orally per day. In order to facilitate

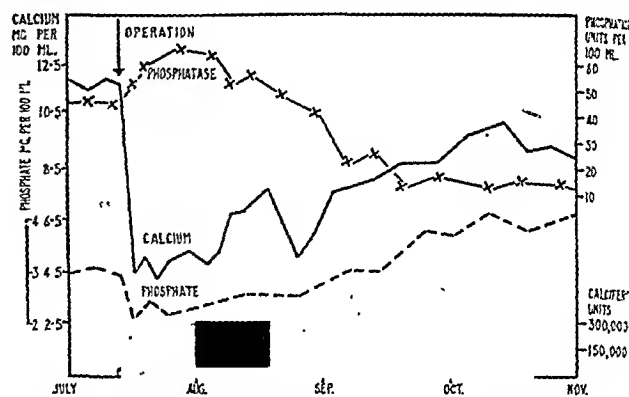


FIG. 1.—Showing the immediate fall in the calcium and phosphate and rise in the phosphatase which occurred after operation. During administration of calciferol the calcium and phosphate gradually rose, and the phosphatase fell to normal.

absorption of calcium a low phosphorus diet (0.56 g.) and 40,000 units of calciferol were given daily. In spite of these measures the patient's condition rapidly deteriorated. In addition, she became uncooperative, refusing to have injections, and parathormone was stopped on the 14th post-operative day, when the serum calcium was still less than 5 mg. per 100 ml. As a last resort a transfusion of 2½ pints (1.42 litres) of fresh citrat

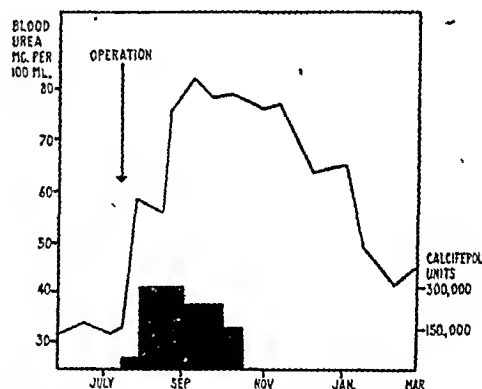


FIG. 2.—Showing rise of blood urea after operation and during calciferol treatment. It fell again after cessation of the drug.

blood (Group A) was given. The result was disastrous. Four hours later tetany, more severe than had hitherto occurred, developed, although examination of the blood showed that there had been no further drop in calcium.

An attempt was then made to raise the serum calcium by increasing the daily dose of calciferol to 300,000 units (60 tablets, each of 50,000 units). Three days later definite improvement was noted; thereafter the serum calcium gradually rose (Fig. 1), and signs of tetany disappeared and were not again elicited. At no time did the patient show any intolerance to the calciferol, which was stopped on Oct. 22 after a total of 19,000,000 units had been given. The blood urea, however, which rose after operation, remained high until some time after the drug had been stopped (Fig. 2). The patient was discharged.

TABLE I.—The Serum Calcium, Phosphate, and Alkaline Phosphatase after Cessation of Calciferol Treatment

Date	Serum Calcium (mg./100 ml.)	Serum Phosphate (mg./100 ml.)	Serum Alkaline Phosphatase (King-Armstrong Units per 100 ml.)
30/10/47	9.1	4.0	10.2
21/11/47	8.6	3.8	—
19/12/47	8.5	—	9.0
16/1/48	10.2	3.5	8.6
24/2/48	8.8	3.1	—
10/3/48	9.0	3.2	8.6

on Oct. 31, and since then the blood chemistry has remained satisfactory (Table I). In March, 1948, she was symptom-free, had gained 30 lb. (13.6 kg.) in weight, and was able to walk unsupported.

Discussion

The post-operative tetany was due to an abrupt fall in serum calcium. Efforts to raise the latter by parathormone (total 1,260 units) were unsuccessful even with different batches of the extract. That it was physiologically active was certain, since its effect in producing a diuresis was well marked. It was felt that failure to absorb calcium might account for the lack of response to the hormone, but faecal analysis for calcium showed that this was not so. It was concluded that the fall in serum calcium and the resultant tetany were due not to too little parathyroid tissue but to the "hungry bones" (Cope, 1941). After operation the decalcified skeleton absorbs calcium and phosphorus from the plasma with so much avidity that hypocalcaemia and hypophosphataemia result. The biochemical findings support this theory, the blood calcium and phosphorus both falling immediately after operation. The rise in alkaline phosphatase which occurred is interpreted as being due to increased osteoblastic activity associated with this recalcification.

The severe and almost fatal tetany which followed the transfusion of blood was produced in a different way. The introduction of citrate (the anticoagulant) would on account of its avidity for calcium ions cause a further reduction in the ionized calcium without altering the total calcium. "Citrate tetany" has been produced experimentally, but its occurrence after transfusion must indeed be rare unless, as was the case here, the serum calcium is already depleted.

The rise in serum calcium which started three days after large doses of calciferol had been prescribed was due to the specific effect of the drug and not to a spontaneous recovery, since the calcium fell again when the dosage of calciferol was temporarily reduced (Fig. 1). During its administration, also, the serum phosphorus rose slowly, while the alkaline phosphatase fell with remarkable rapidity and was normal eight weeks after operation. The calciferol did not appear to have any inhibitory effect on deposition of calcium or phosphorus in bone, for during a five-weeks period 69.25 g. of calcium and 14.84 g. of phosphorus were retained.

Not every case of parathyroid adenoma will require massive calciferol therapy in the post-operative phase. It will definitely be indicated when there is well-marked bone disease and should be started immediately after removal of the adenoma. In addition, large doses of calcium must of course be given orally, and until the calciferol takes effect symptoms of tetany may be alleviated by intravenous calcium gluconate; parathormone should not be used.

I wish to thank Professor C. F. W. Illingworth for allowing me to investigate this patient and Professors J. Norman Davidson and F. W. McNee for advice in the preparation of the paper.

REFERENCE

Cope, O. (1941). *Ann. Surg.*, 114, 706.

The Ministry of Health has issued a pamphlet, "Nursing and Domestic Staff in Hospitals," intended as a guide to hospital management committees on the recruitment, training, and conditions of service of nurses. It includes an example of how to work a shift system in a ward of 34 beds with a staff of one sister, two staff nurses, seven students for day duty, and two nurses for night duty, as well as some observations on what the proper task of a nurse should be and how some of the ward duties at present performed by nurses could be undertaken by domestic orderlies. These include arranging flowers, answering telephones and running messages, preparing meal trays, and handling clothing and laundry. The pamphlet has been sent to boards of governors of teaching hospitals and hospital management committees.

AGGLUTININ ANTI-P IN PREGNANCY REPORT ON TWO CASES

BY

I. DUNSFORD

(From the National Blood Transfusion Service, Sheffield)

The detection of an antibody in the serum during pregnancy has had much significance since Levine and his co-workers (1941) first propounded the theory (since amply confirmed) that haemolytic disease of the newborn is caused by the action on the foetal erythrocytes of immune antibodies formed in the mother's serum during pregnancy and passed through the placenta into the foetal circulation. The formation of these antibodies is stimulated by an antigen present in the foetal red cells but absent from the maternal red cells, the antigen having been inherited from the father. In a very large proportion of cases it has been demonstrated (Boorman *et al.*, 1942) that the rhesus complex has been involved, and in a few the ABO system (Aubert *et al.*, 1945).

There are not many references in the literature to immune or naturally occurring anti-P, and a leading article in the *British Medical Journal* of Oct. 20, 1945 (p. 535), refers to a case in which anti-P was associated with pregnancy. Wintrobe (1946) states: "In rare cases iso-immunization apparently occurs against the agglutinogens A and B, and possibly even M and P may cause immune bodies to be formed." Nigg (1930) has described two human sera which were later found to contain natural anti-P iso-agglutinins, whilst Wiener (1943) records having found only three or four such sera during a period of ten years. The latter serologist also found this iso-agglutinin in two post-transfusion sera he investigated; he states that "while the possibility exists that this factor could on rare occasions give rise to haemolytic transfusion reactions, to date no such reactions have been reported."

During the course of routine investigations carried out in this laboratory, which included testing the patient's serum at 37° C. against a series of Group O cells chosen not only for their rhesus type but also for their M, N, P, Kellecher, Lewis, and Lutheran types, the agglutinin anti-P was discovered in the sera of two pregnant women. In view of the extreme rarity of such an occurrence the history and the serological findings in these two cases are presented below.

Case 1

Mrs. X, a 2-gravida aged 36, in 1940 had a full-term clinically normal child weighing 6 lb. 12 oz. (3.06 kg.), and was again due for delivery on July 31, 1947. There was no history of transfusion or injection of blood. A blood sample was sent from the antenatal clinic for rhesus typing.

Serological Findings

March 7.—Mrs. X:—Group O Rh-positive. Her serum agglutinated some Group O cells weakly at 37° C., giving much stronger reactions at room temperature and at 4° C. At the latter temperature it appeared specific for P cells with a titre of 4. These reactions were compared with those of a proved anti-P serum and were found to be identical, suggesting that Mrs. X's serum contained anti-P. The serum gave a strong Diamond (Diamond and Abelson, 1945) slide reaction. A sample of serum was submitted to the Blood Group Reference Laboratory, Lister Institute, and confirmed as anti-P.

May 9.—Mrs. X:—Group O; genotype cDE/cde; M, N, p. The titre of the antibody against the same Group O P cell was 16 at room temperature and there was no evidence of enhancing when pooled serum from Group O persons was used in place of saline. **Mr. X:**—Group A Rh-positive; genotype CDe/cDE; M, N, P. His cells were strongly agglutinated by his wife's serum at 4° C. and at room temperature, and weakly at 37° C. after absorption with

June 20.—Mrs. X:—The titre of the anti-P was 16 with the standard O P cell. There was no

w 2

incomplete anti-P after destroying the complete antibody by heating at 70° C. for ten minutes and using the Coombs test (Race *et al.*, 1946) for incomplete antibodies.

Aug. 12.—Mrs. X was delivered of a normal infant. *Baby X*:—Group A Rh-positive; M, N, P. Direct Coombs negative. The mother's serum after absorption with A p cells agglutinated the baby's cells strongly at 4° C. and room temperature and weakly at 37° C. *Mrs. X*:—The titre of the antibody was 8, and it could not be enhanced.

Aug. 22.—The child was clinically normal and the haematological reports were normal. On the tenth day of Mrs. X's puerperium the titre of the antibody was 32 at room temperature and was confirmed by the Blood Group Reference Laboratory as anti-P.

Case 2

Mrs. Y, a primipara aged 27, was expecting delivery on Sept. 6, 1947. There was no history of transfusion or injection of blood. A blood sample was sent from the antenatal clinic for rhesus typing.

Serological Findings

March 8.—Group O Rh-positive (D+) p. Her serum agglutinated some O cells weakly at 37° C., but gave much stronger reactions at room temperature and at 4° C. At the latter temperature it appeared specific for P cells with a titre of 4. These reactions were compared with a proved anti-P serum and Mrs. X's serum (previously described) and were found to be identical. From this it appeared that the antibody was anti-P; a sample of the serum submitted to the Blood Group Reference Laboratory was confirmed as anti-P.

April 21.—The titre of the antibody was 32 at 4° C. and room temperature with standard Group O cells and there was no evidence of its enhancement. The titre at 37° C. was 2. There was no evidence of an incomplete anti-P.

June 28.—Mrs. Y's cells were fully investigated: Group O Rh-positive; genotype CDe/cde; M, N, p. The titre of the antibody had not changed.

Aug. 2.—No change in the strength of the antibody.

Aug. 26.—Mrs. Y was delivered of a normal baby. *Baby Y*:—Group O, apparently Rh-negative; P. Direct Coombs negative. Its cells were agglutinated by the mother's serum at 4° C., room temperature, and 37° C. *Mrs. Y*:—No change in the strength of the antibody, nor could it be enhanced.

Sept. 5.—Mrs. Y:—No change in the strength of the antibody. *Baby Y*:—Haematological reports normal; no signs of haemolytic disease of the newborn.

Discussion

The finding of these antibodies in the sera of two pregnant women immediately raises the questions: Are these antibodies immune or naturally occurring? and, Can they give rise to haemolytic disease of the newborn? The following criteria were used in order to arrive at a decision: (a) Could the titre of the antibody be enhanced? (b) Was there evidence of an incomplete form of the antibody? (c) The direct Coombs test on the infants' red cells. (d) The clinical condition of the children.

In investigating the possibility of enhancing the antibody titre the technique used was that first described by Boorman and Dodd (1945). They found that immune sera could be enhanced when normal human sera were used as the diluent in place of saline, whereas naturally occurring agglutinins showed no enhancing. Boorman and Dodd applied their technique to 81 immune and 14 naturally occurring agglutinins and included in their series cold agglutinins but not anti-P. Their technique has been confirmed in this laboratory. Although there were fluctuations in the titre of the antibodies in the two cases described, there was no evidence of enhancing when pooled human serum from Group O p donors was used as the diluent.

In cases of Group O people whose anti-A has been stimulated as a result of immunization with A-group-specific substance it has been shown that their sera contain an

incomplete form of the alpha agglutinin (Boorman and Dodd, 1946). This could be detected by destroying the complete agglutinin with heat and the finding of the incomplete form by the Coombs reagent. In the two sera here reported the complete agglutinin was destroyed by heating at 70° C. for 10 minutes and there was no evidence of an incomplete form of anti-P in that P cells were not sensitized when tested with Coombs reagent.

The second use of the Coombs reagent is for the detection of *in vivo* sensitization by a maternal antibody of the red blood cells of infants with haemolytic disease. These sensitized cells are agglutinated by an anti-human-globulin serum, whereas the cells of normal infants are not agglutinated. In the two cases here described the red cells of the infants were tested as soon as possible after birth and there was no evidence of sensitization. Finally, the medical officers in charge of the cases reported that the infant showed no clinical signs of haemolytic disease and developed normally.

These investigations suggest that the anti-P agglutinin were of natural occurrence and may be compared to the naturally occurring agglutinins anti-A and anti-B, which have occasionally been responsible for haemolytic diseases of the newborn. The protective factors in heterospecific blood group pregnancies were studied by Tovey (1945). His assessment of the main mechanisms operating individually or in combination to protect the foetus may apply to these cases—namely, lack of permeability of the human placenta to these agglutinins, neutralization of the incompatible antibody crossing the placental barrier by group specific substances in the foetal plasma, lack of sensitivity of the foetal erythrocytes towards the incompatible agglutinins, and diminished activity of the agglutinins at body temperature.

It would appear from these two cases that naturally occurring anti-P, although of sufficient strength to be active at 37° C. (Kettel, 1930: the thermal amplitude is usually directly proportional to the titre of the cold agglutinin), is unlikely to be a causative agent in haemolytic disease of the newborn. Conclusive evidence may be derived from further studies.

Summary

Two cases of pregnant women in whose sera the agglutinin anti-P was found are reported.

Evidence suggesting that these antibodies were of natural occurrence is offered.

It is suggested that this naturally occurring antibody is of no pathological significance.

The serological investigations were carried out in the laboratory of the National Blood Transfusion Service, Sheffield, and my sincere thanks are offered to the late and present blood transfusion officer (Dr. E. F. Aubert and Lieutenant-Colonel R. H. Malone) for their discussions and for permission to publish this paper. To Drs. J. B. Cochrane and R. G. Cooke, of Nottingham City and Derby City Hospitals, for their co-operation, and to Drs. A. E. Mourant and R. R. Race, of the Lister Institute, for their confirmation of the anti-P sera.

REFERENCES

- Aubert, E. F., *et al.* (1945). *British Medical Journal*, 2, 648.
- Boorman, K. E., *et al.* (1942). *Ibid.*, 2, 535, 569.
- *et al.* (1945). *Nature*, 156, 663.
- and Dodd, B. E. (1946). *Ibid.*, 158, 589.
- Diamond, L. K., and Abelson, N. M. (1945). *J. Lab. clin. Med.*, 30, 204, 668.
- Kettel, K. (1930). *Undersøgelser over Kuldehaemagglutinerer*, p. 87 Copenhagen. Quoted in A. Wiener's *Blood Groups and Blood Transfusion*, 3rd ed., p. 45.
- Leading article (1945). *British Medical Journal*, 2, 535.
- Levine, P., *et al.* (1941). *J. Amer. med. Ass.*, 116, 825.
- Nigg, C. (1930). *J. Immunol.*, 19, 1.
- Race, R. R., *et al.* (1946). *Lancet*, 1, 264.
- Tovey, G. H. (1945). *J. Path. Bact.*, 57, 295.
- Wiener, A. S. (1943). *Blood Groups and Blood Transfusion*, 3rd ed., p. 256. Springfield, Ill.
- Wintrobe, M. M. (1946). *Clinical Haematology*, 2nd ed., p. 559. Philadelphia.

THE HUMAN LOUSE IN TRANSMISSION OF *T. DUTTONI* IN NATURE

BY

R. B. HEISCH, M.D.

(From the Division of Insect-Borne Diseases, the Medical Research Laboratory, Kenya)

Hitherto there has been no evidence that the human louse can act as a vector of *Treponema duttoni* in nature. Even in the laboratory Nicolle and Anderson (1927) were unable to infect lice with a Congo strain of the parasite. Recently, however, Heisch and Garnham (1948) have shown that under laboratory conditions several strains of East African *T. duttoni* can infect and undergo metacyclic development in lice, and that the infection can be transmitted by inoculation.

The present paper reports the discovery of natural infections in lice of spirochaetes indistinguishable from *T. duttoni*. The only other worker to have experimented along these lines is Blanchard (1914), who in the Congo inoculated mice with lice collected from patients infected by *T. duttoni*, but with negative results.

Lice were collected from the clothes of patients infected with *T. duttoni* at Kisumu and other places in Kenya Colony where the disease is endemic, after being kept for varying periods they were emulsified with saline and inoculated into rats and mice. Lice were collected from seven patients, and four of the batches proved infective.

Case 1—Ten lice (L19) were collected on Aug. 26, 1946 from the clothing of a Kikuyu woman with *T. duttoni* in her blood. The following day one louse was smeared on a slide and stained; no spirochaetes were seen. On the 28th seven lice remained, these were emulsified and inoculated into Mouse 673 but infection did not result.

Case 2—At Meru six lice (L26) from the clothing of a child aged 1 year with relapsing fever were emulsified and inoculated into Mouse 1460 but no infection resulted.

Case 3—Sixteen lice (L26) from the trousers of a sophisticated Tanganyikan suffering from relapsing fever and with quite numerous spirochaetes in his blood, were emulsified and inoculated into Mouse 1593; there was no infection.

Case 4—Eight lice (L30a) were collected at Kisumu from the clothes of a patient with spirochaetes in his blood. Six hours later they were emulsified and inoculated into Rats 2574 and 2548, both of which became infected.

Case 5—Two lice (LKu8) were removed from the head of a child of the Jaluo tribe at Kisumu with spirochaetes in his blood. After five hours they were emulsified and inoculated into Rat Ku19, which subsequently became infected.

Case 6—Forty-eight lice (LKu9) were collected from an adult male of the Jaluo tribe at Kisumu with relapsing fever spirochaetes in his blood. Twenty-five of these were inoculated into a rat after forty-eight hours and the remaining 23 were inoculated into Rat Ku24 after seventy-two hours. Both these animals became infected.

Case 7—Sixteen lice (LKu10) from the clothes of a Jaluo male aged 18 with spirochaetes in his blood were emulsified and inoculated after twenty-seven hours into Rat Ku25, which subsequently became infected.

Discussion

The recovery of spirochaetes from four out of seven batches of lice collected from patients infected with *T. duttoni* is further evidence that the louse is able to act as a vector of this organism in nature. It might be objected that the infections caused in mice and rats were examples of mechanical transmission, but this seems unlikely, as the lice were kept for periods up to three days before inoculation. The criticism might also be made that the strains recovered were in reality not *T. duttoni* but some other

species of spirochaete. However, the strains proved to be *T. duttoni*, because they were capable of infecting *Ornithodoros moubata*, they caused typical infections in laboratory animals, and they were markedly neurotropic (residual brain infections in rats and mice).

It is strange that epidemics of louse-borne *T. duttoni* have rarely if ever been known to occur. This may be due to the existence of an immunity in the populations of endemic areas or because the louse is a less efficient vector of *T. duttoni* than of *T. recurrentis*.

Summary

Of seven batches of lice collected in Kenya Colony from patients infected with *T. duttoni* four were found to be infective when inoculated into rats and mice.

The spirochaetal strains recovered proved to be *T. duttoni* and not any other species of spirochaete.

Although it is probable that the louse can act as a vector of *T. duttoni* in nature, it is not known how often or with what degree of facility this occurs.

I have to thank the Director of Medical Services, Kenya, for permission to publish this paper. I am also much indebted to Mr W. E. Grainger for helping me with the transmission experiments.

REFERENCES

- Blanchard, M. (1914) *Ann. Hyg. Med. Colon.*, 17, 81.
Heisch, R. B., and Garnham, P. C. C. (1948) *Parasitology*, 38, 247.
Nicolle, C., and Anderson, C. (1927) *Bull. Inst. Pasteur* 25, 657.

MENINGOCOCCAL CONJUNCTIVITIS

BY

J. D. A. GRAY, M.B., F.R.C.P.Ed., D.P.H.

AND

R. A. LAMBERT, A.I.M.L.T.

(From the Central Middlesex Hospital)

An intracellular Gram-negative diplococcus in the exudate of a purulent conjunctivitis is often assumed to be a gonococcus, but full bacteriological investigation sometimes shows it to be a meningococcus. There are numerous references in the literature to the presence of meningococci in the conjunctiva, but the methods of identification employed in the earlier cases, at least, are not now acceptable.

Case Report

A boy aged 34 years attended the casualty department with a gross purulent conjunctivitis of the left eye of one day's duration. The cornea was clear and the interior of the eye normal. The condition was completely cured within eight days by local treatment with 30% sulphacetamide ("albacid") hourly, penicillin in saline (2 000 units per ml) every half hour, atropine, and the provision of coloured glasses. The right eye was healthy.

Bacteriology—When first seen films from the left eye showed pus cells with numerous intracellular and extracellular Gram-negative diplococci, and cultures yielded a copious growth of these and a scanty one of *Staphylococcus aureus*. The Gram-negative cocci were strict aerobes, grew only on media containing blood or serum, and fermented glucose and maltose but not lactose or saccharose. Their colonies were denser and more luxuriant than those of gonococci. Agglutinations of them were agglutinated to titre by Laboratory's (Griffith) Group II meningococci to 1 in 25 by Griffith's Group I antiserum. The organism was therefore identified as *Neisseria meningitidis* (Group II). The right eye did not yield meningococci. The pharynx of the patient, his parents, and his contacts were examined for neisseriae without success.

THE
51-7-49
W.D. G.
M.D. G.
M.D. G.
M.D. G.

Discussion

During or immediately preceding cerebrospinal meningitis, meningococci have often been found in the conjunctiva. In some instances the eyes were apparently healthy (Randolph, 1893; McKee, 1908, 1909), but others showed a purulent conjunctivitis (Koplik, 1904). This type of conjunctivitis has become progressively rarer with treatment by specific antiserum and later by sulphonamides, so that it is now practically never observed (Lewis, 1931; Tillett and Brown, 1935). McKee (1908) discussed the probabilities of whether the conjunctiva acted as a portal of entry for the neisseriae or became invaded secondarily.

The occurrence of the conjunctivitis immediately before the onset of meningitis (Koplik, 1904) and its appearance in nurses attending patients with meningitis (Smith, 1905; Reese, 1936) support the first contention. There is no inherent reason why the conjunctiva should not, like the nasopharynx, harbour and even be infected by air-borne meningococci, but obviously the chance is less, inasmuch as a current of air containing the organisms is not drawn by each respiration over the conjunctiva. Meningitis resulting from meningococci which have gained access to the body via the conjunctiva, if it occurs at all, must be very rare compared with the usual sequence of events described by Wilson and Miles (1946), beginning with entry of the meningococci into the nasopharynx and their spread to the meninges either direct or by the blood stream.

Conjunctivitis due to *N. meningitidis*, unassociated as in this case with meningitis in either the host or any of his known immediate contacts, has often been recorded, and Stuart and McWalter (1948) give more than a dozen references. They themselves described six cases, from which they isolated five strains. Four of these were investigated serologically and, in contrast to the case here recorded, all belonged to Group I. It is a matter for speculation whether in the absence of treatment these patients would subsequently have developed meningitis. At present meningitis is usually due to Group I, and most of the strains found in the nasopharynges of persons who have not been in contact with cases of meningitis belong to Group II (Mackie and McCartney, 1948).

In the interests of public health as well as of the patient himself, rapid identification of the organism in neisserial conjunctivitis is of obvious importance. Difficulties due to absence of facilities for immediate culture may be overcome by the use of the thioglycollate method of transport (Stuart, 1946). As Stuart and McWalter suggest, meningococcal conjunctivitis is more frequent than commonly imagined, is often erroneously diagnosed as gonococcal, and may be as severe clinically as gonococcal ophthalmia. Although both conditions respond to sulphonamides, the sociological "follow-up" required is entirely different.

Summary

A case of purulent conjunctivitis due to *N. meningitidis* Group II is recorded and discussed. Contacts were examined for neisseriae without success.

Our thanks are due to Drs. A. Rugg-Gunn and H. Claff for the clinical details.

REFERENCES

- Koplik, H. (1904). *Med. News*, **84**, 1065.
 Lewis, P. M. (1931). *Sth. med. J.*, **24**, 101.
 McKee, H. (1908) *Ophthal. Rec.*, **17**, 438.
 — (1909). *Ibid.*, **18**, 304.
 Mackie, T. J., and McCartney, J. E. (1948). *Handbook of Practical Bacteriology*, 8th ed. Edinburgh.
 Randolph, R. L. (1893). *Bull. Johns Hopk. Hosp.*, **4**, 59.
 Reese, F. M. (1936). *Amer. J. Ophthal.*, **19**, 780.
 Smith, D. (1905). *Arch. Ophthal.*, **34**, 481.
 Stuart, R. D. (1946). *Glas. med. J.*, **27**, 131.
 — and McWalter, D. (1948). *Lancet*, **1**, 246.
 —, W. S., and Brown, T. McP. (1935). *Bull. Johns Hopk. Hosp.*, **297**.
 —, —, and Miles, A. A. (1946). *Topley and Wilson's Textbook of Bacteriology and Immunity*, 3rd ed. London.

Medical Memoranda

Pulmonary Tuberculosis Complicated by Amoebic Hepatitis

The following case history may be of general interest because of its differential diagnostic problem, which is somewhat unusual, and its moral, which is becoming increasingly common.

CASE HISTORY

The patient, a married woman aged 36, has been suffering from pulmonary tuberculosis for at least ten years. A left-sided artificial pneumothorax was induced some two years ago, and she recently came for treatment of a fresh spread in the right lung. She had had appendectomy twenty years ago.

For the last eight years she has been complaining of sharp, dragging pains in the right iliac fossa and lately also in the right epigastric region; the pains were independent of food, were worse when she stood up, and had grown in intensity during the last few years. There was moderate flatulence, but the bowels were regular and the stools macroscopically normal. She gave a vague history of three or four sharp attacks of diarrhoea in the course of the last nine years. The first attack, lasting four or five days, was in 1939; the others, lasting two or three days, occurred between 1935 and 1944. She thinks that on two occasions she passed some blood and mucus.

The patient has never been in tropical countries, and, apart from occasional pre-war trips to Paris and the South of France, her only foreign journey was a summer cruise in Dalmatian waters in 1937. The abdominal symptoms had been variously diagnosed as those of duodenal ulcer and abdominal tuberculosis. They have not responded to treatment.

On examination the caecum was ballooned, doughy and tender and could be elicited by pressure on the colon as far as the splenic flexure. No mass or rolled-up omentum could be palpated. A small area of localized tenderness, which had been unknown to the patient, could be detected in the right lobe of the liver, about 1 in. (2.5 cm.) to the right of the xiphoid process. This tenderness was more pronounced in the intercostal space above than on the palpable liver-edge. On screening, the right diaphragm was observed to be slightly elevated and its movement was somewhat diminished. Sigmoidoscopy disclosed a congested oedematous rectal mucosa, severe submucous haemorrhages on the haustra, and a few small round healed ulcers, at 4 in. (10 cm.).

Investigation revealed slight hypochromic anaemia; W.B.C. 3,600 with normal distribution; van den Bergh quantitative test, 0.8 mg. per 100 ml.; nicotinic acid tolerance (Erdei, 1947, 1948), 450 mg. galactose tolerance and thymol turbidity normal; cephalin-cholesterol test, weakly positive. On examination of the faeces two typical *Entamoeba histolytica* cysts could be demonstrated in the sixth specimen.

A course of ten injections of emetine, with concurrent penicillin and diodoquin and consecutive emetine bismuth iodide and carbarsol was given. After the second emetine injection the liver became very tender, but all tenderness disappeared after the sixth injection, thus justifying the diagnosis of chronic amoebiasis with hepatitis.

Further attacks of diarrhoea occurred some time after the improvement from the anti-amoebic treatment. First *Giardia lamblia* was demonstrated; afterwards, when the diarrhoea became worse and sigmoidoscopy revealed superficial ulceration of the rectal mucosa, *Shigella flexneri* (Newcastle-Manchester strain) was grown from sigmoidoscopy swab. Several stool cultures proved to be negative. Sulphasuxidine treatment was given, and the patient is now free of the complaint, and her motions do not exceed two daily.

COMMENT

In the above case abdominal tuberculosis figured much to prominently in the differential diagnosis, and the correct diagnosis was arrived at only because it was realized that chronic amoebiasis is an increasingly common condition which must be considered when dealing with a very wide range of abdominal and general conditions. This case also demonstrates the value of a rapid liver-function test such as that of nicotinic acid tolerance.

A. ERDEI, M.D., M.R.C.P.

REFERENCES

- Erdei, A. (1947). *British Medical Journal*, **1**, 822.
 — (1948). *Lancet*, **1**, 368.

Reviews

COLON AND RECTUM

The Surgery of the Colon and Rectum. By Sir Hugh Devine, M.S., F.R.C.S., F.R.A.C.S., F.A.C.S., and John Devine, M.S., F.R.C.S., F.R.A.C.S., F.A.C.S. (Pp. 373; 277 illustrations (some in colour). 52s. 6d.) Bristol: John Wright and Sons. 1948.

The work of Sir Hugh Devine in advancing the surgery of the large bowel is already well known. With John Devine as a collaborator in writing this new book he offers all the wisdom which a wide experience of this realm of surgery has developed in an alert and inventive surgeon. We believe this to be an important book which will be highly valued and appreciated by operators both young and old.

Perhaps the outstanding lesson of these pages is that the mortality of colonic operations could be reduced considerably if the bowel were "defunctioned" by an adequate colostomy and chemotherapeutically prepared to reduce possible infection to a minimum. This is, of course, no more than a reiteration of the teachings of Paul and Mikulicz, but the technique has been improved by performing a more perfectly designed colostomy followed by local use of the insoluble sulphonamides. The results recorded here show that these modifications are of real value, and a large part of the book is about the practical application of the technique to various diseases of the colon and rectum. The authors describe the useful Devine operating frame; it is a great help in providing the extensive exposures necessary in this branch of surgery. Another device described is an ingenious pump for the direct transfusion of blood, a procedure now rarely used in Britain.

It is interesting to read that appendicostomy is revived as a treatment for some cases of ulcerative colitis when combined with the use of sulphonamides, although colectomy, partial or complete, by the new technique is performed for most cases. In the treatment of Hirschsprung's disease, too, the authors recommend total colectomy; the results of sympathectomy in these cases "afford little encouragement to continue its use." Not all surgeons would agree. Incidentally, we found the arguments about the experimental work on the autonomic control of the colon rather ambiguous in that the experiments showing that the lower bowel receives a motor (accelerator) supply from the parasympathetic are adduced as evidence against performing sympathectomy, whereas it would seem logically to be evidence in favour, at least if the conception of an antagonism of the two sides of the autonomic supply is accepted. The phraseology here and there sounds rather unusual to the English ear, and the occasional use of such words as "ectropionises" would raise a cry of despair from our purists. The book is well produced, of handy size, and copiously illustrated. We can highly recommend it.

NORMAN C. LAKE.

QUICK DIAGNOSIS OF TUMOURS

Identification of Tumours. Essential Gross and Microscopic Pathologic Features Systematically Arranged for Easier Identification. By N. Chandler Foot, M.D. (Pp. 397; 241 illustrations. 36s.) Philadelphia and London: J. B. Lippincott Company.

The motive behind this book is good; it is intended to be a vade-mecum for the microscopist, providing a quick diagnostic aid in much the same way as a botanist uses a pocket flora in the field. Without preambles about general theory, classifications, carcinogens, and so forth, the author goes straight to the description of types. Part I is on tumours of general distribution, Part II on those of special systems and organs. In each type described there are brief notes under side-headings in bold type indicating the source, site, clinical features, pathology, and differential diagnosis. The illustrative photomicrographs are abundant, but could be better interpreted if the stains used and the magnifications were stated. Technical notes and a tabulated arrangement of the tumours described are appended.

Attractively set out, this book would achieve its objective but for the presence of far too many statements to which exception may be taken. Thus (p. 208) the author gives the normal weight of a parathyroid as 3 g.; he states that carcinoma of the gall-bladder is extremely rare (p. 158); he lists the ileum (p. 144) as a site of adenocarcinoma, which is admitted to be less often so than the colon, but presumably not the excessively rare phenomenon which in fact it is generally considered to be. Apart from the malignant argentaffinoma, primary epithelial malignant tumours of the ileum are virtually unknown. Further instances of this kind could be added. There are also serious omissions. For instance, to take a few at random, the author does not mention the common endochondromata of the phalanges, whereas he gives pride of place to those of the articular cartilages—an unlikely site. In describing primary carcinoma of the liver (p. 154) he does not mention its common association with cirrhosis. He states that carcinoma of the bronchus (p. 111) metastasizes to the bones, suprarenals, spleen, and kidneys, but does not add the brain, liver, and pancreas, which are so commonly involved; nor does he mention on p. 129 the interesting sex differences in the distribution of carcinoma of the oesophagus.

The author's use of words, too, is often puzzling. Thus the term "metaplasia" appears both where one would expect it and also where most pathologists would say "anaplasia." It is to be feared that the student would find this book difficult to use in conjunction with the teaching of other textbooks.

DOROTHY S. RUSSELL.

SIGNS AND SYMPTOMS

Signs and Symptoms. Their Clinical Interpretation. Edited by Cyril Mitchell MacBryde, A.B., M.D., F.A.C.P. Second impression. (Pp. 439; 74 illustrations in black and white and 12 subjects in colour on 6 plates. £3 12s.) Philadelphia and London: J. B. Lippincott Company. 1948.

The recent development of laboratory and radiological methods of diagnosis has not diminished the need for expert clinicians. Useful though special tests are, they must be interpreted in relation to the patient's history and the findings on clinical examination, which remain as much as ever the keystone of medical practice. In MacBryde's own words: "... even to-day the accomplished physician can learn more in the majority of cases from what the patient says, and the way he says it, than from any other avenue of inquiry." In making a clinical assessment there are certain symptoms and signs which claim our attention because of their frequent occurrence and significance. This work is a collection of 26 articles, each on an important symptom or sign, from a team of distinguished contributors. It is excellent. By confining their attention to a few topics the authors have been able to discuss them fully, and there are few of us who could read this book without gaining a better understanding of phenomena that we encounter daily.

Where it strikes an original note is that the authors summarize the results of experimental work on their subjects and thus describe the processes concerned in the production of the particular symptom or sign. In other words, they have shown how clinical observations may yield information about the disturbed physiological processes of which symptoms and signs are the overt manifestations. Clinical medicine continues to advance not because we observe more exactly than older clinicians but because we are able to relate our observations to more precise scientific knowledge than was available to them, a circumstance well illustrated by this book.

Some of the articles are outstandingly good. That on headache by H. G. Wolff is largely derived from his own original studies and is admirable. MacBryde's article on dehydration presents in simple terms the modern conception of water and salt balance, and it is matched by an equally clear account of oedema by Wood and Sylvester. In his essay on "mouth and sore tongue" Vilter shows the refreshing effect of the new wine of scientific research into one of the old wine of clinical medicine. But all the articles are as good as the contents deserve, so this book yields a double pleasure.

PECKHAM HEALTH CENTRE

Health the Unknown. The Story of the Peckham Experiment. By John Comerford. (Pp. 144. 7s. 6d.) London: Hannish Hamilton.

This little book, in which the author describes the work of the Peckham Health Centre, is addressed to the layman, and it contains nothing that will be unfamiliar to medical men who have read Dr. Scott Williamson's books. It is a lively and well-written account which adds a small contribution to the considerable publicity which the Centre is now receiving. In one respect the book is unfortunately misleading. It represents the Centre as likely to be self-supporting, while the truth is that in the latest year's working the expenditure was £29,000 and the members' subscriptions provided but £3,500. It is apparent that the experiment cannot continue without Government support.

To many doctors, as to the reviewer, it has always seemed that the medical work of the Centre was much less important than its sociological activities. The main medical conclusion which emerges from the work at the Centre is that doctors, given time and improved facilities (especially adequate clinical pathology), can do better diagnostic work than is now attained in urban general practice. Moreover, some of its medical publications can be justly criticized. As a sociological experiment, however, it has already proved its value. It has demonstrated the biological importance of the family as a sociological unit; it has shown the need for group activities in the full development of the human being; most important of all, it has provided the only experimental station where mankind can pursue one aspect of his proper study—man in his environment. It would be a pity if this experiment were allowed first to languish and then to die.

D. V. HUBBLE.

PROBLEMS IN LIFE INSURANCE

Transactions of the Association of Life Insurance Medical Directors of America. Edited by Harry E. Ungersleider, M.D. Fifty-fifth Annual Meeting. Volume XXX. (Pp. 378; illustrated. No price given.) New York City: Recording and Statistical Corporation, P.O. Box 594, Newark, N. Jersey.

This is a verbatim report of a meeting which took place in October, 1946. Various topics were discussed in relation to life insurance—rheumatic fever; electrocardiography (136 pages); thrombosis from the physiological viewpoint (Dr. C. H. Best); digestive ulcers, their significance and prognosis (Dr. B. B. Crohn); veterans as a medical underwriting problem; wartime experience with tropical diseases and their future significance; industrial medicine; chemotherapy; and finally an open forum which included a discussion on the insurability of the diabetic. The last 80 pages give membership details, cumulative indices, etc. Here is an extract illustrating the value of the text: "The life expectancy of the peptic ulcer case is impaired in comparison to the normal life expectancy of the control population by about 14%. In contrast to diabetes, to rheumatic heart disease, and similar chronic maladies the ulcer case offers a low rate of risk. The high incidence of ulcer in the general population (5–10%) creates for the actuary and for the medical director of life insurance companies a material problem. But the overall small risk to life offered by the ulcer applicant for insurance compensates for the magnitude of this number and brings assurance that the risk to life involved by the disease is in inverse proportion to the widespread distribution of the malady."

Physicians will appreciate Dr. Best's short and admirably clear account of the use of heparin and dicoumarol. They will also find the paper on rheumatic fever of considerable interest with its discussion on the significance of systolic and diastolic murmurs, and they will appreciate the account of chemotherapy, in particular the section on the use of streptomycin in urinary infections and infections of the typhoid group, although the figures given are now out of date. In the main this volume will interest the experts, medical and actuarial, at the headquarters of the various life insurance companies.

WILLIAM BROCKBANK.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

25^e Anniversaire de L'Institut d'Hygiène et de Médecine d'Ontre Mer de L'Afrique du Nord 1923-1948. (Pp. 206. No price.) Algiers: Imprimerie Nord-Africaine. 1948.

Includes papers on syphilis and tuberculosis in Algeria.

Venins de Serpents et Antivenins. By P. Boquet. (Pp. 157. No price.) Paris: Flammarion. 1948.

A description of snake venoms and the toxic symptoms they cause, with an account of treatment.

Le Corps Médical et L'Assurance-Maladie. Syndicat des Médecins du Grand-Duché de Luxembourg. (Pp. 104. No price.) Luxembourg: Saint-Paul. 1948.

An account of health insurance in Luxembourg.

Über Neurome und Neuro-Fibromatose, nach Untersuchungen am Menschlichen Magendarmschlauch. By F. Feyrter. (Pp. 125. Sch. 35.) Vienna: Wilhelm Maudrich. 1948.

A monograph of the pathology and symptomatology of neuroma and neurofibromas.

Malaria, Filariasis, and Yellow Fever in British Guiana. By G. Giglioli, M.D., M.R.C.P., D.T.M.&H. (Pp. 226. No price.) Mosquito Control Service, British Guiana. 1948.

A report on the control of these diseases by D.D.T.

Science News. Edited by J. L. Crammer. (Pp. 160. 1s. 6d.) London: Penguin Books. 1948.

Recent advances in science described for the layman.

The Biochemical Reactions of Chemical Warfare Agents. Edited by R. T. Williams. (Pp. 73. 5s.) Cambridge: University Press. 1948.

A symposium at which much experimental work done during the war was discussed.

Laboratory Technique in Biology and Medicine. By E. V. Cowdry. 2nd ed. (Pp. 269. 22s.) London: Baillière, Tindall, and Cox. 1948.

This edition includes new material, particularly on microchemical technique.

Heart. A Physiologic and Clinical Study of Cardiovascular Diseases. By A. A. Luisada, M.D. (Pp. 653. 55s.) London: Baillière, Tindall, and Cox. 1948.

An account of heart disease intended primarily for the general physician.

Remington's Practice of Pharmacy. By E. F. Cook, P.D., Ph.M. M.Sc., and E. W. Martin, Ph.C., B.Sc. 9th ed. (Pp. 1,511. 90s.) London: Interscience Publishers. 1948.

A treatise on dispensing with description of medicinal substances their properties, uses, and doses.

Gynaecological Histology. By Josephine Barnes, M.A., D.M. M.R.C.P., F.R.C.S., M.R.C.O.G. (Pp. 242. 30s.) London: Harvey and Blythe. 1948.

A profusely illustrated guide to the histology of normal and abnormal tissues seen in gynaecological practice.

The National Health Service Act, 1946. By S. R. Speller LL.B. (Pp. 497. 42s.) London: H. K. Lewis. 1948.

The Act and a number of regulations are reprinted and annotated.

A Textbook of Clinical Pathology. Edited by F. P. Parker M.D. 3rd ed. (Pp. 1,023. 50s.) London: Baillière, Tindall and Cox. 1948.

This is a largely revised edition of the textbook formerly edited by Dr. Roy Kracke.

The College Curriculum in Hospital Administration. (Pp. 107 52.) Chicago: Physicians' Record. 1948.

The final report by the American Joint Commission on Education

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JANUARY 1 1949

ALLERGY, RHEUMATIC FEVER, AND
NEPHRITIS

Both rheumatic fever and nephritis belong to the group of diseases whose aetiology is still obscure. Most physicians believe that they are in some way related to bacterial infection, though Gordon¹ has recently suggested that a virus is the cause of rheumatic fever. The frequency with which a bacterial infection, usually a streptococcal sore throat, precedes a clinical attack of either of these diseases, and the fact that only rarely can organisms be isolated from the heart or kidney, have suggested that the lesions observed are the result not of direct bacterial injury but of an acquired hypersensitivity of the tissues to the products of the bacteria. The latent period that usually exists between the infection and subsequent renal or cardiac complication is compatible with such a view, since this would represent the time required for sensitization to take place. Two distinct immunological reactions have been suggested as causing the lesions in diseases attributed to allergy. In the first the injury is thought to arise as a result of interaction between antigen and specific antibody which has previously become fixed to the sensitized tissue. In this type of reaction, on which the various diagnostic skin tests such as the tuberculin test are based, no chemical relationship between the antigen and the sensitized tissue is postulated. The second type of reaction depends on the formation of specific anti-organ antibodies; injury results from the interaction between these and the organ concerned.

The first type of reaction has been most often used in experiments to produce cardiovascular lesions resembling those of rheumatic fever. The parenteral administration to rabbits of large quantities of horse serum has been shown by Rich and Gregory² to be often followed by lesions in the myocardium, endocardium, and valves very similar to those of rheumatic fever. The resemblance is remarkably close, even including the typical lesions seen in the coronary arteries and occasionally in the lungs. Arterial necroses characteristic of periarteritis nodosa also occur in these animals. As long ago as 1904 Aschoff³ described similar arterial necroses in cases of rheumatic fever. The experimental production of nephritic lesions by similar methods has not met with anything like the same success, and the disease was not convincingly reproduced until 1933. Masugi⁴ was then able to show that the second

type of reaction, hypothetical though it was, could be successfully applied to the production in experimental animals of an acute glomerulonephritis which closely resembled the human disease both clinically and pathologically. He produced a nephrotoxic serum in ducks by intraperitoneal injection of rabbit's kidney. Subsequent injection of the duck serum intravenously in rabbits caused acute nephritis. It must be admitted, however, that this experiment seems to bear little relationship to the mechanism by which nephritis is naturally produced in man. Since the antigenic stimulus exerted by any substance is closely related to its "foreignness," attempts to produce antibodies to organs from an animal of the same species almost invariably fail. If specific organ antibodies are really responsible for the lesions in nephritis and rheumatic fever then either some profound change must occur in the antibody-producing mechanism or in some way the animal's organ protein is rendered "foreign."

Cavelti⁵ has recently claimed that incubation of organ extracts with streptococci will so alter the antigenic nature of the former as to render them "foreign" to animals of the same species, with the consequence that when they are injected specific antibodies are formed. He also claims that the antibodies produced against these modified organ antigens will react with extracts of the unaltered organs. Thus incubation of rat kidney with streptococci so alters the renal protein as to render it antigenic when injected into other rats. Further, the antibodies so produced react specifically with extracts of normal rat kidneys, and such antisera given intravenously to normal rats are stated to have produced the clinical and pathological signs of glomerulonephritis. Cavelti also carried out a similar experiment in which heart extracts replaced the kidney extracts; the lesion resulting from the parenteral administration of this antiserum resembled acute rheumatic carditis. On the basis of these experiments Cavelti has suggested that the streptococcal infection that usually precedes acute rheumatic fever or acute nephritis results in an interaction *in vivo* between streptococcal products and organ antigens; that during the quiescent phase antibodies are being produced against these modified organ antigens; and that when these reach an appropriate level the interaction between these antibodies and the organ in question results in disease. In substantiation of this theory he maintains⁷ that 12-48 hours after focal streptococcal infection in rats organ antigens of heart and kidney are demonstrable in the circulating blood and that 7-12 days later antibodies to these antigens can be detected. In none of these animals, however, were lesions subsequently found in the heart or kidneys.

That the two types of allergic mechanism here discussed are fundamentally similar is suggested by the work of Kay.⁸ He noted, in repeating Masugi's work, that an interval of approximately seven days occurred between the injection of the nephrotoxic duck serum and the appearance of nephritis in the rabbits. He therefore suggested that during this interval the rabbit was producing antibodies to the

¹ *Lancet*, 1948, 1, 697.² *Bull. Johns Hopk. Hosp.*, 1943, 73, 239.³ *Verh. dtsch. path. Gesellsch.*, 1904, 8, 46.⁴ *Beltr. path. Anat.*, 1933, 91, 82.⁵ *Arch. Path.*, 1945, 39, 148, and 40, 158 and 163.⁶ *Ibid.*, 1947, 44, 1.⁷ *Arch. Path.*, 1947, 44, 119.⁸ *J. exp. Med.*, 1940, 72, 559.⁹ *Ann. rheum. Dis.*, 1948, 7, 97.¹⁰ *Helv. med. Acta*, 1945, 12, 547.¹¹ *Ibid.*, 1946, series A, 13, 456.¹² *Schweiz. med. Wschr.*, 1947, 77, 1069.

duck globulins which include the anti-kidney antibodies, and that renal lesions developed when the rabbit antibodies reacted with the duck globulins which became fixed in the rabbit's kidneys. In other words, in both types of mechanism the lesion is caused by the union of antibody with antigen in or on tissue cells, the site of reaction depending upon the site of fixation of antibody or antigen. In most experiments of this kind antibody is usually localized in the cardiovascular system, and the subsequent lesions are therefore cardiovascular. The experiments of Masugi and Cavelti indicate two methods by which antibody may be localized in other sites. There is obviously scope for further work on the factors determining localization and hence the site of interaction of antigen and antibody.

If it be accepted that rheumatic fever and nephritis occur as a result of allergic hypersensitivity, then the next step in the investigation of these diseases should be the identification of the antigens responsible. In the case of rheumatic fever the evidence is strongly suggestive that the antigen is a part or product of haemolytic streptococci. The relationship of acute nephritis to streptococcal infections is almost as close. The difference in the two diseases must therefore reside either in the particular streptococcal fraction constituting the antigen or in other factors that determine differences of localization of antibody. Wallis⁹ similarly suggests that the differences between rheumatoid arthritis and acute rheumatic fever are fundamentally due to differences in the reacting antigen. Much remains to be learned about how the reaction between antigen and antibody injures the tissue in which the reaction occurs. That histamine is amongst the products liberated and responsible for some of the characteristic pathological manifestations of these reactions is now well established. It is therefore of great interest to the pathologist and the clinician that the antihistamine drugs have been used with some success in both nephritis and post-streptococcal carditis. Reubi¹⁰ and Steinmann and Reubi¹¹ found these drugs of value in experimental and in human nephritis, and Steinmann¹² has recently reported good results with "antistin" in cases of the delayed form of myocarditis that may follow scarlet fever. Elsewhere in this *Journal* we publish a paper by Professor John Craig and Drs. N. S. Clark and J. D. Chalmers which is the first report of the use in this country of antihistamine drugs in the treatment of acute nephritis. As the authors admit, the number of cases and controls is far too small for definite conclusions to be drawn, but the difference in response as judged by duration of clinical signs is so striking that the authors are certainly justified in appealing for a wider clinical trial of this form of treatment. Moreover, since one of the greatest dangers in acute nephritis is the residue of permanent renal damage, any treatment that significantly reduces the duration of the acute phase merits serious consideration. Since it is extremely unlikely that the lesions of the heart or kidney that result from allergic hypersensitivity are entirely due to local histamine production, favourable reports such as these were unexpected, and if the results be confirmed they will provide strong support for the theory that nephritis and rheumatic fever are allergic conditions.

INTERNATIONAL SANITARY CONVENTIONS

From time to time in this *Journal* it has been pointed out that the various international conventions which are supposed to restrict the spread of infectious disease from one country to another and thus to safeguard international health are far from effective. The first International Sanitary Convention, it may be recalled, was signed in 1903 with the object more especially of restricting the spread of cholera, which in the nineteenth century had become a menace to the whole world. The 1903 Convention was succeeded by that of 1912 and that of 1926, which was modified in its turn in 1938. Cognizance was taken of yellow fever in 1912 and of plague and typhus in 1926. The rapid development of aviation led to the International Convention for the Sanitary Control of Aircraft in 1933. During the war many of the provisions of this convention were unworked and were seen to be obviously unworkable; it was therefore modified in 1944, as was also the Sanitary Convention of 1926-38. The man in the street might therefore well imagine that the frequent modifications and adaptations undergone by the conventions had permitted the establishment of a complete system of international sanitary control confirmed by experience and based on effective rules to which all the countries of the world have adhered. Unfortunately this would be altogether too optimistic a view.

In a recent analysis of the present situation Gaud¹ has brought to light the following interesting but alarming facts. There are some 70 sovereign States in the world on whose co-operation the workings of international sanitary conventions depend. So far as maritime navigation is concerned 9 countries are bound by the Conventions of 1912, 1926, and 1944; 5 by the Conventions of 1926 and 1944; 1 by the Convention of 1944; 14 countries are bound only by the Conventions of 1912 and 1926; 9 only by the Convention of 1926; 10 only by the Convention of 1912; and 16 countries are bound by no convention whatsoever. So far as aerial navigation is concerned 9 countries are bound by the Conventions of 1933 and 1944; 9 by the Convention of 1944; 16 by the Convention of 1933; and 36 by no convention.

Apart from the fact that these sanitary conventions do not approach that principle of universality without which their efficiency is sadly lacking, this curious state of affairs has other effects. Since many countries are bound by no particular convention they are free to take the law into their own hands. Some countries refuse to trouble themselves and take few if any precautions; others, as was seen during the cholera epidemic in Egypt, have rushed to the other extreme and imposed restrictions which go far in excess of what is required. There are in fact not many countries in which national sanitary laws and regulations do not run counter in some way to international conventions and accords. Many aeronautical companies faced with differing regulations in different countries have insisted that their passengers should be inoculated against every conceivable disease. The unfortunate wife of an officer and her three children, for instance, who wished to fly from Paris

¹ *Sem. Hosp. Paris*, 1948, 24, 201.

² Findlay, G. M., *British Medical Journal*, 1946, 2, 979.

to China were forced to submit to inoculation against smallpox, yellow fever, cholera, plague, typhoid, and paratyphoid. In these circumstances it is hardly surprising that Gaud confirms what was stated in this *Journal* two years ago—namely, that international health certificates are being forged and can be bought on the black market.

It is obvious that one of the major tasks of WHO, and one which is of considerable urgency, is to draw up a new single convention to which all countries will freely subscribe. There are at present 17 separate conventions or accords, without counting the texts of the documents constituting WHO signed in New York in 1946. Such a unitary convention must not be cluttered with the dead wood of previous conventions, the provisions of which were too often drafted not by experts but by persons who, though they may have had medical qualifications, had spent many years in government offices. As a result the conventions may have been impeccable on the diplomatic level but were often sadly ineffective on the practical level. The Assembly of WHO, according to Article 19 of the Charter, has authority to adopt conventions and accords relating to every question within the competence of the organization. A majority of two-thirds of the Assembly is necessary for the adoption of these conventions and accords, which will come into force so far as each member State is concerned as soon as the particular State has accepted it, in conformity with its constitutional rules. A permanent technical organization has thus taken the place of the old cumbersome diplomatic machinery which had to be invoked whenever a new convention had been drafted. It is sincerely to be hoped that there will be not only a change of form but of spirit, and that governments will be less slow and less indifferent to accepting conventions or regulations fully discussed and already adopted by the Assembly of WHO.

The WHO Expert Committee on International Epidemiology and Quarantine is already alive to the present difficulties, and their ultimate aim is to combine the revised international conventions into uniform WHO regulations which after adoption by the World Health Assembly will come into force automatically without the need for further ratification on the part of national legislative bodies. A number of broad principles to serve as a basis for drafting WHO regulations have already been laid down, and these are to be submitted in June, 1949, to the Second World Health Assembly. They are aimed at establishing international standards on such varied matters as the sanitation of airports, disinsection of aircraft, and quarantine measures applicable to migrants. Beginning in January, 1949, WHO is also going to broadcast daily epidemiological data from Geneva to all parts of the world. This will allow governments to take precautionary measures more rapidly and, it is hoped, more effectively.

MASTER MINDS

Mr. Fred Messer, Labour M.P. for Tottenham, holds the responsible position of chairman of the Central Health Services Council. He is also chairman of the North-West Metropolitan Regional Hospital Board. He has earned these positions of trust on his reputation as a highly able administrator with a special interest in and knowledge of

hospital and medical services. But according to a recent report in the *Hendon Times* it would appear that Mr. Messer allowed himself to adopt a highly partisan attitude to medical men and the work they do. This was at a meeting of the North-West Branch of the Socialist Medical Association under the chairmanship of Dr. S. Leff, medical officer of health for Willesden. Mr. Messer is reported to have said this: "In the days before the new Act, the people were only allowed to be ill at certain times during the day—the times set down on the brass plate in front of the doctor's doors." What kind of confidence can the medical profession have in the chairman of the Central Health Services Council if he makes such ill-judged, inaccurate, and unjust remarks—remarks directed at men and women who after a hard day's work have to be ready to get up at any time of the night in response to a call for help? "For too long," Mr. Messer goes on, "the needs of the people have been subservient to the needs and training of the doctors." What nonsense this is! Mr. Messer again goes on: "Now for the first time the health service as a whole will have a master mind behind it." Does he mean the mind of the chairman of the Central Health Services Council, or the uncoordinated mind of an endless series of Ministers of Health? The medical profession itself has always been in advance of the Government in pressing for improved organization and integration in medical services, and does not underrate the value of the administrator or deny the need for administration so long as it is made subservient to the need of the doctor to give to his patients in the most efficient manner the knowledge and experience wrung from stubborn nature by the master minds of medicine. Our new administrators have yet to learn the lesson of humility, the humility of the man who minds the machine created by men who understand how it works.

BRUISING OF THE HEART

It is now generally recognized that trauma to the praecordium, particularly a severe blow or crushing injury, may occasionally damage the heart even where there is no obvious injury to the chest wall or fracture of the ribs. The symptoms and signs vary considerably, but there may be immediate severe pain lasting minutes or hours, angina pectoris and effort dyspnoea persisting for days or weeks, the development of pericarditis during the following week, and electrocardiographic changes. Most of the latter are evanescent, and unless the patient is examined within a few days of the accident no abnormality may be found. Partial heart block may occur, and this tends to persist for much longer than the other changes. Experimental work and necropsy studies suggest that the usual lesion in the heart is a contusion with varying degrees of oedema and extravasation of blood, or perhaps a tear in the myocardium, though this is less common. Further, for some reason which is not clear, the right auricle appears to be particularly vulnerable. However, the majority of these patients, provided they are not otherwise severely injured, usually recover, and the precise anatomical lesion remains a matter for speculation. Elsewhere in this issue Drs. G. Parsons-Smith and Denis Williams report the case of a boy with a fairly clear-cut picture of a cardiac contusion, with pain, pericarditis, and partial heart block; the damage was done during a boxing match. Two days after the injury he developed a hemiplegia which appeared to be embolic in origin. This clearly suggests that the cardiac injury had spread through the heart to the endocardium and resulted in an embolus, part of which became detached. The explanation is

injury may be. In this case the history indicated that a previous, but less severe, cardiac injury had been caused in a similar manner twelve months before.

INDUSTRIAL WASTES

A plentiful and pure water supply has become part of the environment of most of the inhabitants of this country, and it is apt to be forgotten that such a supply is not a natural phenomenon under most conditions of modern civilization. Our rivers and other sources of water are often grossly polluted by excretal and other wastes and by trade effluents. Those responsible for the purification of water supplies by modern methods must continually exercise great skill and care. In his book¹ on the disposal of industrial waste waters Dr. B. A. Southgate, who is director of water pollution research at the Department of Scientific and Industrial Research, has described the problems involved and the researches which have been and are being made in the attempt to solve those problems.

Most industrial wastes contain in solution or in suspension materials of organic or inorganic nature which are oxidizable and will therefore absorb from the diluting stream the oxygen which is in solution. If effluents which have this action are allowed to enter a stream and to reduce the amount of oxygen in the water below a certain level, fish will die from lack of oxygen and the normal flora will gradually disappear. Solids will be deposited on the bed and banks of the stream, the final result being a complete destruction of its natural characters. Domestic wastes have the same polluting effects, which, however, can be sufficiently reduced in a good sewage works by processes which are mainly biological. Industrial wastes are in general much more polluting than domestic wastes and may have the further disadvantage of containing substances directly toxic to fish or lethal to the bacteria on which successful purification of domestic sewage depends. Some trade effluents may give the stream into which they flow an unpleasant taste or colour, and this stream may later be used as the source of a water supply. Although a certain amount of crude industrial waste can be allowed to enter the diluting streams or the sewage plant, it is usually desirable and often essential that trade wastes should be treated before they are voided from the works.

Industrial effluents differ widely, and each type has to be investigated separately and the manufacturing processes studied at every stage. Dr. Southgate explains the processes used in a large number of industries and the scientific principles involved in the methods which have been adopted to purify the wastes, and he describes the results obtained. There are industries in which the wastes contain much organic matter, as in the textile industries, laundries, leather manufacture, slaughter-houses, dairies and milk products factories, the canning and drying of food, and the manufacture of malt, beer, and alcohol. On the other hand, the carbonization of coal, the pickling of steel and copper, and the use of chromates and cyanides in manufacturing processes produce chemical wastes. The treatment of the effluent in each case by physical, chemical, or biological means presents different problems, and there is the further difficulty of avoiding undue waste of valuable materials. It is sometimes possible to economize in water by the re-use of washing water. From organic waste it may be profitable to recover valuable materials such as fats, or by bacterial digestion to obtain gases of use for power purposes. Even the indigestible residue may be useful as manure. Valuable materials may be recovered from

chemical effluents also, as in the extraction of copper by crystallization or deposition on iron.

Much remains to be done not only in applying what is known but also in further research. Our rivers are unable to cope with the pollutions they receive, but there is great hope of improvement now that industry is paying more attention to the treatment of wastes; the operation of the Public Health (Drainage of Trade Premises) Act, 1937, should also have good results. Nevertheless, the problem of maintaining the purity of surface and underground waters in a densely populated and highly industrialized country is Herculean and may perhaps never be completely solved.

TREATMENT OF PERTUSSIS

During 1947 the number of deaths from pertussis in Glasgow exceeded the combined total of deaths from scarlet fever, measles, diphtheria, and cerebrospinal fever.¹ All the common fevers now cause fewer deaths than 20 years ago, but in pertussis the rate of reduction has lagged far behind. As yet chemotherapy has not supplied the remedy: the sulphonamides seem much less effective than, for example, in measles. Swift's² preliminary report on the interesting new antibiotic polymyxin is encouraging, but more extended trials are necessary. Workers in the U.S.A. have now had considerable experience with different forms of immune sera, and Felton,³ who reviewed the subject in 1945, considered that a case had been made out for their use. Both human and rabbit sera have been tried. The former, from hyperimmunized adults, may be used as lyophilized serum or as the concentrated globulin fraction, and the latter is also available as concentrated globulin. Some workers have felt that the serum should be both antibacterial and antitoxic, and Beaudet⁴ used such a rabbit serum in a series of 50 children, with successful results. McGuinness and his colleagues⁵ gave injections of a lyophilized human serum to 442 patients, of whom 176 were under 6 months of age, and classified 70% of the results as excellent. More recently Kohn and his co-workers⁶ have reported on the use of three forms of serum—two human and one rabbit. They regarded the response as satisfactory in 80% of those under 1 year, but the results were less good in patients over that age.

The same criticism can be made about many of these therapeutic trials—namely, that the treatment of a control series has often not been undertaken. The fact that pertussis has diminished in severity during recent years makes it undesirable to compare present results with those obtained in a previous period. There is indeed no sure method of foretelling the outcome in this fickle disease, but to give improved forms of treatment a fair chance earlier diagnosis is essential. It is tragically true that the majority of cases are diagnosed so late in the disease that any form of treatment is likely to be ineffective. In Kohn's series only 2% were admitted before the onset of whooping; a further 77% were seen during the first week of the whoop, when they were already in the late second or third week of illness. Cruickshank⁷ drew attention to the value of the post-nasal swab, which he inoculated on Bordet-Gengou medium containing penicillin, but many workers have found that swabbing the post-nasal space through the mouth is almost as cumbersome a method as the cough-plate, which was not designed for the general practitioner.

¹ Annual Report of the Medical Officer of Health of Glasgow for the Year 1947

² Lancet, 1948, 1, 133

³ J. Amer. med. Ass., 1945, 128, 26.

⁴ Un. med. Con., 1944, 73, 137.

⁵ J. Pediat., 1944, 24, 249.

⁶ Amer. J. Dis. Child., 1947, 74, 321.

⁷ Lancet, 1944, 1, 176.

⁸ Mon. Bull. Brit. Hlth 1948, 7, 156

⁹ Proc. Soc. exp. Biol., N.Y., 1940, 43, 590

But more recently Cockburn⁸ has shown that when the pharyngeal swab is taken through the nose, as advocated by Bradford and Slavin,⁹ not only is the method more simple for the clinician but the results from the bacteriologist's point of view are much more satisfactory. If earlier diagnosis were to be made possible by the use of such a method, patients could be more promptly isolated. Early isolation, quite apart from limiting the spread of the disease, should reduce the risk of secondary bacterial infection and possibly of bronchopneumonia, and treatment with serum or chemotherapeutic substances is more likely to be effective if started before the disease has become well established.

HOUSE WARMING

A long-term experiment in domestic heating which is being carried out at the Building Research Station under the auspices of the Department of Scientific and Industrial Research was described at a recent meeting at the Royal Institute of British Architects. The research is aimed at finding out how houses can be heated with the most economical consumption of fuel and in the most effective manner for all domestic purposes. Eight small semi-detached houses at Abbot's Langley, Hertfordshire, all built to the same design but with different degrees of thermal insulation, have been equipped with identical heating systems in the endeavour to find out how much heat is conserved by improvements in insulation. In a parallel experiment twenty similar houses have been built with identical insulation but equipped with many different heating systems and appliances, including gas and electric convectors, gas and electric-storage heaters, electric tubular heaters, and multipoint gas water-heaters. The apparatus in each of the houses is closely superintended by the research station staff, with the willing, though largely passive, co-operation of the tenants. The experiment started in September, 1947, and is expected to last for some years.

The interim results made known up to the present are so highly detailed and carry so many qualifications that it would be difficult, if not impossible, to draw any broad conclusions applicable to British housing as a whole. The economics of house heating have been taken as the first point of attack. It has been found possible economically to maintain in a house of 900-1,000 sq. ft. (83.5-93 sq. m.) floor space a constant minimum temperature over the whole house of 30° F. (18° C.) above the outside temperature by means of central heating and anthracite-burning boilers, the efficiency of which is highly praised. Systems of whole-house heating are more expensive to install but much more economical in fuel. As for insulation, one contribution which architects can make to fuel economy and domestic comfort is to put the flues well inside the insulated envelope and not throw away the valuable heat which the flues contain, particularly for houses of two or more stories, by enclosing them in outside walls. It was generally agreed by the architects present at the meeting that the need for better heat insulation in house construction must be taken into account in all future building. Here again the additional cost, whatever it may be—and it cannot represent much on the total value of the house—is well worth while not only for the saving of fuel but also for the health of the occupants. The method of ventilation followed in the experiment, using outlets from bedrooms into the roof, was commended in preference to the "by-law" type of grating, which is often stuffed up with brown paper to keep out draughts. One architect pointed out that whole-house heating would enable a more open plan of house construc-

tion to be carried out, and many of the small halls and passages and tiny rooms, partly arranged in order to seal off the cold areas of a house, could be eliminated. Whole-house heating systems have been in use for a long time in other countries, and some complaint was made of the lack of enterprise of British manufacturers of heating appliances.

There may well be prejudices, traditional views, and perhaps more practical objections to be overcome before whole-house heating commends itself to householders in Britain. Most of us prefer an obvious source of radiant heat, represented by the open coal fire, though admittedly this is wasteful of fuel and also fails to warm the room equably. Families accustomed to gathering round the hearth will not easily be reconciled to the absence of a fireplace even though every corner of the room is properly warmed. Again, quite a large number of people have a firm belief in the virtues of a cold bedroom. Certainly any revolutionary changes in the warming of houses which might result from the Building Research Station's experiment should be accompanied by a careful check on the health of the people who live in the constant-temperature houses as compared with those who hold to the traditional half-cosy, half-Spartan routine. Centrally heated houses in North America are usually too warm to be comfortable for the British visitor, but the residents there are said to suffer just as much from colds and rheumatic disorders as do people in this country. In America, also, the atmosphere inside houses is often so dry that it has to be humidified for the comfort of the residents. The Building Research Station's experiment, which is said to be the only one of its kind ever undertaken in the world, will be well worth while if it succeeds in solving some of these important problems.

ARSENICAL TOXICITY

Since 1939, when wider use began to be made of rapid methods of treating syphilis with arsenic, the incidence of cerebral reactions in North America appears to have been about 1%.¹ These reactions are given the name of arsenical encephalopathy; in fatal cases brain haemorrhages occur. Sexton and Gowdey² became interested in the similarity between the pathology and symptoms of arsenical encephalopathy and those of acute deficiency of vitamin B₁, and in a comparison of the two conditions they observed that a patient receiving a 5-day intravenous drip who developed peripheral neuritis recovered remarkably quickly after receiving massive doses of the vitamin. They attempted to follow the changes in the blood concentration of vitamin B₁ in patients receiving the 5-day treatment with "mapharside" by determining the ratio of lactic acid to pyruvic acid in the blood. In vitamin B₁ deficiency the amount of pyruvic acid rises above the normal. In 9 out of 13 patients treated with mapharside by the 5-day intravenous drip method the level of pyruvic acid rose early and remained above normal until the treatment was finished. The blood sugar rose also, and the hyperglycaemia persisted during the treatment. Clinically there was an increase in sensitiveness of arm and leg muscles to pressure. When these signs and symptoms had developed, the intravenous injection of 600 mg. of vitamin B₁ caused a fall in the sensitiveness of the muscles to pressure. The evidence presented by the authors cannot be considered complete, but their results clearly suggest that not only BAL but also vitamin B₁ is of value in the treatment of the lesions of the nervous system caused by arsenical poisoning.

¹ Thomas, E. W., and Weller, G. *J. Amer. med. Ass.*, 1944, 128, 55.
² *Arch. Derm. Syph., Chicago*, 1947, 55, 634.

MEDICAL FOUNDATION OF EPSOM COLLEGE

The Royal Medical Foundation of Epsom College appeals to all members of the medical profession who do not already do so to subscribe to the Foundation, the object of which is to help the families of less fortunate colleagues. The Foundation in 1948 has provided more than £18,000, as follows:

50 ordinary pensions to medical men or their widows ..	£ 1,500
45 Foundation scholarships for boys (educated, clothed, and maintained entirely free of cost) ..	8,702
13 scholarships for girls	570
Education of 28 boys at reduced fees	1,968
140 pensions and annuities of varying amounts ..	3,023
Grants towards education of 56 boys and girls ..	1,843
Grants to medical men, widows, and spinsters ..	497

In order to maintain this assistance the Foundation has to rely upon the generosity of subscribers and donors for over £14,500 a year. Without sufficient help from them the existing benefactions would have to be curtailed. Owing to lack of funds, many deserving applicants—medical men, widows, and children of school age—remain unassisted. The Sherman Bigg Fund enables the Foundation to make educational grants for those who cannot obtain scholarships. Donations to augment the income of this Fund will be most welcome. Subscriptions and donations for whatever aspect of the work may be sent to the Secretary, Epsom College, Surrey.

CHILD DEVELOPMENT STUDY

It has long been felt by those concerned either with the health or with the education of children that a close study of growth and development, both physical and psychological, conducted on the same group of children in a parallel series of observations would yield valuable results. In 1947 Dr. D. H. Geffen, medical officer of health of St. Pancras, and Professor Alan Moncrieff, of the Institute of Child Health, placed before the Governors of the Foundling Hospital in London a scheme for utilizing their excellent facilities at Coram Gardens—residential nursery, day nursery, and nursery school—for teaching and research purposes. This was sympathetically received, and a further suggestion that a maternity and child-welfare centre might also be started on the same site by the reconstruction of a derelict building was favourably considered by the authorities concerned.

The next development arose when the Central Council for Training in Child Care, which is concerned with the training of boarding-out officers and house mothers under the Children Act, found a shortage of seniors who could take up posts of a supervisory character or as tutors in the various education schemes. The Institute of Education of the University of London and the Institute of Child Health therefore decided to put forward a plan for a joint training and research centre at the Foundling Hospital site. This was discussed with representatives of the Home Office, of the Ministry of Health, and of the L.C.C. Public Health and Education Departments. The two Institutes consulted their own Academic Boards and governing bodies and a final scheme was decided upon, the financing of the teaching side being undertaken by the Institute of Education and that of the research side being shared between this Institute and the Institute of Child Health, with the approval of the appropriate University of London Committees and eventually of the Senate and Court.

A joint committee for the two bodies has been meeting to make detailed plans. On the training side the first course will begin in January. Provision has been made for the appointment of a senior tutor and a junior tutor and for visiting lecturers. Dr. Agatha Bowley has been appointed as senior lecturer in child care and Miss J. E. Cass as tutor in child care. Members of the teaching staff of both Institutes will take part in the course. Miss Cass has also been appointed as honorary educational supervisor to the day nursery on the site so that there may be some general co-operation with staff in relation to the training of probationers for the day Nursery Certificate. On the research side provision has been made for two educational research assistants, for a

part-time medical assistant, and for part-time assistance from the Child Guidance Clinic at the Hospital for Sick Children, Great Ormond Street. Plans for a pilot survey are well advanced. In addition to detailed observations on children in the nurseries and nursery schools it is planned to extend the investigation to babies in the same area who are not attending such institutions. One of the objects of the research programme is to attempt to assess in this way the educational values or disadvantages of the nursery or nursery school. Those concerned with the planning are endeavouring to take a long view, hoping to follow children through the nursery school to the primary school period, and even eventually to adolescence in the youth centre activities in the Harmsworth Memorial Playground, also on the site of the original Foundling Hospital.

Reports of Societies

HEPARIN AND DICOUMAROL

At a meeting of the Medical Society of London on Dec. 13, 1948, with Dr. JENNER HOSKIN presiding, the subject discussed was the therapeutic action of anticoagulants.

Dr. PAUL WOOD described the effects of heparin and dicoumarol in about 100 cases. Heparin was discovered over thirty years ago, but it was twenty years before it was purified for therapeutic use. The dose of heparin was 50 mg. four-hourly for a fairly short time. It could be given by drip, 3 pints (1.7 l.) in 24 hours, each pint (0.57 l.) containing about 100 mg. If that dose were given, they could be sure that the clotting time would not be less than 10 seconds. Dicoumarol was a relatively new drug in this country. The dose given was usually 300 mg. by mouth on the first day, 200 mg. on the second day, and 100 mg. on the third. It had no action for 48 or perhaps 72 hours. Later the doses were determined by the effect on the prothrombin time. The reaction of patients differed considerably from the entirely resistant to the extremely sensitive. Dicoumarol could be dangerous; an overdose resulted in severe haemorrhage, which was very difficult to control. In his own experience and that of his colleagues vitamin K had no effect at all. It was very important to have the prothrombin measured every day or every second day and to keep to round about 30 to 40 mg. per 100 ml. He proceeded to give a few of the results obtained at his hospital during the last two years. Cases of pulmonary embolism numbered 20, 5 of them massive. The average duration of treatment was 26 days, and there were 5 deaths. Cases of cardiac infarct numbered 23, the average duration of treatment was 27 days, and there were 3 deaths; 7 cases of cardiac embolism complicated by pulmonary embolism were treated for 27 days, with 3 deaths. There were 3 cases of arterial occlusion treated for 14 days, with no deaths.

Dr. Wood went on to discuss 10 cases of angina at rest treated on the average for 29 days. No deaths occurred until after the end of treatment; there were two deaths later. The object of the treatment was to prevent coronary thrombosis, and it was extremely difficult to decide whether or not coronary thrombosis would have taken place under a different regime. The decision depended upon the adequacy of the controls, which were not easy to obtain. Contrasted with nine controls treated in a different way, the advantage appeared to lie with the heparin and dicoumarol treatment. The sedimentation rate was very helpful in finding out whether infarction had taken place or not. Dicoumarol in therapeutic doses did not raise the sedimentation rate. One case was that of a doctor who two weeks previously had suffered severe pain in the chest while walking. Later it affected him while he was in bed at night, and shortly afterwards he got the pain on the slightest exertion. The electrocardiograph was normal. He was put on heparin and dicoumarol for seven or eight weeks. This patient was thought to have an active pulmonary embolism, but that was shown not to be the case. He had a good recovery and was now well. In another case substernal pain had persisted for two months, and treatment was followed by complete recovery. The majority of these cases were seen in private practice; they were not commonly seen in hospital until after infarction.

Of the two late deaths in this small group of ten cases of angina at rest, one occurred suddenly about a month after the treatment had stopped, and the other patient died of ventricular fibrillation two or three weeks after the cessation of treatment. The rest recovered without infarction and he offered the results for what they were worth.

Heparin in Arterial Surgery

Mr DICKSON WRIGHT said that haemorrhage was such a dramatic and dangerous event that methods for its control were always being evolved, but intravascular clotting had not received the same attention, and until recent years it was regarded as an unavoidable disease for which rest and patience were the only treatment. It was now realized that many more patients died of clotting accidents than of haemorrhage. At present there were only the two anticoagulants available, and administration was complicated so that they could only be used in the prevention of impending thrombosis or in the treatment of established thrombosis. Even in this field there was hesitancy about using them, the 20% death rate from embolism being risked rather than the negligible, but dramatic deaths from overdosage and haemorrhage. It was often feared that heparin would soften the clot and increase the risk of embolism, but this was not the case.

The great value of heparin lay in the treatment of thrombosis of the lower extremities starting spontaneously or post partum or post-operatively. It had been proved conclusively that once heparin was administered the clot did not grow 1 cm further, the clots in the lung and the local recent clot disintegrated and danger was practically over. The earlier the disease was diagnosed and therapy instituted the less danger did the patient run and the less permanent damage was done to the limbs. Prophylactically heparin could be used in cases in which there had been thrombosis with previous pregnancies or operations. It was given from 48 hours after the delivery, or operation until the patient was out of bed. The dosage of heparin must be adequate. It consisted of four daily intravenous doses at 8 a.m., 12 noon, 4 p.m., and 10 p.m. The first and last doses were 12,500 units and the intermediate ones 10,000, each 100 units was 1 mg of heparin.

Mr Dickson Wright went on to describe the use of heparin in arterial surgery of the limbs, lower aorta, and iliac arteries. The value of heparin in these cases lay in the prevention of clots which tended to form at the suture lines of anastomosis and embolectomy incisions producing a secondary obstruction from arterial thrombosis. In these cases the clotting time was important and should be left carefully at 30 minutes. Blood transfusions could be given with heparin as an anticoagulant (2,000 units to each litre), and for the recently suggested method of bleeding the patient at the start of the operation and the return of the blood at the end it was the ideal substance. He instanced many other uses of heparin—in venesection in cases of polycythaemia, in inducing skin grafts to adhere with plasma glue, in the prevention of portal and other forms of thrombosis after splenectomy, in the treatment of gangrene, etc.

Dicoumarol had the advantages that it did not require intravenous injection and it was cheaper than heparin. It was a selective liver poison. Its antidote was a blood transfusion and vitamin K. To control its use there must be an estimation of the prothrombin reduction in the blood. The disadvantages of the drug were its two-day delay before it took effect—a gap which could be covered by heparin—and the cumulative action. The Mayo Clinic method of administration of dicoumarol was a single daily dose of 300 mg on the first day and on every day after this when the prothrombin was greater than 20 mg per 100 ml. When less than 20 mg per 100 ml no dicoumarol was given. If the figure fell below 10 units menadione bisulphate 30 mg was given intravenously, and when dicoumarol was resumed with the prothrombin content rising above 20 units 100-mg doses were used. Haemorrhage was countered by a fresh transfusion of citrated blood and 60 mg of menadione bisulphate.

Mr Dickson Wright said that when prothrombin estimations were hard to come by he himself recommended 300 mg on the first day, 200 on the second and third day, 200 on the tenth, eleventh, and twelfth day, 200 on the twentieth day, and 100 on the twenty-first and twenty-second day. He felt that the value of the drug, even without estimations, much more than compensated for the dangers of overdosage. The drug was specially

dangerous when used in long-continued small daily doses or in cases wrongly diagnosed as thrombosis.

The main indications for the drug were (1) in treatment of thrombosis in varicose veins, combined with "elastoplast" support, (2) in the prophylactic and curative treatment of deep thrombosis spontaneous or post partum or post operative, (3) in prolonged forms of thrombosis such as thrombophilia, gouty thrombosis, and thrombophlebitis migrans where the patient remained prone to thrombosis for many months. Thrombophilic sufferers were wise to travel with a stock of heparin and dicoumarol and to know their responses to these drugs.

The President said that he had been particularly interested in Dr Paul Wood's description of the cases of angina at rest. He had always been afraid for the patient who came up with a very short history of angina (two or three weeks). The likelihood of the development of coronary thrombosis seemed to be much greater in his case. What one would have liked would have been a drug available after coronary thrombosis had occurred but so far as could be seen—some work had been published in America this year on experiments on dogs after ligating one of the coronary vessels—the results of using dicoumarol had been entirely disappointing.

Notwithstanding a crowded meeting no one rose to sustain the discussion, and the meeting terminated.

CLINICAL APPROACH TO NEUROLOGY

At a meeting of the Devon and Exeter Medico-Chirurgical Society on Dec 16 1948, Dr F M R WALSH spoke on the clinical approach to neurology, defining "clinical" as the method of direct study of the patient at the bedside by means of the five senses. The various techniques elaborated within recent years for neurological investigation said Dr Walshe, were tending to become substitutes for clinical investigation. He discussed the scope and limitations of lumbar puncture in certain nervous diseases. By the time cases of suspected intracranial tumour reached the specialist nowadays lumbar puncture had generally been done. In such cases this was a useless and irrational procedure not without hazard. Again, purely clinical investigation was usually all that was necessary to diagnose disseminated sclerosis. Nevertheless, lumbar puncture, which might exacerbate symptoms in this malady, was often undertaken as a routine instead of as a last resort for the specific purpose of differential diagnosis in exceptionally difficult cases. Dr Walshe wondered why lumbar puncture was so often done in cases of multiple neuritis. In acute anterior poliomyelitis it was sometimes justifiable—for example, to confirm the diagnosis or to exclude meningitis in a suspected case in a residential school—provided that the pathologists' report on the fluid withdrawn was speedily forthcoming. It was not justifiable to perform lumbar puncture on a screaming and struggling child in the pre-paralytic stage, indeed it might tip the scale in favour of paresis and against complete recovery if performed at a time when it was essential to keep the child still.

Turning to epilepsy Dr Walshe said that electro-encephalography was rapidly becoming a routine diagnostic procedure, though it was by no means infallible. Clinical judgment was still the most effective weapon for diagnosing this disease. The diagnosis of expanding or space occupying lesions of the skull could in some cases be achieved only by ventriculography, but many cases could be diagnosed without it. Neurosurgeons were apt to be too "tumour conscious" and it was not always easy to decide when a ventriculogram should be done or whether it should be done at all. Of all cerebral tumours nearly half were gliomata which could not be extirpated without inflicting severe physical and psychic trauma. In slow-growing tumours not causing much disability, and where the patient's life was still worth living, one should hesitate to force the diagnostic issue. All drastic diagnostic procedures threw an additional burden of responsibility on the doctor. If the present trend continued unchecked the art and science of medicine would become submerged and the doctor would be little more than a glorified mechanic. Dr Walshe concluded "We must not be seduced from the clinical approach. We must use ancillary methods not routinely but for specific reasons, and we must choose the best time to use them."

PERSIAN GULF MEDICAL SOCIETY

A medical congress was held under the auspices of the Bahrain Island Medical Society on Nov. 4, 1948. All the doctors working in the Persian Gulf area were invited, and 36 were able to attend the meeting. This congress, the first of its kind in this area, was in some ways experimental. It was desired primarily to exchange ideas on the aetiology, diagnosis, and treatment of diseases endemic in this area. Secondly, it was felt desirable to explore the possibility of forming a more closely knit organization. Thirdly, it was believed that a meeting of this kind would do much to stimulate medical thinking in a section of the world where there is little access to large medical centres.

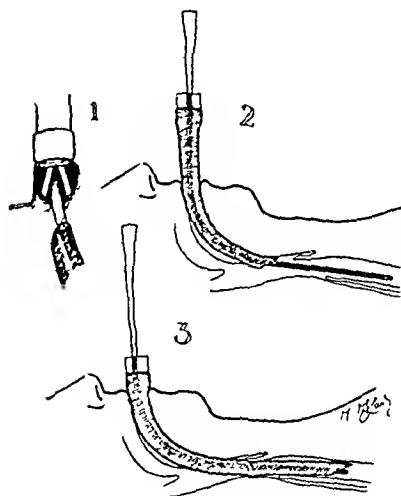
The meeting was opened by the chairman, Dr. Robert J. Biggar, chief surgeon to the Bahrain Petroleum Company, Ltd., and president of the Bahrain Island Medical Society. The chairman then introduced the speakers and conducted the discussions based on the following papers: "Report and personal interpretation of the International Industrial Congress at London," by Dr. A. J. S. Perfect, Bahrain Petroleum Company, Ltd.; "Tuberculosis of the peritoneum treated with streptomycin," by Mr. Allen-Mersh, Kuwait Oil Company; "Diarrhoeas encountered in this area," by Dr. H. H. Golz, Arabian American Oil Company, Dhahran, Saudi Arabia; "External otitis," by Dr. A. Anderson, Anglo-Iranian Oil Company, Abadan, Iran; "Back pain—causes and diagnosis," by Dr. Joseph De Lougherty, Arabian American Oil Company, Dhahran; and "Soft penile ulcer," by Major Wm. C. Marrett, jun., M.C., U.S. Army, Dhahran.

An unusually lively discussion followed each address, and all the European, American, and Indian doctors were generally interested in drawing on the experiences of each other in considering these conditions, which are prevalent around the Persian Gulf. A motion was put forward at the end of the meeting that a Persian Gulf Medical Society should be formed from which committees would be appointed for the study of the problems of the area, certain groups to be assigned one phase of a disease for investigation and final reports to be correlated later. Plans were made for the meetings to be held semi-annually.

Preparations and Appliances

AN AID TO ORAL INTUBATION

Dr. R. R. MACINTOSH, Nuffield Professor of Anaesthetics, Oxford, writes: During the past two years I have been experimenting with large-bore oral endotracheal tubes of different shapes. One of the difficulties in passing tubes beyond a



certain size is that the body of the tube obscures the view of the cords through which the tip must be directed. In order to overcome this I thread the tube over a long gum-elastic catheter, the tip of which is then passed through the cords under direct vision (Figs. 1 and 2). Using the catheter as a guide the tube is gently pushed down into position (Fig. 3) and the guide is then withdrawn.

I find this to be useful, too, when for one reason or another—

e.g., a patient with prominent front teeth—exposure of the larynx is inadequate to pass a standard Magill tube easily. Here the tube is threaded over a catheter or even a wire with a bulbous end. The guide can be curved to direct it through the partially exposed glottis, after which the outer tube readily follows into position. Needless to say, it is necessary previously to abolish any relevant reflexes.

Correspondence

Marxist Genetics

SIR,—Dr. H. M. Rose's letter (Dec. 11, 1948, p. 1038) is a characteristic effort at defending an untenable position by the introduction of irrelevant questions. Lysenko has not deigned to criticize contemporary biology, nor has the official U.S.S.R. Academy of Sciences, unless the term criticism is now understood in Moscow to mean vilification. His vague remarks about germ plasm and permeable membranes have nothing to do with the point at issue, nor has his statement that Lysenko's innovations have caused the Russian peasants to depart from their traditional conservatism. Lest these remarks of mine may appear to be somewhat harsh, I venture to quote extracts from *Pravda*, from a translation published on Aug. 27, 1948, in *Soviet News* by the Press Department of the Soviet Embassy in London.

"Michurin's materialist trend in biology is the only scientific one because it is based on the principles of dialectical materialism—the revolutionary transformation of the world in the interests of the people. The Weissmann-Morgan idealist trend in biology is pseudo-scientific because it is based ultimately on the admission of divine origin in the development of the world—on the passive adaptation of man to permanent and unchanging laws of nature. . . ."

"The results of the session of the Lenin Academy of Agricultural Sciences have demonstrated the complete victory, in theory and in practice, of Michurin's teaching over the Weissmann-Morgan trend in biology. The victory of the revolutionary Michurin teaching over the reactionary teaching of Weissmann and Morgan is enormously important for the consolidation of the natural-scientific foundations of the Marxist-Leninist outlook, for the ideological upbringing of the progressive Soviet man, and for the practice of Communist construction. . . ."

"The U.S.S.R. Academy of Sciences forgot the instructions given by V. I. Lenin that 'partisanship' is inherent to materialism, and that materialism, whatever phenomena are being considered, must stand openly and directly on the viewpoint of a definite public group. For Soviet scientists this viewpoint is the interests of the working people, and the basis for their world outlook is dialectical materialism. . . ."

"In an address to the great teacher and leader of the Soviet people, J. V. Stalin, the participants of the conference declared: 'We promise you, Comrade Stalin, to take up a leading position in the struggle against idealist reactionary teachings, to clear all roads for the unimpeded development of progressive Soviet science for the sake of the great aims of our people, for the sake of the victory of communism.'"

There can be no compromise when a political attack is made upon scientific truth, and the fact that Soviet biological science, so-called, is now an instrument merely of political propaganda should be borne in mind when the dialectical materialists attempt to discredit truth in the interest of politics.

At the conference held in 1939 under the auspices of the journal *Pod Znamenem Marxisma* (Under the Banner of Marxism) Lysenko said, "When he grasps Bolshevism the reader will not be able to give his sympathy to metaphysics, and Mendelism definitely is pure, undisguised metaphysics." "The teaching of pure lines," says Professor L. N. Delonei, "is not free from metaphysics." And further: "We must proceed from dialectical materialism," says Professor Polyakov. "It is from this position that we must appreciate what genetics has contributed and what Comrade Lysenko has to offer." "Soviet biologists," says M. B. Mitin, the chairman of the conference, ". . . must master dialectical and historical materialism, and learn to apply the dialectic method to their scientific work." And lastly, and most revealing: "In order to get a particular result, one must want to get exactly that result," says Lysenko. "If you want to get a particular result, you will get it." (These words were quoted by U. Y. Kerkiss, and Lysenko interrupted his remarks to confirm their correctness.)—I am, etc.,

London, W.1.

GEOFFREY BOURNE.

Delayed Diagnosis of Phthisis

SIR.—I am grateful to your correspondents for raising certain points concerning my article, "The Practitioner's Part in the Anti-tuberculosis Scheme" (Nov. 6, 1948, p. 832). It is apparent from Dr. Bertram Mann's remarks (Nov. 20, p. 917) that I did in fact assume incorrectly that his cases were drawn from sanatorium practice. I am glad to learn, however, that there were even better reasons in 1943 for the longer delay found before patients with symptoms consulted their doctors. Perhaps there has not been such improvement in the patients' response to symptoms over the last few years as I had hoped. This would suggest even more strongly that widespread propaganda is urgently needed to educate the population to appreciate the need for action and the possible significance of symptoms. Such a campaign has already been strongly advocated by both Dr. Mann and myself.

Dr. Ian McD. G. Stewart (Nov. 27, p. 957) quotes active cases discovered by mass radiography who proved to have no symptoms. All tuberculosis workers have of course met such cases, and more especially in mass radiography practice, where the present method of using the machines on presumably healthy groups tends to favour the discovery of a higher proportion of symptomless cases than would be found were the whole population investigated: the patient with prominent symptoms is very likely to be off work and attending his doctor when the unit visits his place of work. On the other hand, active cases with no symptoms are relatively rare in clinic practice, which gives a more representative picture. Nevertheless, as I have pointed out, the symptoms in the first instance may be minor in nature, and this was my very reason for stressing the importance of immediate radiography on the slightest suspicion. What other pointer have we that disease may be present? The fact that most of the out-patients of a famous chest hospital "prove to have nothing more serious than bronchitis" is no excuse for failing to refer such cases for radiography. Overstressing the more unusual symptomless case is more dangerous than attaching undue importance to symptoms, because it may lead practitioners to believe their efforts at diagnosis are not worth while.

Finally, I am surprised to see my suggestion that the anti-tuberculosis services are mediocre offending Dr. Mann. Does he really believe that they can be anything else if such delay in diagnosis occurs? How can we deal effectively with cases diagnosed too late to treat? This factor in itself is enough to degrade any service that is supposed to be both preventive and curative. For 25 years B.C.G. has been extensively used on the Continent, and yet we have not afforded it even an adequate trial in this country. Many chest clinics have no x-ray units on the premises. It is not by any means the recognized practice to employ fully qualified almoners in the service, even though tuberculosis is *par excellence* an example of a "social" disease. Following frequently belated diagnosis patients must in most instances wait six to nine months for adequate treatment, since domiciliary collapse therapy and management are only practised on a significant scale in very few areas. Our sanatorium waiting list almost doubled in three years, so that in December, 1947, it reached over 8,000, whilst the beds available for tuberculous patients only increased by 10% during the same period. In some areas patients, having completed their medical treatment, find it impossible to obtain any form of adequate rehabilitation or light part-time employment, so that breakdown following return to work is common. England and Wales at present have some 30 mass radiography units operating, capable of x-raying only once yearly approximately 5% of the population between 15 and 55. Meanwhile the sputum-positive case is forced to live at home or in a common lodging-house through lack of hostel or "night sanatorium" facilities.

I would therefore restate my opinion that we cannot consider the present attack on tuberculosis in this country anything but mediocre. In large part this is due to a widespread failure to appreciate the extent and urgency of the problem. Few people even in our own profession realize that the tubercle bacillus kills over half of those that die within the age group 15 to 45 years—the group of course containing most of our workers' and parents.—I am, etc.,

PETER STRADLING.

London, W.12.

Fluorides and Dental Caries

SIR.—Public interest is naturally aroused when the possibility of a simple cure or prevention for dental caries appears to have become a practical possibility. The connexion between high fluoride intake, mottled teeth, and lowering of caries incidence was first shown in this country by Ainsworth.¹ Further research on the biochemical aspects was carried out in this country by Murray,² and since that time much work has been done in the U.S.A. and elsewhere. The whole matter has recently received a good deal of publicity in the U.S.A., where large-scale experiments on the artificial fluorination of drinking-water and on topical applications to the teeth are taking place.

Your leading article (Sept. 11, 1948, p. 522) was rightly cautious, though a further letter from Mr. Stocker (Sept. 25, p. 617) was more hypothetically enthusiastic. My attention has recently been drawn to certain proprietary preparations containing fluorides that are, or may become, available, and I feel that it would be as well therefore to review the situation as far as we know it, to evaluate the possible benefits and dangers. It would appear that the consistency of the fluorine-dental caries relationship is marked. On the basis of concomitant variation, the epidemiological evidence relative to domestic water supplies appears to be impressive. Within certain limits the fluoride variability cannot be altered without affecting the prevalence of dental caries. It can, I think, therefore be taken as an established fact that fluorine ingestion during the calcification of the teeth plays an important part in caries prevention. This clearly means that the optimum period for its action is during the period of calcification of the permanent teeth—i.e., from birth until the age of about 10.

The evidence so far forthcoming that fluorides applied topically to the teeth are effective is by no means so well marked as that showing their beneficial action when ingested. Recent work in the U.S.A. suggests that topical application may be effective, but the results obtained have been very variable, and even in the Editorial of the *Journal of the American Dental Association* (1947, 34, 700), from which Mr. Stocker quotes, it is stated that the "number of applications, the most effective concentration of the solution to be used, and the duration of the protective effect must still be matters of speculation and investigation." Topical application, though recommended as a possibly beneficial measure, cannot therefore as yet be said to be a well-defined or accepted procedure.

The optimum dosage of fluorides when ingested appears to be one part per million, over four parts per million tending to produce mottled enamel with unsightly discoloration. It is clear therefore that internal administration of fluorides should be carefully controlled, and is not devoid of hazards, as apart from the toxic nature of the fluorine itself administration of extra fluorine where a water supply already contains a sufficient quantity may produce severe disfigurement with ineradicable mottling of the teeth. There is at present very little precise and detailed information relative to the action of fluorides, and, while it has been suggested by Volker³ that the solubility of the enamel is decreased by the fluoride ions replacing certain more soluble ions in the outer layer of the enamel surface, other workers believe that it acts by inhibiting enzymes, which may arrest any local acid production.

In 1947 the American Dental Association vetoed the use of all proprietary preparations for topical application until further evidence was forthcoming. As far as I know this veto has not yet been lifted. To summarize the state of our present knowledge, therefore, it can be said that:

- (1) Optimal fluoride ingestion appears to inhibit dental caries when its ingestion takes place during the period of calcification of the teeth.
- (2) The evidence that topical application following eruption of the teeth is beneficial, though promising, is as yet by no means conclusive.
- (3) The mechanism by which it acts is not yet fully understood, and the optimum strength of solution, frequency of application, and duration, if any, of effect are as yet unknown.
- (4) Ingestion of excessive amounts of fluoride leads to very unsightly mottled enamel.
- (5) Fluorine is a toxic substance

With penicillin it was very wisely decided that it should not be released for general use until large-scale controlled clinical experiments had been done to evaluate its worth and limitation. It would be a pity, I feel, if fluorides are to be made avail-

to the public in this country before adequate trials have been performed. I do not know what proprietary preparations may come on to the market, but in one that I have seen a leaflet is enclosed, from which I quote:

"There is abundant evidence that caries is a 'deficiency disease' due to deficiency, not of vitamins, but of a substance called fluorine, an element which occurs in drinking water, but rarely in sufficient quantity to prevent dental decay."

"The fluorine in drinking water is 'taken up' by the enamel of the teeth, but there is ample proof that the same effect is produced when, instead of being swallowed, fluorine is applied to the teeth in the form of XYZ, and teeth which are regularly and correctly fluorized by using XYZ are highly resistant to caries. This effect quickly becomes evident by the disappearance of 'decay spots,' and of toothache arising from them."

It is admitted that this preparation states on the outside of the box that it is supplied only on a medical or dental prescription. At the same time the statements contained in the leaflet are so clearly unjustified that much harm might ensue. Surely it would be wise to take a leaf from the American book and ban the use of such preparations until further evidence becomes available.—I am, etc.,

London, W.1.

ALEXANDER MACGREGOR.

REFERENCES

- ¹ *Brit. Dent. J.*, 1933, 55, 233.
- ² *Biochem. J.*, 1935, 29, 102.
- ³ *Proc. Soc. exp. Biol.*, N.Y., 1939, 42, 725

Penicillin Dosage Schedules

SIR,—Your editorial (Nov. 27, p. 946) raises a number of important issues, the most important of which receives the least discussion. Before the study of antibacterial drugs *in vitro* can be directly applied in clinical medicine certain preliminary comparisons must be established. With respect to the drug the four relevant factors are: the bacterial growth phase in which the drug is applied, the bacterial sensitivity to the drug at that and any subsequent growth phases, the concentration of the drug, and the time during which the drug is allowed to act. For a direct *in vivo* comparison to be valid it must be shown that these four factors correspond. Besides this, it must be shown that the growth of the bacteria is similar in the two environments and that, in both, drug-resistant variants are equally likely (or unlikely) to be "favoured."

It is correct to state that in a fluid culture receiving penicillin before incubation (i.e., during the stationary phase of the organisms) and then incubated and observed at intervals staphylococci of the "naturally sensitive" variety are more rapidly killed (as detected by lysis) by small than by large lethal doses of the drug. This is shown for instance in the nephelometric studies of Kirby¹ and was directly observed under the incubating microscope by Gardner.² The explanation is that these organisms are far more sensitive to penicillin in the phase of logarithmic division than in the "lag" phase, and practically insensitive in the resting phase.³ It appears that in the presence of high concentrations of the drug the organisms do not so readily pass into the logarithmic phase, and so a longer time elapses before they are killed, over the range of drug concentrations tested. Certainly cell division proceeds more slowly from the beginning in high than in low lethal penicillin concentrations.⁴ Similarly, when penicillin is added to a full-grown culture or to cells suspended in saline, lysis is again delayed.⁵ If, however, penicillin is added to "sensitive" staphylococci already in the logarithmic phase of division, rapid lysis follows,⁶ even apparently with more than a thousand times the minimal lytic concentration of the drug (Todd⁷). In Todd's work the difference in the rate of lysis of different "sensitive" staphylococcal strains did not appear to be great.

In applying this work to therapeutics we must confess that we still know very little of the rates of multiplication of staphylococci in the human body, although it may reasonably be supposed that in a rapidly developing infectious lesion the multiplication of the organisms is fairly free, and probably slower when the lesion is well localized. These data are manifestly insufficient for accurate comparison with *in vitro* studies to determine "the theoretical ideal" of penicillin dosage schedules. It may be noted that in the mouth, one of the few sites where penicillin action can be closely studied in man, by far the highest rate of bacterial killing is found in the first 10 minutes from starting to suck a penicillin pastille,⁸ suggesting that the majority of the mouth bacteria are actually in a growth phase highly susceptible to fairly high concentrations of the drug. Inoculation studies do not seem to have added much to the solution of this problem.⁹

Surely the fundamental principle is this: that in the present state of knowledge the determination of penicillin dosage

schedules is essentially a clinical study. It was in the pages of this *Journal* that Wheatley¹⁰ described six (and probably seven) cases of characteristic staphylococcal lesions that responded well to penicillin given in doses up to 200,000 units systemically once or twice daily. One's own experience is similar. It is also well known that localized staphylococcal lesions respond well to relatively enormous concentrations of penicillin established in the pus.¹¹ If comparison with theoretical work is desired, it may be argued that the studies of Todd amply justify the high-dosage treatment of developing staphylococcal lesions; but such comparisons are essentially misleading because they ignore the part played by the defences of the host. Here there are two factors to consider—the virulence of the resistant variants and the susceptibility of organisms submitted to bacteriostatic concentrations of penicillin.

On the first point the evidence is quite clear: at any rate the great majority of variants with a marked increase of resistance arising in staphylococcal populations are of low virulence and *in vivo* are easily destroyed by the defences of the host.¹² Their low virulence has been confirmed in man (but only for a proportion of strains) by Blair, Carr, and Buchman.¹³ Such resistant variants are of course "favoured" in artificial culture and, as they are quite common, the validity of *in vitro-in vivo* comparisons is at once questionable. On the second point there is less evidence, but it is believed that bacteria whose growth is arrested by specific drugs are more susceptible to phagocytosis than while actively growing.

It must also be remembered that a localized staphylococcal lesion is not in free communication with the blood stream (anyone who has "pressed out" a boil will have noticed how much trauma may be inflicted without free haemorrhage occurring). This means that drugs can only reach such a lesion from the blood stream by diffusion through the fibrin barrier deposited under the action of the staphylococcal coagulase. For an adequate concentration to reach the inner part of the lesion a much higher concentration must be present in the blood stream. As these effects remain unmeasured, a high blood concentration is indicated in such conditions. It is known that before the drainage of a "ripe" abscess very little penicillin may diffuse in, but that as soon as the pressure is released the drug is able to penetrate freely.¹⁴ As abscess is the characteristic staphylococcal lesion, this gives good grounds for obtaining as high a blood concentration as possible (even if only for limited periods of time) if the state of tension in a staphylococcal lesion is unknown. It has also been shown that too small concentrations of penicillin seem to stimulate the growth of staphylococci.¹⁵

By all means let us study these newer penicillin preparations, but let their proper usefulness as well as their "dosage schedules" be assessed by clinical trials rather than by laboratory studies which, however valuable in another context, are of uncertain relevance here.—I am, etc.,

Montana, Switzerland.

G. I. C. INGRAM.

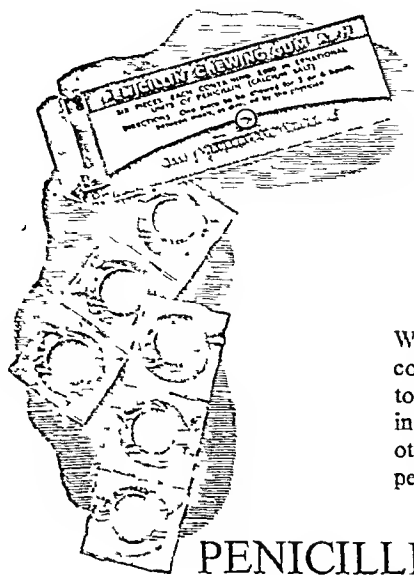
REFERENCES

- ¹ *J. clin. Invest.*, 1945, 24, 165.
- ² *Lancet*, 1945, 1, 658.
- ³ Chain, E., Duthie, E. S., and Callow, D., *ibid.*, 1945, 1, 652.
- ⁴ Eriksen, K. R., *Acta path. microbiol. scand.*, 1946, 23, 221.
- ⁵ Todd, E. W., *Lancet*, 1945, 1, 74.
- ⁶ Knox, R., *ibid.*, 1945, 1, 559.
- ⁷ MacGregor, A. B., and Long, D. A., *Nature, Lond.*, 1945, 155, 201.
- ⁸ Herrell, W. E., and Heilman, D., *Amer. J. med. Sci.*, 1943, 206, 221.
- ⁹ *British Medical Journal*, 1947, 1, 530.
- ¹⁰ Florey, M. E., and Florey, H. W., *Lancet*, 1943, 1, 387.
- ¹¹ North, E. A., and Christie, R., *Med. J. Aust.*, 1946, 1, 176.
- ¹² Plough, H. H., *Amer. J. clin. Path.*, 1945, 15, 446.
- ¹³ *J. Immunol.*, 1946, 62, 281.
- ¹⁴ McAdam, I. W. J., Challinor, S. W., Duguid, J. P., and McCall, A., *Lancet*, 1945, 2, 843.
- ¹⁵ Müller, W. S., Green, C. A., and Kitchen, H., *Nature, Lond.*, 1945, 155, 210.
- ¹⁶ Eriksen, K. R., *Acta path. microbiol. scand.*, 1946, 23, 284.

Mallet Finger

SIR,—Perhaps it is not popular to question the economics of some procedures in the practice of medicine to-day, but surely we cannot be such purists as to ignore the financial cost of particular treatments to an individual and the community.

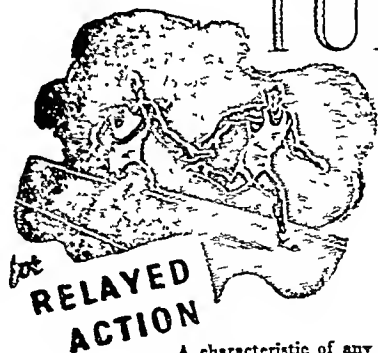
There is one injury which is common at work and in the home—the mallet finger. It is striking how much time can be lost with this condition and I claim a large proportion of it as a result of treatment. In a group of 9,000 workers over the last seven years not a few mallet fingers have been seen, some-



PENICILLIN CHEWING GUM A&H

In packets of six pieces, each piece containing 5,000 i.u. penicillin (calcium salt)

ALLEN & HANBURY'S LTD. LONDON E.C.2



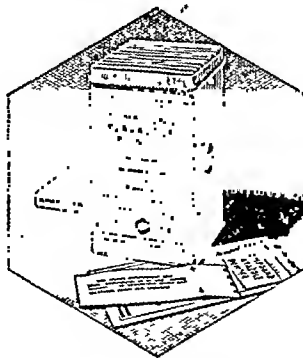
TUINAL

Literature on Request.

Lacey
Trade Mark

THE LATEST BOOKS

104 GLOUCESTER PLACE, LONDON, W.1



A WOUND ANTISEPTIC of high efficiency

FLAVAZOLE is an equimolecular chemical combination of Proflavine base and Sulphathiazole discovered in the laboratories of Boots Pure Drug Co. Ltd.

Clinical results have shown that Compound Flavazole Powder consisting of Flavazole 2%, Sulphathiazole 98%, is most effective in controlling

infections in wounds. Available in tins containing 12 sterilized sifter envelopes of 5 G. ready for immediate use, and in bottles of 15 G.

FLAVAZOLE is also available as a powder for preparing neutral solutions for irrigation and for dilution with a sulphonamide for local application. Bottle of 25 G.

COMPOUND FLAVAZOLE POWDER



Further information from Medical Department BOOTS PURE DRUG CO. LTD., NOTTINGHAM

S.16



In the vitamin alphabet, 'A' and 'D' are the recognised initials of protection. Winter's arrival underlines the importance of these vitamins—and of the Adexolin preparations which present A and D at high concentration. Adexolin Capsules are meant primarily for adults. The normal routine is one or two capsules daily throughout the cold months, with a larger dose if infection threatens—for instance, when the onset of a cold is suspected. For infants and children, Adexolin Liquid provides an equally sound and economical routine, fortifying the body's resistance to infection through the natural mechanisms.



Capsules 4,500 i.u. vitamin A,
900 i.u. vitamin D per capsule.
In tins of 25 and 100.

Liquid 12,000 i.u. vitamin A,
2,000 i.u. vitamin D per cc.
In 14 cc. and 2 oz. bottles.

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX. BYR0N 3434



Watson X-Ray Apparatus WORKS RELIABLY AND WELL

Long experience has taught us how to make X-ray apparatus on which the user may rely implicitly. Electrically and mechanically, it is built for continuous use under all climatic conditions with the minimum of interruption for maintenance.

Radiologists throughout the world specify Watson equipment certain in the knowledge that it embodies the best features of contemporary design.

We will gladly submit proposals for the layout of modern X-ray departments on request.

WATSON
British Made
X-RAY EQUIPMENT

WATSON & SONS (Electro-Medical) Ltd., SUNC HOUSE, PARKER STREET, KINGSWAY, LONDON, W.C.2

times immediately and sometimes from days to years after the injury. It is difficult to find a case where extension has returned to the terminal joint. Some of these have had the appropriate plaster-of-Paris fixation, others have had operation, and one an arthrodesis. Others have had no treatment whatever, continuing at work, and the impression has been that the best result is in the latter class. All have had jobs where the residual dropping has not been likely to interfere with their skill to any appreciable extent, and the impression is that those who have carried on work, and where there has been no effort to correct the deformity, have quickly accommodated themselves to it.

Some idea may be reached of the economic factor from these two cases. A man was under treatment for one year for this condition in the little finger and lost some three months from work during this time. A woman injured at work on July 6, 1948, is still away from work—five months of treatment by plaster and operation. Incidentally, although a part-time worker averaging 35s. a week, she receives 45s. a week for an industrial injury, not because she is malingering but, it is suggested, as a result of over-enthusiastic treatment. These cases, by virtue of the form of the plastic fixation, are difficult to accommodate in work while under treatment.

While it is realized that this letter gives impressions and not statistics, it may be that it will stimulate discussion and inquiry into treatment given without thought to financial disability, and possibly without knowledge of the probable ultimate function. It would be desirable to carry out a planned investigation of this problem.—I am, etc.,

Birmingham.

W. J. LLOYD.

Pre-suppurative Amoebic Hepatitis

SIR,—Dr. James T. Harold in his letter (Dec. 11, p. 1034) states that no recent record exists of an amoebic liver abscess in a patient who has never left this country. He (and others) may be interested to hear of a case in the Queen Elizabeth Hospital, Birmingham, at the present time. The patient had a large sub-phrenic abscess which was opened and drained. He gave a history of a fortnight's diarrhoea; proctoscopy led to the discovery of ulcerations of the rectum. A portion of ulcerated epithelium was removed and upon examination proved to contain cysts of *Entamoeba histolytica*. The patient has never been out of the country in his life, and for the last ten years has never even been out of Worcestershire, except to come to this hospital.

I owe my thanks to Mr. A. L. D'Abreu, whose patient he is, for allowing me to write this letter.

—I am, etc.,

Birmingham.

FRANCIS LOWE.

Curare in the Treatment of Tetanus

SIR,—In view of the current interest in the treatment of tetanus with curare compounds the following brief case report may be of value.

A patient, a boy of 9, was admitted to hospital after a three days' history of trismus, with painful muscular spasms for twelve hours. On examination he showed marked trismus and a considerable degree of rigidity of the spine, especially marked in the cervical and upper thoracic region. Muscular tone was raised generally, and reflexes were brisk. Examination of the child was sufficient to provoke an attack of muscle spasm with typical "risus sardonicus" and acute pain in the cervical region.

Tetanus antitoxin (24,000 i.u. diluted with 10 ml. of pyrogen-free water) was administered intravenously at once and a further 30,000 i.u. given intramuscularly. The patient had been given 3,000 i.u. before admission to hospital without ill-effect, so chances of anaphylactic shock were considered negligible. At the same time sedative treatment was instituted by giving soluble phenobarbitone, gr. $1\frac{1}{2}$ (0.1 g.) six-hourly, and 0.05 mg. d-tubocurarine chloride also six-hourly.

The following day the dose of 30,000 i.u. of antitoxin was repeated intramuscularly. The patient had had no further spasm and was able to swallow semi-solids without difficulty. Treatment with curare and soluble phenobarbitone was continued, and after three days the time interval between doses was lengthened until at the end of seven days the drugs were being given twelve-hourly. Treatment was then discontinued. Apart from a slight restriction of jaw movement the child felt well and was discharged one week later.

This case shows two points of interest. (1) The dose of curare compound used was so small that there was no danger of interfering with respiration, yet it was sufficient to abolish spasm in a fairly advanced case. (2) There was no obvious mode of entry found. The child's arms and legs showed a few healed scratches only, and no other wound was found. From this point of view it is interesting to note that a farm horse at the child's home contracted tetanus a year ago and was cured with tetanus antitoxin, suggesting a heavy implantation of the child's environment with the bacillus.—I am, etc.,

Barrow-in-Furness.

ANNE L. BARLOW.

Anaesthesia in Ludwig's Angina

SIR,—The danger of intravenous anaesthesia for incision of acute inflammatory swellings of the neck has long been recognized, yet only recently a case was described to me which very nearly ended tragically.

A resident, called upon to give the anaesthetic to a case of Ludwig's angina, consulted the latest edition of a standard surgical textbook and found that intravenous anaesthesia was recommended as the method of choice. Accordingly he administered "pentothal." Breathing at once became obstructed and extreme cyanosis developed. The surgeon proceeded to perform tracheotomy, but after he had made the skin incision the anaesthetist managed to persuade an endotracheal tube past the obstruction into the trachea. This patient made a complete recovery, though only after twenty-four hours of delirium. Before operation, I am told, there was visible oedema in the floor of the mouth, and in this and in similar cases one might expect some oedema to be present in the pharyngeal wall and in the glottis without necessarily causing any symptoms of respiratory obstruction prior to anaesthesia.

The sequence of events in these cases would appear to start with laryngeal spasm. Pentothal is known to increase the laryngeal reflex, and the presence of oedema in the nearby tissues probably provides the exciting factor. Asphyxia resulting from this spasmodic occlusion of the larynx gives rise to venous engorgement of the head and neck, which increases the oedema and finally results in complete obstruction. Obstruction will still be complete even when the spasm of the larynx passes off, as it invariably does before death. It follows, therefore, that in the absence of tracheotomy or intubation the patient must die.

Anaesthesia for these cases must be non-irritating and not liable to give rise to laryngospasm. Cyclopropane or chloroform given with plenty of oxygen are the agents which best fulfil these requirements. It is scarcely necessary to add that instruments for tracheotomy should be ready in every case of this nature. It seems deplorable and very hard on young residents, not to mention patients, that such misguided advice should be perpetuated in recent editions of reputable surgical works.—I am, etc.,

Sanon, Surrey.

JOHN H. WILLIS.

The McNaghten Rules

SIR,—Dr. Henry Yellowlees (Dec. 11, 1948, p. 1034) has written without fear of offence, and I am sure that he will permit me to do the same. He has produced the usual stock arguments, for which I am most grateful since it allows me to show their flimsiness. It is surprising, for instance, to see the old one, so beloved of the cheap press, regarding "Law from Harley-Street." Whether Dr. Yellowlees likes it or not, the law is dependant on medical opinion. First, the accused may be unfit to plead. How is that decided? On a doctor's opinion. Secondly, even if condemned to death, there is a proviso in the Criminal Lunatics Act, 1884 (Section 2, subsection IV), by which two or more legally qualified practitioners can be asked to examine the prisoner and inquire as to his insanity. So the law does come from Harley Street.

I am sorry that Dr. Yellowlees would hesitate to certify a patient who "stated that his father had been insane and that he himself had impulses to murder children." I am certain that no judge in chambers would allow an action for malpraxis against me if I certified a man for such impulses, and no commissioner in lunacy would dare to question such a certificate. The reasons for certification are that the patient is (1) dangerous to himself or others, or (2) in need of care and treatment. Most patients in need of treatment will go voluntarily to hospital, and in general patients are certified because the

This does not mean that they are dangerous all the time, but have brief impulses, potentially homicidal or suicidal, etc. *What is more contradictory than that a patient should be certifiable because he is dangerous and yet we should regard him as responsible if he kills anyone?* How a competent lawyer or psychiatrist can accept such a proposition is beyond my comprehension.

I am sure that Dr. Yellowlees has a wide legal acquaintance, but what a pity he never knew Lord Bramwell, who stated, "Nobody is hardly ever really mad enough to be within the definition of madness laid down by the judges' answers"; or Lord Chief Justice Coleridge, who said, "The judicial decisions on questions of insanity were bound by an old authority which, by the light of modern science, was altogether unsound and wrong." The young barristers I meet express uneasiness and dislike of the rules.

Dr. Yellowlees accuses me of expressing "a travesty of the facts." Well, let them speak for themselves. I cannot burden your columns with long lists of disputed cases, but to examine two recent ones: First, a young man whose father has been psychotic and who himself was always odd enters a hospital ward and removes a child he has never previously seen. He smashes it to death against a wall. Is this insane act regarded as a sign of mental disease and the man sent to Broadmoor? No, the M'Naghten rules are invoked and he is hanged. The other case is of a young man who has been an obvious psychopath since puberty. He has been in Borstal and thrice lost commissions in the Services. He is sexually abnormal—a sadist and handkerchief fetishist. He flogs a woman to death with a riding quirt. Then he cuts a girl to pieces. These senseless crimes are not regarded as signs of insanity, and the man is not sent to a criminal mental hospital. No, the M'Naghten rules are produced and he is hanged. If these men were sane, then my criterion of sanity is all awry.

May I state that I am not trying to interfere with the expert's duty to assist the court, but to persuade politicians to alter the law to something sensible, logical, and in accordance with modern psychiatry, when I suggest that legal and medical insanity should be regarded as identical? May I offer the hope that both Dr. Yellowlees and I shall live to see this accomplished?—I am, etc..

London, W 1

CLIFFORD ALLEN.

Femoral Hernia

SIR,—I should like to express my agreement with Mr. Andrew G. Butters (Oct. 23, 1948, p. 743) in his advocacy of the low operation for femoral hernia, though one should always be prepared to use the high (Annandale) approach in the exceptional case. Thorough freeing of the neck of the sac, as he stresses, is very important to secure adequate reduction.

I think the best technique to use is that described long ago by Macewen,¹ who used a puckering stitch to transform the sac into a pad to block the upper end of the canal. Instead of the single strand he used I prefer to run a catgut suture up one side of the sac across the neck and down the other side. When this has been done the sac with its adherent fat is reduced into the abdomen, and with one finger blocking the femoral canal each end of the suture is pulled tight so that the sac is formed into a pad, and the ends of the stitch tied. A pull on the catgut will tell in the majority of cases that the canal is safely closed, in which case, when a local anaesthetic has been used, the patient may safely walk out of the theatre.

I am less inclined to agree with Mr. Butters's view that because a femoral hernia usually makes its appearance at the age of 50 years or later the majority of femoral sacs are acquired.

Some years ago I had charge of a woman of about 50 years of age who was admitted with a mass in the right iliac fossa and a recently acquired, rather tense right femoral hernia. The former was regarded as an appendix abscess and expectant treatment decided on. After about a week she became anxious to go home, but it was considered that the femoral hernia at least was a danger, and it was explored. At operation a thin sac was found to be filled with blood-stained fluid. The neck of the sac was so narrow that some persuasion was required to introduce a probe-ended dissector into the abdomen, and when this was done blood-stained fluid trickled from

the abdomen. Laparotomy then revealed similar fluid in the abdomen and a fixed growth apparently arising from the right ovary. Such a sac could hardly have been acquired, and it is easy to imagine a congenital sac with a narrow neck remaining dormant till, with advancing years, loss of supporting fat in the femoral region allows a tongue of omentum to slip down and produce a hernia.

Incidentally, it may be mentioned here that a useful retractor for the suture or transfixion of the neck of funicular sacs may be devised from the common or kitchen four-pronged fork, the ends of the two medial prongs being bent away from the midline of the instrument to prevent their being entangled in the tissues. The instrument is slipped over the sac, and the assistant uses one hand to press it firmly against the abdomen while his other hand pulls the sac firmly forward. The abdominal contents are kept from entering the sac and the surrounding tissues clear of the surgeon's needle.—I am, etc.,

Birmingham

J. W. RIDDOCH.

REFERENCE

¹ *British Medical Journal*, 1887, 2, 1263.

Nephritis in Textile Workers

SIR,—Dr. G. Herdan (Dec. 18, 1948, p. 1083) makes some statistical criticisms of my article on this subject (Nov. 15, 1947, p. 771), but I cannot agree with his conclusions. In the first place he suggests that my series of personal cases is not a representative sample of the population because it does not show deaths from nephritis or from malignant hypertension in the older age groups. Evidently Dr. Herdan is not very familiar with renal disease or he would know that both conditions are extremely rare over the age of 50. I do not remember ever seeing a case of malignant essential hypertension over the age of 60. Benign essential hypertension does not occur in my table because it does not cause death from renal disease. It is largely for these reasons that I am so certain that the Registrar-General's deaths from so-called nephritis are mostly not renal deaths at all.

I cannot agree either with Dr. Herdan's second point that deaths from nephritis in textile workers should be compared with deaths in the whole population rather than with deaths in social classes III and IV, from which textile workers are drawn. Surely if there were any increased incidence of nephritis due to occupation rather than social circumstances my comparison is the only one by which this could be shown?

Finally, I do not wish my statistical analysis to be taken as proving anything, as I clearly said in my conclusions. The whole paper was merely written to expose what is still the greatest fallacy of all statistical argument—namely, the facile assumption that the data from which the statistics have been compiled are sound.

The question of renal disease in textile workers is now being investigated in the field by Professor Lane's department, and I have no doubt we shall have the answer shortly.—I am, etc..

Manchester

ROBERT PLATT.

Treatment of Simple Ganglion

SIR,—The present teaching on the subject of simple ganglia is inadequate, for in many cases a wrong diagnosis is made—e.g., fibroma, neuroma, osteoma, chondroma, bursa, and even sarcoma. In a few cases seen diagnostic x rays have been taken and, in some, unfavourable prognoses had been given. The condition is common in factory workers, steel workers, miners, etc., and there can be little doubt that heavy work and strain are aetiological factors.

The treatments usually advised in surgical textbooks are: (1) Do nothing in the hope of spontaneous disappearance. This is unsatisfactory, for if a patient comes to a doctor with a swelling he expects something to be done about it. (2) Hitting the swelling with a hard object such as a book. This is clumsy and possibly dangerous. In many cases—e.g., in the palm of the hand—it is often impracticable. This treatment should cease to find a place in modern textbooks. (3) Aspiration and injection of a sclerosing fluid. This is painful, disabling, and often unsuccessful. It is not to be advised. (4) Incision with a tenotome and expression of the contents. (5) Excision of the swelling. This is a major surgical procedure, necessitating a general anaesthetic, most careful asepsis, and subsequent rest. It

leaves a permanent and often unsightly scar, and is often followed by recurrence.

Most surgical textbooks advise excision of the swelling as the best treatment. No mention is made of what is by far the simplest, easiest, and most satisfactory treatment. In the great majority of cases ganglia can be cured by the application of firm, steady pressure with the palmar aspect of the end of the thumb to the swelling—the thumb being supported by the fully flexed fingers. The part should be resting on a hard, firm base, such as a table or desk. Tremendous pressure can be exerted, but it is accurately controlled, and, as the swelling goes, it is quickly and automatically relaxed. In superficial swellings in thin patients the jelly can be seen to disperse in the tendon sheath. The ganglion is a collection of jelly in a diverticulum of the sheath.

Some discomfort, hardly amounting to pain, is felt by the patient, but he may be reassured that the surgeon will possibly feel as much discomfort. It is important that the surgeon should not strain or damage his own metacarpophalangeal joint, for considerable pressure has sometimes to be applied. If the patient is unwilling to accept the discomfort involved, or if very considerable pressure is necessary (and this is not usual), local infiltration with procaine may be used. In a very nervous subject a little gas may be administered or intravenous "pentothal," though this should rarely be necessary. Most cases are very easy to do, but a few are difficult, and it is not always possible to force it which will be the easy ones. Generally the ganglia with a bony background are easy, and those with a soft-tissue background are not so easy.

In the great majority of cases this treatment is successful, but in a few—those in which the opening into the tendon sheath is small or the jelly very solid—the swelling cannot be dispersed. In such cases puncture of the swelling with a fine tenotome after infiltration with procaine and subsequent pressure is the treatment to be adopted, and is effective. The results of treatment are very good indeed: most cases can be dispersed, and few recur. If there is a recurrence, the treatment is repeated. Excision is not the best treatment and should seldom, if ever, be necessary.—I am, etc.,

Rotherham

ERIC COLDREY.

Temperature Recording

SIR.—It is interesting to see confirmed by Professor Alan Moncrieff and Dr. B. J. Hussey (Dec. 4, 1948, p. 972) what one was taught as a student about temperatures. I should like to add a general practitioner's comments. The article does not emphasize the need to test thermometers. I once found a variation of 2° F. (1.2° C.) in a dozen thermometers certified as accurate. Position does not seem to me important, except to avoid the cavernous, sweat-soaked axillae of neurotics, also the rectum. Perhaps I am exposing some psychological kink when I say that I feel interference with the rectum should be limited to those digital examinations which can only be made P.R.

My practice is to use any one of three positions—the groin in children, the mouth in older children and adults, and the axilla only when there is an obvious throat or mouth condition involving gross risk of cross-infection. I make a correction for groin or axillary temperatures and record all readings as though they were buccal.

The time factor is rightly emphasized. I think I take not less than thirty temperatures a day, and allow at least two minutes for each—more, if there is doubt. This involves an hour a day: but it is not difficult to use this time pulse-recording, examining ears, soothing relatives, etc. It is worse than useless—and, I am afraid, a common fault in hospital and general practice—to make hasty and inaccurate temperature records.

Finally, one should not forget that the "normal" temperature is merely an average. On a hot summer evening in London the temperatures of twenty patients with "afebrile" disorders were between 98.6° F. (37° C.) and 99.2° F. (37.3° C.); whereas off the coast of Newfoundland on a winter morning I recorded a succession of temperatures below 96° F. (35.6° C.). Apart from climate, many patients vary from the normal. For this reason I take the first opportunity to record the normal temperature and pulse of a patient—e.g., when he brings his panel card. In this way one knows that even a pulse rate of 60 may be tachycardiac and a temperature of 98.6° F. subnormal. I have a great respect for a thermometer—if it is a good one used intelligently.—I am, etc.,

Wembley, Middlesex.

M. C. ANDREWS.

End of Compulsory Vaccination

SIR.—To many of us Dr. C. Killick Millard will always be associated with vaccinia, and it was a pleasure to hear his voice again (Dec. 18, 1948, p. 1073) in vindication of his well-known views on the subject. While I have subscribed to some of his arguments in the past I do not share his complacency about the future. Compulsory vaccination of infants, despite the exemption clause, was a procedure that few medical men could push with a clear conscience. I have always felt that the advantages, disadvantages, and possibilities should be clearly explained to the parent, and that no doctor should take the responsibility of advising yea or nay.

Mass vaccination of a community threatened with smallpox is seldom, if ever, justified. At the same time vaccination is the specific measure against smallpox and should be employed promptly and accurately where indicated. The medical officer of health who panics and advises mass vaccination is like the sportsman who "browns" the covey instead of picking his birds in front, and the results are comparable. If—to follow up the simile—he fails to pick up the wounded birds (those inoculated but not yet showing a "take") or permits them to escape into the next parish, the results may be disastrous. I have not been impressed by the claims of those who have attempted to justify mass vaccination, not only for the reasons which Dr. Millard gives regarding self-limitation of smallpox, but also because of the fact that in most instances the measure was adopted too late to be of any effect. It is just possible that compulsory vaccination reduces the effect of the first impetus of an epidemic and thus gives us time to mobilize our forces, but it may be argued that it may mask the initial infection.

Medical officers are now expected to "push" vaccination as they do immunization against diphtheria. The only reason which I, personally, can advance for the vaccination of an infant is that in later life, should he be compelled to be vaccinated, he will have less risk of contracting encephalitis. Similarly, I would feel bound to point out the danger of primary vaccination to an adult in need of protection. The obvious policy is to produce a vaccine which will not carry a risk of causing post-vaccinal encephalitis and which we can advocate with confidence.—I am, etc.,

Kirkcaldy, Fife

JAMES R. W. HAY.

POINTS FROM LETTERS

Proof-readers' Disease

Dr. J. S. MEIGHAN (Bridge-of-Weir, Renfrewshire) writes: I claim to have discovered a new disease—proof-readers' carelessness. Almost all books now published in this country have many more printer's errors than before the war. . . . The disease is not confined to books but also affects newspapers. . . . How is it that almost any American book one picks up, or book printed in our Dominions, has much fewer misprints?

O Russia! O Mores!

Dr. ASHLEY A. ROBIN (Burley-in-Wharfedale, Yorks) writes: I regret having to take you up so soon after criticizing your reviewer Dr. Darlington, but after reading the annotation "O Russia! O Mores!" (Dec. 4, 1948, p. 991) I wonder whether the real issue is one of an individual bad reviewer or whether it is a fact that this review was in keeping with your recent treatment of Soviet science in general. On Aug. 30, 1947, in a leading article entitled "Ourselves and the Russians," you dealt with an article entitled "The Sham Political Neutrality of the British Medical Journal" which had appeared in *Meditsinsky Rabotnik*. The *British Medical Journal* was accused of "a tendency to preserve silence on and to ignore the achievements of Soviet medical science . . . and to publish mendacious information." This was hotly denied, and a "sincere desire to inform British readers of the advances and the contributions of Russian medicine" was expressed. Since then there have been four contributions dealing with Soviet affairs. These articles were uniformly hostile. The last article by a Soviet contributor was on Dec. 8, 1945. In it V. Parin, reporting the Soviet Academy of Medical Sciences, says: "All the speakers mentioned the achievements of medical science in Europe and the U.S.A. . . . and expressed great interest in foreign equipment and in the foreign scientific press." I trust that patience is a Russian virtue. . . .

Obituary

LIONEL COLLEDGE, F.R.C.S.

We announce with regret the death, on Dec. 19 at the age of 65, of Mr. Lionel Colledge, one of the most distinguished figures in otology and laryngology in this country. Mr. Colledge, who died at his home in Upper Wimpole Street, was for many years a valued contributor to the *British Medical Journal*.

The son of Major John Colledge, of Cheltenham, he was educated at Cheltenham College and Caius College, Cambridge. Lionel Colledge qualified M.R.C.S., L.R.C.P. in 1908 as a student at St. George's Hospital, graduated M.B., B.Ch. in 1910, and took the F.R.C.S. a year later. During the 1914-18 war he served with the R.A.M.C. in France, and after a short period in command of a casualty clearing station he became aural surgeon to the First Army. He was on the staff of the Hospital for Diseases of the Throat in Golden Square, and he was consulting surgeon to the Ear and Throat Department at St. George's Hospital. Later he was also surgeon to the Royal Masonic Hospital and the West End Hospital for Nervous Diseases. The rules of St. George's Hospital made it necessary for him to retire at the height of his professional activity, but his election to the staff of the Prince of Wales General Hospital at Tottenham allowed him to continue his hospital work there. In later years Mr. Colledge acted as consultant to the Cancer Hospital, where he was able to continue the work on malignant disease of the larynx and pharynx which he had begun early in his career in association with St. Clair Thomson. Together they published in 1930 a monograph on cancer of the larynx which was one of a series in the Anglo-French Library of Medical and Biological Science. This work included the material which had already been presented by Colledge as Semon Lecturer in Laryngology at the University of London in 1927.

In the recent war Mr. Colledge came to the assistance of St. Mary's Hospital and at the same time acted as consulting otologist to the Navy. He wrote authoritatively on a variety of subjects and had a wide knowledge of the literature of his specialty. He contributed articles to the *British Encyclopaedia of Medical Practice* and to Maingot's *Postgraduate Surgery*. His *Guide to Diseases of the Nose and Throat* was written in collaboration with C. A. Parker, and his work on the surgical treatment of paralysis of the vocal cords, on which he assisted Sir Charles Ballance, is well known.

He acted as editor of the Section of Laryngology in the *Proceedings of the Royal Society of Medicine*, and there his revisions, although drastic at times, were of benefit both to author and readers. He was one of the founders of the British Association of Otolaryngologists, and its first vice-president, and he held the presidency of the Sections of Laryngology and Otology of the Royal Society of Medicine.

He married Margaret, the daughter of the late Admiral J. W. Brackenbury, and they had two children. Their son, Maule, lost his life while serving with the Royal Air Force in Europe. Their daughter, Cecilia Colledge, is world-famous as a skater.

Mr. V. E. Negus writes: To some it appeared that Colledge was interested in the major surgical aspects of his specialty to the exclusion of the minor or less serious diseases; this supposition was, however, somewhat exaggerated. Although known more particularly for his interest in malignant disease, yet those who followed his work admired his ability in diseases of the ear and in many other directions. In research, too, Colledge had a share, working with Sir Charles Ballance on the problems of nerve anastomosis. They performed many experiments on monkeys and apes, especially with regard to paralysis of the larynx; anastomosis of the phrenic to the injured recurrent laryngeal nerve promised success, but mistiming in the larynx of the human subject gave disappointing results.

Those who knew Colledge only at a distance may have thought him forbidding at times, but those who held his friendship knew that close below the surface lay a benign and generous character, allowing him to entertain his friends graciously and to see the lighter side, with keen appreciation of any humorous aspect. As

house-surgeon to him for a time at Golden Square, I found sympathy and tolerance, with ready support and help in difficulties. On foreign travel there was no better company. Some trivial annoyances, such as the rattling of cutlery on a table in the dining car, irritated him, but these minor traits accentuated the bigger and better aspects of his character. He was fond of visit to foreign clinics, and as a member of the visiting Association of Throat and Ear Surgeons of Great Britain, and of the Collegium Oto-Rhino-Laryngologicum, he made many trips, on some of which his wife accompanied him and acted as a skilled interpreter in a number of languages. His occasional relaxation was shooting on a Saturday, but non-medical holidays were rare. Work was his constant occupation, and much reading gave him a critical judgment of great value. In discussions he was stubborn and somewhat dogmatic, but his judgments were based on a wide experience and were adopted only after close inquiry into the methods of others.

It was distressing to find that physical disabilities after his critical illness partially cut him off from the active life he had led; heroic and courageous determination, supported by the devotion of his lady attendant, kept him in touch with some of his interests. To the end of his days he visited the Royal Society of Medicine and the Medical Society of London, with both of which he had been intimately connected and for which he had done so much. Widely known to many more than those of his own special branch of medicine, Colledge was esteemed highly and most of all by those who knew him best. He laboured unceasingly for the specialty of his choice, and the result of his labours is a lasting memorial to him: the large number of those who attended his hospital practice and studied his writings will for long bear witness to his influence.

W. M. M. writes: Laryngology has sustained a very great loss in the death of Lionel Colledge; he made laryngectomy appear very easy, and his results were wonderful. His hobby was work: he seldom left London. Any evening he was to be seen walking to or from his house with stick or umbrella over his arm, his hat seldom on his head but carried. He was a man who wanted knowing, but, once known, he was always a real friend. Though reserved, Lionel held firmly to his own view, but doubtless to his extensive and encyclopaedic knowledge of the literature of his specialty.

LUCIEN VAN HOOFF, M.D.

Few who are interested in tropical medicine can fail to have heard of Major-General Lucien-Marie-Joseph-Jean van Hoof who died in Antwerp on Dec. 6. Van Hoof was born in 1890 at Malines. He served as a volunteer throughout the war of 1914-18, being decorated with the Belgian croix de guerre. Later he joined the medical service of the Belgian Congo, becoming its médecin en chef in 1934. He retired from Belgium in 1946 and was appointed a professor at the Institut de Médecine tropicale Prince Léopold in Antwerp. The high efficiency of the medical services in the Belgian Congo and the ever-rising standard of health of its inhabitants are very largely due to van Hoof's great powers of organization. The research institute which he was responsible for creating in Leopoldville is without a rival in tropical Africa, while the housing of Africans in cities such as Leopoldville, Stanleyville, and Elisabethville, a question in which he was deeply interested, provides an object lesson which many British colonies might well study with advantage. Although in his last years in Africa he was naturally encumbered with many administrative duties, he remained throughout an active research worker. He was particularly interested in trypanosomiasis, and in the past few years he had carried out important original investigations on the prophylaxis of sleeping sickness with pentamidine. The investigations are likely to play an important part in the control of human trypanosomiasis throughout Africa. During the war years van Hoof did much to facilitate close co-operation between the British and Belgian authorities. He was a well-known figure at many inter-Allied conferences on yellow fever and trypanosomiasis, and his knowledge and advice were always of the utmost value. The Congo troops who served both East and West Africa owed much of their high standard of fitness to van Hoof's thorough knowledge of how to preserve the health of the African under the most trying tropical conditions. Those who are fortunate enough to have visited Leopoldville

will long remember van Hoof's kindness and unbounded hospitality. He had many British friends, who will wish to join with their Belgian colleagues in mourning the loss of a great man whose work has done much to improve the health of tropical Africa.—G. M. F.

Dr. NANCY GWENDOLYN SHUBIK died suddenly on Sept. 20. She was the daughter of Mr. and Mrs. F. S. Rogers, of Newport, Monmouthshire. She entered the Welsh National School of Medicine in 1935, and qualified M.R.C.S., L.R.C.P. in 1939, taking the D.P.H. in 1941. After two years in clinical and public health work she was appointed demonstrator in pathology at Cardiff. In 1944 she became junior lecturer in pathology at the British Postgraduate Medical School, where she remained until 1945, when she joined the Indian Medical Service. She did excellent work in India, and on returning to England in 1947 she again took up laboratory work and was engaged in neuropathology in Sir Hugh Cairns's department at Oxford. Dr. Shubik was an enthusiastic worker, always determined to seek the exact answers to the problems that she met in her work. She published, in collaboration with Professor E. J. King, several papers on silicosis. She was a member of the Pathological Society of Great Britain, and many of her fellow members will sadly miss her presence at the Society's meetings.

Dr. FREDERICK HENRY WADDY, who died on Nov. 17 at the age of 79, was the third son of the Rev. J. T. Waddy and a nephew of the better-known Judge Waddy, Q.C. Following a brilliant scholastic career at The Grove, Kingswood, and Wesley College, Sheffield, he studied medicine at Glasgow University, graduating M.B., C.M., in 1893 and proceeding M.D. in 1896. After several house appointments he was for three years senior resident medical officer at Fivale Hospital, Sheffield, in which city he started in general practice in 1900. During these early days he obtained the D.P.H. but nevertheless elected to remain in practice, retaining his association with the Guardians as a parish doctor and public vaccinator. As a practitioner he followed his profession for nearly thirty years with a degree of integrity and philanthropy that led to his being profoundly respected. A man of modest and retiring personality, he was widely accomplished in other arts and sciences than that of medicine, being highly proficient in mathematics, astronomy, meteorology, and botany. He was revered as a Wesleyan preacher and known as a scholar in theology, Greek, and Latin. Such was the man who became a casualty at the age of 55. Labouring under the progressive disability resulting from encephalitis lethargica, he was obliged to retire from active professional work three years later, in 1927. With deep distress his relatives and professional colleagues witnessed the decay of his mental capacity for a further twenty-one years, until he died peacefully while asleep at the Northampton home of his daughter, Dr. Ethel Waddy. He leaves also a widow and two sons, the younger of whom is a member of the profession.—D. C. W.

Dr. HARRY TRIST ROBERTS died at his home in Pangbourne on Nov. 20 at the age of 77. He was educated at University College and qualified L.D.S. at the Royal Dental Hospital, afterwards going to St. Mary's Hospital, where his father, Dr. Owen Roberts, and his two brothers had qualified previously, to obtain his medical diplomas. He practised for many years in Harley Street and at his house in Kensington. He was a hard worker, and his genial and sympathetic nature won him hosts of friends and he was greatly esteemed by his patients. He was a keen sportsman, and played cricket for the M.C.C. and rugby for the Wasps and Kensington. Dr. Roberts was a Freeman of the City of London and a Girdler. He took a great interest in the activities of the B.M.A., until he developed osteoarthritis and became hopelessly crippled and was compelled to give up his practice in 1942. He leaves a widow, to whom will be extended the sympathy of his friends and colleagues.

Dr. TOM ENTWISTLE FERGUSON, of Bishop Auckland, died on Nov. 28 at the age of 63. Born at Bolton, of Scottish ancestry and of an old medical family, he qualified at Glasgow in 1911. After a period as house-surgeon at Stanley Hospital, Liverpool, and a tour as a ship surgeon, Dr. Ferguson entered general practice in Bishop Auckland in 1913. He joined the R.A.M.C. in 1915 and served in France and Italy, resuming practice in 1919. He joined the B.M.A. in 1912, and his colleagues honoured him with the chairmanship of the Bishop Auckland Division in 1931-2. Not only in his term of office but at all times Dr. Ferguson gave ungrudging and loyal service to the Association. He took a lively interest in the Bishop Auckland Cottage Hospital, of which he was honorary physician and surgeon. Many patients, especially in the days when distance

and transport were more important factors than they are now, have been grateful for his skill as a surgeon. From 1939-45 Dr. Ferguson was engaged in the work of civil defence—training ambulance students and taking charge of a mobile unit. Golf was his recreation, but had to be forsworn after the first attack of his terminal illness. Dr. Ferguson retired from practice on May 1, 1948, and was succeeded by his son, Dr. A. J. A. Ferguson. Tom Ferguson's death has deprived many of his colleagues of a personal and valued friend and his patients of a devoted physician. He was honest as the day; a philosopher and wit; an admirable host and a good companion.—P. V. A.

Dr. WILLIAM JOHN FRAIN died at his home in Batley on Dec. 6 at the early age of 46, just two years after suffering an acute heart attack which severely limited his later activities. Dr. Frain came of a well-known Dundee family, and he graduated M.B., Ch.B. in 1931. He had worked in the public health service in Suffolk before coming to Yorkshire some ten years ago, and as medical officer of health of Pudsey, and later of Batley, he was an active member of the Yorkshire Branch of the Society of Medical Officers of Health and of the British Medical Association. He neither sought nor secured the limelight, but unostentatiously did much very useful work on behalf of the people of his town. Dr. Frain foresaw clearly the changing status of county district medical officers of health, a change which he considered was detrimental to the service as a whole. A bachelor, he nevertheless enjoyed a most comfortable home life with his sister. He was interested in children and young people, and they liked him. He was a keen churchman, and the large gathering at the memorial service, including the mayor and corporation of Batley and many doctors, was a genuine tribute from those who knew him best.—E. D. I.

Dr. WILLIAM JAMES BENNETT-JONES died at his home in Liverpool on Dec. 14 at the age of 75. A student of Edinburgh University, Dr. Bennett-Jones qualified in 1898, graduated M.B., Ch.B. a year later, and proceeded M.D. in 1903. Dr. Bennett-Jones was well known in Liverpool as an anaesthetist. He was a founder member of the Liverpool Society of Anaesthetists in 1930 and became its president in 1946. He was consulting anaesthetist to the Royal Liverpool United Hospital, and for many years senior honorary anaesthetist to the Royal Infirmary. Dr. Bennett-Jones was a fellow of the Association of Anaesthetists of Britain and Ireland and of the recently formed Faculty of Anaesthetists of the Royal College of Surgeons.

Mr. Robert Kennon writes: "B. J.," as he was affectionately called by his wide circle of friends, was a man of outstanding character, with deep religious feelings, and an exponent of family life and the full meaning of the home. Although a city dweller, he never lost his passionate love of Wales—its preachers and its poets, its language and its customs. A most charitable man, he gave his all in the service of his patients. No one was more accessible or more willing to respond to emergency calls at night, in spite of his advancing years. As an anaesthetist his services were appreciated by Mr. Thelwall Thomas, Sir Robert Jones, Sir Robert Kelly, and Mr. Thomas Guthrie—with whom he was associated in cottage and mansion, and in hospitals great and small. Others quickly recognized his reliability, his helpfulness and co-operation in difficult circumstances, and his continuing care for his patients during the period of recovery. He was a master in the art of administering open ether, in rendering it pleasant for the patients, in maintaining a clear air-way, and in using as little as possible of any drug consistent with a smooth operation. Indeed, it has often been said that more mesmerism than anaesthesia was given, and certainly the calm which fell upon his excitable countrymen as they counted slowly in Welsh was a revelation in the correct approach to anaesthesia. For thirty-six years he used endotracheal methods where necessary. Ever willing to learn, he continued to modernize his technique when, and only when, the new drug was beyond its experimental stages. He leaves a widow, two sons, and four daughters, to whom our deepest sympathy is extended.

Dr. EVAN WILLIAM MONGER HUBERT PHILLIPS died at his home in Port Talbot on Dec. 14 at the age of 64. Born at Newport, Pembrokeshire, Dr. Phillips was educated at Llandoverly College, Oxford University, and St. George's Hospital. He graduated B.M., B.Ch. in 1909, proceeding D.M. in 1921. He went on to take the F.R.C.S.Ed. and the M.Ch. in 1929, when he was an assistant in Port Talbot to the late Dr. J. H. Davies, whose partner he became. He had worked in this area for some forty years and had been prominently associated with Port Talbot General Hospital. Dr. Phillips was a magistrate and served on the county bench for many years, and he was also president of the local camera club.

Medico-Legal

LIBEL ACTIONS BY B.M.A. SETTLEMENT ANNOUNCED

In the King's Bench Division on Dec. 21 before Mr. Justice Hilbery the settlement was announced of two libel actions. The first was brought by the British Medical Association against Daily Mirror Newspapers, Limited, and the second by the British Medical Association against Dr. Santo Wayburn Jeger, Mr. Somerville Hastings, Dr. Louis Comyns, and Dr. Hyacinth Bernard Wenceslaus Morgan, who are all members of Parliament.¹

Mr. C. R. Havers, K.C., who appeared with Mr. H. C. Dickens for the Association, in announcing the settlement of the first action, said that in the issues of the *Daily Mirror* of Jan. 30 and Jan. 31, 1948, under the headings "Bevan challenges doctors on open ballot," and "Doctor M.P.s accuse B.M.A. leaders," the defendants referred to the ballot which was then about to take place. The British Medical Association took the view that passages in those two issues were so worded that it would be generally understood that the defendants were accusing the B.M.A. and its officials of so dishonestly conducting the plebiscite that, in spite of the pledge to the contrary given by the B.M.A., the individual voting of practitioners might be divulged, with possible serious consequences to the individuals. These allegations—if they had been intended—were of such a character that a body such as the B.M.A. was bound to refute them, and these proceedings accordingly followed.

Mr. Havers went on to say that he was happy to have it on the assurance of Mr. Milmo, on behalf of the *Daily Mirror* and its editor, which assurance Mr. Milmo would repeat in court, that the defendants never intended by the passages in question to impugn the honesty of the B.M.A. or any of its officers, and had never taken the view that the passages could be construed in that sense. As a token of good faith the defendants had agreed to pay a substantial sum, which the Association proposed to allocate to a medical charity, and to indemnify the Association against its costs. In these circumstances the plaintiffs were glad to accept the defendants' assurances and to bring the litigation to a close by asking his Lordship to allow the record to be withdrawn.

Mr. Helenus Milmo said that the *Daily Mirror* in these two issues of Jan. 30 and Jan. 31 had reported allegations that individual doctors might feel themselves intimidated because it was an open ballot. It was suggested that the B.M.A. would be in a position to gain a knowledge of how individual doctors voted and to use that knowledge to the detriment of those individuals who voted in favour of accepting the terms of the National Health Service. The *Daily Mirror*, having been given an opportunity to study the full arrangements for conducting the ballot, was satisfied that every precaution was successfully taken to ensure that how individual doctors voted would not be divulged. The *Daily Mirror* also wished to make it clear that at no time was it intended to question the integrity of the B.M.A., and as a token of good faith the *Daily Mirror* had agreed with the B.M.A. to pay a substantial sum to a medical charity nominated by them and to indemnify them against their costs.

B.M.A. v. Jeger and others

Announcing the settlement of the second libel action, Mr. Havers said that shortly after the plebiscite voting papers had been sent out to the members of the medical profession by the B.M.A. a letter signed by the four defendant doctors appeared in issues of the *Daily Telegraph*, the *Daily Mirror*, and the *Manchester Guardian*. This letter concerned, among other things, the methods proposed for ascertaining the views of the profession by means of the plebiscite. The B.M.A. took the view that the letter was so worded that it would be generally understood that the defendants were accusing the Association and its officials of so dishonestly conducting the plebiscite that, in spite of the Association's pledge to the contrary, the individual voting of practitioners might be divulged with possible serious consequences to the individuals. That allegation, if it had been

intended, would, of course, have been one which a body such as the British Medical Association was bound to refute. In this case also, however, the Association had the assurance given by Mr. Paget on behalf of the four defendant doctors that they never intended by their letter to impugn the honesty of the Association or of any of its officers, and had never taken the view that their letter could be construed in that sense. In these circumstances the Association was only too glad to accept that disclaimer and to proceed no farther with the action.

Mr. R. T. Paget, K.C., said that the letter to the newspapers which was the subject of these proceedings was never intended to impugn the honesty of the British Medical Association or of any of its officers and officials, and the defendants and their advisers had never taken the view that the letter could be construed in that sense. The defendants were glad to have this further opportunity of saying publicly that this was not and never had been their intention.

Mr. Justice Hilbery directed that the record in each action should be withdrawn.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The degree of M.A. has been conferred upon Joan M. Boissard, M.R.C.S., L.R.C.P., University Assistant Director of the Public Health Laboratory Service.

The following medical degrees were conferred on Dec. 11:

M B, B CHIR —*H. L. J. Wilson, *Mrs Camilla B. P. Bosanquet, Pamela F Davis.

* By proxy.

D. Russell Davis, M.D., M.R.C.P., has been appointed a Manager of the Pinsent-Darwin Fund for three years from Jan. 1.

An election to the Pinsent-Darwin Studentship in Mental Pathology will be made in March. The studentship is of the annual value of about £250 and is tenable for three years. The student must engage in original research into any problem having a bearing on mental defects, but may carry on educational or other work concurrently. Applications should be sent before Feb. 28 to the secretary, Pinsent-Darwin Studentship, Psychological Laboratory, Cambridge. Applicants should state their age and qualifications and the general nature of the research that they wish to undertake. No testimonials are required, but applicants should give the names of not more than three referees.

The following candidates have been approved at the examinations indicated:

FINAL M B —Part I (*Surgery, Midwifery, and Gynaecology*) — K. P. Abel, C. A. M. Aiken, G. K. Barker, A. Bates, H. H. G. Bell, J. F. Boyle, B. I. Brown, P. Bryan Brown, D. Bulmer, J. P. C. Cullow, C. C. Clapham, P. B. Corston, W. G. Dawson, G. H. Dunkerley, J. V. Earle, R. W. Fairhead, P. A. Freeman, A. C. Gibson, J. R. Gough, G. A. Gresham, B. M. Grimmett, E. C. B. Hall-Craggs, G. F. Hargreaves, G. E. Heald, A. R. H. Hicks, R. N. T. Higgins, B. J. Hockey, J. W. Huddy, L. B. Hunt, I. P. James, M. J. Kehoe, D. S. Kerr, H. P. Kitchner, D. G. A. Leggett, H. K. N. Lister, H. P. Lottenberg, C. McCance, A. McGregor, R. B. McGrigor, T. C. K. Marr, J. D. Marsh, M. Marshall, H. M. Michaelson, E. Monkhouse, A. D. Moore, W. P. L. Morrison, J. E. Naylor, J. H. Neame, D. H. Nixseaman, B. W. Peckett, P. T. Perkins, S. T. H. H. Pilbeam, M. T. Pym, P. J. Roffey, C. A. Rogerson, R. A. Rowan, K. H. L. Scougall, I. H. Seppelt, M. J. Smith, J. F. Southill, J. Stevens, R. A. Struthers, T. J. Sullivan, M. K. Sykes, C. D. Thompson, P. W. Thompson, A. C. Townsend, T. H. H. Wade, D. P. Wagsstaff, C. B. Walker, J. F. Watkins, E. J. Watson-Williams, D. D. Webb, E. K. Westlake, J. L. Whitby, M. Wilkinson, J. P. Williams, P. O. Williams, E. J. C. Wynne, J. G. O. W. Yerburch. Part II (*Principles and Practice of Physics, Pathology, and Pharmacology*) — R. D. Allen, P. J. Andrew, J. A. Balint, G. B. Barker, D. A. A. Beardsmore, G. P. Blanchard, T. B. Boulton, A. Brook, J. C. Burne, M. L. Cox, R. D. Cundall, P. G. R. Dench, J. R. Edsall, H. F. Flint, J. M. Gibson, J. G. Gill, R. V. Grange, J. Halford, D. R. Harrocks, E. W. Heining, G. R. Hervey, J. B. Howells, W. P. Kelly, W. I. N. Kessel, T. C. Langdon, G. A. D. Lavy, K. W. Leech, D. E. Lewin, L. Linder, J. D. Liviwell Jones, P. H. Lord, C. B. McKerrrow, J. W. MacLeod, B. K. Madden, G. Melville Jones, J. L. Millard, A. D. Moore, T. H. Morgan, G. C. Myddelton, J. E. Naylor, A. E. Neill, P. C. J. Nicholl, D. N. Phear, M. I. M. Pines, T. M. Robinson, R. A. Rowan, F. R. V. F. Schofield, M. E. Sidaway, R. S. Smith, T. H. H. Wade, T. J. D. Walker, J. C. Wardall, A. L. Wells, R. B. Wrigley, J. G. O. W. Yerburch.

UNIVERSITY OF EDINBURGH

The University of Edinburgh gave a dinner on Dec. 10 in honour of the School of Medicine of the Royal Colleges, which has now been incorporated in the Medical Faculty of the University. Professor Sydney Smith, Acting Principal of the University, was in the chair, and there were also present the President of the Royal College of Physicians of Edinburgh, the Vice-President of the Royal College of Surgeons of Edinburgh, the Chairman of the Board of Governors of the School of Medicine of the Royal Colleges, other representatives of the Colleges, former members of the teaching staff of the Medical School, and members of the University Faculty of Medicine.

The Acting Principal proposed the toast of the School of Medicine of the Royal Colleges, which was replied to by Dr. W. D. D. Small, President of the Royal College of Physicians, Mr. J. M. Graham, Vice-President of the Royal College of Surgeons, and Mr. W. J. Stuart, Chairman of the Board of Governors of the School of Medicine. Dr. John Orr, formerly Dean of the School of Medicine, proposed the toast of the Faculty of Medicine. Professor T. J. Mackie, Acting Dean, replied on behalf of the Faculty. The Acting Principal, in proposing the toast of the School of Medicine, said that the school had been formally established only in 1895, but that its history went back to a much earlier time. The Guild of Barber Surgeons, which received its Charter in 1505, had been responsible for training its members, and from their foundation the Royal College of Physicians (1681) and the Royal College of Surgeons (1778) had interested themselves in the advancement and teaching of medicine and surgery. Before and after the formal establishment of the Faculty of Medicine within the University in 1726 classes were given by private individuals, who formed an extra-mural group of teachers more or less under the auspices of the Royal Colleges. This extra-mural school proved both a rival and a stimulus to teaching within the University. The brilliance of its teachers attracted students from many parts of the world, and, free from formalities, it was instrumental in introducing certain courses of study long before lectureships in the same subjects were provided within the University. Throughout the nineteenth century, also, many of the most distinguished professors in the University made their reputations as teachers in the extra-mural school. In later as in earlier years much of the renown of the Edinburgh Medical School was due to the work of the extra-mural school, and the University gladly acknowledged its debt to the School of Medicine of the Royal Colleges with which it had worked in friendly rivalry and co-operation for so long. Now, however (Professor Smith continued), circumstances had changed. With the progress of medical science and the increasing expense of providing medical teaching it was no longer possible to continue two teaching institutions in a city the size of Edinburgh, and the Colleges had shown wise statesmanship in deciding to merge their school with the Medical Faculty of the University. For the future, therefore, there would be one institution only for undergraduate teaching, and the Royal Colleges—relieved of their responsibilities at the undergraduate stage—would be free to concentrate on higher medical education through their interest in the Joint Board of Postgraduate Medical Studies. Concluding, the Acting Principal expressed the confident hope that with the combination of interests represented on that Board, and with the same co-operation between the University and the Colleges which had for so long been a feature of the Edinburgh School, the Postgraduate School would be no less renowned than had been its undergraduate predecessor.

At a Graduation Ceremony on Dec. 17 the following medical degrees were conferred:

M.D.—H. N. Alston, W. J. Matheson, Helen R. Neve
C.M.—E. A. Jack
Ph.D.—In the Faculty of Medicine: J. F. Sommerville
M.B., Ch.B.—Dores Baxter, H. Cameron, Isabel A. Cosser, J. Darnborough, J. C. Edie, W. D. Elliott, A. C. Ferguson, J. G. Fraser, G. B. Goodman, A. Gordon, P. F. Green, D. H. Haworth, S. P. A. Henderson, J. W. Herries, C. F. Hogg, J. T. Lamb, M. H. Lawrence, A. C. MacRae, Ann H. Miller, M. Milne, P. A. Moffat, Agnes C. D. Penman, T. Preston, M. L. Roden, B. H. Shiel, Catherine B. G. Sinclair, D. M. W. Smith, C. C. R. Walker, D. C. M. Wilcock.

Medical diplomas were granted as follows:

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE—J. R. A. Messing
DIPLOMA IN MEDICAL RADIODIAGNOSIS—L. D. Keegan, L. D. Philp,
J. S. G. Robinson
DIPLOMA IN MEDICAL RADIOLOGY—J. A. Caskey, W. B. Dawson, Mary
A. J. T. Douglas, J. F. Riley
Awarded medal for thesis. 2 Highly commended for thesis. 3 In absentia

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following candidates have been approved at the examinations indicated:

M.D.—E. Howitt, A. H. Isaacson, F. M. Lanigan-O'Keefe, J. B. Ryder, Sheila Sheehan
M.A.O.—J. D. Llewellyn-Jones
M.B., Ch.B.—D. W. Kyle, Dorothy I. Ogden, J. S. P. Lane, Ivy P. Robinson, C. H. Charlton, M. H. Fritholff, Peggy Moore, S. J. O'Reilly, G. N. Constable, Germaine H. Ross, F. W. Ennel, P. F. Eustace, W. A. McGaw, H. Parsons
BCH—K. C. Millen, T. M. W. Redman, E. M. Clein, Winifred D. Eadie, E. A. Jackson, W. H. Lefcovich, J. K. McCall, S. F. Shilliday, S. D. Boland, M. D. Bamber, Olivia M. Welsh, J. Diamond
B.A.O.—J. P. B. Tuohy, H. Parsons, N. Furlong, Olivia M. Welsh
1 First-class honours. 2 Second-class honours.

The following medical degrees were conferred on Dec. 9:

M.D.—E. Howitt, Sheila Sheehan
M.A.O.—J. D. Llewellyn-Jones
M.B., Ch.B.—B.A.O.—M. D. Bamber, S. D. Boland, E. M. Clein, G. N. Constable, J. Diamond, Winifred D. Eadie, P. F. Eustace, M. H. Fritholff, E. A. Jackson, J. S. P. Lane, W. H. Leon, J. K. McCall, Peggy Moore, K. C. Millen, Dorothy I. Ogden, T. M. W. Redman, Ivy P. Robinson, S. F. Shilliday, Olivia M. Welsh.

UNIVERSITY OF DURHAM

The following candidates have satisfied the examiners at the examination indicated:

FINAL M.B., B.S.—G. L. Anderson, Anne R. Boon, P. G. Buck, Maureen T. Cunningham, June Dickson, Irene N. Dodd, Mildred C. Gardner, Sheila L. Harrison, Elizabeth J. Hunter, Alex P. M. Hurst, Ellen Hurton, Hazel E. Jopling, R. N. C. Locky, J. McManis, J. G. Noble, Edith M. Robertson, D. Smith, J. D. R. Smith, Joan Stephens, A. E. Wright.

UNIVERSITY OF LONDON

The title of Professor of Pathology in the University has been conferred on Howard William Copland Vines, M.D., in respect of the post held by him at Charing Cross Hospital Medical School.

The title of Professor of Chemical Pathology in the University has been conferred on Jocelyn Patterson, Ph.D., M.Sc., in respect of the post held by him at Charing Cross Hospital Medical School.

A special University lecture in dentistry will be given by Professor G. Toverud, Director of the Department of Pedodontia in the Dental School, Oslo, in the Senate House of the University (entrance from Russell Square or Malet Street) on Wednesday, Jan. 12, at 5.30 p.m. His subject is "The Influence of General Health Supervision on the Frequency of Dental Caries in Groups of Norwegian Children." The lecture is addressed to students of the University and to others interested in the subject. Admission is free, without ticket.

UNIVERSITY OF MANCHESTER

The following candidates have been approved at the examinations indicated:

FINAL M.B., Ch.B.—Margaret Armistead, Mary P. Armstrong, J. M. Bernstein, P. H. Bricewell, V. Broadhurst, R. B. Charrock, M. Cohen, J. L. Cohen, B. Gill, Doreen M. Givener, Barbara Hall, B. Hendy, Muriel M. Hughes, H. McIntyre, C. A. Mays, K. Ramsley, W. R. Riley, Beatrice E. Sleigh, R. V. Sykes, Ruth Tansley, D. B. S. Taylor, J. G. Taylor, Helen L. S. Terratt, J. D. Torr, J. D. Villiers, J. M. Watt, H. L. Wray, Doreen Wilkerson, Pen J. H. G. Arnold, P. Feigold, H. Holgate, J. R. Jaffe, B. Jones, G. Kentwell, H. A. Mitchell, Margot Nellen, J. A. Platt, C. W. M. Pratt, I. A. Surman, R. M. Thomson, C. A. Unsworth, J. M. Watt
DIPLOMA IN PSYCHOLOGICAL MEDICINE—Part II: E. Goswami, H. F. Jernie

UNIVERSITY OF BRISTOL

The following candidates have been approved at the examinations indicated:

FINAL M.B., Ch.B.—R. J. Carey, Anne B. Cousins, Vera H. M. Dowling, D. N. Fitzgerald, Margaret Ford, Arne M. French, B. T. Hale, G. A. Hark, Kathleen L. Harman (with distinction in public health), Jean A. Hegreboer, Ursula Jones, A. H. Laxon, A. J. Lee, D. B. Peacock, Elizabeth Peacock-Thorp, G. T. Salter, P. J. Sciller, Maro A. Wells, Group I (concurrent examination): G. D. Teague, A. S. Wallace, Group II (completing examination): Pamela L. C. Watson, Group II only: June Morgan, J. S. R. Old
DIPLOMA IN PSYCHOLOGICAL MEDICINE—Part II: M. A. X. Cochrane, V. G. Croisy, W. A. Hesdon-Ward.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The Faculty of Dental Surgery of the Royal College of Surgeons of England has arranged a series of lectures on anatomy, applied physiology, and pathology in their application to dental surgery and in dental histology, to be given at the College (Lincoln's Inn Fields, London, W.C.) at 5 p.m. and 6.15 p.m. on various dates beginning on Jan. 24 and ending on Feb. 18. The Faculty has also arranged a series of lectures on general, oral, and dental surgery to be given at the College at 5 p.m. and 6.15 p.m. on various dates beginning on Feb. 21 and ending on March 18. The fee for each course is £10 10s. (one lecture 10s.); Fellows and Members of the College and Fellows and Licentiates in Dental Surgery of the College, £6 6s. (one lecture, 7s. 6d.). Admission cards may be obtained from the secretary of the Faculty at the above address.

At a meeting of the Council of the College held on Dec. 9, with Lord Webb-Johnson, President, in the chair, the award of Mackenzie Mackinnon Research Fellowships to Mr. W. J. Atkinson and Dr. C. F. Hawkins was reported. Dr. Horace Evans was elected a Hunterian Professor.

Diplomas of Fellowship were granted to the following successful candidates:

K. MacK MacLeod, M. Ellis, E. Tromsgaard-Hansen, A. B. Dempsey, E. P. Clarke, C. L. Clinton-Thomson, M. Ghok, C. T. A. Burgess, L. F. W. Salmon, C. R. Sawyer, T. Fenwick, D. H. Campbell, P. W. Hunt, K. P. S. Caldwell, J. L. Temple, R. N. Grant, J. S. A. Linton, M. F. Pilcher, D. P. B. Turner, D. A. Barley, B. L. N. Morgan, R. Cohen, A. C. Higgin, J. V. Morris, J. H. E. Verdon, G. B. R. Walker, R. D. Wilkins, H. M. Jones, E. H. M. Foxen, E. H. H. J. G. Brocks, J. A. L. Davies, J. C. Fulford, O. Daniel, R. N. Titchhurst, J. F. R. Withycombe, G. W. Taylor, D. H. Randall, P. H. Hurrell, P. F. Jones, P. G. Large, B. W. T. Pender, J. M. Davis, J. Andrew, K. E. D. Shuttlesworth, R. J. Williams, R. L. B. Roberts, E. J. M. Weaver, D. L. B. Farley, M. J. Roper-Hall, G. J. Hadfield, J. A. MacDougall, A. Sinnatambhi, I. W. Esli, F. J. Darnall, S. J. H. Muller, J. M. G. Kison, J. L. Wright, A. V. K. P. F. Howden, G. C. Jennings, T. H. Wilson, P. L. Brunnen, E. M. Corrie, W. Gordon, G. H. Lewin, C. W. D. Lewis, A. K. Saba, Jean R. C. Burton-Brown, C. T. Collins, J. G. Gow, T. S. S. Gregory, J. D. Morgan, C. Parish, D. L. Spaw, T. H. Tawdry, C. B. R. Mann, H. G. Smith, M. Ahmad, H. M. Bradmore, J. W. F. Rains, S. Rajanayagam, J. B. Blacklay, B. H. Courtice, I. R. Kirk, K. R. Lother, I. Monk, E. H. Paterson, D. A. Sarnfield, R. E. Shaw, P. Ahluwalia, R. D. A. Klesaria, K. D. Koshal, W. A. McAlpine, Marion J. Phillips, J. V. Ellis, P. G. Lai, D. Tooms.

Diplomas of Fellowship in Dental Surgery were granted to thirty-one candidates, including the following members of the medical profession: N. J. Ainsworth, G. A. Cowan, H. H. Kenshole, O. H. Wicksseed, J. W. Mansie, J. H. Hovell, M. P. Graham, and T. Cradock Henry.

Diplomas of Membership were granted to T. McKendrick and D. A. G. Williams.

Diplomas were granted jointly with the Royal College of Physicians of London as follows:

TROPICAL MEDICINE AND HYGIENE.—B. N. A. Beetles, M. A. Chowdhry, Joan E. Jermy.

MEDICAL RADIO-DIAGNOSIS.—J. W. Pierce.

ANAESTHETICS.—O. H. E. Bayles, O. D. Bhat, J. Bullough, L. Clement, Patricia F. de C. Coles, Elsa R. Cooper, J. A. L. Cooper, D. H. Couch, J. Davidson, Eleanor Davies-Jones, E. Fowler Ilse R. Hadelmayr-Kuhn, W. K. Jones, E. J. Leighton, Bertha A. McDougall, T. Wagner, J. M. Marchant, A. J. Merry, A. A. McC. Miller, L. E. Mossrop, G. P. Murtagh, D. K. W. Picken, W. L. Price, Silvia W. Pyddoke, L. W. Ritchie, F. L. Robertshaw, J. G. Robson, J. E. Schofield, W. R. Scott, Doris N. A. Smith, J. K. Sugden, J. H. Wakely, Pamela Westhead, D. Zuck.

INDUSTRIAL HEALTH.—J. W. Webb.

The following hospitals were recognized under the F.R.C.S. regulations: District Infirmary, Ashton-under-Lyne (resident surgical officer, until Dec. 31, 1950); Kent and Canterbury Hospital (additional recognition of ear, nose, and throat and ophthalmic house-surgeon and orthopaedic house-surgeon); the West Kent General Hospital (one house-surgeon); Boundary Park General Hospital, Oldham (resident surgical officer); the South Devon and East Cornwall Hospital, Plymouth (additional recognition of senior house officer (surgical) at Freedom Fields).

Medical Notes in Parliament

Capitation Fee

Sir WAVELL WAKEFIELD on Dec. 16 asked the amount of capitation fee doctors were receiving for their patients.

Mr. BEVAN said there was a fund of 18s. multiplied by 95% of the civil population. From this an agreed deduction was made for mileage payments, making the distributable fund about 17s. 5d. multiplied by 95% of the civil population. The actual payment per person on a doctor's list in any particular executive council's area varied with the proportion of the population who were on the lists of that area. He would not be able to say until after the end of the financial year what was the actual rate payable in each executive council's area. The representatives of the British Medical Association never expected that the rate would not be less than 18s. They knew that there would be certain agreed deductions from this. Sir WAVELL WAKEFIELD said the majority of doctors were suffering from this misapprehension.

Colonel STODDART-SCOTT asserted that the amount of money available for the doctors had been agreed on when it was thought 18,000 practitioners would come into the scheme. Now that 19,000 had come in, should not a larger amount of money be made available?

Mr. BEVAN said Colonel Stoddart-Scott's information was incorrect. The doctors were adequately represented and discussions were taking place between the Ministry of Health and representatives of the profession. He hoped members would await the result of those discussions before organizing a "single pressure lobby."

There were protests at this. Colonel ELLIOT asked Mr. Bevan to avoid making inflammatory and insulting speeches as he had done when the previous discussions were under way.

Mr. BEVAN said that the Opposition would probably seek an opportunity of discussing these matters. He reminded them that they could not seek to increase each item and expect the total to be low.

Amending Bill

Mr. BEVAN told Mr. COLLINS on Dec. 16 that he proposed to accept the recommendations of the Legal Committee on Medical Partnerships. So far as legislation was required, proposals would be made in the forthcoming Bill to amend the National Health Service Act. He hoped there would not be much delay in introducing this legislation.

Public and Private Prescribing

On Dec. 16 Sir WAVELL WAKEFIELD asked Mr. Bevan to indicate the administrative difficulties which prevented the disallowing of prescriptions prescribed at the public expense, but not conforming to required conditions, by doctors in the State service for private patients, while similar prescriptions by the same doctors for State patients could be disallowed.

Mr. BEVAN said a doctor in the Service who prescribed for patients treated under the Service substances which were afterwards found not to be drugs or not to be necessary for the proper treatment of the patient was subject to the disciplinary procedure provided in the regulations. The regulations did not, however, apply to private patients, for whom there was no prescribing at the public expense.

Replying later to Mr. ASTOR, Mr. BEVAN said he was unaware of any general abuse of medical prescriptions under the Health Service. There were a number of individual cases. Disciplinary procedure was provided to deal with them. He wanted it to be firmly and promptly used.

Cost of N.H.S.

Answering Colonel STODDART-SCOTT on Dec. 16, Mr. BEVAN recorded that the total amounts paid out of public funds since July 5 and up to Nov. 30, 1948, in respect of hospital services, general medical services, pharmaceutical services, general dental services, and ophthalmic services were as follows:

	£
Hospital services	58,000,000
General medical services	7,982,994
Pharmaceutical services	5,438,709
General dental services	5,541,658
Ophthalmic services	4,047,568

He added that the total liability incurred in that period could not be stated.

Statements of probable expenditure for the financial year 1948-9 had recently been received from all regional hospital boards and were being examined. None had yet been approved. All regional hospital boards had also submitted estimates for the financial year 1949-50. Gross expenditure as shown in these estimates as received was £157,680,000; of this, £10,236,000 represented capital expenditure. Income was given as £9,021,000.

Artificial Insemination

On Dec. 16 Mr. ERIC FLETCHER asked the Minister of Health what instructions he proposed to issue as to the entries to be made in registering births resulting from human artificial insemination A.I.(D.).

Mr. BEVAN said no fresh instructions were necessary. Registrars already had instructions to ask every birth informant for the name of the child's father. If the informant could not give this information the columns of the birth entry containing particulars of the father were to be left blank. So far as he knew, this procedure had no bearing on the legitimacy of the child.

Cardiff Doctors

Mr. BEVAN stated on Dec. 16 that fourteen doctors in Cardiff each had more than 4,000 registered patients. The highest number of people registered with one doctor in Cardiff was 7,190. This doctor practised in a partnership employing two assistants. Seventeen Cardiff doctors had applied for the basic salary of £300.

Mr. GEORGE THOMAS asked whether Mr. Bevan knew of the difficulty caused in Grangetown, Cardiff, by four doctors operating from one small surgery, having closed their other surgery when the National Health Service started, and whether, in view of the daily queue caused, he would ensure that another surgery was made available.

Mr. BEVAN replied that a doctor was required under the regulations to provide proper and sufficient surgery and waiting-room accommodation for his patients. This case had been considered by the Cardiff Executive Council, who had drawn the practitioners' attention to the need for full compliance with the terms of these regulations.

Dental Estimates

Sir HUGH LUCAS-TOOTH on Dec. 16 inquired what was the total value of estimates approved by the Dental Estimate Board in Eastbourne for each of the months July, August, September, October, and November.

Mr. BEVAN replied that the total values of the approved estimates included in schedules sent for payment to executive councils were:

	£	s.	d.
July	51,253	3	0
August	303,677	2	3
September	997,125	7	9
October	1,882,608	13	3
November	2,461,134	17	2
Total	5,695,799	3	5

He added that not all these schedules would have reached executive councils in time for payment to have been made to the dentists by Nov. 30.

PRESSURE DRESSING FOR A SCALD

AUGUST 22nd, 1947. Scalded at work. Next day attended hospital with a large blister of inner aspect R. ankle (Fig. 1)

Treatment. Scalded area dressed with Jelonet (tulle gras), Viscopaste bandage applied from toes to knee. Pressure pad of cotton-wool applied over scalded area. The whole leg firmly bandaged with Elastocrepe, with especially firm pressure over the scalded area (Fig. 2)

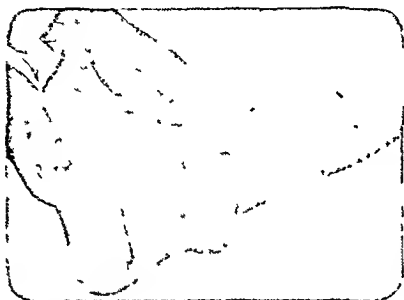


Fig. 2

7th October, 1947. When bandages were removed, wound soundly healed. (Fig. 3).

Comment. Firm pressure dressing afforded immediate comfort, permitting ambulatory treatment and continuation at work.

These details and illustrations are of an actual case. T. J. Smith & Nephew, Ltd., of Hull, manufacturers of Elastoplast, Elastocrepe, Jelonet and Viscopaste, publish this instance—typical of many—in which their products have been used with success.

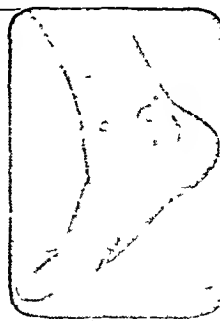


Fig. 1

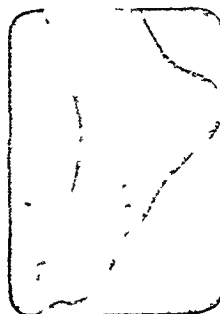
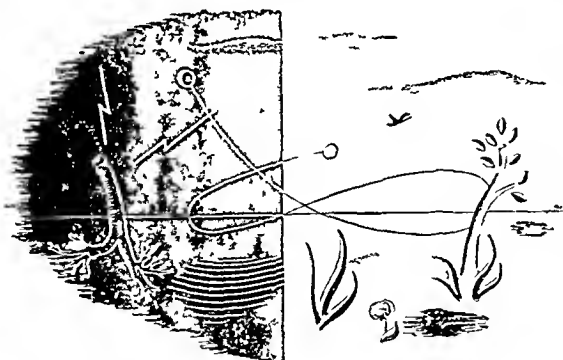


Fig. 3



relief...

CONSCIOUS or unconscious fear of an attack often shadows the mind of the asthmatic. the knowledge that he has 'Franol' to forestall or relieve such attacks can dispel this shadow and restore confidence.

'Franol' is a potent combination of ephedrine (to relieve bronchial spasm), theophylline (to dilate the bronchioles) and 'Luminal' (to mitigate apprehension).

At the first warning of an attack, two tablets of 'Franol' will often bring relief. Taken regularly, 'Franol' will bring an all round improvement in the general condition.

Medical literature supplied upon request.

Tablets in tube of 30, bottles of 100, 500, 1,000.

'FRANOL'

Trade

Mark

BAYER PRODUCTS LIMITED
AFRICA HOUSE, KINGSWAY W.C.2 (HOL 8730)

ANAHÆMIN B.D.H.

In Neurological Complications of Pernicious Anæmia

The hæmopoietic factor as presented in Anahæmin B.D.H. is essential for the prevention of subacute combined degeneration of the cord. Other substances, such as folic acid, will produce an adequate hæmatological response but allow neurological degeneration to appear and to progress unchecked. Potent liver preparations must be regarded as essential for the satisfactory treatment of pernicious anæmia.

Each batch of Anahæmin B.D.H. is clinically tested before issue.

THE BRITISH DRUG HOUSES LTD LONDON N1

Anah E 110

Are vitamins enough?

Obviously, no. The rationale of giving vitamin D, for example, alone, when calcium intake is limited, would be difficult indeed to justify. Similar considerations may apply to other factors, as for example iron and vitamin C.

All these, and other analogous considerations, have been borne in mind in the design of Complevite, which provides, in rational dosage, vitamins and minerals commonly needed as additions to the dietary intake.

Complevite is thus the prescription of choice, both from the point of view of convenience and of economy. *Prescription of Complevite is less expensive than prescription of the individual factors.*

COMPLEVITE

The Vitamin and Mineral Supplement

The recommended adult daily dose provides:—

vitamin A	2,000 I.U.	vitamin C	20 mg.	iodine	} not less than 10 p.p.m. each
vitamin D	300 I.U.	calc. phosph.	480 mg.	manganese	
vitamin B ₁	0.6 mg.	ferr. sulph. exsic.	204 mg.	copper	

A clinical sample gladly sent on request to Medical Dept. 49.A.



Vitamins Limited

Upper Mall, London, W.6

MAGNA EST VIS CONSUECUDINIS (CICERO)

The power of habit is great—and is undoubtedly the basis for satisfactory bowel movement in the normal individual. During illness and convalescence or due to the tempo of civilisation habit-time of bowel movement is often lost and constipation follows.

Once lost, this habit-time is not easy to regain, but 'PETROLAGAR' will do much to help in its recovery. 'PETROLAGAR' impregnates the faeces, softens hard, dry stools and achieves a comfortable bowel movement without griping.

PETROLAGAR

A 25% emulsion of white petroleum oil with flavouring



JOHN WYETH & BROTHER LIMITED
Clifton House, Euston Road, London, N.W.1

ALUDROX · BEPLEX · ENDRINE · PLASTULES

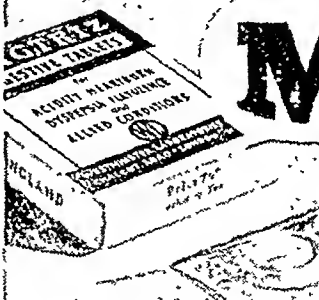
THE Modern

ANTACID ...

*Prompt relief—
Prolonged control*

Magtriz Tablets provide a most convenient and palatable method of administering this effective combination of magnesium trisilicate and magnesium hydroxide. Packed in cellulose envelopes in cartons of 12 and 36 tablets. Dispensing size bottles of 250 and 1,000 tablets.

Liberal trial supply of MAGTRIZ TABLETS and professional literature sent on request.



MAGTRIZ DIGESTIVE TABLETS

FORMULA

Magnesium Trisilicate.....	42.3%
Magnesium Hydroxide.....	9.5%
Sucrose	19.0%
Ol. Menth. Pip.....	0.23%
Excipient to.....	100

WESTMINSTER LABORATORIES LTD., CHALCOT RD., LONDON, N.W.1

No 50

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Dec 11

Figures of Principal Notifiable Diseases for the week, and the - for the corresponding week last year, for: (a) England and Wales (London included) (b) London (administrative county) (c) Scotland (d) Eire (e) Northern Ireland

Figures of Births and Deaths recorded in 1948 for infectious diseases are for: (a) The 126 great towns in England and Wales (including London) (b) London (administrative county) (c) The 16 principal towns in Scotland (d) The 13 principal towns in Eire (e) The 10 principal towns in Northern Ireland

A dash — denotes no cases a blank space denotes disease not notifiable or no return available

Disease	1948					1947 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebro-spinal fever Deaths	39	4	19	—	—	64	6	18	1	—
Diphtheria Deaths	144	12	48	7	9	233	19	67	14	10
Dysentery Deaths	69	13	44	—	—	106	7	28	1	—
Encephalitis lethargica Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas Deaths	—	—	30	21	7	—	29	14	2	—
Infective enteritis or diarrhoea under 2 years Deaths	29	—	—	36	1	62	7	19	3	2
Measles* Deaths†	10 094	176	147	51	61	3 379	156	110	192	20
Ophthalmia neonatorum Deaths	76	5	20	—	—	60	—	—	1	—
Paratyphoid fever Deaths	—	—	11 (B)	—	—	3	1	—	—	—
Pneumonia influenza Deaths (from influenza)‡	1 027	81	9	1	1	725	29	81	—	—
Pneumonia primary Deaths	24	—	—	—	—	23	2	—	2	—
Poliio-encephalitis acut Deaths	1	—	—	—	—	7	3	—	—	—
Poliomyelitis acut Deaths	36	—	—	2	—	77	4	11	—	5
Puerperal fever Deaths	—	—	—	—	—	—	2	10	—	—
Puerperal pyrexia Deaths	98	—	—	—	—	116	9	9	—	—
Relapsing fever Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever Deaths†	1 410	86	257	170	46	1 939	131	296	7	44
Smallpox Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever Deaths	4	1	2	—	—	10	—	4	4	—
Typhus fever Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* Deaths	2 522	187	159	74	9	1 737	92	38	29	5
Deaths (all years) Infant mortality rate (per 1 000 live births)	560	54	60	13	7	389	41	19	13	5
Deaths (excluding still births) Annual death rate (per 1 000 persons living)	5 497	944	659	154	107	5 493	817	804	200	159
Live births Annual rate per 1 000 persons living	7 212	1 220	867	303	227	8 044	1 367	945	419	252
Stillbirths Rate per 1 000 total births (including stillborn)	219	24	21	—	—	236	36	26	—	—

* Measles and whooping cough are not notifiable in Scotland and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county) will no longer be published.

‡ Includes primary form for England and Wales London (administrative county) and Northern Ireland.

§ The number of deaths from poliomyelitis and poli-encephalitis for England and Wales London (administrative county) are combined.

|| Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Influenza Epidemic in Italy

The current influenza epidemic in Italy, although widespread, is said to be a relatively mild form of the disease. According to the World Health Organization's Division of Epidemiology, by mid December the disease was continuing on an epidemic scale in Rome and was widespread both in the central and southern provinces of the mainland and also in Sardinia. More recent information indicates that the infection has since spread to the northern provinces.

It appears that the influenza has run a mild clinical course in all affected regions. It is characterized by high fever which persists for two or three days but then diminishes progressively to normal. Attacks usually last four to five days in all. Fatal lung complications have been observed only among the aged. In this connexion it is noted that the number of deaths from bronchopneumonia does not exceed the seasonal average. Laboratory studies at Sassari in Sardinia, have identified the strain as virus B.

Sickness and Diarrhoea at Chatham

An outbreak of vomiting affecting 58 children but no member of the staff occurred at a Chatham secondary school on Nov. 18, 1948. 20 of the affected children had diarrhoea and sickness. Most of the children were sick between 1.30 and 3.30 p.m., but 10 reported that sickness began at home after 4 p.m. All the affected children were able to go home at 4 p.m., and with one exception all returned to school the following day. About half the children had school milk (pasteurized) in the morning, and 53 of the 58 had the school dinner of cottage pie with greens, and macaroni pudding with jam sauce, served at 12.15 p.m. The 5 who did not have their dinner in school were in a classroom where about a dozen children were sick.

The central kitchen where the dinner was cooked is well equipped, and the hygiene of the premises, equipment, and staff is good. Two of the staff had colds. None had skin lesions. On the day in question 955 dinners were distributed in the cooking containers to six different schools. In the school where the trouble occurred 313 meals were consumed by pupils and staff. No other school was affected. The children do not sit in class groups for dinner. No particular class was attacked. It is not known if the affected children were served from the same containers or by the same person. The minced meat portion of the cottage pie had been precooled on the previous day and stored overnight in the refrigerator on large enamel trays. It was reheated with a covering of mashed potato in the oven the following morning. The remainder of the food was prepared and cooked just before being distributed.

Food containers and crockery were washed immediately after dinner, and no food was available for bacteriological examination. Swabs were taken from the throat, nose, and hands of the kitchen staff, and from 12 *Staphylococcus pyogenes* was recovered on culture, in two cases from all three sites. Two specimens of vomit were submitted for examination and *Staphylococcus pyogenes* isolated. None of the cultures isolated from the food handlers was identical with those obtained from the two vomits. The possibility of metallic poisoning from the food containers was excluded. A complete bacteriological investigation was not possible, and the limited inquiry does not support the preliminary assumption that the symptoms were due to the presence of a staphylococcal enterotoxin in a small proportion of the total food consumed.

Discussion of Table

In England and Wales an increase was recorded in the notifications of measles 1 532 and acute pneumonia 130 decreases were reported for scarlet fever 117, whooping cough 40, and acute poliomyelitis 16.

Large increases in the incidence of measles occurred in Lancashire 514, Yorkshire West Riding 352, Essex 99, Lincolnshire 95, and Middlesex 85. There was a decline of 48 in the notifications of scarlet fever in Yorkshire West Riding.

There were decreases in the incidence of whooping-cough in Yorkshire West Riding 44 and Durham 32, with a rise of 46 in London. A small rise occurred in the incidence of acute pneumonia in every region except in the south-eastern counties, where no change occurred.

An outbreak of dysentery affecting 8 persons was notified from Cheshire, Wirral R.D., the only other large return was Lancashire 12. Notifications of acute poliomyelitis were the lowest since the middle of July, the latest returns during the week were London 4, Yorkshire West Riding 4, Middlesex 3, and Nottinghamshire 3.

In Scotland increases were recorded in the number of notifications of acute primary pneumonia 60 and whooping-cough 27.

There was a decrease of 18 in the notifications of measles. Notifications of diphtheria fell from 21 to 10 in Glasgow, but this was compensated for by a rise of 12 in the remainder of the western area.

In *Eire* a fall was reported in the notifications of measles 39 and scarlet fever 24, while a rise of 16 was recorded for whooping-cough.

In *Northern Ireland* a decrease of 9 in the notifications of scarlet fever and an increase of 5 for diphtheria were the chief changes in the trends of infectious diseases.

Week Ending December 18

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,426, whooping-cough 2,471, diphtheria 124, measles 9,800, acute pneumonia 1,082, cerebrospinal fever 35, acute poliomyelitis 28, dysentery 54, paratyphoid 1, and typhoid 7.

Medical News

Chadwick Medals

The Chadwick Trust recently awarded Chadwick Medals to the nominees of nine provincial universities where sanitary science is taught, or where the Diploma of Public Health is given. The inscription on each medal was as follows: "Chadwick Medal for excellence in the study of Hygiene and of the Sanitary Idea." The names of the nine recipients are as follows, with the universities indicated in parentheses: C. R. Lowe, M.B., Ch.B., D.P.H. (Birmingham); William Nicol, M.B., Ch.B., D.P.H. (Bristol); G. W. Knight, M.B., Ch.B., D.P.H. (Leeds); H. O. M. Bryant, M.B., Ch.B. (Liverpool); D. G. Crawshaw, M.B., Ch.B., D.P.H. (Manchester); William Watt, M.B., Ch.B., D.P.H. (Aberdeen); Gerald O. Mayne, M.B., Ch.B., D.P.H. (Edinburgh); Angus N. MacPhail, M.B., Ch.B., D.P.H. (Glasgow); Sheena M. Allardice, M.B., Ch.B., D.P.H. (St. Andrews).

London School of Hygiene and Tropical Medicine

The Langley Memorial Prize, which is open to competition among officers, past and present, of the Colonial Medical Service who are serving, or who have served, in West Africa, has been awarded to Dr. D. G. Fitzgerald Moore for his paper entitled "Nutritional Eye Disease and Effects of Nutritional Retrobulbar Neuritis."

University Grants Committee

The following medical men are among the members of the University Grants Committee, which has been reconstituted: Professor E. D. Adrian, O.M., F.R.S., Professor G. W. Pickering, and Professor J. C. Spence.

Dr. S. L. Simpson

Dr. S. Leonard Simpson has been elected an Honorary Corresponding Member of the French Society of Endocrinology.

"Agene" Process Prohibited in U.S.A.

The use of nitrogen trichloride to improve and bleach flour (the "agene" process) is to cease in the U.S.A. from Aug. 1 as the result of an inquiry set up under the Food and Drug Administration. Sir Edward Mellanby, F.R.S., first showed that agenzified flour causes hysteria in dogs; his paper appeared in 1946 in this *Journal* (Dec. 14, p. 885). Chlorine dioxide is to be allowed instead of nitrogen trichloride.

Wills

Colonel Sir Harry Edwin Bruce Bruce-Porter, K.B.E., C.M.G., left £42,618. Mr. Cyril Alban Raison, of Birmingham, left £29,557 and bequeathed £2,000 to the Faculty of Medicine of the University of Birmingham to endow "The Cyril Raison Prize" in surgical diseases in children. Dr. Thomas Gwynne Maitland, late medical superintendent, Cunard White Star Line, left £3,611.

COMING EVENTS

Legislation and the Family

A conference on "The New Social Legislation and the Family" will be held at the Conway Hall, Red Lion Square, London, W.C.1, on Jan. 20 and 21, 1949, by the British Social Hygiene Council and the Town and Country Planning Association. It is intended mainly for representatives of local authorities, but social workers and others may be interested. Information may be obtained from the British Social Hygiene Council, Tavistock House North, Tavistock Square, London, W.C.1.

Society of Anaesthetists of South Wales

A Society of Anaesthetists of South Wales is in the process of formation and a meeting with this end in view will be held at Cardiff Royal Infirmary on Wednesday, Jan. 12, 1949, at 8 p.m. All those whose main interest is in anaesthesia are invited to attend the meeting.

Lecture-demonstrations

A series of lecture-demonstrations on psychiatry and neurology will be held in the large lecture theatre of St. George's Hospital Medical School, Hyde Park Corner, London, S.W., on Thursdays at 4.30 p.m., from Jan. 6 to March 17. They are open, without fee, to all postgraduates and senior medical students.

SOCIETIES AND LECTURES

Tuesday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Jan. 4, 5 p.m. "*Zoonoses (Parasitic Infections)*," by Dr. M. Sydney Thomson.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Jan. 4, 11 a.m. "*Some Aspects of Leucorrhoea*," by Dr. W. N. Mascall.

Wednesday

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Jan. 5, 11 a.m. "*Gonorrhoea in the Female*," by Dr. W. N. Mascall.

LONDON COUNTY MEDICAL SOCIETY.—At Furnivall House, Chalmersley Road, London, N., Jan. 5, 4.30 p.m. Annual general meeting. Address by the retiring president, Mr. J. R. M. Whigham.

SOCIETY OF CHEMICAL INDUSTRY: NUTRITION PANEL OF THE FOOD GROUP.—At Gas Industry House, 1, Grosvenor Place, London, S.W., Jan. 5, 6.30 p.m. "*The Sausage as Food*," discussion to be opened by Mr. H. P. Blunt, Mr. Osman Jones, Mr. M. G. Read, and Dr. Magnus Pyke, Ph.D.

Thursday

FACULTY OF HOMOEOPATHY.—At Royal London Homoeopathic Hospital, Great Ormond Street, London, W.C., Jan. 6, 5 p.m. "*Head Hunters in Great Ormond Street*," by Drs. W. Lees Templeton and Charles O. Kennedy.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Jan. 6, 5 p.m. "*Cutaneous Tuberculosis*," by Dr. G. B. Dowling.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Jan. 6, 11 a.m. "*Local Complications of Gonorrhoea in the Female*," by Dr. W. N. Mascall.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—At Large Lecture Theatre, Jan. 6, 4.30 p.m. Lecture-demonstration: Psychiatry.

Friday

MAIDA VALE HOSPITAL MEDICAL SCHOOL, Maida Vale, London, W.—Jan. 7, 5 p.m. Case demonstration by Dr. D. McAlpine.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Apley.—On Dec. 16, 1948, at Woking Maternity Home, to Janie, wife of A. G. Apley, F.R.C.S., West Lodge, West Byfleet, a son.

Barry.—On Dec. 15, 1948, at March, Wiltshire, to Monica (née Craig), wife of C. T. Barry, M.D., D.A., a third son.

Ffrench.—On Nov. 28, 1948, to Marjory and Geoffrey Ffrench, of Pleasant Street, Woodside, Halifax County, Nova Scotia, a daughter.

Parker.—On Dec. 15, 1948, to Kathleen (née Hewlett Johnson), wife of Geoffrey Parker, D.S.O., F.R.C.S., a son—Nicholas James.

Watson.—On Dec. 13, 1948, at the County Hospital, Bangor, to Megan (née Wynne Jones), wife of Claud C. M. Watson, M.B., Ch.B. Ed., a son—David.

DEATHS

Bennett.—On Dec. 21, 1948, at Mildenhall, William Fay Bennett, M.R.C.S., of Barrow, Suffolk.

Bennett-Jones.—On Dec. 14, 1948, at 5, Gambier Terrace, Liverpool, William James Bennett-Jones, M.D., M.R.C.S., F.F.A., aged 75.

Bhat.—Recently, at Karkala, India, Kasargod Somanath Bhat, M.R.C.S., L.R.C.P., aged 63.

Bunting.—On Dec. 15, 1948, William Hartley Bunting, M.D., F.R.C.S. Ed., of Middleton Cottage, Salwarpe, Droitwich, aged 80.

Colledge.—On Dec. 19, 1948, at 2, Upper Wimpole Street, London, W., Lionel Colledge, F.R.C.S.

Jameson.—On Dec. 16, 1948, at Thorne Bank, Great Eccleston, Lanes, Alexander Brown Jameson, M.B., Ch.B. Ed.

Logic.—On Dec. 20, 1948, at 15, Craigholm Crescent, Burntisland, Fife, John Moffat Logic, M.B., Ch.B. Ed.

Morrison.—On Dec. 17, 1948, at 19, Cromer Road, North Walsham, Norfolk, Henry Morrison, M.D., aged 54.

Sutton.—On Dec. 20, 1948, at Guildford, David Carlyle Sutton, M.D. Ed.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions which should be typed. We publish here a selection of those questions and answers which seem to be of general interest

Leucorrhoea

Q.—What is the modern treatment of leucorrhoea, excluding cases due to organic disease and to bacterial infections?

A.—The question rather implies that the term "leucorrhoea" should be reserved for a discharge which is normal in composition but increased in amount. This view coincides with that of the writer, but is not shared by all. If this definition be accepted, then before treatment is instituted it is important to try to assess the amount of discharge. Many women, through ignorance or over-anxiety, may regard the normal as pathological. The activity of the glands lining the genital tract (those in the cervix being the most important) probably varies in different individuals, and sometimes even a rather free secretion is not really abnormal. The vaginal discharge is also physiologically increased premenstrually, during pregnancy, and sometimes about the time of puberty. Ovarian function can also influence the discharge, as is evidenced by the free mucoid secretion from the cervix about the time of ovulation. No treatment other than reassurance and education is necessary in any of the above circumstances.

Increased vascularity or congestion of the pelvic organs acting either directly on the glands or indirectly by way of an ovarian disturbance, appears to be an important factor in leucorrhoea. By this mechanism many causes—working in hot atmospheres, standing for long hours, sedentary occupation, masturbation, unsatisfied sex urge, chronic constipation, etc.—may operate. Any form of chronic ill-health, and anxiety alone, can also cause leucorrhoea. Treatment depends on the cause, but if this is not obvious the measures adopted should be of a general rather than of a local character—regular physical exercise, daily cold baths, saline aperients, reassurance, etc. Astringent douches are rarely used nowadays. Finally, it should be kept in mind that the excessive discharge may be due to an increased amount of glandular tissue in the cervix—an adenomatous state. In this condition erosion of the cervix (a lesion which is not necessarily a response to infection) is often present, and is best treated by cautery or surgical diathermy.

Penicillin and Vaccinia Virus

Q.—(a) Has the use of penicillin in reducing the bacterial contamination of vaccine lymph (calf lymph) been investigated? If so, please give references. (b) May I have the names of institutions, if any, which are preparing anti-smallpox vaccine by the egg-culture technique for mass use?

A.—(a) A number of investigations have been carried out on the effects of penicillin in reducing bacterial contamination of vaccine lymph (see Morin, J., and Turcotte, H., *Canad. J. Res. Sect. E*, 1946, 24, 149). Similar studies have been made in France (Sevin, A., Bossut, J., D'Halluin, G., and Chenet, C., *Ann. Inst. Pasteur, Lille*, 1948, 1, 209). In Russia the use of Soviet gramicidin has been recommended (Marchenko, G. F., and Raphan, E. Z., *J. Microbiol.*, Moscow, 1946, No. 3, p. 16), and in South America tyrothricin has been employed (Miranda, C., *Hospital, Rio de J.*, 1946, 30, 803). There are certain points to be remembered. Whereas pure penicillin has no action on vaccinia virus, impure penicillin may destroy it (Gohar, M. A., and Bashatli, A., *J. trop. Med. Hyg.*, 1946, 49, 115). Penicillin does not necessarily destroy all contaminants. *Pseudomonas aeruginosa* (Ps. pyocyanea) may be quite resistant. D. H. Ducor (*Publ. Hlth Rep. Wash.*, 1947, 62, 565) used a quaternary ammonium compound derived from coconut oil and said to be a mixture of high molecular weight alkyl-dimethyl-benzyl ammonium chlorides: the preparation is known commercially as "roccal".

(b) Investigations are being carried out in Great Britain on vaccinia grown in eggs at the Lister Institute, Elstree, Herts, and at various research centres in America. Egg-culture vaccine is still in the experimental stage and none is yet being issued for mass use.

Cholesteatoma

Q.—What are the pathology and treatment of a cholesteatoma?

A.—A cholesteatoma is a rare tumour occasionally found arising from the meninges, commonly at the base of the brain. It is usually well encapsulated and composed of cells of epithelial type containing crystals of cholesterol and arranged in whorls. It is probably of epidermoid origin and of a teratomatous nature. It is innocent. The treatment is surgical.

Trichorrhexis Nodosa

Q.—What is the cause of splitting of the ends of scalp hair? A female aged 19, otherwise healthy, has suffered from this complaint for four years. Is there a remedy?

A.—The splitting of the ends of scalp hair (trichorrhexis nodosa) is not a disease but a common condition. It is due to excessive dryness of the hair, such as is caused by too frequent washing, especially with alkalis, some powder shampoos, and spirit lotions without oil or glycerin to counteract their drying effect. Trauma by too hard brushing and rubbing, and from certain types of brushes and sharp-pointed combs, is also a common cause of the breaking of the hair shafts.

Bromidrosis

Q.—Can you suggest a successful treatment for severe bromidrosis other than a daily bath and change of underwear? What is the cause of this condition?

A.—The cause is probably endocrine, but gastro-intestinal function may need consideration. The age, sex, and health of the patient have a bearing on the question of treatment. Small doses of stilboestrol are sometimes helpful. Bicarbonate of soda is a good deodorant used in a bath or as a powder, or, if the condition is localized, as a 25% paste. Sodium hexametaphosphate is similarly of value in local treatment used in the same manner. (See also "Any Questions?" Feb 15, 1947, p. 281, and March 15, 1947, p. 366).

Trigeminal Neuralgia

Q.—What is the best medical treatment for trigeminal neuralgia? The preliminary communication on "cuprelone" seems promising. Is this drug obtainable? If so, are any special precautions necessary in its use?

A.—Treating cases of trigeminal neuralgia with large doses of vitamin B₁ (aneurin or thiamin), Borsook (*J. Amer. med. Ass.*, 1940, 114, 1421) described marked improvement in 37 out of 58 patients and some improvement in 55 out of 58. He gave 10 mg daily by intravenous injection, together with a diet rich in vitamin B₁. It is probably sufficient to give vitamin B₁ by mouth, but in large doses such as 25 mg four times a day. If drugs are to be used, "cuprelone" can be tried. The author of the *Lancet* article (Oct. 23, 1948) says that the toxic effects it produces are negligible, but it is probably too early to say how severe they may be in certain sensitive cases. Since it is a derivative of allylthiourea, it may inhibit the thyroid in some patients. Other drugs which have a good effect are "trilene" (trichlorethylene) and tinctura gelsemii (10 to 15 minims: 0.6 to 0.9 ml thrice daily).

Bleeding Gums

Q.—What is the treatment of bleeding gums? I have in mind a woman aged 25, 3-para, with no infection whatsoever in the mouth and whose general health is excellent. A thorough trial of vitamin C, toothpicks, and painting with chromic acid and hydrogen peroxide has led to no improvement, and the patient is afraid of developing pyorrhoea.

A.—Bleeding gums may be due to numerous causes, both general and local. Clearly, before suggesting any form of treatment it is of the utmost importance to ascertain the cause of the bleeding: thus, vitamin deficiencies (such as scurvy), blood disorders (such as leukaemias), etc., are often associated with spongy bleeding gums. Investigation of the patient's blood is therefore of importance where no local cause is obvious. The most common cause of bleeding from the gums is a gingivitis, which may be mild or severe in extent. This is particularly the case with the rather oedematous type, where the interdental

bleeding. Occasionally it is found that in comparatively normal patients with healthy gums bleeding is caused by the excessive and over-zealous use of hard toothbrushes.

Liver Injections in Arthritis

Q.—(a) *Is there any evidence to support the giving of liver injections in the anaemia associated with rheumatic and other arthritic conditions? I should be glad to know if there has been any work on this subject recently.* (b) *What is the percentage of cases of fibrositis which have a "gouty" pathology, and what is the likelihood of these cases being relieved by either cinchophen or colchicum?*

A.—(a) There is no conclusive evidence to indicate that liver injections would influence the anaemia associated with arthritis, but a liver extract would supply vitamin B as well as other substances, and, as so little is known of the pathology of rheumatoid disease, it might be justifiable to try it and watch the effect. In such cases the writer has used a special form orally with good effect on the general condition, but is not aware of any recent work on this aspect.

(b) It is impossible to give a percentage of cases of fibrositis which have a gouty pathology. The only plan would be to test for the blood uric acid content; if this is above normal it might be regarded as evidence of a possible gouty cause in the absence of trauma or any abnormality revealed by a thorough x-ray examination. Unless the blood uric acid content is increased there is no indication for either colchicum or cinchophen, and much to be said against using either, though the latter might have a temporary analgesic effect; aspirin would be far preferable and, as the salicylates tend to lower the blood uric acid content, more effective.

Rh Factor and Pregnancy

Q.—*In view of the baffling complexity of recently published work on the Rh factor, I should like to know what action should be taken on receipt of a report of "Rh-negative, anti-Rh agglutinins present" on the blood of a woman five or six months pregnant. Is there any danger to the foetus from this in a first pregnancy?*

A.—On receipt of a report that a pregnant woman is Rh-negative and has Rh antibodies in her blood it is advisable to arrange for the confinement to take place in hospital, and to make preparations to transfuse the infant with Rh-negative blood without delay if its cells are found to be sensitized to Coombs's test. Antibodies are unlikely to be present at five or six months in a first pregnancy, and there is little or no danger to the first foetus from this cause, unless in twin pregnancy. In subsequent pregnancies, if a woman is found to be Rh-negative but without evidence of antibodies, it is advisable to be prepared to treat the child if found to be affected, but treatment should not be given without proof of haemolytic disease, because many Rh-negative women fail to become sensitized even after several pregnancies (see *B.M.J.*, 1946, 2, 641, for details). There is no justification for the interruption of pregnancy unless on grounds that the mother's health is adversely affected—for example, by toxæmia.

Ultra-violet Light and Pulmonary Tuberculosis

Q.—*Is it not possible that the well-known effect of ultra-violet light in stimulating the activity of pulmonary tuberculosis could be made use of by giving ultra-violet light treatment at the same time as bacteriostatic drugs—p-aminosalicylic acid and streptomycin—on the assumption that the increased activity of the organism would increase its metabolic requirements, and that thereby the intake of these drugs by the micro-organism would be greater?*

A.—No. Ultra-violet light can have no possible direct action on tubercle bacilli in the lung. The effect of ultra-violet light or excessive exposure to sunlight on pulmonary tuberculosis is believed to be to cause reflex pulmonary congestion, with a consequently increased liability to haemoptysis; the flooding of part of the bronchial tree with blood containing tubercle bacilli is then liable to bring about extension of the disease.

NOTES AND COMMENTS

Leukoplakia and Kraurosis Vulvae.—Dr. ELIZABETH HUNT (London, W.) writes: In "Any Questions?" (Dec. 4, p. 1005) the writer states that kraurosis vulvae "might be considered, as an exaggeration of normal senile atrophy, and for all practical purposes it occurs only after suppression of ovarian activity." How can these assumptions be reconciled with the fact that the women described by Breisky (the author of this term), who were suffering from this condition, were all within the reproductive period of life and all apparently with full ovarian activity? I have myself seen many cases of stenosis of the ostium vaginae (i.e., kraurosis vulvae) in younger women whose ovarian functions seemed to be normal. Some of these cases had been diagnosed as "senile atrophy." It would be of interest to know what exactly is meant by "normal senile atrophy." Does this occur at one site only on the skin—namely, the vulva? With reference to leukoplakia vulvae it is my experience that this term is used very loosely for a variety of widely differing skin affections which may present a whitish appearance. These conditions are often prolonged in duration despite medication; none is precancerous. Cancer, when it does occur in association, is found on the internal surfaces of the vulva only. Can excision of skin around the vulva be therefore justified, as the writer suggests?

Corrections

In the review of *Textbook of the Rheumatic Diseases*, edited by W. S. C. Copeman (Dec. 25, 1948, p. 1108), there is an inaccuracy in the second paragraph. This arose through a misreading of the chapter on clinical pathology contributed by Dr. M. J. Gibson. A correction, which unfortunately arrived too late for inclusion in last week's issue, makes this part of Dr. Kenneth Stone's review read as follows: "Dr. M. J. Gibson contributes a chapter on clinical pathology. His discussion of the blood uric acid is not very clear. He states that plasma uric acid is higher than whole-blood uric acid by 1.0 to 2.0 mg., the normal being up to 6 mg. per 100 ml.; a plasma estimation is more reliable, he says, because of variations in the red cell volume. But there is no accurate method of measuring the uric acid in a protein-free filtrate of the plasma, and 4 mg. per 100 ml. has long been accepted as the upper limit of the normal range. Comparatively recent work suggests 6 mg. as a more accurate dividing line between the non-gouty and the gouty; but further confirmation of this is desirable."

Dr. G. MACD. CAMPBELL (Tylorstown, Glam) has pointed out a mistake in our report (Dec. 11, 1948, p. 1031) of the speech by Mr. John Edwards at the opening of the Public Health and Municipal Engineering Congress. According to the official report of the speech issued by the Ministry of Health Mr. Edwards said that under the National Health Service prescriptions were being dispensed at the rate of 140,000 a year. The figure should have been 140,000,000 prescriptions a year.

Dr. DOROTHY M. JAMES, Medical Officer of Health (Standish-with-Langtree Urban District Council) writes: In the "Epidemiological Notes" (Dec. 18, 1948, p. 1087) I notice that in the discussion of the table for the week ending Nov. 27, 1948, you refer to a local outbreak—7 cases of diphtheria—in the urban district of Standish-with-Langtree. This is incorrect. There were no cases of diphtheria in this district during that period, but 7 cases of measles were returned. I have taken the matter up with the Registrar-General.

In a reference to the Todd insecticide fog-applicator ("Any Questions?" Dec. 11, 1948, p. 1048) it was stated that the T.I.F.A., "so far as we are aware, is not manufactured here." We are informed by the Lister-Todd Engineering Corporation, Ltd., of Imperial House, 15/19, Kingsway, London, W.C.2, that the machine is being produced in this country.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atilology*, *Westcent* London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads*, *Westcent*, London.

MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra*, *Westcent*, London.

B.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JANUARY 1 1949

THE SECRETARY REPORTS

WHAT NEXT?

Terms and conditions of service, including remuneration, have dominated the medico-political picture in recent months. It seems a long time since the issues of the day were the Minister's power to introduce a whole-time salaried service, the universal basic salary, direction, the ownership of goodwill, the experimental health centre, appeals to the Courts, and freedom to publish. It seems an age since Mr. Ernest Brown put forward proposals for a whole-time salaried service, since the right of the Central Health Services Council to publish its Report was a major issue, and since the publication of the profession's principles in December, 1945.

General Practice

Of the serious current problems the loss of income, often amounting to hardship, of particular groups and particular individual practitioners is perhaps the first. Representatives of the General Medical Services Committee headed by its new Chairman, Dr. Wand, made representations to the Ministry on this subject, with particular reference to rural practitioners. Three rural practitioners—one from Cumberland, one from Somerset, and one from Norfolk—gave a first-hand account of the conditions of rural practice to-day. The request for an immediate and a substantial increase in the Mileage Fund to deal with the general rural problem was sympathetically received by the Ministry. We shall know the outcome early in the New Year.

The second main problem is the general one of the application of Spens to both urban and rural practitioners. The first investigation, undertaken in Lancashire, is complete. Investigations are being made with all possible speed into a number of sample areas—Bath, Halifax, Norfolk, Nottinghamshire, and Nottingham—following the lines shown in this column last week. The object of the inquiry is to find out what in fact are the ranges of income received by general practitioners and how they compare with the Spens recommendations. This investigation is an indispensable preliminary to any application for an overhaul of remuneration. It is hoped that it will be complete in all the sample areas in four or five weeks' time.

The third problem, closely associated with the second, is that of the increase of work, particularly work of a non-medical character. In one respect the solution here must await the Report of the Government Certificates Committee, on which the profession is powerfully represented; the Association has given its evidence to this Committee. In another respect it is closely associated with the Spens Inquiry and bears on the question of the number of approved maximum on lists. For this reason the two issues of remuneration and burden of work will be raised with the Ministry together as different aspects of the same problem as soon as the special investigations are complete.

At the same time representations are being made to the Ministry on a host of other points. It has been asked for and has promised a speedy settling up of moneys due to insurance practitioners as payment for the first four days of July and a final settling up of N.H.I. payments. A speeding-up of the discussions of payment for immunization and vaccination has been pressed so as to enable practitioners to be paid for this work retrospectively to July 5. We are promised that the model distribution scheme will soon go out to enable payment to be made for work done for temporary residents since

the appointed day. We have pressed and hope to get mileage payments in connexion with the maternity scheme. A brief statement of a number of other points raised in an interview with the Ministry a fortnight ago will be found on another page of the *Supplement*. In short, a steady but heavy pressure is being applied to the Ministry on a wide front. We are determined to secure really satisfactory terms and conditions of service.

Consultants and Specialists

In this field the Consultants and Specialists Committee established by the Association is now participating with the Royal Colleges and the Royal Scottish Corporations in a Joint Committee which will negotiate on matters arising out of the Acts and the Specialist Spens Report. Sir Lionel Whitby, Regius Professor of Physic of the University of Cambridge, President of the Association, has accepted an invitation to become the Chairman of the Committee. It met on Dec. 17 and will meet again on the morning of Jan. 7, meeting representatives of the Ministry on the afternoon of that day. At last the work of negotiating the national scale of remuneration for consultants and specialists has got under way. It is no breach of confidence to say that the first issue to be tackled is that of the security of tenure of consultants and specialists in the new service.

Public Health Service

A vigorous attempt is being made to get these negotiations under way. It was thought wise to await the publication of the Specialist Spens Report in order that both Spens Reports might form the basis for negotiation of public health remuneration. Following the publication of this report we sought to clear away the remaining difficulties about Whitley machinery. This was done. Then we were confronted by delay arising from the difficulties in the minds of the Associations of Local Authorities. The Public Health Committee of the Association at its last meeting decided that this delay could not be allowed to continue, and, in consequence of a recommendation they are putting to the Council in January, I have written to the Ministry of Health in the following terms:

"At a meeting of the Public Health Committee of the Association held on Dec. 17 I reported on the present position with regard to the setting up of the Whitley machinery. The Committee expressed great dissatisfaction and disappointment at the continued delay in opening negotiations and resolved that the following recommendations be submitted to Council at the meeting on Jan. 12, 1949:

"(a) That the Ministry be informed of the serious unrest and dissatisfaction among members of the public health service occasioned by the continued delay in the opening of negotiations on new scales and conditions of service.

"(b) That the Ministry be informed that if negotiations through the approved Whitley machinery have not begun by Feb. 28, 1949, advertisements from local authorities will not be accepted by the *British Medical Journal* unless the salaries offered are in conformity with the Association's own proposals for new scales.

"(c) That negotiations be conducted on a national basis covering England, Wales, and Scotland.

"The profession's representatives have been nominated and are ready to start discussions at once."

Other Groups of the Profession

A case is being prepared for the revision of remuneration in the Colonial Medical Service on the basis of the Spens

Reports. When the negotiations for consultants and specialists are complete the work will be begun of seeking the appropriate application of the Spens Reports to other groups of the profession, including the armed Forces, non-professorial teachers, research workers, industrial medical officers, and Civil Service medical officers. The Spens Reports will no doubt have wide repercussions, but that fact need not prevent us from securing their appropriate application to the two groups of the profession to which they apply directly and to all other groups of the profession to which by implication they relate.

Constitution and Organization of the Association

Discussions under this heading are almost complete. The Committee which has been studying the constitution of the Association in relation to trade union status is now preparing its report. The Organization Committee has been re-examining other aspects of the Association's organization, including the

structure and functions of the Representative Body and the Council. At its last meeting it had the advantage of a vigorous personal contribution from three representatives of the Winchester Division—the authors of the Winchester Memorandum. The fruits of these inquiries should come before the Association in the early part of 1949.

A New Venture

From now on, members of the Association will be able to enjoy without charge the services of the Medical Practices Advisory Bureau which is now being established to advise on problems associated with entering practice and to introduce locums, assistants, and principals. In short, the services once provided by the British Medical Bureau are now available as a free service to members of the Association. It is hoped in time to amplify the service by providing information on appointments and opportunities in other branches of medicine.

National Health Service

AWARDS TO SPECIALISTS COMMITTEE APPOINTED

The Minister of Health and the Secretary of State for Scotland have appointed a committee of 14 members in accordance with the Spens recommendations to advise which specialists engaged in the National Health Service should receive awards for professional distinction, "having regard to the desirability that % of the number eligible should receive the highest award, % the second award, and 20% the third award." The following are appointed: Lord Moran (chairman), Sir Horace Hamilton (vice-chairman), Mr. V. Zachary Cope, Professor Geoffrey B. Fleming, Sir Gordon Gordon-Taylor, Mr. J. M. Graham, Sir David K. Henderson, Sir Edward Mellanby, Mr. J. F. Mountford, Professor Sir Harry Platt, Professor A. L. Robinson, Mr. J. H. Sheldon, Sir Lionel Whitby, Mr. J. M. Wyatt. Mr. T. B. Williamson, of the Ministry of Health, is secretary.

Eleven members have been nominated by the Royal Colleges and Scottish Royal Corporations, one by the Medical Research Council, and one by the universities' committee of vice-chancellors and principals.

MEETING WITH MINISTRY CONDITIONS OF SERVICE DISCUSSED

Representatives of the General Medical Services Committee have had discussions with officers of the Ministry on the following matters in connexion with the National Health Service.

Maternity Medical Services

Administration of Anaesthetics.—It has been suggested that the fee for the services of a second practitioner administering an anaesthetic in maternity cases, together with mileage where claimed, should be paid direct to that practitioner, and with a view to giving effect to this arrangement the name and address of the practitioner concerned, with details as to mileage travelled, should be included in Forms E.C.24 and 24A.

The Ministry has agreed to explore the possibility of putting this recommendation into effect.

Mileage.—It has been recommended that the obstetric fee should be subject to some extra allowance in rural areas in view of the distances to be travelled.

A fee of 1s. a mile each way beyond the two-mile radius has been suggested.

The Ministry is examining the problem.

Certificates to Pregnant Women.—It has been urged that in the case of pregnant women at or about the 36th week the practitioner should be required to give only one certificate to cover the interval to the actual confinement. Such a procedure would be a convenience both to the expectant mother and to the practitioner.

The Ministry of National Insurance has agreed in principle to this suggestion and an agreed announcement will be made in the *Journal* as soon as possible.

Forms E.C.24 and 24A.—Cases have arisen where for reasons beyond the practitioner's control—e.g., patient's change of residence, holidays, etc.—the practitioner has been unable to undertake the necessary antenatal examination "at or about the 36th week," with the result that there is doubt whether the fee is payable. It is understood that in such cases the Department has agreed that the payment of the fee should not be dependent upon carrying out the examination in the period defined.

The Ministry has agreed to make the position clear to local executive councils.

Details of Maternity Fees.—It is the Ministry's view that clerks of executive councils should furnish practitioners with an itemized statement when payment is made in respect of maternity cases.

It is thought that this will be useful to practitioners in scrutinizing payments due to them.

Forms of Application for Maternity Benefit.—A number of practitioners have asked that a supply of forms of application for medical benefit should be made available to them.

The Ministry of National Insurance has already issued instructions to this effect.

Miscarriages

Inquiry was recently made of the Department for a statement on the position of a doctor called to a miscarriage, no previous arrangements for maternity medical services having been made between the patient and the doctor.

The Department replied:

"In such cases we think the doctor, if the patient is his own patient, would give the necessary treatment (without payment) as part of his ordinary obligations as a general practitioner. If the patient was on another doctor's list, he would have no responsibility (unless he were called in when the patient's doctor and his deputy were not available, in which case the emergency arrangements would apply)."

The Association cannot accept the Department's view that treatment for a miscarriage should be regarded as part of the ordinary obligations of a general practitioner under his terms of service, and the Ministry has been so informed.

The Ministry's reply on this point is awaited.

Dental Haemorrhages

It has been recommended that medical practitioners called out to cases of dental haemorrhage following dental extractions should be remunerated for this service. It has further been represented that any payments made should not come out of the Central Practitioners Pool.

Telephone Charges

Practitioners, especially those in rural areas, complain of the heavy cost of telephone charges where action is necessary to obtain an ambulance or to secure the patient's admission to hospital. In the Association's view it is unreasonable that the cost of this service, which is provided by the practitioner for the benefit of his patient, should be borne by the practitioner. It has been suggested that, in respect of other than local telephone calls, practitioners should be able to reverse telephone charges where a call is made to a hospital, on behalf of one of his patients, for the purpose of admitting a patient to hospital, for ambulance facilities, etc.

The Ministry has agreed to explore the possibility of giving effect to this recommendation. In the meantime the Secretary will be glad to have information from practitioners of undue expenditure under this heading.

Postage on Official Communications

The Ministry has again declined to support the Association's contention that the proper method of reimbursing doctors for postage of documents to the executive councils is by the issue of officially franked and addressed envelopes.

Missing Information on Form E.C.1

Numerous complaints have been received from practitioners who have been asked by local executive councils to obtain information omitted by patients when completing Form E.C.1.

The Ministry agrees that this information should be sought from the individual and not from the practitioner.

CLAIMS FOR COMPENSATION

The closing date for the submission of claims for compensation was Oct. 31. The Minister is empowered to grant extension only where he is satisfied with the reasons for delay. Any doctor who has not sent his claim to the Ministry of Health should do so at once, and his return should be accompanied by a statement of the circumstances which made it impracticable to submit the claim by the due date.

REMUNERATION IN ARMED FORCES AND C.M.S.

The subcommittees which have been conducting detailed examinations of the remuneration of medical officers in the armed Forces and in the Colonial Medical Service in relation to the two Spens Reports have now completed their labours. They will report to their parent committees in the New Year.

AMALGAMATION OF THE MALAYAN MEDICAL SERVICE

Four Asian members of the Malayan Branch recently visited Headquarters and gave the views of Asian doctors upon the Malayan Government's proposals for the unification of the Malayan Medical Service.

N.H.I. FINAL SETTLEMENT PAYMENTS DELAYED

Many general practitioners who had panel patients before the National Health Service started are anxious about the Final Settlement under the N.H.I. scheme due to them for the first two quarters of 1948. It has not yet been paid. The provisional payments for the first two quarters were based on the average number of insured persons in the various areas during the preceding year. During those quarters some patients went on or came off panel lists, and the Government Actuary's Department determines mean figures to take account of these people. The delay in calculating the figures is in that Department. When the figures are available—and they should be very shortly—they will be submitted to the Distribution Committee, on which the B.M.A. has representatives. It is expected that the money will be paid out at the end of January.

Questions Answered

Income Tax and Practice Expenses

Q.—Have the income tax authorities agreed with the figure of 35% deduction from the capitation fees, and 50% from mileage fees, as practice expenses which have been made when calculating superannuation contributions?

A.—The figures of 35% for practice expenses and 50% in the case of mileage payments have been adopted solely for the purposes of the National Health Service superannuation scheme. They have not been agreed with the income tax authorities. In any case the individual practitioner's assessment for income tax is a matter for arrangement between himself and the local income tax authorities.

Compensation on Retirement

Q.—If a general practitioner wishes to give up general practice and take up another branch—e.g., industrial medicine—before the retiring age of 60 or 65, can he do so and draw his compensation money for investment according to his own risk?

A.—Under Regulation 13 of the National Health Service (Medical Practices Compensation) Regulations, 1948, the compensation payable to a practitioner will be paid on his retirement from practice or death, whichever occurs first. For the purpose of this regulation retirement from practice means retirement from practice as a medical practitioner providing general medical services under Part IV of the Act or under Part IV of the National Health Service (Scotland) Act, 1947. A practitioner receiving compensation on retirement from practice in the Service does so without prejudice to his right to engage in other fields of medical work.

Entering General Practice

Q.—I am at present serving in the R.A.M.C. and expect to be released next year. How do I set about entering general practice?

A.—The Medical Practices Advisory Bureau can give you information about entering general practice. It is under the direction of a member of the medical secretariat, and its address is B.M.A. House, Tavistock Square, London, W.C.1.

PENALTIES OF OLD AGE LIBERAL PARTY'S VIEWS

At a meeting of the Liberal Party Council held recently the following resolution was passed unanimously:

"That this Council, in these days of full employment and shortage of manpower,

(1) deplores the absence of any constructive policy by the Government for enabling the elderly to maintain a happy and healthy life beyond pensionable age by opportunities for creative employment where they are physically able and willing to continue working, and
(2) calls upon the Government to encourage those of pensionable age who are willing to continue work to do so without penalization;
(3) calls upon the Government as a measure of great urgency to bridge the gap between the National Health Service Act and the National Assistance Act by the establishment of statutory committees representing the regional hospital boards, the local health authorities, and the appropriate voluntary bodies;

(4) urges the Government to increase the provisions for admission of old people into hospital, who are now too frequently excluded solely on the grounds of age."

It was moved by Lord Amulree and seconded by Dr. J. A. Gorsky. Lord Amulree commented on the short-sighted policy of the Government which at present penalizes those able and willing to continue working beyond retirement age if they do so, and urged that the pension should be paid as of right, irrespective of whether the elderly continue with their jobs or not. Such a Liberal policy would improve the manpower situation and in a great many cases would be of benefit to the elderly themselves, who too often tended to die off when the motive power of their lives was removed. He also deplored the lack of hospital accommodation for old people, and commented on the difficulties of the medical profession in gaining admittance to hospital for old folks.

HEARD AT HEADQUARTERS**B.M.A.'s Libel Action**

Medical charities will benefit by a "substantial sum" as the result of the settlement of the libel action of the B.M.A. against "Daily Mirror" Newspapers Limited. In spite of a natural reluctance to use the instrument of a writ for libel, the Council felt that in this instance what it judged to be an imputation of dishonesty against the Association and its officials could only be satisfactorily met by bringing the matter into court. The policy of the Association is often attacked and is expected to be attacked in the same way as the policy of the Government or any corporate body, but it becomes a different matter when the attacks take the form they did in this instance. There is a feeling in some quarters that if an organization is big enough almost anything can be said about it with impunity—that it is so impersonal that it has no character to be assailed. That is not the view which the Association took, and it has been sustained by the Courts. The *Daily Mirror* has withdrawn any imputation which might have been read into its statements in connexion with the conduct of the plebiscite last January, and has agreed to pay a sum to medical charities and to indemnify the Association its costs. In the other action, which concerned four labour M.P.s, they stated that it had never been their intention to impugn the honesty of the Association or its officers or officials. All's well that ends well, and perhaps a lesson has been learned which will be useful for the future.

Private Practice Committee

What has been known for some years now as the General Practice Committee, and before that was known as the Medico-Political Committee, has changed its name. As matters stand, the newly constituted General Medical Services Committee is handling N.H.S. business, and the remnants which belong mainly to the sphere of private practice are the province of what has been the General Practice Committee. Its new title is to be the Private Practice Committee, not strictly logical perhaps, but explanatory, and at any rate the Committee itself could think of nothing better. Dr. Wand, who has been its chairman for nine years, has recently been translated to a more capacious seat, and the Committee has chosen Dr. I. G. Grant, of Glasgow, for its new chairman. The Committee has still plenty to do, especially concerning fees for work for local authorities, national boards, insurance companies, and Service departments, as well as innumerable other matters.

Mining Accidents

When an accident occurs at a coal mine all the doctors from a considerable radius may be summoned, and of course, as is their duty, they attend. A point to which scant regard has been paid hitherto, but which, with nationalization of mines and the setting up of the National Coal Board, is now being looked into by the Association, is the risk of accident which such doctors themselves may run. They are practitioners probably drawn from a wide area and unaccustomed to the, at first, rather alarming conditions of the interior of a mine. Even under the best conditions such underground traversing is attended by minor risks of bruising and so on, and it is all a novice can do to keep his feet and his sight; where there has been an accident the risk is possibly intensified. The duty of the doctor to attend is not questioned, but the point is being raised about the compensation to the doctor or to his dependants in the event of injury or death.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-County Borough Councils.—Dartford, Radcliffe (limited to future appointments), Wallsend.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

WHITLEY MACHINERY AND PUBLIC HEALTH SALARIES

A meeting of the Public Health Committee of the Association was held on Dec. 17 under the chairmanship of Dr. James Fenton. Dr. J. A. Ireland voiced the pleasure of the whole committee on seeing Dr. Fenton back in his usual place, recovered from a serious illness.

A report was given by the Secretary (Dr. Charles Hill) on the question of the setting up of Whitley machinery for public health salaries. He gave an account of correspondence and conversations with the Ministry of Health. At the end of November it was intimated by the Ministry that the associations of local authorities wished to discuss certain matters before the Whitley Council was set up, and that it might be a little time before the first meeting could be arranged. It was to be assumed that the secret of the difficulties was that it had suddenly been realized that the subcommittee of the Whitley Council would be backed by arbitration in the event of disagreement, and that the recourse of any arbitrator would be to the Spens Reports in order to determine his award, a circumstance which might have repercussions in other fields. But the delay was most unsatisfactory. The Association had been anxious to have negotiations for the new scales completed and to have the Whitley machinery embodied in the agreement.

The meeting discussed possible ways in which the setting up of the machinery might be expedited. One member suggested that it was obvious that the local authorities had no intention of collaborating in the setting up of the Whitley machinery, and that two courses were open to those who represented public health medical officers. One course would be to approach the Minister, pointing out the impasse, pointing out also that the Spens Reports were now operable, and should be referable to public health medical officers, and that the Minister be asked to lay down by regulations the scale in accordance therewith. The other course would be to declare that unless negotiations had been begun by a certain early date advertisements for appointments which did not conform with the new proposals would be refused.

After some discussion it was agreed to recommend to the Council of the Association at its meeting early in January that the Minister be informed of the delay in opening the negotiations on the Whitley basis, and that unless such negotiations had begun by Feb. 28 advertisements for appointments which did not conform to the proposals laid down would not be accepted.

It was the unanimous view of the Committee that the Whitley method, backed by arbitration, was the method of choice. The Committee proceeded to select its representatives on the negotiating body, the endeavour being made to cover as wide a field of public health service as possible. The following were appointed: The Chairman of Council (Dr. Dain), the Chairman of the Committee (Dr. Fenton), Dr. Metcalfe Brown, Dr. George Buchan, Dr. J. A. Ireland, Dr. R. H. H. Jolly, Dr. Jean Mackintosh, Dr. Wyndham Parker, Dr. J. Riddell, Dr. J. A. Stirling, and Dr. Hill.

Other Business

The Committee heard with satisfaction that the National Veterinary Medical Association had welcomed the proposal for the setting up of a joint committee to formulate for transmission to Government departments representations on the problem of providing milk of high quality for the community and the supervision of the production and distribution of other foods of animal origin. Three B.M.A. representatives had already been appointed to the Committee, but the Veterinary Association suggested that the numbers should be six on each side, and to this the Committee agreed and appointed three additional B.M.A. representatives, one of them to represent Scotland.

The Committee nominated its Chairman, with Dr. Buchan and Dr. Jolly, to join with representatives of the General Practice Committee in discussions with the local authorities associations on fees for services to local authorities.

The meeting considered a statistical summary which had been prepared showing the present position with regard to equal pay for men and women medical officers. It was stated that

there had recently been an improvement in this respect in the direction of B.M.A. policy, and the Committee felt that the figure reflected great credit on the work of the office. A very large number of the smaller authorities (municipal boroughs and urban and rural districts) from which no replies had been received employed no women medical officers.

The Committee considered the Milk (Special Designations) Bill, the Civil Defence Bill, and other matters.

Correspondence

Remuneration and Size of Lists

SIR,—Now that a subcommittee of the British Medical Association is considering all the aspects of the remuneration of general practitioners with a view to presenting a case for revision of the present inadequate capitation fee to the Minister of Health, it seems profitable to set out how the problem appears to the writer, who is an urban practitioner with a list rather below the present maximum of 4,000. There would appear to be four separate factors involved: first, the report of the Spens Committee; secondly, the volume of work which a general practitioner can reasonably undertake; thirdly, the relation of this to the limited number of practitioners now available in the country and their uneven distribution; and, fourthly, the capitation fee and size of practitioners' lists necessary to correlate the first factor with the second and third. It might be profitable also to consider future developments.

It is important in the first place to recognize clearly what the Spens Committee recommended. They did *not*, as seems to be frequently believed, advise any particular capitation fee. They recommended that certain proportions or percentages of practitioners should earn certain incomes. Thus, 20% of all doctors should earn £700–£1,000, 24% £1,000–£1,300, and so on. By making certain assumptions it is possible to calculate that the average income of the general practitioner, in 1939 values of money, should be about £1,300 plus rather less than half as much again for those practice expenses allowed by the income-tax authorities.

To the figure thus obtained must be added a "betterment" factor for the fall in value of money since 1939. This does not mean such an increase would produce the same purchasing power then and now. Other factors, especially the actual rise in the income of other comparable groups of the community, have to be taken into account. It has been stated that the Ministry are working on a betterment factor of 20%. If this is to be fairly applied it must be remembered that it must apply to the net portion of the income only. That portion of the earnings representing practice expenses must be increased to cover the actual cost of these expenses at the present time. Otherwise the 20% increase in his real income will not reach the doctor at all but will be swallowed up in the much larger percentage increase in the practice expenses.

As this point is of the utmost importance, it might be well to illustrate it by the example of the "average" £1,300 income. The practice expenses, at 33% of the gross income, would be £650, but, as the drug bill is no longer a charge on the income and there is also some saving in the cost of collection of accounts, the comparable 1939 figures might be taken at: income £1,300, expenses £500, total gross £1,800; add 20% = £2,160. In fact, however, the practice expenses which remain are all items which have increased beyond the ordinary proportion. House property over 200%, car transport perhaps 100%, wages about 100%, and so on. If you take net income: £1,300 + 20% = £1,560. Expenses £500 + 100% = £1,000. Total gross income should equal £2,560, or £400 more than the first case. This point is worthy of a full statistical investigation and should not be overlooked.

The Spens Committee gave no guidance on the volume of work a practitioner can reasonably undertake, but if their findings are to be applied to a capitation fee system it is obvious this matter must first of all be considered and settled. It is one of great difficulty, since it involves not only skill but speed of work in addition—consideration, in other words, of both quality and quantity, and these, beyond a certain limiting point, are to some degree inversely proportional.

If the Service is to be other than a sham it must provide time for the proper examination and treatment of all patients as they

require it, and on the other hand the allowance of time must not be so extravagant as to put it out of all reason. The Spens Report on dental services suggested 42 hours a week as reasonable, including clerical work. It must not be forgotten that the doctor has far more urgent calls out of routine hours. For that reason I do not consider he should be called on to work in his consulting-room and on his routine visits for more than at the most 36 hours weekly—i.e., six hours daily six days a week. In my view, taking all the factors into consideration, he should be able to attend 27 patients in his consulting-room in three hours, and 12 patients in their own homes in the other three hours—39 patients daily, or 234 a week. Adding two special visits out of time on each of six weekdays and four on Sundays gives a week of 250 attendances, which I suggest should be the normal maximum for the average man earning the average income.

I am well aware that many men do more: I do myself; but I believe that, if this maximum be largely exceeded, this can only be done at the expense of proper unhurried and well-considered diagnosis and treatment. I cannot feel that some 6½ minutes per consultation and 15 minutes for a visit, including time spent in travelling, can be regarded as excessive.

Now, the pre-war panel patient required, on the average, about five attendances a year. I do not know of any later statistics. It is obvious that with the young and the aged at risk the demand must rise. There is also now far more incidental certification. The present figure must be guesswork in the absence of statistics. I propose to take a figure of seven items of attendance as probable at the present time. Each thousand patients would then require a weekly average of about 135 attendances the year round, but these would probably be distributed 105 per week for the six summer months and 165 per week for the six winter months. As one must obviously provide for the winter, and I am not speaking of the peak period in time of epidemics, it would appear that the figure of 250 items of attendances a week would limit the average list under conditions of demand obtaining in the present Service to about 1,500 patients. The figure seems low on past experience, but will surprise no one who has tried to keep pace with the demand on a much larger list during recent months, which have not yet nearly reached the winter peak.

The Parliamentary Secretary to the Minister of Health recently gave the number of practitioners available as rather over 18,000. As the number of patients at risk is over 45 million, this gives an average of about 2,500 per doctor, although the assistants' list will somewhat reduce the proportion. Further, any maldistribution of doctors would of course increase the average lists of practitioners in industrial areas, which it would seem cannot be much below 3,000.

If, as has been suggested above, the proper average list is 1,500 and the Spens Committee findings provide for an average gross income at the present time of about £2,500 at least, it follows that the equitable capitation fee should not be less than 33s., and this is calculated on a betterment factor of only 20%. It would, in my view, be just possible for the exceptionally hard and quick worker to increase his list to 2,250 and earn the upper range of income advised by the Spens Committee, but above this figure he can only go at a risk of killing himself and his patients. If the figure of seven items of service a year is justified, more patients can be fitted into the day only by cutting down the time given to each or by increasing the total hours of work. I think it is perfectly clear that both these courses are highly undesirable.

It may be asked what happened before July 5. I think the answer is that the economic factor kept down the numbers outside the panel and also that the doctors as a whole were becoming more and more overworked and underpaid. The panel fee of 10s. 6d. up to 1945 was almost ludicrous. I do not remember any of the panel fee inquiries in the past making any attempt to find out what volume of work a man could undertake or what income he could or should earn. Whatever happens now, the present doctors must for some years continue to be seriously overworked. I suggest that if a major breakdown is to be avoided they must be paid sufficiently adequately to enable them to be relieved of financial distress and to enable them to pay for such secretarial and other assistance as may help them to deal with the volume of work.

Some of the quality may have to be let go temporarily in order to deal with the quantity. I think it is essential to establish the correct average list according to the conditions of work, not according to the availability of sufficient practitioners to deal with the population. Then, if it is necessary for the limited number available to cope with the demand of an undue number of patients, at least it will be realized they are being overworked, and then increased remuneration will attract enough men into general practice to balance ultimately the figures and the situation.

Given that the figures I have suggested are substantially correct, I would make the following concrete suggestions: The

capitation fee be fixed at present at about 27s. The maximum list reduced from 4,000 to 2,750. Some latitude might have to be given for a short time in some areas. For the next five years the maximum list be reduced 100 each year and the capitation fee increased by 1s. At least 1,000 new general practitioners be attracted into practice each year and if necessary assistance given to get them settled.

Perhaps the first need of all is for a clear understanding of this complicated problem for all concerned, the doctors not less than the Ministry.—I am, etc.,

Thornion Heath, Surrey.

REGINALD N. DEANE.

* * * The percentages quoted in the second paragraph relate not to all practitioners but to practitioners in the 40-49 age group (Spens Report on General Practitioners, p. 5, Table B).—Ed., B.M.J.

Raise Capitation Fee

SIR,—We read in the Press that Mr. Bevan considers that a dentist may reasonably earn £4,800 per annum—this with a shorter training, little or no postgraduate experience, no night work, no life-and-death responsibility, and six weeks' annual holiday. It is claimed that expenses amount to 50% (although this is doubtful out of such large earnings), leaving a net income of £2,400.

The average general medical practitioner can only have 2,000 patients (total population divided by total of practitioners). From these his gross income will be approximately £1,750, plus about £200 from private patients and £350 from confinements, etc. Deduct 35% for expenses and his net income is less than £1,500. A general medical practitioner should be entitled to a financial return at least equal to his dental colleague. Unfortunately those G.P.s with lists of 3,000-4,000 are apathetic; they are unable to see the writing on the wall—health centres. When these are established it will be precisely in those areas where these large lists exist. They will be staffed by young G.P.s now pouring from the medical schools (and who won't want to starve in rural or suburban areas) and living perhaps in council houses. With no financial obligations for a practice or house, they will soon eat into the long lists of their neighbours. Then perhaps these presently apathetic and apparently financially secure practitioners will feel the pinch in their turn; if they are to protest, they should do so now.

Similarly, unless the B.M.A. presses more strongly, those of us with smaller lists who are already feeling the financial draught are going to be driven to join a "splinter group" or perhaps a rural organization. Sir, the B.M.A. must demand a capitation fee of 30s. and £10 10s. for a confinement. Only then will the average G.P.'s net earnings equal those of a dentist.—I am, etc.,

Stockport, Lancs

J. HEGINBOTHAM.

Training Assistants in Rural Practice

SIR,—I see that doctors are to receive grants for training assistants, provided their practices number over 2,000 patients. May I put in an urgent plea that for the dispensing doctor the number may be substantially reduced?

In a town practice the majority of the patients live in the vicinity of the doctor's house, so that visits are close together and many patients can attend at the surgery. Treatment for the most part consists in writing a prescription to be made up by a chemist near by. A dispensing practice covers an extensive and thinly populated area; visits may be miles apart, and only a fraction of the patients can reach the surgery. In particular, mothers and small children cannot make a cross-country journey to the doctor's house, and so help to swell the visiting list. In addition, the doctor has to carry out the whole work of a chemist—laying in stores of drugs, making up all kinds of prescriptions, and distributing to the patients over a wide area. I believe that 1,500 patients will give the dispensing doctor more work than 2,000 patients in a town practice.

At the beginning of the war I revived the travelling dispensary as used for village medical work in India. In a crate I carry tablets, powders, and concentrated stocks, together with the necessary bottles, corks, and labels. I dispense by the roadside, in farmyards, and in cottage kitchens. The dispensary is immensely popular, as it saves patients sending long

distances for their medicines and it ensures that treatment is begun promptly, but it does slow down the round, and the dispensary has to be restocked nearly every night.

I trust my plea will have favourable consideration.—I am, etc.,

Invergowrie, Scotland.

RUTH M. MONRO.

Car Expenses of Whole-time Specialists

SIR,—I wish to endorse the letter in the *Supplement* of Dec. 18, 1948 (p. 229), from the whole-time specialists of Leicester. Two years spent in queueing for trams, buses, and ferries taught me how deadening to professional enthusiasm such transport can be. The acquisition of a car has enabled me to indulge in many "unofficial" visits to hospitals, reference libraries, clinical meetings, etc. Such visits are not demanded of me, but they are essential to the maintenance and improvement of the degree of professional skill expected of me.

A car is not, therefore, a luxury bestowed upon professional men, but rather an indispensable condition without which their work cannot be undertaken efficiently. Without car expenses it would be financially sounder to travel by tram or bus and continue at a level of professional mediocrity. The annual outlay on running a car amounts to a voluntary contribution to the national exchequer.—I am, etc.,

Liverpool.

ARTHUR S. WIGFIELD.

Remuneration Not Agreed

SIR,—The time has come for plain words. On Dec. 1 the Minister of Health stated, in answer to a question by Sir E. Graham-Little: "The remuneration of general medical practitioners . . . was agreed with the profession." This is not true. At no time did the discussions with the Minister cover remuneration. The Minister's terms of remuneration were announced by him at his last interview with the Negotiating Committee, and the Committee did not agree them but reserved the right to enter into negotiations on them.

The plain facts should be plainly stated, and the Minister's statement plainly rebutted. May we expect an immediate and authoritative statement from the Negotiating Committee?—I am, etc.,

Worcester Park, Surrey.

ROBERT V. GOODLIFFE.

* * * The Secretary of the Association writes: Dr. Goodliffe's statement is accurate. The Minister and the profession accepted the Spens Report. Such is the character of the recommendations of the Spens Committee that it is only now becoming possible for anyone to say whether they are being implemented. For example, it was not possible before the appointed day to say whether or not the Minister's proposals would in effect secure that 50% of general practitioners would receive £1,300 a year net in terms of pre-war money values—i.e., £2,613 a year after conversion into gross and the application of the betterment factor laid down by the Government. Investigations are now proceeding in a number of areas to determine whether in fact Spens is really being applied. The first investigation is complete and four others are now in progress and likely to be completed in three or four weeks' time. Further, the Spens comment on mileage was that

"So far we have discussed solely the position in regard to urban practices. We do not regard as significant the comparatively small differences which Professor Bradford Hill's figures indicate as between urban and mixed practices. The latter have produced somewhat larger incomes, but the difference is not great, and it is far from clear whether this difference would persist in a publicly organized service. A more serious problem exists in regard to incomes from rural practices. We are not prepared to criticize the existence of a difference between the average remuneration of rural and urban practice, having regard to differences in cost of living and amenities; but we consider that the difference of approximately £200 which existed in 1939 between incomes about the £1,000 level in the two classes is excessive and requires reduction by about half, when regard is had to all the facts involved. It appears probable that this could best be secured by weighting mileage more heavily."

It is now becoming obvious that the mileage fund will not bridge the gap, or any substantial part of the gap, between urban and rural remuneration. The negotiations on this point are in the hands of the General Medical Services Committee and a further meeting was held with the Minister on Dec. 22. It is hoped to make a report soon.

Remuneration

SIR,—Will you kindly publish in your correspondence columns the following resolution passed by my committee? "That the British Medical Association should not agree to the fixing of any central sum from which all remuneration should be paid to practitioners;

"That the capitation fee, as finally agreed, should be paid in full and without delay and be subject to no deduction."

It was felt very strongly that the Minister has no moral justification for not paying the full capitation fee as agreed. The assumption that a fixed central sum only should be available was of course based upon the old N.H.I. and does not apply to-day to what is a non-contributory service—thus termed by the Minister in Parliament. Any negotiations based on the assumption that there is this fixed central sum and nothing more must invariably lead to general dissatisfaction among the rank and file of doctors in active practice. It is obvious that the firmest action must be taken to procure the obvious rights of the profession, and it is hoped that all over the country local medical committees will insist upon determined action by their spokesmen. A sitting-down war will get us nowhere.

As regards the basic salary, the present position is grossly unjust to all parties. Where justification exists for the granting of a basic salary, let the Minister be generous with his own funds and not with moneys designed for payment of capitation fees.—I am, etc.,

J. GORDON-WILSON,
Hon. Secretary,
Eastbourne Local Medical Committee

Foreign Visitors

SIR,—If the National Health Service Act covers all foreign visitors to this country who care to take advantage of its provisions—and that, so far as I can gather, without previous contributions—the Ministry of Health are surely in a quite untenable position when they refuse pharmaceutical benefits to private patients who do pay contributions. The Minister himself has said that everyone is eligible to use the whole service "or any part of it."

If he goes back upon this plain statement, and yet extends all the facilities to foreign visitors, then he is in the invidious position of providing free to foreign nationals benefits which he denies to British citizens who are finding the money for those benefits. Surely this is an intolerable and unjust state of affairs. I heard the other day of a foreign visitor to this country who laughed at our foolishness as he returned home with two pairs of spectacles and a set of false teeth at our expense.

It is quite time that such injustices and anomalies should be set right, and it is to be hoped that our negotiators will, without delay, tell the Minister that the medical profession is no longer content to submit to abuses of this kind. It is up to us to protect our patients' interests as well as our own—and indeed it seems as though nobody else is left to do so. One is impelled to wonder whether the present unsatisfactory position would ever have arisen had not our Association sacrificed its prestige by its policy of appeasement and its disastrous surrender in May. Let us all remember that the fear of losing compensation no longer hangs over our heads and that the threat of resignation is a potent weapon.—I am, etc.,

Wolverhampton.

VICTOR RUSSELL.

Married Ex-Service Hospital Residents

SIR,—I am pleading here for a minority of the profession—namely, married ex-Service hospital residents, whose needs for an early increase of remuneration are more urgent than those of the more vocal and better represented majority. It is more than 10 years since I qualified. I am married and have three children. After 5½ years of service I was released from the Army and had to provide a home for my family by over-drawing my bank account. Now, almost three years later, I am still uncomfortably in debt.

After holding a holding appointment under the release scheme, and after a period of unemployment, I decided to train in pulmonary tuberculosis. To support my family I earn little more than "P. D." (*Supplement*, Dec. 4, p. 211) would like to spend on education of his children. My income provides bare subsistence, and, although I do not lack clothing

coupons, certain clothes, as well as certain foods, house repairs, holidays, and medical textbooks and journals, are unobtainable luxuries. A more remunerative, non-resident post would increase the burden of debt, because I should need to move house at a time when costs are higher than formerly, and I should probably need a car.

There has been a suggestion of interim relief for those in my position if a settlement is otherwise long delayed. For me even three months is a long delay, an intolerable delay, but even an inkling of what the future may have in store would be more helpful than the present hopeless obscurity.—I am, etc.,

D. F. S.

Directives

SIR,—I have just received from Salop Executive Council a directive which states that patients requiring medical or surgical appliances must be referred with a letter to a consultant at the Royal Salop Infirmary and should attend on Wednesdays. Is it possible to conceive a more absurd rule? Consultants are required for the purpose of consultation on certain types of case and are already finding it difficult to get through the numbers of cases attending out-patient departments. Why then add a quite unnecessary task?

Let me give an example. Two days ago a mother brought her infant to have an umbilical belt replaced owing to wear. Do the authorities really consider it sensible that this mother should travel 28 miles to Shrewsbury, paying her fare, arranging for another woman to look after her other baby, wait for perhaps four hours in the out-patient department, and waste the valuable time of a consultant over such a trivial matter? Really it is reminiscent of directives received when in the Army. Or take the case of a patient requiring renewal of a colostomy belt, a truss, or any other appliance: surely such a service can be rendered by the patient's own doctor, or do the authorities consider us all completely incompetent? During the discussions over the Service I often warned my colleagues about the types of directives we should receive. This is a typical example.

It does not impress one that the best and most intelligent people have been placed in authority over us. Would it not be a good idea to place more general practitioners on committees required to decide such matters as these and guide the bureaucrats?—I am, etc.,

Ludlow, Salop

VICTOR N. FENTON.

* A general practitioner may prescribe trusses on Form E.C.10, and also order repairs and replacements of colostomy belts and cups and of suprapubic belts (see *Supplement*, Nov. 13, p. 172).—Ed., B.M.J.

Rural Practitioners

SIR,—It is clear from the letters of Dr. Hugh B. Muir and Dr. Verna Kendall (*Supplement*, Dec. 11, p. 220) that something must be done to rescue rural practitioners. I would go further than asking for thorough investigation. What is wanted first and foremost is a bonus to all practitioners with less than 1,000 on their list. The bonus should be greater by at least 30% for such as practise in rural areas. Those with less than 500 patients need a double bonus.

The countryside will be denuded of doctors very soon if immediate help is not forthcoming; and all parts of the country, town and rural, will eventually be denuded of all those doctors who would have prospered and continued to practise if they had not been ruined while trying to acquire their first 1,000 patients. If any of us had time, we should perhaps organize propaganda in the lay press and follow that up with processions to Downing Street.—I am, etc.,

New Milton, Hants.

MARY EDWARDS.

Whole-time Specialists Appointed to Hospitals

SIR,—I wonder whether you will allow me to take a few lines of your valuable space to endeavour to bring to the notice of the Negotiating Committee the special position of those whole-time specialists who were appointed to hospitals under the terms of the Ministry of Health Circular 202-46.

I feel it was not intended that these specialists should continue in whole-time employment after the complete establishment of the National Health Service, yet unless regional boards are instructed to grant an adequate number of sessions

to these people most will be forced through serious financial difficulties to continue in whole-time employment, because the terms of their employment have effectively precluded them from developing a private practice in their specialties.

This matter is giving very serious concern to individuals employed under the terms of the circular, and some pronouncement by the Ministry seems overdue.—I am, etc.,

Birkenhead.

C. M. MILLER.

All Resign

SIR,—From Mr. Bevan's reply in Parliament on Dec. 1 to Sir E. Graham-Little's question (*Journal*, Dec. 11, 1948, p. 1042) it is quite apparent that the Minister considers our present remuneration is in full accord with the recommendations of the Spens Committee. As no other person—apart from the Minister—can possibly hold this view, it is time now that we should disillusion him.

In the humble opinion of one whose rural practice now brings in £1,000 less than before, with double the work, the only way to do this is for the profession as a body to resign from the National Health Service. Any difficulties in the way of this, such as the constitution of the B.M.A., the question of so-called compensation, another plebiscite, the resulting chaos in the Ministry of National Insurance, etc., are mere details. The Minister has broken faith with us. That is obvious and sufficient reason for the only action that he will understand.—I am, etc.,

Canterbury.

R. C. McINTOSH.

Marriage Allowances for Medical Officers

SIR,—Recently questions have been discussed in the House of Commons referring to the allowances payable to married officers. It seems a pity that no reference was made to the following anomaly.

The majority of serving practitioners and dentists, holding only temporary commissions as they do, are not eligible for the extra marriage allowances. This makes them to all intents and purposes the only married officers who do not receive extra allowances under the new rates of pay. I think you will agree that this is a most unfair discrimination, as professional men in the Services hold positions of trust and responsibility that are, to say the least, comparable with those held by other officers.

The increases were made, it is quoted, to offset the present high rents, etc., that married personnel have to pay, and it is felt that these rents cannot under any stretch of the imagination be believed to apply only to regular serving officers. I ask you, therefore, to do your best to publicize this unfortunate state of affairs.—I am, etc.,

London, N.3.

E. J. TRIMMER.

* * The Secretary of the Association writes: It has not yet been decided by the Government whether the recently announced increases in officers' marriage allowances are to apply to National Service officers or not.

Representation of Tuberculosis Workers

SIR,—At a meeting of doctors working in tuberculosis in the Liverpool Region it was recently decided to form a Liverpool Region Tuberculosis Society and to seek representation on the Joint Tuberculosis Council. At a time when the J.T.C. is being consulted about terms and conditions of service for tuberculosis workers it was felt that it was most important that this body should be fully representative of all regions. This view is held by all the sanatorium superintendents and tuberculosis officers in common.

The J.T.C. has replied that it cannot consider our application for six months, as regional representation will involve amending its constitution. It has advised the Liverpool Region to seek representation through the North-Western Tuberculosis Society. Both representatives from the North-Western are from the Manchester Region, and cannot be expected to know anything about conditions in this region. Furthermore, no change in representation could be obtained in this way until the next Annual General Meeting in June, by which time it is expected that negotiations will be completed.

Our Society therefore wishes to issue a strong protest against the decision of the J.T.C. to deny representation to the Liver-

pool Region during this critical period, and to point out the unrepresentative nature of the J.T.C. as at present constituted.—I am, etc.,

WILLIAM D. GRAY,
Hon. Secretary,
Liverpool Region Tuberculosis Society.

The Independence Fund

SIR,—One wonders how many of those doctors who now bewail their fate in the National Health Service supported the Independence Fund of the B.M.A. Is it possible to publish numbers or names in order to show how much tangible support the resistance effort received prior to July 5?—I am, etc.,

Southampton.

V. WESTON.

* * The number of medical men and women who contributed to the Independence Fund was 5,325.—Ed., *B.M.J.*

POINTS FROM LETTERS

Employment of Assistants

Dr. DONALD M. O'CONNOR (Launceston, Cornwall) writes: . . . Dr. W. B. Howell (*Supplement*, Dec. 4, p. 210) states, "If there was one on the pay-roll of a principal on July 5 he must have been sufficiently trained to disqualify him from participating in the scheme as a *trainee* at the present time." This example of the *non sequitur* might well find a place in *Alice in Wonderland* but seems to be out of place as a serious contribution to the *Journal*. . . . Dr. Howell's first paragraph seems to indicate that he failed to read either my letter or the Secretary's footnote with any real attention. In the matter of assuming the role of fairy godmother the Ministry made its promise publicly in April. My contention is that the circular "Remuneration of General Practitioners" should not have contained paragraph 6 at all, or alternatively that it should have been made quite clear that this paragraph, and only this paragraph, was not intended to come into force until some uncertain date after the appointed day. . . .

"Practice Allowance"

Dr. K. HARRY GILL (Eastbourne) writes: The large number of letters appearing in the *B.M.J.* prove widespread dissatisfaction among practitioners with the present rate of remuneration. Would not the dilemma which the profession now finds itself in be solved most satisfactorily, I suggest, by a really substantial "practice allowance," since the expenses of both the large and small practice are virtually the same? The practices with maximum lists are financially secure, but those with small lists far from it, and a sufficient practice allowance would assist them, in my view, more satisfactorily than an all-round capitation fee increase. . . .

Dentists' Incomes

Dr. BEALE H. GIBSON (Bradford-on-Avon) writes: . . . While I have no desire to minimize the good work done by our colleagues, it is surely farcical, to put it mildly, that an average dental income should be in the region of £4,000 per annum gross, as stated by the Minister of Health in a recent speech, while few doctors are able to earn half that amount. The relative responsibility, hours of work, etc., should place medical practitioners far above their dental colleagues for financial consideration. While the latter by working overtime are enabled to augment their incomes indefinitely, the doctor, who can be called upon at any time of the day or night, cannot claim a similar privilege. . . . The B.M.A. should realize that discontent is growing very rapidly among the rank and file, while the word "negotiation" gives rise to acute hyperpnea among most of us.

Buying and Selling Goodwill: Correction

Dr. SIDNEY B. DEPREZ (Hove, Sussex) writes: Referring to the *Supplement* of Dec. 4, p. 200, as it is desirable for an information service to be correctly informed, may I presume to point out that the Act has *not* abolished the buying and selling of the goodwill of practices but only of the goodwill of practices of persons who have enrolled under the National Health Service?

NATIONAL (WAR) FORMULARY

The N.W.F. Committee has decided that the third edition of the *Formulary* shall be amended as follows: Emulsion of Liquid Paraffin B.P.C. shall be deleted and replaced by Emulsion of Liquid Paraffin B.P.; the synonym for Emulsion of Liquid Paraffin and Magnesia shall be deleted. The suffix to Emulsion of Liquid Paraffin with Phenolphthalein shall be deleted and replaced by N.W.F. In the latter two preparations the Emulsion of Liquid Paraffin that will be used will now be the B.P. emulsion. It has been agreed that Jan. 1, 1949, shall be the date on which this amendment will come into operation.

B.M.A. LIBRARY

The following books have been added to the Library

- Addis, T. *Glomerular Nephritis* 1948
 Adler, G. *Studies in Analytical Psychology* 1948
 Bailey, P. *Intracranial Tumors* Second edition 1948
 Barnes, J. *Gynaecological Histology* 1948
 Bartley, S. H., and Chute, E. *Fatigue and Impairment in Man* 1947
 Beaumont, W. *Infra-red Irradiation* Third edition 1948
 Birch, C. A. *Emergencies in Medical Practice* 1948
 British Drug Houses. *The B.D.H. Guide to the B.P.* 1948 1948
 British Pharmacopoeia 1948 1948
 Buckstein, J. *The Digestive Tract in Roentgenology* 1948
 Carruthers, D. G. *Diseases of the Ear, Nose, and Throat* Second edition 1948
 Cattell, R. B. A. *Guide to Mental Testing* Second edition 1948
 Clave, A. M. *Management in Obstetrics* 1948
 Cleveland, A. J. A. *History of the Norfolk and Norwich Hospital from 1900 to the end of 1946* 1948
 Collis, W. R. F., et al. *Modern Methods of Infant Management* 1948
 Copeman, W. S. C. (Editor). *Textbook of Rheumatic Diseases* 1948
 Davies, N., and Isenburg, U. *Standard Radiographic Positions* Second edition 1947
 Deller, F. C. (Editor). *Modern Management of Gastric and Duodenal Ulcer* 1948
 Eden and Holland's *Manual of Obstetrics* Ninth edition by Alan Brews 1948
 Gerson, L. *Les Varices et leurs Associations Pathologiques* 2me edition 1948
 Gilmour, J. R. *Parathyroid Glands and Skeleton in Renal Disease* 1947
 Hamburger, J. *Medical Research in France during the War (1919-1945)* 1948
 Hamilton, G. *Psychotherapy in Child Guidance* 1947
 Harris, N. G. (Editor). *Modern Trends in Psychological Medicine* 1948 1948
 Heif, F., and Rusby, N. L. *Recent Advances in Respiratory Tuberculosis* Fourth edition 1948
 Henri's *Molds, Yeasts, and Actinomycetes* Second edition by Charles E. Skinner et al. 1947
 Jackson, H. (jun) and Parker, F. (jun). *Hodgkin's Disease and Allied Disorders* 1947
 Law, S. G. *Therapy Through Interview* 1948
 MacBryde, C. M. (Editor). *Signs and Symptoms Their Clinical Interpretation* 1947
 MacNalty, Sir A. S. *The History of State Medicine in England being the FitzPatrick Lectures for 1946-7* 1948
 Marshall, J. *The Skin Diseases* 1948
 Missions, J. M. *Introducción al Estudio de la Plasmoterapia* 1947
 Maxwell, J. *Introduction to Diseases of the Chest* Third edition 1948
 Montpellier, J. M. *Autour du Probleme du Cancer Vol 2* 1948
 Mora, C. F. *Himene Psiquica Fasciculo Primero—Eugenesia (el libro de los novios)* 1947
 Neire, L., and Bretey, J. *Vaccination par le BCG par Scarifications Cutanees* 1947
 Neill, R. G. *Aids to Bimology* Second edition 1948
 Oliver, J. O. *Aids to Pathology* Ninth edition 1948
 Paz Soldan, C. E. *Aspectos e Impresiones del Mundo de Postguerra* 1948
 Queen Charlotte's *Textbook of Obstetrics* Seventh edition 1948
 Richardson, U. F. *Veterinary Protozoology* 1948
 Riddell, M. S. *Lectures to Nurses* Ninth edition 1948
 Robson, W. A. (Editor). *Social Security* Third edition 1948
 van Rooven, C. E., and Rhodes, A. J. *Virus Diseases of Man* Second edition 1948
 Ross (W. H.) *Foundation (Scotland) for the Study of Prevention of Blindness* 1948
 Salle, A. J. *Laboratory Manual on Fundamental Principles of Bacteriology* Third edition 1948
 Sands, I. J. *Neuropsychiatry for Nurses* Fifth edition 1948
 Schaub, I. G., and Foley, M. K. *Diagnostic Bacteriology* Third edition 1947
 Shaw, W. *Textbook of Gynaecology* Fifth edition 1948
 Shryock, R. H. *American Medical Research Past and Present* 1947
 Shull, A. F. *Heredity* Fourth edition 1948
 Slarr, A. *Die stun pten Bauchverletzungen ihre Erkennung und Behandlung* 1948
 Smith, L. W., and Gault, E. S. *Essentials of Pathology* Third edition 1948
 Smi, h. S. F. *Aids to Organic Chemistry* Third edition revised by Ian Leslie 1948
 Teneff, S., and Morando, G. C. *Le Ferite Osteo articolari d'Arma da Fuoco* 1947
 Thienes, C. H., and Haley, T. J. *Clinical Toxicology* Second edition 1948
 Top, F. H. *Communicable Diseases* Second edition 1947
 Universidad de San Carlos. *"Oncocercosis" (enfermedad de Robles)* 1948
 Walker, G. F. *Handbook of Medicine* Fourth edition 1948
 Walter, C. W. *The Aseptic Treatment of Wounds* 1948
 Wilhus, F. A., and Dry, T. J. A. *History of the Heart and Circulation* 1948
 Winbury-White, H. P. (Editor). *Textbook of Genito-urinary Surgery* 1948

H.M. Forces Appointments

ROYAL NAVY

Acting Surgeon Lieutenant T. T. Chapman to be Surgeon Lieutenant.

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Commanders E. I. Pudd, V.R.D., J. O. Clode, V.R.D., D. W. Bawtree, V.R.D., W. T. R. Chapman, V.R.D., G. F. S. Parker, V.R.D., R. W. H. Tinker, V.R.D., H. G. Ungley, V.R.D., and A. W. Kendall, V.R.D., have been placed on the Retired List.
 Surgeon Lieutenants R. W. B. Scott, J. K. Black, J. L. Elliott, R. R. Dickson, L. B. Cohen, and J. E. Morton to be Surgeon Lieutenant Commanders.

Temporary Surgeon Lieutenants R. D. Nicholson, D. G. Jones, D. M. Forsyth, and C. M. Flood have been transferred to List II of the Permanent R.N.V.R. in the rank of Surgeon Lieutenant.

Temporary Surgeon Lieutenants A. A. Murray and P. Milward have been transferred to List I of the Permanent R.N.V.R. in the rank of Surgeon Lieutenants.

Temporary Acting Surgeon Lieutenants I. M. Ormerod, M. G. D. Davys, M. J. Rafiq, E. A. D. Boyd, J. P. R. Richardson, P. W. Rowell, N. O. Bennett, J. D. Bowie, P. R. Boyd, J. H. S. Pettit, J. C. Whyte, F. M. Milne, W. G. D. Murray, and K. B. M. Crawford to be Temporary Surgeon Lieutenants.

ROYAL ARMY MEDICAL CORPS

Lieutenant Colonel J. T. McConkey, C.B.E., has retired on retired pay and has been granted the honorary rank of Brigadier.

Lieutenant Colonels H. S. Milne, M.C., A. R. Barlas, M.C., Pierson, M.C., H. A. Boyle, T. Parr, and M. P. Power, O.B.E., M.C., have retired on retired pay and have been granted the honorary rank of Colonel.

Lieutenant Colonels D. W. M. Mackenzie and W. G. Harvey have retired on retired pay.

Majors (War Substantive Lieutenant-Colonels) J. J. O'Connell, O.B.E., J. M. Carnon, W. M. Oxley, and J. G. M. A. Brunet to be Lieutenant Colonels.

Majors H. V. D. A. Iles, A. MacLennan, O.B.E., F. E. Buckland, J. H. J. Crosse, O.B.E., J. Boyle, R. Phillipson, O.B.E., R. S. Vine, J. S. Kelleher, and K. H. Clark to be Lieutenant Colonels.

Major J. Duzuid has retired and has been granted the honorary rank of Lieutenant Colonel.

Major A. E. B. Wood, retired and re-employed, has reverted to retired pay on ceasing to be re-employed and has been restored to the rank of Lieutenant Colonel.

Majors M. White, M.C. and G. A. K. H. Reed, retired pay and re-employed, have reverted to retired pay on account of disability and have been restored to the rank of Lieutenant Colonel.

Major A. T. Frost, O.B.E., retired and re-employed on ceasing to be re-employed has been restored to the rank of Lieutenant Colonel.

Majors D. A. Ireland and H. H. Atkinson have retired having received a gratuity and have been granted the honorary rank of Lieutenant Colonel. (Substituted for the notifications in *Supplements to the London Gazette* dated Nov. 11, 1947, and Aug. 27, 1948, respectively).

Captain (War Substantive Major) D. W. Moynagh, M.C., to be Major.

Captains (Temporary Majors) J. E. Miller, M.C., and F. Lancelley to be Majors.

Captains G. P. Crean, E. D. H. Williams, J. Irvine, and A. J. Fulthorpe to be Majors.

Captains P. L. G. Cole and D. E. S. Steele, from Short Service Commissions, to be Captains.

Captain M. G. Jackson Smyth, from Short Service Commission, has been appointed to a permanent commission.

Short Service Commission Specialist—Captain R. M. Henderson, from Short Service Commission, to be Captain. (Substituted for the notification in a *Supplement to the London Gazette* dated July 23, 1946.) Captain W. P. Lees has retired on account of disability.

Short Service Commissions—Captains (War Substantive Majors) R. H. Sourner, J. J. Groome, H. L. Connor, W. L. H. L. Bell, G. G. Black, A. T. MacM. Glen, R. H. Wheeler, G. J. Harrison, G. A. Weir, W. G. McDermott, J. McN. Lockie, and F. Livesay have retired having received a gratuity, and have been granted the honorary rank of Lieutenant Colonel.

Captains (War Substantive Majors) N. R. Murdoch, P. B. Hanbury, P. J. Gcozhean, N. A. Flaherty, J. Reeve, T. P. O'Brien, V. Bennett, C. G. O'Driscoll, and J. S. Hamilton Gibbs have retired having received a gratuity, and have been granted the honorary rank of Major.

Captains F. D. F. Steele, A. A. Daly, G. M. Barling, J. H. Prain, C. E. Brown, G. W. A. Gordon, C. C. Langford, M. Headlam, E. A. Donegan, T. P. Hawkins, and J. Baxter have retired having received a gratuity, and have been granted the honorary rank of Major.

Captain P. G. McGrath has retired and has been granted the honorary rank of Major.

Captains R. Houston, A. A. Greorv Darr, I. A. Jackson, M.B.E., R. P. Bradshaw, and G. P. Stille, from Emergency Commissions, to be Captains.

Captains I. W. H. Mansfield, J. C. B. Nesfield, E. M. Rowland, G. G. Sherriff, H. F. L. Gallaher, D. G. Howarson, R. A. Hoey, D. S. Toole, I. O. B. Spencer, W. M. McLennan, and F. B. Lake have retired having received a gratuity.

Lieutenants (War Substantive Captains) J. C. Crook and W. J. Irwin from Emergency Commissions, to be Captains.

Lieutenants W. F. Belsham, J. G. P. Power, J. F. F. Rooney, A. W. Morrow, J. L. Kilgour, B. McConkey, E. E. Vella, and K. B. Lazarus to be Captains.

Lieutenants S. A. Biggart and

G. H. Bulow, from Emergency Commissions, to be Lieutenants.
Captain M. A. O'Sullivan, from T.A., to be Lieutenant.

ROYAL AIR FORCE

Group Captain L. Freeman has retired at his own request.

Wing Commanders S. B. S. Smith and T. D. L. Bolan have retired on account of medical unfitness for Air Force Service.

Flight Lieutenants T. Gray, F. S. Krusin, R. O. M. Jones, R. A. Smart, M. W. L. White, J. S. Howitt, G. R. Bedford, and A. C. Camm to be Squadron Leaders.

Flight Lieutenant I. R. Waters has retired at his own request, retaining the rank of Squadron Leader.

P. A. Wilkinson to be Squadron Leader.

To be Flight Lieutenants: H. N. H. Genese, T. A. Evershed, J. A. B. Mounsey, S. E. Cupples, W. R. Lee, T. Gray, I. M. Perkins, F. S. Krusin, and H. A. N. Hamersley.

To be Flight Lieutenants (Temporary): R. C. Rylance, M. Mattinson, G. Clayton, and W. S. Noble.

Flying Officers J. S. Conway, M. L. Montagnon, W. S. Peart, W. D. H. Conacher, P. A. Emerson, D. G. Jones, H. L. Jones, D. A. McGreal, J. Mackintosh, J. F. McMinn, A. McNabb, J. W. B. Matthews, C. P. Newcombe, W. Seright, E. J. S. N. Briggs, T. H. S. Burns, P. J. N. Cox, A. Herschell, J. M. White, S. P. Wrightson, J. H. H. Gibbon, S. P. Bruce, D. F. Coulter, J. L. Crammer, B. D. Grant, J. T. W. Jones, R. T. Jones, J. B. Loudon, J. P. Payne, D. Reid, H. D. White, C. Wood, R. N. Grabowsky-Atherstone, S. M. Hilton, G. A. Humphreys, H. Cohen, W. A. D. Combe, J. K. Craig, D. W. J. Cullingford, A. R. Curtis, D. P. Fitzgerald, J. M. Gill, R. W. Hughes, J. D. Kerr, P. B. Kunkler, P. D. Livingstone, R. M. Powell, J. Parkyn, W. L. Sewell, G. R. B. Whitaker, A. T. Wilson, D. A. Watson, and R. G. H. Salkeld to be Flight Lieutenants.

To be Flying Officers: M. T. F. Carpendale and P. W. Robertson.

To be Flying Officers (Temporary): R. MacG. Aitken, G. G. Allan, H. C. H. Bird, E. I. Boxer, D. H. Brooks, D. Brown, J. Brown, P. P. M. Browne, C. M. Browne, C. A. B. Clemetson, W. H. D. Fairbank, G. Fairclough, J. Findlater, M. E. Glanvill, M. A. Heasman, J. A. Hill, O. E. F. Hodgson, D. A. P. Hunt, L. J. M. Jamieson, J. S. Jenkins, J. D. C. Lyons, R. L. McGhie, D. McD. McKean, A. L. McNab, A. Millar, I. O. Miller, J. B. Moser, A. Muir, K. H. Nickol, J. P. Ommer, G. J. Pack, P. N. Porritt, E. T. Roberts, E. Sherrah-Davies, O. H. Taylor, G. C. Thiek, J. P. D. Thomas, I. H. Thomson, A. C. Traill, A. P. Waterson, W. F. Watson, C. B. Whittaker, D. A. Good, C. B. Wynn Parry, N. V. Addison, W. S. A. Allan, J. J. Ashken, A. J. Barr, J. G. S. Buchanan, J. F. Butchart, G. S. Cairness, R. A. Chambers, A. J. Essex-Cater, E. Evans, J. P. Falkingham, J. M. Ferries, R. S. Gillinson, S. Gillis, R. H. Griffith, J. F. Hale, J. A. Howarth, J. G. Inglis, J. A. James, A. F. Johnstone, W. B. Kennedy, R. G. Krause, J. I. Lees, J. D. O. Loudon, I. L. Macfarlane, R. A. Maxwell, J. L. Moffatt, J. E. Murray, W. H. Nisbet, J. G. Parish, P. K. Pybus, D. A. Road, G. Ross, P. R. McH. Seales, O. H. Simms, C. G. W. Sykes, K. P. Williams, M. B. Wingate.

RESERVE OF AIR FORCE OFFICERS

Squadron Leader A. R. Agate has resigned his commission, retaining his rank.

Squadron Leader R. C. H. Tripp has relinquished his commission on appointment to the reconstituted R.A.A.F., retaining the rank of Wing Commander.

ROYAL AUXILIARY AIR FORCE

R. C. H. Tripp to be Flight Lieutenant.

ROYAL AIR FORCE VOLUNTEER RESERVE

Flight Lieutenant J. M. Sword has resigned his commission, retaining the rank of Squadron Leader.

Flight Lieutenants J. M. Whaites, G. J. E. Ansell, R. G. P. Heard, G. R. B. McCarter, and P. R. B. Jones have resigned their commissions, retaining their rank.

Flight Lieutenants R. E. Glenn and T. G. Bradley have relinquished their commissions on account of medical unfitness for Air Force service, retaining their rank.

Flight Lieutenant G. Clayton has relinquished his commission on appointment to the R.A.F.

Flight Lieutenants W. S. Noble, R. C. Rylance, and M. Mattinson have relinquished their commissions on appointment to temporary commissions in the R.A.F.

Flight Lieutenant H. V. Roberts has resigned his commission.

Flying Officer P. Westcombe has relinquished his commission on account of medical unfitness for Air Force service, retaining his rank.

WOMEN'S FORCES

EMPLOYED WITH THE MEDICAL BRANCH OF THE R.A.F.

Mary H. Power to be Temporary Flying Officer.

COLONIAL MEDICAL SERVICE

The following appointments have been announced: D. G. Conacher, M.B., A. F. Fowler, M.R.C.S., and R. G. P. Heard, M.B., Medical Officers, Tanganyika; D. Fairley, M.D., Senior Medical Officer, St. Helena; F. C. K. Austin, M.D., District Medical Officer, Windward Islands; R. E. Browne, M.R.C.S., Supernumerary Medical Officer, Leeward Islands; P. M. Yap, M.B., Medical Officer, Hong Kong; M. Zwierz, M.D., Medical Officer, St. Vincent, Windward Islands; M. A. Byer, M.B., Medical Officer of Health, St. Lucia; L. G. Eddy, M.B., D.T.M.&H., Director of Medical Services, British Guiana.

Association Notices

SUTTON COLDFIELD DIVISION

Notice is hereby given by the Council of the Association to all concerned of the formation of a new Sutton Coldfield Division of the Birmingham Branch. The new Division comprises the area of the Municipal Borough of Sutton Coldfield.

CHARLES HILL,
Secretary.

Diary of Central Meetings

JANUARY

12 Wed. Council, 10 a.m.

Branch and Division Meetings to be Held

GUILDFORD DIVISION.—At Royal Surrey County Hospital, Guildford, Tuesday, Jan. 4, 8.30 p.m. Dr. L. S. Michaelis: "Orthopaedic Treatment of Rheumatism."

LEWISHAM DIVISION.—At Lewisham Hospital, 390, High Street, London, S.E., Friday, Jan. 7, 8.30 p.m. Films: G.P. Anaesthetics.

RICHMOND DIVISION.—At Royal Hospital, Richmond, Tuesday, Jan. 4, 9 p.m. Dr. W. D. Brooks: "Bronchial Carcinoma."

Meetings of Branches and Divisions

LINCOLN DIVISION

A general meeting of the Division was held on Dec. 7, with Dr. A. M. Maiden in the chair. There were 41 members present. Resolutions from the West Sussex and Huddersfield Divisions were read which suggested that negotiations should be commenced forthwith to increase the capitation fee to 30s. After Dr. Semple had said that the B.M.A. was not entirely to blame for the present situation as the profession had not stood solidly behind them, the chairman asked Dr. Grey Turner (Assistant Secretary) to speak. He emphasized that great differences of opinion existed in different areas: some practitioners were doing much better under the Act, and a few were doing very much worse. A sample survey had shown that many doctors were making more than ever before. On a basis of available general practitioners to the number of population, it was not possible to implement a reduction to 3,000 maximum. The B.M.A. were pressing for payment of full mileage allowance for rural practitioners. Dr. Friskney put in a plea for the rural practitioners.

Dr. Friskney asked for a show of hands by members present to show how many had had a diminution of income greater than 15%. Twelve out of 24 practitioners indicated that their incomes showed this deficiency. Drs. Cheshire and O'Toole emphasized that the change in income was not so great, but the amount of work was enormously increased. On a show of hands, 15 out of 24 G.P.s indicated that the work in their practices had substantially increased since the appointed day. Dr. Sharrard proposed that the Huddersfield resolution be supported, and this was seconded by Dr. Robertson. An amendment was proposed by Dr. Temple and seconded by Dr. Friskney that a substantial increase in mileage payment be added to the resolution. This amended resolution was then carried by 20 votes to 5.

The meeting then considered a resolution from the Winchester Division suggesting that in certain maternity cases a doctor should be permitted to claim the moneys payable by the State and to charge an agreed additional fee. Dr. Semple proposed that the resolution should lie on the table. The proposal was seconded by Dr. Temple and carried unanimously.

The Winchester memorandum on the organization of the B.M.A. was next discussed. The chairman gave a brief review of the B.M.A. organization and emphasized that at present it was impossible to carry any motion if Council was not in favour of it. Drs. Cottrell, A. H. Briggs, Robertson, Friskney, Cheshire, and Grey Turner took part in the ensuing discussion. Dr. Cottrell said that the Organization Committee at Headquarters was discussing this and similar resolutions. Dr. Cheshire thought that any committee representing the present organization could not be the best one to consider a change. Dr. Grey Turner said that the chief problem was how to get through the large agenda at Representative Meetings, and thought the Division should consider if they were prepared to sacrifice their present privilege of direct approach by Divisions to a Representative Meeting. Dr. Semple proposed that they should write to the Winchester Division giving support to the main principle of their Memorandum. This proposal was seconded by Dr. Sharrard and carried without dissent.

The meeting was closed by a vote of thanks to Dr. Grey Turner which was proposed by Dr. Semple and carried with acclamation.

The Minister of Health has made the following appointments to Regional Hospital Boards.—East Anglian: Mr. C. Dudson, former Governor of Peterborough Memorial Hospital and a member of the Executive Committee of the Railway Clerks Association, in succession to Mr. O. Chivers; Col. D. Portway, Master of St. Catharine's Hospital, Cambridge, in succession to Dr. T. S. Hele. Oxford: Sir Henry Clay, Warden of Nuffield College, Oxford, and member of the Board of Governors of the Oxford United Hospitals, in succession to Sir Oliver Franks, now British Ambassador to the United States.

LONDON SATURDAY JANUARY 8 1949

CLINICAL AND SOCIAL PROBLEMS OF EPILEPSY*

BY

F. J. NATTRASS, M.D., F.R.C.P.

Professor of Medicine, University of Durham; Physician, Royal Victoria Infirmary, Newcastle-upon-Tyne

LECTURE II

The Causes of Epilepsy

There are two ways of looking at the problem of epilepsy in an aetiological sense. One is to regard all forms of convulsive attack as epilepsy, which then becomes simply a symptom of many general and nervous diseases: Cobb (1936) lists sixty clinical causes of fits. The other is to reserve the term for an essentially neurogenic disorder in which there is episodic disturbance of cortical function: this would include idiopathic epilepsy, and might reasonably include also symptomatic epilepsy due to primary intracranial disease. It would exclude convulsions due to general circulatory changes, to circulating toxins, or to metabolic poisons. According to this definition it would be correct to speak of cysticercosis epilepsy or traumatic epilepsy, but incorrect to speak of "cardiac epilepsy," "hypoglycaemic epilepsy," or "uraemic epilepsy." This clinical classification seems to me a useful one.

In every case in which an initial diagnosis of epilepsy has been made two further aims should be in the mind of the physician: (1) to determine the part of the brain in which the disturbance starts; (2) to decide the nature of the lesion at that point.

The Anatomical Diagnosis.—Localization of the site of the discharge is clinically precise in local epilepsy of all types and in generalized seizures with consistent focal onset. Lennox and Cobb (1933) instituted an inquiry into the aura or first stage of the fit in 1,359 patients. A similar inquiry was made by Gowers (1901) in 2,013 patients, and it is remarkable to find that the percentage reporting an aura of some kind is almost identical in the two series—namely, 56.2% and 57%. An aura occurred with equal frequency in idiopathic and symptomatic cases, but in only a minority was it of precise localizing significance. Aid in localization is also given by electro-encephalography, and Jasper (Penfield and Erickson, 1941) believes that such records have their chief value in demonstrating or confirming the focal origin of attacks.

The Pathological Diagnosis.—Determination of the site of a discharging lesion or epileptogenic focus, if this is possible, does not of itself, as Hughlings Jackson pointed out, give any information about the nature of the lesion. An initial approach to the problem of the pathological diagnosis is afforded by consideration of the types of cerebral lesion which predominate at different periods of life. Thus in infancy the chief organic cerebral causes of epilepsy are developmental brain defect and birth injury. Such injury

may result from prolonged asphyxia or from cortical laceration, and in these children there are generally other evidences besides epilepsy of diffuse or focal brain injury. It is important to remember that the development of fits originating from the neighbourhood of the injury may be delayed until later childhood or even adult life (Penfield and Erickson, 1941). Acquired cerebral lesions of childhood are often followed by epilepsy. In these, as in birth trauma, there are likely to be focal signs of brain injury, especially hemiplegia. Occurring as a complication of infections of known and unknown nature, and accompanied at the outset by convulsions, the cerebral injury is probably more often due to vascular thrombosis than to encephalitis. After childhood the major organic cerebral causes of epilepsy are head injury, cerebral tumours, and cerebral arteriosclerosis. These have their maximum incidence in early adult life, middle age, and old age respectively.

Significance of Infantile Convulsions

Assessment of the significance of convulsions in an individual child is a clinical problem involving a weighing of the evidence. The presence of signs of pre-existing brain defect or injury is unfavourable. Recurrent attacks occurring at intervals without known exciting cause are strongly suggestive of idiopathic epilepsy, which is likely to continue. Petit mal attacks have the same significance. These considerations apart, an isolated convulsion or a short series of convulsions occurring in early childhood during an acute infective illness, and unaccompanied by persisting evidence of brain damage, need not cause anxiety about the future or call for continued anticonvulsant treatment: the great majority of such children do not develop epilepsy. This is in accordance with the usual belief, but does not justify a tendency to regard infantile convulsions generally as of little moment.

Age of Onset of Idiopathic Epilepsy

A diagnosis of idiopathic epilepsy implies the exclusion so far as is possible of all organic cerebral lesions and in general a tendency to recurrence of attacks without known cause. Idiopathic epilepsy may arise at any age, but does so especially in childhood and youth. An onset in later years is usually stated to be decidedly infrequent. Most textbooks contain warnings such as the following: "It is always well to be suspicious of 'epilepsy' beginning in adult life, for in a majority of such cases the disease is not epilepsy" (Christian, 1942).

Organic disease of the brain which may cause epilepsy is commoner in later life, and therefore epilepsy in such patients is more likely to be due to progressive intracranial disease than in children or adolescents. Nevertheless I see many patients whose fits begin in adult life and continue

*The second Lumleian Lecture, delivered to the Royal College of Physicians, April 15, 1948 (abridged). Lecture I appeared in last week's issue.

without evidence of any structural basis for the attacks. In order to clarify this matter I have made an inquiry into the age of onset in my cases, and secondly into the cause of attacks in the later age groups.

Table I shows the age of onset in 991 cases. While, in accordance with general experience, the highest incidence is in the second decade, it will be noted that 12% showed the first evidence of epilepsy between the ages of 30 and 40 and 17% after the age of 40.

TABLE I.—Age of Onset of Epilepsy in 991 Cases

0-10 years	19%	31-40 years	12%
11-20 "	30%	Over 40 "	17%
21-30 "	22%		

Table II shows a comparison of this series with some previous records.

TABLE II.—Percentage of Cases of Epilepsy with Onset over Age 30

Gowers	Turner	Spratling	Starr	Kraepelin	Paskind	Present Series
9.3	9.8	7.4	12.7	12.8	19.2	29.0

It will be noted that the figures of Paskind (1932) and my own series indicate a markedly higher proportion than the others of patients in whom the first fits occurred after the age of 30. This observer's statistics and my own are comparable because we were both dealing with patients in private practice or in the purely consultative out-patient service of a general hospital. Most if not all of the other assessments were made on patients in institutions or attending special hospitals for epilepsy. These represent a more severe and deteriorated group, and in such patients the age of onset is earlier. Of Paskind's patients 93.5% were in excellent mental health and were engaged in occupations similar to those of the great mass of the population. Tylor Fox (1939) states that there are about 20,000 epileptics in various institutions in this country, and estimates that there are at least 100,000 in the community at large. The extra-mural group is therefore more representative of epileptic patients as a whole.

Table III gives the results of a follow-up, after not less than three years, of 100 cases of epilepsy with onset after the age of 40.

TABLE III.—Follow-up of 100 Cases of Epilepsy with Onset after the Age of 40

Deaths	25
Tumour—proved 8, probable 2	10
Effects of cerebral arteriosclerosis	5
Heart failure	3
Air raid	1
Pancreatic tumour ? hypoglycaemia	1
G.P.I.	1
Cause unknown	4
Improved (fits ceased or diminished)	48
I.S.Q. or worse	27

Of the 25 deaths 10 were due to intracranial tumour and five to cerebral arteriosclerosis. Of the 75 surviving patients none showed on re-examination any symptom or sign of intracranial tumour. Their general condition on the whole was good: most of them were living almost normal lives and were at work. A gratifying number seem to have been much improved by treatment.

Evidences of arterial disease are not conspicuous in these patients. Without doubt cerebral arteriosclerosis may cause epilepsy. But it is not justifiable to assign seizures to this cause merely because the patient is of advanced age. Analysis of blood pressure readings does not seem to indicate the presence of hypertension in these epileptic patients in any greater proportion than in non-epileptic subjects of the same age.

Other evidences of cerebral arteriosclerosis—for example, strokes and mental deterioration—were notably infrequent.

The question arises whether Jacksonian epilepsy is specially suggestive of tumour. Of the 100 patients with onset after the age of 40, 11 are known to have had Jacksonian attacks (Table IV). Of these 8 are dead, the cause being shown.

TABLE IV.—Significance of Jacksonian Epilepsy among 100 Patients

Number known to have Jacksonian attacks ..	11
Deaths	8
Tumour	3
Cerebral arteriosclerosis	1
G.P.I.	1
Heart failure	2
Unknown	1

The mortality is unexpected, but the point which emerges is that Jacksonian attacks, while revealing the site of the disturbance, give no indication of the nature of the lesion.

One further point of clinical significance is the time of attacks. For the 75 surviving patients this is shown in Table V.

TABLE V.—Time of Epileptic Attacks in 75 Patients over Age 40

Diurnal only	31	Irregular	17
Nocturnal only	27		

A final statistical item invites an approach from another angle—namely, the incidence of epilepsy in a series of intracranial tumours. My colleague G. F. Rowbotham has kindly allowed me to analyse the records of 200 consecutive cases of verified tumour admitted to his clinic in the course of about two years.

TABLE VI
Incidence of Epilepsy in 200 Cases of Intracranial Tumour

Number with fits	56 (28%)
Number with fits at onset	38 (19%)
Grand mal	22
Jacksonian	14
Petit mal	2

Time of Appearance of other Signs of Tumour in 38 Cases with Epilepsy at Onset

Period	No. of Cases	Period	No. of Cases
1-6 months	10	5-6 years	1
6-12 "	8	6-7 "	2
1-2 years	5	7-8 "	1
2-3 "	4	8-10 "	1
3-5 "	5	10-12 "	1

Fits occurred in 28% at some stage. In 19% the patients came under observation because of some type of epileptic attack. In more than half the initial attack was of the grand mal type, in about a third Jacksonian; while in two patients the earliest attacks were of the petit mal variety. Half of these patients with epilepsy at the onset developed other symptoms and signs of intracranial tumour within twelve months. In the remainder such evidence was delayed up to five years, and in isolated cases up to twelve years.

Glioma of a cerebral hemisphere was much the commonest cause of fits; cases which were latent for several years were either astrocytomas or meningiomas. High intracranial pressure *per se* is not an important cause of fits; for example, they are rare in posterior fossa tumours, though these are usually associated with early internal hydrocephalus.

Similar conclusions have been published by a number of observers (Sargent, 1921; Parker, 1930; Dowman and Smith, 1928; Penfield and Erickson, 1941), though the time relationship between epilepsy and other symptoms has not to my mind been sufficiently stressed. The proportion of cases with epilepsy at the onset is considerably lower in most of these reports.

Discussing the causes of epilepsy, Penfield and Erickson (1941), while recognizing that idiopathic seizures may start

at any time, write as follows: "In cases of onset between 35 and 55, the most frequent cause is cerebral neoplasm." "After 55 years the various cerebral lesions produced by abnormality of the cerebral blood vessels become more frequent, though the strong probability of neoplasm must still be remembered." "Idiopathic epilepsy comes on in youth, not in early infancy, and not in middle age or old age."

With reference to these conclusions I would point out that statistics about epilepsy are affected by the tendency for the patients to fall into different groups. There is the broad division between institutional and non-institutional cases. There is also, I think, a process of selection operating in regard to patients sent to neurological surgeons: in a personal communication Penfield agrees with this opinion. I would be the last to minimize the importance of seeking an organic cause in all cases, and especially in patients of tumour-bearing age, but I cannot avoid the conclusion that among epileptics as a whole the largest group must still be classified as idiopathic. When fits are due to tumour careful observation reveals other symptoms and signs within a few months in the majority of cases if these are not already present at the onset of the illness.

Aetiology of Idiopathic Epilepsy

The term "idiopathic" is a deliberate declaration of aetiological ignorance. Without doubt a proportion of cases so classified are due to unrevealed structural causes. Of the remainder it seems probable that the chief cause is an inherited instability of the cortex. But if this is so, then what is inherited is infrequently actual epilepsy; more often a less specific dysrhythmia.

Evidence about heredity is derived primarily from studies of family histories. It has been estimated that 1 in 200 to 300 of the population as a whole has had fits at some time. Among the near relatives of epileptics 1 in 40 to 50 has had fits (Lennox, 1945b). That is to say, seizures are five to six times more frequent in the parents, siblings, and children of epileptics than in the general population. Taking relatives as a whole and not only near relatives, a family history of epilepsy has been obtained by various observers in some 4% of non-epileptics and in from 20 to 30% of epileptics. This figure is less when attacks begin in adult life. Very striking is the finding in a series of identical twins that in 70% of these if epilepsy was present in one twin it was present in the other (Lennox, Gibbs, and Gibbs, 1940).

Further evidence comes from electro-encephalographic records. Soon after the initial discovery of distinctive records in epileptic attacks several observers (Lowenbach, 1939; Strauss *et al.*, 1939) recorded abnormal waves in the relatives of patients. In one study 60% of the near relatives of a group of epileptics were found to have various abnormal rhythms, as compared with 10% of controls with no such family history (Lennox, Gibbs, and Gibbs, 1940). It is important to note, however, that the proportion of relatives whose records showed paroxysmal disturbances of specifically epileptic type was much smaller. Again of special interest is the observation (Lennox, Gibbs, and Gibbs, 1942) of seven pairs of identical twins: one of each pair had epilepsy, and in each instance the other twin showed a significantly abnormal record.

These studies of family trees and electro-encephalograms agree in showing a hereditary predisposition which is very much more frequent than the direct inheritance of epilepsy. It has been suggested that epilepsy results when acquired factors such as trauma or tumour combine with genetic factors. This theory is attractive, but seems to have only a limited application, since in the majority of cases no exciting cause can be found for the onset of overt epilepsy.

Medicinal Treatment

On May 11, 1857 (vide *Lancet* of that date), Sir John Locock presided at a meeting of the Royal Medical and Chirurgical Society of London at which an address on epilepsy was given by Sieveking. In the discussion Locock mentioned that he had been trying treatment by bromide of potassium at the suggestion of an unnamed German physician. The suggestion was made because this medicine had been found to depress sexual activity, and the idea had long been prevalent that masturbation was an important cause of epilepsy. This belief persisted: as late as 1880 a paper was read at the annual meeting of the British Medical Association at Cambridge on the treatment of epilepsy by castration (Temkin, 1945). Bromides in various combinations became the first effective treatment of this disease, and remained unchallenged for fifty years.

Phenobarbitone

Medicinal treatment is now more hopeful than in the past, but rather more complex because several drugs of proved efficacy are available and it is necessary in each case to decide which remedy or combination of remedies is most likely to be successful. Phenobarbitone has very largely replaced bromides because both clinically and experimentally it is a more effective anticonvulsant, is easier to take in tablet form, and is almost free from toxic effects. The dose which can be tolerated without drowsiness varies very much in different individuals. It is generally sufficient to give it morning and night in a dose of 1½ gr. (0.1 g.) for an adult, but this may be pushed considerably higher in some patients if control of attacks is inadequate. Patients who have only nocturnal attacks may take a rather larger dose at night, but it is probably best not to omit altogether a smaller morning dose, because if it is given only once in twenty-four hours there is a tendency for attacks to be postponed to the uncontrolled period. When the optimum dose has been decided it should be maintained with great regularity: if attacks have been absent for three years it may be reduced gradually and finally discontinued. Sudden cessation frequently leads to return of attacks.

"Epanutin"

In an exhaustive series of experiments Merritt and Putnam (1945) found that the most effective anticonvulsant tested was the sodium salt of 5, 5, diphenyl-hydantoin, known in this country under the approved name of soluble phenytoin and "epanutin," and as dilantin sodium in America. A large number of reports have been published since this drug was introduced ten years ago (Parke, Davis and Co., 1945). There is no doubt it is the most powerful anticonvulsant known, and it has the great advantage that in therapeutic doses it has practically no hypnotic effect. It is especially potent in the control of psychomotor attacks. It has not, however, displaced phenobarbitone, because with its use there is a much higher incidence of toxic effects. These are rarely dangerous, but they may be alarming, and the margin between the effective therapeutic dose and the toxic dose is often narrow.

When toxic symptoms occur they usually do so early in treatment, but occasionally they appear after several months. Nausea and vomiting are generally avoided by giving the remedy with meals. Erythematous rashes with fever are infrequent but necessitate withdrawal of the drug, with resumption in gradually increasing doses. The most frequent and disturbing effects are referable to the nervous system, and include nystagmus and diplopia, tremors, and ataxia of upper and lower limbs.

A curious oedema of the gums has been reported with varying frequency in different series. In spite of much work on it the nature of the change is obscure: its incidence is diminished by preliminary removal of oral sepsis, and continued care of the teeth and massage of the gums usually render it unnecessary to discontinue the drug.

No serious blood changes have been reported from the use of epanutin.

The usual minimal effective dose for adults is three capsules (each 1½ gr.: 0.1 g.) daily, one with each of the principal meals.

If a distinct effect is not observed a fourth dose may be added, and further additions may be made in cases under continuous observation. Most British reports on this remedy come from institutions, and therefore concern severe cases and usually those which have failed to respond satisfactorily to phenobarbitone. For less severe cases it is not always necessary to give full doses; furthermore, if the treatment is begun and increased gradually toxic effects are lessened (Pullar-Strecker, 1945).

Both phenobarbitone and epanutin are anticonvulsants and of chief value in the control of major seizures. They are often without effect on petit mal, and indeed epanutin may increase the number of attacks of this type. In cases resistant to either drug alone a combination of the two may prove more effective. Such combined medication is in fact very commonly used, but it is important to realize that if this plan is followed the dosage of each drug should be adequate. There is reason to believe that the action of the two is different: the beneficial effects of the second drug are not obtained unless it is given in sufficient amount to produce an effect by itself, and the toxicity of the one is neither enhanced nor diminished by the other (Blair, 1947).

"Tridione"

The frequent failure of the anticonvulsants to influence petit mal gives importance to the introduction of a drug which has a striking effect on this type of attack and also on the allied akinetic seizures and on epileptic myoclonus. This is 3,5,5-trimethylxazolidine-2,4-dione, or "tridione," and its use for epilepsy is due to Lennox. It has become available in this country only in the past few months, and only one report has yet been published by a British observer (Butter, 1948). I can therefore only speak of it from a very limited personal experience, but it may be useful to mention the main facts as set out in the careful reports from America, where some 10,000 patients are being treated with it. Lennox (1945a, 1947) reported that of 166 patients 31% had been entirely freed of attacks, and in 32% attacks were less than a quarter of their previous number; 83% in all had fewer seizures. Furthermore, in many cases the distinctive paroxysmal spike-and-wave pattern of the electro-encephalogram was restored to normal. He emphasizes that the drug is wrongly described as an anticonvulsant, for not only is it ineffective against convulsive seizures but it may increase these if they already exist.

This remedy is given in capsules of 0.3 g., and the usual dose is three capsules a day for children over 5 years, and four capsules a day for adults, taken with meals. For small children the contents of a capsule may be given with food. The effect on attacks may be immediate, but the maximum effect is usually seen in one to four weeks; the longest period of waiting for relief was six months.

Toxic effects were soon noted. About one in seven patients develops a rash, either a papular rash on the forehead or a morbilliform eruption; if the latter is generalized it is advised that the drug be stopped for a few days and resumed gradually. About one-third of the patients complain of intolerance of bright light; the degree of this symptom, the nature of which is unknown, varies, and it seldom necessitates stoppage of the remedy. No evidence of injury to the retina or optic nerves has been detected. Such toxic effects are rarely serious, but in 1946 two reports (Harrison *et al.*, 1946; Mackay and Gottstein, 1946) were published simultaneously of fatal aplastic anaemia and agranulocytosis due to this drug. It had been given for six months and ten months respectively, when the blood changes appeared suddenly and could not be controlled by any measures. Including these two, Lennox has learnt of four fatal cases. Two further cases have been reported in this country. One (Braithwaite, 1948) had a transient urticarial rash on the 25th day; on the 51st he developed gingivitis and pyrexia. The drug was stopped on the 53rd day, but he died three weeks later with agranulocytosis and an aplastic marrow. The second died, after four weeks' treatment, from exfoliative dermatitis without any blood changes (Kerrin, 1948). These fatalities may reasonably be attributed to idiosyncrasy, and are perhaps no more frequent than with some other drugs, but such drugs are seldom administered for long periods, while remedies for epilepsy have usually to be continued indefinitely. It is therefore important to learn that withdrawal of tridione, unlike phenobarbitone and epanutin, is not followed by an early return of attacks, and in many cases

they have not returned at all. Lennox advises that if attack have been absent for three months the drug should be reduced gradually and finally discontinued. He believes that if monthly blood examinations are done danger can be averted by stopping the drug if the polymorph count falls below 1,600 per c.mm. In 127 patients who had taken tridione for periods up to two years he found that the count fell to this level in 6%, in a cases returning to normal when the drug was stopped. My own experience, though limited to 9 cases, is favourable: in all attacks have been reduced and toxic effects absent except for some complaint of the glare phenomenon. The leucocyte count has not fallen in any case, but tended to rise. In three of these patients attacks have now been absent for three months and the drug is being withdrawn.

Summary of Medicinal Treatment

It may be said that, if a patient suffers from grand mal only, the choice lies between epanutin and phenobarbitone. In young subjects, in whom it is desirable to bring the attacks under control as quickly and certainly as possible because of the danger of mental deterioration, the more powerful remedy epanutin should in my opinion be used provided the necessary observation can be maintained. Alternatively, phenobarbitone may be used in the first instance. If after due observation attacks are not controlled, epanutin should be added gradually without reducing the dose of phenobarbitone. In such cases it is probably best to continue the two drugs together, but reduction in the amount of phenobarbitone may be tried.

When the patient has both grand mal and petit mal control of the former is the more important, but if attacks of the latter are frequent tridione should be used as well as an anticonvulsant. In this event phenobarbitone should be chosen, since epanutin tends to increase petit mal.

For psychomotor attacks epanutin is much the most effective agent. For pure petit mal the evidence I have indicated points to the use of tridione with the appropriate precautions.

Status epilepticus calls for urgent control by full doses of sedative. Probably the safest and most effective method is the intramuscular injection of 5 to 10 ml. of paraldehyde, repeated if necessary. Alternatively, soluble phenobarbitone may be injected in 3-gr. (0.2 g.) doses.

Finally, in this connexion I would quote the words of Blair (1940), that with the remedies now available there are few epileptics who cannot expect reasonable control of their fits, and hope should never be abandoned until these treatments have each been patiently and efficiently tried out.

Surgical Treatment

Epilepsy *per se* is not an indication for surgical intervention. If it can be shown that attacks are arising from a local brain lesion, operation may be justified in the hope of removing the epileptogenic focus. If this is a tumour, relief of fits is only an incidental aim of operation. Non-progressive lesions may be manifested solely by epilepsy: such lesions are meningocerebral scars resulting from traumatic, vascular, or inflammatory changes. Their presence may be suspected because of local epilepsy or generalized epilepsy with consistent focal onset, together with indications from the history of the manner in which they might have originated. Any persistent evidence of impaired function, such as minimal signs of hemiplegia, would of course be decisive evidence of a local lesion. But attacks of both these types occur commonly in idiopathic epilepsy, and a negative exploration may make the patient worse. In these circumstances radiographs after the introduction of air by lumbar puncture provide evidence of the greatest importance (Childe and Penfield, 1944). To this method may now be added the demonstration of a focal lesion by the electro-encephalogram.

Decision about operation if a local lesion has been demonstrated is by no means simple. It has to be remembered that epileptic attacks do not arise directly from an area of cortical fibrosis but are the result of instability produced by the scar in neighbouring but intact cortical cells. Therefore attacks may continue in spite of a clean excision, and anticonvulsant treatment must be maintained. Excision of such an area means replacing one scar by another and possibly converting a discharging lesion into a destroying lesion. In each case the frequency of attacks, the effects of a full trial of medicinal treatment, and the risks of injury by the operation have to be taken into account.

Social Problems of Epilepsy

The social consequences of epilepsy are peculiarly severe, and it is our duty to mitigate them so far as lies in our power. Nothing can alter the fact that a liability to sudden and unpredictable attacks of loss of consciousness or of uncontrolled behaviour is a grave handicap to any human being. In this respect epilepsy is much more serious than any other of the paroxysmal disorders, and this is a reason for a *separateness and not a unity of these disorders*.

Two fears fill the minds of the parents of a child with epilepsy—the fear of accident and the fear of mental deterioration. That dreadful accidents can occur we all know, but when we consider the immense aggregate of fits which occur among epileptics in the community we must recognize that serious accidents from this cause are relatively very few. The danger of mental deterioration when attacks begin in childhood is real enough, but is usually much exaggerated in the parents' thoughts. Though there are exceptions, this danger is on the whole proportionate to the frequency and severity of attacks; the risk is therefore diminished by the improved methods of treatment now available. Children with pure petit mal, and the great majority with only occasional grand mal, are in little danger of mental change. Presentation of these facts is of incalculable value to the parents, and is to be preferred to vague promises and hopes.

The first serious social decisions are concerned with education. Frequent major seizures are incompatible with ordinary school life. Petit mal attacks, even if numerous, are almost devoid of risk and should not prevent attendance at school. Infrequent major seizures should not be a barrier. The welfare of the children as a whole must be the first consideration, but if the attitude of teachers is free of fuss and anxiety the witnessing of an occasional attack by other children does these children no harm. Few if any of the school activities should be denied to the epileptic boy or girl. To exclude games for fear of head injury is to provoke greater risks to the child's physical development and peace of mind. Swimming is more doubtful, and must be under supervision; but each case must be considered on its merits, frequency and time of attacks being all-important. To prohibit cycling may cause much unhappiness and is by no means always necessary. Examinations should be taken in the ordinary way. Nothing must prevent the regular supervision of medicinal treatment.

Interesting studies have been made of University students subject to epilepsy. In one such study of 93 students (Himmler and Raphael, 1944) 76% were classified as of the idiopathic group; the rest had some evidence of cerebral injury or defect: 65% to 70% did creditable work and took up jobs of all kinds, including medicine. Of 70 epileptic students at another University (Lennox, 1946) the number graduating equalled the record for all students.

Such facts have a bearing on the important question of choice of occupation. Essentially a decision depends on the degree to which attacks are controlled by treatment.

Short of complete control, however, infrequent attacks should seldom be held to prevent a young man from adopting the occupation of his choice. Certain callings are clearly unsuitable. They include contact with dangerous machinery, work at heights or in the mines, or any post in which an attack might involve danger to others. It is not in our discretion to give permission for a patient subject to epilepsy to drive a motor vehicle, for this is his own responsibility. The law, being unsatisfactory (Symonds, 1948), is in fact widely evaded.

Medicine, law, the arts, and many office occupations need not be regarded as closed, for there are branches of these which can be pursued with success and safety, though others are barred. For those with no special ambitions more specific advice may be given, and I have been accustomed to suggest work on the land, which is healthy, active, and satisfying, and involves little restriction apart from possible avoidance of agricultural machinery.

As a fact the great majority of adult epileptics outside institutions earn their living in every variety of calling, and many have achieved fame in every walk of life. These people form by far the largest group of all sufferers from epilepsy. They are a relatively stable group and do not deteriorate as the years pass, but rather tend to improve. The more serious cases beginning in childhood have been weeded out. But though they are at work for the most part, they suffer serious social disabilities. Many conceal their liability to fits and go in fear of an attack at work which will lead to loss of their employment.

Hitherto probably the greatest deterrent to the securing of work has been the liability of employers for accidents arising out of and in the course of employment. Replacement of the Workmen's Compensation Act by the National Insurance (Industrial Injuries) Act should greatly assist in the employment of epileptics in common with other partially disabled persons. The need for full use of man-power, as well as an increased sense of social responsibility, led to the Disabled Persons (Employment) Act of 1944, under the provisions of which a proportion of disabled persons must be accepted by all employers of more than twenty people. The Act provides for registration as a means of identifying those who are qualified for its benefits, and responsibility for finding suitable employment is in the hands of Disablement Resettlement Officers (D.R.O.s) working at the Employment Exchanges. For those judged unfit for ordinary employment, work may be found in sheltered workshops maintained under the Act by the Disabled Persons' Employment Corporation: eight of these factories have been established throughout the country and fifty more are planned. Special provision for epileptics has been made in certain of these factories.

Apart from official help, voluntary organizations, including the hospital almoners' service, are ready to assist epileptics to get and keep jobs, and are endeavouring to overcome prejudice and ignorance on the part of employers and the public in regard to this disease. In this country Tylor Fox (1939, 1947), and in America Lennox (Lennox and Cobb, 1942), have in particular been tireless in their efforts to improve the lot of epileptics in the community. The success of all plans depends entirely on the initiative and co-operation of those in medical charge of the patients. We alone know when it is reasonable to ask employers to accept such persons in their factories or offices; school and University authorities look to us for guidance in the difficult decision whether to accept a student or pupil known to be liable to fits. To recommend unsuitable patients is to do harm to them and to epileptics as a whole. No two cases are exactly alike; frequency and character of attacks are clearly the main considerations, but favourable points are

the occurrence of attacks chiefly or solely during sleep or in the early mornings, the existence of a warning long enough to enable the patient to avoid heavy falls, and a satisfactory degree of control by medicinal treatment.

One further social problem is that of marriage. On the basis of the evidence about the heredity of epilepsy formerly noted, the chance of a child of an epileptic also becoming epileptic has been variously estimated as from 1 in 10 to 1 in 40 (Brain, 1926; Lennox, 1945b). The risk of transmission is probably much less still if attacks begin in adult life, or if the patient has no family history of epilepsy; also if attacks are the result of a definite brain injury. A family history in both partners greatly increases the risk. Electrical records of epileptic type in either partner or both partners have probably the same significance. The prospect of producing epileptic children is therefore far less than is generally believed, and this we can conscientiously explain to those concerned. The real risks in marriage are the anxieties and dangers caused in the home and at work by the attacks themselves: these known risks can be calculated and faced. Nevertheless, so great is the dread of epilepsy that many patients decline marriage or refuse to have children. Both decisions are probably wrong, but they are understandable.

I have pleasure in acknowledging the help of successive assistants in following up cases—namely, Drs. H. G. Miller, F. Robertson, R. Mowbray, G. C. Ismay, and J. P. Anderson.

REFERENCES

- Adie, W. J. (1924). *Brain*, 47, 96.
 — (1930). *Lancet*, 2, 237.
 Berger, H. (1929). *Arch. Psychiat.*, 87, 527.
 — (1932). *Ibid.*, 97, 6.
 Blair, D. (1940). *J. ment. Sci.*, 86, 888.
 — (1947). *British Medical Journal*, 2, 171.
 Blyth, W. (1943). *Ibid.*, 1, 100.
 Brain, W. R. (1926). *Quart. J. Med.*, 19, 300.
 Braithwaite, R. F. (1948). *British Medical Journal*, 1, 14.
 Bridge, E. M., Livingston, S., and Tietze, C. (1943). *J. Pediatr.*, 23, 539.
 Butter, A. J. M. (1948). *Ibid.*, 1, 13.
 Childs, A. E., and Penfield, W. (1944). *Amer. J. Psychiat.*, 101, 30.
 Christian, H. A. (1942). *Osler's Medicine*, 14th ed. New York.
 Cobb, S. (1936). *Med. Clin. N. Amer.*, 19, 1583.
 Cohn, R., and Cruvant, B. A. (1944). *Arch. Neurol. Psychiat.*, 51, 163.
 Collier, J. (1928). *Lancet*, 1, 588.
 Critchley, M. (1937). *Brain*, 60, 13.
 Dow, D. J., and Whitty, C. W. M. (1947). *Lancet*, 2, 52.
 Dowman, E. C., and Smith, W. A. (1928). *Arch. Neurol. Psychiat.*, 20, 1312.
 Ely, F. A. (1930). *Ibid.*, 24, 943.
 Feiling, A. (1942). *Trans. med. Soc. Lond.*, 63, 178.
 Fox, J. T. (1939). *J. ment. Sci.*, 85, 940.
 — (1941). *Lancet*, 1, 631.
 — (1947). *Ibid.*, 1, 775.
 Gibbs, F. A., Gibbs, E. L., and Lennox, W. G. (1943). *Arch. Neurol. Psychiat.*, 50, 111.
 — Lennox, W. G., and Gibbs, E. L. (1936). *Ibid.*, 36, 1225.
 — — (1938). *Ibid.*, 39, 298.
 Golla, F., Graham, S., and Walter, W. G. (1937). *J. ment. Sci.*, 83, 1737.
 Gowers, W. R. (1901). *Epilepsy*. London.
 — (1907). *The Borderland of Epilepsy*. London.
 Harrison, F. F., Johnson, R. D., and Ayer, D. (1946). *J. Amer. med. Ass.*, 132, 11.
 Himler, L. E., and Raphael, T. (1944). *Amer. J. Psychiat.*, 101, 762.
 Holmes, G. (1927). *Lancet*, 1, 957.
 — (1946). *British Medical Journal*, 2, 1.
 Hunt, J. R. (1922). *J. nerv. ment. Dis.*, 56, 351.
 Jackson, J. Hughlings (1931). *Selected Writings*, edited by J. Taylor, London.
 Kerrin, J. C. (1948). *Lancet*, 1, 267.
 Lennox, W. G., (1945a). *J. Amer. med. Ass.*, 129, 1069.
 — (1945b). *Hum. Fertil.*, 10, 97.
 — (1946). *Science and Scarcity*. New York and London.
 — (1947). *J. Amer. med. Ass.*, 134, 138.
 — and Cobb, S. (1933). *Arch. Neurol. Psychiat.*, 30, 374.
 — (1942). *Industr. Med.*, 11, 571.
 — Gibbs, F. A., and Gibbs, E. L. (1940). *Arch. Neurol. Psychiat.*, 44, 1155.
 — — (1942). *Ibid.*, 47, 702.
 Lewis, T. (1933). *Diseases of the Heart*. London.
 Lowenbach, H. (1939). *Bull. Johns Hopk. Hosp.*, 65, 125.
 Mackay, R. P., and Gottstein, W. K. (1946). *J. Amer. med. Ass.*, 132, 13.
 Martin, J. P. (1945). *Brain*, 68, 167.
 Medical Research Council Report (1944). *British Medical Journal*, 1, 279.
 Merritt, H. H., and Putnam, T. J. (1945). *Epilepsia*, 3, 1.
 Nattress, F. J. (1938). *British Encyclopedia of Medical Practice*, vol. 9, p. 91. London.
 Parke, Davis and Co. (1945). *Convulsive Disorders* (with bibliography).
 Parker, H. L. (1930). *Arch. Neurol. Psychiat.*, 23, 1032.
 Rook, A. F. (1932). *Ibid.*, 28, 370.
 Penfield, W., and Erickson, T. C. (1941). *Epilepsy and Cerebral Localization*. London.
 Pullar-Strecker, H. (1945). *Med. Pr.*, 213, 376.
 Rook, A. F. (1946). *Brain*, 69, 138.
 — (1947). *Quart. J. Med.*, 16, 181.
 Rudolph, G. de M. (1946a). *Bristol med.-chir. J.*, 63, 132.
 — (1946b). *J. ment. Sci.*, 92, 814.
 — (1947). *Ibid.*, 93, 369.
 Ryle, J. A. (1939). *Lancet*, 2, 408.
 Sargent, P. (1921). *Brain*, 44, 312.
 Schumacher, G. A., and Wolff, H. G. (1941). *Arch. Neurol. Psychiat.*, 45, 199.
 Shafar, J. (1941). *Lancet*, 1, 632.
 Strauss, H., Rahm, W. E., and Barrera, S. E. (1939). *Proc. Soc. exp. Biol., N.Y.*, 42, 207.
 Symonds, C. P. (1948). *British Medical Journal*, 1, 533.
 Temkin, O. (1945). *The Falling Sickness*. Baltimore.
 Walshe, F. M. R. (1941). *Price's Textbook of Medicine*. London.
 — (1943). *Brain*, 66, 104.
 Whitty, C. W. M. (1943). *Ibid.*, 66, 43.
 Williams, D. (1944). *Ibid.*, 67, 10.
 Wilson, S. A. K. (1928). *Modern Problems in Neurology*. London.

DIABETIC FERTILITY, MATERNAL MORTALITY, AND FOETAL LOSS RATE

BY

J. A. L. GILBERT,* M.D., F.R.C.P.Ed., M.R.C.P.

AND

D. M. DUNLOP, B.A., M.D., F.R.C.P., F.R.C.P.Ed.

(From the Medical Research Council Clinical Endocrinology Research Unit, Edinburgh University)

Fertility

Pregnancy in diabetic women in the pre-insulin era was a rare event. Skipper (1933) credits Bennewitz (1826) with the first recorded case. Amenorrhoea due to uncontrolled diabetes accounted for the low fertility rates of 2–6% quoted by Lecorché (1885), von Noorden (1909), and Skipper (1933). The diabetic control that followed the introduction of insulin in 1923 largely abolished the amenorrhoea and produced a concomitant increase in fertility.

Skipper (1933), reviewing the records of the London Hospital, noted a fertility rate of 15% amongst 177 diabetic women between 1923 and 1931, compared with a rate of 2% amongst 190 comparable diabetic women between 1893 and 1922, while Eastman (1946) observed a fertility rate of 28.6%.

The rate of diabetic to non-diabetic pregnancies admitted to large obstetric hospitals has shown a similar rise. Williams (1909) saw only one pregnant diabetic during his thirteen years in charge of the obstetric service at Johns Hopkins Hospital, and in his review of the literature found only 65 recorded cases, whereas Mengert and Laughlin (1939) quote a ratio of 1 in 276, Barns (1941) 1 in 930, and Eastman (1946) 1 in 282. There were 70 diabetic pregnancies among the 20,438 confinements at the Simpson Memorial Maternity Pavilion of the Royal Infirmary, Edinburgh, between 1943

*This work was carried out during the tenure of a Lund Research Fellowship of the Diabetic Association.

and 1947—a ratio of 1 in 292. Insulin has therefore raised the status of the pregnant diabetic from that of a medical curiosity to one for which adequate provision must be made in any maternity service.

Maternal Mortality

An immediate maternal mortality of between 25 and 30% in diabetic women was associated with pregnancy in the pre-insulin era (Duncan, 1882; Offergeld, 1908; Williams, 1909; and others). The last-named author noted an immediate mortality of 27%, with an additional 23% during the ensuing two years, due to diabetic coma in the majority of cases. The insulin era has been associated with a progressively declining maternal mortality. Reviews of the literature by Skipper (1933) and Kramer (1935) revealed immediate maternal mortalities of 9.3 and 3.4% respectively. A mortality rate of less than 2% was quoted by Lawrence and Oakley (1942). White (1946) reported the loss of only one mother in 271 diabetic pregnancies between 1936 and 1946. Several smaller series of cases reported by Kramer (1935), Brandstrup and Okkels (1938), Shir (1939), Mengert and Laughlin (1939), and others reveal no maternal loss. There was one maternal death among the 70 pregnancies in the 62 diabetic women confined at the Simpson Memorial Maternity Pavilion, Edinburgh, between 1942 and 1947. It is thus apparent that the introduction of insulin has made pregnancy relatively safe for diabetic women.

Foetal Loss

The beneficial effects on the mother from insulin treatment have not been shared by the foetus. Henley (1947), reviewing the literature, noted a foetal loss of 43% in 169 pregnancies during the pre-insulin era, compared with 5.6% in 924 pregnancies since the introduction of insulin. The foetal loss rate in his own series was 55%.

The published figures of the foetal loss rate show considerable disparity. Mengert and Laughlin (1939) and Miller, Hurwitz, and Kuder (1944), considering only the foetal deaths occurring late in pregnancy and the deaths of babies during the neonatal period, found the foetal loss rate to be 18.2 and 23.6% respectively. On the other hand the foetal loss rates reported by Ronsheim (1933), Herrick and Tillman (1938), Barns (1941), and Lawrence and Oakley (1942), covering the whole course of pregnancy and the neonatal period, were 64, 43, 44, and 37% respectively.

Throughout this review of our cases the term "foetal loss rate" is taken to mean the percentage of all pregnancies not resulting in the birth of a baby living for at least 14 days. The term is therefore inclusive of all abortions, miscarriages, intrauterine deaths, stillbirths, and deaths occurring during the first 14 days of the neonatal period.

Using this definition, Table I shows that in spite of medical and obstetric supervision which we hope has been at least not inferior to the average in the country our foetal loss rate during the last five years has been as high as 51.4%.

TABLE I.—*Diabetic Foetal Loss Rate*

Period since Diagnosis of Diabetes	Total No. of Pregnancies	Foetal and Neonatal Loss	Foetal Loss Rate
0-2 years	35	19	54.3%
3 years and over	35	17	48.6%
Total	70	36	51.4%

In comparison with such figures recent results published by White (1946) are striking. This worker uses hormonal therapy to correct abnormal gonadotrophin and pregnanediol levels. She reports foetal loss rates based on

whether these levels are normal or abnormal and on whether patients have been given hormonal treatment of sufficient intensity to correct any abnormality which may exist. She found a foetal loss rate of only 3% when hormonal levels were normal, in comparison with 48% in cases with abnormal levels; but correction of abnormal levels by appropriate therapy resulted in a fall of the foetal loss rate to 10%. Her series, however, does not include abortions before the 24th week of pregnancy, so that her figures are not strictly comparable with our own. Even taking this into account, however, the foetal mortality reported by White is incomparably lower than in any other large series of cases—a result which may well be due to the correction of abnormal hormonal levels in her patients.

Pre-diabetic Foetal Loss: Historical Review

Throughout this article the terms "pre-diabetic" and "diabetic" refer respectively to the phases before and after the diagnosis of diabetes.

Allen (1939) first drew attention to the abnormally high rate of foetal loss occurring in the pre-diabetic period. Mengert and Laughlin (1939) have reported a foetal loss rate of 29.8% in 84 pregnancies during this period. Diabetes developed before the menopause in all their patients. Miller, Hurwitz, and Kuder (1944) have analysed 252 pre-diabetic pregnancies occurring in women developing diabetes during the child-bearing period. Their figures, which are exclusive of abortions and miscarriages, and which therefore include only stillbirths, intrauterine deaths, and neonatal deaths, show a foetal loss of 19.8% during the 20-year pre-diabetic period in comparison with a non-diabetic control rate of 5.4%. The maximum foetal loss rate of 35.4% occurred during the five years immediately before the diagnosis of diabetes and was considerably higher than the foetal loss rate of 23.6% which occurred in the 93 pregnancies among the same group of women after the onset of diabetes. Miller (1945), analysing the obstetric histories of 57 women in whom diabetes was diagnosed after the age of 40, reported an overall pre-diabetic foetal loss of 8.3% rising to 15.8% in the 15 years immediately before the diagnosis of diabetes.

Henley (1947) found a loss of 18% in 160 pre-diabetic pregnancies. His survey covered the pre-diabetic phase of 46 women in whom the disease was diagnosed between the ages of 25 and 69. Dolger and Herzstein (1944) and Herzstein and Dolger (1946) have failed to substantiate these findings. The reports of these workers are based on the pre-diabetic histories of 200 married diabetic women, 94 of whom developed the disease before the age of 45. They conclude that, although there is a significant increase in the foetal loss rate during the five years immediately before the diagnosis of diabetes, yet for pre-diabetic periods of longer duration the rate is not significantly different from that of non-diabetic women. Miller (1946) has challenged this conclusion, and by applying the χ^2 test to their figures has shown the difference between the pre-diabetic foetal loss rate for the 15 years before the onset of diabetes and the control foetal loss rate to be statistically significant. The absence of a uniform definition of foetal loss rate throughout the literature makes precise comparisons of figures impossible.

We have also been impressed by the high rate of foetal loss characterizing the pre-diabetic histories of many of our patients. The present survey deals with the pre-diabetic histories of 165 women attending the diabetic out-patient department of the Royal Infirmary, Edinburgh. All patients were interviewed personally. The group was unselected, and represents 165 consecutive attendances of parous diabetic women at the department.

Present Investigation

Standard Rate of Foetal Loss.—The first step in this investigation consisted in establishing the foetal loss rate in a comparable group of non-diabetic women. This presented many difficulties. The report of the Registrar-General for Scotland is exclusive of abortions and therefore does not give figures of "total" foetal loss according to our definition. Equally unsatisfactory were the histories of patients admitted to local maternity hospitals, since the admission to such institutions is often limited to primiparous patients and to those developing complications of pregnancy. Our diabetic patients are drawn in almost equal proportions from urban and rural districts. Records from the city clinics were consequently not entirely comparable. The standard rate of foetal loss finally chosen for comparison was that of the non-diabetic women attending the Ayr County Maternity Service. This service caters for all pregnancies, normal and abnormal. Further, the patients are drawn from urban centres such as Kilmarnock and from the wide rural districts of Ayr County. Obstetric histories of 1,027 women admitted to the above service in 1942 were analysed. Among the 3,276 pregnancies involved there was a foetal loss of 263 (8%). The components of the foetal loss rate were as follows: abortions and miscarriages, 2.8%; stillbirths, 3.2%; deaths occurring in the first 14 days of the neonatal period, 2%.

Variables Affecting the Foetal Loss Rate.—In the case of non-diabetic women the foetal loss rate might be expected to vary with such factors as the social class and physical condition of the mother, the age of the mother at the time of pregnancy, and the number of previous pregnancies. In a strict analysis it would have been necessary to investigate the foetal loss rate corresponding to each of these variables and to each combination of variables. Such subdivision was, however, impracticable: apart from the difficulty of establishing definitions of social class and physical condition, the numbers involved when such subdivision was undertaken were too small to make statistical conclusions valid. It was assumed, therefore, that these variable factors were "randomized" in our data, and that they were homogeneous when any two rates of foetal loss were compared. The comparisons made above indicate that the foetal loss rate of 8% among non-diabetic women can be used as a satisfactory standard for comparison with the foetal loss rates of the diabetic women concerned in the present survey.

Results

The 165 patients involved were divided into two main groups: (1) insulin group—132 women in whom the administration of insulin was necessary for diabetic control; (2) non-insulin group—33 patients in whom dietary treatment alone was sufficient for diabetic control. Each group was subdivided into: (a) young diabetics—women in whom diabetes was diagnosed before the age of 45; and (b) old diabetics—women in whom diabetes was diagnosed after the age of 45.

TABLE II.—Insulin Group—132 Insulin Patients

Pre-diabetic Period	Total No. of Pregnancies	Foetal and Neonatal Loss	Foetal Loss Rate
0-2 years ..	20	10	50.0%
3-9 ..	58	12	20.7%
10-19 ..	129	21	16.3%
20+ ..	252	29	11.5%
Total ..	459	72	15.7%

Insulin Group

Table II shows the pre-diabetic foetal loss rate in the 132 patients who were taking insulin. It will be noted that the overall foetal loss rate of 15.7% is similar to the 18% quoted by Henley and is twice the non-diabetic control rate of 8%. On the whole there is a progressive increase in the foetal loss rate as the time when diabetes was first diagnosed is approached. The foetal loss rate of 11.5% for pre-diabetic periods in excess of 20 years steadily reaches a maximum in

the two years immediately before the diagnosis of diabetes. The foetal loss rate of 50% for the two-year pre-diabetic period in the present survey manifestly represents figures for young diabetics only, the last pregnancy among the old diabetic having occurred not less than four years before the diagnosis of diabetes.

TABLE III.—Young Diabetics—59 Insulin Cases. Foetal Loss Rate According to Pre-diabetic Period

Pre-diabetic Period	Total No. of Pregnancies	Foetal and Neonatal Loss	Foetal Loss Rate
0-2 years ..	20	10	50.0%
3-9 ..	49	10	20.4%
10-19 ..	45	9	20.0%
20+ ..	10	1	10.0%
Total ..	124	30	24.2%

Young Diabetics.—Table III shows the pre-diabetic foetal loss rate among 59 young diabetics requiring insulin. It will be noted that the overall foetal loss rate of 24.2% in this group is three times the non-diabetic control rate of 8%—a ratio similar to that observed by Miller, Hurwitz, and Kurden (1944). Their foetal loss rate of 35.4% in the 1-5-year pre-diabetic period is comparable to the 50% during the 0-2-year period in our series, since we found the foetal loss rate of 50% in the 0-2-year phase to be substantially higher than that occurring in the 3-5-year period. We believe that the high foetal loss rate of the immediate pre-diabetic period is the characteristic feature of the pre-diabetic state, to be discussed later.

TABLE IV.—Old Diabetics—73 Insulin Cases. Foetal Loss Rate According to Pre-diabetic Period

Pre-diabetic Period	Total No. of Pregnancies	Foetal and Neonatal Loss	Foetal Loss Rate
3-9 years ..	9	2	22.2%
10-19 ..	84	12	14.3%
20+ ..	242	28	11.6%
Total ..	335	42	12.5%

Old Diabetics.—Table IV shows the pre-diabetic foetal loss rate among 73 old diabetics requiring insulin. An overall loss of 42 (12.5%) occurred in 335 pregnancies. As none of these women had been pregnant for at least four years before the onset of their diabetes, and usually for a much longer time, it is not surprising that they fail to show the very high foetal loss rate characterizing the immediate pre-diabetic phase of the young group of women. Miller (1945) reports similar observations.

TABLE V.—Comparison of Foetal Loss Rate in Insulin and Non-insulin Cases

	Insulin			Non-insulin		
	No. of Patients	No. of Pregnancies	Foetal Loss Rate	No. of Patients	No. of Pregnancies	Foetal Loss Rate
Young diabetics	59	124	24.2%	6	30	26.7%
Old ..	73	335	12.5%	27	115	11.3%
Total ..	132	459	15.7%	33	145	14.5%

Non-insulin Group

The patients requiring only dietary treatment for the control of their diabetes form a small group of 6 young diabetics and 27 old diabetics (Table V). The overall foetal loss rate of 14.5% in this group is not significantly different from the rate of 15.7% in women requiring insulin. Subdivision of the non-insulin group into old and young diabetics revealed foetal loss rates not significantly different from those observed in the insulin group. The similarity in pre-diabetic foetal loss rates of patients requiring insulin and those controlled by dietary treatment alone has been commented on by Herzstein and Dolger (1946). There seems, therefore, to be no relation between the severity of the ensuing diabetes and the pre-diabetic foetal loss rate.

All comparisons of the foetal loss rates between the various groups and the control group discussed above have been subject to the χ^2 test and have been found to be statistically significant.

Discussion

Our observation of an abnormally high foetal loss rate for pre-diabetic periods of up to 20 years confirms the findings of Miller, Hurwitz, and Kuder (1944) and Miller (1945). Our observation of a maximum foetal loss rate among young diabetics in the years immediately before the diagnosis of diabetes still further confirms the findings of these workers.

The similarity of the foetal loss rate in the immediate pre-diabetic phase and in the post-diabetic period raises a doubt whether the immediate pre-diabetic period is in fact pre-diabetic. Herzstein and Dolger (1946) point out that the 0-5-year period is not wholly pre-diabetic, as it may include an unspecified number of undiagnosed diabetics, since it is never easy to determine the exact date of onset of diabetes. We cannot entirely accept this view, for the following reasons: first, in the majority of young diabetics the disease comes on acutely, leaving little doubt about its approximate date of onset; secondly, the features of diabetes, such as glycosuria, polyuria, loss of weight, etc., tend to be aggravated by pregnancy, and it therefore seems unlikely that had clinical diabetes been present during the 0-2-year period it would have been completely overlooked by the obstetrician in the majority of cases; lastly, and most important, Table III shows a significant increase in the foetal loss rate for at least a decade before the diagnosis of diabetes was made, and it is impossible to believe that these young patients were suffering from undiagnosed diabetes for as long as five years.

It seems, therefore, that there is a factor conducive to foetal mortality which may be active for as long as 20 years before the diagnosis of diabetes and very active for the immediately preceding five years. The precise nature of this factor still remains uncertain. It is probable that the factors responsible for the large babies, the high foetal loss rate, and the ensuing maternal diabetes have a common basis in some general metabolic disturbance in the mother, and that the features of clinical diabetes, such as polyuria, glycosuria, thirst, etc., are a very late stage of this metabolic disturbance, an early feature of which is a high foetal loss rate.

Summary

Insulin therapy has increased the fertility of diabetic women and has made pregnancy a relatively safe proceeding for the mother, but has failed to produce a very significant decrease in the foetal mortality rate in diabetic women.

The pre-diabetic obstetric histories of 165 women in whom diabetes was diagnosed between the ages of 25 and 69 have been analysed. The overall pre-diabetic foetal loss rate was twice the non-diabetic control rate.

In those patients in whom diabetes was diagnosed before the age of 45 the pre-diabetic foetal loss rate was three times the non-diabetic control rate. The maximum pre-diabetic foetal loss rate, which was six times the control rate, occurred in the two years immediately before the diagnosis of diabetes was made and was as high as that observed after the onset of clinical diabetes.

In those patients in whom diabetes was diagnosed after the age of 45 the pre-diabetic foetal loss rate, which in this group was one and a half times the non-diabetic control rate, failed to show the dramatic rise immediately before the diagnosis of diabetes observed in the younger group of women.

There appeared to be no relation between the severity of the ensuing diabetes and the pre-diabetic foetal loss rate.

The onset of clinical diabetes may be a late stage in some general metabolic disturbance an early feature of which is a high foetal loss rate.

We are greatly indebted to Mr. George Waugh, F.F.A., A.I.A., F.S.S., for his invaluable work, under the aegis of the Scottish Statistical Research Bureau, in collating and analysing the data in this paper, and to Dr. C. A. Bignold, Medical Officer of Health for Ayr County, for so kindly putting his maternity service records at our disposal.

REFERENCES

- Allen, E. (1939) *Amer. J. Obstet. Gynec.*, 38, 982.
 Bandstrup, E., and Okkels, H. (1938). *Acta obstet. gynec. scand.*, 18, 136.
 Barnes, H. H. F. (1941). *J. Obstet. Gynaec. Brit. Emp.*, 48, 707.
 Bennet, H. G. (1826). Quoted by Skipper, E. (1923).
 Dolger, H., and Herzstein, J. (1944). *J. Amer. med. Ass.*, 125, 931.
 Duncan, J. Matthews (1882). *Trans. Obstet. Soc. Lond.*, 24, 256.
 Eastman, N. J. (1946). *Obstet. Gynec. Survey*, 1, 3.
 Henley, W. E. (1947). *N.Z. med. J.*, 46, 386.
 Herrick, W. W., and Tillman, A. J. B. (1938). *Surg. Obstet. Gynec.*, 66, 37.
 Herzstein, J., and Dolger, H. (1946). *Amer. J. Obstet. Gynec.*, 51, 420.
 Kramer, D. W. (1935). *Ibid.*, 30, 68.
 Lawrence, R. D., and Oakley, W. (1942). *Quart. J. med.*, n.s. 11, 45.
 Lecorché, E. (1885). *Ann. Gynec. Obstet.*, 24, 257.
 Mengert, W. F., and Laughlin, K. A. (1939). *Surg. Obstet. Gynec.*, 69, 615.
 Miller, H. C. (1945). *New Engl. J. Med.*, 233, 376.
 — (1946). *J. Amer. med. Ass.*, 131, 700.
 — Hurwitz, D., and Kuder, K. (1944). *Ibid.*, 124, 271.
 Offergeld, H. (1938). *Arch. Gynäk.*, 86, 160.
 Ronsheim, J. (1933). *Amer. J. Obstet. Gynec.*, 25, 710.
 Shir, M. M. (1939). *Ibid.*, 37, 1032.
 Skipper, E. (1933). *Quart. J. Med.*, n.s. 2, 353.
 Von Noorden, C. (1909). Quoted by Eastman, N. J. (1946).
 White, P. (1946). In Joslin and others' *Treatment of Diabetes Mellitus*, 8th ed., p. 777. Kimpton, London.
 Williams, J. Whitridge (1909). *Amer. J. med. Sci.*, 137, 1.

PREGNANCY COMPLICATED BY DIABETES MELLITUS

BY

H. H. FOURACRE BARNES, F.R.C.S., M.R.C.O.G.*

Assistant in Obstetric Unit, University College Hospital;
 Gynaecological Surgeon, Hospital for Women, Soho
 Square; Obstetric and Gynaecological Surgeon,
 Queen Mary's Hospital for the East End

AND

M. E. MORGANS, M.B., M.R.C.P.

Assistant in Medical Unit, University College Hospital

During the past twenty years 45 patients with definite diabetes mellitus have been observed in 58 pregnancies at University College Hospital. The incidence was 1 in 580 deliveries. This high figure is due to the fact that a number of the patients were referred to the Obstetric Unit from the Diabetic Clinic of the hospital. Pregnancy in the diabetic is an infrequent occurrence, and is in part due to the decreased fertility of the diabetic patient and in part to the fact that diabetes is much commoner in women during the latter portion of the child-bearing period, when pregnancy is less frequent (Barnes, 1941).

In 48 of the pregnancies diabetes had been diagnosed and treated by a physician before the onset of the pregnancy. In the remaining 10 pregnancies the diagnosis was made during the pregnancy on the strength of a fasting blood sugar of 130 mg. per 100 ml. or over, a typical blood-sugar curve, and history of diabetic symptoms. The diagnosis was subsequently confirmed after the pregnancy. Hence in approximately one-quarter of the patients pregnancy appeared to unmask the condition of diabetes by precipitating the onset of symptoms or actually to initiate the clinical onset of the disease, which persisted, although usually in a milder form, after the pregnancy.

*Working with a Lund Research Association.

Insulin Requirements During Pregnancy

In this series of 58 pregnancies treatment was with diet alone in 7 cases and with diet and insulin in 51. Of 19 cases under insulin treatment in which the diet remained unchanged throughout the pregnancy and the puerperium (alteration being made only during the labour), nine required more insulin as the pregnancy advanced up to the time of delivery; nine required more up to two to four weeks before delivery, after which a gradual and slight fall in insulin requirements occurred until delivery; and the remaining patient needed no alteration in the insulin dosage throughout pregnancy. Of the 19 patients 17 showed a marked fall in the insulin requirements after delivery; the other two showed no change. These figures support the contention that carbohydrate tolerance usually diminishes as pregnancy advances (Duncan and Fetter, 1934; Skipper, 1933).

It has been thought that any increase in the carbohydrate tolerance acquired during pregnancy was due to the transference of insulin from the foetus to the mother. Skipper (1933) reviewed the evidence and concluded that there was no good reason to believe that such improvement in the carbohydrate tolerance was due to this cause. It should be mentioned that eight of the nine patients who showed this improvement just before delivery were receiving oestrogen therapy at the time, and this may have some significance. Some writers claim that oestrogens improve the glucose tolerance in women developing diabetes at about the menopause (Gessler, Halsted, and Stetson, 1939; Spiegelman, 1940). Lawrence and Madders (1941), using small doses of stilboestrol on a few patients of menopausal age, failed to confirm these findings. In the present series the pregnant diabetics who were treated with oestrogens received ten times the amount of stilboestrol given to the patients of Lawrence and Madders.

The marked and abrupt fall in the insulin requirements after delivery in the majority of patients must be emphasized, for there is the obvious danger that the patient will develop hypoglycaemic coma if this fact is neglected.

Complications of Pregnancy

Hydramnios.—There appears to be a definite and pronounced tendency for the pregnant diabetic to develop hydramnios of the chronic variety with its added complications. In 17 of the pregnancies of this series clinical hydramnios developed—an incidence of 29%.

Coma.—One patient developed diabetic coma in the 33rd week of pregnancy and was successfully treated. Another was admitted with diabetic intoxication at the 29th week. This patient was never in diabetic coma, but her diabetes was exceedingly difficult to balance on account of repeated vomiting. She died a few days after admission. Her blood pressure was 170/100 one day before death, and on the day of death she developed epileptiform convulsions which were not hypoglycaemic in nature. At necropsy there was no evidence of eclampsia or nephritis. In some patients ketosis was precipitated by the onset of urinary infection.

Two patients developed hypoglycaemic coma, and there were others who experienced hypoglycaemic symptoms in the early stage of pregnancy. This may have been related to the development of renal glycosuria, which is often found in normal pregnancy and which may be superimposed on the diabetic condition, or to the prevalence of hyperemesis in early pregnancy or to overdosage with insulin. It cannot be stressed too strongly that the care of the pregnant diabetic should be shared with a physician who will supervise the treatment of the diabetes as soon as it is recognized.

Toxaemia of Late Pregnancy.—There is general agreement that the diabetic is more liable to develop late pregnancy toxaemia than the non-diabetic. The degree of this greater liability varies from three times (Mengert and Laughlin, 1939) to fifty times (White, 1937), according to different observers. On the strict standards for the classification of late pregnancy toxaemia adopted at University College Hospital, and previously outlined (Barns, 1941), there were 25 diabetic pregnancies with this complication. This gives an incidence of 43% as compared with the usual incidence of 35% obtained at University College Hospital for the non-diabetic pregnancies. The toxaemia in 12 of these 25 cases was severe enough to warrant admission to hospital, according to the standards laid down by Browne (1946). Hence the incidence of toxaemia of this severity is 20.7%, which is similar to that in diabetic pregnancies quoted by Herrick and Tillman (1938). The incidence of this severe toxaemia for all patients delivered at University College Hospital during the year 1939 was 5%. White (1935) found that the incidence of eclampsia in the diabetic was nearly 17 times that for the non-diabetic. It would therefore appear that the relative incidence of toxaemia of late pregnancy varies with the standard of severity taken for comparison, and that there is a predisposition for the pregnant diabetic to develop the more severe type of toxaemia.

Prognosis for the Mother

In the pre-insulin era a quarter of the mothers died during delivery or the puerperium and a further quarter died within two years of delivery (Williams, 1909; Offergeld 1908). Diabetic coma was usually responsible for the maternal death. The prognosis for the mother has been considerably improved since the introduction of insulin. Skipper (1933) gave the immediate maternal mortality a 9.3%, with an additional mortality of 3.4% for the next two years. In the present series of 58 pregnancies in 41 diabetic patients there was one immediate death, to which reference has already been made above.

The diabetic is especially liable to infection of one kind or another. Provided that the diabetes is kept under proper control this tendency is reduced to a minimum. There were four pregnancies which were followed by puerperal pyrexia: two were due to urinary infection and one to pleurisy; the fourth was probably due to puerperal sepsis but this was not definitely established by bacteriological investigation.

Walker (1927), like Skipper (1933), is of the opinion that if the diabetes is adequately controlled pregnancy does not produce a permanent increase in the severity of the condition. Observations made in this series of patients support that view. In 34 pregnancies the carbohydrate tolerance as judged by the diet and insulin requirements before and after pregnancy, is known; in 28 (82%) it was unchanged and in six it was decreased. It is to be noted that the onset of the diabetes in these six patients occurred either within a few months of the beginning of the pregnancy or during the pregnancy (two patients).

Prognosis for the Foetus

The foetal mortality for pregnancies complicated by diabetes mellitus has remained persistently high in spite of the great advance made in the treatment of diabetes with insulin. In the pre-insulin era it was 41% (Williams, 1909). Since the introduction of insulin it has remained approximately the same figure.

The obstetrical histories of the patients of the present series show that of 64 diabetic pregnancies 7 ended in abortion—an incidence of 10.9%. As judged from this small series it would appear that the incidence of abortion

in the pregnant diabetic is no greater than that in the non-diabetic (11.8%, Barns, 1947) or that in the woman who subsequently develops diabetes (Barns and Morgans, 1948). The high foetal mortality in the pregnant diabetic is therefore due to some unknown factor or factors which cause the death of the viable foetus and the newborn infant.

The 58 diabetic pregnancies have been divided into a first series of 43 and a second series of 15 because of a radical change in the treatment of the latter. Of the first 43 diabetic pregnancies two resulted in abortion, and in a third case the patient was evacuated (during the war years) whilst pregnant, and lost sight of. There are therefore 40 diabetic pregnancies which were followed throughout pregnancy and which continued beyond the 28th week. Of these 40 pregnancies 18 resulted in live infants, 13 ended in the birth of stillborn or macerated foetuses, and in the remaining 9 neonatal death occurred. The total late foetal mortality is therefore 55%. The cause of this high foetal mortality, consisting of intrauterine death of the viable foetus, stillbirths, and neonatal deaths, is little understood, and none of the hypotheses presented to explain it is wholly satisfactory.

Late pregnancy toxæmia in the mother, with its associated hormonal changes in the serum, has been considered by Smith *et al.* (1944) to be the cause of these foetal catastrophes. In the present series it was found that intrauterine death of the viable foetus did occur without the association of late pregnancy toxæmia, and also that neonatal death was infrequently associated with this complication in the mother. Conversely, Lawrence and Oakley (1942) found that toxæmia could exist without any accompanying foetal catastrophe. They found no support for the view that toxæmia was an important factor in the causation of the high foetal mortality in diabetic pregnancies. The foetal mortality for non-diabetic pregnancies complicated by late pregnancy toxæmia is approximately only half that for diabetic pregnancies with this complication (Barns, 1941). It would therefore appear that late pregnancy toxæmia cannot be regarded as the primary factor in the production of the high foetal mortality. The presence of this complication in the diabetic pregnancy cannot, however, be regarded as unimportant, for it may weigh the scales against a successful outcome.

Coma, diabetic or hypoglycaemic, has been incriminated in the past as a cause of intrauterine death of the viable foetus. Studies of pregnancies in women who subsequently develop diabetes have shown that there is a high foetal mortality in these pre-diabetic pregnancies which increases as the clinical onset of the diabetes is approached (Barns and Morgans, 1948; Miller, 1946). Presumably the factor responsible for these foetal deaths is the same but differs in degree before and after the onset of the diabetes, and it has been suggested that this factor might arise from the anterior pituitary lobe of the mother. It is therefore clear that if such is the case these diabetic complications cannot be the primary cause of the foetal catastrophe, for such occurs with undue frequency before diabetes develops.

Hypoglycaemia in the newborn infant has been suggested as an important cause of the high neonatal death rate in diabetic pregnancies. In six cases of the present series blood-sugar estimations of the newborn were carried out. In no case was the blood-sugar level below the normal range for newborn infants given by Ketteringham and Austin (1938), and in three of the infants so investigated neonatal death occurred. Hypoglycaemia therefore seems unlikely to be the cause of the high neonatal mortality rate, particularly as it is difficult to see why this condition should occur in the infant of the pre-diabetic, in whom there is also a high neonatal mortality rate. The blood-sugar level of the

infant of the diabetic is higher than normal when *in utero* and at birth by virtue of the raised blood sugar of the mother. There is therefore an appreciable drop in the blood sugar to the normal range in the first few hours of life, and this fall is greater than is usual in infants of non-diabetic mothers. It therefore seems reasonable, and at least can do no harm, to give the infant glucose to allow this fall to be accomplished more slowly.

Infants of diabetic mothers are larger than normal; but so, too, are those born during the pre-diabetic period of the mother, hence hyperglycaemia in the mother cannot be the cause of the gigantism, as has been suggested. The abnormal hormone picture of high serum gonadotrophin, low serum oestrin, and diminished pregnandiol excretion sometimes found in these pregnant diabetics has been thought by White *et al.* (1939) to be related to the large size of the infant. This abnormal hormone picture had been claimed by Smith and Smith (1935a, 1935b, 1937, 1940) to precede the onset of, and to accompany, late pregnancy toxæmia. Since, however, the non-diabetic pregnancy with late pregnancy toxæmia does not produce the large infant characteristic of the diabetic mother, it seems unlikely that the abnormal hormone picture is directly related to the production of the large infant. Recently the importance of the pituitary gland in this connexion has been stressed, and it has been suggested that there might be an excess of the growth hormone from the maternal anterior pituitary lobe which causes the infant of the diabetic and the pre-diabetic mother to be large (Barns and Morgans, 1948).

The incidence of congenital defects of the foetus of the diabetic mother is greater than in the non-diabetic. Comyns Berkeley *et al.* (1938) state that the incidence for pregnancies in general is 3%. There were four infants with congenital defects out of the 40 diabetic pregnancies of the first series.

In view of the good results claimed by White (1947) for hormone therapy in the diabetic pregnancies it was decided to treat a series of diabetic pregnancies with oestrogens. The therapy was used on the assumption that oestrogens might act as an anterior pituitary lobe depressant. In the past it has been the custom at University College Hospital to terminate the pregnancy just after the 36th week in order to avoid intrauterine death. Although the infants obtained were large, they were immature. This immaturity cannot be neglected as a factor likely to increase the chances of neonatal death. The first series of 40 diabetic pregnancies were so treated.

The second series of 15 diabetic pregnancies have been treated with oestrogens, and early artificial termination of the pregnancy was avoided in all but the first two cases. There was one stillbirth due to cerebral haemorrhage which occurred in one of the pregnancies terminated early, one intrauterine death, and one neonatal death. Although the series is small, the results suggest that the outlook for the foetus of the pregnant diabetic is improved by the above procedures. It is hoped to present a detailed analysis of these cases in the near future.

Summary

A series of 58 diabetic pregnancies in 45 patients is reviewed.

In the majority of patients the carbohydrate tolerance was found to diminish as pregnancy advanced. In some, however, it increased prior to delivery, and it is possible that oestrogens given therapeutically may have been a factor in this improvement.

The tendency of the pregnant diabetic to develop hydramnios is confirmed.

It was found that hypoglycaemic symptoms and coma tend to occur in early pregnancy, and ketosis and diabetic coma in the latter part of pregnancy.

There is a greater tendency for the diabetic to develop late pregnancy toxæmia than the non-diabetic, and the relative incidence varies with the standard of severity of the toxæmia taken for comparison.

The maternal prognosis is good, and pregnancy does not make the diabetes worse provided that it is well treated.

The late foetal mortality was 55% in a first series of 43 pregnancies. In a second series of 15 pregnancies in which oestrogens were given there were only three deaths. The cause of the foetal mortality is discussed, and it is suggested that the factor affecting the viability of the foetus probably arises in the maternal anterior pituitary lobe. The incidence of abortion does not appear to differ from that for non-diabetic pregnancies, and suggests, first, that diabetes mellitus is not a cause of abortion, and, secondly, that the factor which reduces foetal viability exerts its strongest influence towards the end of pregnancy.

Congenital deformities, gigantism, and hypoglycaemia of the newborn are briefly discussed, and it is suggested that the tendency to gigantism is due to an excess of the growth hormone from the maternal pituitary gland.

We should like to express our gratitude to Professor W. C. W. Nixon, Director of the Obstetric Unit, for his encouragement and permission to make use of the case records of the Obstetric Unit; to Professor H. P. Himsworth, Director of the Medical Unit, for permission to make use of the records of the Diabetic Clinic and for helpful advice; and to Organon Laboratories for the generous supply of stilboestrol dipropionate.

REFERENCES

- Barns, H. H. Fouracre (1941). *J. Obstet. Gynaec. Brit. Emp.*, 48, 707.
 — (1947). *British Medical Journal*, 1, 169.
 — and Morgans, M. E. (1948). *J. Obstet. Gynaec. Brit. Emp.*, 55, 449.
 Berkeley, Sir C., Bonney, V., and MacLeod, D. (1938). *The Abnormal in Obstetrics*, p. 103. Arnold, London.
 Browne, F. J. (1946). *Antenatal and Postnatal Care*, 6th ed., p. 384. Churchill, London.
 Duncan, G. G., and Fetter, F. (1934). *Amer. J. med. Sci.*, 187, 347.
 Gessler, C. J., Halsted, J. A., and Stetson, R. P. (1939). *J. clin. Invest.*, 18, 715.
 Herrick, W. W., and Tillman, A. J. B. (1938). *Surg. Gynec. Obstet.*, 66, 37.
 Ketteringham, R. C., and Austin, B. R. (1938). *Amer. J. med. Sci.*, 195, 318.
 Lawrence, R. D., and Madders, K. (1941). *Lancet*, 1, 601.
 — and Oakley, W. (1942). *Quart. J. Med.*, 11 (Pt. 41), 45.
 Mengert, W. F., and Laughlin, K. A. (1939). *Surg. Gynec. Obstet.*, 69, 615.
 Miller, H. C. (1946). *J. Pediat.*, 29, 455.
 Offergeld, H. (1908). *Arch. Gynäk.*, 86, 106.
 Skipper, E. (1933). *Quart. J. Med.*, 26, 353.
 Smith, G. van S., and Smith, O. W. (1935a). *Surg. Gynec. Obstet.*, 61, 27.
 — (1935b). *Ibid.*, 61, 175.
 — (1937). *Amer. J. Obstet. Gynec.*, 33, 365.
 — (1940). *Ibid.*, 39, 405.
 — and Hurwitz, D. (1944). *Amer. J. med. Sci.*, 208, 25.
 Spiegelman, A. R. (1940). *Ibid.*, 200, 228.
 Walker, A. (1927). *Proc. R. Soc. Med.*, 21, 377.
 White, P. (1935). *Surg. Gynec. Obstet.*, 61, 324.
 — (1937). *Amer. J. Obstet. Gynec.*, 33, 380.
 — (1947). *Penn. med. J.*, 50, 705.
 — Titus, R. S., Joslin, E. P., and Hunt, H. (1939). *Amer. J. med. Sci.*, 198, 482.
 Williams, J. Whitridge (1909). *Ibid.*, 137, 1.

Another step towards closing the wartime gap in the issue of vital statistics by the Registrar-General has been taken with the publication of Part II of the *Statistical Review* for 1943. During that year in England and Wales the improvement in the birth rate following the record low figure in 1941 was maintained, the fall in the still-birth rate continued, and the number of marriages was the lowest for seventeen years. There were 684,334 live births during 1943, representing a birth rate of 16.2 per 1,000 total population. This maintained the improvement seen in 1942, when the corresponding figures were 651,503 and 15.6, and compared favourably with the record low figures of 579,091 and 13.9 for 1941. The birth rate for 1943 was the highest since 1930, when the corresponding figure was 16.3. Later figures showed that the birth rate further increased to 17.7 in 1944, fell to 15.9 in 1945, and again increased to 19.2 in 1946 and 20.6 (provisional) in 1947. Of the live births in 1943, 43,709 or 6.4% were illegitimate compared with 36,467 and 5.6% in 1942 and an average of 4.3% for the ten years 1930-9. In 1945 this proportion was 9.3%; in 1946 it was 6.6%, and in 1947 it was 5.3%.

THE RELATION OF STAPH. PYOGENES TO DENTAL CARIES

BY

E. MATTHEWS, D.D.S., D.I.C., F.D.S.R.C.S.

H. F. ATKINSON, M.Sc., L.D.S.

P. SAUNSBURY, L.D.S.

AND

H. W. CLEGG, M.D., D.P.H.

(From the Turner Dental School and the Department of Bacteriology, University of Manchester)

Appleton (1944), in his review of the bacteria occurring in dental caries, mentioned several workers who have isolated *Staphylococcus aureus* from carious cavities. Among them were Miller, Goadby, Kantorowicz, and Niedergesaeß, but although they had established the presence of this organism in both the superficial and the deep layers of carious cavities it was only rarely and then in small numbers.

Nord (1946) stated that Gottlieb, in a private communication, said he had "discovered the micro-organism causing dental caries to be *Staph. aureus*, and that a perfectly sound tooth in a pure culture of this organism will in two months show caries which cannot be distinguished from true caries."

Gottlieb (1947) headed a paragraph of his book "*Staphylococcus aureus* produces dental caries," and referred to the work of Crawford (1946), who stated that *Staph. aureus* was isolated from carious cavities and that sterile extracted teeth, when placed in a culture of that organism, developed yellow spots and real cavities within two months. Ground sections of these teeth revealed exactly the same picture as that found in naturally carious teeth.

This paper reports the results of a collaborative investigation to test the claims of Gottlieb and Crawford and to find out if the presence of *Staph. aureus* in the mouth could be correlated with caries.

Bacteriological Technique

Material to be examined was incubated for twenty-four hours in a salt-meat medium specially selective for staphylococcus.* A loopful of this culture was spread on a horse-blood agar plate, incubated for twenty-four hours, and then allowed to age on the bench for two or three days so that colonies would have ample time to develop pigment. All varieties of colonies suspected of being staphylococcus were picked off and tested for the production of coagulase. Only "coagulase-positive" strains—i.e., *Staph. pyogenes*—were considered in the results which follow. These strains were all haemolytic. Most of them produced golden-yellow pigment (*Staph. aureus*), but some had white or nearly white colonies (*Staph. albus*). It has been well established that *Staph. pyogenes* nearly always liquefies gelatin and produces toxin and is potentially pathogenic for man. *Staph. pyogenes* should be regarded as including virtually all the strains which, on the basis of colour of colony, were formerly classed as *Staph. aureus*.

It has been shown that by the technique adopted it was usually possible to obtain a nearly pure plate culture of staphylococci when 300 staphylococci were mixed with 1,000,000 other bacteria in 1 ml. of a prepared mixture used as original inoculum. It follows that this method of culture gives no information about the presence or absence

*A full account of work on selective media for staphylococci is being published from the Department of Bacteriology.

of other bacteria, and that the results recorded in this paper refer only to staphylococci.

Experimental

1. *Exposure of Teeth to Cultures of Staph. pyogenes in vitro.*—Sound recently extracted teeth were macroscopically examined to confirm the absence of caries. They were boiled for half an hour and placed in a broth culture of *Staph. pyogenes*. This culture was renewed every two days and maintained at 37° C. Eleven teeth were treated in this way and exposed to the organisms for periods ranging from fifteen days to four months. None of the teeth showed any macroscopical change resembling caries, nor did there appear to be any reduction in the surface hardness of the enamel. Samples of the broth were tested at intervals for the presence of calcium, but none gave a positive result. Ground sections of the teeth made after exposure to the organisms did not reveal any microscopical change resembling caries.

2. *Attempts to Isolate Staph. pyogenes from Carious Cavities.*—Grossly carious teeth were extracted and a swab taken from the surface of the cavity was inoculated into the selective medium. The soft carious material was removed from the cavity with sterile excavators and a little of the carious material from the deep layers was inoculated similarly. Eleven teeth were examined; only one culture (from the surface) yielded *Staph. pyogenes*.

3. *Isolation of Staph. pyogenes from Mouth-washings and Attempts to Correlate its Presence with Caries.*—About 5 ml. of sterile nutrient broth was poured from a test-tube into the patient's mouth and instructions were given to let it wash round all the teeth for about 30 seconds. The broth was then run out of the mouth, through a sterile thistle funnel, back into the original test-tube, and 1 ml. was inoculated without delay into the selective medium. A careful "mirror and probe" examination of the mouth was made to ascertain the existence or absence of clinical caries.

The results of examining a group of 86 school-children aged 5-12 years are summarized in the accompanying Table. In 52 (27%) of 194 examinations caries was present when *Staph. pyogenes* was absent, thus constituting a frank disagreement.

Table Showing Results of Correlating Dental Caries with *Staph. pyogenes* in Mouth-washings

Date of Examination	No. of Children Examined	No. of Children with			
		Caries — <i>Staph.</i> —	Caries — <i>Staph.</i> +	Caries — <i>Staph.</i> —	Caries — <i>Staph.</i> +
16/7/47 ..	86	24	21	22	19
30/7/47 ..	7	—	1	1	5
10/10/47 ..	24	4	3	11	6
17/10/47 ..	28	4	10	4	10
24/10/47 ..	32	4	7	9	12
27/11/47 ..	17	—	—	5	12
Totals ..	194	36	42	52	64

The remainder may be said to have agreed. There is obvious agreement in 64 examinations (33%) where both were positive and in 36 (19%) where both were negative. There is some doubt in the 42 instances (21%) where caries was absent but staphylococci were present, but it could be argued that these were not in disagreement because the presence of *Staph. pyogenes* might be an indicator of early caries, undetected by the examination employed, which would appear later. Some such cases were in fact demonstrated.

All the children were examined on the first date and as many as possible were re-examined at intervals to test the constancy of findings in individuals and to note any onset of caries. On the whole the results were inconstant. Of 50 children twice examined 20 gave consistent findings, and of 20 examined three times only four were alike on each occasion. The disagreements were nearly always attributable to the bacteriological results; in only a few cases had caries developed during the

interval between examinations. Among the children there were 10 with obvious caries who failed repeatedly to yield *Staph. pyogenes*. Nine children, however, who had no caries at the start but who harboured this organism did develop clinical carious lesions before their final examination.

In view of this last finding and the possibility that the presence of *Staph. pyogenes* in the mouth might be an indicator of incipient or early caries, examination was made of a further series of 17 selected patients who had a small pit or fissure which showed early clinical signs of caries. Nine also had gross carious lesions. Mouth-washings were cultured as before. A sterile probe was pressed firmly into the tiny cavity of the early lesions, care being taken to avoid contact with other tissues, and then used to inoculate the selective medium. Cultures from the deep layers of the gross lesions were also made. The results can be summarized as follows:

	Early Lesions	Gross Lesions	Mouth-washings
No. of examinations ..	17	9	17
<i>Staph. pyogenes</i> isolated	0	1	12

4. *Control.*—In order to test the possibility that *Staph. pyogenes* found in the mouth-washings might have come from sources other than the inside of the mouth, swabs were taken as indicated below and inoculated into the selective medium. Thirteen of the children referred to in Section 3 were examined, with the following results: (a) Swabs wiped over the lips and adjoining skin: none yielded *Staph. pyogenes*. (b) Swabs taken from the nostrils: three were positive. (c) Of the swabs from the tooth surfaces and gums, those that were positive coincided substantially with the positive mouth-washings.

Discussion

These investigations do not support the view that *Staph. pyogenes* causes dental caries or that its presence in the mouth is an indicator of active or incipient caries.

Exposing boiled teeth to cultures (Section 1) is an arbitrary procedure, under conditions very different from those occurring naturally in the mouth, and a negative result therefore may be regarded as having less significance than a positive one. Nevertheless, teeth were not attacked *in vitro* by *Staph. pyogenes*.

The failure to recover this organism from the lesions in early caries and also from the great majority of cavities in advanced caries using a sensitive selective culture medium is a point of considerable importance (Sections 2 and 4).

The evidence from culturing mouth-washings (Section 3) likewise does not support the association of *Staph. pyogenes* with caries. This organism is often present in the mouth irrespective of the existence of caries. In assessing the results shown in the Table a considerable percentage of examinations may be noted in which there was agreement between clinical findings and results of culture. There were also instances where the presence of *Staph. pyogenes* could be regarded as indicating the impending onset of caries. Against this, however, should be set the instances of frank disagreement, the inconstancy of recovery of *Staph. pyogenes* from individuals on repeated examination, and the number of those who had caries but repeatedly failed to yield *Staph. pyogenes*.

In an earlier series of 25 dental students examined similarly there was possibly suggestive evidence for the idea that *Staph. pyogenes* in the mouth might correlate with the existence of caries, but the further evidence presented here showed that this could not be substantiated.

If *Staph. pyogenes* does not produce caries it is unlikely that other staphylococci will do so. As indicated earlier in this paper, the strains known as *Staph. aureus* would

practically all be included in those designated *pyogenes*. Other staphylococci are less proteolytic and saccharolytic on substrates usually tested in culture, and are less haemolytic and toxigenic. They would therefore be less likely than *Staph. pyogenes* to be concerned in the aetiology of caries.

Conclusion

A combined clinical and bacteriological investigation using a highly sensitive and selective medium for the isolation of *Staph. pyogenes* has failed to reveal an aetiological relationship between this organism and dental caries.

We desire to express our thanks to Mr. R. Bradbury, school dental officer, Borough of Stretford, for arranging and assisting with the examination of the children. We also acknowledge our indebtedness to Professor H. B. Maitland, Director of the Department of Bacteriology.

REFERENCES

- Appleton, J. L. T. (1944). *Bacterial Infection*, Kimpton, London.
Crawford, H. M. (1946). *Tex. dent. J.*, 64, 185.
Gottlieb, B. (1947). *Dental Caries*, Kimpton, London.
Nord, C. F. L. (1946). *Brit. dent. J.*, 81, 316.

SENILE DETERIORATION OF THE CENTRAL NERVOUS SYSTEM

A CLINICAL STUDY

BY

TREVOR H. HOWELL, M.R.C.P.Ed.

Lecturer in Problems of Old Age, St. Bartholomew's Hospital;
late Deputy Surgeon, Royal Hospital, Chelsea

Comparatively little has been written about the clinical aspects of neurology in the aged. Even textbooks dealing with old age, such as those of Thewlis (1946) and Stieglitz (1943), are unsatisfactory. The best account at present is that of Macdonald Critchley (1931). He notes the frequent occurrence of several clinical changes. Diminution of objective pain sensation is mentioned, while complaints of subjective pains are said to be common. Progressive loss of vibration sense is stated to be customary, while sluggish pupils, missing superficial reflexes, and weak or absent tendon-jerks are said to be the usual findings. No indication is given, however, of the frequency of these signs or of the age at which they may be expected.

Since the absence of reflexes and alterations of sensation might give rise to the misdiagnosis of neurological lesions, it seemed expedient to examine a series of healthy old people to ascertain what variations are normal. I therefore examined 200 Chelsea pensioners. Most of these men were known to me both personally and professionally, so that considerably more co-operation was forthcoming than might otherwise have been the case. This should add to the credibility of the clinical findings. Among the pensioners examined a small number were found to have neurological lesions previously unrecognized: these were omitted from the series. The results of the clinical examination of the nervous system are described below.

Motor Changes

Tendon Reflexes.—Each case was tested for supinator, triceps, biceps, knee, and ankle jerks. Only 7% of those examined had every reflex present, these being in the younger age groups. The arm-jerks were normal in all men under 70, but the ankle-jerks were not elicited in over half the cases even at this age. In those over 70 there was a definite drop in frequency of all reflexes, but no

further decrease until the age of 85 except in the ankle-jerks (Table I).

TABLE I.—Percentage of Tendon Reflexes Obtained

Age	No	Supinator		Biceps		Triceps		Knee		Ankle	
		R.	L.	R.	L.	R.	L.	R.	L.	R.	L.
65-69	16	100	100	100	100	100	100	87	87	43	38
70-74	57	67	65	88	88	70	72	79	77	32	35
75-79	72	69	68	84	85	84	84	76	76	32	35
80-84	31	68	65	90	90	87	80	80	80	12	12
85-91	9	33	33	66	66	44	55	44	44	22	22
Mean values	..	69	63	86	87	79	79	77	77	29	31

Superficial Reflexes.—Contrary to expectation, the vast majority of plantar responses were normal. Age did not seem to have any bearing on the frequency of abnormality, which was 5%, mainly scattered in the age groups between 70 and 84. There was no difference between the two sides of the body, except in three pensioners. The abdominals, however, were elicited less regularly. The upper quadrants always responded more easily than the lower ones, but there was no constant difference between right and left sides of the belly. The average for all the men was less than 50%, with a drop at 70 years of age and another drop after 85, similar to that found in the deep reflexes (see Table II).

TABLE II.—Superficial Reflexes

Age	No	Abdominals		Plantars	
		R.	L.	R.	L.
65-69	16	100%	100%	100%	95%
70-74	57	63%	75%	96%	94%
75-79	72	54%	49%	96%	96%
80-84	31	51%	52%	89%	87%
85-91	9	47%	45%	100%	100%
		36%	40%		
		61%	48%		
		42%	35%		
		22%	22%		
		0%	6%		

Power.—Power was assessed only roughly in the absence of a dynamometer. The pensioners were graded by strength of grip and by power of flexion and extension at elbow and knee. The results were classified as very good, good, fair, and poor. Loss of strength seemed to develop with increase of age, but this was not universally true in the cases examined, as may be seen in Table III.

TABLE III.—Power in Limbs

Age	No.	Very Good	Good	Fair	Poor
65-69	15	40%	33%	27%	0%
70-74	54	13%	62%	20%	5%
75-79	66	8%	39%	45%	8%
80-84	31	16%	29%	32%	23%
85-91	8	0%	37%	50%	13%
Means :		13%	44%	34%	9%

Sensory Changes

Vibration Sense.—As changes in vibration sense were among the positive findings noted by earlier observers considerable care was taken in testing for this form of sensation. Bony points on both wrists, elbows, shoulders, ankles, knees, shins, and the sacrum were tested. The percentage registering on the sacrum was uniformly small in every age group. More than 90% appreciated vibration on the bones of the upper extremity. Ankles and shins showed perception in over 70% of cases, but the knees appreciated the sensation in just over 50%. The results are shown in Table IV.

TABLE IV.—Percentage Registering Vibration Sense

Age	No.	Wrists		Elbows		Shldrs		Ankles		Shins		Knees		Sacrum
		R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	
65-69 ..	16	100	100	100	100	80	94	87	87	94	87	50	56	12
70-74 ..	57	100	100	100	100	95	98	88	84	81	79	61	67	18
75-79 ..	72	100	100	100	100	90	89	76	73	73	74	51	53	15
80-84 ..	32	97	97	94	97	94	94	62	56	62	44	31	34	10
85-91 ..	9	100	100	100	100	100	100	89	89	67	78	67	78	11
Mean:		99	99	98	99	94	94	79	76	75	72	52	56	15

Joint Sense of Position.—The sense of position of joints was tested by moving the great toe on each side. Three tests were made for each toe after a period of irregular movement. The vast majority of patients showed normal position sense in the feet (Table V).

TABLE V.—Position Sense of Toes

Age	No.	Abnormal Right	Abnormal Left
65-69	16	0%	0.5%
70-74	56	4%	3%
75-79	72	2%	3.5%
80-84	33	1%	1%
85-91	9	0%	0%

Nose-Touching.—To my surprise quite a number of the pensioners were unable to touch their noses accurately when their eyes were closed. The resulting movement was not an intention tremor but a definite dysmetria. This was usually present in both hands, but if one alone was involved the left was the site of occurrence more often than the right. Up to the age of 85, increasing years had no effect on the frequency of the abnormal findings (Table VI).

TABLE VI.—Dysmetria in Touching Nose

Age	No.	Right	Left	Both
65-69	16	0%	25%	19%
70-74	56	9%	14%	20%
75-79	72	11%	14%	18%
80-84	33	6%	15%	21%
85-91	9	0%	0%	44%
Mean:		8%	15%	20%

Rotation of Wrists.—This test showed normal results in four-fifths of the men examined. When there was difficulty in carrying out the movements both wrists were equally at fault. The difficulty appeared to be one of performing an unfamiliar series of muscular exercises and not a cerebellar dysfunction. It is significant that the disability percentage increases steadily with the age of the pensioners tested (Table VII).

TABLE VII.—Difficulty in Wrist Rotation

Age	No.	Defective
65-69	16	0%
70-74	56	4%
75-79	72	25%
80-84	33	33%
85-91	9	44%

Pain, Temperature, and Light Touch.—The results of examination for these sensations were often very hard to interpret. Sometimes pain and temperature sense would be diminished over the same area. Sometimes one would be normal while the other seemed impaired. Touch was involved only half as often as the other sensations. Altogether some 45 patients failed to register 73 sensations between them. The findings were most frequent in the age groups between 70 and 85. The sites of anaesthesia were fairly constant, being almost always on either the shin or the forearm. Usually the inner aspects of the limbs were

involved, but the distribution seemed to follow more of a cord segmental pattern than to conform to any actual superficial nerve area. As it is not possible to summarize this information satisfactorily in the form of a table, let me state that 24% of the men showed impairment of one kind or another. Two-fifths of these did not register pain, two-fifths did not register changes in temperature, and one-fifth could not appreciate light touch. Deep pain sensation was not tested in this examination.

Cranial Nerves

In the examination of the cranial nerves, Nos. 1, 2, and 8 were omitted. The only abnormality detected, apart from changes in the pupils, was an external rectus palsy in two cases. The reactions of the pupils were, however, often abnormal. Sometimes they reacted to light alone, sometimes to accommodation alone, often to neither. A small pupil was more common than a dilated one, but the proportion of either was not great enough to impress the observer.

TABLE VIII.—Percentage of Positive Reactions of the Pupils

Age	No	Light		Accommodation		Neither	
		One	Both	One	Both	One	Both
65-69	16	6	69	0	69	6	12
70-74	57	9	60	0	60	9	25
75-79	72	12	54	7	36	10	24
80-84	32	3	50	0	19	3	44
85-91	9	0	33	0	0	0	67
Mean:		9	54	3	41	8	28

It will be seen from Table VIII that if a response is lost it usually disappears in both pupils. Even at the earliest age group nearly one-third of the men had lost either light or accommodation reaction. The percentage of failures to react increases steadily with age, being more complete in the case of accommodation. A completely inactive pupil was found in two-thirds of those over 85.

Discussion

What is the meaning of the findings recorded above? Let us first try to make a rough statement about the anatomical location of some of the lesions which are indicated. This is not easy, for they appear to be very widely scattered in their distribution.

Judging by the plantar response it would appear that the pyramidal tract is affected in less than 5%, since some of the responses considered abnormal were not of true Babinski type. The frequent absence of the tendon reflexes would suggest possible cord lesions at varying levels. With regard to the sensory losses, it would seem that sensations passing in the lateral spinothalamic tract are lost twice as often as those conducted by the ventral one. A discrepancy appears, however, when the various posterior column sensations are examined. Position sense is normal in the feet of nearly all those examined. Yet vibration is often not felt in the sacrum, ankles, and knees. Dysmetria in the arms is not uncommon. It seems hard to reconcile such findings anatomically. In the same way, the variations in response of the pupils to light and accommodation, tending to become more frequent with advancing years, suggest a progressive but patchy dissolution. It is possible, of course, that some of these lesions may be functional and not organic. For example, it has been shown that the incontinent bladder of old age can be brought under conscious cerebral control by suitable treatment in a number of cases.

The most important result of the investigation, however, is the wide variation of "normal" findings in old age.

Until this is appreciated, non-existent disease of the central nervous system will frequently be suspected or even diagnosed. I have often seen clinical combinations suggesting tabes dorsalis or progressive muscular atrophy in pensioners who were really healthy. Doubtless others have had a similar experience.

Summary

The results of neurological examination in 200 healthy Chelsea pensioners are given.

Absent pupillary reactions, missing tendon-jerks, and superficial reflexes were common motor findings.

Absent vibration sense in sacrum and lower limbs, dysmetria, and patchy analgesia in the forearms and shins were not unusual.

Anatomical location of lesions accounting for such findings was difficult or impossible.

The possibility of misdiagnosis owing to such results of senile deterioration is stressed.

REFERENCES

- Critchley, M. (1931). *Lancet*, 1, 1119, 1221, 1331.
Stieglitz, E. J. (1943). *Geriatric Medicine*. Philadelphia.
Thewlis, M. W. (1946). *The Care of the Aged*, 5th ed. St. Louis.

Medical Memoranda

A Case of Tetanus in a Child

Recovery from tetanus, though not unduly uncommon, merits being reported, especially when there are additional interesting and unusual features in the case.

CASE REPORT

A boy aged 8 was admitted at 1.30 p.m. on June 9, 1947. The receiving officer diagnosed "generalized peritonitis? cause." On June 7 the boy fell down and hurt his left leg and his chest. Shortly afterwards he had pain in the abdomen, which became very severe during the night of June 8. There was no nausea or vomiting. The doctor who first saw him found some rigidity and tenderness of the abdomen and diagnosed intestinal obstruction.

On admission the receiving officer observed "absolute rigidity." When I saw the patient, he was flushed and looked ill; pulse 110, temperature 99° F. (37.2° C.), respiration 26, laboured and with working alae nasi. He had marked fetor oris and a furred tongue. The abdomen was a little tender in the left hypochondrium and right iliac fossa; there was no guarding or rigidity. Nothing abnormal found in chest. Several bruises on left leg, recent scratches on front of right chest, and an old healing abrasion over the right knee were seen. He had no neck rigidity or any difficulty in voluntary movement of limbs, but severe pain on attempted movement of trunk. Back very stiff and lumbar muscles tender. Rectal examination revealed nothing abnormal. Blood count within normal limits. Acetone and a trace of sugar were found in the urine.

At 5 p.m. he could not open his mouth wide enough for inspection of the throat, and the attempt produced a painful spasm of the abdominal muscles. On interrogation he remembered some difficulty in opening his mouth the previous evening. A tentative diagnosis of tetanus was suggested, and became evident at 7.15 p.m. with risus sardonicus and typical generalized painful spasm, most pronounced in the abdominal muscles. Treatment was started at 7.30 p.m. with 5 dr. (19 g.) of paraldehyde (in saline) per rectum with 1/200 gr. (0.32 mg.) of atropine subcutaneously. A.T.S. 120,000 units (in two doses) intravenously, and 100,000 units (in three doses) intramuscularly, was given, also 300,000 units of penicillin (in wax). Next day paraldehyde was administered at suitable intervals by the intramuscular route and penicillin was continued. Fluids were taken well and urine was passed. Orthotonus and risus sardonicus were well marked, and occasional generalized spasms were still occurring. Next day the pain became more severe and pethidine had to be given as well as paraldehyde. June 12: trismus still marked, but only one generalized spasm occurred. June 13: general rigidity more pronounced than previously; severe pain in both legs, but no spasms; some cutaneous irritation. June 14: well-marked serum rash; still much pain in abdomen, chest, and legs, but no spasms. June 19: trismus less; general improvement definite; solid food started. June 24: no more pain; rash subsided. On June 29 he got up and on July 5 was discharged home.

The boy received 120,000 units of A.T.S. intravenously and 100,000 units intramuscularly in the six hours following diagnosis, 21 dr. (82 g.) of paraldehyde per rectum in the 18 hours following diagnosis, and 65 ml. of paraldehyde by intramuscular injection adminis-

tered over the next 11 days (average 5.9 ml. a day; maximum actually given in 24 hours was 19 ml.). In addition he received 1,700 mg. of pethidine hydrochloride (including 100 mg. orally) in eight days (average 212.5 mg. a day; maximum actually given in 24 hours, including 50 mg. orally, was 300 mg.). A total of 6,900,000 units of penicillin was administered in 21 days. All this actually entailed 96 needle punctures. The old abrasion on the right knee (which was considered to be the portal entry of the infection rather than the recent scratches on the chest) was dressed for about two days with a hydrogen peroxide dressing.

COMMENT

This case has certain curious features. Most notable is the fact that it presented itself as an acute abdomen, and the first two doctors who saw him diagnosed in succession an acute intestinal obstruction and acute generalized peritonitis. The misleading history of a fall within 48 hours of onset raised the possibility of a ruptured spleen or of an osteomyelitis of the vertebral column. The general appearance and laboured breathing suggested the presence of a pneumonia. Risus sardonicus did not become evident until about 24 hours after the first appearance of trismus (which at no time prevented the boy from speaking distinctly or drinking) and only a very short period before the onset of generalized spasms. Pethidine appeared to give much relief, definitely more than paraldehyde, especially after the appearance of the serum rash (which started four days after the administration of A.T.S. and took 11 days to subside without any special treatment). The patient remained throughout quite bright and co-operative.

I wish to thank Mr. John Scholefield for permission to publish this case, Dr. Dynski-Klein for her help in establishing the diagnosis, and Dr. Rilstone for admitting this child into my ward.

N. N. IOVETZ-TERESHCHENKO, F.R.C.S.

BIBLIOGRAPHY

- Cole, L. (1942). *Ministry of Health E.M.S. Instructions*, Part I, Supplement 31.
Firor, W. M. (1942). *Surg. Gynec. Obstet.*, 75, 185.
Rackemann, F. M. (1942). *New Engl. J. Med.*, 226, 726.
Spaeth, R. (1941). *Arch. Intern. Med.*, 68, 1133.

Dystocia after Amputation of Cervix

The Manchester operation for prolapse is carried out so often that it is well to record any untoward results. Hunter (1939) drew attention to the occurrence of dystocia and abortion after the operation and urged conservation of the cervix in the child-bearing period. However, the occasional case does occur in which pregnancy follows extensive operation.

CASE REPORT

In November, 1938, a patient, then aged 40, was treated by anterior and posterior colporrhaphy and amputation of the cervix for proclitidia. The cervix was grossly lacerated and hypertrophied, so that the amputation was maximal. There had been four children, all delivered by forceps, and subsequent pregnancy was not anticipated. The cure was complete, and the menstrual cycle was not altered except that the periods were rather scanty.

In September, 1944, the patient's doctor (Harold Hirsch, of Stockport) sought her admission to hospital. He stated that she had been two days in labour, and that although the head was well down in the pelvis he could distinguish no external os on vaginal examination. This examination was repeated in hospital, with the same findings. The head was separated from the examining finger by a thin sheet of muscle in which there seemed to be no aperture. Lower-segment caesarean section was carried out immediately. On exploring the lower pole of the uterine cavity from above no internal os could be found, but there was a definite dimpling where the muscle seemed very thin. After closing the abdomen, vaginal examination was carried out with antiseptic precautions. No blood was present in the vagina, nor could any be expressed. The thin area mentioned above was identified and deliberately perforated with the finger, after which lochia drained freely.

The puerperium was satisfactory, the lochia being normal for a caesarean case—i.e., rather scanty. Vaginal examination was repeated on the 17th day, when again no external os could be identified. Obviously some orifice must have survived the first operation, otherwise neither menstruation nor conception could have occurred. It is suggested that cicatrization had reduced it to a very small aperture, and that the swelling consequent upon the hyper-vascularity of pregnancy had completed the closure.

WALTER CALVERT, M.R.C.O.G.

REFERENCE

- Hunter, A. J. W. (1939). *British Medical Journal*, 2, 991.

Reviews

BREAST-FEEDING

Breast Feeding. A Guide to the Natural Feeding of Infants. By F. Charlotte Naish, B.A., M.B., B.Ch. Oxford Medical Publications. (Pp. 151; illustrated. 10s. 6d.) London: Geoffrey Cumberlege. 1948.

Paediatricians look a little uncomfortable, even blush, when the subject of breast-feeding is mentioned. They all proclaim and extol its importance; but it is a complicated problem which has not received sufficient scientific and practical study, and it is therefore sadly mismanaged in practice. In this book Dr. Charlotte Naish gives the fruits of her own study and clinical practice, her aim being to provide general practitioners, midwives, and health visitors with a practical guide in their supervision of breast-feeding. She has succeeded in her aim. Her book is of outstanding merit, and deserves the attention of all who are concerned with the feeding of young infants; it ought to take its place as a standard and authoritative guide to breast-feeding.

The main part of the book is a practical account of breast-feeding in its various phases, from the antenatal preparation for it, throughout the critical stages of its beginning and establishment, to its end in weaning. The author emphasizes the details and technique of management and fully describes them, relating them to the underlying physical and chemical processes at work in the mother and child; she describes these briefly in the first three chapters, and also gives a clear account of the thoughts and feelings of the nursing mother. In this preliminary section the author lays down a principle or working rule that "the baby must be adequately fed, and as much of its food as possible must come from the breast. The younger the baby the more important breast-feeding is." The author regards this rule as of overriding importance, and it governs every part of her practice and almost every page of her book. As a result she says much about and gives instructions for complementary feeding, its indications throughout breast-feeding, and the technique of its administration. There are separate chapters on the succeeding phases of breast-feeding, the first week, the second week, the danger weeks (third and sixth), established breast-feeding, and weaning. Then follow chapters on breast trouble and the contraindications to breast-feeding, with a final and useful chapter on breast-feeding without suckling, where she discusses cases of prematurity, cleft palate, and pyloric stenosis.

The present low standard of practice in breast-feeding is mainly due to downright ignorance, the bad tradition of nursery lore, and the lack of serious clinical study. Dr. Naish's book should do much to remove these obstacles. Based on extensive clinical experience, it is rich in clinical observations. Moreover, it is a constant search for links between the clinical phenomena she describes and the underlying physiological and chemical processes that produce them; and it is this fusion of clinical observations with their hidden causes that determines the techniques of management. Her style is clear, concise, and simple; there is not the slightest difficulty in understanding what the author means in her arguments, explanations, and directions, and she has also at her command a quiet irony which can clear the ground of debate like a stick of dynamite. This is an excellent and admirable book. It should serve its immediate purpose in raising the standard of practice in breast-feeding. It ought also to call the attention of physicians and physiologists to a rich and comparatively unworked field of clinical and scientific study—human lactation and infant digestion.

CHARLES MCNEIL.

GROWTH OF THE MIND

Emotional Problems of Living. By O. Spurgeon English, M.D., and Gerald H. J. Pearson, M.D. (Pp. 438. 16s.) London: George Allen and Unwin. 1947.

To describe the dynamics of the mind to the ordinary intelligent reader is as difficult as describing the structure of the atom without using mathematics. The former seems easier,

because all people are in daily touch with mental problems in themselves and in others, but the processes involved in the development of mental patterns in normal character and in neurosis can be clearly understood and accepted only through a first-hand knowledge of the technique of psycho-analysis as well as its formulated doctrines and hypotheses. Nevertheless, it is possible to convey much information on mental development which can be of use to students, teachers, and nurses. The authors have attempted to do this—with considerable success—using the Freudian doctrine of emotional development from babyhood onwards.

In fairly simple language they take the reader through an account of the various stages of instinctual development in so far as it is basic to the structure of the ego and the unconscious. They describe the vicissitudes of the instincts in the oral, anal, and phallic stages, then through the latent period to adolescence. They write with great care and simplicity and include short illustrative case histories. Those phases are rather rigidly distinguished, which is not the case in reality, for they interpenetrate one another. Furthermore, they do not emphasize enough the role of ego development in the light of the conflict between impulse and conscience, nor the fact that most of these processes are strictly unconscious in their dynamic relations. They do not discuss Melanie Klein's work on the early formation of the conscience and the development of infantile depression, despite its controversial character. The book is such easy and entertaining reading that the novice and the unwary may be easily swept away; it is a big book, and so readable that they may come away too easily instructed in the most difficult of all human problems.

EMANUEL MILLER.

SURGICAL UROLOGY

Surgical Urology. In two volumes. By Dr. G. de Illyés, Professor of Urology and Director of the Clinic of Urology in the Hungarian Royal Péter Pázmány University, Budapest. (Pp. 679; 391 illustrations. 63s.) London: Constable and Co., Ltd. 1948 (1942).

Professor G. de Illyés is a well-known Continental urologist and this book is the outcome of his long personal experience. Volume 1 is divided into a general and a special part. In the former the author discusses symptomatology, methods of examination, and the special instruments used in urology, and in the latter diseases of the kidneys. In Volume 2 he considers the rest of the genito-urinary tract and ends with an interesting chapter on disturbances of sexual function. An index for both volumes is included. The book is profusely illustrated by 391 figures, many of which are in colour; it is clearly printed and well bound, and the text is enriched by descriptions of individual cases to emphasize important facts. The chapters on the kidney and urethra are particularly good, though we do not agree with all the author's views.

This work first appeared in 1942, but the war delayed its publication in England until now; as a result, the author does not entirely fulfil his wish "to present urology in its present advanced stage of development." He does not discuss the most recent advances in urology and describes the sulphonamides (which are not indexed) as a new drug, and their efficacy in the treatment of urological infections is left undecided. He has tried to make the book encyclopaedic in scope and has therefore had to expound some subjects briefly. It would be an advantage to have details of how to carry out transplantation of the ureters into the colon. Diagrams illustrating operative technique might be more plentiful throughout. In the description of suprapubic removal of bladder papillomata we find no mention of protecting the wound surfaces by towels soaked in antiseptic (e.g., silver nitrate) to prevent implantation metastases.

Nevertheless, in spite of these criticisms, the work represents the results of enormous labour in clinical observation and surgical achievement, and the author is to be congratulated on the successful accomplishment of his task. If a new edition is prepared and the most recent advances in urology added, together with a bibliography and an index at the end of each volume, it could be wholeheartedly recommended and would find a permanent place in our reference libraries.

DAVID AIKEN.

BRITISH HOSPITALS

British Hospitals. By A. G. L. Ives. (Pp. 50; with 4 plates in colour and 26 illustrations in black and white. 5s.) London: Collins. 1948.

Mr. Ives's contribution to the series "Britain in Pictures: the British People in Pictures" is well worthy of its place in this deservedly popular set of volumes. The story is felicitously told and the illustrations illuminate the text. In fifty pages he covers the history of hospitals from A.D. 600 to 1948. He uses examples surviving in our midst to bring alive the compassionate spirit imbuing those who founded and those who worked in them; a spirit that waxed and waned, but always survived vicissitudes of national and social upheaval; an inspiration the author hopes and believes will persist even after the transformation recently undergone.

After a storied chapter on the mediaeval scene, with Christian piety as the motive force behind the monastic foundations, he passes on to discuss the royal hospitals and the dawn of scientific medicine; thence the eighteenth century and the spate of voluntary hospitals, listing twenty-eight in the provinces built between 1736 and 1798, besides those in London. He naturally makes much of the Nightingale era, and does not forget the great service of John Howard in for ever harping on cleanliness. There is then a chapter on "The Turn of the Century," with mention of Osler's textbook, the coming of x rays, the development of bacteriology, the realization of the social aspects of medicine, the advent of the almoner, and the establishment of the King's Fund. Then follows a judicious appreciation of the conditions and circumstances that led up to a general recognition of the need for a unified hospital system and of the stages which culminated in the National Health Service. The frontispiece is a fine initial from the illuminated cartulary of St. Bartholomew's; there are pictures by Anna Zinkeisen, Felix Topolski, Edward Ardizzone, and many reproductions of old pictures and engravings. This is quite a fascinating story for the general reader, and there is a lot, too, that will be new to many who thought they knew all about hospitals.

E. ROCK CARLING.

THE PATIENT'S VIEW

Taking the Cline. By Robert G. Lovell, M.D. (Pp. 93; illustrated. 52 or 10s.) New York and London: The Macmillan Company. 1948.

This book, written by an ex-patient, is primarily intended to be handed to the newly admitted patient to a sanatorium so that he shall learn the nature and purpose of what lies ahead of him. I accordingly tried it out on a number of sanatorium patients and asked them what they thought of it. Unanimously they condemned it as a futile attempt to convey in two hours' reading what can be learned and understood only by being *lived through* for weeks and months: "As misleading as programme notes on an unfamiliar piece of music—although perhaps factually accurate," said one. "It tells you nothing that you don't pick up all in good time from doctors, nurses, and other patients," said another, adding, "Surely if anyone is curious enough to want to read the subject up he would want something a bit meatier." "Isn't it a bit optimistic?" asked yet another with feeling. "There's no mention whatever of failed A.P.s, fluid, and similar disappointments that seem to be more the rule than the exception during the course of treatment."

Apart from perpetuating the classical misconception that in lateral decubitus the lower lung does less work than the upper, the book is incontrovertibly accurate—as far as it goes. Unfortunately for us, it is only too evidently written for the average patient in a far-off happy land where dire shortage of nursing and domestic staff does not discourage (if not positively preclude) his ringing a bell whenever he wants a book from his bedside table—rather than raise his shoulders from the bed. The text is enlivened with six line drawings—one showing cross-sections of the chest, one showing plan and elevation of a very useful reading rack, and four that are more facetious. There are also appendices on "Leisure Time Reading," "Listening to Classical Music," and on playing that engrossing paper-game of "Battleships."

GEORGE DAY.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

The W. H. Ross Foundation (Scotland) for the Study of Prevention of Blindness. (Pp. 236. 3s.) London: University of London Press. 1948.

A history of the Foundation, and papers on research carried out under its auspices or at its request.

Tramp Royal. By R. MacMahon. (Pp. 315. 10s. 6d.) London: John Langdon. 1948.

The travels of a doctor to remote countries.

Osteoperiostitis Tuberculosa y Sifilitica. By V. B. Olives. (Pp. 403. No price.) Barcelona: Ediciones Byp. 1948.

A monograph on the pathology, diagnosis, and treatment.

Études Chimiques sur la Tuberculose. Edited by J. Paraf. (Pp. 130. 300 francs.) Paris: L'Expansion Scientifique. 1948.

A collection of papers reviewing work with antibiotics and chemotherapeutic agents.

La Mesure du Rendement Circulatoire. By A. H. Israel and C. H. Rendu. (Pp. 75. 200 francs.) Paris: L'Expansion Scientifique. 1948.

The authors propose a formula for determining circulatory efficiency from the blood pressure and pulse rate.

Abhandlungen der Deutschen Akademie der Wissenschaften zu Berlin. By H. Nachtshcim and H. Klein. No. 5. (Pp. 71. M. 750.) Berlin: Akademie. 1948.

This number contains a monograph on erythroblastosis foetalis.

Estudio Clínico del Enfisema Pulmonar. By J. A. Sciuto. (Pp. 164. No price.) Montevideo: Rosgal. 1948.

A monograph on the pathology, diagnosis, and treatment of pulmonary emphysema.

Leitfaden der bakteriologischen Trinkwasseruntersuchung. By H. Beger. 2nd ed. (Pp. 122. M. 6.60.) Berlin: Urban and Schwarzenberg. 1948.

A short account of the bacteriological investigation of water.

Therapeutisches Taschenbuch. Edited by G. Ruepp. (Pp. 394. 12 Swiss francs.) Berne: Hans Huber. 1948.

A summary of therapeutics for students and house-men.

Synopsis of Physiology. By A. Rendle Short, B.Sc., M.D., F.R.C.S., and others. 4th ed. (Pp. 346. 20s.) Bristol: John Wright. 1948.

A summary intended chiefly for medical students.

Human Embryology and Morphology. By Sir Arthur Keith. 6th ed. (Pp. 690. 40s.) London: Edward Arnold. 1948.

The text has been revised for this edition and many new references have been added.

Das Gesundheitswesen in der Bauplanung Berlins. By P. Vogler and G. Hasscnplugg. (Pp. 95. No price.) Berlin: Werner Sacnger. 1948.

Public health statistics and maps.

Le Fond d'Oeil des Hypertendus et des Cyanoses. By D. Routier. (Pp. 100. 1,350 francs.) Paris: Masson. 1947.

Annotated illustrations of the ophthalmoscopic appearances.

Contemporary Religious Jurisprudence. By I. H. Rubenstein. (Pp. 120. \$2.50.) Chicago: Waldain Press. 1948.

Discusses the American law in relation to faith healing, fortune telling, and pacifism.

Chirurgie Moderne de la Hanche. By R. Charry. (Pp. 316. 1,340 francs.) Paris: G. Doin. 1948.

An illustrated practical manual on the surgery of the hip-joint.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JANUARY 8 1949

EPILEPSY

During the last 25 years great additions have been made to our understanding of epilepsy, but there is perhaps no other field of medicine where so large an increase of knowledge has left so many problems still unsolved. This may be, at least in part, because the accumulation of new facts has outrun our capacity to interpret them. The Lumenian Lectures delivered by Dr. F. J. Nattrass and published in this and the previous issue of the *Journal* are therefore timely, for he has made a wide survey of a topic which is of importance to workers in many departments of medicine.

These two lectures raise many questions of absorbing interest. One of the most fundamental is the relationship between consciousness and the functions of the brain. Why does a patient lose consciousness in one kind of epileptic attack and not in another, and what, if any, is the connexion between loss of consciousness and cerebral dysrhythmia? Many neurologists have believed that there are one or more localized areas in the brain disturbance of which causes loss of consciousness. The interpretation of clinical experience by means of electro-encephalography certainly affords some support for such a view. Adrian¹ has pointed out that electro-encephalography shows that in some epileptics considerable areas of the cerebral cortex may be involved in an abnormal rhythmical activity for some time before or after the attack in which consciousness is lost. "That the mind can still function with abnormal waves in much of the cortex," Adrian says, "is not more remarkable than that it can still function when half the cortex is giving the regular beat of the α rhythm or when a large part is removed by the neurosurgeon. What seems to be necessary is that some part of the cortex should still be free to react to the incoming messages from the sense organs and to those handed on from other parts of the brain." We may perhaps infer from this that if a cerebral dysrhythmia is to produce loss of consciousness primarily by disturbing the functions of the cerebral cortex it must be extremely widespread, and such a disturbance, affecting in its course the motor areas, will cause a generalized convulsion, or in other words will produce the clinical picture of grand mal. Clearly, if this view is correct, there must be some other explanation of epileptic attacks characterized almost exclusively by loss of consciousness such as petit mal, or by loss of consciousness accompanied by a sudden fall, as in akinetic epilepsy or what are sometimes called "drop attacks." Again, it is evident that the physiological disturbance is not identical in petit mal and in akinetic epilepsy. In akinetic epilepsy the loss of con-

sciousness may be so brief as to be demonstrable only by the most careful questioning of the patient, for it may be limited to the period of the fall itself. This contrast between the tolerance which the cerebral cortex shows to widespread electrical disturbances in dysrhythmia of the grand mal type and the sudden short and selective loss of consciousness in petit mal and akinetic epilepsy suggests that there must be areas of the brain especially intimately associated with consciousness, and it is tempting to suppose that these areas may be functionally related to the recently discovered system of suppressor bands, from which electrical stimuli evoke a widespread suppression of cortical activity.

This again raises the much-discussed question of the relationship between epilepsy and narcolepsy. Dr. Nattrass would separate the two decisively on clinical grounds, and there is no doubt that as a rule narcolepsy, whether or not accompanied by cataplexy, can be distinguished without any difficulty from epilepsy. Nevertheless there appear to be intermediate states in which the distinction is more difficult. Loss of consciousness is common to both narcolepsy and many forms of epilepsy; similarly, loss of muscular power and tone is common to cataplexy and akinetic epilepsy. The tempo of the disturbance is different, and this may be nosologically important, but the anatomical pathways and physiological functions are surely akin. From the patient's point of view the differences may well be much more significant than the resemblances, but the neurophysiologist may find that each will illuminate the other.

Hughlings Jackson's division of the symptoms of lesions of the nervous system into the negative phenomena of loss of function and the positive phenomena produced by functions released from higher control was a fertilizing idea of the utmost value in the development of neurological thought, but recent advances in our knowledge of epilepsy show its limitations. Can what has been termed a "discharging lesion" be explained entirely as a manifestation of the disappearance of higher control? And is there no place, between functions lost and functions released, for the conception of a distortion of activity? In any case epilepsy is a disruptive and disintegrating influence, for its positive manifestations occur at a comparatively low level of nervous organization. The epileptic convulsion does not consist of co-ordinated movements: these depend upon combinations of neurones too highly organized to be susceptible to stimulation by a method as coarse as an epileptic dysrhythmia.

For all our new knowledge of cortical electronics the essential nature of epilepsy still eludes us. Why does the synchronous electrical discharge occur? Electrical convulsant therapy has shown, what indeed had been stated on theoretical grounds before, that anyone will have an epileptic fit if appropriately stimulated. Nevertheless, the technique of the electrically induced convulsion has also shown that individuals vary greatly in their susceptibility to epilepsy. This fact, of course, was well known to clinicians. A brain injury or a cerebral tumour will induce fits in one person but not in another, and this difference does not appear to depend upon differences in the nature or

¹ Adrian, E. D., *The Physical Background of Perception*, p. 79. Oxford, 1947.

situation of the lesion. It has been shown statistically, however, that it does depend, to some extent at least, upon heredity. Sufferers from traumatic epilepsy, for example, have a much higher incidence of epilepsy among their relations than controls, and many investigations have shown that from one-quarter to one-third of all patients with idiopathic epilepsy have epileptic relatives. But we do not know what constitutes the hereditary predisposition, nor even in what part of the body to search for it. Perhaps, during recent years, students of epilepsy have been too much preoccupied with the nervous system. Humoral factors have been studied in the past without much result, yet they still force themselves upon the attention of every neurologist. Why do so many female epileptics have fits predominantly, or even exclusively, at their menstrual periods? Why does hydration tend to precipitate attacks and dehydration to diminish their frequency? How does the blood-sugar level influence the incidence of convulsions, and to what is the benefit of a ketogenic diet due? These and many similar biochemical questions illustrate the practical and theoretical importance of metabolic factors. Moreover, all our effective therapeutic agents, being chemical, must be made humoral before they can act. All that we have learned about epilepsy in recent years can still be fairly described as a knowledge of what happens when things go wrong. We have been elaborately and successfully recording the speed of a galloping horse that has escaped from the stable door. All our pharmacological remedies are at best little more than strings with which we tie up the door, and which the horse from time to time breaks. But the door has a lock, and we have still to find the key.

DIABETES AND PREGNANCY

Before 1921 the occurrence of pregnancy in a diabetic woman was a medical curiosity; in those days amenorrhoea was the general rule among such women, as indeed it still is while the diabetes is uncontrolled. The diabetic woman who did succeed in becoming pregnant ran a serious risk of death during the pregnancy, during labour, or in the following year or two: overall maternal mortality figures of 50% have been recorded. The foetal mortality was also high, not far short of 50% for the entire pregnancy and neonatal period. The discovery of insulin by Banting and Best in 1921 and its application to the control of diabetes mellitus has had a remarkable influence on the fertility of diabetic women and on their maternal mortality. Diabetes is no longer a rare complication of pregnancy, or, from the physician's point of view, pregnancy a rare complication of diabetes, and with proper control the maternal mortality has been reduced to about 1 or 2%. On the other hand, to quote from the paper by Dr. J. A. L. Gilbert and Professor D. M. Dunlop which appears elsewhere in this issue, "In spite of the most stringent medical and obstetric supervision our foetal loss rate during the last five years has been as high as 51.4%." This figure, which agrees with those of many other authors, including Mr. H. H. Fouracre Barns and Dr. M. E. Morgans, whose paper on this subject is also published

in this issue of the *Journal*, makes it painfully evident that control of the diabetes with insulin and diet has no influence whatever on the foetal mortality.

Control of the diabetes itself during pregnancy is now for practical purposes largely a solved problem, and the fact that different regimes based upon differing conceptions of the changes in carbohydrate metabolism during pregnancy all produce satisfactory results so far as maternal mortality is concerned indicates that close co-operation between physician and obstetrician is all-important—a point stressed by Barns and Morgans. How to improve the foetal mortality, then, is the pressing problem, and the solution of this is still awaited.

The high rate of foetal loss found in the pregnancies of women who subsequently develop diabetes—becoming increasingly obvious as the interval between pregnancy and the onset of the diabetes shortens—was first observed by Allen¹ in 1939 and has since been reported by several other authors.²⁻⁴ Gilbert and Dunlop publish figures which are in close agreement with these writers. In the pre-diabetic as well as the diabetic period this high foetal mortality is caused by an excess of late intrauterine and neonatal deaths, the abortion rate having been found by Barns and Morgans to be essentially the same in non-diabetic, pre-diabetic, and diabetic women. It is clear, then, that neither the hyperglycaemia nor the ketosis of diabetes can be held to account for the adverse effects on the foetus, since the foetal death rate is high before the diabetes makes its presence clinically detectable, while proper control of the diabetes does not reduce it. On the other hand, there is general agreement that the incidence of toxæmia of late pregnancy is significantly increased in diabetes, in spite of adequate control of the latter. Smith and his colleagues⁵ consider that the hormonal changes in the serum which they believe to take place even before the onset of toxæmia may be responsible for the foetal catastrophes. On the supposition that the harm is done by a lowering of the blood oestrogen and progesterone White⁶ has treated a series of some 300 consecutive diabetic pregnant women with oestrogens and progesterone and has obtained 90% foetal survival (excluding deaths before the period of viability).

This striking success has not yet been confirmed, nor are the premises upon which the method of treatment is based generally accepted, though in fairness to Smith and his colleagues it must be admitted that their researches have never been properly repeated by other observers. There is no doubt, for example, that intrauterine death of the viable foetus can occur in the absence of late pregnancy toxæmia, while, conversely, Lawrence and Oakley⁷ found that toxæmia did not necessarily cause foetal death. Palmer and his colleagues⁸ have recently treated 42 consecutive cases of pregnant diabetic women along the lines advised by White and reported a foetal survival in 36 cases of 81.3%,

¹ *Amer. J. Obstet. Gynec.*, 1939, 38, 982.

² Mengert, W. F., and Laughlin, K. A., *Surg. Gynec. Obstet.*, 1939, 69, 615.

³ Miller, H. C., Hurwitz, D., and Kuder, K., *J. Amer. med. Ass.*, 1944, 124, 271.

⁴ Barns, H. H. F., and Morgans, M. E., *J. Obstet. Gynaec. Brit. Emp.*, 1948, 55, 449.

⁵ *Amer. J. med. Sci.*, 1944, 208, 25.

⁶ *Penn. med. J.*, 1947, 50, 705.

⁷ *Quart. J. Med.*, 1942, 11, 45.

⁸ *W. J. Surg. Obstet. Gynec.*, 1948, 56, 175.

⁹ *Amer. J. med. Sci.*, 1939, 198, 482.

¹⁰ Barns, H. H. F., Lindan, O., Morgans, M. E., and Swyer, G. I. M., *Proc. Soc. Endocrinol.*, 1948-9 (in press)

compared with 60% for a previous group of 41 patients not treated with stilboestrol and progesterone. When, however, the χ^2 test is applied to these figures a value of 2.762 is obtained, which means that the difference between the treated and untreated groups could have occurred in random sampling more frequently than once in 20 times, so that the significance of the reported difference is in some doubt.

Foetuses from diabetic mothers have a marked tendency to be overweight; that this is not the result of maternal hyperglycaemia is shown by the fact that the same tendency is seen during the pre-diabetic period, while control of the maternal diabetes does not decrease the mean weight of the foetuses. It has been suggested by White and her colleagues⁹ that the abnormal hormonal levels in the blood already mentioned might be responsible for the large size of the foetus; it is well known, however, that late pregnancy toxæmia in non-diabetic mothers is associated with underweight rather than overweight babies, so that this explanation seems unlikely. In seeking a more plausible theory to account for the observed facts Barns and Morgans⁴ have suggested that increased production of the diabetogenic growth-promoting complex of the anterior lobe of the pituitary might be the factor which is responsible for the increased size of the foetus and for the late foetal catastrophes, as well as for the development of the diabetes. They further suggest that the effectiveness of oestrogens, if they produce the results claimed by White, lies in their ability to inhibit the anterior pituitary. Some experimental work lends support to the first part of this hypothesis, for the administration to pregnant rats of an extract of ox anterior pituitary lobe containing the diabetogenic growth-promoting complex has been found to produce up to 100% of stillbirths, depending upon the dosage.¹⁰

Whether or not either of these theories is correct, it would seem that an investigation is urgently required to compare the effects on foetal mortality of (1) no specific treatment directed towards saving the foetus, (2) termination of the pregnancy (usually by caesarean section) at the 36th week to avoid the late foetal deaths, (3) oestrogen treatment combined with termination, and (4) oestrogen treatment alone. It seems probable that termination of pregnancy has failed to reduce the overall foetal mortality because, while many late intrauterine deaths are avoided, it has increased the neonatal death rate due to prematurity (in spite of the large size of the infants). To be of real value, oestrogens—or any other therapeutic agents—must be able to avert late intrauterine death and so enable full-term birth to occur, with its much reduced likelihood of neonatal death.

NEW YEAR HONOURS

The medical profession will warmly applaud the great honour bestowed on Sir John Boyd Orr, F.R.S., one of the newly created barons. As director of the Rowett Research Institute, Aberdeen, he had a world-wide reputation in nutritional science, and between the wars did much to shake the complacency of those who believed that the people of Britain were well fed. Feeling, no doubt, the need for a bigger platform to urge forward his views, inspired by a determined idealism, he entered Parliament as an Independent after a by-election for the Scottish Universities in

1945. "I stand," he said then, "for a world food policy of production for consumption and distribution according to needs, just on the lines of the Hot Springs recommendation." Busy as he was, he at the same time acted energetically as the chairman of the B.M.A. Committee which drew up *A Charter for Health*, published in 1946. Sir John was re-elected to Parliament in the general election in 1945. Within a few months he was appointed Director-General of the United Nations Food and Agriculture Organization, and shortly after this resigned his seat in Parliament. His fearless and consistent advocacy of his views as Director-General of F.A.O. earned him world-wide admiration. It is good to know that the country will have the benefit of his wisdom in the debates of the House of Lords.

Three medical men have been designated Knights Bachelor. Professor Henry Cohen is Professor of Medicine in the University of Liverpool and vice-chairman of the Central Health Services Council. He rendered outstanding service to the B.M.A. as chairman of the Medical Education Committee, whose report was published last year. Professor Sydney Smith is Regius Professor of Forensic Medicine and Dean of the Faculty of Medicine in the University of Edinburgh, and his name is familiar as the author of a famous textbook. Mr. H. E. Griffiths is surgeon to the Albert Dock Hospital, London, and has done pioneer work in the rehabilitation of disabled persons.

Sir William Gilliatt has been raised from C.V.O. to K.C.V.O. Sir Wilson Jameson has been created G.B.E. Dr. Edith Summerskill, M.P., is to become a Privy Councillor. Many other honours have been deservedly bestowed on medical men and women, a full list appearing elsewhere in this issue.

"ANTRYCIDE"

"Antrycide" is a new synthetic preparation which appears to mark an important advance in veterinary medicine. The Under-Secretary of State for the Colonies, Mr. D. R. Rees-Williams, and the heads of the Pharmaceutical and Agricultural Divisions of Imperial Chemical Industries at a meeting at the Colonial Office on Dec. 29 gave some details about the use of this drug in the prevention and treatment of trypanosomiasis in cattle in tropical Africa. It was stated that trials in East Africa had demonstrated that a single treatment will cure cattle infected with *T. congolense* and *T. vivax*, and that it has been used with success against *T. brucei* infection in cattle, horses, and dogs, *T. evansi* in camels, and *T. simiae* in pigs. Experiments are still proceeding, but it is apparently possible to protect cattle against *T. congolense* for from four to six months in the majority of cases, and against *T. vivax* for a rather shorter period. Certain cases in which the disease has "broken through" after a shorter period are being investigated. *T. congolense* is the most harmful trypanosome affecting domestic animals in most parts of East Africa. Among cattle in British West Africa *T. vivax* is more important than *T. congolense*. It was further claimed that "antrycide" has no toxic effects, and that its administration by hypodermic injection is so simple that the presence of a veterinary surgeon is not necessary. At the same time, Mr. Rees-Williams said that there would probably be a greatly increased demand for veterinary surgeons in these parts of Africa because of the stimulus which would be given to cattle-rearing following the diminution of the ravages of the tsetse fly.

The supplies of the new drug, which it is hoped will amount to two or three tons this year, sufficient to protect 2,000,000 animals, will be limited at first to Government veterinary departments, those in Kenya, Uganda, and the Sudan having priority, following which field trials will be undertaken in West Africa. The research which led to the

discovery of "antrycide" has occupied four years. It has been undertaken by a team of I.C.I. chemists and biologists working first in experimental laboratories in Manchester and later in parts of Africa where trypanosomiasis is endemic, the work being based on laboratories in Khartum, Nairobi, and Entebbe, Uganda. The team was headed by Dr. F. H. S. Curd, Ph.D., who tragically was killed in a railway accident over a month ago. He, with Dr. D. Garnet Davey, Ph.D., another member of the team, jointly discovered "paludrine," the antimalarial drug, for which they were awarded the Society of Apothecaries' gold medal in 1947. A third member of the team was Dr. W. A. Sexton, Ph.D.; and the fourth, the only medical member, was Dr. Charles Melville Scott, who is at present in Africa and, before he became head of the biological department of I.C.I., was lecturer in materia medica at Edinburgh University.

The drug—a white crystalline powder soluble in water—is the result of that type of research in the new field of heterocyclic chemistry which has been described as "enlightened empiricism." A great number of compounds were tested, first of all in this country on trypanosome-infected mice, and later on cattle in Africa. After many failures a substance was discovered which had a slight effect on the disease, and then attention was directed to stepping up the potency. Ultimately the most effective preparation was found to be the one now presented, the serial number of which was M.7555. In reply to a question about how the drug worked, Dr. Cecil Cronshaw, group director in charge of the Pharmaceutical Division of I.C.I., simply said, "We do not know." The tests in Africa, which began a year ago, have been carried out in collaboration with the Tsetse Fly and Trypanosomiasis Committee of the Colonial Office, and further details from this committee and from the I.C.I. team will be awaited with interest.

RESISTANT STAPHYLOCOCCI

It is now common knowledge that strains of staphylococci resistant to penicillin are being encountered with increasing frequency, particularly in hospital practice, where cross infection accounts for their spread. Dr. Mary Barber, who reported a year ago in this *Journal*¹ that the proportion of such strains encountered among staphylococci isolated from actual lesions had risen in successive periods from 14.1 to 38%, now describes a more recent series of investigations in which the proportion of resistant strains isolated from a variety of sources in the same hospital has reached 59%.² It is noteworthy that two of these were cases of septicaemia: both patients died in spite of intensive penicillin treatment, and a positive blood culture was obtained from one of them when, owing in part to renal inadequacy, the blood penicillin content was no less than 8 units per ml. This paper also contains further interesting data bearing on the mode of origin of these strains and a discussion of the recently suggested idea that contact with other bacteria may restore their sensitiveness—unfortunately resistant strains were even commoner in mixed than in pure cultures, a finding which lends no support to this hypothesis.

Almost all staphylococci found to be naturally resistant to penicillin (as distinct from those artificially habituated to high concentrations *in vitro*) produce penicillinase, an enzyme which destroys the drug. The formation of this enzyme can be detected by the appearances in a primary culture in a "cup" or "ditch" plate. Barber mentions the observation made originally by Waterworth³ that

colonies of such an organism attain full or even abnormally large size at the boundary of the inhibition zone; having destroyed the penicillin in their neighbourhood they can grow unimpeded. The possibility of studying this and other phenomena connected with antibiotics by such exceedingly simple methods has perhaps discouraged more exact quantitative study. That a good deal can be gained by applying more exact methods is shown in the work of Gilson and Parker,⁴ who have defined a unit of penicillinase and devised a method for its accurate assay. They were thus able to determine the amount formed by 40 strains of staphylococcus. Twenty-two formed little or none, but the quantity formed by the remainder varied from 190 to 125,000 units per g. of culture. These findings gain their chief interest when compared with the results of a double test of sensitivity to penicillin, one employing an inoculum of only a few hundred cells and the other of 10,000 times that number. Except in the case of two strains a small inoculum of a penicillinase-forming organism was usually inhibited by quite a low concentration of penicillin, often not exceeding that required by a normally sensitive organism. On the other hand, a large inoculum of a penicillinase-forming organism grew in concentrations a thousand or more times greater, the degree of difference generally corresponding with the amount of enzyme formed by it. Thus, as these authors say, the "resistance" exhibited by the organisms is "an artefact introduced by the method of testing: it expresses simply the ability of the resting cell to dispose of the penicillin in its environment."

Gilson and Parker are not the first to point out that the size of the inoculum requires control in such a test, but their very thorough investigation emphasizes this necessity, indeed it seems to demand from the laboratory a much more searching investigation of the properties of a staphylococcus than has ever been contemplated hitherto if the probable effect of penicillin on it is to be predetermined. The results of treatment in, say, a case of septicaemia are likely to depend not only on whether penicillinase is formed but in what amount; and the possibility of clearing the blood stream, where there may be few bacteria, may be indicated by the results of a sensitivity test employing a small inoculum. That there is perhaps yet another factor, although it may only apply to comparison between different bacterial species, is suggested by the observations of Bondi and Dietz.⁵ They also studied the effect of inoculum size on the sensitivity to penicillin of Gram-positive penicillinase-forming bacteria and obtained similar results, but they found that the degree of variation did not depend on the total quantity of penicillinase formed but on the rapidity with which it was formed in the early stages of growth.

DEATH AT BIRTH

As the Registrar-General recently pointed out,¹ certification of the causes of death is at its least precise at the two ends of the age scale. Relatively few necropsies are performed after still-birth or neonatal death; yet the need for accurate information about the numerical importance of the various sources of danger to infant life is increasingly felt. The downward trend in infant mortality rates in recent years is the result of a decrease in the death rate in the later stages of the first year of life. The still-birth and neonatal death rates have, it is true, shared in the general improvement, but the rate of decline has been much slower among infants either at birth or in their first month of life.

¹ *British Medical Journal*, 1947, 2, 863.

² *Lancet*, 1948, 2, 641.

³ *Ann. Inst. Pasteur*, 1948, 75, 94.

⁴ *J. Bact.*, 1948, 55, 801.

⁵ *Ibid.*, 1948, 55, 843.

¹ *Registrar-General's Statistical Review of England and Wales for the Years 1938 and 1939 (Text)*, 1947. H.M.S.O., London.

² *Amer. J. Obstet. Gynec.*, 1947, 54, 188.

In preventive action the concentration of effort should be during the dangerous first month. Effective action, however, depends on accurate information which, in this context, only post-mortem dissection can give. A recent report from the Bellevue Hospital, New York, is therefore to be welcomed, for in this Labate² summarizes the necropsy results in 78% of the 1,114 foetal and neonatal deaths occurring in the hospital during the ten years between 1933 and 1943. The four major causes of death were found to be prematurity, pulmonary lesions, birth trauma, and maceration (following antepartum or intrapartum death, often of unknown origin). Prematurity, the most important cause, accounted for 27.6% of the deaths among the cases examined—a finding consistent with previous studies of this type. Necropsy in such cases usually shows a generalized immaturity of the vital organs of the body. The maldevelopment of the lungs causes persistent cyanosis: renal function is inefficient because glomerular development has not been allowed to go on as usual to the thirty-sixth week: the alimentary tract is immature: and heat regulation is unstable. The four main objectives in the care of the premature child must therefore be the maintenance of body temperature, the prevention of cyanosis, proper nutrition, and the prevention of infection. The problem of prematurity must concern the obstetrician as much as the paediatrician: he must delay the onset of labour, be sparing in the use of sedatives, minimize the strain of the second stage by episiotomy and by low-forceps delivery, and be ready to apply vigorous measures of infant resuscitation after birth.

The plight of the premature child is often made worse by coexistent defect. Pulmonary lesions were a cause of death in 21% of viable premature babies on whom a necropsy was performed. Pneumonia was a particular hazard in the neonatal period, and 80% of the deaths due to this disease were the result of aspiration pneumonia. Among full-term infants, too, pulmonary lesions due to aspiration of amniotic fluid, pneumonia, haemorrhage, or cystic disease were the most frequent cause of death. Birth trauma, however, also accounted for many deaths in this group. Injuries were of three main types—intracranial, spinal, and intra-abdominal. Difficult operative delivery appeared to be the most frequent cause of injuries, the nature of which partly depended upon the maturity of the infant. Lacerations of the dura and subdural haemorrhage were the lesions most frequently found among full-term infants, while subarachnoid and subventricular haemorrhages were more common in premature infants. Spinal dislocations were apt to follow difficult breech delivery, and abdominal injuries such as rupture of liver were sometimes the result of too strenuous attempts at resuscitation in the premature.

Labate remarks that the value of surveys of post-mortem findings is to be judged by the lowered mortality rate which results from an application of the lessons learned. By that standard the fall in the death rates among infants delivered at the Bellevue Hospital in the ten-year period under review is an indication that these lessons have been successfully translated from the post-mortem table to the delivery room and the nursery.

WORLD PROGRAMME OF DISEASE PREVENTION

Every year the International Health Division of the Rockefeller Foundation publishes a report on its activities of special interest to health officers and other workers in the field of public health. The report for 1947 covers the world from China to Peru. In China the Division has started a programme of malaria control and research on typhoid fever; in Peru it is carrying out

special studies on the development of local health services. Two important subjects discussed are the continued prevalence of malaria in many parts of the world and progress in the control of yellow fever. Yellow fever is being studied under the auspices of the Division in East and West Africa and in many South American countries, and malaria in Italy and Sardinia, the Netherlands, the West Indies, and South America.

One rather ominous feature is remarked in connexion with the malaria control measures instituted in Italy. After a D.D.T. house-spraying campaign carried out in a coastal region north of Naples and in the Tiber delta it was found that, in contrast to previous experience, house flies were not affected. Apparently a race of flies abnormally resistant to D.D.T. has become predominant in these areas and also in other regions of the mainland where the insecticide has been in use for several years. Thus far all varieties of anopheline mosquitoes remain susceptible to D.D.T., and malaria transmission rates continue very low in controlled areas, but the general sanitary value of the spraying is lessened.

Another field of study is typhus fever. Experiments here have included the testing of para-aminobenzoic acid in the treatment of epidemic louse-borne infection, and the preparation has been found to have a distinctly favourable effect as regards duration of fever, incidence of complications, and mortality, though there are certain contraindications and the treatment is not always effective. Work is also being done on mice to find chemicals of value against the organism of scrub typhus.

On the general question of health care a representative of the International Health Division has undertaken a survey of international trends which took him to 12 countries. He noticed three major defects in the planning and legislation for medical services. The most serious was the complete failure, except in Australia, to consider the categories and numbers of personnel and their training required to establish the organization envisaged by the legislation. Another defect was that, except in South Africa, planning and legislation were for sickness rather than for health insurance. Finally, he found inadequate provision for the three chief lacks in medical care to-day—namely, chronic, mental, and rehabilitation services. Two other minor defects were disclosed: that in most countries planning had proceeded without reference to what was developing in other countries, and that the need for auxiliary medical personnel was almost completely disregarded. The United States, and to a lesser extent Canada, were the only countries in which the training of auxiliary personnel, apart from nursing, had been standardized with the level of training controlled by a national organization—but it is evident that the observer failed to notice what has been and is being done in Britain in this connexion. The same investigator calls attention to the backwardness of medical education so far as concerns the training of the general practitioner in preventive medicine, geriatrics, psychosomatic medicine, and rehabilitation: but it is added that because of its new Health Act Britain has a great opportunity of exploring and demonstrating the positive aspects of health.

The Rockefeller Fellowships are an important branch of the work of the Foundation. In 1947 the International Health Division directed the studies of 112 individuals to whom fellowships had been granted. Of these 112 the main interests of 65 were in public health administration. Nearly all of them were studying in educational institutions in the United States or Canada, but a few were engaged in field activities. The Fellows came from 26 countries, only one of them from England. The report is a great record of world endeavour complementing that of the World Health Organization.

THE PROBLEM OF AGEING

BASIC DIFFICULTIES OF RESEARCH

BY

V. KORENCHEVSKY, M.D.

(From the Oxford Gerontological Research Unit, Oxford)

Great interest in the problems of gerontology is being shown in medical and scientific circles and by the public at large. Misunderstandings on the subject among non-specialists, however, are sometimes considerable. Therefore a summary of some of the main difficulties of the problem and of gerontological research might be of interest to those who have no time to study the matter in detail.

Theories of Senescence

There are several theories of senescence. Professor Warthin (1929, p. 160) sums up his critical review in the following pertinent words: "In general they are all built upon insecure foundations, hypothetical substances and hypothetical changes that may be due to the processes [effects, V.K.] of senescence and not its cause. Not a single one of all these theories of senescence so far offered has a leg to stand upon; for the greater part they are pure hypotheses constructed about some single fact."

Professor Medawar (1946), in his conclusions, is equally emphatic: "The problems of old age and natural death are hardly yet acknowledged to be within the province of genuine scientific inquiry." He emphasizes that the gerontologist requires many accurate data, scientifically controlled, for his conclusions; he has no time for "anecdotes" and loose statements, such as those concerning very old age in some animals and human beings, various sweeping theories of senescence, etc. He rightly says that the present-day gerontologist is quite aware of the fact that he has to begin "the study of the problem of ageing from scratch," and that gerontologists "would first of all try to piece together a full empirical description of the phenomenon of ageing as it is reflected in structural changes of tissues and cells and, more particularly, in the type and intensity of tissue and cellular metabolism. Only scraps of such information are now available."

The theory recently suggested by Bab (1948) belongs to the same category as defined by Warthin: in this theory one of the two factors on which, according to him, ageing depends is the diencephalon, about which so far we know comparatively little, and the changes in which most probably are the effects of ageing and not one of its primary causes.

Thus it is clear that, until the main facts concerning this problem are discovered and pieced together by experimental and clinical research, gerontologists will not be able to construct any reliable theory of senescence.

Pathological Character of Present Ageing

The greatest difficulty, however, of gerontology is that we know practically nothing of normal physiological senescence and the normal span of life. Referring to man, Mueller-Deham and Rabson (1942) state that, "in the first place, the old patient is a sick one; and, secondly, the sick patient is an old one." The latter sentence would be more correct in a modified form: "and, secondly, the sick patient is ageing more rapidly."

It is obviously impossible to discover normal features and establish normal standards of physiological senescence unless normal individuals are available: they should possess the best hereditary characters, should live a normal span of life in normal conditions of nutrition and environment, and should be free from any disease that might leave after-effects on their tissues and organs.

It is clear that from this point of view those centenarians who are available at present are deficient in various respects for human gerontological research. To begin with, we do not know whether 109-112 years, the longest span of human life so far registered with reasonable accuracy (Korenchevsky, 1947), really is the longest one and cannot be extended further under

those more normal conditions of existence which will be discovered by science and medicine (Fisher, 1923; Dublin, 1942). The basic elements of normal life, such as proper hygiene and nutrition, are most probably still very far from ideal, in spite of the truly remarkable progress in these fields of physiology and medicine.

Moreover, senescence is complicated and accelerated by those pathological features and diseases which are not necessarily associated with normal old age, since they are not present even in some rare cases of less-pronounced pathological ageing (for example, senile mental deterioration, effects of improper nutrition, accumulation of and auto-intoxication with metabolic products, gastro-intestinal auto-intoxication, hypertension, arteriosclerosis, and certain disorders in the functioning of the heart, liver, kidneys, and glands of internal secretion). Hirsch (1945) shows this fact clearly for arteriosclerosis in one of his careful investigations dealing with the relation of this disease to the processes of ageing.

There are several promising lines of research concerning pathological senility, but only two examples will be mentioned.

1. *Auto-intoxication with Metabolic Waste Products.*—Some results of primary importance have been obtained with tissue cultures in the brilliant experiments of Carrel and his co-workers (1921, 1922, 1937), extended and supplemented by Cohn and Murray (1925), Hoffman *et al.* (1937), Goldschmidt *et al.* (1937), Medawar (1940), and others, and well summarized by Medawar (1946). In cells isolated from the organism and living *in vitro* as a tissue culture senescence and death could be greatly postponed ("indefinitely" as suggested by Carrel, 1937, p. 4) if the metabolic waste products were not allowed to accumulate. In such conditions the "old" cells (i.e., those from older animals) have just as high a capacity of growth as young ones. The old cells merely take a longer time than do the young ones in starting their growth. Professor Pearl (1922), similarly to Carrel, concludes that (p. 75) "senescence appears not to be a primary attribute to the physiological economy of cells as such," and (p. 67) "that the individual cells and tissues of the body, in and by themselves, are potentially immortal."

In connexion with these experiments *in vitro*, Carrel performed a striking although drastic experiment *in vivo*. The experiment has been described by one of his co-workers (Du Noy, 1936). At the Rockefeller Institute there was a dog nearly 18 years old. The animal never stirred from its corner and could hardly get up to eat. It slept all day, its coat was coming out, its eyes were dim, and the eyelids were stuck together. Nearly two-thirds of its blood was removed, the red cells centrifuged, washed in Ringer solution, then mixed with fresh Ringer solution so as to re-establish the initial volume of the blood and reinjected into the dog. After recuperation the operation was repeated. After the second operation the dog not only lived but, when completely recovered, was quite different: it ran and barked, became lively and active—in particular, sexually active—its lids cleared, and its fur started to grow again. Although such a relief could be of a temporary character only, and the actual operation could not be considered for human geriatric research, the significance of the experiment is considerable.

2. *Nutritional Experiments.*—The experiments of Sherman and others (1937, 1939) and McCay (1942) and their co-workers suggest another promising line of gerontological research. They were able to obtain prolongation of the life-span and improvement of the health of rats either by adding an extra amount of vitamins and calcium to a diet already adequate in all respects (Sherman) or by quantitatively restricting such a diet (McCay). Carrel (1937) in experiments on mice obtained results similar to those of McCay.

Of course, the results of experiments on animals do not necessarily mean that the same effects will be obtained on human beings. Research on animals, however, must precede geriatric trials on human beings. Experiments on such short-lived animals as rats and mice give hope for a comparatively more rapid success in obtaining normal individuals with physiological senescence than do clinical trials on human beings. Moreover, attempts to change a pathological senility into a physiological one may perhaps bring about considerable changes in the human organism. This indicates the

possibility of grave danger, perhaps fatal, and necessitates therefore the greatest caution, and only by preliminary research on animals can we ensure absence of dangerous effects. It must also be emphasized that in research on gerontology the study of pathological senescence is as important as that of physiological ageing.

Definition of Old Age, and Tests for the Process of Ageing

At present, gerontologists must unavoidably be satisfied with a definition which disregards the most fundamental fact—namely, that we do not know the causes, features, and standards of normal physiological senescence. It can be expressed only in terms of the processes (effects) of ageing as we can observe them now. Because of this, until our knowledge of the subject is more complete such a definition can only be of a temporary character. Moreover, this definition should be based on facts which have been studied with reasonable accuracy.

From the point of view of these requirements the best definition of ageing has been given by Professor Warthin (1929, p. 74). He constructs it on pathological and clinical observations which have been obtained by all the investigators of the subject; namely, it is agreed that hypoplasia, or atrophy of organs, is one of the most important and typical changes and features of ageing. Hence Warthin defines ageing as a "major involution" of the living organism, of all its organs, tissues, and functions. Since all of them are correlated with and dependent on each other, the involution of each single organ, "once well initiated, may through the weakening or loss of the given function initiate or strengthen retrogressive changes in other organs. The various lines of involution are not wholly independent, but, in the general economy of the organism, aid and supplement one another until various vicious circles and correlations of retrogression are produced." Although this definition deals only with the simplest factual effects of ageing, it is very helpful in indicating various urgent schemes of gerontological research.

In the first place, a detailed investigation of hypoplastic and atrophic changes in the organs and tissues is very important, especially in the earliest latent form of relative hypoplasia as measured by changes in weight or linear measurements of organs and cells. The first results of such research were based on the data independently obtained in two American laboratories (Donaldson, 1924; Freudenberg and Billiter, 1935; Freudenberg and Clausen, 1937a, 1937b; Freudenberg and Hashimoto, 1937, 1939; Freudenberg and Howard, 1937) and in the Oxford Gerontological Research Unit (Korenchevsky, 1942, 1948; Korenchevsky and Jones, 1946, 1947, 1948). These data are in complete agreement and show that the relative decrease in weight of organs (relative involution) can be used as one of the tests for and indications of ageing in rats. Most probably this test will be reliable also for human material, as shown by investigations and recalculations (Korenchevsky, 1942) of the data so far available.

The test appears to be not only as good as many other tests of ageing but of great importance because it deals with one of the main changes and features both of ageing and of old age. It has to be supplemented, however, at least by histological examination.

At present, however, every test or indicator of ageing is handicapped by two difficulties. First, it is not known whether our tests will be valid for the processes of normal physiological senescence. Secondly, practically no feature of present-day senescence can be regarded as specific for old age only. Any of them might be present in or after some diseases, or occur in the changes produced by mental or physical stress and duress, or develop in or after some other pathological conditions. For example, in some rare cases the hair does not become grey in old age, whilst in some young ones it becomes grey in a very short time under the stress of an emotional crisis. In young rats certain vitamin deficiencies produce greying of fur (Unna *et al.*, 1941; Ansbacher, 1941; Ralli and Graef, 1943), atrophic skin (Morgan and Simms, 1939), and osteoporosis (Korenchevsky, 1922). Baldness might start to develop at an early age, or (Hamilton, 1942) can be produced by suitable doses of androgens.

A premature appearance of senile wrinkled skin was observed and described by Merschejewsky (1876), Pelikan (1876), Pittard

(1934), and Tandler and Grosz (1913) in castrated men. Arteriosclerosis, hypertension, senile kidneys, senile heart, etc., might be almost absent in some cases of senescence. For instance, Hirsbe (1945) did not find any signs of arteriosclerosis in 9.5% of autopsies in 400 old men aged more than 65 and examined by him.

From all the above-mentioned facts it follows that in present-day gerontological research a correct understanding and an accurate definition of the processes of ageing, or of the anti-ageing properties of any factor examined, could be obtained only after performance of several morphological, physiological, and biochemical investigations, both experimental and clinical (Korenchevsky, 1948). Since such a manifold investigation is technically impossible for a single research worker, the conclusions which he makes have to be drawn with reservations as judged by the test (or tests) of ageing applied in the experiments performed.

Causes of Ageing

So far we do not know the *main primary causes* of ageing, nor are we able to begin investigation of them before cases of normal physiological senescence are available. Heredity, according to some research workers (e.g., Pearl, 1922, 1931; Pearl and de Witt Pearl, 1934), influences longevity. If this is so, future research might discover a hereditary factor which has a connexion with the primary causes of ageing. Dubbio and Marks (1942), however, emphasize difficulties of such research in man: "There may be strong beneficial influences from survivorship of parents on longevity of offspring . . . and these influences may have nothing whatever to do with heredity."

Professor Child (1915), one of the first gerontologists to have a sharp insight into and clear understanding of the problems of ageing, concludes in these words in dealing with the importance of heredity for geriatric research (p. 310): "The advance of knowledge and of experimental technique may make it possible at some future time to bring about a greater degree of rejuvenescence and retardation of senescence in man and the higher animals than is now possible, but when we remember that the present condition of the protoplasmic substratum of these organisms is the result of millions of years of evolutionary equilibration we cannot but admit that this task may prove to be one of considerable difficulty."

In the case of the *secondary causes* of ageing the possibilities for gerontological research are more satisfactory. These causes should be defined as non-specific but capable only of hastening the process of ageing. A great number of the secondary causes might include any of those non-specific factors which increase "wear and tear" and involution, general or only of one or more organs or tissues. They *accelerate* the main process of ageing, chiefly by producing "secondary vicious circles of ageing" (Warthin).

Infectious diseases, intoxications, deficiencies of vitamins or hormones or any other vital factor, any pathological changes in any tissue, organ, or blood vessels, physical or mental traumas, etc., might belong to this category. For example, hypothyroidism might produce a number of features of senility, even (Hertoghe, 1899) in the form of mild deficiency. Castrated men often develop some senile changes prematurely (Merschejewsky, 1876; Korsakow, 1898; Pittard, 1934), although they might preserve their mental faculties. Thus Korsakow writes (p. 340): "The eunuchs are ageing early, at the age of 40 producing an impression of 60-year-old men." Professor Pittard (p. 327) records: "The men castrated after puberty appear to age very rapidly, as also their congeneric fellows do, who have been castrated early. They become prematurely wrinkled and acquire soon the appearance of old women." In a patient with diphtheria the toxin producing degenerative changes in the heart accelerates its ageing, but obviously this is not one of the primary causes of physiological senile changes in that organ.

It is obviously illogical, however, to expect (as some authors do) that a secondary cause can *produce the whole* complex of ageing in all organs, tissues, and their functions when this cause is able to accelerate sometimes only a single process of senescence in one organ or tissue. Moreover, the secondary causes of senescence, not being the primary causes of ageing, produce chiefly their own primary action according to their functional nature (for example, effects specific for each

hormone or vitamin, or their deficiency). This action, although accelerating senile change or changes in some organs, in one or two other organs simultaneously might produce an effect which is typical of the specific function only but not of senility (e.g., a delay in thymus involution and, in male rats, adrenal hypertrophy after castration). It is an urgent task to investigate all these secondary causes and their vicious circles in order to illuminate their possible role in the senility complex and to understand how to break these vicious circles for geriatric purposes. From this point of view investigation of endocrine organs is specially important.

In the Oxford Gerontological Research Unit (Korenchevsky and Jones, 1946, 1947, 1948) an approach to this problem gave some significant results. Changes in the relative weights, and histological examination, showed that in female rats ovariectomy accelerates, and the combination of scx and thyroid hormones reverse more or less completely, the relative involution in the organs investigated. It was, however, strongly emphasized that in these experiments, as in any other research on ageing, the gerontological interpretation of the results obtained is impossible without manifold morphological, physiological, and biochemical experiments (Korenchevsky, 1948). It is obvious that ovariectomy might belong only to the group of secondary causes of ageing and therefore alone could never produce the whole syndrome of ageing, nor, for the same reasons, could hormones reverse this syndrome.

Moreover, since the action of the secondary causes, in particular that of ovariectomy, is not specifically ageing, and since the hormones might belong to the secondary reverse factors only—i.e., non-specific ones—discrepancies between the changes produced by them and the ageing or anti-ageing effects respectively are always possible. For example, androgens increase the involution of adrenals, whilst exerting an anti-involutionary effect on other organs investigated; ovariectomy at the beginning delays the involution of the thymus, but accelerates that process in some other organs. The clear predominance and importance of the special effects decide the gerontological significance of the factor concerned.

Summary

Gerontological research is handicapped by the basic difficulties of the problem; the span of life and the process of ageing are abnormal, and therefore the normal standard features and the primary causes of physiological senescence and old age are unknown.

It is possible, however, to investigate the secondary causes of ageing and pathological senescence as observed at present. This research is as important to gerontology as is that on physiological old age.

A definition of the secondary causes of ageing is given and the value of the present-day tests for ageing is discussed.

REFERENCES

- Ansbacher, S. (1941) *Science*, **93**, 164.
 Bab, H. (1948) *British Medical Journal*, **1**, 1000.
 Carrel, A., and Ebeling, A. H. (1921). *J. exp. Med.*, **34**, 599.
 — (1922) *Ibid.*, **35**, 17.
 — (1937) *The Problem of the Prolongation of Life*. New York.
 Child, C. M. (1915) *Senescence and Rejuvenescence*. Chicago.
 Cohn, A. E., and Murray, H. A. (1925) *J. exp. Med.*, **42**, 275.
 Donaldson, H. H. (1924) *The Rat*. Philadelphia.
 Dublin, L. I. (1942) In E. V. Cowdry's *Problems of Ageing*, p. 108. Baltimore.
 — and Marks, H. H. (1942) *The Inheritance of Longevity*, p. 32. New York.
 Du Noy, L. (1936) *Biological Time*, p. 115. London.
 Fisher, I. (1923) *Report on National Vitality, its Wastes and Conservation*, p. 103. Washington.
 Freudenberg, C. B., and Billiter, O. A. (1935) *Endocrinology*, **19**, 347.
 — and Clausen, F. W. (1937a) *Anat. Rec.*, **68**, 133.
 — (1937b) *Ibid.*, **69**, 171.
 — and Hashimoto, E. I. (1937). *Amer. J. Anat.*, **62**, 93.
 — (1937) *Proc. Soc. exp. Biol. N.Y.*, **41**, 530.
 — and Howard, P. M. (1937) *Ibid.*, **36**, 144.
 Goldschmidt, J., Hoffman, R., and Doljanski, L. (1937). *C.R. Soc. Biol., Paris*, **128**, 389.
 Hamilton, J. B. (1942) *Amer. J. Anat.*, **71**, 451.
 Hertel, F. (1899) *Nouv. Iconogr. Scapit.*, **12**, 267.
 Hirsch, S. (1945) *Rejuvenet.*, **25**, 419.
 Hoffman, R. S., Goldschmidt, J., and Doljanski, L. (1937) *Growth*, **1**, 228.
 Korenchevsky, V. (1922) "The Aetiology and Pathology of Rickets from the Experimental Point of View" *Spec. Rep. Ser. med. Res. Coun., Lond.*, No. 71, London.
 — (1942) *J. Path. Bact.*, **54**, 13.
 — (1947) *British Medical Journal*, **2**, 14.
 — (1948) *Ibid.*, **1**, 728.
 — and Jones, V. E. (1946) *J. Geront.*, **1**, 319, 336.
 — (1947) *Ibid.*, **2**, 116.
 — (1948) *Ibid.*, **3**, 21.
 Korsakow, W. (1893) *Dtsch. med. Wschr.*, **23**, 338.
 McCas, C. M. (1942) In E. V. Cowdry's *Problems of Ageing*, p. 680. Baltimore.
 Medawar, P. B. (1940) *Proc. roy. Soc. B*, **129**, 332.
 — (1946) *Med. Quart.*, **1**, 30.

- Merschejewsky, W. O. (1876). "Beilagen" in Pelikan's (1876) book, p. 15.
 Morgan, A. F., and Simms, H. D. (1939). *Science*, **89**, 565.
 Mueller-Deham, A., and Rabson, S. M. (1942). *Internal Medicine in Old Age*, p. 40. Baltimore.
 Pearl, R. (1922). *The Biology of Death*. Philadelphia.
 — (1931). *Hum. Biol.*, **3**, 245.
 — and De Witt Pearl, R. (1934). *The Ancestry of the Long-lived*. Baltimore.
 Petikan, E. (1876). *Gerichtlich-medizinische Untersuchungen über das Skopzen-thum in Russland*. Giessen.
 Pittard, E. (1934). *La castration chez l'homme et les modifications morphologiques qu'elle entraîne*. Paris.
 Ralli, E. P., and Graef, I. (1943). *Endocrinology*, **32**, 1.
 Sherman, H. C., and Campbell, H. L. (1937). *J. Nutr.*, **14**, 609.
 — and Lanford, P. S. (1939). *Prac. Amer. Acad. Sci.*, **25**, 16.
 Tandler, J., and Grosz, S. (1913). *Die biologischen Grundlagen der sekundären Geschlechtscharaktere*. Berlin.
 Unna, K., Richards, G. V., and Sampson, W. L. (1941). *J. Nutr.*, **22**, 553.
 Warthin, A. S. (1929). *Old Age, the Major Involution*. New York.

MEDICAL NEW YEAR HONOURS

The names of the following members of the medical profession were included in a New Year Honours List published in the *London Gazette* on Jan. 1.

Baron

Sir JOHN BOYD ORR, D.S.O., M.C., M.D., D.Sc., LL.D., F.R.S. Lately Director-General of the Food and Agriculture Organization of the United Nations.

Privy Councillor

EDITH CLARA SUMMERSKILL, M.R.C.S., L.R.C.P., M.P. Member of Parliament for West Fulham since 1938. Parliamentary Secretary, Ministry of Food, since 1945.

G.B.E. (Civil Division)

Sir WILLIAM WILSON JAMESON, K.C.B., M.D., F.R.C.P. Honorary Physician to the King. Chief Medical Officer, Ministry of Health and Ministry of Education.

K.C.V.O.

Sir WILLIAM GILLIATT, C.V.O., M.D., M.S., F.R.C.P., F.R.C.S. President of the Royal College of Obstetricians and Gynaecologists

Knighthood

HENRY COHEN, M.D., F.R.C.P. Professor of Medicine in the University of Liverpool.

HUGH ERNEST GRIFFITHS, C.B.E., M.S., F.R.C.S., Surgeon, Albert Dock Hospital, London, E. For services in the industrial rehabilitation of disabled persons.

SYDNEY ALFRED SMITH, C.B.E., M.D., F.R.C.P.Ed. Regius Professor of Forensic Medicine and Dean of the Faculty of Medicine in the University of Edinburgh.

C.B. (Military Division)

FREDERICK HARRIS, C.B.E., M.C., M.B., B.Ch., late Royal Army Medical Corps. Honorary Surgeon to the King.

LIONEL FREDERICK STRUGNELL, M.B., B.S. Surgeon Rear-Admiral, Royal Navy. Honorary Physician to the King.

C.M.G.

ARTHUR BARTON PILGRIM AMIES, D.D.Sc., F.R.A.C.S., F.A.C.D., D.L.O. Professor of Dental Science in the University of Melbourne.

THOMAS AITKEN AUSTIN, L.R.C.P.&S.I., D.P.H., D.T.M., D.T.H. Colonial Medical Service. Director of Medical Services, Uganda.

RICHARD BRUNEL HAWES, M.B., B.S., F.R.C.P., D.T.M.&H. Consulting Physician to the Colonial Office.

MONTAGU TRAVERS MORGAN, M.C., M.D., D.P.H. Medical Officer of Health, Port of London. Medical Adviser, Ministry of Transport

C.B.E. (Military Division)

ROBERT WALSH MUSSEN, M.D., M.R.C.P. Surgeon Captain, Royal Navy.

C.B.E. (Civil Division)

WILLIAM ARTHUR BULLOUGH, M.Sc., M.B., Ch.B., D.P.H. County Medical Officer for Essex.

JOHN BURTON CLELAND, M.D., Ch.M. Formerly Professor of Pathology in the University of Adelaide.

EMILY HANCOCK MCKINNON, M.B., B.Ch., of Dunedin, New Zealand. For services in the field of medicine and welfare of women.

NORMAN MANSON, M.B., Ch.B., D.O.M.S. Warden, Hospital of St. John, Jerusalem.

WILLIAM BENTLEY PURCHASE, M.C., M.B., D.P.H. H.M. Coroner for the Northern District of London.

WILLIAM ROBERTS, M.D., F.R.C.S. Medical Superintendent, Grace Hospital, Newfoundland.

O.B.E. (Military Division)

STEPHEN MACKENZIE, M.R.C.S., L.R.C.P., D.C.H. Lieutenant-Colonel (temporary) (now Major), Royal Army Medical Corps.

SIDNEY RICHARD CARLYLE NELSON, M.D., M.C.P.&S. Wing Commander, Royal Air Force.

O.B.E. (Civil Division)

Mrs. MARGARET MARY BASHAM, M.B., Ch.B., D.P.H. County Director, Monmouthshire Branch, British Red Cross Society.
 GEORGE FREDERICK BAXTER, M.R.C.S., L.R.C.P. Senior Surgeon, Public Hospital, Kingston, Jamaica.

ERIC HATTAWAY BRIDGMAN, M.B., B.Ch. Superintendent, Rotorua Hospital, New Zealand.

JOHN CHARLES JOSEPH CALLANAN, M.D. Director of Medical Services, Swaziland.

CHARLOTTE ANN DOUGLAS, M.D., F.R.C.O.G., D.P.H. Medical Officer, Department of Health for Scotland

CYRIL FRANCIS FERNANDO, M.D., M.R.C.P. Medical Officer and Physician, General Hospital, Colombo, Ceylon.

GEORGE GIGLIOLI, M.D., M.R.C.P., D.T.M.&H. Honorary Government-Malariaologist, British Guiana.

RICHARD MURCHISON MORRIS, M.D., D.P.H., D.T.M.&H., Medical Director and Secretary for Health, Bulawayo, Southern Rhodesia.

HAROLD BURNET PORTEOUS, M.B., Ch.B. Wing Commander (ret.), Royal Air Force. Medical Officer, Board of Customs and Excise.

ERNEST ALBERT HAROLD RUSSELL, M.B., B.S. Honorary Consulting Obstetrician, Queen Victoria Maternity Hospital, State of South Australia.

Hon. O.B.E. (Civil Division)

FRANCIS AKANU IBIAM, M.B., Ch.B. Medical practitioner on the staff of the Church of Scotland Mission, Nigeria.

LOUBE MARY-MADELEINE LENGUAER, Medical Officer, Leprosy Control, Nigeria.

M.B.E. (Civil Division)

Mrs. OLGA KONSTANTINOVNA ABBOTT. Physician, Ethiopian Vice-Ministry of Health, Addis Ababa.

CHARLES EDWARD ETHERIDGE, M.B. Admiralty Surgeon and Agent, Whitstable, Kent.

JOSEPH GALEA, M.D., D.P.H. Medical Officer of Health, Malta

Mr. GEORGE NORTH, M.C., LL.D., the Registrar-General, was appointed C.B., and Mr. G. R. EDWARDS, the secretary of the Royal Society of Medicine, an O.B.E.

THE KING'S HEALTH

The following bulletin was issued from Buckingham Palace on Jan. 3:

Since the bulletin of Dec. 13, 1948, the King has made uninterrupted progress. His general health is entirely satisfactory. On both right and left sides the arterial circulation in the legs and feet is improving slowly. It is not yet sufficient to allow more than strictly limited activity when his Majesty leaves London to continue his convalescence in the country.

MAURICE CASSIDY.	J. PATERSON ROSS
THOMAS DUNHILL.	MORTON SMART.
HORACE EVANS.	JOHN WEIR.
J. R. LEARMONTH.	

The bulletin is the fifth to be issued and the first which has been signed by Dr. Horace Evans, who has been physician to Queen Mary since 1946.

Nova et Vetera**ARE FEMALES BORN CO-TWIN WITH MALES STERILE?**

"It is a popular opinion, and I do not know any instance to discountenance it, that if twins be of different sexes, the female is sterile."

Your inquirer (*Journal*, Nov. 13, p. 887) may be interested in a work by Sir James Young Simpson* in which these words (taken from an obstetrical publication dated 1843) form the opening sentence. Famous as the first man to use anaesthesia in childbirth, Simpson has many other claims to undying fame; and during his short but intensely active life he poured forth a seemingly endless stream of writings covering an amazing variety of medical and scientific subjects. This article is typical of his style, and, although it is now a hundred years old, extracts from it may interest present-day readers.

Having, as was his wont, arrested his reader's attention by an apt quotation, Simpson plunges without ado into his discourse. First he deals with comparative physiology. From John Hunter (1779) he quotes:

**Selected Obstetrical and Gynaecological Works of Sir J. Y. Simpson*, ed. by J. Watt Black, p. 822. Edinburgh, 1871.

"When among black cattle, the cow brings forth a male and a female at the same birth, the male is a perfect bull-calf, but the apparent female is almost always imperfect in its sexual organization. Female cattle of this kind, born co-twin with males, have long been distinguished in this country under the name of freemartins. In external appearance and form of body they usually resemble the ox and spayed heifer more than either the entire male or the entire female of the species. They commonly grow to a larger size than either the bull or the cow, and have horns like those of an ox, and a tone of bellowing similar to his, with the same marked disposition to become fat under the use of nonnourishing food. In general they do not show any sexual desire for the bull, or the bull for them."

Hunter's dissections showed that the external sexual organs were of the female type but that the vaginal canal was contracted in its upper part, and the internal female organs, the uterus, Fallopian tubes, and ovaries, were "altogether rudimentary and imperfect in their structure." After reference to other authorities, Simpson records his own examination of freemartins "killed in the shambles of this city" and tells how he "found all of them formed after the imperfect and abnormal type pointed out by Mr. Hunter." He continues:

"The butchers in Edinburgh and its neighbourhood, of a number of whom I have made enquiries upon the subject, seem to be perfectly familiar with the fact, that in the free-martin, whose flesh they usually reckon of a superior quality, the womb, or calf-bed, as they term it, is in almost all cases apparently wanting; and all our intelligent agriculturalists in the Lothians are acquainted with the sterile character of these animals."

Characteristically, Simpson now turns to the examination of old Roman writings. He finds reference to the existence of sterile cows ("*tauræ*"), which were set aside and trained to the plough; and he speculates on whether these animals were, in fact, freemartins.

Next he indicates the complexity of the subject. He recounts cases in which, despite the circumstances of its birth, the female calf of dissimilarly sexed twins had, when grown, full reproductive abilities. He states that he had been unable to find any evidence of the occurrence of a freemartin in sheep or other animals which are normally uniparous but occasionally produce opposite-sexed twins:

"I have hitherto been equally unsuccessful in tracing out any instance of a twin mare or she-ass, born under the circumstances already pointed out, being reared to maturity. The mare, indeed, appears only in extremely rare cases to produce twins, and these . . . seldom survive for any length of time after birth."

Turning now to the human species, he states:

"A prejudice in reference to the infecundity of human females born co-twin with males exists to a considerable extent amongst the peasantry of the Lothians, and has very probably been derived from the analogy of the free-martin cow."

He abruptly forces the importance of this matter on the reader's attention by the quotation:

"The mischief to which the opinion might give rise, in causing a girl to be rejected as a wife for a defect, or taken for an excellence, according to sterility might be regarded, which she did not possess, is incalculable."

He next presents records from Edinburgh, Dublin, and London hospitals to show the frequency of dissimilarly sexed twins and states that, contrary to current opinion, it was "by no means uncommon"; one case occurred in every 199 labours.

Simpson now turns to his main theme. He presents numerous records of cases in which the female of dissimilarly sexed human twins did in fact have issue. Included in these is a case of plural pregnancy, occurring in 1827, in which a female infant, co-quadruplet to three males, became herself in the course of time the mother of triplets. Of 123 females born co-twin with males he discovered that no fewer than 112 had families, and that only 11 were without issue although married for several years. He concludes that "females born under the circumstances we are considering were unproductive in the proportion of 1 in 10."

Before drawing conclusions from these figures Simpson wisely turns his attention to the proportion of unproductive marriages in the society in general—a subject on which there was at that time no available information. He had the records of two large self-contained villages examined—Grangemouth and Bathgate—"one community chiefly of a sea-faring population,

and the other of persons engaged in agriculture and manufacture." From these figures he concludes that, allowing for couples not yet married for five years, *one marriage in ten was without issue*. With admirable resource he "extended the basis of data" by examining the histories of marriages contained in a work on the "British Peerage" for 1833. In this case the proportion of barren marriages was, he found, 1 in 6 $\frac{1}{2}$.

Simpson could now "form a just conclusion" that females born co-twin with males were at least as productive as females in general. He adds that error, if any was present, was in the direction of over-estimating the number of barren marriages in these females:

"In relation to such a question as the present, all minds are too liable to be impressed with and recollect instances illustrative of the supposed rule and common opinion, whilst the apparent exceptions to it are unattended to or forgotten."

Further, Simpson found that the fruitfulness of these women was not impaired. The average number of children born to each mother was 4 $\frac{1}{2}$; while in the control group (this modern technical term is not used by Simpson!) the corresponding number was 4 $\frac{3}{8}$.

"The whole enquiry," he observes, "forms an apt illustration of an old remark, that in Medicine it often requires a much greater extent of observation and research to disprove satisfactorily an alleged and accredited fact, than was ever expended, either upon the original development or subsequent confirmation of it. In the present instance, the results have turned out to be perfectly contradictory to the opinion which I, in common with others, held regarding the infecundity of the female in double-sexed twins, when I commenced looking into the subject; and instead of finding my preconceived ideas confirmed by the investigation, they have, on the other hand, been completely confuted by it."

Finally, Simpson expresses great surprise at the phenomenon of the freemartin:

"For certainly it cannot but be considered as an extraordinary circumstance, that, in the cow, the twin existence in utero of a male along with a female should, as a general principle, lead to so great a degree of malformation . . . in the sexual organs, and in the sexual organs only . . . and be limited entirely to the reproductive organs of the female twin, while those of the male twin are perfectly and fully developed. . . . The whole series of circumstances, when considered in conjunction with each other, seems to form, in relation to the origin of malformations, one of the strangest and most inexplicable facts to be met with in the study of abnormal development."

Can we wonder at Simpson's amazement? No explanation, no glimmer of understanding, was possible. Knowledge of "chemical messengers" in the blood stream was more than half a century ahead.

As an example of a perfectly constructed paper, written in clear and arresting English, this publication of Simpson's must be hard to match. And how strange it is that the false belief he so clearly exposed and so forcefully dispelled should to this day linger on in some parts of our country!

J. CHASSAR MOIR.

Reports of Societies

CHELSEA CLINICAL SOCIETY

The third dinner meeting of the session was held on Dec. 14 at the South Kensington Hotel, S.W.7, with the president, Mr. Nils Eckhoff, in the chair. A most interesting discussion on "Films and their Influence" was opened by Mr. Sidney Gilliatt, of the J. Arthur Rank Organization, and Mr. Noël Langley. A sound film showing cinematic technique from its inception was also exhibited. The discussion was continued by Drs. Stewart Webb, Seth Smith, Keane, Eckenstein, Chadwick, McCormick, Guy Daynes, Skene Keith, Guy Beauchamp, Mr. Havelock Allen, Mr. Cutler, and Judge Norman Daynes. Mr. Gilliatt and Mr. Langley replied.

The Ministry of Transport has issued Amendment No. 3 to *The Ship Certain's Medical Guide, 1946*. It advocates "paludrine" as the best prophylactic against malaria, and states that *this drug will in future replace mepracrine in the Ship's Medical Stores*. Copies of the Amendment are obtainable from H.M. Stationery Office or through any bookseller for 3d.

Correspondence

Malaya Branch of B.M.A. and R.M.B.F.

SIR,—You recently published (Nov. 13, 1948, p. 875) a letter from me expressing the thanks of the Royal Medical Benevolent Fund for gift parcels for the beneficiaries of the Fund sent by members of the B.M.A. in New South Wales. It is now my pleasant duty to inform your readers that gift parcels have also been sent by your members in Malaya. The recipients have been deeply touched by the kind thought of these colleagues far away when the donors themselves can hardly be living in a bed of roses at the present time. I send a message of heartfelt thanks to you, Sir, in the hope that it will thus reach all those who have shown such kindness and generosity.—I am, etc.,

WEBB-JOHNSON,
President,
Royal Medical Benevolent Fund.

Whither Tuberculosis?

SIR,—I was most interested to read Dr. G. Lissant Cox's letter (Dec. 25, 1948, p. 1118), as I myself have been concerned about certain trends discernible in the plans which are being outlined for the new regional chest services. It seems to me that some serious mistakes are about to be made. Dr. Cox suggests that if the chest physician or tuberculosis officer becomes too "clinical" he is in danger of losing his soul, and, although this is probably an overstatement, yet Dr. Cox is right in essentials and as usual has put his finger on the most important point at issue.

In the past I have always advocated that as far as possible chest clinics should be sited in the out-patient departments of general hospitals not only in order to rescue the T.O. from his isolation and to subject him to stimulation by the contact with and criticism of his fellow physicians, but also so that these physicians should come to understand something of the work that goes on in a chest clinic and see perhaps for the first time what real environmental medicine is. For it is in the environmental field that the old tuberculosis service did such great pioneer work. I had not foreseen, however, that with the acceptance of this principle the chest physician would be tempted to devote himself exclusively to clinical work and to desert the task which previously he had on the whole done very well. Yet this is precisely what is going to happen unless a stand is made. Chest physicians are demanding beds in sanatoria where they can treat their patients and "see them right through," as they say, and sanatorium physicians are asking for a share of the clinic work. Such a policy has a superficial attraction but it ignores the realities of the problem.

The treatment of phthisis from activity to quiescence is a very complicated business, requiring experience, patience, and skill. A pneumothorax is easy to induce, but its complications are numerous and, in unaccustomed hands, frequent. Many a patient would have lived a great deal longer if it were as difficult to do a pneumothorax as to do a thoracoplasty. Furthermore, therapy is becoming even more complicated by the introduction of specific drugs. I feel, therefore, that sanatorium physicians have a task before them which should exercise all their skill. The chest physician's job on the other hand is quite different, requiring a different sort of person. He has on the clinical side a wide field of differential diagnosis (for tuberculosis can simulate most other diseases) and minor therapy. His clinical ability must be no less than that of the sanatorium physician, for the assessment of the present condition and probable trend of an individual case requires skill and understanding which can only be acquired by experience in all branches of tuberculosis work. The exercise of clinical judgment only in diagnosis and assessment should not deter the man of the right temperament from this job, for it has compensations in the sphere of human relations. He has to do with management, aftercare, rehabilitation, and above all prevention. This latter covers such matters as sociology, psychology, and non-party politics, and will soon include the use of B.C.G.

It is on the field of prevention that the battle against tuberculosis will be won, as with so many diseases in the past, while

in the sanatorium-beds the individual casualties will be treated. Thus the chest physician's job can be one of the most satisfying in medicine. He should regard it as a reproach to his work if a patient is found in his area with bilateral phthisis. He should be ashamed of it and inquire closely how it came about. All his new cases should be minimal. It may even be that with improvements in bacteriological technique a new horizon of diagnosis is in sight, that in the future our patients will be x-ray negative and T.B.-positive, and that with proper management and advice we shall be able to prevent the onset of radiological phthisis. This may seem at present an impossible vision, but no one can deny that the outlook in the tuberculosis world has become immeasurably wider and clearer in the last ten years. With these considerations in mind and many others too numerous for a short letter, the task of the chest physician should be seen as one which gives both intellectual and emotional satisfaction. It would indeed be an exceptional man who could do it well and at the same time conduct good clinical therapy.—I am, etc.,

Aylesbury, Bucks.

STEPHEN HALL.

Rheumatoid Arthritis and Ruptured Tendons

SIR,—I have read with interest the paper by Dr. G. D. Kersley (Nov. 27, 1948, p. 942) and Dr. Peter London's letter (Dec. 11, 1948, p. 1039) on ruptured tendons in patients with rheumatoid arthritis. Early this term my attention was drawn to the condition found in certain shoulder-joints in the dissecting room. Out of 22 joints examined 10 showed some sign of arthritic change, and in 6 there were gross changes. In these 6 specimens the long head of the biceps tendon was fixed to the bicipital groove in the region of the surgical neck of the humerus. Judging by the atrophic belly of the muscle, I would say that the tendon had ruptured and become secondarily attached to the humerus. It would seem that the condition is much more common than has been previously reported, and I am arranging for a search to be made regularly in dissecting-room material.—I am, etc.,

Department of Anatomy
University College,
London, W.1.

J. T. AITKEN.

Fibrositis

SIR,—In the letter by Dr. T. Blanchard Sellors (Dec. 18, 1948, p. 1082) I would humbly submit it is indeed a remarkable pathology that accounts for his interpretation of the word "fibrositis." I am not aware that there is as yet an agreed definition of this vexed word, and I think it is because there are so many individual interpretations of it that there is so much misunderstanding. This is clearly illustrated in the many letters appearing in the *Journal* since Dr. James Cyriax put forward his controversial yet masterly attempt (July 31, 1948, p. 251) to clarify the issue. It is to be hoped that doctors will soon agree on some definite terminology.

That the symptoms of fibrositis coming on for no apparent reason are all in fact "the result of articular lesions" is well illustrated by the following chance occurrence. A man aged 56 complained of a painful and stiff neck. It had come on gradually during the last week, but when seen his head was flexed and he was unable to look up above the horizontal. On questioning, he said he had had pain and stiffness of his neck in 1943 and 1946. In 1946 he visited an osteopath, who "stretched" his neck so severely that he was much worse.

The examination was instructive. The head was held stiff and was moved most cautiously. All movements were limited, but especially side flexion both to the left and right and rotation of the chin to the left. Passive movements were only slightly increased, being limited by pain. Resisted movements caused notably no pain. On palpation there was marked tenderness on the right postero-lateral aspect of the neck, mostly localized opposite C2-C3, slight tenderness between spinous processes C2-C4, and much tenderness at the occipital insertion of the right trapezius and semispinalis capitis muscles. The left trapezius (upper outer border) was very tender. Shoulder and elbow-joint movements were free.

A course of radiant heat and massage was arranged the same day, as he had found it of benefit before. However, the following day he phoned the masseuse asking her not to come, as when he woke up that morning he found he could look around naturally, move his head freely in all directions, and was quite free from pain. On examination later this was confirmed. A truly remarkable "fibrositis."

The diagnosis was that of derangement of a cervical intervertebral joint, C5-C6 or C6-C7, osteoarthritis with loose-body formation in a man of this age being very common. Reduction or replacement of the loose body had occurred naturally. Confirmation of this diagnosis was presented in a letter from the patient's previous doctor, who reported as follows: 1942, lumbago and sciatica; 1942, severe fibrositis of neck; 1943, coccygodynia; 1943, neuritis of left arm, secondary to stiff neck; 1946, right suprascapular fibrositis; 1946, some anaesthesia of left forearm.

It is interesting to note the combined cervical and lumbar disk lesion, which is so frequent an occurrence, and to observe the value of manipulation in such lesions.—I am, etc.,

Ryde, Isle of Wight.

TREVAN HAMBLBY.

REFERENCE

1 Cyriax, J., *Rheumatism and Soft Tissue Injuries*, 1947, London.

"Comedomastitis"

SIR,—For some time I have been puzzled by two cases of "chronic mastitis" which did not fit into the usual description of this disease.

The first case I saw at the Metropolitan Hospital three years ago, when a married woman of 50 presented herself with what appeared clinically to be a scirrhous carcinoma of the breast. It was not until after radical mastectomy that the tumour was sectioned and the breast revealed caseous debris in the large ducts and a cyst which was filled with similar grumous material. The pathologist reported that there was no evidence of malignancy in the portion of the breast and that the condition was one of chronic cystic mastitis; he remarked that the ducts and cysts were filled with milk-like debris.

The second case occurred in private practice last year, and was in a single woman of 38 who had multiple smooth swellings in both breasts. Clinically there was no evidence of malignancy, and chronic cystic mastitis was diagnosed. A biopsy was performed in order to reassure the patient that the condition was not malignant, and it was found that a thick grey material could be squeezed from the large ducts like toothpaste out of a tube. The pathologist reported that microscopic section showed chronic cystic mastitis, but he noted that several of the larger cysts were filled with milk-like debris resembling a galactocoele.

I could find no reference in the literature to a description of this condition. Sampson Handley mentioned duct catarrh, where plugs of epithelial debris blocked up the ducts, and Cheatle had noted dilated ducts with retained secretion in carcinomatous breasts. Tice, Dockerty, and Harrington¹ have recently given a full account of this condition under the name of "comedomastitis." They state that:

"Comedomastitis is a disease of the breast characterized by dilatation of the lactiferous ducts, which are distended with inspissated grumous material that may be expressed from the cut ends of the ducts much as comedones are expressed from ordinary blackheads. It is a disease of the large ducts, in contrast to chronic cystic mastitis, which is a disease of the acini and ductules. Marked clinical similarity to mammary malignancy may be present when comedomastitis results in an indurated area of the breast which is fixed to the skin and is associated with a retracted nipple."

There is little doubt that this condition is a definite pathological entity, although it is intimately related to chronic cystic mastitis; as Tice, Dockerty, and Harrington point out, time may prove that the two types are responses to different hormones and that comedomastitis is merely a phase in the constantly changing panorama of breast pathology.—I am, etc.,

El Alto Hospital, Peru.

JOHN M. JACKSON.

REFERENCE

1 *Surg. Gynec. Obstet.*, 1948, 87, 525.

Treatment of Infertile Marriage

SIR,—I disagree with the criticisms of Miss M. Moore White and Dr. E. Friedmann (Dec. 11, 1948, p. 1035) of Mr. Christie Brown's paper. They surely seem to have missed the main object of his article. Most people who deal with infertile marriage will agree with Meaker's¹ view that sterility often results from multiple causative factors. He further points out that any one of these factors is often insufficient in itself to prevent conception, whereas all of them combined are able to

depress the fertility level below the threshold for conception. On the other hand, the removal of one of these impediments will often result in a rise in the fertility level above the threshold for conception. This of course is the explanation why different procedures in the past have all had their zealous advocates.

Furthermore, many women seek advice on account of sterility but are unwilling to submit to special investigations. Mr. Christie Brown describes a simple plan which would appear to help a reasonable percentage, and it certainly warrants further trial in suitable cases. Miss Moore White and Dr. Friedmann also appeared to have overlooked that this simple plan was only advocated in cases where there was no clinical evidence of abnormality.

Mr. Christie Brown performs another useful service in stressing that the foetal environment is partly genetically controlled. In other words, the maternal capacity to retain the foetus depends on an adequate supply of hormones, which in turn depends on a healthy, well-developed chorion. The other factor, of course, is the capacity of the uterus to respond. Evidence and proof of the latter condition have now been produced, and a similar condition has been described in certain types of "anovulatory" menstruation. Proof of ovulation has been seen at laparotomy and normal hormone secretion shown by urinary assay, and yet the endometrium has not shown the usual response.

Without question, all the basic requisites for conception, production of ova and sperms, existence of an uninterrupted pathway, and a satisfactory nidation surface should ultimately be investigated, but surely there is no harm in trying this simple plan for some two or three months. Our object should be to achieve conception, and this does not necessarily include the cure of all the factors that are responsible for the infertility. —I am, etc.,

London W 1

E. ROBERT REES.

REFERENCE

¹ *Amer. J. Obstet. Gynec.*, 1930, 20, 749

Breast-feeding

SIR,—Dr. H. R. E. Wallis (Dec. 25, 1948, p. 1121) courteously supplies me with some American statistics in support of breast-feeding. What a pity it is that we should have to go to America for these as well as for our bread-and-butter. One sees clearly that more bottle-fed babies die in infancy from gastro-enteritis and pyloric stenosis, but surely this is inevitable, as most of them have had digestive troubles since birth. At least in most practices a baby is left at the breast till something goes wrong, and the weaklings go to the wall or rather to the bottle.

Your correspondent is not impressed by my four healthy bottle-fed children and the conviction, born of twenty-five years' observation in general practice, that the mythical benefits of breast-feeding are one great big fairy story. Let me quote my late partner, Dr. C. B. Hutchinson, who has five healthy bottle-fed children and over fifty years of similar experience. He assures me that he has never been able to determine any extra incidence of disease or lack of immunity in bottle-fed children during adolescence or later life, and he warmly supports my view that much unhappiness and maternal misery could be saved by early recourse to weaning. If our ideas are sound, as I sincerely believe they are, it is only fair to our present-day mothers that we should be able to speak comfortable words to them when they relinquish the almost impossible task of synthesizing wholesome milk from snot, scraps, and sausage meat.

Nearly fifty years ago, when I survived bottle-feeding in the bad old days when only two or three indifferent baby foods were available, there was a very strong case for breast-feeding. In spite of this I have been blessed with personal health and vitality above the average. Now that such excellent baby foods are available at nominal prices I feel that the case for forced breast-feeding has collapsed and that we should, in fairness to our overworked young mothers, relieve them of this extra physical drain on the slightest pretext instead of starving their babies to breaking point. And I should like to be able to assure them with authority that they are in no way jeopardizing their baby's right to health and happiness in the future.—I am, etc.,

Walter Kent

JAMES S. HALL.

Perichondrium in Vascular Surgery

SIR,—As a plastic surgeon I have no experience of vascular surgery, but I have followed with interest all the great advances in the latter during the last few years. All plastic surgeons are interested in the reaction which occurs on the reception given to similar and dissimilar tissues when brought into contact with each other—this is the basis of successful grafting. In addition a few years ago I did some research work on the subject examining histologically the effects produced in rabbits' tissue by the introduction of a large number of substances. Perichondrium, when stripped from the costal cartilages, is tough and fairly strong, and has the property in an unusual degree of forming rapid adhesions to other tissues, promoting a local fibrosis and itself undergoing contraction. It would seem that these are properties which vascular surgeons are seeking in a ligature material.

If sufficient perichondrium can be obtained for the case would have the advantage of being living tissue, and would quickly form strong adhesions to the blood vessel concerned and to surrounding tissues; it would not be absorbed like catgut, nor produce necrosis like silk (if tied tightly), and, moreover, would tend to get tighter as it contracted. The contraction starts as soon as the perichondrium is free; therefore it should be removed only immediately before it is wanted. With the use of vitallium or acrylic tubes for uniting a divided artery it is admitted that the weak point is the ligature, and indeed it must be, for the free ends of the blood vessel beyond the silk ligatures must inevitably die if the ligature is tight enough, because of the destruction of the vasa vasorum. Whereas with fresh perichondrium new live cells grow on and would unite the blood vessel and the ligature very quickly, and, moreover, instead of getting slack, it would get tighter.

I have used perichondrium chiefly for securing individual muscles of the face when they have by accident been avulsed from their attachments with the production of considerable disfigurement and disability—e.g., the orbicularis oculi. Strips of perichondrium used thus get a firm grip of the muscle on periosteum and promote adhesions most satisfactorily, and do not know of any other substance, vital or non-vital, which will accomplish this purpose more than temporarily. Fasci lata is quite useless for the purpose; it has no adhesive or gripping properties, and a knot tied with it rapidly comes undone unless very carefully sutured.

As for the reasons for this adhesive reaction, it may be that more histamine is released by damaged perichondrium cells than by cells of other tissues, and that this produces a strong local reaction on contiguous tissues; or the clue may lie in the following sentence taken from Wells's *Chemical Pathology* (1925, p. 470): "Chondroitin is a gummy substance, which in turn may be split into acetic acid and a strong reducing substance, chondrosin. Chondro-sulphuric acid is the characteristic component of cartilage, but is also found in the walls of the aorta and other elastic structures." These suggestions are offered in the hope that by the pooling of experience some benefit may accrue.—I am, etc.,

Wellington, New Zealand.

H. P. PICKERILL.

Millilitres Correct

SIR,—It is still the practice amongst manufacturers of medical requisites to state the dosage of their liquid preparations in cubic centimetres instead of the correct official millilitres. There may be laudable exceptions, but if so I have not come across them. One of the reasons which have been given to me for adherence to this incorrect nomenclature is that if millilitres were used many doctors would not understand them and uncertainty and confusion might result, especially when preparations were injected, since doctors generally use syringes marked in cubic centimetres.

I cannot believe that the millilitre is a strange and confusing measure to doctors; presumably they have used it from the beginning of their studies. Certainly all their measuring vessels are graduated in millilitres, and this unit, not the cubic centimetre, is official in the *British Pharmacopoeia*. Moreover, the enlightened policy of the *British Medical Journal* must by now have made the whole medical profession familiar with the millilitre. This being so, I do not think that a syringe marked in cubic centimetres would cause confusion, but nowadays such

PROGRESS in the relief of pain



Culmination of four years' work in the Glaxo Research Laboratories was the recent synthesis of an analgesic exhibiting unique properties. Originally coded 'C.B.11', the compound has been the subject of many clinical trials including that reported in the British Medical Journal (1948, 2,553) 'Heptalgin'—the name now adopted—was shown in these tests to abolish pain and little or no cortical depression or drowsiness was observed.

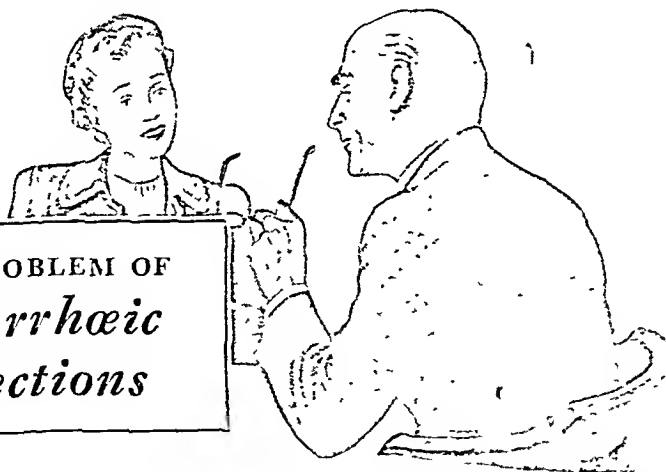
'Heptalgin' has an analgesic potency about six times that of morphine, twenty times that of pethidine and at least three times that of 'amidone'; yet its acute toxicity is relatively much lower than that of these other compounds. Indeed, all available evidence points to a prominent place for 'Heptalgin' in the future of analgesia.



Brand Diphenylmorpholinoheptanone hydrochloride
TABLETS—in bottles of 25 & 100 AMPOULES—1cc. in boxes of 6

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX BYRON 3434

THE PROBLEM OF *Seborrhæic* *affections*



CHRONIC skin diseases such as acne, seborrhæa oleosa, and rosacea are very distressing to the patient. In the case of women it is particularly difficult to treat facial lesions without further disfigurement.

Genatosan Products offer two happy solutions to the problem. Dermatological Cream No. 10 (Zinc Sulph. 3%, Potass. Sulphurat. 3%) contains the active in-

gredients in a non-greasy base. For day use the cream may be employed as a powder base without detracting from its therapeutic value, and your patients will appreciate the lack of restriction on the use of cosmetics.

Alternatively, or additionally 'Fissan' Ichthammol Powder (2% Ichthammol) is flesh tinted and can be used as a face powder.

Information and literature upon request to the Medical Department.

GENATOSAN LTD.

Division of British Chemicals & Biologicals Ltd.

LOUGHBOROUGH, LEICESTERSHIRE Tel: Loughborough 2292

BRONCHIAL ASTHMA

NEODRENAL

BRAND
ISOPROPYL ADRENALINE

THE NEW 'ORAL' ADRENALINE

A potent bronchodilator: well tolerated: prompt in action: adrenaline injections unnecessary: superior to ephedrine. Issued in the form of tablets for sublingual use and a spray solution for oral inhalation.

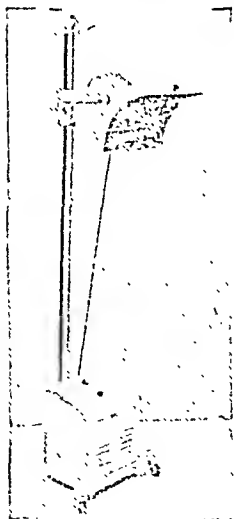
Literature and samples on request

*A Product of the
"SAVORY & MOORE"
Group*

SAVORY & MOORE LTD.
WELBECK STREET, LONDON W.1



Ultra-Violet Therapy



The new Lumsden Standard Quartz Mercury Vapour Lamp has all the most modern features of design. It is fitted with a high pressure Burner which gives a generous Ultra-Violet output, and can be depended upon to give a very satisfactory service.

Price £45

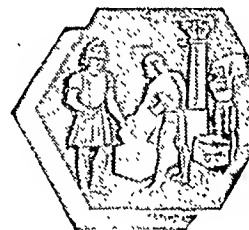
Send for Catalogue No. 211 giving full information, from the LUMSDEN LAMP CO., 282, Millburn, Almondbank, PERTH.

Or ask your local dealer.

LUMSDEN SUN LAMP.

EFFUGERE NON POTES NECESSITATES (SENECA)

You cannot ignore necessities



In the treatment of hypochromic anaemia it is generally recognised that iron should be presented in the most easily assimilable form.

This is achieved in 'PLASTULES' by enclosing ferrous iron in semi-fluid form in gelatin capsules. The small dosage of three a day is easy to take and the iron is readily absorbed. Digestive upset is avoided and a rapid response is achieved.

PLASTULES

Each Plastule Plain contains Ferrous Sulph. Essicc. B.P. 5 grs. dried yeast 1 grs. They are also available with hog stomach, with liver extract, and with folic acid.

JOHN WYETH & BROTHER LIMITED
Clifton House, Euston Road, London, N.W.1
ALUDROX - BEPLEX - ENDRINE - PETROLAGAR

Wyeth

a wrongly marked syringe is a reproach to the manufacturer. The British Standards Institution has issued a specification for syringes in which graduation in millilitres is prescribed, and makers should follow this prescription. I understand that syringes correctly marked in millilitres are now obtainable.

It is conceivable that many doctors, far from being perturbed by millilitres, may regard the statement of doses in cubic centimetres as indicating that manufacturers are behind the times and as evidence of ignorance or carelessness which may extend beyond the use of an incorrect unit of measurement. It seems to me that the adoption of the millilitre would be a "selling point" for manufacturers—evidence that they are up to date and correct in this and presumably in other matters relating to their business.—I am, etc.,

J. M. HAMILL.

London, W.14

Mineral Oils in Bread

SIR,—In a letter published in this *Journal* (Aug. 21, 1948, p. 401) under the heading "Liquid Paraffin in Baking" it was shown that the use of even highly refined mineral oil in quantity as an ingredient in cakes involved a potential hazard to health. This conclusion was based on microscopical examination of cake batters which revealed that minute droplets of mineral oil of particle size less than 0.5μ persisted after baking. Evidence has been obtained by Frazer¹ that oil of such particle size can be directly absorbed through the intestinal wall and may lead to liver and other damage.

A detailed study of the potential distribution of mineral oils in bread has now been completed. Suggestions have been made to the baking industry regarding the use of such oils as tin-greasing agents and machinery lubricants, in which contact with dough may lead to some mineral oil absorption. It would appear that in view of the findings described later a clear distinction may be drawn between this form of use and incorporation of mineral oil in quantity as an ingredient in baked products.

The inherent dangers in the uncontrolled use of mineral oils have recently been reviewed²⁻⁴ and their use as ingredients in foodstuffs condemned. These views are based on such evidence as interference with the absorption of carotene, vitamin D, calcium, phosphorus, and vitamin K, and the ability of mineral oil to destroy cells in the lymph nodes and to induce (when impure) tumours in rodents. In certain cases necropsies on human subjects known to have used mineral oil over a long period have shown the presence of oily deposits in the lymph nodes. It must be emphasized, however, that there appears to be no substantiated evidence of refined mineral oils producing carcinogenic effects on ingestion, and the experimental evidence on the heated oils is still inconclusive. It might be thought that as dough is baked in an oven at 450°F . (232°C .) there is some possibility of the formation of harmful oxidation products. This, however, is unlikely to occur, since the internal dough temperature is less than 212°F . (100°C .), and even at the point of contact between the dough and baking tin oxidation will be slight in the atmosphere of carbon dioxide, prevailing consequent on the fermentation conditions.

In view of the available medical evidence we have been guided in framing recommendations to the industry largely by the more clearly defined physiological defects which might accompany uncontrolled usage. These defects appear dependent on the oil being finely emulsified and absorbed through the intestinal wall. Alvarez⁵ has shown that even after ingestion in the liquid form emulsification may subsequently occur, being effected by the bile salts, oleic acid, and glyceryl monostearate present in the bowel and acting as emulsifiers.

Microscopical examination of bread doughs containing mineral oil stained with scarlet red has shown that the degree of dispersion depends on the efficiency of admixing the oil with the dough. Emulsification of the oil with the water present in the dough does not occur, and the oil either is distributed as a thin film inside the dough when mixing is slight or, when thoroughly mixed, it forms a film apparently surrounding each starch particle and/or penetrates the gluten in the form of an unbroken macro-film. These latter conditions do not occur to any appreciable extent in baking practice. When oil is used to prevent dough adhering to the baking tin it forms a thin layer over the dough and is slightly absorbed during the baking. Observation of oiled bread doughs—baked in a micro-oven by the technique described in the above-mentioned letter—has

shown no evidence of these films dispersing into droplet form. Thus it may be regarded that pure oil used as a grease or lubricant in bread production does not result in emulsion formation, and it is believed that subsequent emulsification in the bowel does not occur and that the chance of absorption through the intestinal wall is remote.

The difficulty of carbon tetrachloride extraction of the total mineral oil in breads and even pure starch "loaves" containing known quantities led us to the view that some of the oil was firmly bound to the crumb. A laboratory experiment was designed to copy somewhat the processes occurring when bread containing up to 2% mineral oil was ingested. Bread was boiled with 0.5N hydrochloric acid for a short time to imitate the breakdown caused by mastication, and the mixture was then rendered slightly acid and incubated at 38°C . for about 24 hours in the presence of the enzymes diastase and pancreatin to imitate the digestive process. It was found that the mineral oil still adhered to the residue resulting from this degradation and was little dispersed in the acid solution. This type of undigested residue might be compared with the roughage excreted from the human system. It is noteworthy that a parallel experiment in which glyceryl monostearate was added to the digest gave similar results.

It would appear, therefore, that mineral oils, when present in small amounts in bread, will not be liberated to any marked degree internally and that the possibility of emulsification and subsequent absorption is slight. Even this risk is eliminated should small residual quantities be metabolized, and evidence obtained with the paraffin denterohexadecane⁶ has indicated that such metabolism may well occur. The quantitative determination of mineral oil in bread will be described elsewhere. A survey of the quantity of mineral oil present in loaves purchased from 16 sources in Great Britain has indicated that the majority of bread examined falls within the recommendations suggested to the industry as a result of our investigations.

It has been suggested that bread should only contain mineral oil (1) if the quantity does not exceed 2,000 parts per million, and (2) if the chemical purity is not below that of liquid paraffin B.P. In these circumstances we believe that pure mineral oils may be safely used for the purposes specified in quantities not greatly exceeding 2,000 parts per million, as the chance of emulsification of oil in the bowel appears to be much smaller than with the same oil undiluted, and that at this level of usage the oil is probably largely excreted with the roughage, any residue being completely metabolized in the body.—We are, etc.,

The British Baking Industries
Research Association,
Chorleywood, Herts.

J. B. M. COPPOCK.
M. A. COOKSON.

REFERENCES

1. *J. Physiol.*, 1944, 103, 306.
2. *British Medical Journal*, 1948, 1, 1141.
3. *J. Amer. med. Ass.*, 1947, 135, 512.
4. *Ibid.*, 1943, 123, 967.
5. *Gastroenterology*, 1947, 9, 315.
6. Stetten, De W., *J. biol. Chem.*, 1943, 147, 327.

Purpura Complicating Pregnancy

SIR,—I read with interest the article by Dr. J. A. Chalmers (Dec. 11, 1948, p. 1020) on purpura haemorrhagica as a complication of pregnancy but cannot agree with some of his conclusions. In a review¹ of the available literature on this subject in 1943, descriptions were traced of 68 cases of purpura during pregnancy, 75 cases having been stated to have been reported up to that time. It was shown that of the described cases only 5 could be classified as true thrombocytopenic purpura—the rest being purpuric manifestations of a variety of septic and toxic conditions. Some, indeed, were shown to be clinically cases of scurvy.

In the 5 true cases (which included one C. W. F. Burnett and I reported) all the mothers recovered completely. Hence true purpura complicating pregnancy does not appear to be a fatal condition. The fatalities occurred among the other cases, where the purpura was associated with such conditions as septicæmia and poisoning by various drugs. Furthermore, in the 5 true cases treatment varied in each case (in one case splenectomy was performed), but there were no fatalities, and spontaneous and complete recovery followed parturition in all cases. Treatment apparently has little influence upon the ultimate outcome. The amount of post-partum hæmorrhage was in no case excessive, and it is obvious that efficient uterine contraction is still the factor of paramount importance in the prevention of hæmorrhage.

In the case reported by Burnett and me the initial symptoms of severe epistaxis and widespread ecchymoses appeared at the

fourteenth week of pregnancy, and a platelet count at that time showed 15,000 platelets per c.mm., and at no time during the remainder of the pregnancy did the count rise above 163,000 per c.mm. At delivery the count was 76,000 per c.mm., and yet despite a perineal laceration there was no undue loss and the puerperium was uneventful. The infant's platelet count at the end of the first week was 332,000 per c.mm., and the mother's count gradually returned to normal over the ensuing 6 months. At no time did the patient have any specific treatment for her purpuric condition.

It appears, therefore, that (1) the figures quoted by Dr. Chalmers are not all cases of true purpura, and (2) there is nothing in the available literature to support the statement that the mortality rate is high or to provide any basis for dogmatic principles of treatment.—I am, etc.,

Manchester.

I. KLASS.

REFERENCE

¹ Burnett, C. W. F., and Klass, I., *J. Obstet. Gynaec. Brit. Emp.*, 1943, 50, 393.

Retaining Patency of Veins

SIR,—The method described by Drs. A. J. Palmer and A. H. C. Walker (Dec. 4, 1948, p. 985) for ensuring patency of veins after cutting-down for transfusion, while no doubt effective, is too complicated to become generally adopted. It also suffers from the disadvantage that the wound is not closed while the cannula is *in situ*, hence presumably the reference to infection of the wound. The sutures described are designed to prevent leakage from the vein after removal of the cannula, but the same end can be achieved by direct pressure of a dressing.

A simple method of ensuring patency of veins after cutting-down is as follows: The vein is exposed in the usual way and the distal part tied off with silkworm gut or with some other non-absorbable suture material, the ends of which are left long. The cannula is inserted and tied in the vein the same way. The wound is then almost closed with one or two skin sutures, and the long ends of the ties on the vein are brought out of the wound alongside the cannula. In order to take out the cannula, the suture fixing it is pulled on until the knot appears and it is then cut out with fine scissors. The suture tying off the distal end of the vein is removed in the same way, and immediately a pressure dressing is applied. Surprisingly little bleeding occurs, and the wound in the vein seals off rapidly. Advantages claimed for this method are simplicity, closure of wound at time of insertion of cannula, and the avoidance of buried catgut.

I would emphasize that in routine ward work cutting-down should be the last resort, and where possible a needle or trocar and cannula should be used. These latter methods often fall into disrepute because of inadequate immobilization of the arm, causing displacement of the needle. This state of affairs is largely due to the fact that it is commonly believed it is possible to immobilize a limb with one back splint. Experience, however, shows that to ensure immobility of the limb at least three splints in the form of a box are necessary, or, alternatively, a light plaster cast should be used.—I am, etc.,

Helifax

A. W. FOWLER.

Calcified Cyst of Spleen

SIR,—Mr. J. H. Donovan's article (Dec. 25, 1948, p. 1106) records an interesting case of calcified cyst of spleen. He points out that his is the second case recorded in this country. This prompts me to mention that Mr. J. I. P. James and I published a case of calcified non-parasitic cyst of the spleen in 1943.¹ Cysts of the spleen present diagnostic difficulties, and in our case diagnosis was made before operation mainly on radiological evidence. The radiological features were: a round cyst in the left upper quadrant the size of a large orange, with a calcified rim, elevating the left diaphragm; the barium-filled stomach was pressed upon by the cyst and pushed to the right; the splenic flexure was displaced downwards. Intravenous pyelogram showed downward displacement of the left kidney. These radiological signs seem to be characteristic of splenic cysts, since they have also been described by other authors. Benton² suggests that the downward displacement of the splenic flexure is almost pathognomonic of large cyst of the spleen.

Calcified non-parasitic cysts of spleen are usually believed to be the result of trauma. Although no history of injury could be obtained in our case, signs of old haemorrhage were found in

the calcified cyst. In Dr. R. W. Bazeley's case,³ referred to by Mr. Donovan, a severe accident with fracture of the left lower ribs preceded the detection of multiple calcifications and of a large calcified cyst of spleen. On the evidence of the severe injury to the left lower chest and the presence of a large calcified cyst in the left upper quadrant with pressure signs on neighbouring organs similar to those seen on the radiograph in our case, I felt justified during the discussion on the case in suggesting a diagnosis of calcified cyst of spleen of traumatic origin.—I am, etc.,

London, W.1.

A. ELKELES.

REFERENCES

- ¹ *Brit. J. Radiol.*, 1943, n.s. 16, 59.
- ² *J. Amer. med. Ass.*, 1932, 99, 1674.
- ³ *Proc. R. Soc. Med.*, 1948, 41, 377.

Dracontiasis

SIR,—I read with great interest Dr. W. L. M. Perry's report from Nigeria (Dec. 25, 1948, p. 1107) of his operation on a left inguinal hernia associated with a female specimen of *Dracontulus medinensis* in the hernial sac. In view of the comment that no previous record was available of the occurrence of guinea worm in this situation Dr. Perry and others amongst your readers in the Tropics might be interested in a similar case report which I submitted from Hyderabad (Deccan) and which was published in these columns (Sept. 16, 1933, p. 528).

The points of clinical interest in my own case (which was I felt, quite inadequately presented through a very scanty knowledge of helminthology and a complete lack of access to the literature of the subject in such localities) were these: an indirect right inguinal hernia containing small intestine and gangrenous omentum was strangulated with the guinea worm, a female 1 cm. long and alive, in close relation to the neck of the sac; hydrocele present on the same side was also dealt with. A welcome feature of the operation was the unaccustomed ease with which this long worm came out intact, without any need for having recourse to the usual dodges, such as injection of mercuric chloride solution, for facilitating its extraction. The patient's convalescence was uneventful.—I am, etc.,

Huddersfield

W. E. THOMPSON.

Steroid Metabolism and Frontal Lobes

SIR,—Dr. F. Reitman (Dec. 18, 1948, p. 1064) publishes series of twelve 17-ketosteroid urinary estimations (based on the biochemical work from Charing Cross Hospital¹) before and three to four months after bilateral prefrontal leucotomy. It is interesting and instructive that the 17-ketosteroid results from this operation should conform on the whole to those obtained from unilateral adrenalectomy. In his series the average drop was from 13.4 mg. a day to 9.47 mg. a day, and Cases 9 and 10, with ketosteroids of 23.6 mg. and 20.3 mg. a day, look suspicious of cortical overactivity. In our last published analysis² of unilateral adrenalectomy the drop in the excretion of 17-ketosteroids in the cases in Group 1 (post-pubertal virilism) was as follows:

	Pre-operative	Post-operative
Average of 41 tests	17.6	8.5
Good results	17.5	6.8
Improved	19.1	9.9
Remained the same	15.1	8.4

As a general observation we regard a drop of 50% or over associated with the better results. The clinical results in this series were:

	Group II	Cushing's Type	Psychological Symptoms Present
Cases	88	14	15
Good	16	2	3
Improved	45	11	8
Remained the same	10	1	2
Deficient information	14	—	—
Died from other causes	3	—	—

Dr. Reitman does not go into any clinical details, but we have experienced psychosomatic-sexual changes of varying degree in a fair number of patients, and most of them have benefited by unilateral adrenalectomy.

An extreme case of this kind was described in 1939,¹ and the patient has remained perfectly well and was last seen a year or two ago. There is this curious twin control in the evolution of sex precocity and Cushing's syndrome, where the syndromes may respectively emanate from a hypothalamic tumour or basophil adenoma of the pituitary, or both from hyperplasia or tumour of the adrenal cortex, associated with increased output of androgens, which establishes the differential diagnosis. Now it would seem that the pituitary hypothalamic mechanism may be controlled by frontal impulses as far as the excretion of androgens is concerned, vicariously or direct from their production in the adrenal cortex—I am, etc.,

London W 1

L. R. BROSTER

REFERENCES

- ¹Paterson J, McPhee, I M, and Greenwood A W, *British Medical Journal* 1942, 1, 35.
²Broster L R, *Proc R Soc Med*, 1946, 40, 35.
³Allen C et al., *British Medical Journal*, 1939, 1, 1220.

Toxicity of Soluble Phenytoin

SIR,—As I was going through the article by Dr T N Nauth-Misir (Oct 2, p 646) I was reminded of a similar case under my care.

A patient, 32 years old, had been an epileptic for the last 16 years and had potassium bromide, phenitone, phenobarbitone, and phenytoin sodium in various doses at different times. In spite of that he used to get attacks quite frequently. He came under my observation from December, 1946. I started with $\frac{1}{2}$ gr (0.1 g) of phenobarbitone daily in three divided doses. Still his fits were not controlled, so I advised him to have one capsule (0.1 g) of phenytoin sodium and 1 gr (65 mg) of phenobarbitone. He had such a line of treatment for two and a half months. In spite of this he used to get fits once a month or so. I increased the dose of phenytoin sodium to two capsules a day, with 1 gr of phenobarbitone. Even after this there was no change in the frequency of attacks. He came to see me on Oct 7, 1947, complaining about his unsteady gait and headache. On questioning he told me that this had started on Oct 3, 1947 and now he was completely incapacitated. On examination I found that he had cerebellar ataxia, but I could not come to any conclusion about the causation of the condition. I examined him again and noticed that he had hypertrophy of gums. It was now quite clear he had been having phenytoin sodium two capsules (0.2 g) daily for seven months. The drug was stopped and he completely recovered in four days. No other measures were taken.

My case differs from Dr Nauth-Misir's case in that my patient had cerebellar ataxia after such small doses as 0.1 g daily for 24 months and 0.2 g daily for seven months, while his was a case of an acute severe toxic reaction (with cerebellar ataxia, etc) after a single heavy dose of 250 tablets of 0.1 g—I am, etc.,

Ahmedabad India

S C KESUNGAR

Temperature Recording

SIR—I have read the interesting article on temperature recording in children by Professor Alan Moncrieff and Dr B J Hussey (Dec 4, 1948, p 972) and the comments in the annotation (p 991) on this particular subject. It seems that despite the fact that temperature recordings have been common routine for centuries there are still differences of opinion on the various ways to record temperature and their significance.

In this connexion I would like to mention that temperature differences exist not only at various sites but even under the axilla if taken at the same time on both sides. I have been taking bilateral axillary temperatures in cases of pulmonary tuberculosis for some time and recorded differences. The differences seem to be connected with underlying disease in the chest, and they vary from fractions of a degree to 1° C. In cases of unilateral disease the temperature is higher on the side affected, and in bilateral disease on the side of greater activity. The differences are more manifest if recordings are made over a period of ten days—taking temperatures morning and evening on both sides for ten minutes with ordinary mercury thermometers.

Before inducing an artificial pneumothorax in cases of bilateral disease, besides other factors I find it useful to take bilateral temperatures, and I start an artificial pneumothorax on the side where greater activity is indicated by the average higher temperature—I am, etc.,

Harold Court Sanatorium Essex

M WEINBERGER.

POINTS FROM LETTERS

Diagnosis of Tuberculous Meningitis

Dr P E FITZPATRICK (Belfast) writes. I was extremely interested in Dr J T Lewis's letter (Dec 11, 1948, p 1076) on the early diagnosis of tuberculous meningitis by cerebrospinal fluid examination, especially in relation to the fall in the glucose content. What to my mind is equally important is the recognition of early clinical signs and symptoms, as this leads to earlier hospitalization and therefore earlier examination of the CSF and earlier treatment. I have in mind four cases of this disease which had, all of them, the same signs and symptoms. All four were boys of age group 5-10 years. In all a family history of pulmonary tuberculosis was present. In each case, about three months before the onset of the cerebral symptoms of headache, vomiting, photophobia, strabismus, etc., it was noticed that there developed on the hands, trunk, and knees particularly a crop of small papillomata, not unlike molluscum contagiosum, irregularly distributed. Associated with this were irritability and lassitude, with a disinclination to play games or to take an interest in toys. Inside three months all developed variable symptoms—mostly headache, intermittent temperature, occasional vomiting, and what to my mind was most significant of all, night terrors. Having the possibility of tuberculous meningitis in mind, I sent all four to hospital with a tentative diagnosis of tuberculous meningitis. In each case this was confirmed by the presence of tubercle bacilli in the CSF and a reduced glucose content. It would be interesting to know if this crop of small papillomata might be the skin manifestation of the mass dissemination of some abdominal, pulmonary, or other focus of tubercle bacilli, affecting at the same time the meninges and later producing all the signs and symptoms of tuberculous meningitis.

Herpes Zoster

Dr EDGAR PALMER (Lydd, Kent) writes. The treatment of this distressing complaint has been characterized by many different procedures and has been unsatisfactory in the past. As it is known that it is due to inflammation of the posterior nerve roots caused by a virus, and as it is also known that hexamine is excreted into the nerve sheaths, it seemed reasonable to prescribe this drug. Over a period of ten years in a rural practice, without the controls possible in a hospital I have found that tab hexamine gr 5 (0.32 g) t.d.s., p.c., has given most excellent results, causing the lesions to dry up quickly and the irritation and pain to subside rapidly. I have not had a case of post herpetic neuralgia since using this drug.

Temperature Recording

Dr S L FRANK (Preston) writes. From recent correspondence there seems to be some doubt as to how long a thermometer should be left in position. This must vary from case to case, as the rate of heat transference from the tissues to the thermometer bulb is variable and depends on such variable factors as the degree of dilatation of the blood vessels concerned. Thus in a suspected appendicitis, where the expected pyrexia is only slight and the peripheral vessels may be constricted from some degree of shock, it may be well over five minutes before equilibrium is reached between the oral temperature and the temperature of the mercury. It follows that the only correct way to take a temperature (irrespective of the site used) is to wait until the mercury stops rising—in practice, until two successive half minute readings are the same. In teaching this method I have found it necessary to ensure that the thermometer is not shaken down between each half minute reading.

Cloning of Surgeons' Spectacles

Dr C G KAY SHARP (Leeds) writes. With reference to the letters on this subject from Mr G K Rose (Dec 4, 1948, p 998) and Mr R Wood Power (Dec 25, 1948, p 1123) may I draw attention to the fact that the problem of cloning of spectacles has been solved by the provision of contact lenses? The lenses are kept free from clouding by the movement of the eyelids. The average continuous wearing time is four hours—long enough for most surgical operations.

Procaine Penicillin

Dr L GREENFIELD (London, N5) writes. The introduction of procaine penicillin suspension has solved many of the difficulties of penicillin administration in general practice. The handling of the suspension, however, presents a difficulty which to some extent neutralizes the advantages. At present the substance is exhibited in rubber-capped bottles from which aspiration into the syringe even through a wide bore needle is not easy. There seems to be no reason why it should not be presented in 1 ml ampoules, from which the suspension could be aspirated into the syringe with the needle detached. The injection into the patient, using a needle of as small a bore as size 12, offers no difficulty and causes little discomfort.

Obituary

R. H. MILLER, M.D., F.R.C.P.

Dr. Reginald Henry Miller, who died in hospital in London on Dec. 23 at the age of 69, was consulting physician to St. Mary's Hospital, London, and the Paddington Green Children's Hospital.

The son of Dr. Andrew Miller, of Hampstead, he was educated at Charterhouse and at St. Mary's Hospital. He graduated M.B. in 1905 and proceeded M.D. in 1907. Dr. Miller was a general physician with a particular interest in paediatrics. He was medical registrar and pathologist at the Hospital for Sick Children, Great Ormond Street, in 1906-8, and he acted as secretary of the Section of Diseases of Children at the annual meeting of the B.M.A. in 1911. He was elected F.R.C.P. in 1917, and was an original member of the British Paediatric Association and an honorary member at the time of his death. He was the first editor, together with the late Dr. Hugh Thursfield, of the *Archives of Disease in Childhood*, and himself contributed a number of important articles to the literature on diseases of children.

Dr. Miller was a recognized expert on mental deficiency in children and a visitor for the County of Middlesex under the Mental Deficiency Acts. He also wrote extensively about rheumatic fever and heart disease in childhood. At Paddington Green he was responsible for starting the first supervisory clinic for rheumatic children in the London area. In 1939, soon after the outbreak of the recent war, he left London to become medical director of the Park Prewett General Hospital at Basingstoke.

Dr. T. Pearce Williams writes: The passing of Reginald Miller removes one more of that group of physicians who by their writings, based largely on clinical observation, did much to advance the art of paediatrics in the first thirty years of this century. I first met Reginald Miller in 1919 at St. Mary's, and later became a colleague of his at Paddington Green Children's Hospital. His fine figure, commanding presence, and resonant voice were combined with a ready wit and extensive knowledge of our language. His carefully chosen comments at committees were at times devastating, and he coined some most pertinent aphorisms. It was at Paddington Green that Miller carried out most of his work on the coeliac disorder, gastromegaly, and juvenile rheumatism. He discussed his problems freely with his colleagues, particularly with H. W. Perkins in the pathological department. Miller had a childish love of car riding, and for some years I called for him regularly to drive him to his rooms in Harley Street where, except for his hospital visits, he spent most of his days. I also lunched with him regularly and gained much from the breadth of his knowledge, his ready sympathy, and his interest in the development of paediatrics, particularly with the foundation of the British Paediatric Association. Miller's disposition was shy and sensitive, often masked by remarks apparently rude but rarely intended to be so. In 1911 he published a textbook, *The Medical Diseases of Children*, a copy of which I have before me. I doubt if any more recent publication has surpassed it in quality. He was much hurt by criticism which he felt was unfair and unjust, and could never be persuaded to revise the text for a further edition. A sincere Catholic, he yet had much of the Puritan in his nature and was almost ascetic in his habits. He worked quietly and unhurriedly, typing all his own letters, for neatness was a passion with him. His relaxation in the summer was a visit to Lords. He talked much of his family, in whose development he gained much happiness. His transfer to Basingstoke in 1939 broke the steady routine of his life, and he was little seen in London thereafter. Despite much importuning of his colleagues at Paddington Green, he never returned to take up work there, much to our regret. For much personal kindness I could never adequately repay him, and at the Children's Hospital we mourn the loss of a very dear friend and colleague.

Dr. Thomas Hunt writes: As a physician Reggie Miller possessed the great gift of recognizing serious illness almost instinctively, and, though there might be little to suggest it to others, he seemed at once to be able to pick out the important

from the trivial. He was essentially humble in his own estimation, and was never impatient in listening to the views of others, however junior. His patients were devoted to him, and his gentle kindness on his ward rounds was an inspiration to students. As a teacher he will be long remembered for his wit and paradox and his quickness at finding the *mot juste*. At times his lazy, almost slipshod, manner and his large build—he was over 6 ft. 3 in.—seemed to give an impression of indifference; indeed, with minor ailments he could be frankly bored. But with an ill patient or an anxious relative he showed that understanding and sympathy which was part of his very gentle nature. As a man he hated violence and bustle, and both wars were a great ordeal to him. By temperament he was sensitive and cautious, with many of the attributes of the artist. His health was not good and for some years before his death he had had to take care of himself and avoid strain and over-exertion. Miller was at his best with children, and his work on coeliac disease, duodenal ileus, and especially rheumatic fever was outstanding. He had little sympathy with much modern psychiatric teaching and in particular disapproved of the Freudian school, but his views on the psychosomatic aspects of disease were in many ways remarkably ahead of his time. Miller was an expert prescriber, with a remarkable memory for mixtures and doses, and he used medicines with skill and a fine regard for their value as well as their dangers. Reggie Miller was one who, though he could be biting and even sarcastic if it was necessary, nevertheless delighted in saying nice things about others; in return he was almost childishly happy at knowing of his friends' affection and at feeling that he was welcomed and appreciated. His many friends will mourn the loss of a personality whose charm, wit, brilliant conversation, and gentle nature will not soon be found again.

WILLIAM SUSMAN, M.D.

Dr. William Susman, who died suddenly on Dec. 23 at the early age of 53, had been for many years lecturer in morbid anatomy and histology in the University of Manchester. He was a graduate in arts and medicine of Queen's University, Kingston, Ontario, and his interest in pathology was already obvious in his student days. After qualifying in 1923 he was awarded a Hoffmann fellowship and spent two years in Edinburgh, where he studied under Lorrain Smith and held a number of junior appointments in the pathological departments of the University, the Royal Infirmary, and the Royal Mental Hospital. In 1925 he went to Manchester as assistant lecturer in bacteriology in the department of pathology under Shaw Dunn. In recent years his main hospital appointments had been those of senior pathologist to the Manchester Royal Infirmary and honorary pathologist to the Manchester Royal Eye Hospital.

Dr. Susman was a keen research worker and published some twenty-five papers. Many of these reflect his special interest in diseases of the ductless glands and include a classical paper on atrophy of the adrenals as a cause of Addison's disease which was published in the *Journal of Pathology and Bacteriology* in 1932. His paper on intraocular tumours, which appeared six years later in the *British Journal of Ophthalmology*, has also been recognized as outstanding. In recent years administrative work, both within and outside the University, has claimed much of his time. He was an active member of the Board of the Faculty of Medicine and of its various committees. A member of the British Medical Association since 1924, he was a member of the Non-Professorial Group Committee from 1937 to 1946, of the Special Practice Committee in 1938-9, and of the Special Committee on Patents in 1944-5. Medical lecturers throughout the country have reason to remember him gratefully, for he was largely instrumental in founding the Association's Non-Professorial Group, which grew steadily in strength and influence under his chairmanship.

A vigorous and effective teacher of morbid anatomy and histology, Dr. Susman had a clear grasp of the needs of the medical student, and he never lost the zest and freshness that keep teacher and student in contact. Many generations of students will remember him with respect and affection. His great experience was always freely at the service of his colleagues and others, and his loss as a consultant will be widely felt.

From 1915 to 1919 Dr. Susman saw service in the Canadian Army Medical Corps, in the 8th and 2nd Duke of Wellington

egument, and in the Royal Flying Corps, and he was twice wounded, in the recent war he served as a medical officer in the Home Guard. He is survived by his wife and one son, a student of medicine, and to them all who knew him will desire to express their sympathy.

Dr JOHN MOFFAT LOGIE, of Burntisland died on Dec 20, and with his passing Fife has lost an outstanding personality in the medical profession. He was proud of the fact that he came of humble stock, and, in his own words *per vias luras* he qualified as a chemist and with his savings went on to graduate M.B., Ch.B. at Edinburgh University in 1910. For a time he was a house surgeon at the Royal Infirmary, Dundee, and then he settled first in Aberdour, later moving to the neighbouring busier town of Burntisland. From there Dr Logie conducted a large general practice and endeared himself to many patients. He was medical officer of health to the town of Burntisland—one of the few remaining medical officers of smaller burghs. He was the embodiment of all the good qualities which go to make a first class family doctor. So successful was his medical career in his own town that he received a public presentation on his recent retirement. Dr Logie read widely, and was a keen student of the classics all his life. He was an active member of the B.M.A. in Fife, and took a great interest in its work. His contributions to discussions were always marked by his complete honesty of purpose and opinion. He was a past president of the Fife Branch. A sincere churchman, he was closely identified with the affairs of St Serf's Burntisland where a memorial service for him was held on Dec 22 and attended by many of the local people. He is survived by his wife and daughter to whom we offer our sympathy.—J.M.

Dr ARTHUR ANDERSON, who was senior medical officer of the Glasgow Education Health Service, died on Dec 22 at his home in Victoria Park Gardens at the early age of 53. Dr Anderson was an M.A. of Glasgow University and graduated M.B., Ch.B. in 1922. He proceeded M.D. in 1924 and took the D.P.H. in 1943. He was appointed senior medical officer only in January, 1948, but more than twenty-four years of his professional career had been devoted to the Glasgow Education Health Service. During this time Dr Anderson made a special study of rheumatic disease in school children, and he was expert in eye conditions and refraction. One of his greatest interests was in the nutrition of the children and he was ever watchful that the school meals should provide a good balanced diet. At the time when he acted as school medical officer for the Partick area he knew practically every child and parent in his district. Dr Anderson was held in the highest esteem by his colleagues and was popular with teaching staff and pupils alike. On the appointment of the late Dr J. Miller Young as senior medical officer of the Education Health Service, Dr Anderson was appointed senior assistant medical officer. He was a good administrator and assisted materially in the building up of the department to meet the provisions of the recent Education Act. He was an elder of Partick Parish Church and an active member of the Partick Medical Association. He had few hobbies outside his work, to which he gave his whole attention. During the war-years Dr Anderson trained many hundreds of the citizens of Glasgow in the essentials of A.R.P. and first aid. He is survived by his wife and a daughter.

Dr GEORGE HENRY CHAVASSE MOLD died on Dec 24 at the age of 64. Dr Mold studied medicine at Birmingham University and graduated M.B., Ch.B. in 1908. After a brief period as a house physician at the General Hospital, Birmingham, he went into general practice. During the 1914-18 war he served as a captain in the R.A.M.C., and not long after demobilization he settled in Sussex.

G.S. writes. Dr Mold came to Cross-in-Hand, Sussex, over nineteen years ago and a few years later we became partners. One could not have had a more loyal partner, nor a more conscientious or harder worker. He never spared himself in spite of ill-health during his last few years here. He served on the National Insurance Committee for East Sussex and helped in Red Cross work. He found a home to retire to in Gloucestershire, where he was enjoying his garden and a well earned rest. His last illness came unexpectedly, and although he knew the end could not be long delayed he bore it very bravely and showed great courage. Even a week before he died he dictated part of a letter showing interest in old friends here.

Dr KASARGOD SOMANATH BHAT died recently at Karkala, South Kanara, Madras Province, India at the age of 63. Dr Bhat, who studied medicine at Madras and later at St Bartholomew's Hospital, qualified in 1915, and was in practice in SE London for many years. During the war he

acted as medical officer for a number of the Bermondsey shelters. He returned to his native province only in 1944.

Dr K. Malik writes. Dr Bhat was my friend during the last twenty-six years. He did for me and a number of others in the same circumstances a great service—namely, gave me a start. He not only bought instruments, including a dental chair, but sent us patients. He was always gruff, monosyllabic, and no too well dressed, but he worked hard and gave generously. His learning was very wide. He always knew the latest medical literature, the best articles on chess, and he was interested in botany. His type is rare. He never spoke of his good deeds, but I discovered many, always in roundabout ways—although I saw him for many years at least once a week. The world is the poorer for his loss and many of us are the sadder.

Dr Cranston Walker writes. To students Arthur Robinson (Dec 18, 1948 p. 1084) had many outstanding characteristics. The movements of his spare figure were quick, energetic, and accurate. His decisions also were quick, and his intentions proceeded immediately and smoothly into action. He never seemed to waste a moment. His speech though quiet was equally quick and efficient. His manner of entering the dissecting room was an economical rebuke considerably effective to anyone who lounged or slouched. He disallowed smoking there. His knowledge of human anatomy was amazing and his understanding profound. He knew the body with intimate familiarity not only as it is usually placed and described, but in any attitude and from any aspect or direction in broad view or in the minutest detail. He could answer any question, however recalcitrant, without an instant's hesitation and apparently with complete infallibility. Evidently he had prepared himself for his work of teaching anatomy with most exacting thoroughness and devotion. He probably had great powers of visualization, and in three dimensions, so that in his mind any structure under attention stood out solid in a translucent body and round it he could see vividly, as he liked, any other structures, and could remove them, replace them, or render them transparent at will in order to make plain any matter of structure or relation. His blackboard drawings were done with great rapidity. He appeared to be building up structures, or occasionally cutting down on them according to the solid images in his mind, not drawing after memorized diagrams. He often used the broad surface of the chalk to cover areas quickly subordinating the use of outline. He carried on research with persistent vigour especially in embryology, but never allowed this to encroach on his teaching. His devotion to this, and to the needs of anatomy students at all stages was so eager and so successful that infection with his zeal was inescapable. It was perhaps most felt in his informal dissecting room tutorials. He had no need to assert authority; his manner was always that of a helpful energetic friend—who had given considerable attention to anatomy—leading suavely to knowledge and understanding.

Medico-Legal

VISCERAL TRANSPOSITION AS A DEFENCE

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

A young man on trial for murder in the Central Criminal Court in Dublin recently adduced a defence that had probably never been attempted before that he was a case of transposition of the viscera and therefore incapable of a normal degree of self control.¹ He was 28, and for about eighteen months had been keeping company with a widow of 35, to whom he was passionately attached. He was drawing a small wage as a chemist's assistant, and had just failed to pass an examination which would have advanced him professionally. In a field which the couple used to frequent they had—according to the accused—a quarrel but of an unimportant kind. The woman spoke of leaving him, there was some sort of a struggle in which they both lost their footing and he found his hands round her throat and, without being able to control what he was doing, continued to squeeze it until she lost consciousness. He then felt the heart, dragged the body some distance by the hands, and repeatedly kicked the face, breaking the bones. He made no serious attempt to divert suspicion from himself. He maintained that he had never intended to do her any harm and that something had snapped in his brain.

A general practitioner of Ballymun, Dr John Hannan gave evidence that he had known the accused from his youth.

¹ Dublin Evening Herald, Oct. 18-22.

and that the mother had consulted him because her son had been backward and solitary. He said that the lad's physical development had been poor and he had complete transposition of the viscera. Dr. Hannan maintained that this rare condition was often associated with mental deficiency, and put forward the theory that it was a sign of a throwback to a more primitive type of ancestor, and that a person affected by it could therefore not be expected to have the same restraint over his emotions as an ordinary person. He declared his belief that the accused at the moment of the murder had been temporarily insane and reverted to a jungle type. The prison medical officer, Dr. T. Murphy, confirmed the transposition but said that this abnormality, though rare, had no significance and was found in perfectly healthy people.

The judge directed the jury that there had been no evidence of provocation, and so the defence of manslaughter, on which the accused also relied, would not stand. Moreover, no reasonable jury could in his opinion accept any of the evidence tending to show insanity. Some people did insane things from time to time under the stress of emotions or passion, but their lack of self-control did not absolve them from responsibility in law for their acts. To prove insanity an accused person must show that because of a defect of reason he did not know what he was doing, or did not know that it was wrong (the M'Naghten rules); otherwise he was responsible. The jury, after an absence of an hour and forty minutes, came back with a verdict of guilty and a strong recommendation to mercy. The sentence of death has since been commuted to penal servitude for life.

Universities and Colleges

UNIVERSITY OF LONDON

H. F. T. Deane has been approved at the examination for the Academic Postgraduate Diploma in Medical Radiology.

UNIVERSITY OF MANCHESTER

William Francis Nicholson, M.D., M.Chir., F.R.C.S., has been appointed Lecturer in Surgery in the University.

UNIVERSITY OF LEEDS

The Council of the University has appointed Thomas Duncan Day, M.D., as Senior Research Fellow in Experimental Pathology and Cancer Research.

UNIVERSITY OF BRISTOL

D. M. P. R. Clarke has been approved in Part II of the examination for the Diploma in Medical Radiodiagnosis.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

At a meeting of the College held on Dec. 15, with Mr. Frank E. Jardine, President, in the chair, the following, having passed the requisite examinations, were admitted Fellows:

T. M. Abbas, S. Abel, A. F. Alexander, P. St. G. Anderson, R. W. Bailie, J. A. Barclay, A. E. Bateman, H. A. Benjamin, C. L. Beynon, S. C. Bhattacharyya, H. G. Biggart, H. D. W. Black, J. S. Boyd, I. Bruce, A. Buchan, G. Buchanan, J. S. Calnan, J. D. Cameron, J. A. Campbell, N. A. Campbell, J. S. Cason, Z. A. Choudhury, K. S. Clarke, K. W. Cochrane, R. B. G. Cook, J. W. Cowie, C. S. Dafoe, K. H. Dalrymple, W. J. Dempster, W. R. Dickie, C. A. P. Donaldson, A. G. Gibb, C. A. Gleadhill, A. G. Gray, L. M. Green, W. S. Hanna, P. Harris, A. R. Harper, C. J. Hassett, J. R. Hochhauser, V. S. Hughes-Davies, R. F. Jackson, E. W. Jeyaratnam, A. Joffe, A. M. Keith, J. R. Kenyon, D. R. Kilgour, S. S. Kiriame, A. P. Kitchin, J. W. Knox, T. Koonvisal, D. W. Lamb, A. S. Lewis, R. A. Lindsay, Ursula M. Lister, H. K. Lucas, J. T. Malr, R. N. G. Majumder, T. S. Matheson, A. J. M. Mathieson, A. B. May, R. K. Menda, I. H. Meyer, A. M. Michael, J. P. Mitchell, R. Morrison, J. Mowat, A. A. Murray, J. H. McBeath, R. J. M. McCormack, A. B. McCulloch, D. M. Macdonald, G. H. D. McNaught, C. G. Nairn, J. G. Napier, E. L. Nicolson, T. H. Norton, W. D. Paterson, B. H. Price, Ghias-Ud-Din Qazi, P. T. Quinlan, M. S. Qureshi, Florence C. R. Richardson, E. F. Ridley, L. R. Robson, P. E. Roland, N. Rosenzweig, A. M. Sadek, H. K. Sarkar, A. S. Scott, L. S. Scott, R. H. Sewell, Shrikrishna, J. J. Skapinker, A. D. Smit, P. H. E. Smith, E. F. G. Stewart, B. A. Thompson, G. R. Thomson, N. Tunnell, P. R. Walbaum, R. B. Watson, Catrin M. Williams, R. G. Williams, Eileen D. M. Wilson, D. Wright, J. H. Wrigley, S. Zian.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

Dr. H. C. Cameron, F.R.C.P., will deliver the Dr. John Burns Lecture in the Hall of the Faculty (242, St. Vincent Street, Glasgow) on Wednesday, Jan. 12, at 5 p.m. The title of the lecture is "The Beginnings of Modern Surgery, with personal recollections of Lord Lister." All medical practitioners are invited to attend.

Medical News

Inquiry Into Punishment

The Home Secretary has appointed a committee to review the existing methods of punishment in prisons, Borstal institutions, approved schools, and reform homes (other than corporal punishment in prisons and Borstal institutions); to consider the procedure adopted in inquiries into breaches of discipline; and to recommend whether changes in methods and procedure are necessary or desirable. The members are Mr. H. W. F. Franklin (chairman), head master of Epsom College; Mrs. D. M. Bates, chairman of Leicester City Probation Committee; Dr. R. D. Curran; Mr. J. C. Jolly, K.C. Recorder of Preston and member of the Home Office advisory council on the treatment of offenders; Sir Leo Page, member of the Home Office advisory committees on probation and treatment of offenders; and Mr. E. V. Watering, member of the National Union of General and Municipal Workers. The joint secretaries are Mr. D. Pettigrew, of the Prison Commission, Horseferry House, Thorne Street, London, S.W.1, and Mrs. M. G. Kewley, of the Children's Department, Home Office, S.W.1. Anyone interested in the work of the committee is invited to communicate with one of the secretaries.

Dr. Curran, who is an authority on the medical aspects of crime, holds the post of psychiatrist at St. George's Hospital. He qualified in 1927, taking the Cambridge degree and the M.R.C.P. a year later, and the D.P.M. in 1930. He was elected F.R.C.P. in 1937. He served throughout the recent war in the R.N.V.R. as Consultant in Psychiatry.

Lock on Dangerous Drugs

New regulations made by the Home Office make it the duty of doctors, chemists, and other authorized persons to take proper care of dangerous drugs. The Home Office states that the courts will determine in any individual case what degree of professional necessity would justify an authorized person in carrying or leaving unattended a dangerous drug which is not in a locked receptacle, but there would seem to be no need for the prosecution to prove negligence where drugs are found otherwise than in a suitable receptacle. The Home Secretary is advised that a car cannot be regarded as a receptacle.

Administration of Water Undertakings

The Ministry of Health has issued a new version of its "Memorandum on the Safeguards to be Adopted in Day-to-Day Administration of Water Undertakings" (H.M.S.O. 2d.). It has been revised in the light of recommendations of the Gathering Grounds Subcommittee of the Central Advisory Water Committee. Where the water supply comes from the headwaters of the stream or an intake near the source, the water undertakers should if possible obtain control of the gathering ground above the dam or intake and so manage the land as to prevent pollution. When control of the gathering ground cannot be obtained, the water undertakers should frequently inspect it and seek the co-operation of farmers and house holders there, as well as of the local authority, to ensure that sewage and manure are properly disposed of.

Wills

Dr. Charles Morley Wenyon, late Director-in-Chief of the Wellcome Research Institution, left £6,593. Dr. Francis Benjamin Sutherland, formerly deputy commissioner of the General Board of Control for Scotland, left £8,358. Miss Eugenie Leeson Willis, F.R.C.S., who was chief assistant to the orthopaedic department at the Manchester Royal Infirmary, left £2,656.

COMING EVENTS

Society of Medical Officers of Health

The second annual dinner of the Services Hygiene Group of the Society of Medical Officers of Health will be held at the Quadrant Restaurant, 74, Regent Street, London, W., on Friday, Jan. 28, at 7 for 7.30 p.m., with the president, Colonel H. D. Chalke, in the chair. All past and present hygiene officers of the Services are cordially invited, whether members of the society or not. Applications for tickets (13s. 6d., including gratuities but exclusive of wines) should be sent with remittance to the honorary secretary, Dr. G. M. Frizelle, London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1, as soon as possible. Dress: dinner jackets with decorations.

Ophthalmological Congress

The Annual Congress of the Ophthalmological Society will be held at the Royal Society of Medicine, 1, Wimpole Street, London W.1, on March 31 to April 2, 1949. The subject for discussion will be "Corneal Grafting," which will be opened by Dr. R. Townley.

Paten (New York), Professor A. Franceschetti (Geneva), Professor G. P. Sourdille (Nantes), and Mr. J. W. Tudor Thomas (Cardiff). Members who wish to take part in the subsequent discussion are advised to intimate their intention before the opening of the Congress. Members wishing to read papers are asked to send the titles to Mr. Bridgeman as soon as possible. Abstracts of papers should be submitted not later than Jan. 31, 1949. The annual dinner will be held on March 31.

Neurological Congress

The 4th International Neurological Congress will be held in Paris on Sept. 5-10, 1949. Scientific business will comprise discussions on four main topics: (1) the thalamus and its pathology, (2) electro-encephalography and electromyography, (3) virus diseases of the nervous system, (4) the surgery of pain. Short papers on any neurological topic will also be given, and members are invited to submit by Feb. 1, 1949, titles and an abstract of their communication to the secretary (Dr. Macdonald Critchley, the National Hospital, Queen Square, London, W.C.1). The length of the communication must not exceed ten minutes. No member may give more than two communications. Application for membership and all financial contributions must be made through the national committee for each country, which will transmit all applications for membership and all subscriptions to the General Committee in Paris. There are two classes of members: (1) full members—i.e., all medical men or women interested in neurology, and (2) associate members—i.e., non-medical men or women interested in the Congress. Every member of the Section of Neurology of the Royal Society of Medicine is invited to contribute the sum of 10s towards the general expenses of the Congress (whether attending or not). The subscription for full members is £2 10s and for associate members £1 5s. All cheques should be made payable to the Treasurer, International Congress, and sent to Dr. M. J. McArdle, 52a Wimpole Street, London, W.1, before April 1, 1949.

APPOINTMENTS

J. D. W. Pearce, M.D., F.R.C.P. Ed., D.P.M., has been appointed Assistant Physician to Department of Psychiatry, St. Mary's Hospital, London, W.

Dr. Pearce qualified at Edinburgh University in 1927 and after taking the D.P.M. in 1930 proceeded M.D. in 1933. He took the M.R.C.P. Ed. in the same year, and was elected to the Fellowship in 1937. Dr. Pearce has been specially interested in the psychological problems of delinquency and has contributed to the medical press on the subject.

Robert Barer, M.B., B.S., of the Department of Human Anatomy in the University of Oxford has been appointed Alan Johnston Lawrence, and Moseley Research Fellow of the Royal Society for two years from Jan. 1, renewable for a further three years.

Dr. Barer took the London M.B., B.S. with honours in 1942 at University College Hospital and has worked on phase-contrast microscopy, publishing a paper on the subject in the *Quarterly Journal of Microscopical Science* in 1947. He served in the R.A.M.C. during the war and was awarded the Military Cross. He will continue his work at Oxford on the biological and medical applications of new methods of microscopy with special reference to the Burch refraction microscope.

CLIVE F. TEMPLE, M.B., B.S., Acting Honorary Medical Director of the British Legion Village.

SOCIETIES AND LECTURES

Monday

MEICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, London, W.—Jan. 10, 8.30 p.m. "Treatment of Osteo arthritis of the Hip and Knee." Discussion to be introduced by Messrs W. G. Waugh and W. A. Law.

WESTMINSTER HOSPITAL SCHOOL OF MEDICINE Meyerstein Lecture Theatre, Horseferry Road, London, S.W.—Jan. 10, 5.30 p.m. "Cancer of the Pharynx and Oesophagus." Clinico-pathological demonstration.

Tuesday

CHELSEA CLINICAL SOCIETY—At South Kensington Hotel, 47, Queen's Gate Terrace, London, S.W.—Jan. 11, 7 for 7.30 p.m. General meeting. "Radioactive Isotopes in Treatment." Discussion to be opened by Drs D. W. Smithers and W. V. Mayneord.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Jan. 11, 5 p.m. "Histopathology of the Skin." By Dr. I. Mucnde.

INSTITUTE OF UROLOGY—At St. Paul's Hospital, Endell Street, London, W.C.—Jan. 11, 11 a.m. "Anal rectal Gonorrhoea." By Dr. A. H. Harkness.

PHYSIOTHERAPISTS ASSOCIATION OF GREAT BRITAIN—At Charing Cross Hotel, Strand, London, W.C.—Jan. 11, 8 p.m. "Physiotherapy and Its Uses in Postural Deformities." By Dr. Edward Moore.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Jan. 11, 5 p.m. "The Cardiology of Old Age." Goulstonian Lecture by Dr. C. J. Gavey, F.R.C.P.

Wednesday

INSTITUTE OF UROLOGY—At St. Paul's Hosp al, Endell Street, London, W.C., Jan. 12, 11 a.m., "Vulvo vaginitis," by Dr. W. N. Mascall.

LONDON UNIVERSITY, Senate House, W.C.—Jan. 12, 5.20 p.m. "The Influence of General Health Superstitions on the Frequency of Dental Caries in Groups of Norwegian Children." Special University Lecture by Professor G. Toverud, Director of the Department of Pedodontia in the Dental School, Oslo.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW, 242, St. Vincent Street, Glasgow—Jan. 12, 5 p.m. "The Beginnings of Modern Surgery with Pearsall Recollections of Lord Lister." By Dr. H. C. Cameron.

SOCIETY OF CHEMICAL INDUSTRY—Joint meeting of the Microbiological Panel of the Food Group and the Society for Applied Bacteriology, at Medical Society of London, 11, Chandos Street, W., Jan. 12, 2.15 p.m. "Mycorrhiza and the Growth of Fern Crops." By Dr. M. C. Rayner. "Micro organisms in Relation to the Production and Degradation of Soil Organic Matter." By Dr. G. K. Frazer. "Soil Antibiotics." By Dr. P. W. Brian. Discussion.

SOUTH WEST LONDON MEDICAL SOCIETY—At Bellinghale Hospital, Wardsworth Common, S.W.—Jan. 12, 8.15 p.m. "Diagnosis and Treatment of Acute Mastoiditis." By Dr. W. A. Herve.

Thursday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Jan. 13, 5 p.m. "The Influence of Stress in Dermatology." By Dr. H. W. Barber.

INSTITUTE OF UROLOGY—At St. Paul's Hospital, Endell Street, London, W.C., Jan. 13, 11 a.m. "Gonococcal Infections of the Urinary Tract." By Dr. A. H. Harkness.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN—At 17, Bloomsbury Square, London, W.C., Jan. 13, 7.0 p.m. "London and Pharmacy in the Seventeenth Century." By James Lofthian, Ph.D.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Jan. 13, 5 p.m. "The Cardiology of Old Age." Goulstonian Lecture by Dr. C. J. Gavey, F.R.C.P.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—At Large Lecture Theatre, Jan. 13, 4.0 p.m. Lecture-demonstration: Neurology.

Friday

LONDON CHEST HOSPITAL, Victoria Park, E.—Jan. 14, 5 p.m. "The Application of Collapse Therapy in Pulmonary Tuberculosis." By Dr. N. Lloyd Rusbv.

MAIDA VALE HOSPITAL MEDICAL SCHOOL, Maida Vale, London, W.—Jan. 14, 5 p.m. Case demonstration by Professor S. Nevill.

ROYAL MEDICAL SOCIETY, 7, Melbourne Place, Edinburgh—Jan. 14, 8 p.m. Address by Mr. I. M. Duthie.

WEST KENT MEDICO-CHIRURGICAL SOCIETY—At Miller Hospital, Greenwich High Road, London, S.E.—Jan. 14, 8.30 p.m. Clinical meeting.

Saturday

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION—At Royal Free Hospital, Gray's Inn Road, W.C.—Jan. 15, 3 p.m. Clinical meeting.

BIRTHS, MARRIAGES, AND DEATHS

BIRTH

Fisher—On Dec. 29, 1948, at St. George's Hospital to Mary (Pepper) wife of Dr. R. E. W. Fisher a daughter.

MARRIAGE

Habibis—Murray—On Dec. 29, 1948, at St. Mary and the Annet's Bazaar, W. Homer A. Habibis, M.D., D.C.H. of 1a Portchester Terrace, London, W., and Stella Mary Murray, M.B., B.S., D.C.H., elder daughter of Mr. and Mrs. J. A. Murray of Stefford House, Brighton Road, Sutton, Surrey.

DEATHS

Abernethy—On Dec. 26, 1948, at 54, Queens Crescent, London, N.W. Victor Alexander Abernethy, L.R.C.P.S.I. and L.M.

Aldridge—On Dec. 26, 1948, at Bournemouth, Charles Braxton Mooring Aldridge, M.R.C.S., L.R.C.P., of Chalford, 100 Richmond Park Road, Bournemouth, aged 61.

Anderson—On Dec. 22, 1948, at 3, Victoria Park Gardens, South Glasgow, Arthur Anderson, M.D., D.P.H., aged 63.

Balthasar—On Dec. 29, 1948, Ewald Mount Balthasar, M.R.C.S., L.R.C.P., D.P.H. of 492, Lea Bridge Road, Leyton, E.

Deckay—On Dec. 29, 1948, John Vernon Dockray, O.B.E., M.R.C.S., L.R.C.P. of Stradbroke, near Diss, Norfolk.

Foulkes—On Jan. 2, 1949, at Glen Heillog, Abertyle, Derbyshire, Meredith Foulkes, M.R.C.S., L.R.C.P., aged 62.

Garrad—On Dec. 26, 1948, Francis William Garrad, M.D., of 40, Cobhath Road, Harrow, aged 78.

Hollway—On Dec. 26, 1948, at Teignmouth Hospital, Ed. H. Hollway, O.B.E., M.B., B.S. of St. Anthony's, Bournemouth, Dorset.

Hutchinson—On Dec. 25, 1948, at Worthing, Richard Cecil Hutchinson, M.D., D.P.H.

Mackay—On Dec. 28, 1948, at Chichester, James Murdoch Mackay, M.C., M.B., Ch.B., late West African Medical Service.

Miller—On Dec. 23, 1948, at St. Mary's Hospital, London, W. Pennal Henry Miller, M.D., F.R.C.P. of 32, Abbey Gardens, London, N.W.

Mold—On Dec. 24, 1948, at Orchard Leigh, Eastington, Gos. George Henry Chivass, Mod. M.B., Ch.B., late of Cross-in-Hard, Sussex, aged 64.

Mossman—On Dec. 24, 1948, at Baldrin Road, Pilschey, Perthshire, Robert Arthur Mossman, L.R.C.P.S. Ed., aged 94.

No. 51

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Dec. 18.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included) (b) London (administrative county) (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1948					1947 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	35	5	23	3	1	33	1	24	—	1
Deaths	—	—	1	—	—	1	—	1	—	—
Diphtheria	124	9	36	11	5	209	19	57	11	13
Deaths	—	—	—	—	—	3	—	—	—	1
Dysentery	54	8	46	2	1	83	16	34	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	38	4	2	—	—	45	12	5
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	33	2	7	40	1	78	7	11	30	3
Deaths	—	—	—	5	—	—	—	—	10	—
Measles* Deaths† ..	9,800	180	80	60	37	3,209	133	501	139	19
Ophthalmia neonatorum ..	58	2	6	—	—	53	2	5	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	1	1	1 (A)	—	—	6	11	1 (B)	—	—
Deaths	—	—	1 (B)	—	—	—	—	—	—	—
Pneumonia, influenzal ..	1,082	67	12	7	1	841	61	6	6	23
Deaths (from influenza)‡ ..	24	2	—	—	—	15	2	3	2	4
Pneumonia, primary ..	292	67	451	37	6	—	50	404	24	16
Deaths	—	—	8	—	—	—	—	14	—	—
Polio-encephalitis, acute ..	1	—	—	—	—	5	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	28	2	2	—	—	55	4	13	4	1
Deaths§	3	1	—	—	—	—	—	—	—	—
Puerperal fever	—	—	4	—	—	—	2	13	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| ..	95	12	7	1	—	135	16	10	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,426	64	288	173	42	2,063	159	299	44	56
Deaths†	—	—	—	—	—	1	—	2	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	7	2	1	2	—	4	—	2	5	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	2,471	154	178	62	14	1,699	122	32	27	9
Deaths	6	—	—	—	—	10	1	1	1	—
Deaths (0-1 year) ..	325	44	52	34	10	445	46	66	37	19
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths) ..	5,326	891	646	195	129	5,298	779	704	217	138
Annual death rate (per 1,000 persons living) ..	—	—	13.0	12.2	—	—	15.6	13.7	—	—
Live births	7,196	1,158	1,011	305	219	7,858	1,186	953	290	229
Annual rate per 1,000 persons living ..	—	—	20.4	19.1	—	—	19.2	18.3	—	—
Stillbirths	193	23	25	—	—	201	24	28	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	24	—	—	—	29	—	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* there was a decrease in the notifications of measles 294, whooping-cough 51, diphtheria 20, and dysentery 15. There were increases in the incidence of acute pneumonia 55 and scarlet fever 16.

The largest decreases in the notifications of measles were Lancashire 145, Yorkshire West Riding 126, Essex 86, and Middlesex 68; the largest increases were Durham 65 and Worcestershire 56.

The largest rises in the incidence of whooping-cough were Kent 55 and Sussex 40; the greatest fall was London 33. The chief features of the returns for diphtheria were an outbreak with 8 notifications in Yorkshire East Riding, Holderness R.D., and an increase of 8 in Essex. The largest increase in the incidence of acute pneumonia was in the south-eastern counties, where the notifications rose from 66 to 105.

The largest centres of dysentery were London 8 (Hackney 4) and Lancashire 8 (Liverpool C.B. 7). The largest return for acute poliomyelitis was Yorkshire West Riding 3.

In *Scotland* increases were recorded in the notifications of acute primary pneumonia 54 and whooping-cough 19, while a decrease of 67 was reported for measles. The rise in the incidence of pneumonia was contributed by the western area of the country.

In *Eire* there was an increase of 9 in the notifications of measles and a decrease of 12 for whooping-cough.

In *Northern Ireland* the chief feature of the returns was a decrease of 26 in the notifications of measles in Belfast C.B.

Quarterly Returns for England and Wales

During the September quarter the birth rate was 17.6 per 1,000, compared with 20.0 for the corresponding quarter of 1947. The infant mortality rate was 28 per 1,000 live births, and was the lowest rate ever recorded for any quarter and 4 below the rate for the third quarter of 1947. The stillbirth rate was 22.6 per 1,000 total births and was the lowest rate for any quarter on record. The general death rate was 9.3 per 1,000 and 0.4 above the rate for the corresponding quarter of the preceding year.

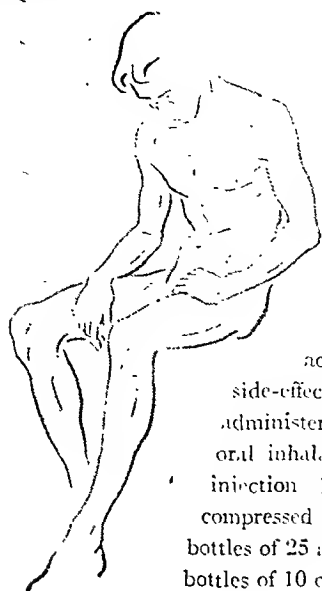
Quarterly Return for Eire

The birth rate during the September quarter was 21.9 per 1,000 and was 1.5 below the rate for the third quarter of 1947. The infant mortality rate was 38 per 1,000 registered births, and was the lowest rate yet recorded. The general death rate was 10.5, and was 0.7 below the rate for the September quarter of 1947. The death rate from the principal epidemic diseases was less than half the recent rates for the third quarters; only 125 deaths were attributed to these causes, and of these 69 were due to infantile diarrhoea and enteritis and 42 to whooping-cough. Deaths from pulmonary tuberculosis numbered 512, and deaths from other forms of tuberculosis 167; these were, respectively, 124 and 52 fewer than in the third quarter of 1947.

Week Ending December 25

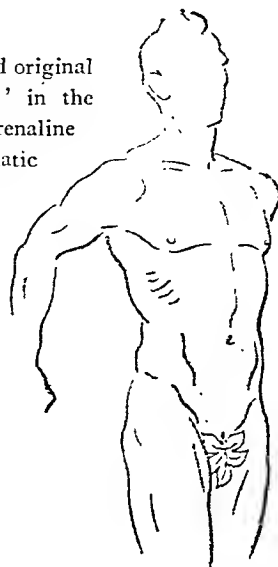
The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,154, whooping-cough 1,791, diphtheria 100, measles 8,959, acute pneumonia 792, cerebrospinal fever 22, acute poliomyelitis 17, dysentery 30, paratyphoid 3, and typhoid 4.

The Ministry of National Insurance states that some people may get reduced sickness and unemployment benefit from Jan. 3. These are people who were already insured when the new scheme came into operation but whose total number of contributions paid or credited for the year ended July, 1948, including arrears paid since then, was less than 50. For instance, a man with less than 26 contributions paid and credited in this period will not be entitled to benefit, but if he has more than this number the weekly rate will vary from 13s. with 26 to 29 contributions to 25s. with 48 or 49 contributions. Similar reductions will be made for dependants' benefits. Benefit may also be lost after Jan. 3 by those who have not yet handed in their 1947-8 contribution cards. Anyone who still has this card in his possession is advised to take it at once to the employment exchange and get it replaced by a National Insurance card.



AT THE FIRST GASP

Clinical experience has amply confirmed original reports on the value of 'Neo-Epinine' in the treatment of bronchial asthma. Equal to adrenaline and superior to ephedrine in anti-asthmatic activity, it is relatively free from the undesirable side-effects of both these drugs. 'Neo-Epinine' is administered simply, either sublingually or by oral inhalation, thereby avoiding the necessity for injection. Issued for sublingual administration as compressed products each containing 20 mgm., in bottles of 25 and 100; and as 1 per cent Spray Solution in bottles of 10 c.c.

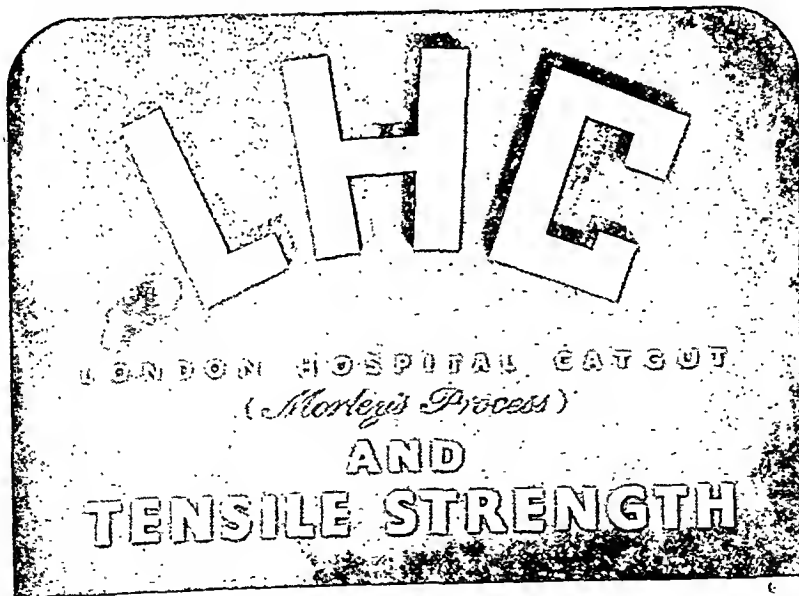


'NEO-EPININE'

ISOPROPYL ADRENALINE SULPHATE



BURROUGHS WELLCOME & CO. (The Wellcome Foundation Ltd.) LONDON



THE self-imposed arbitrary standard set for London Hospital Catgut at its inception is above that of the B.P. Codex and the U.S.A. Pharmacopoeia. The London Hospital standard has never been departed from and is still maintained.

This outstanding feature, together with an

elasticity (elongation) approximating 40%, affords the Surgeon perfect safety in using fine sizes compatible with modern technique.

When using London Hospital Catgut, we strongly recommend Surgeons to use B.P.C. sizes 2/0, 0, and 1 for general surgery and B.P.C. sizes 3/0 and 4/0 for very fine work.

THE LONDON HOSPITAL (LIGATURE DEPARTMENT), LTD., LONDON, E.1, ENGLAND

TRADE MARK

'THEOGARDENAL'

theobromine and phenobarbitone

BRAND

tablets

The vaso-dilator and diuretic actions of theobromine and the sedative effect of phenobarbitone are combined in an effective synergistic form in 'Theogardenal'.

It is of great value in the symptomatic relief of hypertension. In therapeutic dosage it is non-toxic, has no cumulative effect and is well tolerated even when prescribed over lengthy periods.

tablets: (theobromine gr. 5 and phenobarbitone gr. $\frac{1}{2}$)
Containers of 25, 100 and 500



manufactured by

MAY & BAKER LTD

distributors

PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD. DAGENHAM

BARCLEY
SURGICAL CORSETS

*Individually
Designed*

SURGICAL
SUPPORTS

for

Post Operative Wear
Visceroptosis
Deformity
Maternity
Herniae

TRAINED CORSETTIERS
IN ALL AREAS

BARCLEY CORSETS LTD
WELWYN GARDEN CITY
HERTFORDSHIRE

BARCLEY

For the 'bilious' or 'liverish' patient

Dehydrocholin B.D.H. is dehydrocholic acid, the most active and least toxic of the bile acids. It is highly effective in aiding the digestion and absorption of foodstuffs, particularly fats, and it promotes the secretion of bile, thus exerting a twofold action. Dehydrocholin B.D.H. is effective by mouth and is indicated particularly for the treatment of 'bilious' or 'liverish' conditions.

Available in tablets each containing 0.25 gramme.

DEHYDROCHOLIN B.D.H.

Details of dosage and other relevant information on request

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1
TEL: CLERKENWELL 3000 GRAMS: TETRADOME TELX LONDON
Dhyd/E/22

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Oestrogen Estimation

Q.—What is the method of estimating oestrogen in urine and for what purpose is it used?

A.—Many methods have been, and still are being, used, and none can be regarded as satisfactory. Most of them consist basically in extracting the oestrogens with ether from a 24-hour specimen of urine. Thorough hydrolysis is also necessary to break up the oestrogen-glucuronic-acid combinations. The fraction containing the oestrogens is then usually assayed according to its ability to produce cornification of the vaginal epithelium in spayed female mice or rats. Colorimetric and photometric tests have also been described (Bachman, K., *J. Biol. Chem.*, 1939, 131, 455), but they are rarely employed.

It is relatively easy to demonstrate the presence of oestrogens but extremely difficult to make an accurate quantitative determination. Biological assays are notoriously unreliable, because the reactions in the test object vary with the sensitivities of individual animals of the same species, the spacing of doses, etc. Also the different excretion products (for example, oestrone, oestriol) of oestradiol have different biological activities, and the total effect depends on their relative proportions. Again, not all workers employ the same criteria for a positive biological response, and it is doubtful whether the findings of one laboratory can be compared with those of another. Apart from the technical difficulties in quantitative work, its value in clinical practice is doubtful at present. The amount of oestrogen in the urine does not necessarily reflect the blood level; indeed it is possible that one might be high when the other is low. Moreover, oestrogen is excreted by other routes—for example, in the bile and faeces. The state of liver and renal function also affects the oestrogen content of the urine. Although quantitative estimations have been used in the hope of determining the level of ovarian and placental function, and particularly in such conditions as amenorrhoea, pregnancy toxæmia, threatened abortion, and pregnancy complicated by diabetes, such studies should still be regarded as experimental rather than of general practical application. Apart from rough qualitative tests of blood and urine, often the best practical method of estimating oestrogen production is to note the effects on the vagina and endometrium of the patient rather than on the genital tract of a test animal.

Skin Sterilization

Q.—Is it possible to render the skin bacteriologically sterile? Is surgical spirit a reliable cleansing agent? Please comment also on the use of the following "dettol," tincture of iodine "cetavlon," methylated ether. Would repeated application succeed where a single application has failed?

A.—The skin cannot be sterilized. Its "resident" flora is partly inaccessible: it is possible to destroy only the "transient" or purely superficial flora, which may include pathogens. Most of the disinfectants named, if properly applied, are capable of this, including spirit, which according to G. T. L. Archer (*British Medical Journal*, 1945, 2, 148) is superior to ether. Tincture of iodine is perhaps the most reliable and rapidly acting. Further experiments illustrating this have recently been made by Gardner (*Lancet*, 1946, 1, 683; 2, 760), whose work also includes observations on "dettol" and "cetavlon." These papers should be consulted for further information. If skin is prepared for operation some time beforehand, different considerations apply, and the choice may reasonably fall on a slowly acting but persistent disinfectant such as mercury perchloride or one of the antiseptic dyes or flavines. It is impossible to say which of all these procedures is the most satisfactory: no practical comparative tests on a large enough scale have ever been made, and the incidence of operation-wound infection is affected by so many other factors that any information so obtained would be of doubtful significance.

Transfusion of Infected Blood

Q.—Is there a method of sterilizing blood from (1) potentially malarious and (2) potentially syphilitic donors?

A.—(1) The danger of transmitting malaria occurs only when red cells are being transfused. If blood suspected of containing malaria parasites is stored for 14 days at 4° C. the majority of the plasmodia will almost certainly be destroyed or rendered non-infective. Antimalarial drugs such as quinine or mepacrine, if added to the blood, will destroy parasites, but the mixture must be kept at 37° C. for at least 24 hours, by which time some degree of haemolysis may have occurred, thus rendering the red cells unsuitable for use. Proguanil ("paludrine") has no direct action on the malarial parasites. Infections due to *Plasmodium falciparum* usually die out two years after a patient has left a malarial country; *P. vivax* and *P. malariae* may persist in the tissues for many years. If it is suspected that blood containing malarial parasites has been used for transfusion, the recipient should be placed on suppressive doses of an antimalarial drug—proguanil 100 mg. daily, or mepacrine 100 mg. daily, or chloroquine 300 mg. on one day a week. Such suppressive regimens, so long as they are continued, will usually prevent the onset of acute symptoms.

(2) *Treponema pallidum* may be transmitted in whole blood, plasma, or serum. In latent syphilis or in late tertiary syphilis it is doubtful whether spirochaetes are present in the blood stream, but in the incubation period and during the primary and secondary stages there is danger of transmitting infection by transfusion. Spirochaetes may be destroyed *in vitro* by the action of arsenicals, arsenious oxides such as "mapharsen" acting more rapidly than neoarsphenamine. H. Eagle and W. Mendelsohn (*Science*, 1938, 87, 194) point out that the antispriochoetal action of arsenicals *in vitro* depends on a number of variables. Raising the temperature from 23° to 37° C. increases the rate of inactivation, but serum and tissue cells retard the spirochaetocidal effect. It is therefore doubtful whether this measure could be applied to whole blood. Penicillin inactivates *Treponema pallidum* in a concentration of 10,000 units per ml. when the spirochaetes are exposed for three hours at 37° C. (A. Bessemans and R. Derom, *Ann. Derm. Syph. Paris*, 1946, 6, 744). H. Eagle (*J. Bact.* 1946, 52, 81) has shown that penicillin G is more active in destroying *T. pallidum* than the other forms of penicillin, the relative activities per mg. of the penicillins are: F=53, G=100, K=76, X=51. No reliable evidence is available to show how much time is required to inactivate treponemata in whole blood.

Glaucoma Simplex

Q.—Is there anything to prevent the intense irritation of the eyes and the surrounding skin which may be due to the application of pilocarpine in oil to a patient with glaucoma simplex?

A.—It is likely that the irritation is due to the medicament. Some patients develop these irritative symptoms after prolonged use of almost any type of drops. Oily drops are apt to be more irritating than a watery solution, and higher concentrations than lower concentrations. The patient is presumably using 0.25% pilocarpine in oil. Drops of 0.5% in watery solution three or four times a day may be better tolerated. Alternatively, eserine drops 0.25% in watery solution may also prove the better medicament. The important thing in using drops is, of course, to keep the pupil contracted and the tension under control. This, rather than tolerance to the drops, should determine whether the best procedure would not be surgical.

Fanconi's Syndrome

Q.—What is Fanconi's syndrome, and what are the differential diagnosis and treatment?

A.—There are two separate and distinct disorders known as Fanconi's syndrome. In chronological order these are: (1) the combination of congenital hypoplasia of the bone marrow with multiple congenital defects occurring as a familial disease (*Jb. Kinderheilk.* 1927, 117, 257); (2) a condition in which dysfunction of the renal tubules is associated with a hypophosphataemia, renal glycosuria, "rickets," and disturbance of amino-acid metabolism (*Jb. Kinderheilk.* 1931, 133, 255; *Dtsch. med. Wschr.* 1936, 62, 1169; *Jb. Kinderheilk.* 1939, 139, 199).

There is no purpose in discussing the details of differential diagnosis and treatment of these two widely different syndromes, but the questioner will find the information he requires in the papers cited.

T.A.B. in Cheiropompholyx

Q.—What are the rationale and method of administration of T.A.B. in the treatment of cheiropompholyx?

A.—There is no rationale for the use of T.A.B. in pompholyx; it is shock therapy and empirical. It may be given intravenously in a dosage of 100 million organisms, when a severe pyrexial reaction lasting a few days may be anticipated, or in a dosage of 10 million repeated a few times at weekly intervals, when a less severe reaction will result.

Hormone Treatment of Infertility

Q.—Is testosterone propionate or methyl testosterone indicated, and, if so, in what dosage, for infertility in a man aged 41? His testes are abnormally small, and an examination of the seminal fluid reveals no spermatozoa. There is no other physical abnormality and no history of previous illness.

A.—Testosterone propionate or methyl testosterone has been advocated for infertility associated with oligospermia or even azospermia, because experimentally either maintains spermatogenesis in the hypophysectomized animal. The dosage might be in the neighbourhood of 25 mg. of the former injected three times a week, or 5 mg. of the latter thrice daily. The writer, however, has no confidence in this therapy, or even in gonadotrophin therapy, unless there is at the same time clear endocrinological evidence that the condition is secondary to a hypopituitarism. Testicular biopsy should be carried out in every case, and it is probable that in this case fibrosis and hyalinization (resulting from previous virus infection) will be found; such a condition would not respond to any hormone therapy.

Melanoma

Q.—A man aged 57 has had from childhood a small area of black pigmentation about 5 cm. to the right and slightly below the navel; it is now about 1 cm. across. The skin is freely movable and there is no proliferation of tissue. In view of the risk of malignant change, what advice should be given? Would removal provoke malignant development?

A.—The relationship between benign and malignant melanoma is of great importance. Signs of malignant change developing are an increase in size, increase in the degree of pigmentation, the presence of moisture, and the occurrence of bleeding. When any of these signs are present in a benign melanoma it must be excised carefully. Experience proves that trauma to a benign melanoma can initiate malignant changes, and when such a tumour is subjected to constant trauma it must be excised. When excision is undertaken certain technical details are important. Excision is carried out with the scalpel; the tumour itself must not be touched by the scalpel or forceps, or traumatized in any way. The encircling incision must be placed at least 2.5 cm. from the edge of the tumour, and the underlying deep fascia is also removed over an area 4 cm. from the edge.

Secondary Syphilis

Q.—A patient developed a secondary syphilitic rash and was treated with 14 mega units of penicillin over 14 days. She has had an intermittent course of arsenic and bismuth (0.6 g. and 2 ml. a week for three 12-week courses), but the injections upset her. Her blood was positive at the start, but she has since had three negative Wassermann reactions. Is it safe to discontinue the arsenic and bismuth when she has completed her fourth 12-week course (she has one month's rest in between courses) or should I go on for another full twelve months?

A.—The treatment already given seems quite adequate, and as injections upset the patient further treatment might do more harm than good. It will, of course, be necessary to keep the patient under observation with periodical blood tests (say three-monthly for the first year and six-monthly for the second year) for two years after completion of treatment; the cerebrospinal fluid should be examined some time during the observation

period. Should the question of pregnancy arise, careful observation throughout and perhaps a second course of penicillin would be indicated.

Enteroptosis

Q.—Is there any recent treatment for enteroptosis? The x-ray report is as follows: "Enteroptosis and irregular spasm of lower part of colon; pelvic colon somewhat elongated; weak contractions of caecum and ascending colon."

A.—Enteroptosis needs no treatment. A low position of the viscera is merely part of a lean asthenic habitus and there is no evidence that it is responsible for any symptoms. Exception must be made to this statement in the case of the kidney, where kinking of the ureter may occasionally give rise to a Dietl's crisis, and possibly also in the case of the spleen. For the rest "visceroptosis" is no more than the usual position assumed by the viscera in the tall thin individual. The only comment of possible significance in the radiologist's report cited by the questioner is the presence of irregular spasm in the lower part of the colon. This may result in abdominal pain, and, if it indicates the spastic colon, treatment with a low-residue diet, liquid paraffin, and antispasmodics should be of benefit.

Fluorides in Prevention of Dental Caries

Q.—Would it be worth while for an adult who still has most of his teeth, though heavily filled, to try fluoride treatment in the hope of delaying the inevitable? If so, in what form and manner should it be used? Are there any contraindications?

A.—The evidence that topical application of fluoride solutions is of value in halting the onset of dental caries after the eruption of the teeth is not as yet entirely convincing. In the adult, provided that regular dental attention is received, the teeth are far less likely to be lost on account of dental caries than from gingivitis. The method so far used is the topical application of 2% sodium fluoride solution to the surfaces of the teeth, after previous cleaning and drying to ensure adequate contact of the solution with the dental tissues. The optimum concentration of the solution and the number and frequency of applications are not as yet known. It must be remembered that fluoride salts are extremely toxic. The questioner should also refer to a letter on this subject published in the *Journal* of Jan. 1 at page 29.

Petit Mal

Q.—Is anything known of the aetiology of petit mal, and is there any useful form of treatment?

A.—Petit mal is ordinarily a constitutional affection due to a cerebral dysrhythmia, often inherited. The latest form of promising treatment consists in giving capsules of "tridione", the usual dose being 0.3 g. thrice daily. Caution is necessary owing to the risk of agranulocytosis. A subjective sensation of glare, if not photophobia, is a very common side-effect.

NOTES AND COMMENTS

Correction.—Mr. Malcolm Donaldson (chairman of the Clinics Cancer Research Committee of the British Empire Cancer Campaign) has pointed out that in our report (Dec. 18, 1948, p. 1076) of the Committee's statistical survey of cancer of the kidney, bladder, and prostate it was stated that the first symptom of the disease (cancer of the prostate) was difficult or painful micturition in 60% of cases. What the Committee actually stated was that difficult or frequent micturition was the first symptom in 60% of cases. Local pain in the perineum or urethra was the first symptom in only 3.7% of the cases.

All communications with regard to editorial business should be addressed to the EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atitolo; Westcen, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1. Telephone: EUSTON 2111. TELEGRAMS: *Britmedads, Westcen, London.* MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra, Westcen London.*

B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JANUARY 8 1949

THE SECRETARY REPORTS

SPENS REPORTS COMPARED

It may be useful to recall some of the recommendations of the two Spens Committees and to compare the effect of the two Reports when considered together. This comparison is of the Spens Committees' recommendations, whether or no they have been carried into effect. Each Committee was anxious that conditions in the field of practice with which it was concerned should be sufficient to attract the best practitioners. The Specialist Spens Committee's recommendations were therefore designed to remove some of the financial risks and deterrents which had previously been responsible for the loss of many potential specialists to general practice, while the General Practice Spens Committee proposed to improve substantially the prospects of attaining success in general practice lest the expected improvement of remuneration in the specialist field should attract the best members of the profession, leaving general practice to be recruited from the less able practitioners.

Both Committees appear to assume that one year will elapse after registration before the young practitioner begins his chosen career. The General Practice Committee proposes that "after the completion of house appointments" the doctor intending to take up general practice should spend one or preferably two years as assistant, while the Specialist Committee proposes for the potential specialist a series of hospital training appointments arranged in three grades covering six or seven years from the end of the first year after registration.

The young man of 25 who proposes to enter general practice will, according to the Spens recommendations, receive as assistant £500 the first year and £600 the second year, while the potential specialist will receive £600 the first year and £700 the second. Thereafter, the general practitioner will be free to assume the full responsibility of practice with a list of his own. The General Practice Report makes no special mention of the years between the ages of 26 and 30, but of the general practitioners of 30-34 years 57% may expect to receive between £700 and £1,300 and 31% over £1,300. The potential specialist will proceed through three grades of appointments by annual increases of £100, assuming that there is no delay in obtaining appointments, until at the age of 31 he is receiving £1,200. The figures relate to net income and to 1939 values.

Rewarding Ability and Effort

Both Committees seek a method of remuneration which will involve differentiation depending upon ability and effort. The General Practice Committee assumes a capitation method as meeting this requirement and permitting equal remuneration for equal burden of practice. The Specialist Committee recommends that the specialist from 32 to 40 years of age, who, although he has completed his training, is still increasing the variety and width of his clinical experience, should receive an automatic incremental basic scale of remuneration, and differentiation should be secured both during and after this period by certain distinction awards limited in number and amount for outstanding merit.

The comparative effect of the detailed recommendations of both Committees is illustrated in the following table. All incomes are net and in terms of 1939 values.

Incomes for Ages 30-64

Age	General Practitioners		Specialists	
	Range of Income	Additions	Basic Salary	Additions
30	10-5% receive under £700 p.a.			
31	22-3% " £700-£1,000		£1,500	
32	35% " £1,000-£1,300		£1,625	
33	17-8% " £1,300-£1,600		£1,750	
34	11-6% " £1,600-£2,000			
	2-7% " over £2,000			
35	6-6% " under £700 p.a.		£1,875	
36	16-6% " £700-£1,000		£2,000	
37	26-6% " £1,000-£1,300		£2,125	
38	26-9% " £1,300-£1,600		£2,250	
39	17-7% " £1,600-£2,000		£2,375	
	5-6% " over £2,000			
40-49	8% " under £700 p.a.	10% of principals receive fee of £100 p.a. for supervising assistants	£2,500	
	19-1% " £700-£1,000			
	23-4% " £1,000-£1,300			
	23-7% " £1,300-£1,600			
	16-7% " £1,600-£2,000			
	9-1% " over £2,000			
50-54	7-2% " under £700 p.a.	Grant for assistant if no assistant previously employed:		
	17% " £700-£1,000	1st year, £500		
	24-8% " £1,000-£1,300	2nd year, £500		
	23-7% " £1,300-£1,600	3rd year, £100		
	14-9% " £1,600-£2,000			
	12% " over £2,000			
55-59	20-4% " under £700 p.a.			
	15-8% " £700-£1,000			
	21-9% " £1,000-£1,300			
	21-5% " £1,300-£1,600			
	15-4% " £1,600-£2,000			
	5% " over £2,000			
60-64	17-4% " under £700 p.a.			
	23-2% " £700-£1,000			
	27-5% " £1,000-£1,300			
	17-9% " £1,300-£1,600			
	10-6% " £1,600-£2,000			
	3-4% " over £2,000			

The following comparisons may be drawn from the table:

(i) In the age group 35-39, over 53% of the general practitioners will receive between £1,000 and £1,600 and all specialists will proceed incrementally from £1,875 to £2,375.

(ii) In the age group 40-49, less than 25% of general practitioners will reach £2,000 and less than 10% will exceed £2,000. All specialists of the same age will receive a basic salary of £2,500.

(iii) The highest proportion of general practitioners to exceed the £2,000 level is 12% in the 50-54 age group. 100% of specialists receive the basic £2,500.

(iv) An additional means of income open to the general practitioner is to train an assistant, for which he is recommended to receive a fee of £100 per annum; this is available to 10% of practitioners. 34% of specialists may expect to receive a distinction award in addition to their basic salary.

(v) The distinction awards to specialists are permanent additions to the basic salary continuing until the holder reaches the retiring age of 65. The General Practice Committee expects that only 3% or 4% of practitioners between 60 and 64 years of age will receive over £2,000 and 40% will be receiving between £700 and £1,300. Theoretically the proportion of specialists of the same age group receiving £3,000 or more may be anything up to 34%, and none will receive less than £2,500.

The regulations which have so far been issued by the Minister of Health differ in some respects from the Spens recommendations. For example, there is no regulation that a newly qualified practitioner entering general practice must spend one or

two years as an assistant; he may establish himself immediately as a principal if he so desires. Neither do the regulations specify any proportion of principals who may supervise assistants.

The scheme of grants for supervision of the training of assistants which the Minister has introduced under the National Health Service Act provides a grant of £150 to the principal for the training period of one year plus the salary of the assistant and boarding expenses (together not exceeding £700 a year), with an allowance not exceeding £150 a year if an additional car is necessary.

Holidays and Locums

The Specialist Committee recommends that the specialist should be allowed definite holidays, and in addition extended

leave should be given on occasion for study and research. The specialist should not be financially liable for the provision of a deputy during such periods of absence. The General Practice Committee makes no mention of holidays, with or without the provision of a locum. It refers to postgraduate study only in connexion with the means of levelling up low incomes, and suggests that a bonus of £100 should be paid to a practitioner who had attended a refresher course within the preceding three years. The question of providing a locum is not mentioned. The scheme of grants for postgraduate courses introduced by the Minister provides for payment of the fees for approved courses, plus subsistence allowances of up to £1 a day if attendance entails absence from home at night, with first-class travelling expenses. In addition, up to 14 guineas a week is allowed for payment of a locum tenent where necessary.

National Health Service

AMENDING BILL FURTHER CHANGES SOUGHT

Some of the changes likely to be sought by the profession in the legislation amending the National Health Service Acts or in new regulations were listed in the *Supplement* of Dec. 18, 1948 (p. 225). Two points can be added to that list:

Foreign Visitors.—The Minister's view, with which Counsel consulted by the General Medical Services Committee has agreed, is that the services provided under the National Health Service Act for "the people of England and Wales" are available also for foreign visitors. In so far as the Act provides for the free treatment of foreign visitors, the Minister has been urged to exclude such provision when he introduces amending legislation.

Disciplinary Procedure.—An elaborate code has been established for safeguarding the interests of the patient. The disciplinary procedure set out in the Service Committees and Tribunal Regulations, 1948, is based largely on the National Health Insurance model. The regulations require (among other things) that any complaint by a person against a medical practitioner in respect of an alleged failure to comply with the terms of service shall be investigated by the Medical Service Committee. The new code, however, unlike the National Health Insurance code, contains no provision for the investigation of complaints by a medical practitioner about the conduct of a patient. The Medical Benefit Regulations made under the National Health Insurance Act, 1936, contained a provision requiring any question arising between an insurance practitioner and a person in respect of the conduct of the person while receiving treatment to be investigated by the Medical Services Subcommittee. The Minister has been asked to include a similar provision in the disciplinary arrangements under the new Service.

PRESCRIBING BY GENERAL PRACTITIONERS. GUIDANCE FROM MINISTRY

General practitioners are sometimes in doubt whether a preparation may be prescribed on Form E.C.10. If a practitioner orders preparations which are not drugs or medicines, the local executive council is empowered to recover from him the cost of such preparations. He may challenge the council's action and require the matter to be referred to the local medical committee under Regulation 16 of the National Health Service (Service Committees and Tribunal) Regulations, 1948 (*Journal*, April 3, p. 653), with the possibility of appeal to referees. The Minister has appointed a committee to decide on what should be classified as a drug or medicine, and he will also consult the Standing Medical and Pharmaceutical Advisory Committees of the Central Health Services Council as soon as these are set up. In the meantime he has sent two lists of preparations to local executive councils; they were drawn up by an advisory committee in relation to the National Health Insurance scheme.

The Ministry points out that the lists have no statutory force, were compiled nearly twenty years ago, and are not exhaustive. They are reproduced in the next column.

TABLE I.—*Substances and Preparations Which in the Opinion of the Advisory Committee Were Never Drugs*

Acidophilus milk	"Marmite"
"Albulactin"	Meat extracts (other than liver extracts)
"Allenburys Food"	Meat juices
"Ambrosia"	"Mellin's Food"
Arrowroot	"Meloviol"
"Benger's Food"	"Midolia" biscuits
"Bovinine Meat Juice"	"Muller's Nutrient"
"Bovril"	"New-Promonta"
"Bragg's Charcoal Biscuits"	"Numol"
"Brand's Essences"	Nutrient suppositories
Brandy	Oatmeal
"Bulgar-Lac"	"Ovaltine"
Calves' foot jelly	"Oxo"
Cane sugar	"Panopepton"
"Carnrick's Peptonoids"	Pearl Barley
Casein food	Peptonizing powders
"Casumen"	"Plasmon"
"Ceregen"	"Plasmon Oats"
"Cerolia Cream"	"Robinson's Barley and Groats"
Champagne	"Roboleine"
"Chy-mol"	"Saccharin tablets"
Coffee	"Sanaphos"
Diabetic bread and biscuits	"Sanatogen"
"Energen" bread and biscuits	"Savory and Moore's Foods"
"Glaxo"	Sherry
"Glaxovo"	"Somatose"
Gluten bread	"Tonagen"
"Glyco-lactophos"	"Torbet's Lactic Oats"
"Herogen"	"Valentine's Meat Juice"
"Hi-gah Tea"	"Valkasa"
"Horlick's Milk"	"Vibrona"
Ice	"Vigoral"
"Instant Postum"	"Virol"
Iodized salt	"Virol and Milk"
Lactic milk	"Vitafer"
"Lacto-Dextrin"	"Vitagen"
"Lactogen"	"Vitalia Meat Juice"
Lactose	"Zomogen Tonic Food"
"Lemco"	
"Mabela"	

TABLE II.—*Substances and Preparations Which in the Opinion of the Advisory Committee might be, but were not always, Drugs or Medicines for the Purposes of Medical Benefit and the Prescribing of Which by Insurance Practitioners was, in the Opinion of the Advisory Committee, Justified Only in Special Circumstances*

"Allen and Hanburys Malt and Oil"	"Lactagol"
Antiseptic soaps	"Lactomaltine"
"Bemax"	"Maltine"
"Bynin"	"Maltine and Oil"
"Bynogen"	"Metagen"
"Bynol"	"Omnevit"
"Bynol and Oil"	"Ostelin"
"Byno Preparations"	"Ostelin Preparations"
"Bynotone"	"Radio Malt"
Cheltenham Spa Water	"Radiostol"
Cod-liver-oil tablets	"Radiostoleum"
"Cream of Malt"	"Resinol Soap"
"Cuticura Soap"	"Scott's Emulsion"
"Glovo Cod Liver Oil Tablets"	"Virolax"
"Gucose"	"Vitamalt"
"Haematogen"	"Vitamine Malt"
"Hazeline Cream"	"Vitamogen"
"Jecomalt"	"Vitmar"
"Jeyes Fluid"	"Wander's Malt and Oil"
"Kepler's Malt and Oil"	"Wander's Malt Extract c Haemoglobin"
	"Yeast-Vite Tablets"

Disputes in a particular case can be resolved only by the procedure laid down in the regulations referred to above. In particular, though only brandy, champagne and cherry are shown in Table I, the Minister considers that no alcoholic liquors should be ordered on Form EC 10, nor should toilet requisites.

SPECIALISTS' PERMANENT CONTRACTS LIMITED CIRCULATION OF PROPOSALS

The draft proposals for the permanent contracts for consultants and specialists were forwarded as a confidential document to the Consultants and Specialists Committee established by the British Medical Association, the Royal Colleges, and the Royal Scottish Corporations. A request was made to the Ministry that the document should be circulated to the Regional Consultants and Specialists Committees for their observations and recommendations. The Ministry, however, adheres to its view that the proposals are not ripe for wider publication and consequently this will have the effect of depriving the elected representatives of consultants and specialists in each region of official opportunity of expressing their views at this stage.

SUPPLEMENTARY OPHTHALMIC SERVICE SAMPLE INQUIRY

The Health Service has brought a tremendous demand from the public for ophthalmic treatment, and ophthalmic practitioners have had to work long hours to see all their patients. During the past few months the Ministry of Health has been receiving returns from local executive councils which indicate that considerable sums have been paid out to ophthalmic practitioners for work under the Supplementary Service. The question has been raised—presumably by the Treasurer—whether the fee payable to an ophthalmic practitioner for an eye examination is appropriate.

The fee was negotiated with the Ministry on the assumption that on the average each examination occupies about half an hour. The Ministry considers that with nearly six months' experience it should now be possible to ascertain whether that assumption has been borne out in practice. It therefore proposes to seek the co-operation of ophthalmic practitioners in carrying out a sample inquiry to determine the average time taken per examination.

If the inquiry shows that the assumption on which the original negotiations were based was wrong or that there has been any subsequent change in the time of an examination, the Negotiating Ophthalmic Subcommittee has indicated that it will be prepared to reopen discussions with the Ministry on the terms of service. It welcomes the Ministry's proposal for it considers that the high standard of professional work existing before the appointed day is being maintained under the Supplementary Service, and it hopes that all ophthalmic practitioners will co-operate to the fullest extent in the inquiry.

CLAIMING FEES FOR SPECIALIST ATTENTION

When a general practitioner who is also on a hospital staff as a specialist gives specialist attention to a patient on his NHS list in private pay-bed accommodation of a hospital or in a registered nurse home, he should submit particulars to the local executive council on Form EC 33 before claiming payment from the patient. The practitioner may obtain this form from the local executive council.

DENTISTS' EARNINGS LIMITED

The Minister of Health has made regulations which come into operation on Feb 1 by which dentists' earnings in excess of £4,800 a year are reduced by half. The Ministry of Health states that some 20% of dentists in the Service are at present earning at the rate of £4,800 gross a year or over. The Minister understands that the dental organizations agree with him that excessive earnings should be checked, but that they consider further investigation should precede action, he thinks that the situation calls for immediate action.

THE ASSOCIATION AND PRIVATE PRACTICE

A meeting of what has hitherto been known as the General Practice Committee of the Association was held at Headquarters on Dec 22. Dr S Wand, who has been elected chairman of the General Medical Services Committee, which deals with NHS matters as affecting general practitioners was enabled on that account to continue his chairmanship of the General Practice Committee which he had held for nine years. He was warmly thanked for his services, and the Committee elected to the chair Dr I D Grant, of Glasgow. It was also decided, subject to the approval of the Council, to rename the committee the Private Practice Committee.

It was reported that, following an instruction at the last meeting the Assistant Secretary had met representatives of the Life Offices Association and had discussed the question of a standard fee for supplementary reports. While no fee will be payable for further information in consequence of omissions from the original report or for the elucidation of obscure statements any supplementary information required will be the subject of a fee normally not less than 10/6d.

Correspondence was read on the question of recognizing the Association as the representative body to discuss with the National Coal Board the salaries and conditions of service of its medical officers. The Board is prepared to give an undertaking that as a general principle it will consult the Association on these matters and will be prepared to receive at any time representations on salaries and conditions of service. The range of salaries of the deputy and divisional medical officers was mentioned to the Committee, and it was agreed that there should be a conference with the Industrial Health Committee with a view to considering, within the framework of the Spens Report, the remuneration of the service as a whole.

The question of doctors' signs on motor-cars again came forward. It was the view of London members that the great increase of "yellow band" areas in London made it increasingly difficult for doctors to park anywhere. Three London members of the Committee were asked to go into the detail of various points raised concerning the issue of badges and the like. While it was fully recognized that the authorities could not distinguish in any general way between doctors and other members of the public, the police might well be instructed to use their discretion where a doctor's car was involved.

Some discussion took place on fees for examination of persons alleged to be "drunk in charge." It was stated that in London a fee of three guineas for a night call (from 9 p.m.) and two guineas in the day-time had been secured—at all events in certain police districts. The minimum fees are two guineas and one guinea respectively, but in London apparently the minimum has not followed the usual tendency to become the maximum.

It was reported that the contracts of certain police surgeons had been terminated on the ground that they had not joined the National Health Service. Representatives of the Association to senior officials of the Home Office and Scotland Yard had been received sympathetically and an assurance had been given that no practitioner would be debarred on these grounds from having his name included in the lists of available doctors maintained at police stations in the metropolitan area. In future the list of police surgeons on whom the police can call will be open to any practitioner whether or not he has joined the Service.

A question arose, following a case in Essex, whether a practitioner who undertook one session a week for the county council was holding an office of profit which disqualified him from membership of the Health Subcommittee. One member of the Private Practice Committee said that he was carrying out vaccination and immunization for the London County Council, but nevertheless he proposed to be a candidate for the LCC at the next election. He held that he was not "holding an office of profit" but was being paid a fee for doing a particular job. It was stated that no disqualification attached to a practitioner who undertook vaccination and immunization for his local authority, but that there was some dubiety about a sessional appointment of a clinical character, and the legal aspects of this matter were being further pursued. It is not the National Health Service Act which governs this situation, but the Local Government Act, 1933 (Sections 59 and 94).

The Committee, on a reference from the Council, considered that a Section of General Practice, with which forensic medicine and medical jurisprudence might be combined, would be a very useful feature of the Annual Meeting, and referred it to the Arrangements Committee with a view to the Annual Meeting of 1950.

The Ship Surgeons Subcommittee presented certain proposed amendments of the terms of service suggested by the Shipping Federation for ship surgeons. The desire has been to protect the interests of those surgeons working in ships carrying few passengers and where there is consequently little opportunity of earning private fees. Certain recommendations have been formulated and it is proposed to seek a meeting with the Shipping Federation.

HEARD AT HEADQUARTERS

All At Sea

A problem which has its amusing as well as its important side has been engaging the Ship Surgeons Subcommittee of the Association—namely, whether a man on board ship is or is not a National Health Service patient, and, if he is, to what executive council area he belongs. Does the National Health Service Act extend to territorial waters? Does Mr. Bevan rule the waves? The discussion on this point got very involved, and it was even suggested that a man might be a Service patient as long as his ship was tied to the jetty, but as soon as she slipped her moorings he would be, so to speak, an orphan of the storm. Incidentally, the same sort of problem has just arisen in connexion with patent law. The question is being raised whether, if an invention is stolen and worked only on board ship, and never landed, the patent can be said to be infringed. It is being proposed to amend the Patent Law by declaring that a British ship, wherever it is, is part of British territory. On the matter of the National Health Service legal opinion is to be sought. For the present, as one member put it the sea appears to be "No man's land."

Booking the Fee

Overheard at the Hunterian Society. A surgeon had carried out a successful operation on a farmer, who wanted to know what he owed. He was told fifty guineas, whereupon he pulled out from under his pillow a packet of notes and began counting out fifty-two ten. "Don't trouble to do that," said the surgeon: "write me a cheque." "Ah, but," said the farmer, "you are booked as ten loads of manure."

Names

What should one call a person who goes to a marriage guidance centre for advice—a patient, a client, a case, a suppliant, a seeker, an applicant? *Marriage Guidance*, the monthly bulletin of the National Marriage Guidance Council, has recently put the question to its readers. One attractive suggestion is the Esperanto word *feliconito*, which means "will-be-happy-one." Medical men must also be searching their minds for some appropriate term, distinctive yet not too narrow in its scope, to describe both the man with appendicitis and the one who comes only every two years to get a certificate for glasses. Civil Servants are said to be speaking of "National Health Service units," but the doctor, who is perhaps in closer touch with these C.N.H.S. might be embarrassed to call from his desk, "Next N.H.S. unit, please." Probably we shall continue to use the traditional word "patient" and all that it implies of suffering, even though what people suffer from changes with every statutory regulation. Psychiatrists had better find quickly a diagnostic label for the man who demands a wig to hide his shame.

One Fee for Two Surgeons

When a surgeon operates on a patient who has been admitted to a hospital pay-bed the regulations provide that the total medical fees paid shall not exceed 75 guineas. If the surgeon performs a major operation he receives 50 guineas, but if two surgeons work together on the case they cannot both receive this fee, since the amount paid by the patient would then exceed the maximum. We hear of a surgeon who with his colleague performed a perineo-abdominal operation for carcinoma of the

rectum. He asked the senior administrative medical officer of his region what fee he could charge, saying that this was a double operation carried out at one sitting by two surgeons, two assistants, and an anaesthetist. He was told that had the operation taken place in two stages on separate occasions it would have counted as two operations, but when done at one sitting, whether by two surgeons or not, it is one operation, and the fee must be shared by all concerned. It seems unfortunate that a method of remuneration should be so devised as to penalize a surgeon who very properly works in collaboration with a colleague in a case such as this.

Accountancy Services

The agency work formerly undertaken by the British Medical Bureau is now one of the services performed by the B.M.A. Medical Practices Advisory Bureau, but the B.M.A. cannot undertake accountancy work for individual members. Private accountants will continue to do this, and inquiries should be addressed either to Mr. C. W. Rippen, Tavistock House South Tavistock Square, London, W.C.1, or to Mr. J. Charnock 33, Cross Street, Manchester, 2. The British Medical Bureau was started just over 20 years ago, superseding the Scholastic Clerical, and Medical Association, Ltd., which was founded in 1880. The new Medical Practices Advisory Bureau will have offices at first in London, Edinburgh, and Manchester; other places are also being considered.

Questions Answered

We publish here the answers to a selection of questions that seem to be of general interest.

Maternity Benefits

Q.—Is a woman whose husband has been paying contributions under the National Insurance Act, 1946, only since July 5 eligible for maternity benefits for a confinement which is due early in January?

A.—If the baby is born after Jan. 1, when 26 qualifying contributions will have been paid by the husband, a maternity grant of £4 will be paid. In addition, an attendance allowance of £1 a week for a period of four weeks following the confinement is payable. The attendance allowance will be reduced for any week of this period during which the woman is gainfully occupied. The woman is not eligible for a maternity allowance, because 45 contributions must have been paid before the benefit of maternity allowance comes into force.

Private Certificates

Q.—My patients tell me that instead of paying me a shilling for a certificate for their private sick-club they can get a copy of my N.H.S. certificate from the Labour Exchange. - Can the Labour Exchange reproduce my certificate?

A.—No. The patient must obtain it from his doctor, but particulars for a certificate for a friendly society may be obtained from the local office of the Ministry of National Insurance.

Superannuation

Q.—When I entered the Service on July 5 I was 67 years of age. I find that deductions are being made from my remuneration for superannuation. Surely this is incorrect?

A.—No deduction should be made from the remuneration of any practitioner who was over 65 years of age on the appointed day, and if the matter is taken up with the executive council it can be speedily adjusted and any deducted moneys returned.

Special Leave for Congress

Q.—As a part-time specialist can I obtain special leave to attend a national congress in my speciality?

A.—Yes. The interim contracts make provision for special study leave, without loss of remuneration, where approved by a regional hospital board. In the permanent contracts the Executive Committee of the Central Consultants and Specialists Committee has recommended that subsistence and travelling be paid in addition, as suggested in the Spens Report.

Compensation and Income Tax

Q.—We are told that the compensation depended on the amount taken during the two years previous to July 5, 1948. I hear from my accountant that he has had my compensation passed, with the income-tax people signing it, on my income-tax returns for these two years, but he tells me that if I wish to start my income-tax year afresh as from July 5 it might influence my compensation payment. I am severely hit by the N.H.S., and I expect my income will have dropped to half of what it was by the end of the first twelve months, and will probably go on dropping.

A.—Compensation is calculated from the gross receipts of the practice during the last two accounting years completed

before July 5. The assessment of the "annual loss" may be said therefore to represent the amount on which the purchase price would have been based if the practice had been sold on or about the appointed day. The effect of the introduction of the N.H.S. on the income of the practice, or a change in the method of computing tax, does not affect the assessment.

Prescribing for Private Patients

Q.—I am not in the National Health Service, but I am in partnership with two colleagues who are. We are all general practitioners. Can I get one of my partners to prescribe on Form E.C.10 for my private patients, so that they do not have to pay for their medicines?

A.—No. The regulations forbid prescribing in this way.

MEDICAL WAR RELIEF FUND
ANNUAL REPORT 1947-8

1. This report covers the period of twelve months from Sept. 1, 1947, to Aug. 31, 1948. Appended to the report is the audited statement of accounts for the same period.

2. In the third year after the war the need for the existence of this fund is still very apparent. One letter received during the year from a young widow reads: "I first had word of my husband being missing believed killed, then a year later missing believed prisoner-of-war, then a year later presumed to have died of wounds while in enemy hands. Since then life has been one long struggle with three young children to maintain and educate." The Government pension for this young widow and three children is £228 per annum, and she goes on to add: "I dislike letting anyone know the plight I am in, but is there any way of getting help?" Such appeals, so long after the end of hostilities, provide full justification for continuing the activities of the fund.

3. During the year 42 applicants were granted assistance amounting to £6,663. Twenty of these applicants had previously received help. As in earlier years, the purposes for which most of the grants were voted were: first, to assist practitioners to re-establish themselves in civil practice (18 applicants); secondly, to assist widows with the education of children (15 applicants).

4. In those cases where a grant is to be paid over a period of time, or is for the purpose of school fees, the grant is administered through the office of the Royal Medical Benevolent Fund, and 12 grants amounting to £1,696 were voted in this manner.

5. From time to time the Distribution Subcommittee receives reports on the progress of cases helped in previous years, and

the circumstances are then reviewed and fresh grants are voted if the need is shown. Every effort has been made to keep in touch with all the cases where children are concerned and to ensure that the education is progressing.

6. The following is an extract from a letter written by a beneficiary of the fund during the year: "I really find it rather difficult to express the deep gratitude I feel for the more than generous gift voted to me. The second gift came as a total surprise. Never before in my life have I received such a welcome gift. It makes all the difference between pinching and scraping and knowing that, at last I have a little something behind me." Another widow writes: "I just don't know how to thank the Committee for the wonderful kindness and generosity. It is impossible to describe to you what a relief your gift has brought to me and what a burden it has lifted from my shoulders." The Committee of the Fund, acting as the Trustees on behalf of all the subscribers, quotes these letters in order to convey to the subscribers the heartfelt gratitude of the recipients and as a proof that the subscribers' generosity was not misplaced.

7. Once again the Committee wishes to record its indebtedness to the Royal Medical Benevolent Fund for its continued co-operation, and its appreciation of the valuable services rendered by Mr. E. C. Pennefather as Honorary Secretary of the Distribution Subcommittee.

8. The statement of accounts shows that the fund still has a substantial unspent balance, and, as has already been announced, the Committee thinks it unnecessary to seek further contributions at the present time.

H. GUY DAIN. *Chairman.*

STATEMENT OF ACCOUNTS FOR THE TWELVE MONTHS ENDED AUG. 31, 1948

	£	s.	d.	£	s.	d.
To Balance Brought Forward:						
£7,000 3% Savings Bonds, 1955/65 ..	7,000	0	0			
£10,000 2½% Savings Bonds, 1964/67 ..	9,985	18	9			
£4,000 2½% National War Bonds, 1951/53 ..	4,000	0	0			
£1,000 3% Defence Bonds (P.O. Issue) ..	1,000	0	0			
500 National Savings Certificates ..	375	0	0			
Deposit with Post Office Savings Bank and						
Accrued Interest ..	190	12	0			
Cash at Bank on Current Account ..	3,025	2	7			
Cash in Hand ..			10 11			
	25,577	4	3			

Less: Amount due to R.M.B.F. (Clerical Assistance) ..	70	0	0			
	25,507	4	3			
Donations ..	911	4	7			
Interest on Investments (Gross) ..	565	1	9			
Interest on Deposit with Post Office ..	1	19	2			
Loans Repaid during Year ..	840	0	0			
Premium on 3% Defence Bonds Repaid ..	8		0			
Profit on Sale of 2½% National War Bonds ..	39	12	0			

NOTE.—Since the inception of the Fund loans to a total of £16,539 have been voted; of this sum £1,962 was repaid prior to Aug. 31, 1948, and loans amounting to £800 have been written off following the death of the borrowers.

£27,865 9 9

	£	s.	d.	£	s.	d.
By Loans Advanced during Year						
Gifts (including £1,951 12s. to be administered by the Royal Medical Benevolent Fund)	6,177	19	9			
Less: Amounts cancelled ..	255	0	0			
	5,912	19	9			
Petty Cash Expenses ..			5 2 10			
Clerical Assistance ..			104 0 0			
Honorarium to Secretary of Distribution Subcommittee ..			200 0 0			
Printings ..			1 13 4			
Balance Carried Forward at Aug. 31, 1948:						
£7,000 3% Savings Bonds, 1955/65 ..	7,000	0	0			
£10,000 2½% Savings Bonds, 1964/67 ..	9,985	18	9			
£4,000 2½% National War Bonds, 1951/53 ..	2,000	0	0			
£940 3% Defence Bonds (P.O. Issue) ..	940	0	0			
500 National Savings Certificates ..	375	0	0			
Cash at Bank on Current Account ..	504	2	0			
Cash in Hand ..	8		1			
	20,825	8	10			
Add: Income Tax Recoverable ..	11	5	0			
Amount due for Dividend outstanding ..	125	0	0			
	20,961	13	10			
Less: Amount due to R.M.B.F. for Clerical Assistance ..	70	0	0			
	20,891	13	10			

£27,865 9 9

Examined with the books and vouchers and found correct.

Oct. 25, 1948.

PRICE, WATERHOUSE & CO., 3, Frederick's Place, Old Jewry, London, E.C.2.
Chartered Accountants.
Honorary Auditors.

A solution would be to appoint a small number of whole-time obstetricians from the general practitioners in each area. They would be chosen not only for their experience but also for their love of obstetrics and would eschew all further general practice. They would undertake any domiciliary obstetrics referred to them by the general practitioners, who would still be permitted to look after their own cases should they so desire. It would then be possible rapidly to improve the standard of obstetrics, to the benefit of patients and of hospital gynaecological departments alike.—I am, etc.,

Ewell, Surrey.

PAUL WINGATE.

The Independence Fund

SIR,—May I say how thoroughly I agree with the sentiments expressed in Dr. R. C. McIntosh's letter (*Supplement*, Jan. 1, p. 8)? Surely we have all learnt by now that the only way with dictators is to treat them rough, for it is the only thing they understand. A small minority who are doing very well out of the Health Service—so far—will of course protest against a wholesale resignation from what is becoming a racket—and a tragedy for some.

In another letter Dr. V. Weston (p. 8) has truly hit the nail on the head. It is astonishing that only just over 5,000 of our profession were prepared to back their fancy.

I am beginning to have some sympathy for our Council. Even some of us who have no interest in the Health Service thought the Independence Fund a pressing duty to support.—I am, etc.,

London, N W 3.

H. V. DEAKIN.

** As we stated at the foot of Dr. Weston's letter, 5,325 medical men and women contributed to the Independence Fund.—ED., *B.M.J.*

Freedom of the Profession

SIR,—In the *Supplement* of Dec. 4, 1948 (p. 203), in the report of the conference of Local Medical Committees Dr. Guy Dain is reported to have made the following statement: "There is a new organization called the Fellowship for Freedom in Medicine, and if they can assist us in any way to help maintain the freedom we have got we shall be only too glad of their help." But what is this freedom that they have got? Dr. Dain claims to have attained clinical freedom, freedom of speech, freedom of choice both ways for patients and doctors, freedom to do private as well as State work, freedom to regulate our lists—we need not take more than we like, and we can practise where we like if the area has not been declared an over-doctored one.

Let us consider these freedoms one by one, these freedoms that Dr. Dain claims to have "attained" (can he mean "retained"?).

(a) *Clinical Freedom*.—Was it ever seriously suggested by anybody that Mr. Bevan or one of his Civil Servants would wield the scalpel or use the stethoscope?

(b) *Freedom of Speech*.—Do we have to regard it as an achievement in this country that professional men are still allowed freedom of speech?

(c) *Freedom of Choice*.—Was it ever threatened that patients would be compelled to attend doctors they dislike or that doctors should see patients to whom they objected?

(d) *Freedom to do State and Private Practice*.—What is this freedom worth when, thanks to the Act, there are no private patients left for 93% of the general practitioners? As for the specialists, no one ever dreamt of precluding them from being consulted by private patients.

(e) *Freedom to Regulate our Lists*.—Does this mean any more than that we are not obliged to take on more patients than we are capable of looking after?

(f) *Freedom to Practise Where We Like if it is not an Over-doctored Area*.—This freedom is illusory. Mr. Bevan promised that if a doctor were asked for as a partner or a successor the consent of the relevant committee would be automatic. His pledge has not been fulfilled. Nor so far has any list of over-doctored areas been published. (What is an over-doctored area?)

So much for the vaunted freedoms. But Dr. Dain speaks with two voices in the same speech. His list of freedoms is far less formidable than his list of servitudes. He speaks of doctors' requests for closed areas against other doctors (negative direction) because of financial stringency. He talks of the lack

of medical manpower and of work that is overwhelming us. He warns us that the forthcoming winter may cause a complete breakdown. He foresees the pressure that will be exerted to secure that those suffering hardships or serious diminution of income should have a special claim from the Special Inducement Fund. And, to crown all, he says:

"We are now in the position that we are no longer handicapped by the fear that we may lose our compensation, and if we do not get satisfaction quickly it will not be beyond the bounds of possibility to withdraw our services, not entirely because we are not getting enough money, but because under the conditions obtaining we cannot properly 'deliver the goods.'"

Are these the accents of a victor in a struggle for liberty? Surely these frank statements by Dr. Dain are entirely at variance with his claim that we have 'definitely attained a position of freedom. The truth is that the very opposite of freedom has been attained in fact—a state of servitude and indignity never before thrust on any profession in this country.—I am, etc.,

London, W.1.

GEORGE ROSSDALE.

Ophthalmic Service

SIR,—I have received a communication from the chairman of the Ophthalmic Subcommittee of the Negotiating Committee that they have asked the Negotiating Committee to seek a further meeting with the Ministry with a view to modifying the conditions of the Supplementary Service. The reason for doing this is that there is a minority of practitioners whose earnings have been such that it must be concluded they are not giving the half-hour for a full ophthalmological examination which the committee had promised they should do.

I append my reply to the chairman, which I shall be grateful if you will publish, as I think it must be of interest to all medical men at the moment when the question of remuneration is causing so much dissatisfaction, and I think that most will agree with my views.

"I am in receipt of your letter re the remuneration of specialists in the Supplementary Ophthalmic Service. I feel sure that the object of the Negotiating Committee in seeking a further meeting with the Ministry in order to modify the conditions of the Service is actuated by their interest in the welfare of the patient and not because they feel that some of their colleagues are making too large an income. I would therefore ask that you would take the opportunity of suggesting to the Ministry that the number of patients attending the out-patient departments at hospitals should be limited in a similar manner.

"The out-patients' session is supposed to last 2½ hours, but I find that my own invariably last four hours, and during this period I probably see 30 or 40 patients. I am quite sure that if the regional board paid a sum of, say, £1 1s. per patient instead of £4 4s. a session they would probably decide that I am seeing far too many patients in a session, but as there is a fixed sum of £4 4s. this large number of patients who are seen in too short a time causes no disquietude. I would suggest, therefore, that only five new patients were seen in any one session of 2½ hours or ten old patients, because patients attending the out-patients are usually referred cases and many of them pathological, and therefore requiring quite as long a time as do the ordinary simple refraction cases which are seen under the Supplementary Scheme.

"At the Ophthalmological Services Committee of Surrey, when it was suggested that as the refraction fee for a patient for ophthalmic medical practitioners had been cut from £1 11s. 6d. to 12s. 6d. it seemed a little strange that the optician who measured the patient for glasses should continue to receive £1 5s. 6d. for this service, the optician members of the committee showed no desire to seek an interview with the Minister with a view to modifying this fee."

—I am, etc.,

Camberley, Surrey

LESLIE HARTLEY.

Long-term Policy Required

SIR,—There is no doubt, as your correspondents have so often maintained, that no doctor can do a really good and conscientious job with a list of more than 2,000 to 2,500 patients, and that something should be done soon to limit the lists and raise the capitation fee. The latter is quite inadequate as a measure of services given and bears no real relationship to the present-day cost of living.

It seems to me that up to the time of the inception of the Health Service there were two distinct types of medical practice, but that since its inception the distinction is rapidly disappearing, to the lasting detriment of patient and doctor alike. The

first type of general practice was and is a product of industrialized and urban areas. In this type weight of numbers force upon the doctor a course of action in sheer self-defence which at first he resents but later comes to accept as normal practice for want of the ability to do anything different. The second type of medical practice is that in which the patient is given an adequate examination and is properly instructed and prescribed for. It is now rapidly disappearing under the weight of extra work following the start of the new Health Service.

Up to the time of inception of the Health Service the first type of practice provided a reasonable income with some hope of retirement; but the second type, while it provided an adequate living, held out little hope of retirement. In the first instance it is impossible to blame the doctor for the state of affairs. Circumstances precluded anything else. But however necessary this state of affairs may have been before, it is wholly indefensible and something that should not be tolerated for a moment longer than is absolutely necessary in any health service which has the interests of patient and doctor at heart. As a permanent state of affairs it is quite undesirable. As a short-term solution the only remedy would appear to be smaller lists and higher capitation fee. The high capitation fee is nothing less than the just due of those who take on the heavy responsibility and exacting demands, both physical and mental, coupled with unearthly hours of work. But smaller lists of the order suggested mean probably almost doubtful the doctors to pay and may not be an economic possibility. In view of the fact that the Health Service is likely to cost the nation many millions more than its sponsors have anticipated. I suggest that a long-term policy is urgently required, one which will raise the resistance of the people to disease and so ultimately lighten the present well-nigh intolerable burden on the medical profession. It is a policy not so much for the medical profession as for the Government, but who better than the medical profession to keep the matter before the notice of the public and of the Government?

Surely the time has now come to determine for all time the role played in the lowering of resistance to disease and in the production of ill-health by present practices in the treatment of the soil and of food, by the educational system, and by the economic system, and to press for reforms which will improve the health of the people. For it seems to me, Sir, that unless and until these factors are taken into account and tackled fully and conscientiously we shall continue to see an increase of ill-health among the people and the vexed question of the Health Service will continue to vex.—I am, etc.,

TROON, Ayrshire.

HUGH L. MACKINTOSH.

Salaries of Opticians and G.P.s

SIR,—I have the greatest admiration for that bard-working friend of us all, the general practitioner. I know that Dr. J. W. Nicholas (*Supplement*, Dec. 18, 1948, p. 230) is right in his contention that a twelve-hour day is often his lot. Nevertheless, I must refute the suggestion that the average ophthalmic optician works for only six hours per day. This may be the bare time allowed for the examination and measurement for spectacles of new patients, but it cannot represent the full extent of his activities per diem. He may, in fact, have to see that patient at least three times.

It must be remembered that in addition patients already examined will be returning for their glasses, which will have to be fitted and adjusted. Others will be returning for adjustments (for which no charge is made) and repairs, which he will effect on the premises where possible. In addition he will have to write up his records and his orders to the manufacturers and supervise his workshop if he has one. He will have to check the measurements of the frames and power of the lenses returned to him. Small wonder that many opticians complain that the book work and form-filling, reports to doctors, etc., have to be done at home and that the full day amounts to ten to twelve hours. Much can be done in this last respect by a competent secretary-receptionist (whose duties are not only writing letters), who is absolutely essential to make appointments, answer the telephone, explain delays to patients, help them with their forms, etc.

The optician's dispensing fee was calculated on the average remuneration he obtained under the old National Health Insurance Act and is approximately the same and far less than the

fees obtainable for private work. Far from being overpaid, many at the moment are complaining that they are worse off, and many, in fact, are overdrawn at the bank.

Mr. D. Stenhouse Stewart (p. 231) writes of 16 refractions per day. This is, of course, quite possible in the case of a firm where two or more qualified opticians are working, but the actual overheads will be increased accordingly. He talks of £150 per month amply meeting establishment expenses. Has he any idea of present-day salaries? I can assure him that this figure will hardly cover the salary of a senior qualified optician plus a receptionist, or a mechanic, let alone rent, rates, lighting, telephone, workshop expenses, etc., which are generally, I submit, considerably higher than those of the general practitioner.

If the general practitioner is underpaid, this should be rectified. Nobody would be more pleased than my profession to see this happen, but the way to do it is surely not to decry the optician, who is doing a job of work conscientiously and well, but to press for the revision of the medical remuneration on the merits of its own case.

Finally, may I point out that my profession feels strongly that adequate time must be given to each patient requiring eye examination. The Council of the Association of Optical Practitioners, following the lead of the British Optical Association, has recently passed the following resolution:

"That if it is shown that a member of the Association of Optical Practitioners has given insufficient time or inadequate service to his patients, he will render himself liable to disciplinary action under the A.O.P. Articles of Association."

—I am, etc.,

G. H. GILES,
Hon. Secretary, Association of Optical Practitioners.

Civil Service Medical Officers

SIR.—A good deal of correspondence has been published in recent issues of the *Supplement* under the pen name of "Civil Service M.O." and "Another Civil Service M.O." As Chairman of the Institution of Professional Civil Servants' Medical Panel I consider it opportune to enumerate some of the objects of this Institution, which is the duly recognized and responsible negotiating body for Civil Service medical officers. It is concerned with:

- (1) The maintenance and improvement of the position and status of its members.
- (2) The protection, assertion and enforcement, or the assistance therein of the status, position, rights, remedies, and interests of such public servants.
- (3) The advancement of efficiency in the public service, the promotion, teaching, and extension of professional science, knowledge, and practice, and the interchange of views thereon.
- (4) All these objectives may be promoted or effected by the Institution either alone or in combination with other persons or bodies.

In relation to medical officers, the Spens Reports are in the nature of a charter. For the first time an independent body has set out what they consider to be the proper level of remuneration for the profession, and this has been accepted in principle. The Civil Service medical officer is not seeking merely remunerative parity with the administration but remuneration which has its proper affinity to that obtaining for the medical profession generally. It must include adequate recognition of the long duration of a medical education; the late entry, with consequent effect on pension entitlement; the fact that the majority of medical practitioners are recruited as experienced practitioners of proved capacity; and the need for bringing the salaries of the Civil Service medical officers in line with those of the medical profession. Moreover, the remuneration should bear a close relationship to qualification, experience, and nature of duties of Civil Service medical officers.

The Institution of Professional Civil Servants has made it quite clear to the Treasury that in their view members of the medical profession in the Civil Service should be paid in accordance with the levels of remuneration contained in the Spens Reports. The Medical Panel of the Institution has for some months now been at work preparing an appropriate claim based on the Spens Reports. The claim is now in its final stages of preparation, and we anticipate submitting it to the Treasury in the immediate future.

As was said in the letter of the *Supplement* of Nov. 6, 1948 (p. 166), there are in the Civil Service many medical officers of

consultant and specialist status, and this is an aspect of the question which will be reflected in the pay scheme that will be submitted. The Institution has no doubt that the British Medical Association will fully support the claim when it is tabled.

In conclusion, if the writers of the above-mentioned letters have not already done so, it is strongly recommended that they should join the Institution, where matters pertaining to medical ethics, duties, and remuneration, to mention a few, are fully discussed and negotiated in the interest of all Civil Service medical officers.—I am, etc.,

CHAIRMAN,
Medical Panel,
Institution of Professional Civil Servants.

Master Minds

SIR,—With reference to the annotation headed "Master Minds" (*Journal*, Jan. 1, p. 23), I am instructed by my chairman to ask you to be good enough to publish a letter received by my committee from Mr. Messer, the contents of which are as follows:

"I am in receipt of your letter with copy of paper enclosed, which I am returning herewith.

"This report has already been brought to my notice and I need hardly say that I read it with very great distress. It is an instance where tearing a passage out of the context makes a very great difference. All I was trying to do was to explain the difficulties under which the general practitioners work and expressing the hope that the establishment of health centres would give them better opportunities. I have never, at any time, criticized the work of the general practitioner, as I realize the essential part they play in the Service.

"I have, from time to time, referred to the lack of organization of the general practitioner services, but this, of course, is a matter generally recognized.

"If anything I have said has given rise to a feeling that I have in any way reflected on the professional integrity of the general practitioner, I would be most anxious to correct it and I sincerely hope that the cordial relations which have existed between the profession and myself for so many years will continue."

Mr. Messer has given permission for his comments to be published.—I am, etc.,

D. F. HUTCHINSON,
Secretary,
Middlesex Local Medical Committee.

London, W.C.1

POINTS FROM LETTERS

Locums

Dr. SHACKLETON BAILEY (Eyc, Suffolk) writes: . . . I suggest that executive councils accept some responsibility for what goes on in their areas when doctors are ill or on holiday. It would be a great convenience if they had a small panel of locumtenents at their disposal who could come to the rescue in emergency and who would be available to the doctors in the area concerned for holiday purposes. Doctors would of course book their holidays well in advance, and late applicants might have to take their holidays when the locums were available rather than just when they liked. But I am sure everyone concerned would be glad to make occasional sacrifices of this sort for the security of a good locum who was responsible to the executive council. It might be a little more costly, but a good locum is worth paying for. The executive councils would recruit their panel of locums mainly from young qualified men who desired to practise in a particular area. A man who had served an executive council well in the capacity of a locum would have the assurance that he would be a strong candidate for any vacancy in general practice occurring in the area. The doctors in the area would know his capabilities and he would get a fair idea of what practice there was like before settling down. . . .

Outstanding N.H.I. Fees

Dr. M. LETHBRIDGE FARMER (Portishead, Somerset) writes: . . . May I ask what has happened to the outstanding balances for 1947-8 of panel fees, mileage, and dispensing fees due under the N.H.I.? These represent in part remuneration for work done and in part actual out-of-pocket disbursements. The contract of service under which they were earned or incurred terminated on July 5, yet the clerk of the insurance committee concerned with those due to me tells me that the necessary allocation of funds to meet them has not as yet (Dec 16) been made. In view of the vast excess of expenditure over estimates for the new Service, are we to write these amounts off as a bad debt on the part of the Ministry? . . .

* A note on these payments appeared in the *Supplement* of Jan. 1 (p. 3).—Eo., B.M.J.

H.M. Forces Appointments

WOMEN'S FORCES

EMPLOYED WITH THE R.A.M.C.

War Substantive Captain F. J. Pounds has relinquished her commission and has been granted the honorary rank of Major.

War Substantive Captains J. W. Paul and N. M. Dwyer have relinquished their commissions and have been granted the honorary rank of Captain.

War Substantive Captain L. Blackburn has relinquished her commission and has been granted the honorary rank of Captain. (Submitted for the notification in a *Supplement* to the *London Gazette* dated March 8, 1946.)

Association Notices

FULL-TIME NON-PROFESSORIAL MEDICAL TEACHERS', LABORATORY AND RESEARCH WORKERS' GROUP

A meeting of the Group of Full-time Non-Professorial Medical Teachers, Laboratory and Research Workers will be held E.M.A. House on Thursday, Jan. 27, 1949, at 5 p.m. The main business will be to give the report of the Group Committee, and an item of particular importance will be a discussion on the Spens Report and its application to specialist holding university posts, and those who are not in contract with boards of governors of teaching hospitals or regional hospital boards. The Group Committee extends a cordial invitation to all non-members of the Group who may be interested.

Diary of Central Meetings

JANUARY

12 Wed. Council, 10 a.m.

Branch and Division Meetings to be Held

ROCHESTER, CHATHAM, AND GILLINGHAM DIVISION.—At All Saint Hospital, Chatham, Thursday, Jan. 13, 8.30 p.m. Clinical meeting. All medical practitioners in the area of the Division are invited.

TUNBRIDGE WELLS DIVISION.—At Kent and Sussex Hospital Wednesday, Jan. 12, 8.15 p.m. Sir Leonard Parsons: "Comm. Oversights in the Acute Diseases of Children."

WESTMINSTER AND HOLBORN DIVISION.—Joint meeting with Chels and Fulham and Kensington and Hammersmith Divisions, at Postgraduate Medical School of the Royal Cancer Hospital, 24, Onslie Gardens, Fulham, S.W., Wednesday, Jan. 12, 8.30 p.m. Mr. C. Shattock: "Cancer of the Breast." Open to all medical practitioners in the area of the Divisions.

WINCHESTER DIVISION.—At County Hospital, Winchester, Sunday, Jan. 9, 11 a.m. Meeting. Agenda: National Health Service Remuneration. Consideration of the following Resolutions: (i) *Frc Ashton-under-Lyne Division*: "This Division demands a Special Representative Meeting for the sole purpose of deciding upon immediate action to raise the capitation fee to an equitable basis." (ii) *From Torquay Division*: "That unless the Spens Report, plan an adequate betterment factor, is implemented by March 31, 1949, mass resignation of all members of the B.M.A. in the general practitioner service should be called for by the Council of the Association and to this end a Special Representative Meeting should be called for not later than the first week in February." (iii) *From Rochdale Division*: "This meeting views with great dissatisfaction the apathy of the Central Body in respect of the present unsatisfactory capitation fee, and is strongly of the opinion that a Special Representative Meeting should be called not later than Feb. 15, 1949, in order that the Negotiating Committee may be given new and urgent instructions for an approach to the Minister regarding the remuneration of all sections of the profession." Consideration of Birkenhead and Wirral Division: "That this Division recommends the formation of a trades union within the framework of the B.M.A., this being in our opinion, the best way of safeguarding our interests." Organization of the B.M.A.: (i) Report of the Division Representatives on the B.M.A. Organization Committee Meeting (ii) Consideration of draft of new memorandum based on Report received from Divisions.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar
Non-County Borough Councils.—Dartford, Radcliffe (limited to future appointments), Wallsend.

Urban District Councils.—Denton, Droylsden, Houghton-l-
Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

LONDON SATURDAY JANUARY 15 1949

PULHEEMS

A NEW SYSTEM OF MEDICAL CLASSIFICATION

BY

ROY T. FLETCHER, M.B.E., M.D.

Major, R.A.M.C.

(From the Hygiene Directorate, War Office)

The Pulheems system of medical classification was officially adopted by the Army on April 1, 1948. It has also been accepted by the Royal Navy, the Royal Air Force, and the Ministry of Labour and National Service, whose Medical Boards took it into use on June 1, 1948.

The object of this paper is to introduce Pulheems to the profession and to stimulate interest in this new system of classification so that doctors called upon to examine recruits or to act as medical officers will be familiar with the principles involved. The Pulheems system commands attention because it provides us for the first time with a method of expressing on paper in a concise and easily recognizable form the physical and mental capacities of an individual. I consider that when it becomes generally known it will be accepted by the profession and applied on a wide basis. Certainly it goes a long way towards unifying and rationalizing our standards and towards improving our "clinical" appreciation of physical and mental fitness. While we are still unable to measure physical and mental capacity by purely clinical means, Pulheems is undoubtedly a great advance on methods hitherto employed.

It is hardly surprising that the Forces Medical Services should be responsible for developing a comprehensive system of medical classification, since in the Services organized medicine has been developed to a high level and Service requirements clearly call for some means of assessing accurately the fighting-man's physical and mental capacity. It seems probable that with a National Health Service, and in view of the necessity for the economic employment of our man-power in industry and elsewhere, the Pulheems system of medical classification will meet an essential need. Further, if the physical fitness of our people is to be safeguarded by comprehensive health surveys of the population will have to be undertaken, and in order to derive full benefit from such surveys we must pay due attention not only to clinical states but also to "health" or physical and mental capacity.

Medical Classification in the Past

The need for a system of medical classification in the Army became apparent during the South African War (1899-1902), when for the first time officers and men were examined with respect to their physical fitness for service at home or abroad. It was not until the war of 1914-18 that any further breakdown of these two broad classes was attempted, and following the introduction of the Military Services Act in January, 1916, the scope of medical classification was extended to include all serving officers and men at home and abroad. The system of lettered categories, which later became so familiar, was introduced at that time, and

it was with this system of classification in vogue that we were called upon in 1939 to face the war. During the ensuing years the increasing demands on man-power necessitated successive extension of the medical categories used, and as a result the category system became more and more complicated, while at the same time it failed to meet the new demands placed upon it.

Briefly, the reasons for the failure of the former system of medical categorization are as follows:

The medical categories used (a) did not adequately define a man's physical or mental limitations, and it was therefore not possible to allocate the man to employment in which full use could be made of those capacities which were not in any way impaired, (b) gave no indication of the mental and emotional make-up of the individual, factors which in total warfare are no less important than the physical attributes, and (c) merely indicated restrictions on employability of a very generalized nature, giving no information about the particular disability involved. They therefore provided no guidance on the most suitable type of work for any given soldier with due regard to the nature of his disability. In short, the medical category system was designed to meet the requirements of our traditional Army (and particularly the infantry soldier), which marched on its feet and fought with a rifle. It was not a system designed to cater for the modern mechanized Army engaged in technological conflict.

With the introduction of personnel selection procedure into the Army in 1942, the deficiencies and shortcomings of the medical category system were further revealed and emphasized. The range of employments available in a modern army is extremely wide and varied, and each individual job brings into use different mental and physical functions, which in turn may have to be qualified according to the conditions and environment in which the work has to be performed—e.g., tropical, arctic, front-line action, etc. It will be agreed that to ply a trade under direct shell-fire is totally different from practising the same trade in the safety of a base workshop, and that a man with chronic ear disease who may be perfectly fit to serve in a temperate climate is likely to break down when serving in the Tropics or subtropics. Clearly, minor disabilities which are of little significance to a member of the training staff of a static base installation can represent a serious liability in an active combatant unit.

From the foregoing it is apparent that the lettered system of medical categorization proved very wasteful from the point of view of man-power economy. In order to employ men satisfactorily in the Army the medical authorities must provide a clear-cut specification of the individual's

functional capacities. Only in this way can men be employed to the best advantage, man-power economy be effected, and the individual himself be satisfied.

Progress towards a New System

Had it not been for the crisis of 1939 it is likely that steps would have been taken to improve our system of medical classification to meet the demands of mechanization and the numerous new employments created; but the British Army authorities considered it both undesirable and totally impracticable to introduce a new system once war had started. However, in 1943 the Canadian Army authorities introduced a new system of medical classification which they called "Pulhems," chief credit for which goes to Major-General Brock-Chisholm, then Director-General of the Canadian Army Medical Services. It was he who first suggested that men should be examined in respect of seven subdivisions of bodily and mental function, and as a result a committee was appointed to investigate the possibilities of such a scheme. This committee designed the Pulhems system of medical classification now used by the Canadian Army.

Subsequently the attention of the British Army authorities was drawn to this system and selected groups of Army intakes were examined by that method. The trial, though limited, proved that it was possible to assess the functional capacity of the individual and record the findings in terms which would be easily understood by his employers (and selection officers); but, as already indicated, it was not possible to introduce the system generally at that time. In 1946 an Inter-Services Committee was formed "to devise a system of medical classification which would be suitable for use by the Royal Navy, the Army, and the Royal Air Force." It was agreed that "Pulhems" should form the basis of discussion, and eventually this committee devised the system known as "Pulheems—a system of medical classification for the Fighting Services." It is this system which has been adopted and which I will now proceed to describe.

The Pulheems System of Medical Classification

The Qualities—Under the Pulheems system of medical classification examination of the individual is carried out objectively, with particular reference to seven subdivisions of bodily and mental function, the code letters of which go to make up the word "Pulheems" as follows:

- P—Physical capacity
- U—Upper limbs
- L—Locomotion
- H—Hearing (acuity)
- EE—Eyesight (visual acuity)
- M—Mental capacity
- S—Stability (emotional).

These subdivisions are known as *qualities*.

Visual Acuity (EE).—Under the former systems of medical categorization specified visual standards were laid down and each category was permitted certain of these standards—e.g., A1—V.S.1, 2, or 3; A3—V.S.4; A4—V.S.5 or 6, etc. Such visual standards are still being used by the Canadian Army, hence their use of the single "E." The Royal Navy and the Royal Air Force found that the wide range of vision permissible in some of the categories previously used made accurate employment of men in various technical trades extremely difficult. In the discussions which took place on the subject these two Services insisted that, to meet the requirements of their tradesmen, the new system must specify the precise degree of visual acuity in each eye separately, both without and with the aid of glasses. This requirement was met by introducing a separate "E" for

each eye, subdividing the medical box under each of the "E's" so that the unaided vision could be shown in the upper half of the box and the aided vision in the lower half. The method of recording visual acuity is based on the following standards:

6/6 = 1	6/24 = 5
6/9 = 2	6/36 = 6
6/12 = 3	6/60 = 7
6/18 = 4	Less than 6/60 = 8

Thus, for example, EE is recorded as follows for a man whose uncorrected vision is R=6/12, L=6/18 and whose corrected vision is R=6/6, L=6/9:

E	E
3	4
1	2

the first "E" indicating the visual acuity in the right eye and the second "E" that in the left eye.

Degrees of Each Quality.—There are eight degrees under each quality, but for reasons which will emerge later not all of these are used in the case of U, L, H, M, and S, as the following table shows:

P	U	L	H	E	E	M	S
1	1	1	1	1	1	—*	—*
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	—	—	—	4	4	—	—
5	—	—	—	5	5	—	—
6	—	—	—	6	6	—	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8

Functional Interpretation of the Degrees of Each Quality

The degrees of each quality, excepting H and EE, refer to functional ability. The degrees of H and EE are related to definite standards of hearing and eyesight, degree 8 under H signifying the man is unfit for any form of military service. Table I shows in detail the functional requirements of the degrees used under each of the qualities other than EE. Under this quality the minimum visual requirement for certain essential duties—e.g., shooting, driving, etc.—is detailed.

Climatic Restriction.—During the 1939-45 war major causes of invaliding to the United Kingdom from overseas theatres were skin, ear, eye diseases, and psychiatric disorders. After treatment in the United Kingdom many of these men recovered sufficiently to become fit even for full combatant duties provided they were retained in a temperate climate. In order to avoid sending such men to climates where they would break down because of disabilities which remain quiescent only in a temperate climate it is essential to indicate the necessity for climatic limitation. Under the Pulheems system degrees 4, 5, 6, and 7 are used for this purpose. In the assessment of the qualities U and L, any pathological condition of the limbs, such as osteomyelitis, will have a general constitutional effect. This also applies to diseases of the ears and eyes—as opposed to hearing (H) and eyesight (EE). It is therefore convenient to confine the specification of climatic restriction so far as the qualities P, U, L, H, and EE are concerned to the assessment of the P quality only, and for this reason degrees 4, 5, and 6 are not used under U, L, and H. With regard to M and S, experience in the last war indicates that men of low intelligence adapt themselves poorly to strange and unfamiliar surroundings. Intelligence once assessed remains a constant factor and is not directly related to the question; for Army purposes,

*With regard to "M" and "S," degree 1 implies functional efficiency "above average," which it was considered extremely difficult to assess; thus degree 2 under these qualities indicates normal or better.

TABLE 1.—Guide to Pulheems: Functional Interpretation of Degrees of Each Quality
MEN

Degree	P	U	L	II	EE	M	S
1	Fit, after training, for full strain and fatigue on combat duty. Fit to withstand exposure to all kinds of weather. A front-line fighter in any part of the world	Muscle power above average. Must be able to handle a rifle and do heavy manual work, including digging, pushing, dragging, heaving, lifting, and climbing. All tasks carried out with rapidity and efficiency	Capable of very severe locomotor strain for 5 or 6 days. Can undertake forced marches and fight at the end of such marches. Can run, climb, jump, crawl, and swim perfectly in all kinds of about quickly	Very good hearing. Ability to hear sufficiently well to perform any duty	Unaided vision E E B B 3 3 or 1 6 Able to see to shoot and drive	M	S
2	Fit for normal work or strain but unable to endure "extreme" degrees for long periods. A front-line fighter in any part of the world	Muscle power average. Able to do all a U.I. man can do but at a slower pace	Same as L1, but pace may be slower	Good bearing. Able to hear sufficiently well to perform any duty	Aided vision E B 8 8 8 3 3 or 1 6 Able to see to shoot and drive	Ability under Army conditions to learn to perform successfully full combatant duties. Includes those who can be trained as tradesmen and specialists	Emotionally fit to perform Army duties adequately under full combatant conditions in any part of the world
3	Fit for ordinary work. Fits not the standard, even after training, to endure the strain and fatigue of full combatant duty. Fit for restricted service in any part of the world	Must be able to use a weapon for defensive purposes and be capable of less severe forms of manual work than U2	Capable of marching 5 miles or further in an emergency. Able to stand for periods of at least 2 hours. Fit for guard duties	Able to hear sufficiently well to perform any duty where moderate impairment of hearing does not disqualify	Aided vision E B 8 8 8 3 6 or 6 1 Able to see to drive but not to shoot	Ability under Army conditions to learn to perform simple labouring duties, including fitness to bear arms in self-defence	Whilst having a history of emotional instability is at present well adjusted and fit to serve in any part of the world in a role which is not primarily a fighting one
4	Fit, after training, for full strain and fatigue of full combatant duty provided he serves in temperate climates only				Aided vision E L 8 8 3 3 Able to see for ordinary purposes (not shooting or driving—biocular)		
5	Fit for normal work or strain but unable to endure "extreme" degrees for long periods. Fit for service in temperate climates only				Aided vision E B 8 8 8 8 3 7 or 7 3 Able to see for ordinary purposes (not shooting or driving—monocular)		Whilst having a history of emotional instability is sufficiently well adjusted to serve in temperate climates in a role which is not primarily a fighting one
6	Fit for ordinary work. Has not the stamina, even after training, to endure the strain and fatigue of full combatant duties. Fit for restricted service in temperate climates	Capable of sedentary and routine work of a lighter type. Includes personnel unable to bear arms on account of physical disability (weakness of elbow, but may serve overseas in the base area)	Able to walk 2 miles per day at own pace. Can stand for moderate but not prolonged periods. Service in the U.K., but may serve overseas in the base area	Able to hear sufficiently well to perform any duty where marked impairment of hearing does not disqualify. Service in the U.K., but may serve overseas in the base area	The E.E. boxes bear no relation to the degree of the other qualities—i.e., P, U, L, M, and S. They belong to a separate and vision unaided and aided	Because of low mental capacity is unfit to bear arms but is capable of simple labouring duties under supervision. Including a minimum of responsibilities. Service in U.K. only	Functionally fit to perform Army duties adequately under living conditions favourable to the individual in the U.K.
7	Capable of performing useful Army duties within limits of his disabilities. Not likely to break down if suitably employed, when includes time for regular rest and sleep. Service in U.K. only						
8							
Factors to be considered	Ave. build, strength, and stamina-guts	Strength, range of movement, and general efficiency of arms, shoulder, breast, and back	Strength, range of movement, and efficiency of feet, legs, and lower back	Auditory acuity	Visual acuity	Mental capacity	Emotional stability

UNFIT FOR ANY FORM OF MILITARY SERVICE

however, men whose mental capacity is incompatible with employment in any part of the world can be employed only at home (i.e., degree 7), hence degrees 4, 5, and 6 are not used under M. The S quality has a material bearing on climatic restriction, but it is considered that a man who requires restriction to service in a temperate climate because of emotional instability is unlikely to be employable in a combatant role; therefore under S degrees 6 and 7 only are used. Men with psychosomatic disorders—e.g., effort syndrome, functional dyspepsia, etc.—may require a lower assessment under P as well as S. Finally, if an individual has a low assessment under one of the qualities other than P, it does *not* follow that the same assessment must be made under P—e.g., a man who is assessed L7 but is physically fit to be assessed P3 should be classified P3 and not P7. Lowering of the P assessment to 7 in such a case would impose unnecessary restriction on employment. Any individual, however, assessed degree 7 under P, M, or S can serve only in the United Kingdom.

From the foregoing it will be seen that climatic restriction is decided by the assessment of the individual under the qualities P and S, and to a lesser extent under the quality M. Employment within the various areas in the theatre—i.e., forward, lines of communication, or base—is dependent thereafter on the complete assessment.

Temporary Assessment.—(a) “R” Assessments:—Where an individual is suffering from a condition which is remediable by surgical operation or other means (e.g., hernia, poor physique) he is classified according to his present capacities (but not lower than 7) and the letter R is inserted immediately after the degree of P, U, L, or S affected, the period of temporary restriction from full duty of the assessment being stated—e.g., P3R for three months. Such an individual remains on duty, and at the conclusion of medical treatment is reassessed.

(b) “O” Assessments:—When an individual is off duty and under medical care he is temporarily unfit for military service. This is shown as degree “O” under P, U, L, or S as appropriate and the period of temporary incapacity is stated—e.g., P—“O” for six months.

Method of Assessment.—The medical assessment of any man under this system is based on *functional efficiency at the conclusion of training*. For this reason the *pre-Service* assessment allotted by the civilian medical board is verified by the military medical authorities when the man joins for duty and an *initial* assessment is allotted. At the conclusion of basic training a full medical examination is carried out and a *Service* assessment is made, which remains effective until alteration is considered necessary by a military medical board. To record the findings, in addition to the assessment under each of the seven qualities, age (represented by the last two figures of the year of birth), height, weight, and colour perception standard are recorded in a medical box, in which there is space to enter the reason for an assessment below 2 under P, U, L, or S. The medical box takes the following form:

Y O B	P	U	L	H	E	E	M	S.
20	2	2	3	1	1	1	2	2
Ht. 68 ..	P							
C.P. 2 ..	U							
Wt. 135 ..	L	Pes planus—moderate		Medical board: 3/7/46				
	S							

Such an assessment indicates a man who is fit in every way except for a moderate degree of flat-foot, and at a glance it is easy to see that he is suitable for full employ-

ment in any part of the world with mechanized troops but not with infantry (because of L3).

With the introduction of the Pulheems system into the three Services it has been necessary to review medical documentation in general, and a much improved system is being devised for use by all three Services which it is hoped will be introduced in the near future.

Administrative Application of the System

From Table I it will be seen that the degrees of P, U, L, H, M, and S are interpreted and signify suitability for various ranges of employment as follows:

TABLE II

Degree	Functional Capacity	Combatant Capacity	Climatic Restriction
1	Above average	Full	Nil
2	Above average	Full	Temperate
3	Average	Full	Nil
4	Average	Full	Temperate
5	Moderate defect	Restricted	Nil
6	Moderate defect	Restricted	Temperate
7	Marked defect	Restricted	Service in U.K. only
8	UNFIT FOR ANY FORM OF MILITARY SERVICE		

The term “restricted” implies service in a role which is not primarily a fighting one.

It is evident, therefore, that the Pulheems code number (i.e., the recorded assessment) provides in effect a complete indication of the fitness, physical and mental, of the individual for employment under varying conditions. It is possible to reduce this code number to a simple two-letter code for use as an employment standard, and so simplify the administrative application of the system.

This has been done within the Army and the Royal Air Force, and the employment standards used by the Army are as follows:

- FE—Employable on full combatant duties in any area in any part of the world (FE—forward everywhere).
- FT—Employable on full combatant duties in any area in temperate climates (FT—forward temperate).
- LE—Normally employable in the lines of communication or base area in any part of the world, but may be employed in the forward area in any role which is not primarily a fighting one (LE—L. of C. everywhere).
- LT—Normally employable in the lines of communication or base areas in temperate climates only, but may be employed in the forward area in any role which is not primarily a fighting one (LT—L. of C. temperate).
- BE—Employable only in the base area in any part of the world (BE—base everywhere).
- BT—Employable only in the base area in temperate climate (BT—base temperate).
- HO—Employable in the protected area in the United Kingdom only (HO—home only).

It has been said that the two essentials required in a system of medical classification are (a) a detailed qualitative estimation of the individual, and (b) a qualitative analysis of the available employments expressed in the same terms.

Under the Pulheems system these two requirements are met. For the Army's purposes employment standards have been worked out in relation to each arm of the Service. For employment forward of the base the standard has been set according to the general functions of the arm, while in base areas it has been determined in relation to the actual employment itself. This difference is necessary to meet the requirements of reinforcement demands.

Minimum Standards: The Infantry Soldier

To conclude my description of the Pulheems system of medical classification and to provide an illustration of the working of the system it is convenient to start with the specifications of the infantry soldier, since it is such men whom every army particularly needs and who must possess the highest standards of physical competence. To be efficient an infantry soldier must have the following functional attributes:

P for Physical Capacity—"Must be able to endure severe strain, do heavy physical work, and engage in hand-to-hand combat"

These are general capacities derived from a man's whole physical development—his height and weight, his ability to acquire physical stamina with the proper training, his capacity for work, and his general good health

U for Upper Part of the Body, or Upper Limbs—"Must be able to lift and carry heavy loads. Be able to dig and throw hand grenades and use weapons"

To do these things a man must have strong arms, shoulders, and back, and must be able to use his hands with normal dexterity

L for Lower Part of the Body, or Locomotion—"Must be able to stand at his post for long hours and march more than 20 miles a day without difficulty"

H for Hearing—"Hearing must be good so that he can understand commands made under difficult conditions and hear suspicious sounds when on night watches"

EE for Eyesight—"Must be able to see the enemy at considerable distance and use his rifle sights with either eye"

M for Mental Capacity—"Must be intelligent in order to learn the use of his specialized weapons and field craft"

S for Stability (Emotional)—"Must also be a man of stable temperament with self confidence and determination"

Expressed in terms of Pulheems, the minimum standard permissible for the infantry soldier therefore is

P	U	L	H	E	E	M	S	—Employment Standard
				8	8			
2	2	2	2	—	—	2	2	—FE
				3	3			

Discussion

Under Pulheems the emphasis is placed on the functional capacity of the individual to work rather than on any existing abnormality, whether anatomical or otherwise. It is generally agreed by all concerned that, given a reasonably correct functional assessment of a man's ability to work, a more accurate allocation to suitable employment becomes possible. It is hoped that in the future there will be few, if any, "square pegs in round holes" in the Services.

One of the factors on which there is some diversity of view among medical men is the effect of the age of the individual on assessment, particularly under the P quality. It must be admitted that as one advances in years moderate constitutional defects begin to appear which can easily be recognized on examination, such as increase in weight, rise in blood pressure, cardiac irregularity, and so on, and over the age of 40 years the likelihood of a man or woman being assessed P1 or P2 becomes less and less as age advances. In the absence of such constitutional defects, however, in a man of good physique and with a good previous history there is no reason why an assessment of P2 should not be given to the really fit individual. In an organization such as the Army, the medical officer is inclined to think in terms of "fighting" fitness, and therefore he tends to assess the 40-year-olds and over as P3

rather than P2. It should always be remembered that the employment of an individual must be governed by both his medical fitness and his age, and the latter alone is sufficient to contraindicate posting in a fighting role.

The Pulheems system of medical classification was subjected to some criticism because for the first time in the history of medical categories in the Services it specifically took into consideration the two qualities mental capacity (M) and emotional stability (S) and introduced their routine assessment for each individual. It has even been stated in this connexion that the Pulheems system was little more than a "psychiatric racket" which, it was implied, might be detrimental to and prejudice the chances of men entering the Forces. There can surely be few to-day who would deny that psychiatric disorders are as important as physical diseases, and in the light of increasing knowledge the dichotomy between mind and body appears more and more arbitrary and indistinct. Medical fitness is a *total* problem and we cannot separate the mind from the body. It is hoped that the introduction of Pulheems by the Services will help to underline in the mind of the public as well as in that of the medical profession the importance of regarding the individual as a complete unit, in whom the mental and physical functions must be considered and assessed simultaneously. Service medical officers are trained to use their clinical judgment in assessing an individual as normal or better—i.e., M2 and S2, it is only when there is doubt or any definite indication that the individual is abnormal that psychiatric advice should be obtained.

Within the Services, therefore, it has been possible to introduce a new system of medical classification which, while giving a much more detailed picture of the man's capacity to work, is also very simple in its application and use by non-medical personnel. In the Army, standards have been worked out for all the trades and employment available, and it is hoped to take steps to prove our norms and in the end to obtain some definite information on what is compatible with normal and what is definitely abnormal.

The tendency in the past in the medical world has been to teach the medical student the care of the sick and disabled, little attention being paid to his education in what is considered normal. There are many ways of being "well," but the whole question of just how well a man must be in order to carry out satisfactorily any particular one of the hundreds of jobs that are available in a modern army has never been satisfactorily determined. The present drive towards positive health will, it is hoped, be very materially assisted by the use of Pulheems, since it is evident that an accurate method of assessing the fitness of an individual is a prerequisite of the determination of positive health. It is for these reasons that I suggest that such a system need not be confined to the Services alone and could well be used by industry generally, police forces, and other similar bodies.

It would appear from Service experience regarding medical classification generally that comparatively little attention has been paid to it in the past, and that the systems of classification formerly used have not been understood properly either by medical men or by laymen. Where the employment of men has been considered, a great deal of stress has been placed on welfare, environment, working conditions, and so on, but practically no attention has been given to the question of their fitness for their particular type of employment. It is hoped that academic bodies in the future will consider teaching *methods* of medical classification to medical students and also to postgraduates. It is contended that the concentration on disease in hospital teaching and elsewhere is unwise, and that the time has come when more consideration must be given to health

and fitness and the application of clinical knowledge to its assessment. Almost all medical men are called upon at one time or another to examine men for the Services, and the despairing efforts of the newly qualified medical officer when faced with a group of recruits whose fitness he is expected to assess is well known. The fault lies essentially with the teaching rather than with the new doctor.

One of the difficulties in using any system of medical classification is the wide divergence of opinion among medical men regarding assessment generally and more particularly the influence of various diseases and other morbid conditions on assessment. In the literature which has been produced by the Services on the Pulheems system an attempt has been made to issue some guidance in this matter. It is hoped that with increasing experience this aspect of the subject will be reviewed from time to time and greater precision will be achieved. It remains for civilian bodies to carry the project one stage further. If it is possible to achieve the necessary liaison between civil and military medical authorities there seems to be no reason why in the end all medical men should not be able to allot to each individual the same medical assessment, a development which would be more than welcome to the Services.

Conclusion

The Pulheems system of medical classification has been introduced in the Services to remedy the shortcomings of previous systems used and to facilitate the optimum employment of man-power. Our objectives briefly are: to set up a common system for use by all three Services; to provide a functional assessment of the individual's capacity for work; to assist in expressing the physical and mental attributes appropriate to individual trades and employments within each Service; to allocate men to the employment for which they are most suited in view of their physical, intellectual, and emotional make-up; and to provide a system which is administratively simple to apply in both peace and war.

I consider that the introduction of Pulheems by the fighting Services marks a great step forward in this field of activity. The conception of a uniform assessment of the functional abilities of the population as a whole, whether in terms of war requirements or of industrial potential, is striking enough to require no further elaboration.

ARMY PUBLICATIONS

Pulheems—System of Medical Classification for the Fighting Services, dated November, 1946.

The Application of the Pulheems System of Medical Classification to the Army (W.O. Code No. 1792—restricted).

These pamphlets are in the process of being rewritten, and it is hoped that the first, which deals with the medical aspect entirely, will be available for purchase at H.M. Stationery Office early this year.

I wish to express my thanks to the Director-General of the Army Medical Services, Lieutenant-General Neil Cantlie, C.B., M.C., F.R.C.S., K.H.P., for permission to publish this paper. My gratitude is also due to the Director of Hygiene, Brigadier A. E. Richmond, C.B.E., K.H.S., and my colleagues Lieutenant-Colonel A. N. B. Odber, O.B.E., R.A.M.C., and Major R. B. Stalbow, General List, for much valuable help and criticism in the presentation of this paper.

Offenders who are remanded on bail under provisions of Section 26 of the Criminal Justice Act, 1948, may now be sent to certified institutions or certified houses (among other places) for medical examination and report. The Mental Deficiency (Amendment) Regulations, 1948, which came into operation on Dec. 27, prevent such an offender being received in a certified institution or certified house which is already accommodating the full number of patients for which it has been certified as suitable unless the Minister consents to his reception.

"PALUDRINE" (PROGUANIL) IN PROPHYLAXIS AND TREATMENT OF MALARIAL INFECTIONS CAUSED BY A WEST AFRICAN STRAIN OF *P. FALCIPARUM*

BY

G. COVELL, M.D., D.T.M.&H., D.P.H.

W. D. NICOL, M.B., D.P.M., F.R.C.P.

P. G. SHUTE AND M. MARYON

(From the Malaria Laboratory, Horton Hospital, Epsom, Surrey)

"Paludrine" was first used for the treatment of human malaria at the Liverpool School of Tropical Medicine in 1945 by Maegraith and his colleagues, who published records relating to 22 patients naturally infected with West African strains of *Plasmodium falciparum*, 16 of whom were considered to be suffering from primary attacks. The dosage of paludrine administered varied from 50 to 600 mg. twice daily for 14 days. The clinical response was satisfactory in all cases, and was as rapid in those receiving 50 mg. of the drug twice daily as in those who were given a dosage ten times as great. Owing to difficulties in follow-up it was not possible to determine the radical cure rate (Maegraith *et al.*, 1945).

Subsequently an extensive series of prophylactic and therapeutic trials with paludrine on volunteers exposed to infection with New Guinea strains of *P. falciparum* and on troops suffering from malaria contracted in that area was undertaken by Fairley and his colleagues at the Land Headquarters Medical Research Unit, Cairns, Australia, on the same lines as those previously employed at this centre with mepacrine. Paludrine was found to act as a true causal prophylactic against infections due to New Guinea strains of *P. falciparum*. Radical cure was effected in 41 out of 41 natural and in 46 out of 47 experimentally induced sporozoite infections treated with a ten-days course of 100 mg. of the drug thrice daily. In most cases there was rapid clearance of asexual parasites from the peripheral blood, but, though the overt attack was readily controlled even by very low dosage, the clinical response was described as "not rapid." Gametocytes were not destroyed in the peripheral blood but were rendered non-infective to mosquitoes for a variable period, depending on the size of the dose administered (Fairley *et al.*, 1946).

Since the publication of the Liverpool and Cairns trials a number of prophylactic and therapeutic trials with paludrine have been carried out in India and in Malaya, with generally favourable results. The drug has proved exceedingly useful in both these countries, particularly among labour forces and village populations, where a single-dose treatment of 300 mg. has been generally adopted. It should be noted, however, that the great majority of the subjects treated have been semi-immunes, and there is little evidence regarding the radical cure rate. Chaudhuri (1948) drew attention to the existence in India of strains of *P. falciparum* infections from which are not radically cured by a dosage of 300 mg. of paludrine daily for ten days, and cited the case of a patient who experienced a second overt attack nine days after the completion of treatment and a third attack 11 days later. Other reports from clinicians practising in India and in Malaya indicate that for the treatment of *P. falciparum* infections in non-immune persons paludrine is not entirely adequate in the dosage originally recommended.

In Sardinia, Bettini (1948) treated 94 cases of *falciparum* malaria with 100 mg. of paludrine thrice daily for 10 days

followed by a weekly dose of 100 mg. for three months. The clinical response and clearance of parasites from the peripheral blood were satisfactory, but in 17 of the cases relapses* occurred within this period.

Widely divergent accounts regarding the efficacy of paludrine in the treatment and prophylaxis of malaria have emanated from different parts of Africa, including Kenya, Tanganyika, Rhodesia, Uganda, the Gold Coast, and Nigeria. Some of these have been favourable, whilst in others it has been alleged that the drug has proved unsatisfactory in the treatment of *P. falciparum* infections, in respect of both clinical response and radical cure, as well as for prophylaxis. The most frequent criticism has been that, owing to its slowness of action, serious symptoms have persisted in many cases for three or four days, sometimes longer, necessitating reinforcement of the treatment with mepacrine or quinine.

As the result of trials in the Belgian Congo, van Riel (1948) reported that in a dosage of 100 mg. thrice weekly paludrine failed to act as a causal prophylactic against *P. falciparum* in non-immune subjects constantly exposed to infection. This statement was based on the grounds that one out of 11 persons so treated developed an overt malarial attack on the last day of drug administration and our others did so shortly after this had been discontinued, under conditions precluding the possibility of reinfection. It should be noted, however, that administration of the drug was discontinued approximately 40 hours after the last possible exposure to infection, a period which on Fairley's findings leaves little if any margin of safety and which can scarcely be regarded as sufficient to ensure adequate protection. The clinical response in 156 cases of *P. falciparum* malaria in African labourers treated with 100 mg. of paludrine thrice daily was reported by van Riel to be as satisfactory as that achieved by mepacrine or quinine, but the radical cure rate was not stated.

The investigations recorded below were undertaken in an endeavour to clear up some of the points at issue regarding the use of paludrine for the prophylaxis and treatment of infections with African strains of *P. falciparum*. The strain of parasite used was obtained from a native child resident in Lagos, Nigeria, in November, 1947, and has been maintained at Horton since that date by successive blood and mosquito inoculation. None of the subjects brought whom the strain has been passed received paludrine, except the second in the series, who was given 300 mg. of the drug in a single dose on two successive days. The mosquitoes used for transmission were *Anopheles stephensi* (Type), a colony of which was established at Horton during the winter of 1947-8 from specimens imported by air from India. The subjects of the trials were patients in Horton Hospital, all of whom had undergone malaria therapy for eurosyphilis with the Madagascar strain of *P. vivax* or with European strains of *P. falciparum* nine or more years previously but had not been exposed to malarial infection of any kind in the intervening period.

Prophylactic Trials

Twenty-seven patients were arranged in groups as shown in Table I. The patients were infected once weekly over a period of six weeks,† alternate subjects under prophylaxis either being bitten by five to ten heavily infected mosquitoes or receiving by intravenous injection a suspension of the salivary glands of one heavily infected mosquito by the technique described by Shute (1937). Infections were

*Throughout this paper the term "relapse" has been applied to any recrudescence of fever with demonstrable parasitaemia subsequent to the primary attack.

†Except the two individuals under quinine prophylaxis (Group V), who were infected three times only, over a period of three weeks.

TABLE I

Group	No. in Each Group	Drug Administered	Dosage
I	5	Paludrine	100 mg. daily
II	5	"	50 mg. daily
III	5	"	100 mg. twice weekly at 3 to 4 days' interval
IV	5	"	300 mg. once weekly
V	1	Quinine hydrochloride	5 gr. (320 mg.) daily
VI (controls)	5	No drug	10 gr. (650 mg.) daily

given on a different day each week, so as to simulate as closely as possible conditions which might arise in nature. Drug administration was started three days before the first infection in each group, and was continued until six days after the last infection. One or more controls were infected from each batch of mosquitoes used during the course of the experiment. Blood examinations (thick smears) were made twice weekly as a routine, and daily in the case of any rise of temperature above the normal level.

Results

No member of any of the paludrine groups (I to IV) showed parasites in the peripheral blood either during the period of drug administration or subsequently. One member of Group II (50 mg. of paludrine daily) had intermittent pyrexia for four days, starting a fortnight after his first infection. Sub-inoculation of his blood into a non-immune subject proved negative. The donor was found to have only a trace of paludrine in his blood at this time, whereas a few days later the concentration of the drug was of the same order as that of the other four members of the group, the inference being that by some means he had avoided taking the drug regularly as prescribed. Despite the negative results of sub-inoculation and blood examination it is possible that the pyrexia was the result of a partially suppressed malarial infection, but in the circumstances stated this case cannot be regarded as a genuine breakthrough.

Neither of the two individuals under quinine prophylaxis (Group V) showed pyrexia or parasites in the peripheral blood while taking the drug. Both developed overt attacks of malaria after the drug had been discontinued, the first after the lapse of seven days and the second five days later. This is in accordance with the well-established fact that quinine is not a causal prophylactic of malarial infections, its action being suppressive only. All the five control cases developed overt malarial attacks within the normal incubation period, thus demonstrating that each batch of mosquitoes used was infective.

Ten weeks after the cessation of drug administration 18 of the 20 individuals who had been on paludrine prophylaxis were inoculated intravenously with sporozoites of the same strain of *P. falciparum*. All without exception developed overt attacks of malaria within a period of seven to ten days, thus proving their susceptibility to infection with the Lagos strain.

Three members of the laboratory staff were bitten repeatedly while handling heavily infected batches of mosquitoes throughout the period of the investigation, taking no precautions to avoid infection. Each took 200 mg. of paludrine in a single dose twice weekly at three to four days' interval. None of them developed malarial attacks. It is of interest also that two members of the staff who visited Nigeria in November, 1947, were inoculated intravenously in Lagos with a suspension of the salivary glands of a heavily infected specimen of *Anopheles gambiae* caught in a native hut. The species of parasite cannot be stated with certainty, but since the great majority of positive

blood smears examined at this time contained parasites of *P. falciparum* it is more than likely that they were infected with sporozoites of this species. They had each taken 100 mg. of paludrine daily until and including the day before infection, after which the drug was discontinued. Neither developed signs or symptoms of malaria.

From the evidence presented above paludrine has been shown to act as a true causal prophylactic against the Lagos strain of *P. falciparum* in each of the regimes under trial. It is considered, however, that non-immune persons residing in or visiting West Africa should be advised to take not less than 100 mg. of the drug daily for the prophylaxis of malaria. For semi-immune subjects, such as native labour forces and locally recruited Government employees, a weekly dose of 300 mg. is recommended. We do not regard the other two systems tested as offering a sufficient margin of safety.

Therapeutic Trials

Twenty-five patients were arranged in groups as shown in Table II. Each patient was infected by intravenous

TABLE II

Group	No. in Each Group	System of Treatment
I	5	Paludrine 300 mg. once daily for 14 days
II	5	Paludrine 300 mg. twice daily for 7 days
III	5	Paludrine 300 mg. twice daily for 10 days, plus quinine hydrochloride 10 gr. thrice daily on the first day of treatment only
IV	5	Paludrine 300 mg. twice daily for 10 days, plus mepacrine 300 mg. thrice daily on the first day only
V	5	Quinine hydrochloride 10 gr. twice daily for 10 days

inoculation of a suspension of the salivary glands of two specimens from the same heavily infected batch of mosquitoes. Treatment was started in all cases as soon as the temperature reached 100° F. (37.8° C.), provided that parasites had also been seen in the peripheral blood (thick smear).

The results are summarized in Table III. The most striking features brought out by these results are: (1) the

TABLE III

Group	Average Duration of Fever*	Average Duration of Parasitaemia* (Asexual)	Subsequent History
I (P only)	76 hours	3.2 days	All 5 cases relapsed within 3 weeks and were treated with 300 mg. paludrine twice daily for 10 days. A second relapse occurred in one case.
II (P only)	68 "	3.0 "	Four out of 5 cases relapsed within 3 weeks and were treated with 300 mg. paludrine twice daily for 10 days. A second relapse occurred in 2 cases.
III (P. plus Q)	78 "	2.0 "	No relapse (observed 3 months)
IV (P. plus M)	50 "	2.5 "	" " "
V (Q. only)	55 "	2.5 "	" " "

* After beginning of treatment.

P. = Paludrine, Q. = Quinine, M. = Mepacrine.

conspicuous failure of paludrine unaided to effect radical cure; (2) the absence of relapse following courses of paludrine reinforced with quinine or mepacrine on the first day of treatment, and of quinine alone; and (3) the rapid termination of the clinical attack effected by reinforcement of a paludrine course with mepacrine on the first day of treatment.

Effect of Paludrine on Gametocytes.—Gametocytes were observed, often in very large numbers, in the peripheral blood of eight of the nine patients who experienced relapses, for which they were treated with 300 mg. of

paludrine twice daily for ten days. Mosquitoes were allowed to feed repeatedly on the two patients who showed the greatest density of gametocytes over a period of 24 days, but none became infected. By this time the gametocytes had become too scanty for infection to occur even had no drug been given.

Discussion

The chief objectives in the treatment of *P. falciparum* infections are: (1) Termination of the clinical attack with the least possible delay. In countries where malignant tertian infections are prevalent this is an essential requirement, particularly when, as often happens, the patient has been ill for some days before the beginning of specific treatment. (2) Prevention of relapses, which may be little less dangerous to life than the primary attack. (3) Sterilization of gametocytes for as long a period as possible. (4) Low toxicity on the part of the drugs used for treatment and for prophylaxis.

The investigations here recorded have confirmed the findings of others working in different countries that the action of paludrine on the clinical attack in malarial infections is generally less rapid than that of mepacrine or quinine, and have shown that, though it acts as a true causal prophylactic of the Lagos strain of *P. falciparum*, it cannot be relied upon, unaided, to effect radical cure of infections with that strain. When administered in sufficient dosage however, it effectively sterilizes gametocytes for as long as these are present in the peripheral blood in numbers sufficient to infect mosquitoes, while its toxicity is of a lower grade than that of any other known antimalarial drug.

Mepacrine, when administered in the dosage now usually prescribed—i.e., starting with a "loading dose" of 600 to 900 mg. on the first day or first two days of treatment and continuing at 300 mg. daily for five to seven days—will effect a rapid termination of the clinical attack and a high rate of radical cure of *P. falciparum* infections. It does not, however, sterilize gametocytes, and its toxic effects though of rare occurrence, are by no means negligible. This applies particularly to the so-called mepacrine psychosis which may evoke symptoms of mental aberration or even of mania and excitement. The yellow coloration of the skin which sometimes follows a course of mepacrine is an additional disadvantage.

Quinine, when administered in a daily dose of 20 to 30 gr. (1.3 to 2 g.) over a period of seven to ten days, will like mepacrine, ensure in most cases a rapid termination of the clinical attack and a high radical cure rate. It has no effect on the infectivity of gametocytes. A greater disadvantage, however, is its long-recognized association with the precipitation of blackwater fever. Findlay and Stevenson (1944) have recorded a marked reduction in the incidence of this disease following the substitution of mepacrine for quinine in the treatment of *P. falciparum* infections among British troops stationed in West Africa.

We have shown that reinforcement of a course of paludrine 300 mg. twice daily with mepacrine 900 mg. given in three doses on the first day of treatment brings about rapid termination of the clinical attack and also results in a high rate of radical cure.* It does not seem likely that a single day's reinforcement with mepacrine will cause mental disturbances, which occur almost exclusively towards the end of a full mepacrine course or during the first week after this has been completed. Since paludrine in doses of 300 mg. twice daily for ten days

*It is possible that reinforcement with 600 mg. of mepacrine would prove sufficient for this purpose.

effectually sterilizes gametocytes, this course, reinforced with mepacrine in massive dosage on the first day of treatment, seems more likely to fulfil all the requirements listed above than any other form of treatment available. We would advise, however, that such a course be followed up by a maintenance dose of 100 mg. of paludrine daily for the ensuing six weeks, in order to cover the period during which *P. falciparum* relapses are most likely to occur. In endemic areas where strict paludrine prophylaxis is in force the patient would come under this régime automatically.

Summary

An account is given of a series of prophylactic and therapeutic trials with paludrine carried out at Horton Hospital, Epsom, against a strain of *P. falciparum* obtained from a native child resident in Lagos, Nigeria.

Paludrine was found to act as a true causal prophylactic of infections with this strain of parasite. The prophylactic dosage recommended for non-immune adults exposed to malarial infection in West Africa is 100 mg. daily.

Paludrine controlled the clinical attack caused by infections with this strain, but its action in this respect and in clearance of asexual parasites from the peripheral blood was somewhat less rapid than that of mepacrine or quinine.

Paludrine unaided failed to effect radical cure of infections with this strain, a finding in marked contrast with the results achieved by Fairley *et al.* (1946) in their researches on New Guinea strains of *P. falciparum*.

Radical cure of the Lagos strain of *P. falciparum* has apparently been effected with (a) 300 mg. of paludrine twice daily for 10 days, reinforced with 900 mg. of mepacrine given in three doses on the first day of treatment (6 cases); (b) 300 mg. of paludrine twice daily for 10 days, reinforced with 30 gr. (2 g.) of quinine hydrochloride given in three doses on the first day of treatment (5 cases); and (c) 10 gr. (650 mg.) of quinine hydrochloride twice daily for 10 days (5 cases).

Following a course of 300 mg. of paludrine twice daily for 10 days gametocytes were rendered non-infective to mosquitoes for as long as they continued to be present in the peripheral blood in sufficient numbers for infection to occur.

Reinforcement of a course of 300 mg. of paludrine twice daily for 10 days with 900 mg. of mepacrine administered in three doses on the first day of treatment shortened the average duration of pyrexia and clinical symptoms by approximately twenty-four hours.

It is considered that such a course, followed by a maintenance dose of 100 mg. of paludrine daily for the ensuing six weeks, would fulfil the main objectives in the treatment of *P. falciparum* malaria infections—namely, rapid termination of the clinical attack, a high radical cure rate, sterilization of gametocytes, and minimum risk of injurious side-effects.

REFERENCES

- Bettini, S. (1948). *Rivista di Parassit.*, 9, 107.
 Chaudhuri, R. N. (1948). *Ind. Med. Gazette*, 83, 225.
 Fairley, N. H., *et al.* (1946). *Trans. R. Soc. trop. Med. Hyg.*, 40, 105.
 Findlay, G. M., and Stevenson, A. C. (1944). *Ann. trop. Med. Parasit.*, 38, 168.
 Macgrath, B. G., *et al.* (1945). *Ibid.*, 39, 232.
 Riel, J. van (1948). *Ann. Soc. belge Méd. trop.*, 28, 85.
 Shute, P. G. (1937). *Ann. trop. Med. Parasit.*, 31, 85.

The Secretary of State for Scotland has appointed Mr. T. D. Haddow to be an Under Secretary in the Department of Health for Scotland. Mr. Haddow, who is 35 years of age, was educated at Watson's College and Edinburgh and Cambridge Universities. He had the distinction of taking first place in the 1935 competition for entry into the administrative grade of the Civil Service. He was appointed to the Department of Health for Scotland in October, 1935, as an Assistant Principal, promoted to the rank of Principal in 1940, and to Assistant Secretary in 1943. He was closely associated with the preparatory work in connexion with the National Health Service. Under the auspices of the Commonwealth Fund of New York, Mr. Haddow is at present in the U.S.A. studying the administration of public health in that country, and he will complete these studies before returning to take up his new appointment.

INTRAVENOUS "PALUDRINE" (PROGUANIL)

BY

R. N. CHAUDHURI, M.B.Cal., M.R.C.P.Ed.,
T.D.D.Wales

Professor of Tropical Medicine

AND

H. CHAKRAVARTI, M.B.Cal.

Assistant Research Officer

School of Tropical Medicine, Calcutta

In the spring of 1947 we received a supply of paludrine acetate (soluble proguanil) for intravenous use in the treatment of malaria. This preliminary report is a record of its employment in 11 patients admitted to the hospital attached to this institution, one of them being transferred from another hospital. All were Indians, nine males and two females, ranging in age from 9 to 60 years. The duration of illness was four days or less in nine cases and about a week in two, but in none had any antimalarial treatment been given before admission. *Plasmodium falciparum* infection was predominant, being present in 8 cases, while two had *P. vivax* and one had mixed infection. Four patients were gravely ill with pernicious symptoms, four had heavy parasitic infection with frequent vomiting, while three had what may be called ordinary malaria without any complication.

Paludrine acetate* was supplied in 5-ml. ampoules, each containing 100 mg. of the drug. As it was sent to us for experimental trial there were no instructions regarding dosage, and so we had to proceed cautiously, starting with 25 mg. and increasing to 400 mg. in a single injection. In four cases paludrine was given both orally and intravenously.

Case Reports

Case 1.—A boy aged 14, weight 70 lb. (31.75 kg.). was admitted on April 16, 1947, for remittent fever of four days' duration with severe headache. On admission his temperature was 100.2° F. (37.9° C.). Liver and spleen were not palpable: blood showed *P. falciparum* rings. On the following day, while the temperature was 105° F. (40.6° C.), 25 mg. of paludrine was given intravenously. The blood pressure was 102/45 mm. Hg before and 104/50 five minutes after the injection. On the second day of the injection the temperature was almost normal, but next day it shot up to 104.5° F. (40.25° C.), and remained at about this level for five days and thereafter was of intermittent type. The blood was negative on the third day and

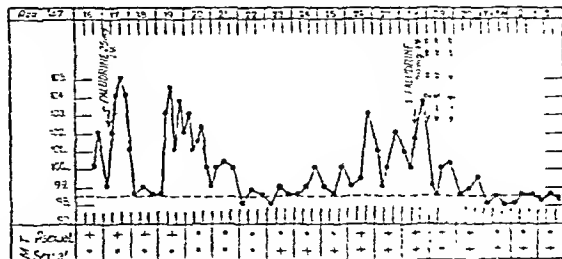


FIG. 1.—Temperature chart of Case 1

crescents appeared on the sixth day. On the ninth day, when the temperature was still high, *P. falciparum* rings reappeared in the blood and the spleen became palpable when 50 mg. of paludrine was given intravenously twice daily for two days. This controlled the fever in 60 hours and cleared the blood of asexual parasites in 48 hours (Fig. 1). The blood pressure

*Paludrine acetate has now been replaced by paludrine lactate, which is more soluble and less irritant. An ampoule of 2 ml. contains 100 mg. of the drug. We have used it intramuscularly with satisfactory results, which will be published later.

before and after the injections showed little or no variation. The patient was subsequently under observation for eight months, during which period he had no recurrence of fever.

Case 2.—A man aged 50, weight 90 lb. (40.8 kg.), was admitted on April 22, 1947, with a history of relapsing *P. vivax* malaria, the duration of the present attack of fever being two days. Blood showed *P. vivax* rings, schizonts, and gametocytes in large numbers. The temperature on admission at 10 a.m. was 99.4° F. (37.4° C.), but it shot up to 106° F. (41.1° C.) at 2 p.m., when 50 mg. of paludrine was given intravenously followed by one tablet (100 mg.) thrice daily for five days. The blood pressure was 170/85 mm. Hg before and 150/80 after the injection. The temperature was slightly raised on the following day and became normal on the day after, while the blood was clear of asexual parasites in 48 hours.

Case 3.—A man aged 34, weight 100 lb. (45.35 kg.), was admitted on May 2, 1947, with a history of fever on alternate days. The spleen was palpable and blood showed *P. vivax* parasites in large numbers. On the 6th he was given three injections of paludrine, 100 mg. each, at intervals of four hours, with a satisfactory clinical response, the temperature becoming normal in 24 hours and the blood parasite-free in 72 hours.

Case 4.—A man aged 60, weight 88 lb. (39.92 kg.), was admitted on July 23, 1947, as a case of enteric fever of about ten days' duration. He was looking toxic and dehydrated, and his general condition was low. As he was also semiconscious it was difficult to feed him. The spleen was palpable and the blood showed *P. falciparum* rings +++ and scanty crescents. Paludrine 100 mg. was given intravenously at 2, 6, and 10 p.m. and 2 a.m., and was well tolerated. The blood pressure before and after each injection was as follows:

	Before	After
1st injection	78/55 Hg	80/58 Hg
2nd	70/50 Hg	75/55 Hg
3rd	80/55 Hg	80/60 Hg
4th	80/55 Hg	80/58 Hg

The patient became fully conscious on the following day and took food much better. The temperature became normal after 32 hours and no asexual parasites were seen after 48 hours, while crescents persisted. There was slow but steady improvement in the general condition, but after about three weeks, while still in the hospital, he had a relapse, for which paludrine was given in doses of one tablet thrice daily for ten days with good response. He was followed up for the next six months, during which period he had no fever.

This was a serious case of *P. falciparum* malaria in an old man with symptoms simulating typhoid fever. Four intravenous injections of paludrine, 100 mg. each at intervals of four hours, had an immediate response.

Case 5.—A man aged 20, weight 90 lb. (40.8 kg.), was admitted to the Medical College Hospital under Dr. J. C. Bancrjee on Aug. 23, 1947. The history was that he had a sudden attack of fever on the 20th but carried on with his work until the 22nd. On the following day his fever was high, and he had seven or eight bilious vomits and five or six loose stools with mucus. His condition rapidly deteriorated; he became unconscious at 3 p.m. and was brought to the hospital at about midnight. Blood examination showed *P. vivax* rings. He was given an intravenous injection of paludrine, 100 mg., followed by two tablets of the drug by nasal tube thrice daily for five days. After two more paludrine injections on Aug. 27 and 28 the temperature became normal, but he still remained almost unconscious. On the 30th he was transferred to this hospital along with other patients to make room for casualties due to communal riots in the city. On examination the patient was in a lethargic state, being unable to hear, talk, eat, or even recognize his own mother. At times he was restless, but there was no rigidity or paralysis. Reflexes were normal, pupils equal and reacting, and fundus oculi healthy. The spleen was palpable and the blood pressure 85/55 mm. Hg. Stools passed involuntarily. Blood showed crescents daily from Sept. 5 to 17, and also scanty *P. falciparum* rings on the 8th and 9th, but with no rise of temperature. No antimalarial drug was given and he was fed by nasal tube. After ten days of vegetative existence he began to improve mentally and physically and gradually regained consciousness. He could then sit up and take his food himself and speak, though indistinctly, but developed volitional tremors. At this stage he was taken back

to the Medical College Hospital, where he made good progress except for an attack of *P. vivax* malaria. He visits us periodically, and up to now has been normal.

This patient was desperately ill with cerebral malaria and had apparently both *P. falciparum* and *P. vivax* infections, which responded well to paludrine given intravenously and by the nasal route; but symptoms suggestive of encephalitis developed and he remained in that stage for several weeks. These symptoms appeared to be a sequel of cerebral malaria and not due to large doses of paludrine. It is of interest, however, to note that, despite this dosage, the patient had an early *P. falciparum* relapse without fever and later *P. vivax* relapse with fever while in hospital.

Case 6.—A man aged 40, weight 120 lb. (50.43 kg.), was admitted on Sept. 30, 1947, with a history of high continuous fever for three days, with intense headache and frequent vomiting. His general condition was low, temperature 102.4° F. (39.1° C.), spleen just palpable, and tongue coated and dry. The blood showed *P. falciparum* rings +++. An intravenous injection of 200 mg. of paludrine was given immediately, followed by two more injections of 100 mg. each at intervals of four hours. The temperature became normal three days after the injections, although the blood was negative on the second day.

Case 7.—A man aged 30, weight 75 lb. (34 kg.), was admitted on Oct. 3, 1947, for remittent fever and repeated vomiting of about a week's duration. The spleen was palpable and the blood showed *P. falciparum* rings +++. Soon after admission he had a severe rigor, which was considerably relieved by an intravenous injection of 5 ml. of 10% calcium gluconate. As he was unable to retain anything by mouth he was given an intravenous injection of 300 mg. of paludrine. On the third day he became afebrile and the blood was free of rings.

Case 8.—A man aged 20 was admitted on Oct. 9, 1947, with fever and frequent vomiting that started the same morning. He had had *P. vivax* malaria three weeks previously and been treated with "chloroquin." The spleen was just palpable and blood showed *P. falciparum* rings +++. Next day, when the temperature was 105° F. (40.6° C.), he was given an injection of 400 mg. of paludrine, followed orally by 100 mg. thrice daily for three days. On the 13th he was afebrile and the asexual parasites had disappeared. No untoward effect was observed, and the blood pressure before and after the injection was 102/65 and 105/65 mm. Hg.

Case 9.—A woman aged 25, weight 87 lb. (39.46 kg.), was admitted in the evening of Oct. 9, 1947, with a history of high fever for four days and of unconsciousness the night before. On admission her temperature was 103° F. (39.4° C.). She was conscious but dazed, and complained of intense headache and frequent vomiting. The spleen was palpable and blood showed *P. falciparum* rings +++. Paludrine, 400 mg., was given intravenously on the following day. After about 6 ml. had been injected rather rapidly she complained of a hot sensation all over the body and began to sweat. This symptom passed off soon and the injection was completed. The blood pressure before and after the injection was 120/65 and 120/70 mm. Hg respectively. Subsequently she complained of pain along the course of the injected vein up to the axilla, and this persisted for about four days. The temperature became normal in 56 hours and the blood free of parasites in 28 hours.

This patient had vasomotor reactions after part of the injection given rapidly. Probably she also had some local phlebitis.

Case 10.—A boy aged 15, weight 82 lb. (37.19 kg.), was admitted on Oct. 9, 1947, for fever and excessive vomiting for two days. His condition on admission was low; he was very thirsty but was unable to retain anything. The pulse was fast and soft, urine scanty, and temperature 100.4° F. (38° C.). The spleen was palpable, and the blood showed *P. falciparum* rings +++. Paludrine, 400 mg., was given intravenously followed by one 100-mg. tablet thrice daily for four days. There was a striking improvement in the patient's condition; the temperature was normal and the blood became parasite-free after 36 hours.

Case 11.—A girl aged 9 was admitted on Oct. 31, 1947, with a history of high continuous fever for three days, starting with

chill and rigor and persistent vomiting. She had been delirious and restless on the previous night, and on admission was semi-conscious, with a temperature of 104° F. (40° C.), rising to 106° F. (41.1° C.) soon after. The pulse was feeble and very rapid, about 160 (?) a minute, while the respiration was hurried and laboured. A few scattered rales and rhonchi were heard in the lungs. The heart sounds were short and weak; blood pressure 120/60 mm. Hg. The blood showed *P. falciparum* rings. She was immediately given an injection of 100 mg. paludrine; five minutes after the injection the blood pressure was 122/60. Another injection was given after four hours, and the treatment also included sponging and the administration of oxygen, fluids, glucose, and nikethamide injections. The condition steadily deteriorated, and she died 16 hours after admission.

Discussion

Dosage.—Antimalarial drugs are given parenterally only when for any reason, such as loss of consciousness or persistent vomiting, the patient is unable to swallow or retain them, and as soon as these symptoms are controlled the drugs are continued orally. These indications were present in 8 out of 11 cases in this series. Paludrine injections were first tried in two uncomplicated cases of malaria. In one, that of a boy of 14 with *P. falciparum* infection, a dose of 25 mg. had no effect on the temperature, which continued unabated for several days, nor on the parasite, crescents appearing on the sixth day and *P. falciparum* rings reappearing on the ninth day. Both, however, were controlled with 200 mg. of paludrine (50 mg. given twice a day for two days) in about 48 hours after the injection. The other case was heavily infected with *P. vivax* malaria and was treated with 50 mg. intravenously, followed by oral paludrine, one 100-mg. tablet thrice daily for five days. This brought the temperature to normal and cleared the blood of parasites within 48 hours of the injection.

As there were no untoward effects from these injections it was decided to increase the dose in the cases that came afterwards. Most of them happened to be *P. falciparum* infections complicated by cerebral or gastro-intestinal symptoms. At first the dose was 100 to 200 mg. repeated two to three times a day at four-hourly intervals; later it was one of 300 mg. and ultimately 400 mg. These patients therefore received by injection, either in a single dose or in repeated doses, 300 to 600 mg. of paludrine. To be on the safe side, these injections were accompanied in four cases by paludrine orally.

Effect on Temperature and Parasites.—The immediate effect of the increased dosage in 7 out of 9 patients was striking. In Cases 3, 4, 6, 7, and 9, which had injections only, the blood became clear of parasites in 24 to 48 hours and the temperature became normal in 32 to 72 hours; there was also improvement in their general condition. This was especially noticeable in Case 4, that of a man of 60, who was semiconscious and in a toxic state on admission. After receiving 400 mg. in twelve hours he soon became fully conscious and began to take his food much better. Cases 8 and 10, which had oral paludrine in addition to injections, showed equally good response even before the drug by mouth could have exerted its full effect.

Paludrine had no such effect in the remaining two cases. One of them (Case 5) had typical cerebral malaria, and, though the mixed *P. falciparum* and *P. vivax* infection was controlled by giving the drug intravenously as well as by the nasal route, he remained unconscious for some time and developed signs indicative of encephalitis; but eventually he recovered fully in spite of subsequent relapses. The other case (No. 11) was that of a girl of 9 with hyperpyrexia and delirium from *P. falciparum* infection who was admitted in a state of failing circulation. Paludrine by injection (two doses of 100 mg.) with stimulants, had no

effect whatsoever, and she died within 16 hours of admission. The patient was brought in in a moribund state, and it is difficult to judge the effect of the drug in such a case.

Other Effects.—Practically all the patients were weak and undernourished before the present attack of malaria. Only one of them weighed above 100 lb. (45.35 kg.). One was below 10 years of age and two were 50 years or over. The blood pressure was low in two cases—viz., 78/55 and 85/55 mm. Hg. Yet paludrine had no adverse effect, and the blood pressure remained remarkably constant even after three or four injections given at four-hourly intervals. One patient (Case 9) complained, while the injection was being given, of a hot sensation all over the body and began to sweat; these symptoms soon passed off, and the blood pressure remained unaffected. Subsequently she complained of pain along the course of the injected vein up to the axilla, which lasted for four days. Later we encountered another patient, not included in this series, who also complained of similar pain, which persisted for five or six days after the injection of 100 mg. The pain was mild but uncomfortable, and was possibly due to some local phlebitis.

Summary

Paludrine acetate (soluble proguanil) was tried intravenously as an experimental measure in a series of 11 cases of malaria, all of which except two had *P. falciparum* infection. The majority of the patients had either cerebral or gastro-intestinal complications and were not suitable for oral medication. Four of them were gravely ill.

Doses varied from 25 to 400 mg., and were repeated in a few cases. The total amount of paludrine injected ranged from 200 to 600 mg. per case.

This series was too small for determination of the optimum dose, but in the majority of cases a dosage of 200 to 400 mg. controlled the temperature and cleared the peripheral blood of asexual parasites in two to three days.

One patient admitted in a moribund state died. Another patient, with typical cerebral malaria, remained unconscious for several days and later developed signs and symptoms of encephalitis, from which, however, he recovered completely.

The injections were well tolerated, but one patient (and another not included in this series) had some phlebitis of the injected vein, which subsided in a few days.

Our thanks are due to Messrs. Imperial Chemical Industries (India), Ltd., for the supply of paludrine acetate; to Dr. J. C. Banerjee, of the Calcutta Medical College, for information about Case 5; and to the Indian Research Fund Association for a grant to carry out clinical trials with recent antimalarials.

In the annual report of the Central Midwives Board for the year 1947-8 reference is made to the changes and improvements which have been brought about in recent years in the midwifery services of the country. Revision of the rules has been considered, and the Board has come to the conclusion that while some of the rules are still necessary they should be phrased in such a way that "they indicate a general standard of professional work which it is desirable to maintain rather than set out in precise detail the methods by which such a standard should be attained." During the year the Board decided to incorporate training in analgesia in the ordinary syllabus of training for a pupil midwife. Up to March 1, 1948, some 11,759 midwives possessed either the Board's certificate of proficiency or a certificate issued by a training institution. The Royal College of Obstetrics and Gynaecology was asked by the Board to report on the suitability of trichlorethylene as an analgesic for use by midwives, but the Council of the Royal College was unable to recommend that this substance should be used by midwives without supervision. The number of midwives who were practising in 1947 was 17,400. This maintains the steady increase recorded since 1942, when the figure was 15,615. The number of pupil midwives who were successful at the first examination was a record—3,832 compared with 3,486 in 1946. Wastage during training averaged 10.4% of the registrations. It is interesting that for the first time since 1902 there was no longer any midwife practising out of the 12,500 untrained women who were admitted to the Roll by virtue of having been in *bona fide* practice as midwives for a year or more before the passing of the Midwives Act, 1902.

PLASMA-CELL MASTITIS

REPORT OF A CASE WITH BILATERAL INVOLVEMENT

BY

MAX CUTLER, M.D.

(From the Chicago Tumor Institute)

Since plasma-cell mastitis was first described (Cheate and Cutler, 1931) this peculiar inflammatory condition of the breast has become a subject of increasing interest. The fact that fewer than fifty cases are recorded in the literature under this title attests to the rarity of the disease. Its importance lies in its marked similarity to cancer. In fact, until recently radical mastectomy was almost invariably performed without biopsy because the clinical picture seemed so classical.

The purpose of this communication is to review the literature and report a case with bilateral involvement, an aspect which so far as I am aware has not been previously recorded.

Case Report

A married woman* aged 37, with two children, aged 5 and 7, was first seen on Oct. 28, 1932. Two weeks previously she felt a sudden pain in the right nipple accompanied by swelling and tenderness of the right breast. Three days later the swelling, pain, and tenderness diminished and the patient felt a mass in the centre of the breast.

Examination disclosed the breast to be considerably larger than the left, and the surface temperature was raised. In the centre was a firm solid movable mass about 8 cm. in diameter attached to the overlying skin. Several enlarged movable lymph nodes were present in the right axilla. The left breast seemed normal. A diagnosis of diffuse duct carcinoma was made and, because of the possibility of inflammatory carcinoma, pre-operative irradiation was given as follows: right breast, 16,000 mg.-hours with 4 g. of radium, filtration 1 mm. platinum, distance 6 cm. through a round portal 10 cm. in diameter—4,000 mg.-hours for four days. Right axilla, 12,000 mg.-hours with 4 g. of radium, filtration 1 mm. platinum, distance 10 cm. through a round portal 10 cm. in diameter—4,000 mg.-hours daily for three days. The last radiation treatment was given on Nov. 2, 1932. Several days after completion of treatment the tumour began to regress rapidly. The patient was scheduled for radical mastectomy on Nov. 8, 1932.

In consultation with Dr. Richter just before the operation I suggested that the clinical picture, especially the rapid regression under irradiation, raised doubts about the diagnosis, and it was decided to perform a biopsy. The residual mass was excised and showed no evidence of carcinoma. The gross character of the lesion was most unusual. There were several small soft semi-fluid yellowish foci having a xanthomatous appearance, and numerous dilated ducts which exuded a brownish creamy material. Microscopically, foci of lymphocytes and solid masses of plasma cells with occasional foreign-body giant cells were seen, but no signs of carcinoma. Simple mastectomy was performed with the same gross and microscopical findings.

On July 6, 1939, six years and eight months after removal of the right breast, the patient complained of pain, tenderness, and nodularity in the left breast which recurred periodically at monthly intervals. These episodes corresponded to the menstrual cycle, although menstruation had ceased some years before in connexion with a hysterectomy. The ovaries were not removed. Examination disclosed that the left breast was enlarged, tender, and the seat of diffuse nodularity. In July, 1946, Dr. Richter performed a local excision. The gross and microscopical features of the specimen were those of plasma-cell mastitis.

Comment

This case presents several interesting and unusual features—the involvement of the second breast almost seven years

after the first, the cyclic periodic increase and recession of symptoms, and the marked radiosensitivity of the lesion. The clinical and pathological picture which created a problem in diagnosis and treatment is best presented by the following notes I made on the morning of Nov. 8, 1932, the day of the first operation.

"Just before operation, in conversation with Dr. Richter, it was my opinion that there was some doubt about the presence of cancer, and I recommended local excision of the residual mass and frozen section. This was done. The gross character of the lesion was most peculiar, there being several areas of soft semi-fluid xanthomatous foci, also numerous dilated ducts exuding a brownish creamy material. There were no definite chalky streaks as one finds in carcinoma. Frozen sections failed to show definite evidence of carcinoma. Microscopical examination shows numerous foci of plasma cells and lymphocytes with occasional giant cells. It is my opinion that we are dealing with plasma-cell mastitis. It is interesting to note, on reviewing the history, that the condition started with acute symptoms consisting of sharp pain at night and that upon examination there was elevation of surface temperature over the breast. It is also important that the whole duration of this lesion was only two weeks. Furthermore, the very marked and rapid diminution in size of the mass following irradiation is more in favour of an inflammatory process. All the evidence favours a benign lesion."

Historical

In 1925 Ewing began to call attention to an unusual lesion of the breast which presented the gross and microscopical features of a curious inflammatory process. Almost without exception a radical operation had been performed under a clinical diagnosis of cancer. Because of the presence of solid masses of plasma cells beyond those seen in the usual inflammatory lesions, Ewing suggested the name "plasma-cell mastitis." I was associated with Ewing in the laboratory of the Memorial Hospital at the time and undertook to study the clinical picture associated with this condition; I found in the records of the Memorial Hospital only ten cases. The clinical features associated with this pathological state were so striking as to make it obvious that we were dealing with a more or less specific clinical and pathological entity. The results of this study were published by Cheate and Cutler in 1931.

In 1933 Adair published a detailed study of the same cases and reached essentially similar conclusions. Adair suggested that the lesion may be precancerous and advised local excision as the best treatment. In the same year I reported the case of a woman aged 50 with the classical clinical signs of the disease (Cutler, 1933). Eight weeks after the onset a residual tumour mass was excised which showed the typical gross and microscopical features of plasma-cell mastitis. In 1939 Rodman and Ingleby reported a case which showed marked shock and toxæmia after radical breast amputation under an erroneous diagnosis of cancer. They consider that the presence of colostrum-like cells and fatty acid crystals suggests that the disease may be due to the action of enzymes causing a splitting of milk-like substances secreted under certain conditions in breasts of non-pregnant women. These studies, they think, point to the possibility that the products of milk disintegration may constitute the causative agent.

Cromar and Dockerty (1941) reported twenty-four cases seen over a period of thirty years in the Mayo Clinic. A clinical diagnosis of cancer had been made in seventeen of the cases. The low incidence of the disease was emphasized by these authors and by Harrington (twenty-four cases of plasma-cell mastitis among 12,000 breast cases). In 1943 Payne, Strauss, and Glasser reported two cases under the title of "mastitis obliterans" and presented their reasons for preferring this term to that of plasma-cell mastitis. The same year Lübschitz (1943) reported the case

*This patient was referred to me for consultation by Dr. H. M. Richter, through whose courtesy her case is reported.

of a patient who died in shock twenty-four hours after radical mastectomy. A biopsy had been erroneously interpreted as cancer, hence the radical operation. In 1944 Parsons, Henthorne, and Clark found five cases of plasma-cell mastitis among 1,500 breast specimens. Two of the cases are reported with clinical data. Gaston (1947) added three new cases. One patient had a bloody discharge from the nipple and in another there was a coexistent comedo-carcinoma with metastasis to axillary lymph nodes. Gaston suggests that while plasma-cell mastitis is usually benign the disease has malignant potentialities and can develop into either a comedo-carcinoma or a malignant plasmocytoma.

Related Conditions

In 1931 I searched the literature for references to acute and subacute inflammation of the non-lactating breast with the view of finding examples of plasma-cell mastitis reported under other titles. I found the case presented by Courtin (1900) before the Bordeaux Medical and Surgical Society in 1899. The patient was 50 years of age and the menopause had occurred four years previously. The tumour had been present for three months and showed most of the classical features of cancer. It was firm and fixed to the skin. The nipple was retracted and the axillary lymph nodes were enlarged. The tumour was, however, exquisitely tender, and the skin was reddened and warm. The treatment consisted of local hot applications. After four weeks the tumour had disappeared and there was no evidence of disease. In the discussion Coquet referred to a similar case which he had observed.

In 1932 Cohn and Bloodgood reported a series of cases of non-suppurative chronic lactation mastitis, some of recent origin, others occurring months or years after pregnancy. Microscopical study of the sections revealed signs of residual lactation in all the cases.

In 1909 Ingier described a low-grade inflammatory lesion of the breast under the term "mastitis obliterans." From a review of the case, however, it is clear that, although the microscopical features have some resemblance to plasma-cell mastitis, the clinical picture is totally different. Thus the patient developed an abscess in a lactating breast unlike plasma-cell mastitis. This clinical picture generally does not simulate mammary cancer.

In the case reported by Hoerz (1910) as mastitis obliterans a tumour mass developed following trauma. This too is not the clinical picture of plasma-cell mastitis, but rather of traumatic fat necrosis. In 1933 Schultz reviewed the earlier German cases and added a case of his own under the term "mastitis obliterans."

From an analysis of the published data it seems clear that some of the cases published as "mastitis obliterans," such as those of Ingier and of Hoerz, have no real similarity to plasma-cell mastitis, at least clinically, whereas others, such as those reported by Payne, Strauss, and Glasser, represent the same condition that we call plasma-cell mastitis.

The case published by C. W. Cutler (1934) is disquieting. His patient was a woman aged 49. Local excision was performed for a tumour of the left breast, and a microscopical diagnosis of plasma-cell mastitis was made. Nine months later a growth with a similar microscopical structure appeared in the right vocal cord, and subsequently similar lesions appeared in the sterno-clavicular joint, upper portion of left breast, and right antrum. The question arises whether this is a true example of plasma-cell mastitis or one of plasmocytoma. The question must be left open for the present, but the weight of evidence favours the latter diagnosis.

Certain conditions which have some similarity to plasma-cell mastitis and from which it must be distinguished are: lactation mastitis with or without abscess formation, traumatic fat necrosis, and plasmocytoma. Diffuse duct carcinoma, especially when associated with inflammatory signs, has already been noted.

Distinguishing Features

Clinical Features.—A breast which is not the seat of lactation may become acutely inflamed. The onset is sudden, with pain, tenderness, and redness of the skin. At first the whole breast is swollen and the axillary nodes are enlarged and tender. Usually there is some rise in temperature and sometimes there are chills. A creamy discharge from the nipple is not uncommon. The acute symptoms soon begin to subside, and as time progresses the process enters the second or subacute stage. In this interval the pain and tenderness diminish and the swelling of the breast decreases, leaving a diffuse nodularity. After a relatively short period the subacute signs disappear and the disease enters a chronic stage, which is generally prolonged. When all the acute and subacute signs of inflammation have disappeared there remains a discrete, hard, solid residual mass with attachment to the overlying skin and often retraction of the nipple. The axillary nodes are usually enlarged and firm. It is during the latter part of the subacute stage and more particularly during the third or chronic stage that the breast presents the classical clinical picture of mammary cancer, rendering a diagnosis of cancer almost imperative, and it is only by eliciting from the patient the details of the initial inflammatory phases of the disease that an error in diagnosis is avoided and the patient saved from a radical mastectomy.

Gross Features.—On cross-section one sees numerous dilated ducts and minute cysts which under pressure exude a thick creamy puriform material. The fat, fibrous tissue, and epithelial elements show a peculiar induration. The tissue has an unusual pinkish inflammatory appearance. There are radiating strands of dense translucent fibrous connective tissue. In some portions there may be soft semi-necrotic greyish areas and xanthomatoid foci, 1 to 3 mm. in diameter, often projecting from the cut surface. The induration and resistance of the tissues simulate carcinoma, but even in the most dense portions one fails to find the classical cicatricial tissues or chalky points that are characteristic of carcinoma. Furthermore, the process is diffuse and does not form a definable tumour that can be limited from the remainder of the breast.

Microscopical Features.—The affected portions of the breast exhibit an active acute and subacute exudative inflammation with numerous leucocytes, lymphocytes, and plasma cells. The process is diffuse and involves both the glandular and the interstitial tissues. The exudate is especially prominent around the ducts and acini, where the cellular reaction may consist almost exclusively of plasma cells. Foreign-body giant cells are often encountered in the centre of these foci. In some instances they are numerous and in others they are few or altogether absent. The dilated ducts are filled with and distended by desquamated epithelial debris. The epithelial cells undergo an intense hyperplasia, which may be so pronounced as to give rise to a suspicion of carcinoma. In the frozen section such areas can be very confusing and may lead to a diagnosis of carcinoma.

Diagnosis

The diagnosis is comparatively simple if the patient is examined during the first or acute stage. In the later stages, when the inflammatory signs have subsided, diagnosis is more difficult and errors are common. The most important

aid in differentiating this disease from cancer is to recognize the acute onset and subsequent clinical course. In plasma-cell mastitis the initial picture is that of an acute or subacute inflammation which appears suddenly and subsides rapidly. The process regresses steadily, whereas in carcinoma the process is reversed. The disease begins locally and extends progressively. A single examination is generally inadequate, for only by several examinations can one determine whether the disease is progressing or regressing. This is the most important single factor in the differential diagnosis.

Plasma-cell mastitis has to be distinguished from (a) inflammatory carcinoma, (b) diffuse duct carcinoma, and (c) traumatic mastitis. The initial stages of plasma-cell mastitis resemble inflammatory carcinoma; in the latter state, however, the carcinomatous invasion of the subdermal lymphatics gives rise to an irregular ridge-like thickening of the skin which is not present in plasma-cell mastitis. Diffuse duct carcinoma complicated by inflammation may simulate plasma-cell mastitis, but the disease process is diametrically opposite in the two conditions, one being steadily regressive, the other steadily progressive. Traumatic mastitis is differentiated by the history of trauma and the classical transillumination findings.

There are two pitfalls in the microscopical interpretation, and both apply specially to the examination of frozen sections, in which the fixation is generally inadequate. The intense epithelial hyperplasia often appears to have invaded structures outside normal boundaries. Paraffin sections of the same areas show that the masses of cells are actually confined within normal boundaries of ducts and acini, yet the picture can be so confusing that errors are sometimes made by the most expert. Another source of confusion is that the plasma cells may be so large and oedematous that in frozen sections they resemble anaplastic malignant epithelial cells.

Prognosis and Treatment

This curious unexplained inflammatory process tends to spontaneous regression and resolution, although a remnant often remains for long time. The possibility that the disease may be precancerous has to be considered, but the clinical evidence is rather against this theory. I have observed one example which was suggestive of a relationship between plasma-cell mastitis and cancer. Adair points out that the time factor has to be considered, and it may well be that further observations will tend to establish a closer relationship between the two states.

The differential diagnosis between the early stages of plasma-cell mastitis and diffuse duct carcinoma with or without inflammatory signs is sometimes difficult. In order to avoid undue delay in establishing the diagnosis, it seems best to perform biopsy early. In former publications I was rather against biopsy during the early acute stage of the disease, but subsequent experience leads to the opinion that, generally speaking, less harm is done by a carefully performed but adequate biopsy than might be done by delaying a diagnosis of cancer. If the inflammatory process is definitely subsiding there would seem to be an advantage in postponing biopsy for a short period.

The safest treatment during the chronic stage, when the lesion is localized, is to remove the diseased area surgically. If most or all of the breast is involved and the inflammatory signs have disappeared simple mastectomy is indicated. During the acute and early subacute stages, the diagnosis having been established microscopically, irradiation should be given, with the reasonable expectation that the lesion will regress and become more localized. Surgical removal of the remnant can then be performed. The possibility that irradiation alone will suffice has to be considered, but until

more cases have been studied over long periods surgical removal, alone or combined with irradiation, constitutes the safest course to pursue.

Summary and Conclusions

Plasma-cell mastitis is a clinical pathological entity. It is a peculiar inflammatory condition of uncertain aetiology. Its practical importance lies in the fact that it simulates cancer so closely that in the past it has almost always been treated by radical mastectomy. Since the onset and the course of the disease are highly characteristic and unlike those of cancer, a distinction is generally not difficult if one keeps the possibility of this condition in mind and if one elicits a careful history in every case of suspected mammary cancer. As regards treatment, the safest course to pursue after establishing the diagnosis by adequate biopsy is surgical excision during the later stages, when the lesion is localized, and irradiation during the acute or subacute stages followed by conservative surgical excision of the remnant.

A case of plasma-cell mastitis with bilateral involvement is reported in which irradiation demonstrated the lesion to be highly radiosensitive. So far as I know, no example of bilateral involvement has hitherto been recorded under this title.

REFERENCES

- Adair, Frank E. (1933). *Arch. Surg.*, **26**, 735.
 Cheatle, G. L., and Cutler, M. (1931). *Tumors of the Breast*, p. 298, Arnold, London.
 Cohn, L. C., and Bloodgood, J. C. (1932). *Amer. J. Cancer*, **16**, 487.
 Courtin (1900). *Bull. Mém. Soc. méd. chir. Bordeaux*, p. 292.
 Cromar, C. D. L., and Doekerty, M. B. (1941). *Proc. Mayo Clin.*, **16**, 775.
 Cutler, C. W. (1934). *Ann. Surg.*, **100**, 392.
 Cutler, M. (1933). *J. Amer. med. Ass.*, **101**, 1217.
 Gaston, E. A. (1947). *Surgery*, **21**, 208.
 Hoerz (1910). *Beitr. klin. Chir.*, **70**, 682.
 Ingier, Alexandra (1909). *Virehows Arch.*, **198**, 338.
 Lubschitz, K. (1943). *Acta radiol., Stockh.*, **24**, 403.
 Parsons, W. H., Henthorne, J. C., and Clark, R. L., jun. (1944). *Arch. Surg.*, **49**, 86.
 Payne, R. L., Strauss, A. F., and Glasser, R. D. (1943). *Surgery*, **14**, 719.
 Rodman, J. S., and Ingleby, H. (1939). *Ann. Surg.*, **109**, 921.
 Schultz, A. (1933). *Handbuch der Speziellen Pathologie*, VII, 2 145. Julius Springer, Berlin.

TWO COMMON NON-MALIGNANT CONDITIONS OF THE BREAST

THE CLINICAL FEATURES OF CYSTIC DISEASE AND THE PAIN SYNDROME

BY

DAVID H. PATEY, M.S., F.R.C.S.

Surgeon, Middlesex Hospital

The clinician tends to divide pathological conditions of the breast into two big groups: a group composed of well-defined pathological entities such as abscess, fibro-adenoma or carcinoma; and a vague, ill-defined group with varying and indefinite symptoms and signs which he tends to lump loosely together under some such title as chronic mastitis. Owing to confusion which sometimes exists about this latter group I have thought it worth while to describe the two common non-malignant conditions of the breast as I see them clinically. I have also reviewed the literature in broad perspective to show how some of the ideas on this group of disorders have arisen. I would like to support the plea of Cheatle for the abolition of the term "chronic mastitis," which has lost almost all precision and value; its sole remaining virtue is that no one can agree on a term to replace it. Deaver and McFarland in 1918 were able to collect no fewer than 23 different terms, and many more have been added since. Rather than attempt to burden the literature with still further terminologies I have thought it

best to rely on a purely factual descriptive term for each of the two main varieties of disorder met with.

There are two common non-malignant conditions of the breast met with clinically. The first is a condition with objective clinical signs—*cystic disease of the breast*; the second is a subjective disorder, the one symptom common to all cases being pain, and therefore it is best labelled the *pain syndrome*.

Cystic Disease of the Breast

Cystic disease of the breast is most commonly met with clinically between the ages of 40 and 50; it may be seen in the late thirties or early fifties, but it is rare for it to develop much earlier or much later. Far and away the commonest clinical picture is that of the *apparently solitary cyst*. A woman without any pain or other premonitory symptoms suddenly happens to feel a lump in her breast. In some cases the patient feels convinced that the lump was not there a short time before, and that it came up suddenly.

On examination the breasts appear normal in all respects on inspection and palpation except for the presence of the lump—hard, smooth, rounded, and with a characteristic dome-shaped top—of a size usually between $\frac{1}{2}$ in. (1.9 cm.) and 2 in. (5 cm.). Elasticity and fluctuation are exceptional. There may be a faint suggestion of lobulation in the form of a slight groove, but not nearly of the degree met with in a fibro-adenoma. There is no skin dimpling, nor are there other infiltrative signs. The diagnosis is established by aspiration, when anything from 2 ml. to 20 ml. of watery fluid, greyish green by reflected light and reddish brown by transmitted light, is obtained. Following aspiration the lump completely disappears and the breast returns to normal, although in the case of large cysts for a day or two a hollow may be felt in the position of the cysts with condensation of the tissues around. The periods are usually regular and normal, there is nothing in the immediate clinical history to indicate the cause of the development of the cyst, and usually there is nothing of note in previous history or the family history. But it has been known since the days of Réclus and Schimmelbusch that the apparently solitary cyst is an expression of a diffuse condition of both breasts, and it is not surprising, therefore, that further cysts sometimes develop, either in the same or in the opposite breast, which lend themselves to aspiration in the same way as the original cyst.

A woman may not come for medical advice until she has in one or both breasts a number of large cysts similar to the usual solitary type—*multiple cysts*. She may come with clinically diagnosable *diffuse cystic disease* of both breasts—a comparatively rare form. The whole of each breast feels shotty and not unlike the normal physiological type of shotty breast, but differing in that the shotty nodules are larger and coarser, varying in size, and in some cases large enough to allow of the insertion of a small needle and the aspiration of fluid, thus confirming the cystic nature. And finally, forming the most difficult diagnostic problem of all, there is the condition of *small aggregated cysts*. This may occur in breasts that are otherwise normal clinically or in breasts affected with clinically diagnosable diffuse cystic disease. A lump an inch (2.5 cm.) or so in diameter is felt which is hard and irregular, just like a carcinoma but without skin dimpling or other infiltrative signs. The lump is formed by the aggregation of a number of small cysts, each of which may be so tiny that nothing may be obtained on aspiration, thus suggesting that it is a solid mass. The establishment of the diagnosis of this type is usually possible only after exploration and naked eye and microscopical examination.

The Pain Syndrome

The second common clinical group of non-malignant disorders of the breast is the subjective disorder which, as stated above, I think best called the pain syndrome, affecting women from the twenties onwards. There are no objective findings. The pain may be an exaggeration of the normal premenstrual feeling of engorgement and sensitiveness of the breasts, or may be present between the periods as well. In other cases it may bear no relation to menstruation. The pain may affect both breasts diffusely, one breast, or a part of one breast. Any form of breast may be affected. In many of these cases there is the phenomenon of the pseudo-lump—i.e., the suggestion of a lump which can be felt with one method of palpation but not with another. Sometimes it is the feeling of this pseudo-lump by the patient that leads to her seeking medical advice. One other and common feature of cases of this type is the fear of cancer, experienced before and sometimes after complaint of pain. This fear may have to be elicited by direct questioning.

Both cystic disease and the pain syndrome are the commonest non-malignant conditions of the breast, the pain syndrome being slightly commoner than cystic disease, and the two together about equal in frequency to malignant disease.

Historical Review

In most reviews of the literature priority is given to Astley Cooper (1829) for the first important description of cystic disease of the breast. Credit for the first coherent account of cystic disease is usually given to Brodie (1846), but my own impression of Brodie's writing is that he did not clearly distinguish between cystic disease and what we now know as Brodie's tumour (cystic or giant fibro-adenoma). A few years later Birkett (1850) and Velpeau (1856) published monographs on diseases of the breast in which both cystic disease and the pain syndrome are clearly recognized and their main clinical features described. James Paget (1870) was interested mainly in the morbid anatomy of the cysts, which he regarded as obstructive in origin and due to periductal fibrosis, comparing cystic breasts to granular kidneys. This almost certainly wrong view of the origin of cystic disease for long persisted in the literature in spite of the work of Réclus and Schimmelbusch, which showed that cysts were secondary to epithelial changes in the ducts of the breast, and has finally disappeared only with the experimental production of cystic disease by hormones. Bryant (1887) also separated the pain syndrome and cystic disease as distinct entities.

By the latter half of the last century surgeon pathologists had recognized and defined the clinical features of both cystic disease of the breast and the pain syndrome. But the position soon became more complicated with the development of the morbid histological era in the study of breast pathology, especially by Réclus and Schimmelbusch. Réclus wrote a number of papers between 1883 and 1893 on what he called cystic disease of the breast. His main contribution was to call attention to its diffuse and usually bilateral character, and to give a clear picture of its morbid anatomy and histology. To begin with, Réclus regarded the condition as precarcinomatous, and treatment by mastectomy or even bilateral mastectomy as obligatory, but as the result of clinical experience he ended by coming to the opposite view. Schimmelbusch (1892) clearly established the histological features of the disease. He showed that the formation of the cysts was determined by the proliferation of the glandular tissue of the mamma, and as a result suggested the term of "cyst adenoma." And he concluded that if there was any risk of carcinoma

developing it was too small to justify such a drastic procedure as bilateral mastectomy, which was the rational one if prophylactic surgery were to be adopted. König (1893) appears to have been the first to emphasize the commonness of the disease.

By drawing attention to the epithelial changes in cystic disease Réclus and Schimmelbusch unwittingly supported the view which already existed, that the disease was precarcinomatous and dangerous; as a result the advocacy and practice of mastectomy increased. Most authors, however, did not carry their logic so far as to advocate bilateral mastectomy. From their time, too, the practice of grouping together cystic disease and the pain syndrome as different phases of the same condition became more general. The classic monograph of Cheate and Cutler (1931), with its detailed study of the histological changes of cystic disease, was careful to point out once again that the pain syndrome which they called mazoplasia was a separate condition and not precarcinomatous. (Cheate and Cutler's work was also noteworthy for pointing out authoritatively that nodularity of the breasts is not necessarily pathological; it occurs regularly under physiological conditions such as menstruation and may result from change in the supporting fat of the breast.) Among the latest writers who under the influence of histological appearances regard cystic disease of the breast as precarcinomatous is Willis (1948). But the clinical evidence to the contrary has always been very strong. I previously reviewed this question in 1939, and would refer readers to this review and to Geschickter's (1943) monograph for further references. But to take the most important observations, Bloodgood (1931), who throughout the early part of the century wrote many papers on the subject, reported a follow-up for periods of up to 30 years of more than 100 patients from whom blue-domed cysts had been removed, and found none had developed cancer. Campbell (1934) refers to 233 cases of "chronic mastitis" treated by local excision of areas of breast tissue and followed up for from 2 to 14 years. In one patient only did carcinoma of the breast develop. Geschickter found no cases of carcinoma in 231 cases of the pain syndrome followed up for many years, and only four cases of carcinoma in 378 cases of cystic disease. It is not surprising, therefore, that for many years now clinicians have tended to conservatism in the treatment of both cystic disease and the pain syndrome, and that mastectomy is rarely performed for these conditions, and still more rarely the only logical prophylactic procedure—bilateral mastectomy.

From 1930 onwards many investigators have shown that a cystic disease may be produced in the breasts of animals, chiefly mice and rats, by large doses of oestrogenic substances and that under certain conditions carcinoma of the breast may supervene (see review; Patey, 1939). Geschickter (1943) has more recently summarized his own extensive personal experimental work as well as reviewing the literature. But the application of this experimental work to human cystic disease is not clear in the field of aetiology or of treatment. Thus Bueher and Geschickter (1941) say, "It is not possible to state with assurance the endocrine disturbance in cystic disease,"—i.e., human cystic disease. And Taylor (1942) notes, "In spite of much discussion of chronic mastitis as an endocrine disease, no one has yet succeeded in proving that this breast condition represents a specific response to any recognized type of glandular dysfunction." And it is a matter of common observation that neither in cystic disease nor in the pain syndrome is there any undue frequency of menstrual disturbance. While Spence (1940) thought that testosterone injections and inunctions helped the symptoms of the pain

syndrome, he had improvement in some cases from the inunction of bland ointments; and Atkins (1940) and Taylor (1942) are among those who have found hormonal treatment of this group of disorders of little practical value.

Discussion

Three important questions arise: Are the conditions both manifestations of the same disorder, or are they two separate disorders? What is their cause, or causes? What relation, if any, have they to carcinoma?

As to the first question, there is such a striking clinical difference between the patient with a cyst and the patient with the pain syndrome whose breasts show no clear objective features to distinguish them from any normal woman's that the clinician can only answer that they are separate conditions.

Under the second question, therefore, we have to consider two questions—What is the cause of cystic disease? and What is the cause of the pain syndrome? The fact that cystic disease predominantly affects women of between 40 and 50 suggested to clinicians long ago that it was related to the hormonal changes occurring at that time, and Deaver and McFarland had suggested that they should be termed "involution cysts." But hormonal disorder is still a hypothesis although supported to some extent by experimental work. The pain syndrome, being a subjective disorder, is most likely to have a subjective cause, and here at once the most striking feature is fear of cancer. In many cases the fear of cancer is clearly the origin of the whole trouble. In other cases, but less frequently, the fixation on the breast is determined by an injury or some previous disease of the breast. But in a small proportion of cases the origin may be psychosexual. Quite accidentally in one of my cases a patient raised the question whether it might be due to a sexual maladjustment with her husband. And since then I have come across a number of similar cases—e.g., the young married woman who wants children while her husband does not; the woman married to a husband much less passionate than herself; and cases with difficulties in the sexual act. I have never regarded it as within the province of the surgeon to make routine inquiries into the sexual life of patients who come with breast troubles. And in those cases of the pain syndrome which I cannot explain on the usual fear-of-cancer basis I tell the patient that some cases of pain in the breast are due to sexual maladjustment or anxieties. Some patients will then wish to discuss further possible factors on these lines; others will not. In any case the bringing of this explanation into the open will often have a beneficial effect. Any deeper exploration of the psychosexual upset is the concern of the psychiatrist rather than the surgeon. At the present time it is not possible to say whether psychosexual factors act on the breast through nervous or through hormonal influences. It is possible that both factors are involved.

Finally, we must attempt to answer the question, What is the relation, if any, of these disorders of the breast to cancer? The pain syndrome, being a functional condition without organic basis, must clearly be quite unrelated to carcinoma. The views of various authorities on cystic disease have already been given. But the strongest support for the now predominantly held clinical view that cystic disease is not a dangerous condition likely to develop into carcinoma is the experience of many surgeons all over the world who for years have treated the condition by some simple procedure such as tapping, with its demonstration that these conservatively treated breasts do not show any special liability to develop carcinoma.

Summary

Chronic mastitis is a term which has lost all precision and value and should be abolished. There are two common non-malignant conditions of the breast met with clinically—cystic disease and the pain syndrome—which are separate and distinct conditions. Cystic disease presents clear objective physical signs from which a clinical diagnosis can be made, the cause is unknown but is possibly a hormonal upset, there is no special liability to carcinoma of the breasts affected, and tapping is a satisfactory treatment. The pain syndrome is a purely subjective disorder, although sometimes superimposed on exaggerated physiological premenstrual engorgement of the breasts, and the breasts affected present no objective abnormality. The cause of the fixation on the breast is usually fear of carcinoma, but in a small proportion of cases is a psychosexual upset. Treatment by explanation and reassurance usually results in cure of the pain.

REFERENCES

- Atkins, H. J. B. (1940). *Lancet*, 2, 411.
 Birkett, J. (1850). *The Diseases of the Breast*. London.
 Bloodgood, J. C. (1931). *Ann. Surg.*, 93, 235.
 Brodie, B. C. (1846). *Lectures in Pathology and Surgery*. London.
 Bryant, T. (1887). *The Diseases of the Breast*. London.
 Bacher, N. L. R., and Geschickter, C. F. (1941). *J. clin. Endocrinol.*, 1, 58.
 Campbell, O. J. (1934). *Arch. Surg.*, 28, 1001.
 Cheate, G. L., and Cutler, M. (1931). *Tumours of the Breast*. London.
 Cooper, Astley (1928). *Illustrations of the Diseases of the Breast*. London.
 Deaver, J. B., and McFarland, J. (1918). *The Breast, its Anomalies, its Diseases, and their Treatment*. Philadelphia.
 Geschickter, C. F. (1943). *Disease of the Breast*. Philadelphia.
 König (1893). *Cbl. Chir.*, 20, 49.
 Paget, J. (1870). *Lectures on Surgical Pathology*. London.
 Patey, D. H. (1939). *Surg. Gynec. Obstet.*, 68 (Int. Abstr. Surg.), 575.
 Réclus, P. (1893). *Sem. méd.*, 13, 353.
 Schimmelbusch, C. (1892). *Arch. klin. Chir.*, 44, 117.
 Spence, A. W. (1940). *Lancet*, 2, 387.
 Taylor, H. C. (1942). *Surg. Gynec. Obstet.*, 74, 326.
 Velpeau, A. (1856). *A Treatise on the Diseases of the Breast and Mammary Region*. London.
 Willis, R. A. (1948). *The Pathology of Tumours*. London.

AMETHOCAINE HYDROCHLORIDE

SEVERE TOXIC EFFECTS WHEN USED FOR BRONCHOSCOPY

BY

C. A. JACKSON, F.R.C.S.

Chief Assistant, St. Bartholomew's Hospital Chest Unit.
 Hill End Hospital and Clinic, St. Albans

Amethocaine hydrochloride is increasing in popularity in this country as a surface analgesic. The occurrence of two severe toxic reactions arising from its use in a thoracic unit while securing analgesia for bronchoscopy has emphasized again the danger of overdosage when applied to a mucous surface, together with a specific sensitivity shown by certain individuals. These near tragedies have prompted me to review similar cases reported in the literature and to study the properties of this drug. Since amethocaine has been used for surface analgesia twelve deaths at bronchoscopy and gastroscopy have been reported by various authors and a further three deaths during preparation for urethral instrumentation.

Whether it be due to sensitivity or overdosage, the nature of the reaction reveals a striking similarity in the majority of cases and is the typical classic picture of cocaine or procaine intoxication. Within a few moments of local application the patient becomes faint and giddy, and unconsciousness follows. There may be wandering or deviation of the eyes. A trembling and twitching of the extremities occurs

which rapidly develops into generalized clonic convulsions, epileptiform in nature, during which cyanosis, foaming at the mouth, and an accelerated weakened pulse are noted. This seizure may subside with recovery or may return with a greater violence, when the patient may succumb from respiratory or cardiac failure.

Cases in the Literature

There have been a number of case reports in German and American journals since 1935 giving instances of severe constitutional disturbances and even fatalities. Apart from two deaths recorded by Hancock (1939), the only British report is found in a statistical review of causes of sudden death in which two fatalities are recorded as having occurred when this analgesic was being used in bronchoscopy.

In 1939 Fasselt reported two reactions to amethocaine 2% in anaesthetizing the throat before the removal of foreign bodies by bronchoscopy. All symptoms, however, disappeared spontaneously in these cases. Phillips and his associates (1941) reported a similar reaction in a patient who was undergoing a bronchoscopic examination. In this case generalized tonic contractions occurred which were controlled by "dial," 2 ml., given intramuscularly; the strength of the solution was not mentioned. The patient recovered.

Schoen (1939) reported three fatal reactions to local analgesia using amethocaine prior to bronchoscopy. Wagener is reported by him to have quoted a case in which 6 ml. of 2.5% solution was applied to the larynx for the removal of a wart and in which general convulsions occurred, leading to death in six to eight minutes.

In a case quoted by Cazzaniga (Schoen, 1939) a total dose of less than 130 mg. of amethocaine was used, yet the patient, a 27-year-old woman with pulmonary tuberculosis, developed severe convulsions some seconds after the initial administration and death occurred thirty minutes later.

Freeman (1939) reported four serious accidents with amethocaine employed as a mucous membrane analgesic for gastroscopy. Hancock (1939) had two deaths from the drug, also used for gastroscopy. His patients were both in advanced cachexia from malignant disease of the stomach.

Pfeiffer (1937) and Shumacher (1941) reported sensitivity to 0.5 and 1% solutions when administered in the eye. Videbeck (1936) mentioned three cases of amethocaine eczema in doctors who used the drug in their practices.

Thomas and Fenton (1943) provide a series of cases of their own in which amethocaine was shown to possess definite toxic properties. The first patient gave a history of asthma but no history of drug sensitivity. During bronchoscopy, while receiving a second spray of amethocaine 2% five minutes after the first, he had a sudden severe asthmatic attack and died thirty minutes later. A woman giving a history of pulmonary tuberculosis of one year's duration and with no known allergy, after receiving 5 ml. of amethocaine solution by pharyngeal spray became faint and suffered a generalized convulsive seizure with frothing at the mouth, which persisted until respirations ceased. Two other patients, both women, underwent bronchoscopy with amethocaine local analgesia for investigation of bronchiectasis. Feeble respirations, cyanosis, weak pulse, and clonic convulsions developed in both patients. Only after the administration of adrenaline and oxygen did these patients return to consciousness. In both cases skin tests for amethocaine sensitivity proved positive when performed afterwards. A 58-year-old man, after a gastric resection for carcinoma, was being prepared for gastroscopy with a 2% amethocaine gargle, to be followed by a 5-ml. spray, this to be repeated

in ten minutes. About fifteen minutes later the patient became stuporous, suffering clonic convulsions involving the arms and legs, lacrimated, and there was drooling of saliva and grinding of the teeth. The skin was cold and clammy, the lips were cyanotic. This reaction lasted ten minutes, but the patient recovered. One patient, ten minutes after receiving 5 ml. of 2% amethocaine prior to gastroscopy, became pulseless and convulsive, developed jerky respirations, and died. Three other cases were marked by nystagmus and convulsive seizures, but all three patients survived.

Doane and Cohn (1945) reported the case of a 48-year-old woman who suffered severely from asthma. Sixteen days before admission under their care a successful bronchoscopy had been performed, using 2% amethocaine as a spray. Five days after admission she was being prepared for a bronchogram; 2 ml. of a 2% solution was instilled by a nasal catheter, no premedication being given. A further 1 ml. of the solution was being instilled eight minutes later, when the patient slumped forward unconscious and in another three minutes slight convulsive movements occurred. This seizure was relieved by 2 g. of sodium phenobarbitone intravenously, but soon returned with greater violence. A double dose of barbiturate and cardiac restorative measures failed and the patient died thirty minutes later.

Richards (1947) recorded two cases of sudden death following the application of a 2% amethocaine spray for the purpose of bronchoscopy—one in a patient with a lung tumour and the other in a case of bronchiectasis. In both cases generalized convulsions set in within a few minutes and death occurred very shortly afterwards.

Shindler (1940) and Holt (1945) each report a fatality.

Properties of the Drug

Amethocaine, known variously as "pantocaine," "ponto-caine," "anethaine," "dikaine," "tetracaine," and "decicain," belongs like procaine to the para-aminobenzoyl group of anaesthetics and was introduced as decicain about eighteen years ago by Bayers.

Advantages.—It is resistant to boiling, it is stable in solution, it is lethal to all non-sporing organisms, it is ten times more potent than procaine or cocaine, and it is relatively quick in achieving its action and provides prolonged analgesia. Although the onset of analgesia is slower than with cocaine, the effect is more persistent.

Disadvantages.—It penetrates the tissues more rapidly than procaine and does not produce the vasoconstrictive action of cocaine. It is therefore essential to use it in conjunction with adrenaline, which reduces its toxicity by one-fifth. The relative toxicity of amethocaine, cocaine, and procaine is 4.5, 3, and 1 respectively, but this disadvantage is mitigated by the effective dose being one-tenth that of cocaine. It is detoxicated more slowly than procaine. It is less soluble than procaine 1 : 7 to 1 : 1.

For injection 0.1 and 0.05% solutions are recommended. For surface analgesia 2% solutions are advised (James, 1943). In Cazzaniga's case death occurred with a dose of 130 mg.; but James has used as much as 300 mg., although he advises that this amount should never be exceeded. The recommended therapeutic dose in man is 2 mg. per lb. of body weight. Hancock (1939) refers to a series of 2,000 cases of gastroscopy performed using 10 ml. of 2% solution without mishap.

For four months we have given anethaine, a 2% solution of amethocaine hydrochloride (4 ml. in conjunction with 1 ml. of 1 in 1,000 adrenaline), preparatory to bronchography and bronchoscopy. For the latter investigation the following was the procedure adopted.

The patient is given two "euphagin" tablets (benzocaine 200 mg.) to suck forty minutes pre-operatively, followed ten minutes later with $\frac{1}{4}$ or $\frac{1}{2}$ gr. (11 or 16 mg.) of morphine. In the anaesthetic room the fauces, posterior pharyngeal wall, and both pyriform fossae are painted with the above solution, using about 2 ml., but only a portion of this amount would actually be expended. A final injection of 2 ml. between the cords under direct vision usually effects adequate analgesia for the examination, although a further supply of the local analgesic is available for direct bronchial spray if required.

Case Reports

Case 1.—The patient was a 62-year-old man with superior mediastinal obstruction believed to be secondary to a right upper lobe bronchial carcinoma. Local analgesia for bronchoscopy was being induced by the above method with 5 ml. of mixed solution. Within 30 seconds of the intratracheal injection the patient, who was sitting up, complained of giddiness and then fell back unconscious; convulsions followed as described above. Endotracheal oxygen and carbon dioxide was instituted immediately. The head was lowered and venepuncture performed, 500 ml. of blood being withdrawn. Recovery took place after three convulsive seizures. There were no sequelae.

Case 2.—A young man aged 21 with left lower lobe bronchiectasis was having preparation of the pharynx and larynx by this method, but 4 ml. of the solution instead of the usual 2 ml. was injected between the cords. (The first 2 ml. was thought to have been swallowed.) Within a few moments the patient became pale and a cold sweat broke out on the face. He lay down and at once started jactitating, at first in the lips and then in the limbs. The pulse was 80-90, regular and of good volume. He then had a convulsion, during which he became cyanosed. The clonic spasm subsided and respirations returned, but were shallow and rapid. Almost immediately convulsions were renewed with increased intensity. The patient became deeply cyanosed, and during the clonic stage it was noticed that the pulse had ceased. Intracardiac adrenaline 2 ml., was injected, while artificial respiration was begun and oxygen was administered through a face-mask. There being no response to these measures, the abdomen was opened through an upper midline incision and direct cardiac massage through the diaphragm was performed. A flaccid immobile heart was massaged without response for about one minute. A few rhythmic contractions occurred, ceased, and then in response to further massage recurred. The heart subsequently started and continued to beat strongly with occasional extrasystoles. Although the total period of cardiac arrest was estimated at more than four minutes and unconsciousness persisted for four days, complete recovery took place.

Comment

The first patient was seriously ill with gross congestion of the head, neck, and shoulder girdle. He proved difficult to anaesthetize and was uncooperative. Five millilitres of the normal mixture (80 mg.) of amethocaine was used and must have been rapidly absorbed. The second patient was a relatively fit young man. In this case 4 ml. (64 mg.) of amethocaine mixture was projected between the cords into the trachea. In an endeavour to co-operate the patient was hyperventilating, so that the full quantity of this drug may have directly reached the alveoli and been rapidly absorbed from this highly vascular surface.

Neither patient gave a history of allergy, and, although in each case more than the usual 4 ml. of amethocaine-adrenaline mixture was used, both patients would appear to have been unusually sensitive to the drug.

No satisfactory sensitivity test has been described, but Thomas and Fenton (1943) recommended the use of a patch skin test in suspected or doubtful cases. They admit that such a test is not entirely reliable. They also suggest that

sensitivity to the drug may be provoked by its previous use or the use of procaine, which is closely related to it.

Certainly in two fatal cases (Ahroon, 1946; Doane and Cohn, 1945) there had been recent previous administration of the drug. Thomas and Fenton draw attention to the intolerance to amethocaine manifested by allergic individuals, bronchial asthmatics, etc., as well as by cachectic patients.

Following the method of Hancock (1939), the technique in preparation for bronchoscopy has been modified. Each patient is now given a 1-gr. (65-mg.) amethocaine pastille to suck thirty minutes before instrumentation. This produces a much more complete analgesia of the mouth and pharynx than benzocaine, and it is considered that any idiosyncrasy possessed by the patient would be displayed while the relatively small dose contained in the pastille was being absorbed.

Apart from the severe constitutional reactions to amethocaine on record other less serious reactions have been recognized. These include attacks of dyspnoea and asthmatic symptoms (Fujikawa, Neves, Brasher, and Buckingham, 1948), blepharoconjunctivitis (McAlpine and Berens, 1942), and occupational dermatitis and eczema in doctors and oculists (Videbeck, 1936; Cameron, 1937; Hollander, 1939; Shimkin, 1939).

Prevention of Severe Reactions.—The following prophylactic measures are suggested: (a) A barbiturate should be given by mouth in pre-operative preparation—e.g., phenobarbitone 3 gr. (0.2 g.) or sodium amytal or nembutal 1½ gr. (0.1 g.) 40 minutes before examination. (b) An amethocaine pastille, 1 gr. (65 mg.), should be given to the patient to suck 30 minutes before the examination. (c) Amethocaine when used for surface analgesia should have adrenaline 1 in 1,000 solution added in the proportion of 4 to 1 by volume, and the total dose of amethocaine should not exceed 4 ml. of a 2% solution (80 mg.) or a corresponding amount in a more dilute solution. (d) Application by means of a laryngeal spray should be avoided, since its use can easily lead to overdosage. (e) Amethocaine should never be applied to an inflamed, traumatized, or highly vascular epithelial surface—especially so in the urethra (Knepper, 1937). (f) The drug should be avoided in patients giving a history of allergy or in severely debilitated or cachectic cases.

Control of the Established Reaction.—(i) General:—Secure an unobstructed airway by endotracheal tube if necessary. Begin artificial respiration with an oxygen-carbon-dioxide mixture. (ii) To control convulsions:—The immediate intravenous administration of a rapidly acting barbiturate—20 ml. of 2½% sodium thiopentone (0.5 g.)—is usually sufficient to control convulsions. (Picrotoxin should be available in case too much barbiturate is given.) (iii) Administration of respiratory and cardiac stimulants:—nikethamide, 2–5 ml.; caffeine sodium benzoate, 7½ gr. (0.5 g.), etc.

In using amethocaine in surface analgesia, as with many other local analgesics, from time to time the unusually susceptible individual may be met with. Reactions come with devastating suddenness and the results may be disastrous. By excluding those patients mentioned under (e) and (f) above, sensitive patients should be even more rarely met with. An analysis of the fatal cases reported reveals overdosage, faulty technique, or failure to use adrenaline to be more often the cause of death than individual idiosyncrasy.

Summary

A report is given of two toxic reactions with the use of amethocaine hydrochloride as an analgesic for bronchoscopy.

A review of the literature reveals twelve reported deaths at bronchoscopy and gastroscopy, while there are many cases of severe constitutional disturbance.

The advantages and disadvantages of the drug are assessed, the difficulty of applying an adequate sensitivity test accepted, and suggestions made for the prevention and treatment of toxic reactions.

I wish to express my thanks to Mr. O. S. Tubbs for permission to report these cases and for helpful advice in the preparation of this paper.

REFERENCES

- Ahroon, W. A. (1946). *Laryngoscope*, 56, 320.
Cameron, O. J. (1937). *Nebraska med. J.*, 22, 229.
Doane, J. C., and Cohn, E. M. (1945). *Anesthesiology*, 6, 421.
Fasselt, H. (1939). *Arch. Ohr.-Nas.-Kehlk. Heilk.*, 146, 217.
Freeman, E. B. (1939). *J. Amer. med. Ass.*, 112, 217.
Fujikawa, F., Neves, A., Brasher, C. A., and Buckingham, W. W. (1948). *J. thorac. Surg.*, 17, 123.
Hancock, P. E. T. (1939). *Proc. R. Soc. Med.*, 32, 538.
Hollander, L. (1939). *Arch. Derm. Syph.*, 40, 92.
Holt, T. (1945). *Arch. Otolaryng.*, Chicago, 42, 280.
James, N. R. (1943). *Regional Anaesthesia for Intra-abdominal Surgery*, p. 2. Churchill, London.
Knepper, R. (1937). *Munch. med. Wschr.*, 84, 1572.
McAlpine, P. T., and Berens, C. (1942). *Amer. J. Ophthalm.*, 25, 206.
Pfeiffer, R. L. (1937). *Arch. Ophthalm.*, Chicago, 18, 62.
Phillips, F. J., Congleton, V. L., and Tuttle, W. (1941). *Curr. Res. Anesth.*, 20, 233.
Richards, R. (1947). *British Medical Journal*, 2, 51.
Schindler, R. (1940). *Amer. J. digest. Dis.*, 7, 293.
Schoen, F. (1939). *Wien. klin. Wschr.*, 52, 505.
Shimkin, N. (1939). *Ann. Oculist.*, Paris, 176, 198.
Shumacher, H. B. (1941). *Surgery*, 10, 134.
Thomas, J. W., and Fenton, M. M. (1943). *J. Allergy*, 14, 145.
Videbeck, H. I. (1936). *Ugeskr. Laeg.*, 98, 278.

"GAMMEXANE" AND MOSQUITO CONTROL IN THE BELGIAN CONGO*

BY

G. DAVIDSON, B.Sc.

(From the Ross Institute of Tropical Hygiene)

Experiments are now being carried out in a large palm-oil plantation at Yaligimba, in the Belgian Congo, on the control of malaria by adult mosquito destruction, using the residual insecticide "gammexane" in the houses in the labour camps and in several native villages around the plantation. The plantation, which occupies an area of some 30 square miles (77.7 km.²), is situated in a forest belt in the northern part of the Belgian Congo. The main species of anopheline mosquito concerned is *A. moucheti*, which breeds at the edges of the large rivers in the vicinity. There are also a few *A. gambiae* and *A. paludis*.

Mosquito densities in the houses before and after treatment with the insecticide are being determined by the following four methods:

1. The number of mosquitoes resting in the houses during the daytime is being estimated by laying white sheets over the whole floor surface of a house and spraying the closed house with a pyrethrum-in-kerosene spray.
2. The number of mosquitoes leaving the house each morning is being determined by the use of window-traps.
3. The number of mosquitoes entering during the night to bite the occupants of any one bed in the house is being determined by the use of mosquito-net traps, which mosquitoes can enter but not leave.
4. The mosquito-nets of the inhabitants of the camps and villages are being examined to determine the percentage

*This work has been made possible by grants from United Africa Company, Limited, and from Imperial Chemical Industries, Limited.

containing mosquitoes. The majority of these nets are made of calico and are usually incompletely closed by the occupant or in a bad state of repair.

Parasite rates and spleen rates have been estimated among children in many of the camps and villages before treatment, and are high throughout the area. These will again be estimated in both treated and untreated villages one year after treatment, as will the parasite rate among babies born in the villages during that year.

Salivary gland dissections are also being done on the mosquitoes before and after treatment. The sporozoite rate in the main anopheline, *A. moucheti*, is naturally low—0.4% in 3,712 dissections—and large numbers of dissections have had to be done.

Water-dispersible powders containing gammexane have been used for the spraying of the internal surfaces of the houses, and a concentration of 10 mg. of gammexane per square foot (930 cm.²) of surface has been aimed at. Eclipse "Warley" pneumatic sprayers of 2 gallons (9 litres) capacity are being employed for the spraying. These give an application rate of approximately 5 pints (2.84 litres) of spray per 1,000 square feet (93 m.²) of surface.

Results so far show after treatment a very marked reduction in the numbers of mosquitoes caught by the four methods outlined above. The best results have been obtained with the water-dispersible powder P530, containing 6% of gammexane. Mosquitoes caught by the window-trap method began to appear in significant numbers in the fifteenth and sixteenth weeks after treatment. Mosquitoes caught by the net-trap method were showing only a slight increase at this time, and almost no mosquitoes were found by the other two methods. The unreliability of estimating the persistence of the insecticide by determining mosquito densities by the flit-catching method alone has been clearly demonstrated.

Results of salivary gland dissections from treated and untreated villages are:

	Dissected	Positive	Percentage
Untreated villages:			
<i>A. moucheti</i> ..	3,712	15	0.40
<i>A. gambiae</i> ..	408	17	4.17
<i>A. paludis</i> ..	45	0	0
Treated villages:			
<i>A. moucheti</i> ..	2,001	1	0.05
<i>A. gambiae</i> ..	44	0	0
<i>A. paludis</i> ..	12	0	0

The only positive *moucheti* mosquito from a treated village was found in a net-trap three weeks after the first treatment of the village, at a time when another village only 2 kilometres away remained untreated. It is therefore possible that this mosquito flew from the untreated village and entered the net-trap without coming into contact with the treated surface of the house.

The site for these experiments was originally chosen with a view to possibly eradicating the mosquitoes in the plantation solely by adult mosquito destruction in houses. It was soon decided, however, that the plantation was not sufficiently isolated for this to be achieved, and the reappearance of mosquitoes in significant numbers after the treatment of single villages or groups of villages, isolated to the extent of 3 to 4 kilometres, has confirmed this view. However, it is proposed to try to eradicate the mosquitoes in the plantation by spraying also the villages which lie near to the plantation to form a protective barrier against invasion of mosquitoes into the treated plantation. It is thought that an initial spraying of the whole area three times during the first year can be reduced to twice a year and be quite an economical proposition.

It is hoped to publish shortly a more detailed account of this work.

Medical Memoranda

Twisted Ovarian Cysts in Children

Ovarian cyst with torsion of the pedicle is an uncommon condition in children, only about 125 cases having been reported in the past hundred years. The literature contains such interesting cases as an ovarian cyst in a 7-months premature infant and torsion of an ovarian cyst in a 10-days-old baby (Bursch). The majority of twisted ovarian cysts in children occur on the right side, and because of this the diagnosis made is usually that of acute appendicitis, or appendicular abscess if a mass is palpable. There may be symptoms of a vague character consisting of nausea and vomiting, preceded by vague abdominal ache for a few days, with one or more severe attacks of sudden abdominal pain lasting for a few hours, this being due to a tighter twist of the pedicle. The following reports illustrate typical cases.

CASE HISTORIES

(1) The patient, a girl aged 10, was first seen at 9 p.m. on Jan. 5, 1948. She had had a dull pain in the right side of her abdomen and right lumbar region on and off for three weeks, but 48 hours before admission she had had nausea and vomiting with increased pain in the right loin. Since then she had vomited white frothy matter. The pain remained in the back and right side of her abdomen and was at no time central. She had been constipated for some weeks, and 24 hours before admission had been given a soap enema, which yielded a very good result. She had had no urinary symptoms. Her activities were normal for her age, and she had been sleeping well.

On admission the temperature was 98° F. (36.7° C.), pulse 122, and respirations 24. She was a thin, pallid child; her tongue was slightly furred, with halitosis present. There was a moderate degree of rigidity in the right lower quadrant, with tenderness in the right side of the abdomen and right lumbar region, most pronounced about 1 in. (2.5 cm.) below McBurney's point. Rectal examination had been carried out, and the only thing noted was the presence of hard faecal masses. A diagnosis of acute appendicitis was made and laparotomy was carried out.

A Rutherford Morison incision was first employed and a plum-coloured mass was seen in the pelvis. Through this incision it was not possible to observe whether the mass was adherent to gut or not, and so a right subumbilical paramedian incision was carried out, when the mass proved to be a twisted right ovarian cyst, the size and shape of a kidney, with four twists in the pedicle. The pedicle was untwisted and afterwards transfixed, the cyst being then removed. The right tube was left intact. A small cyst was present in the left ovary. Both incisions were closed without drainage. Recovery was uneventful and the patient was discharged from hospital ten days after operation.

The histological report stated that there was massive haemorrhage in the cyst, in which were seen scattered capillaries, veins, and arterioles. Collections of polymorphs were present round most of the larger vessels, often with necrosis of the vessel wall. There was nothing to identify the tissue with certainty, but it was probably a connective-tissue tumour and possibly ovarian in origin. I am indebted to Dr. A. J. McCall for the histological report.

(2) On Dec. 5 a girl aged 9 years was admitted to hospital with the diagnosis of subacute intestinal obstruction. A cystic mass was felt on rectal examination. In the light of the experience gained in the case described above a diagnosis of twisted ovarian cyst was made. Laparotomy confirmed the diagnosis. A twisted ovarian cyst with four torsions of the pedicle was found on the left side. The cyst was removed as in the former case.

G. GORDON CROWE, F.R.C.S.Ed.,
Surgeon, City General Hospital, Stoke-on-Trent.

BIBLIOGRAPHY

Fowle, J. A. (1944). *Amer. J. Surg.*, 64, 285.

Precautions that the practitioner must take in dealing with drugs under the Dangerous Drugs Acts and Regulations are described in a memorandum "Dangerous Drugs Acts, 1920 to 1932," D.D.101, 5th edition (H.M.S.O., 3d.). Drugs covered by these Acts and regulations are listed, and the pamphlet describes how prescriptions for them must be written, dated, and signed, how the medical practitioner should obtain and store the drugs, and what records he should keep. The memorandum concludes with an appendix extracted from the Report of the Departmental Committee on Morphine and Heroin Addiction, discussing the precautions to be observed when administering these drugs in medical practice.

Reviews

SOCIAL MEDICINE

Changing Disciplines. By John A. Ryle, M.D. Lectures on the History, Method, and Motives of Social Pathology. Oxford Medical Publications. (Pp. 124; illustrated, 12s. 6d.) London: Oxford University Press (Geoffrey Cumberlege). 1948.

Because of the personal and professional stature of its author, and also because he was the first among us to assume the academic title of professor of social medicine, his views on the content, scope, instruments, and aims of this branch of medicine must necessarily command widespread attention. It is largely because of his personal qualities, the attractiveness of his advocacy, and the work that he performed while he was alone in academic social medicine that the subject has in Britain claimed such interest and that chairs of social medicine have been created and are now being filled in so many of our universities. It was fortunate, therefore, that Professor Ryle should have been persuaded to go to America and been required during the course of his visit to state his creed. As he says in his preface, in preparation for the visit he attempted to crystallize some of his ideas born of experience which had come to him since he had transferred his energies from the field of clinical and personal medicine to new ventures in the field of social medicine, from studies in individual pathology to studies in social pathology.

Professor Ryle senses that medicine is changing as social aims are changing, and he expresses the view that while medicine, through scientific and technical advances, has greatly gained in potentiality during the last quarter of a century it has become less surely attuned to some of the more fundamental human needs, to the deeper personal needs of the individual and to the broader social needs of the group or community. He charges the profession with thinking more about curing than preventing, more about medical care and its huge costs than about the economies that could be effected by attacking the basic causes of disease. His creed is stated. The whole man and his family are the practising physician's charge, but they can no longer be considered in detachment from their total environment or from the larger communities of which they are but a part. Communities large and small are now due for a more intimate study and care in respect of their health and sickness, for they cannot be considered apart from their total environment or from the individuals and families of which they are composed. State medicine must be based on scientific principles and especially on humane understanding. Good social medicine must in fact have its foundations in sound social pathology.

This book in the main is an edited collection of lectures previously given. The author discusses social pathology and the new age in medicine, the social post-mortem examination and its bearing on aetiological research, the affairs of the Institute of Social Medicine at Oxford, the meaning of normal and the measurement of health, social medicine and the population problem, medical ethics, and the new humanism, and he successfully answers the question how medicine in its immediate development may become better able to tackle the new problems that social changes have created, and how it may accept greatly enlarged responsibilities in relation to community health. It is much more than an intelligent discussion of matters of fact and of interpretation, for within its pages and behind the writing can be seen clearly the portrait of a man who in type and temperament is admirably suited for leadership in this particular field and whom the practice of humanistic medicine has moulded into an altogether attractive person.

F. A. E. CREW.

HOUSING AND POPULATION

Housing and the Family. By M. J. Elsas. (Pp. 136. 8s. 6d.) London: Meridian Books Ltd.

This book is about the housing needs of the country in relation to the change in population consequent upon the declining birth rate and the trend towards a greater proportion of old

people. The author describes this relationship as "the demographic factor," and he discusses housing from the demographic point of view. There is a considerable amount of statistical information on the number and ages of existing houses, and information gained from a comprehensive questionnaire which was completed, at the author's request, by 18 local authorities—ten county boroughs, four boroughs, one urban district, and three rural districts. The questionnaire showed the number of dwellings built by the authorities concerned between 1919 and 1940, and the size, type, rent, etc., of each.

In Chapter V, "Housing Indices," it is interesting to note that there were in 1939 a greater number of dwellings per 100 persons than in 1931 (28.0 as compared with 23.5). Overcrowding was reduced, but the author points out that the improvement is not so great as might at first appear, since families are now smaller and more houses are required to accommodate the same number of people. He rightly criticizes the overcrowding standard as laid down in the Housing Act, 1936, as being too low (although the highest in Europe), but few public health officers will agree that a cubic-space instead of a floor-space standard is desirable. The cubic-space idea was rejected years ago, since it gave an altogether false value to the older house with 12-ft. ceilings, the upper 3 ft. at least performing no useful function. On such a standard a cathedral could accommodate more people than could stand in it. The present tendency to favour a ceiling of 8 ft. 6 in. has much in its favour from the public health point of view. The author's statement about overcrowding (p. 96), "Every room in the house can be used as a bedroom if it has sufficient space," may be misleading. In computing the permitted number of people for a dwelling-house, any room of a type not normally used in the locality as a living-room or bedroom is excluded. Thus sculleries and bathrooms are ignored, and in the ordinary working-class house—the "two up and two down"—the permitted number is generally five persons, for the back room downstairs is not generally used as a living-room.

The author criticizes the scarcity of rent rebate schemes and suggests a national rent rebate system to apply to all houses, whether owned by local authorities or private landlords. This is a highly controversial topic. The book is very interesting and can confidently be recommended to all concerned with housing or indeed the welfare of the people.

J. M. MACKINTOSH.

CHEMOTHERAPY IN MENINGITIS

Traitement Moderne des Méningites purulentes aiguës. By René Martin and Bernard Sureau. (Pp. 256; 40 figures, 2 plates. 450 fr.) Paris: Editions Médicales Flammarion. 1948.

The treatment and prognosis of meningitis have been changed by the discoveries of the past fourteen years more profoundly than those of any other disease. Most accounts of what chemotherapy can achieve deal either with a single type of infection or a particular form of treatment and are often based on relatively few cases. A treatise on the treatment of purulent meningitis is general, founded on the exceptional experience afforded by the Hôpital Pasteur in Paris, is therefore particularly welcome. The authors describe over 60 personal cases, many in detail; 28 of them were meningococcal, 13 pneumococcal, 6 streptococcal, 10 staphylococcal, and 4 due to *H. influenzae*. Except for the first-named infection, which usually responds well to sulphonamides alone, Martin and Sureau advocate combined antibiotic and sulphonamide treatment. Their methods are vigorous: intrathecal penicillin is given twice daily, and their dosage of sulphonamides is, if necessary, enormous, even reaching 1 g. daily per kg. body weight, and producing in the cerebrospinal fluid concentrations up to 70 mg. per 100 ml. Sulphadiazine is favoured, and another sulphonamide is often given together with it. The reader perplexed by the French designations for these drugs (sulphanilamide, for instance, being "1162F") will find a key to them on page 132.

After accounts of the treatment of each form of meningitis, based on the literature as well as the authors' own experience, there are chapters on the agents and methods used, on relapses and their distinction from effects of the treatment itself ("medicamentous meningitis"), on recurrent meningitis in cases of congenital cerebrospinal rhinorrhoea and its surgical

prevention, and finally on laboratory aids to the direction of treatment, the necessity of which is strongly emphasized. The authors provide an extensive classified bibliography, which includes references to papers on meningitis caused by no less than 17 species other than the common ones already mentioned. This monograph contains a mass of information of great practical value, and will be read appreciatively by everyone interested in its subject.

L. P. GARROD.

PRIVATE AND STATE MEDICINE

Private Enterprise or Government in Medicine. By Louis Hope-well Bauer, A.B., M.D., F.A.C.P. (Pp. 201. 25s.) Springfield, Illinois: Charles C. Thomas. Oxford: Blackwell Scientific Publications.

The title of this book makes an instant appeal to members of a profession which in Britain has been trying to solve the problem raised since the publication of the Report of the Royal Commission on the Poor Law in 1909. Here, as in the U.S.A., it is a fact that a considerable section of the population is unable to pay for complete medical care by private fees. Here, as in all democratic countries, our profession would agree with Abraham Lincoln's dictum quoted on the jacket of Dr. Bauer's book, "In all that the people can individually do as well for themselves, the Government should not interfere." But how shall we find some method of supplying what is needed short of compulsory insurance or socialization of medicine? There is no answer to this yet. Since the end of the first world war the medical profession in the U.S.A. has been fighting attempts to increase Government control, and on the whole successfully. Of these proposals Dr. Bauer gives full details. It is evident that the fight is still on. The book makes no pretence of being impartial. My criticism is that the author makes no attempt to show that there is another side to the argument, and exception can fairly be taken to the biased and exaggerated accounts given of the effects of compulsory sickness insurance in those countries which have tried it.

In his anxiety to show that there is no need for other than voluntary effort in the States Dr. Bauer says that "the proportion of medical men to population is greater here, that no other country has obtained a better distribution of doctors in the rural areas, and that preventive medicine is more effective in the U.S.A. than in countries with compulsory insurance." Yet the book contains much evidence that the rural distribution is deplorable, and Dr. Bauer has apparently never heard of our Highlands and Islands scheme. On one page he tells us that in half the counties of the States there are no whole-time medical officers of health and in some of them there is no continuity of service and they are subject to political control. The British system of N.H.I., he says, "encourage mass therapy, and medication is controlled by the Government," and "it is often stated that the British system is far better than the system which prevailed before 1911. This is undoubtedly true, because the system then in vogue [which by the way was private enterprise] was so intolerably bad that any change was bound to be an improvement." This is only one, but a typical, example of the author's judgment of the conditions in other countries, and it is in my opinion sufficient to justify one who knows better in being cautious in accepting his conclusions.

Dr. Bauer frankly recognizes the existence in the U.S.A. of large sections of the people who are either "indigent" or "medically indigent" and that it is up to the medical profession to find a way to satisfy their needs. He strongly advocates voluntary local schemes, and shows that already many such schemes favoured by the A.M.A. are in operation. The payments are to be made by employers and workmen and for the indigent by the Government. But nothing in the book seems to me to justify the belief that this method is likely to solve the national problem. And Dr. Bauer never faces the situation which would arise in a time of prolonged unemployment, or what is to be done with improvident people who refuse to join the schemes. Far from being unsympathetic to the author's desire to avoid Government control, I believe most doctors in Britain would rejoice if our brethren in the U.S.A. could evolve a solution of the problem on voluntary lines. But this book gives little encouragement to this hope.

ALFRED COX.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Man, the Unknown. By A. Carrel. (Pp. 312. 1s. 6d.) W. Drayton, Middlesex: Penguin Books. 1948.

The author comments on man's place in the world and suggests remedies for our excessive industrialization.

Neuroanatomy. By F. A. Mettler, A.M., M.D., Ph.D. 2nd ed. (Pp. 536. 50s.) London: Kimpton. 1948.

A textbook for medical students.

Theory and Problems of Social Psychology. By D. Krech and R. S. Crutchfield. (Pp. 639. 27s.) London: McGraw-Hill. 1948.

A textbook for teachers and students of social psychology.

Síndrome Anémico do Kala-Azar. By C. Trincão. (Pp. 68. No price.) Lisbon: Sociedade Industrial de Tipografia. 1948.

A research monograph with extensive bibliographies.

Sex Variants. By G. W. Henry, M.D., and others. (Pp. 1,128. 40s.) London: Hamish Hamilton. 1948.

The personal histories of homosexual men and women, with notes on them.

Physiology. By A. D. Le Vay, M.Sc., F.R.C.S. (Pp. 209. 4s. 6d.) London: English Universities Press. 1948.

A short account for the layman.

Ulcer. By D. Cook, B.A., M.D. (Pp. 187. 5s.) Chicago: Medical Center Foundation and Fund. 1946.

The author elaborates his thesis that gastric ulcer is due to ischaemia of the mucosa caused by pressure from structures adjacent to the stomach.

Transplantation von Mensch auf Mensch aus dem Lebenden und aus der Leiche. By E. Kubányi. (Pp. 120. 12.80 Swiss francs.) Berne: Hans Huber. 1948.

A monograph on the transplantation of endocrine and other tissues from man to man or cadaver to man.

An Elementary Atlas of Cardiography. By H. Wallace-Jones, M.D., M.Sc., F.R.C.P., and others. (Pp. 108. 12s. 6d.) Bristol: John Wright. 1948.

Illustrations of electrocardiograms and skiagraphs, with annotations.

Die Indikationen zur Röntgen- und Radium-Bestrahlung. By H. R. Glauner. (Pp. 124. M. 7.20.) Stuttgart: Georg Thieme. 1948.

A short review of the conditions for which x-ray or radium therapy is indicated.

L'Indirizzo Psicologico nello Studio della Personalità del Reo. By P. Manunza. (Pp. 138. No price.) Cagliari: Società Editoriale Italiana. 1948.

An account of researches into the psychology of delinquents.

Cardiology. By W. Evans, M.D., D.Sc., F.R.C.P. (Pp. 310. 35s.) London: Butterworth. 1948.

A textbook for medical students.

Médecine Pratique. Edited by C. Lian. (Pp. 191. 700 francs.) Paris: L'Expansion Scientifique. 1948.

Lectures on a variety of medical topics delivered to students.

World of All of Us. Issued by the Church Missionary Society. (Pp. 58. 2s. 6d.) London: Church Missionary Society. 1948.

News from the letters of medical missionaries abroad.

A Surgeon's Guide to Local Anaesthesia. By C. E. Corlette, M.D., Ch.M., F.R.A.C.S. (Pp. 355. 35s.) Bristol: John Wright. 1948.

A practical guide intended for surgeons, not for physician-anaesthetists.

Atemregelung als Heilmittel. By L. Hofbauer. (Pp. 99. Sch. 25.) Vienna: Wilhelm Maudrich. 1948.

A short account of the treatment of chest disorders.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JANUARY 15 1949

CONCERNING HOLES AND PEGS

That man is well who derives from what he does, and particularly from his energy expended for the common good, physical, intellectual, and emotional satisfaction. He tends to be ill if his needs in respect of such satisfaction remain unconsidered. Sickness, unhappiness, and inefficiency in the individual and in the group can be the dramatization of discontent cradled in disharmony between man and the conditions of his external social world. It is no new observation that for the maintenance of health and efficiency the tasks demanded of an individual should not in their demands exceed the limits of his total potential abilities and should not be too far below the upper limits of these. Yet in civil life it is not always easily possible to ensure that the immature shall enter that occupation which will offer him the opportunities that he must enjoy if he is to become a complete citizen and a hale individual. In the Army it is possible and greatly to be desired. In its fabric there is a multitude of holes of varying size and shape, definable and measurable. Among its recruits there is a multitude of pegs of infinite variety, differing in respect of physical, intellectual, and emotional qualities and of acquired and potential skills, some of which are amenable to accurate measurement. In this issue of the *Journal* Major R. T. Fletcher tells the story of the methods which in their sequence have been employed in the Army in attempts to pre-select the man for the job. The complementary story of the methods that have been devised to attune the man to his job belongs, unfortunately, not to the medical services but to the Directorate of Selection of Personnel. This dissociation of the purely medical assessment of the individual's physical attributes and the military assessment of his qualities in respect of employment was productive of much confusion and wasted effort.

To begin with, the civilian medical boards were responsible for the classification of a man into one of four grades of physical fitness for service. The Army medical and selection services then took up the task of specifying the form of employment that was suitable to his physical condition and of posting a particular recruit to a particular arm. The former attempted to devise a system of medical categories which would translate the civilian grades into terms of military employment. These grades differed in respect of visual acuity, ability to march long distances, general soundness of constitution, and of other manifestations of defect likely to affect the performance of military duties. As was to be expected, this system proved in experience to be exceedingly faulty. An Army unit is not composed of identical individuals performing uniform tasks. It is a diversified community in which there is a highly organized division of labour. Categorization by reference to physical attributes can be utterly misleading, since the

presence of physical defect does not necessarily imply functional imperfection.

No wonder then that during the war this system was so elaborated that at the end the series of categories demanded by its various permutations and combinations of physical characteristics, including subdivisions to include men over 41 and such as were fit for non-tropical and home service only, numbered no fewer than 72. That the system was itself inherently complicated, its administrative procedures cumbersome, and the underlying principles never completely grasped was clearly indicated by the stream of amendments and revisions which poured forth unceasingly. The system never fully succeeded in attaining complete correlation between physical condition and aptitude for employment, and continuous attempts were made to devise some alternative method likely to prove more flexible in application and more promising in results. It had become evident that any one of the many categories was related not to any one prescribed form of employment but to a multiplicity of occupations widely diverse in nature and requirements. In determining a man's category the medical officer or board had to decide not on the man's fitness to perform the job in which he was then engaged but rather on his capacity to perform all the numerous jobs that a man of his category might be called upon from time to time to undertake. Ability to carry out certain duties could not be regarded as evidence of fitness for any specified category. It became clear that the category of a recruit should be based upon a combination of medical classification and training recommendation. Schemes to this end were devised and tested. None was satisfactory.

Eventually it was decided to put to the test the system which had been invented and adopted by the Canadians—the Pulheems system. This was based upon the truth that modern warfare made ever-increasing demands, both qualitative and quantitative, upon the soldier in physical ability varying in nature and degree according to the exigencies of his particular employment, in the level of intelligence required to grasp the technicalities of military operations, and in temperamental stability as a primary factor in determining conduct in battle. The growing complexities of military service and the widely diverse occupations which it comprised called for the application of more precise methods in the selection of personnel, since success in any undertaking depended upon the capacity of each man adequately to fulfil the task assigned to him. Moreover, conservation of man-power implied the employment of every soldier in his proper capacity so that a maximum of working efficiency and a minimum of wastage might be ensured. The system correlated two essentials: a detailed qualitative assessment of the individual soldier and a qualitative analysis of occupational requirements. In it the emphasis was placed on performance and not on physical shortcomings.

Towards the end of the war this system was thoroughly tested by a series of trials, and its value was demonstrated especially in relation to the lower categories. It was found that before it could be universally applied much instruction would have to be given to medical officers in order to wean them from their saprophytic preferences. Now it is to be used by all three Services and is beyond the

experimental stage. As Major Fletcher points out, its usefulness is not restricted to the armed Forces: it can claim its place in industry. As yet it is by no means perfect; in it there is, still much that is based on clinical judgment rather than on exact measurement. The Directorate of Hygiene seeks the help of the academic scientist and is willing to place at his disposal the unique research facilities that it can command. In the large-scale employment of this system there will be abundant opportunity, especially for the experimental psychologist, the physiologist, and the specialist in physical medicine, in collaboration with the Army Medical Services, to add to natural knowledge and, at the same time to render service of great value.

It seems probable that this development will have its effect upon the medical curriculum. If the civilian practitioner is to be called upon to make use of this Pulheems system it follows that he will have to be given information concerning it and be taught the principles upon which it is based during the period of his professional education. It will be for the departments of social medicine to weave this into their courses.

SECOND THOUGHTS ON PROGUANIL

The combined ingenuity of chemists, pharmacologists, and experimental pathologists has in the past quarter of a century given to the world a great number of interesting and valuable pharmaceuticals. Yet the mortality among such compounds has been high, and many of them are to-day largely of historic interest. That it takes time to assess correctly the value of any new drug has been emphasized again and again by medical men; yet this still seems to be insufficiently appreciated, for too often in the past enthusiastic receptions have been given to new and relatively untried drugs about which over-optimistic hopes have been raised. Careful and prolonged trials are especially necessary with new chemotherapeutic compounds, and above all with new antimalarial drugs because of the diversity not only of the species of plasmodia but also of strains. In assessing new antimalarial drugs there are three important questions to be answered: Does the drug rapidly control clinical symptoms? Does it produce radical cures? Does it act as a true causal prophylactic or as a suppressive? Action on gametocytes is probably of less importance, more especially in hyper-endemic areas such as West Africa, where a few gametocytes more or less can hardly make any great difference to the public-health.

When "paludrine," now known as proguanil, first appeared in 1945 it was hoped, and at first perhaps with too much enthusiasm, that the solution to all the problems of the treatment of malaria had been found. It soon became apparent that, though acute attacks due to *Plasmodium vivax* are readily controlled by proguanil, the infection is not eradicated. Proguanil alone is thus inferior to a combination of pamaquin and quinine in the treatment of relapsing vivax infections. In addition it cannot be relied on to act as a true causal prophylactic. In the case of infections due to *P. falciparum* the evidence has been extremely confusing, but further light has been thrown on

the action of proguanil on this parasite by Sir Gordon Covell and his collaborators, whose paper we publish elsewhere in this issue. There is now general agreement from various parts of Africa and Asia that proguanil acts more slowly than mepacrine, quinine, or chloroquine in controlling acute attacks of malaria due to *P. falciparum*. Walls¹ found that quinine and proguanil were more satisfactory than proguanil alone, and Covell and his colleagues show that the fall of temperature is hastened and the duration of parasitaemia shortened by combining proguanil with quinine or mepacrine. This is of considerable importance, for the persistence of serious symptoms in infections due to *P. falciparum* may mean cerebral involvement or even the development of blackwater fever.

The second question is whether proguanil acts by eradicating the parasites, thereby producing a radical cure. Chaudhuri² drew attention to the existence in India of strains of *P. falciparum* which give rise to infections not radically cured by proguanil in doses of 300 mg. for 10 days. One patient in fact had a second attack nine days after treatment and a third attack 11 days later, a radical cure being finally produced by chloroquine. Fairley and his colleagues,³ working with New Guinea strains of *P. falciparum*, claimed to have produced a radical cure of 41 out of 41 naturally acquired infections and of 46 out of 47 experimentally induced sporozoite infections as a result of a 10 days' course of 100 mg. of the drug thrice daily. On the other hand Covell and his colleagues have now brought forward convincing evidence that proguanil alone does not produce a radical cure of a West African strain. In this respect it is inferior to mepacrine.

Uncertainty still existed whether proguanil was really a true causal prophylactic against *P. falciparum*. Fairley's experiments appeared to demonstrate conclusively that proguanil could act as a true causal prophylactic against a New Guinea strain of *P. falciparum*. Ciuca and his colleagues,⁴ working in Rumania with a long-established laboratory strain of *P. falciparum*, also found that of five subjects inoculated twice weekly with *P. falciparum* sporozoites over a period of four weeks none showed fever or parasites when 300 mg. of proguanil was given every week during the period of inoculation and for two weeks after the final inoculation. Observations were made over periods of at least 23 days after the final inoculation, but no sub-inoculations were attempted, nor was it proved that the subjects were susceptible to the strain of *P. falciparum* employed. In the Belgian Congo van Riel⁵ found that 300 mg. every week did not act as a true causal prophylactic; but, as Covell and his colleagues point out, the administration of the drug was continued only for 40 hours after the last possible exposure to infection, a period far too short to give any margin of safety. The experiments recorded by Covell and his colleagues show that proguanil can undoubtedly act as a true causal prophylactic against an African strain of *P. falciparum*. To be on the safe side, however, they recommend that for non-immunes a dose of 100 mg. should be taken daily.

While these investigations undoubtedly clarify the position with regard to certain African strains of *P. falciparum*, they urgently require further extension. Evidence accumulated during the war suggests that not all strains of

P. falciparum from Africa south of the Sahara are identical. African troops from the Belgian Congo stationed in Nigeria had a malarial incidence three to four times that of Nigerians serving in the same area. Gold Coast troops stationed on the north bank of the Gambia were more frequently and more severely attacked by malaria than Gambian troops alongside them. Studies on the effects of proguanil on other African strains of *P. falciparum* would therefore be of great interest.

There are other points on which further information is required if proguanil is to be extensively used. When, during the war years, large bodies of European troops were serving in West Africa, blackwater fever was abolished only when mepacrine was substituted for quinine, both in the suppression and treatment of malaria. If proguanil by itself cannot be relied upon to eradicate falciparum malaria in West Africa it is doubtful if it will have the power to abolish blackwater fever as does mepacrine. Secondly, there is growing evidence that proguanil produces resistant strains of plasmodia with comparative ease. It has already been shown that *P. gallinaceum* in fowls and *P. cynomolgi* in the monkey can be rendered resistant to proguanil⁶⁻¹¹; evidence is shortly to be published that the same is true of *P. vivax* and *P. falciparum*. Resistance against quinine and mepacrine is extremely difficult to produce.

One of the facts in favour of proguanil appears to be its low toxicity. However, there have been complaints of loss of appetite, reduction of weight, and lack of energy from some of those who have taken proguanil for considerable periods. Hughes and his colleagues¹² have noticed similar signs in the rat. Recent studies by Burn and Vane¹³ and by other workers^{14, 15} have shown that there is almost certainly a pathological basis for these symptoms, for doses of 900 mg. of proguanil in man reduce the acidity and volume of the gastric juice. Loss of appetite is a matter of moment to those Europeans who are stationed in such tropical areas as West Africa, for towards the end of a long tour the appetite is in any case rather poor and capricious. For Africans, whose diet is only too often deficient both quantitatively and qualitatively, it is obviously undesirable that they should take for long periods a suppressive antimalarial which may reduce still further their already inadequate intake of food.

In comparing the effects of mepacrine and proguanil in the prevention and treatment of falciparum malaria in West Africa it may be said that for prophylaxis both drugs must be taken daily. In a dose of 100 mg. daily mepacrine has very few failures: records are already available of patients who, in spite of taking 100 mg. of proguanil daily, have suffered from attacks. Mepacrine is not a true causal prophylactic, but if continued as a suppressive will bring

about a radical cure. Proguanil is a true causal prophylactic for at least one strain, but does not produce a radical cure. Mepacrine does not injure gametocytes; proguanil inhibits their development in the mosquito. Mepacrine does not induce drug fastness; proguanil probably does. Mepacrine stains the skin and may cause psychoses, though the incidence is low—1.71 per 1,000 among 90,320 persons given mepacrine therapeutically or prophylactically.¹⁶ Proguanil may cause loss of appetite associated with decreased acidity of the gastric juice. The relationship, if any, of proguanil to the onset of blackwater fever is not yet known. It is claimed that chloroquine, 0.25 g. of the base, effectively suppresses malaria if given once weekly, but it has not yet been tested against West African strains of *P. falciparum*. It is thus doubtful whether the ideal drug either for the prophylaxis or radical cure of malignant tertian malaria has yet been discovered.

The necessity for the intravenous administration of anti-malarials is fortunately rare and occurs for the most part only in cerebral emergencies and where the patient is unable to swallow. The effects of proguanil acetate, soluble proguanil, when given intravenously are recorded by Chaudhuri and Chakravarti on page 91. The acetate, however, has now been replaced by the more soluble lactate for intravenous use. Further investigations on the comparative effects of proguanil lactate and quinine when given intravenously will be of considerable interest, more especially if carried out on patients with no immunity or tolerance to malaria.

THE DANGERS OF HEROIN

Most doctors will agree with Sydenham that they would not wish to practise medicine if denied the use of opium, but they seldom pause when they prescribe this drug or its derivatives to consider the social implications of the narcotics. It is to this aspect that the Permanent Central Opium Board has drawn attention in a report which was recently summarized in *The Times*.¹ The Board is particularly concerned with the increase in the medical use of heroin. It has been found in the past that a rise in the legitimate use of drugs of this order precedes an increase in addiction and in illicit supply. In 1931 an international conference noted the wide variations in the demands of various countries for heroin for medical use and commented on the disparity in professional practice. Acting on the recommendations of this conference, many countries, of which the United States was one, prohibited the importation and manufacture of this drug. In 1946, 71 countries required less than 1 kg. per million inhabitants, while one, Finland, required more than 25 kg. The Finnish Government estimates its country's requirements for 1949 as 51 kg. per million inhabitants, representing a more than sevenfold increase in consumption since 1936. The needs of Italy and Sweden have also risen.

The dangers of heroin are well known. Addiction is acquired more rapidly than with any other drug; once acquired, the disorder progresses with greater speed and is marked by a more profound and disastrous moral degeneration than in any other addiction. Cure is more difficult, and sudden withdrawal may prove fatal. In the light of these facts it is clearly the duty of the medical profession to examine again the therapeutic value of this substance

¹ *British Medical Journal*, 1948, 2, 275

² *Iridian med. Gaz.*, 1948, 83, 225

³ *Trans. R. Soc. trop. Med. Hyg.*, 1946, 40, 105

⁴ *Bull. World Health Organ.*, 1948, 1, 297

⁵ *Ann. Soc. belge Méd. trop.*, 1948, 28, 85

⁶ Bishop, A., and Birckett, B., *Nature*, 1947, 159, 884

⁷ Bishop, A., and Birckett, B., *Parasitology*, 1948, 39, 125

⁸ Bishop, A., and McConnachie, E. W., *Nature*, 1948, 162, 541.

⁹ Williamson, J., et al., *ibid.*, 1947, 159, 885.

¹⁰ Williamson, J., and Lourie, E. M., *Ann. trop. Med. Parasit.*, 1947, 41, 278

¹¹ Hawking, F., and Perry, W. L. N., *Lancet*, 1948, 2, 850.

¹² *J. Pharmacol.*, 1947, 90, 233.

¹³ *Brit. J. Pharmacol.*, 1948, 3, 545

¹⁴ Vane, J. R., Walker, J. M., and Wynn Parry, C. B., *ibid.*, 1948, 3, 350.

¹⁵ Doll, R., and Schneider, R., *ibid.*, 1948, 3, 352.

¹⁶ Findlay, G. M., *Trop. Dis. Bull.*, 1947, 44, 763.

and to weigh it against its social danger. When first introduced in 1898 it was claimed that, although heroin lessened the cough reflex and slowed respiration, inspiration was deepened and increased in force. This alleged advantage over morphine has not been confirmed. Its effects on the alimentary tract are certainly less prominent than those of morphine, but where pain needs relief and these other actions are undesirable dihydromorphine can be employed. The choice of effective analgesics has been widened by the introduction of pethidine and similar compounds. For the control of cough codeine or one of its derivatives, dihydrocodeinone or dihydrohydroxy-codeinone, will suffice in most cases. In short, morphine or some related drug can always be used as effectively as heroin. Since 1931 the profession has been deprived of heroin in some 26 countries without evident disadvantage. Pharmacological opinion has long held that its social dangers overshadow its therapeutic importance. It must be granted that there is justice in the Permanent Central Opium Board's claim of "an *a priori* case for its total abolition."

DISEASE OF THE BREAST

It remains a sad fact that even with all modern methods of investigation and with the results of various therapeutic methods recorded in thousands of cases it has not yet been possible to define clearly, either histologically or clinically, the more frequently encountered pathological conditions in the breast. To remove a breast unnecessarily is a surgical crime; to leave a breast *in situ* when it contains an undiagnosed or misdiagnosed malignant tumour is almost worse. Are there any beacons to help the practising surgeon to steer between the Scylla of commission and the Charybdis of omission?

On the one side is the obviously innocent tumour, such as the fibro-adenoma, easy to diagnose and amenable to simple treatment without producing deformity or loss of function. On the other is the clinically obvious carcinoma, which by the time it has reached this stage is probably a growth of some years' standing and may even have spread either obviously or microscopically to far distant parts. In this class the signposts to treatment are also clear—pointing to a judicious mixture, varying with each growth and each individual, of surgery and radiotherapy. Two papers recently published in the *Journal* were concerned with this aspect of the problem, the first by Sir Cecil Wakley¹ and the second by Mr. Victor Riddell.² Unfortunately the results of treatment, especially when the relative accessibility of the breast as an organ is taken into consideration, are woefully depressing to the clinician who follows up his cases sufficiently long. He is a fortunate man who can say that one-third of his patients are alive and well five years after treatment, and even in this group lie traps for the unwary. Fat necrosis³ is an example, for an adequate history is frequently lacking; another is the condition of plasma-cell mastitis, described by Dr. Max Cutler elsewhere in this issue.

Between the two extremes and far outnumbering them come that mass of cases and conditions labelled by one of a dozen or more names—the generic but now rightly repudiated term for which has previously been "chronic interstitial (cystic) mastitis." Also published in this issue is a paper by Mr. D. H. Patey, who describes two common non-malignant conditions of the breast—the "pain" syndrome and "cystic disease." The separation of the former condition into a class of its own—a subjective disorder without obvious clinical signs and due either to cancerophobia or to a psychosocial disturbance—is timely if its

recognition serves only to distinguish one among the many manifestations of disorder in this vague intermediate class. Cystic disease, on the other hand, would appear to present innumerable problems. Undoubtedly there are many perfectly innocent cysts, but Patey himself speaks of a possible hormonal cause, with all the conflicting and possibly sinister implications that this suggests. Again, he describes a diffuse cystic disease in which accurate diagnosis is only "possible after exploration and naked-eye and microscopical examination." For the solitary cyst he advocates diagnosis by aspiration, a method also approved by Pybus,⁴ who goes further and treats the condition by injection of quinine and urethane. But cysts, apart from the retention cyst of the lactating breast, are essentially degenerative in character, though they may vary widely in type, in contents, and in pathological significance. Dawson⁵ divides all proliferative conditions of the breast into adenosis and epitheliosis. The former term (also approved clinically by Atkins⁶) comprises glandular growth which produces more and larger lobules and is essentially a response to physiological stimuli. Epitheliosis, on the other hand, implies proliferation inside existing ducts, and degeneration of these cells leads to cyst formation, with perhaps secondary papilliferous outgrowths or uncontrolled extension into surrounding stroma. Such cells (and cysts) are according to Dawson a very probable "*Anlage*" of carcinoma. A good, if rare, example of this condition is "comedomastitis" where proliferation within the dilated ducts is still non-invasive. Comedomastitis was described recently by Tice, Dockerty, and Harrington⁷ and was mentioned by Mr. J. M. Jackson in a letter appearing in last week's *Journal* (p. 71).

Such considerations as these would seem to place cystic disease in a far from well defined category and to throw considerable doubt on its universally non-malignant character. The other large group of non-malignant breast tumours—the fibro-adenomas (nodular non-cystic breasts)—have a greater claim to innocence, though it is perhaps worthy of record that they too in the process of reaching natural quiescence by fibrosis may also develop microscopic cysts. There are still many obscurities in this field of pathology, and since it is patients as well as tumours that are concerned the perhaps hackneyed aphorisms of the clinicians still merit attention: "No fibro-adenoma occurs after the age of 35"; "A lump in the breast is carcinoma until proved otherwise"; "It is better to look and see than wait and see."

PRESENT-DAY PNEUMONIA

A valuable analysis of the characters of pneumonia and its response to the different treatments used in three recent periods has been made by Israel and his colleagues.¹ Their material consisted of patients admitted to the Philadelphia General Hospital during the twelve-month periods (including the winters) of 1936-7, 1940-1, and 1945-6. After first eliminating all patients over 60, tuberculous, post-operative, and terminal cases, the numbers available in these periods were respectively 368, 540, and 420. Of these 261, 429, and 312 were diagnosed as having lobar pneumonia, and consideration was restricted to these groups. In the first period there was no chemotherapy, and the only specific treatment used was serum in five cases: the mortality was 23.3%. In the second period all but 20 patients (wrongly diagnosed) were given sulphonamides, and the mortality was only 5.4%. In 1945-6 penicillin was also available: it was used alone in 36 cases and together with sulphonamides in 113; sulphadiazine or sulphadiazine with sulphamerazine was given to another 153; and 10 patients for some reason received no specific treatment. It might have

¹ *British Medical Journal*, 1948, 2, 631.

² *Ibid.*, 1948, 2, 635.

³ Murphy, J. E., *Arch. Surg.*, 1939, 38, 1.

⁴ *Lancet*, 1947, 1, 420.

⁵ *Ann. R. Coll. Surg.*, 1948, 2, 241.

⁶ Atkins, H. J. B., *Lancet*, 1947, 1, 253.

⁷ *Surg. Gynec. Obstet.*, 1948, 87, 525.

¹ *N. Engl. J. Med.*, 1948, 238, 205.

been expected that the additional therapeutic resources available in the most recent period would reduce mortality still further, but it did not; there was on the contrary a slight rise, to 6.5%, and a distinct increase in the mean duration of fever and the length of stay in hospital.

The apparent reason for these differences is to be found in a change in the characters of the disease, notably in its age incidence. In 1940-1 the fourth decade had the largest number of cases; in 1945-6 the fifth and sixth each contained more than any lower age group. At the same time there was a marked increase in the proportion of patients without leucocytosis. This appears at first sight to suggest that this group included a number of cases of virus pneumonia, the course of which would be relatively unaffected by chemotherapy. That this is not the explanation is evident from the careful analysis made. It would be expected that most of these supposed virus pneumonias would occur in the patients with leucocyte counts between 5,000 and 10,000, but in fact their mortality did not differ, and their decline of fever was more rapid than those with a leucocytosis. Low leucocyte counts and a retarded response to treatment were also seen in patients whose pneumonia was proved to be of bacterial aetiology by cultivating pneumococci from the blood.

Nevertheless, the authors are inclined to the view that virus infection is responsible for the change in the character of the disease in quite a different way. Their hypothesis, originally put forward by Francis, is nothing less than that a virus is concerned in producing lobar pneumonia generally, with varying degrees of superimposed bacterial infection. The facts which they have to explain can all be accounted for by a hypothetical recent change in the relative importance of the virus and bacterial factors. This is indeed a revolutionary concept and not one which will be readily accepted, especially in view of the ease and regularity with which typical lobar pneumonia can now be produced experimentally with pneumococcus culture. It is, nevertheless, an interesting possibility to bear in mind. Comparable studies of present-day pneumonia should certainly be made elsewhere in order to see whether the tendency observed by Israel and his colleagues is general.

SICKNESS TREATED IN HOSPITALS

In a leading article¹ on the subject of morbidity surveys we have already referred to the investigation carried out by the Glasgow Health and Sickness Bureau of hospital-treated sickness among the population of Stirlingshire. This well-produced report,² published by the Nuffield Provincial Hospitals Trust, covers the period of twelve months beginning on Oct. 1, 1946, and records the hospital attendances of all the residents in the county irrespective of whether they received treatment at hospitals inside or outside Stirlingshire. No record, however, was made of patients who were treated in nursing-homes. In-patients during the year numbered 10,560 and out-patients 18,009, out of a total population of 183,200—i.e., one person in every seven of the population had hospital care during the year. This rather startling finding must be qualified. An examination of the tables shows that over one-third of the in-patients were women who entered hospital for their confinements or babies born in hospital, and over one-third of the out-patients attended for injuries. With the omission of these groups the proportion of the population receiving treatment at hospitals was one in thirteen. The authors stress the difficulties of interpreting hospital data in relation to the general sickness in a com-

munity, since many other factors (geographical, social, environmental, custom, etc.) besides the disease determine whether or not a patient enters hospital. Apart from mothers and babies the three largest groups of in-patients were admitted for the treatment of diseases of the digestive system (1,217 patients), infectious and parasitic diseases (760 patients), and injuries (719 patients).

The data have been extensively analysed, the patients having been grouped according to disease, age, occupation, area of residence, duration of stay in hospital, condition on discharge, etc. It is always difficult to present a mass of detail in a manner that gives the maximum information without ambiguity and at the same time in a form that is generally understood. Percentage distributions are generally not informative—the fact that a specific disease forms a larger proportion of the total admission in one social class than in another does not convey any useful information unless the numbers exposed to risk by age and sex are known. There is also a risk of gaining false impressions from percentage distributions. Taking figures from a table showing the percentage in age groups of the total number of patients admitted for certain diseases, the authors discuss the "peak" incidence—for example, they find that the peak incidence for circulatory diseases in females is at ages 35-54. Actually, when allowance is made for the varying numbers exposed to risk in each age group, it is clear that the peak vanishes and the incidence increases throughout life—a finding to be expected from the known trend of mortality. The presentation of some of the tables could be improved, and some omitted since they give no useful information. The division of the percentage of hospital admissions in each age group by the percentage of population in each age group seems clumsy and is no improvement on the usual method—i.e., admissions expressed as a percentage of the population exposed to risk. There is little to be learnt from a comparison of the duration of stay in hospital for all causes combined with figures obtained from old records, since methods of treatment and hospital policy have changed considerably, and, moreover, with the discovery of many auxiliary aids to diagnosis a larger number of patients are admitted for investigation (generally only for a few days) than formerly. This investigation, by breaking new ground, provides useful guidance for future inquiries.

INCREASE OF MILEAGE FUND

The General Medical Services Committee sent a deputation to the Ministry of Health on Dec. 22 to put before it the problems at present facing rural practitioners and to urge the need for the relief of financial hardship suffered by so many of those practising in rural areas. As is announced in this week's *Supplement*, the Ministry of Health has proceeded to lighten the load by increasing the Mileage Fund by rather more than 50%. This Fund has been increased by £700,000—from £1,300,000 a year to £2,000,000. The increase is made up by a new provision of £500,000, and by £200,000 from the Special Inducement Fund. The new Fund of £2,000,000 will be retrospective to July 5, 1948, and in the case of some practices this will increase the annual income by several hundred pounds. This substantial increase in the Fund is a tribute to the pertinacity of those who are negotiating on behalf of the medical profession, and a welcome sign that the Ministry of Health will respond to a strong case cogently put. It is, of course, yet to be seen to what extent this will relieve the financial anxiety of rural practitioners, and whether it will provide a sufficient reward for those general practitioners who care for the health of the people who live in the four-fifths of Britain that still remain the countryside.

¹ *British Medical Journal*, 1948, 2, 686.

² *Hospital and Community*. 1. *Hospital-treated Sickness Amongst the People of Stirlingshire*. 1948. Nuffield Provincial Hospitals Trust.

HAEMATEMESIS AND MELAENA*

BY

NORMAN C. TANNER, F.R.C.S.

Senior Surgeon, St. James Hospital, London

Cases of massive gastro-duodenal bleeding treated at St. James Hospital, London, in the period of 1941-8 numbered 650. Peptic ulcer and gastritis accounted for 85% of these cases, as is shown in Table I.

TABLE I.—Final Diagnosis

Gastric ulcer	290
Duodenal ulcer	195
Anastomotic ulcer	29
Oesophageal ulcer	2
Gastritis	40
Carcinoma of the stomach	24
Portal hypertension	22
Hiatal hernia	3
Simple tumour of the stomach	4
Gastric diverticulum	1
Aneurysm of the aorta	1
Pancreatitis	1
Uncertain, duodenal diverticulum, etc.	38
Total	650

Although oesophageal varicosities are a typical feature of portal hypertension, it is not so well known that varicosities may occur in the body of the stomach, and they were observed gastroscopically in one of these 22 cases. There is great difficulty in arresting the haemorrhage in this disease, and I recommend the use of an inflatable bag in the lower oesophagus which can, on distension, obstruct the collateral blood flow from the coronary veins and so reduce the pressure in the oesophageal veins to normal or less. (See Fig. 1.) A modified Miller Abbott

tube is useful for this purpose and need not press on the bleeding area.

Severe bleeding from carcinoma of the stomach is not necessarily a sign of inoperability, for of 24 such cases with severe bleeding 13 were eventually treated by gastric resection and left the hospital well, though 4 required a total gastrectomy.

Gastroscopy is of value in the diagnosis of some cases of hiatus hernia; the gastroscope may first enter the supra-diaphragmatic part of the stomach and then the sub-diaphragmatic compartment. Above the diaphragm a violent heaving pulsation is seen, due to the immediate proximity of the heart, with an opening below, which varies in size with respiration, through the oesophageal hiatus in the diaphragm. If the gastroscope is passed through this opening the normal quiet appearance of the body of the stomach is seen.

FIG. 1.—The bag inflated in the lower oesophagus, obstructing hypertensive portal flow, with aspiration or feeding tube in the stomach.

Gastritis, particularly an atrophic gastritis associated with achlorhydria, may be the only positive finding in many cases of gastro-duodenal bleeding, as in 40 cases in this series. Why is the atrophic stomach prone to bleed? Occasionally a small subacute gastric ulcer is found, but in the majority of cases there is no visible ulcer by the time the patient is examined gastroscopically. In two cases minute erosions were seen directly overlying the submucosal vessels which appear so prominent in atrophic cases. I believe that in these cases minor erosions which might heal without incident in normal mucosa penetrate one or more of the submucosal vessels and cause a haemorrhage. The value of gastroscopy in this series was amply demonstrated.

*Abridged version of the first Simpson-Smith Memorial Lecture, delivered at the West London Hospital Medical School on June 10, 1948.

Peptic Ulcer and Gastritis

In England a policy of selective surgical intervention has been followed in this group, cases thought likely to fare badly under medical management being treated surgically. This policy has certain difficulties. If one waits for repeated bleeding, or waits to be certain that the bleeding is of a lethal type, then several days may have passed and the patient may be in poor condition for surgery. An alternative method is to operate on all cases of bleeding in patients who are known to have peptic ulceration and to operate at once, as recommended by Finsterer, on a patients who have a second haemorrhage even if they have no history of peptic ulceration.

How can we discover the advantages or otherwise of surgery? Comparison of the results of different workers is practically valueless. The ages of different groups of cases recorded vary widely; in this series 38% of the patients were aged over 60 compared with the more usual proportion of 2 to 20%, and two thirds of the deaths occurred in this group. Long lists of cases of gastro-duodenal bleeding treated surgically with few or no deaths are of little value; such figures may be readily obtained if only good risk cases are accepted. I therefore adopted a different approach. With the co-operation of the medical staff at St. James Hospital all the cases of haematemesis and melaena were admitted to my wards. A routine method of treatment was decided upon and printed on charts displayed in the wards. The intention was to remove as many variables as possible and then vary one factor only, the factor of surgical intervention, to discover its effect on mortality. It was of course impossible to exclude some variables. The introduction of the sulphonamides and penicillin had some effect, and the depletion of staff during the war also affected the results. Bombing had a bad effect on surgical mortality, and the incidence of bleeding rose during the "fly bomb" period. The total mortality figures were as follows:

Whole Series.—650 cases; 85 deaths; mortality 13.0% (number over age 60 is 249=38%).

Peptic Ulcer and Gastritis Group.—586 cases; 62 deaths; mortality 10.5% (number over age 60 is 224=38%).

During the first phase of this period, 1941-3, operation was avoided so far as possible, and the cases operated on were the persistently bleeding survivors. In the next period, for six months of 1944, early or more frequent operations were undertaken and gastrectomy was almost invariably performed. The period was terminated by the advent of the flying bombs, which made surgery inadvisable and difficult. The mortality rose during this period. Following this, operation was a little less readily undertaken, and, instead of making it a rule to perform gastrectomy, the simplest and safest method of controlling the bleeding was used. This brought down the mortality to a low level.

In 1948 things were sufficiently stable to try the effect of early surgery in a much higher proportion of cases, and so from Jan. 1, 1948, the dictates of Finsterer were followed. The increased operation rate in the first four months of the year to 41%, and during that time there was no death, despite the advanced age of many of the patients. Table II clarifies these points.

TABLE II.—Peptic Ulcer and Gastritis

	No. of Cases	Over 60 Years	Operated on	Mortality	Average Age of Patient who Died
Period 1, 1941-3. Operation avoided if possible	193	33%	5%	10%	62
Period 2, Dec., 1943-June/1944. Operation earlier, always gastrectomy	60	33%	15%	20%	62
Period 3, June, 1944-Dec., 1945. Simplest operation to stop bleeding, early	175	39%	11%	7%	66
1946	66	36%	8%	11%	61
1947	71	32%	15%	15%	67
Period 4, 1948. "Finsterer" ..	22	45%	41%	0%	—

This fourth group is too small to be significant but will be extended. Up to Oct. 14, 1948, 60 cases had been admitted, 35 (58%) being treated by emergency operation. Of the 60 patients, two (3.3%) have died, but one of these was bleeding too severely to move to the operating theatre and the second was a bed-ridden man aged 67 who had been bleeding on and off for three months. It must be acknowledged that the series is a fortunate one.

All the operations were performed under local analgesia, most of them by myself, but several by two assistants after they had spent two years in assisting at operations on considerable numbers of gastro-duodenal cases. So far as the precise surgical procedure is concerned, I considered it unwise to start the operation with a fixed determination to perform a gastrectomy, although that is undoubtedly the most certain way of stopping bleeding. In most bleeding gastric ulcers a gastrectomy is the easiest treatment. In extensive deeply penetrating ulcers in feeble persons I was often content to separate the ulcer edge from liver and pancreas and then firmly suture up the resulting opening in the stomach, taking care to include the whole crater edge in the sutures. A secondary gastrectomy has occasionally been necessary later. This procedure has undoubtedly saved some very fragile patients from death. In cases of duodenal ulcer the anterior wall of the duodenum is opened, the ulcer edges firmly approximated with deep silk sutures, and the duodenum repaired; this obstructs it, and so a gastro-jejunostomy is necessary. Although one patient bled again some days after this operation, it has given good results on the whole and has saved lives.

Finally, I believe that where there are good facilities and surgeons interested in this subject the freer use of surgery in the arrest of gastro-duodenal bleeding may give better results than those hitherto obtained. The method of deciding on a definite policy and observing the effects on the mortality of varying this policy may lead to further enlightenment.

Correspondence

Infective Ear Disease

SIR.—Your leading article on infective ear disease (Dec. 18, 1948, p. 1068) reviews the problem and discusses Mr. Colin M. Johnston's paper (p. 1049) on the same subject. It states that "it seems certain that regular daily treatment is the best method of clearing up infected ears." Is this true of suppurative otitis media? Before factory managements are persuaded to set aside facilities, including valuable nursing personnel, and workers are persuaded to spend their working time in making daily visits to factory clinics, the evidence must be considered. Daily treatment must inevitably consist, as Mr. Johnston points out, in a nurse or orderly syringing the ear or cleansing the ear by dry mopping and instilling drops. I know of no method more calculated to perpetuate infection: the easiest way to set up middle-ear discharge in a case with dry perforation is to syringe the ear; does not a suppurating ear so treated become dry despite rather than because of such treatment?

Mr. Johnston's paper is an abridged version of his full report to the M.R.C., and comments are to be related to the abridged rather than the full report. Are his criteria of cure adequate, bearing in mind the fact that of 37 cases of "immediate cure" examined by him 6-18 months after cessation of treatment 46% were found to have relapsed—a result not surprising in the condition, itself liable to intermittent activity? Moreover, the average duration of treatment was 5.2 weeks, and it seems likely that the average number of treatment attendances was 25-30. Of 274 cases some two-thirds would be the simple type of otitis, tubal infection, or tympanic sepsis, for only 90 showed granulations or polypi and six cholesteatoma. Moreover, of the polyp cases a number would arise from the tympanic annulus, with excellent prognosis. That "immediate cure" resulted in 80% of cases treated to conclusion is therefore not surprising, but I submit that a result as good could have been obtained with far less treatment.

In such cases treatment by an otologist perhaps once, perhaps repeated at weekly intervals three or four times, will yield equal results. The essentials are very careful toilet of the meatus and application of 20% silver nitrate, which is far preferable to chromic acid or trichloroacetic acid; it is an effective caustic and need not be confined to the precise area of the middle ear, being harmless in the external ear and indeed helpful if, as frequently occurs, otitis externa accompanies the otitis media. The application of silver is immediately followed by free insufflation, not light dusting but largely filling the meatus with pulv. P.S.U. (sulphathiazole 10 parts, urea 1 part, penicillin 2,000 units per gramme). Such treatment is only with extreme rarity followed by skin reactions.

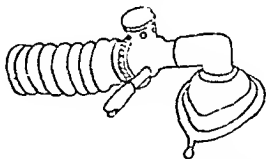
In cases of tubal infection (antero-inferior perforation, discharge of mucous type, notably influenced by occurrence of coryza) infection in the nose, sinuses, or nasopharynx requires treatment, but deviation of the nasal septum and tonsillar or dental infection are rarely significant in the otitis.

More important, though less numerically, than these "nuisance cases" of otitis media are those with cholesteatoma or osteitis extending beyond the tympanic annulus, and I hope that Mr. Johnston will be able to amplify the information he has given, to record the number of cases showing attic perforations and granulations persisting despite treatment and correlate the results of treatment with these findings. It would seem that he takes too tolerant a view: to regard cases showing persistent pus in the middle ear not extruding through the perforation as "quiescent" is to misunderstand the whole pathology of the middle ear cleft. In days past radical operations were done in cases of persistent middle-ear suppuration of the tympanic sepsis and tubal type: that is history, and best forgotten. But the otologist who takes too lightly his cases of cholesteatoma, or deep osteitis, or granulations of antral origin incurs much responsibility: indefinite supervision will be required, and sooner or later operation will be advised—or the patient will fail to continue attendance, for which the otologist must blame not the patient but his own dilatory decision. In these cases, correctly diagnosed as such (a small proportion only of the total), there is expectation only of continued discharge, progressive increase of deafness, and possible sudden complication of the most serious nature.

Preparations and Appliances

ANAESTHETIC APPARATUS FOR INFANTS

Dr. D. F. REES, of Twickenham, writes: Below is described a simple method of anaesthetic administration evolved for that very awkward patient the tiny baby—i.e., from birth to the early months of life. It is based on Ayre's open T-piece method without the need for intubation. The apparatus consists of the inlet junction and mask mounting of a Waters assembly with a length of elephant tubing (6 in.—15 cm.—has proved satisfactory) fitted on to the absorber mounting. The valve is screwed shut and the feed-tube is connected to a normal Boyle machine.



In major abdominal operations—e.g., for pyloric stenosis, exomphalos, torsion of gut, and intussusception—it provides ideal conditions, with quiet respiration and adequate relaxation and oxygenation. It has the advantage over cyclopropane that an air-tight fit of the mask is unnecessary and that the administration can be performed by the relatively unskilled. Finally, the lightness of the apparatus renders the fatigue of administration minimal. In minor surgery, such as circumcisions and talipes manipulations, it is equally effective, and dispenses with the cumbersome "rag-and-bottle" method and the nuisance of preparing several Schimmelbusch masks in the event of a long list. To obviate risk of explosion when cauterizing naevi and warts a non-inflammable mixture can be administered at will.

As a guide, 2 litres of oxygen and 4 litres of nitrous oxide, with the ether tap of the standard Boyle fully open, slide up, and ether to the 6-oz. (170-ml.) mark, quickly provide adequate anaesthesia for abdominal work. The large volume of gas-flow plus the non-gastight fit of the mask ensures against CO₂ build-up under the latter. A diagram is included more to emphasize the simplicity of the apparatus than to clarify the above description.

Operation should be advised after trial of conservative treatment, for it is only after such treatment in many cases that the precise pathology can be determined. Otoscopy and trial treatment of short duration are all important—neglect x rays, so often unhelpful and not infrequently misleading in otology. Operation must be performed according to the operative findings and be as limited as the disease permits. In these cases the disease is in the antrum and/or attic, and the lower tympanic and tubal region are best left undisturbed in almost all cases. The transmeatal route gives direct access to the site of disease and greatly speeds up convalescence and healing. The operation involves only 3 to 4 days in bed, 8 days in hospital, and dressings once weekly for 5 to 6 weeks. The only justification for postponement of so simple a treatment is the desire to spin out as long as possible still good hearing in the diseased ear, the other ear being more deaf: the surgeon fears that in dealing with extensive disease he will encroach on still functioning hearing mechanism. Such cases do occur and they must be watched carefully; sooner or later spread of disease, increasing the indication for operation or increasing the damage to the hearing, will bring the patient to operation.

Mr. Johnston's findings throw light on the importance of the problem of chronic otitis: we must be sure we tackle in the right way the disease in all its forms.—I am, etc.,

Canterbury.

T. A. CLARKE.

SIR,—As a school medical officer, I read Mr. Colin M. Johnston's paper (Dec. 18, 1948, p. 1049) with great interest, as infective ear disease presents an important problem among the school population. In fact, in a sample of 1,241 "defects discovered at routine examinations" which I analysed recently I found that 12.0% were assigned to diseases of the ear, nose, and throat—a figure almost identical with the 12.7% quoted by Mr. Johnston as occurring in a sample of 11,956 military out-patients.

I believe that this problem should be tackled from the epidemiological standpoint, in particular by the study of the infecting organisms, and I was disappointed to find no reference to bacteriology save a passing remark as to the possible growth of penicillin-resistant organisms in otitis externa. The following examples of bacteriological studies on pus from cases of otorrhoea will illustrate this point: (1) Pure growth of *Str. haemolyticus*—slightly "sulpha"-resistant and sensitive to penicillin. (2) (a) *Staph. pyogenes*—"sulpha"-resistant, penicillin-sensitive; (b) *Bact. coli*—resistant to sulphonamides and penicillin. (3) *Staph. pyogenes*—"sulpha"-resistant, penicillin-sensitive. (4) *Staph. pyogenes*—"sulpha"-resistant, slightly resistant to penicillin.

In none of these cases could chemotherapy, local or general, have been used successfully without this bacteriological evidence. In addition, an inspection of the findings affords a clue to epidemiology. Case 1, which was of recent origin, was associated with an organism of epidemic strain which was responsible for an outbreak of tonsillitis in the area. The other three cases were of longer standing. The staphylococcus may either have been of nasal origin or have been introduced as a contaminant during amateur efforts at treatment by the mother. In Case 2 the presence of *Bact. coli* supports the latter theory.

While studying a small outbreak of otitis media during the first quarter of 1948 I was impressed with the way in which parents consistently neglected to obtain advice in the early stages when severe earache was the predominant symptom—the stage in which systemic chemotherapy has the greatest chance of overcoming the infection. The onset of otorrhoea was regarded as desirable in that pain was relieved, and even then no advice was sought for periods which extended up to 14 days. The problem is therefore one of education and early ascertainment. As regards the latter, a policy which insists on exclusion from school of all cases of otorrhoea will result in treatment being obtained fairly early.

I am of the opinion that there is a good case for co-operation between otologist, bacteriologist, and epidemiologist in this field, and that by good team work, in which incidentally each must have respect for the others' outlook, a successful attack can be launched on this obviously serious cause of ill health in all sections of the population.—I am, etc.,

Bexley, Kent

A. J. DALZELL-WARD.

Treatment of Simple Ganglion

SIR,—I am delighted to read in the letter from my old friend Mr. Eric Coldrey (Jan. 1, p. 32) that he advocates rupturing simple ganglia rather than excising them. I entirely agree with him, both that this is sound practice and that it is not sufficiently frequently taught. It should be given a trial in almost every case. The ganglion in the commonest position, that on the dorsum of the wrist, is usually ruptured fairly easily, but that on the palmar aspect overlying the radial artery at the lower end of the radius is very resistant to rupture and often rather tender. I always use my two thumbs, one placed over the other, to apply the rupturing force. It is perhaps wise for textbooks to continue as they do to recall the well-aimed but surely traditional blow from the family Bible, as students are so ready to remember the bizarre and will know that rupture of a ganglion is a recognized practice.

But I most sharply disagree with Mr. Coldrey on two points in his letter. He says, "The results of treatment are very good indeed; most cases can be dispersed, and few recur." I used to believe the same, as few patients returned after rupturing the ganglion. But some years ago when I began following up my cases I realized that in about two-thirds of them the ganglion re-formed. However, although the betting is 2 to 1 against, the simplicity of the treatment is such as to prompt me to continue to give it a trial in all cases. I also entirely disagree with Mr. Coldrey when he says that simple ganglia arise from tendon sheaths. This is most dangerous teaching, for if a dissection for removal of a ganglion is carried out only as far as the tendon sheaths recurrence is very probable. If, in a bloodless field, the tendons and their sheaths are carefully retracted the ganglion will be seen to arise from the capsule of a joint, and this part of the capsule should be excised. Even then a few ganglia may recur. The only common ganglion that does not arise from a joint capsule that I know of is the interesting tiny tender one situated in the palm over a metacarpo-phalangeal joint.

A longitudinal incision on the back of the wrist is always more unsightly than a ganglion, but it is still being used—and much too frequently.—I am, etc.,

London, W.1.

JOHN HOSFORD.

SIR,—I have read Mr. Eric Coldrey's letter (Jan. 1, p. 32) with astonishment. I have re-read it to see whether my first impressions were incorrect. The more I peruse it the more I wonder whether he and I are living in the same world. Is it true that in "many cases a wrong diagnosis is made—e.g., fibroma, neuroma, osteoma, chondroma, bursa, and even sarcoma"?

Is it really true that some of the treatments ascribed to surgical textbooks such as "hitting the swelling with a hard object" are really described in recent editions? Is it really true that excision of a ganglion "is a major surgical procedure necessitating a general anaesthetic and subsequent rest, and leaving a permanent and often unsightly scar"? Is it really true that the "jelly can be seen to disperse in the tendon sheath"? Is it still believed that "a ganglion is a collection of jelly in a diverticulum of the sheath"?

For twenty years I have been fascinated by discussion about the simple ganglion, and, probably to the annoyance of my house-surgeons, who have felt that I was robbing them of their just dues, I have preferred to carry out the operation rather than entrust it to those who do not know on what they are operating. In twenty years I have found one ganglion arising from a tendon sheath. Two arose from the middle of the shaft of the first metatarsal. All the others arose from a joint. It is the failure to realize how deep is the origin of the ganglion, so that excision is incomplete, that results in recurrence. The complete excision of a ganglion leaves a small hole in the capsule of the joint from which it has arisen. To describe the operation as a major surgical procedure is to travesty the words. Most careful asepsis is required as in all operations. A local anaesthetic will suffice for all but the very nervous patients. Subsequent rest is required only for those cases where activity would delay the healing of the wound.

If Mr. Coldrey had examined textbooks he would have found an interesting swing over in the last fifty years. In the earlier textbooks a ganglion was described as arising from a tendon

sheath; later editions give approximately 50% in favour of the tendon sheath and 50% in favour of the joint. The more recent editions give a much higher percentage describing the true origin of a ganglion.

About diagnosis of ganglion I have nothing to say, except that I am surprised that any surgeon would admit mistaking a solid osteoma or chondroma for a cyst, however tense it was.—I am, etc.,

Manchester

W. SAYLE CREER.

SIR,—I agree with Mr. Eric Coldrey's view (Jan. 1, p. 32) that the present teaching on the subject of simple ganglion is inadequate, especially as to its treatment. My late chief and I had a ganglion each near the insertion of the right flexor carpi radialis. It is interesting that in both of us anxiety would cause temporary enlargement of the ganglion. For instance, in my own case this would begin with pain about three days before an examination and later subside. A sharp tap with a small mastoid hammer would hasten the gradual subsidence. In about two years the swelling disappeared for good. Many of these ganglia are said to be tuberculous.

The continuous-pressure method of reduction by one's thumb or knuckle is very efficacious, especially if the ganglion ruptures during the proceeding. The second method quoted—viz., hitting the swelling with a hard object such as a book—is clumsy, as Mr. Coldrey says, but carried out with a more accurate and decisive technique it rarely fails. A small mastoid hammer, being heavy for its size, properly used results in the instantaneous disappearance of the swelling, much to the patient's interest and amazement. One may quickly establish a local reputation as a champion ganglion-smasher. The only failures known to me have been when the sac has been thick-walled. I have never seen the method cause any spread of tuberculosis. Apparent incompleteness of cure may result from the presence of a second and much smaller ganglion hidden by the first, or by incomplete dispersal of the jelly and subsequent thickening of the sac. It is as well, therefore, not to fail at the first attempt. The method requires good positioning and the exercise of a certain amount of nerve to avoid damage to bone and yet ensure a correct knock. A small torch applied over the swelling often aids the diagnosis. Two or three days may be required for the pain to subside after such treatment.

I agree that the other methods mentioned by Mr. Coldrey are not always successful. They are seldom required if reduction or cracking has been employed. Excision may result in local disaster and often in keloid. It is also sometimes very troublesome to perform. It seems to me that the subject could be discussed with advantage both to the patient and the doctor. The natural history of an untreated ganglion has not been authoritatively given by anyone, as far as I know. A ganglion which quickly arises from hard manual work or from strain generally cures itself.—I am, etc.,

London, W.1.

G. H. COLT.

Mallet Finger and Simple Ganglion

SIR,—I was very interested to see Dr. W. J. Lloyd's remarks (Jan. 1, p. 30) concerning mallet finger. I think it is important, however, to x-ray all mallet fingers, as the line of treatment should differ according to whether or not a small fragment of bone is avulsed from the base of the dorsum of the distal phalanx. If there is such bone involvement, then it is worth while immobilizing the finger in the position usually recommended—i.e., 90 degrees flexion at the proximal joint, with the distal joint hyperextended. One month's fixation is sufficient, by which time clinical union is obtained.

Should there be no bone involvement, then the best results are obtained by non-fixation. I usually instruct the patient to hyperextend the distal joint by pressure of the affected finger against the thumb. This can be carried out on multiple occasions throughout the day, giving an end-result of loss of not more than 10 degrees extension at the terminal joint. Very few people find this to be any disability whatever, and the majority are able to work from the beginning. Local application of ung. "iodex" and methyl sal. helps to relieve the pain at the affected site during the first few weeks. It takes several months before the final result can be assessed.

Plaster fixation does not give results as good as the above method, and quite often the patient is unable to continue at work during the

immobilization. Attempts at suturing the torn extensor may lead to loss of flexion at the distal joint or to septic complications leading to disabilities which are far greater than the results obtained by the above regime.

I would also give strong support to the treatment of simple ganglia recommended by Mr. Eric Coldrey (Jan. 1, p. 32). Treatment by aspiration and injection of sclerosing fluid is in my opinion definitely contraindicated and shows a lack of appreciation of the pathology of the condition, as there is always a communication between the ganglion and either a tendon sheath or joint. Obviously injection of sclerosing fluid into either of the latter could be very dangerous.

The complete excision of ganglia may also be dangerous in inexperienced hands owing to extensive ramifications of the ganglion amongst important anatomical structures. The treatment should be as Mr. Coldrey states: (1) attempted dispersion by pressure of the thumb, or (2) insertion of a tenotome and dispersion if the first method is unsuccessful. Recurrence may occur whatever method is used; it behoves us therefore to use the simplest method possible. Recurrence following puncture by the tenotome is not an indication for surgical excision. The only indication for surgical interference is inability to disperse the swelling following puncture, and in this case it is usually found that the tumour is not a simple ganglion at all but is often a fibroma, which one may find impossible to differentiate from a very firm ganglion.—I am, etc.,

West Bromwich

J. H. KIRKHAM.

SIR,—In his letter questioning the value of conventional treatment for mallet finger Dr. W. J. Lloyd (Jan. 1, p. 30) has made a useful point. I am not ashamed to admit that my own results are depressing, and that of six cases operated on during 1948 only one regained normal extensor function. I agree entirely with Dr. Lloyd that better and far quicker rehabilitation is to be obtained by returning to work without treatment of any kind, and that treatment is indicated only when a special skill demands an attempt to restore full function in the distal segment of the finger.

Perhaps more important than the immediate subject, however, is the general issue involved. In dealing with any non-disabling condition it is often of value to ask oneself whether prolonged treatment, which inevitably makes it necessary to cure the complications caused by that treatment, is really worth while when measured against the advantages of a rapid return to activity.—I am, etc.,

London, W.1

DAVID LE VAY.

Self-administered Pneumothorax Refills

SIR,—I have just read Dr. Philip Ellman's letter on self-administered pneumothorax refills (Oct. 16, 1948, p. 723). I have never heard of a lay person administering his own refills, but I have reason to believe that this is not an uncommon procedure among medical practitioners suffering from tuberculosis. While personally I have never encountered any such practitioners, I heard of some such half-dozen while in Australia early in 1948. This tempted me to conduct my own refills. I have since done this on frequent occasions.

The procedure is amazingly simple and devoid of difficulty or discomfort. The assistance of a nurse is not required provided the apparatus incorporates a three-way tap instead of the usual clips. This tap has three positions connecting thus: (1) outlet bottle to patient, (2) patient to manometer, and (3) both outlet bottle and manometer cut off or neutral. The bottles are set up with the water-containing bottle elevated, so that when the tap is turned "outlet to patient" air will flow from the air-reservoir bottle. First the tap is in "neutral." Then I prepare the chest, and, having drawn a few ml. of local anaesthetic into a syringe with a fine needle, I raise a bleb over an intercostal space laterally and high in the axilla. The pneumothorax being left-sided, it is necessary to stand up during the procedure, the left shoulder being abducted to ninety degrees, the elbow flexed to forty-five degrees, and the palm of the hand resting on the occiput.

A gauge 22 needle is then fitted to the syringe and the intercostal space penetrated. The space is entered with the needle either perpendicular or oblique to the skin surface, depending on one's ability to conduct this manipulation with one hand. Actually an oblique penetration is simpler but requires a longer needle. When the pleural

space has been entered a few bubbles of air drawn back into the syringe ensure a patent needle. The left hand can now be freely used for any manipulations. The syringe is now disconnected, leaving the needle *in situ*, the rubber outlet tube from the air-containing bottle is connected to the needle, the tap turned to "patient-manometer" position, and a reading obtained. Using a fine needle (gauge 22) I have never had difficulty in establishing a "free swing"; no needle blockage has occurred, nor has a second attempt ever been necessary. After a free swing is established and the reading noted, the tap is turned to the "outlet bottle to patient" position. Siphonage into the air-holding bottle results and the pneumothorax refill is now in process.

This procedure is simple and painless, and takes under fifteen minutes for a 600-ml. refill from start to finish. It can be carried out unaided, using one hand only—in my case the right, as I have a left-sided pneumothorax.

I would like to mention the use of a spirometer in controlling refills. This calls for the co-operation of a radiologist in the first instance, with the simultaneous taking of radiographs and spirometer readings. These can be correlated for almost any patient with a unilateral pneumothorax in a short time. In my own case a vital capacity of 1,600–1,800 ml. indicates satisfactory radiological collapse, while a reading of about 3,300 ml. indicates almost total re-expansion, with difficulty in entering the pleural space. This of course does not displace routine films but is nevertheless a helpful guide, as spirometry is both convenient and simple compared with frequent films and screenings.—I am, etc.,

Auckland, New Zealand.

LAURIE GLUCKMAN.

Syringe-transmitted Jaundice

SIR.—I feel that Dr. Donald D. Brown's letter (Dec. 25, 1948, p. 1119) must be answered, and for this reason I would like to present the following facts for his consideration.

1. Much higher rates of hepatitis than that described by me (November 27, 1948, p. 938) have been reported as occurring in V.D. clinics. These rates occurred irrespective of outbreaks of epidemic infective hepatitis and were arrested by proper sterilization and supervision of syringe technique. Very low rates of hepatitis have continued in the clinics concerned, irrespective of the incidence of jaundice in the population.

2. My cases were not divided into infective hepatitis and syringe-transmitted hepatitis. Such a division is admittedly clinically impossible. It should, however, be pointed out that no outbreak of infective hepatitis occurred in this area at or about the dates concerned (April to September, 1947). A survey of the literature reveals only one description concerning the incidence of hepatitis during an epidemic of the infective type. This was in Leicestershire, and the incidence was much less than 1% of the population.

3. For at least ten years jaundice has been by far the commonest complication of the antisyphilitic treatment given in this clinic.

4. During the period reviewed the incidence of hepatitis in male patients suffering from gonorrhoea was 4%, when these patients were followed up for four months. These patients made about 14 visits during the four months and shared the waiting-room with syphilitics under treatment and incubating hepatitis. They received one intramuscular injection of penicillin, and blood for W.R. was taken on five occasions. The W.R.s were performed with a common syringe and needle, washed in running tap water between each blood-taking and boiled once a day only.

5. No records of the incidence of hepatitis in the families of these men is available, but, as Dr. Brown will understand, a fair proportion of the females attending the clinic were wives, sweethearts, consorts, mothers, and daughters of male patients. The incidence of jaundice at the female end of the clinic for all syphilitic patients attending during the reviewed period was 2% only, when these women were followed for one year. An investigation of sterilization arrangements on the female side of the clinic revealed these to be good—the only loophole to a possible syringe transmission lying in the use of a common bismuth syringe boiled once daily.

6. No case of hepatitis occurred in the clinic staff, although many of these had "long conversations" with males incubating and suffering from hepatitis.

7. Three months after the introduction of controlled boiling and with better supervision the incidence of jaundice in this clinic has shown a rapid decline.

I trust that this information, in conjunction with the very exhaustive review of the literature provided in the leading article in the *Journal* of Dec. 18 (p. 988), will confirm Dr. Brown in a full appreciation of the facts in both theory and practice. If cases of hepatitis are to occur in any number in any type of

clinic where multiple injections are being given two stages are necessary: (a) the introduction of a syringe-transmissible virus by a patient, and (b) its subsequent propagation by inadequately sterilized syringes. So Dr. Brown is too modest (I cannot believe him too lucky, as I am sure the syringe-transmissible virus of hepatitis has not missed Bristol in its general itinerary). If the incidence of hepatitis in the Bristol V.D. clinic is under 1%, Dr. Brown has only his "best laid schemes" to thank.—I am, etc.,

Newcastle-upon-Tyne.

R. S. MORTON.

Nephritis in Textile Workers

SIR.—Dr. G. Herdan (Dec. 18, 1948, p. 1083) makes justifiable criticism of some of the statistics in Professor Platt's article (Nov. 15, 1947, p. 771), but it seems that Professor Platt intended to indicate broad trends, and he has stated emphatically that his figures prove nothing.

Dr. Herdan's own figures appear to be at fault. In his first table the number of male deaths from nephritis for ages 16–24 (females is presumably a misprint) should read 220 per year and not 462 (*vide* Registrar-General's *Decennial Supplement*, 1931, Table 4A). In his second table there seem to be errors in the lowest and highest age groups, presumably because deaths at 65 and over have been related to the wrong populations at risk. This should read as follows:

Deaths from Nephritis per 100,000 at Risk in Each Age Group*

	16	25	35	45	55	65	70+
Textile workers ..	10	14	20	111	153	433	555
All males	7	9	18	49	108	219	389
Social classes III and IV	7	9	18	46	102	207	389

* Taken from the Registrar-General's *Decennial Supplement*, 1931.

It will be seen that the excess of mortality from so-called nephritis of textile workers over all males and over males in social classes III and IV occurs in all age groups, but the differences in the three youngest groups are small.

There is some danger in making assumptions from such crude data, which represent the opinion of general practitioners who often cannot verify their diagnoses either by necropsy or special investigation. For example, Dr. Herdan states: "It would thus seem—adopting Professor Platt's theory of essential hypertension as a hereditary disease for textile workers—that such workers in addition to being through their hereditary make-up prone to malignant hypertension are also at an increased risk of falling a prey to renal disease through environmental factors." These assumptions may be quoted and requoted until they become established facts in the minds of many. There has already been a tendency to accept renal disease of textile workers as a definite entity caused by social or occupational factors. This does not deny the enormous value of the Registrar-General's figures, but in many instances they should be used as pointers to further investigation and not as proving the existence of an occupational or social disease.—I am, etc.,

Manchester.

RICHARD SCHILLING.

** Dr. Schilling correctly refers to a misprint. Dr. Herdan's letter was not at fault.—ED., *B.M.J.*

Spinal Analgesia and Caesarean Section

SIR.—In my letter about classical caesarean section (Nov. 13, 1948, p. 877) I incidentally expressed preference for spinal analgesia, which has called forth opposition. Dr. C. D. Sanders (Nov. 27, p. 959) says that increased uterine contractions endanger the life of the child. This is not so. Mr. D. Stanley-Jones (Dec. 25, p. 1121) suggests that there is danger of sudden death of the mother by bleeding into the uterus due to paralysis of vasomotor control, omitting the action of the powerful uterine muscle, the tone and contraction of which are increased if anything—Dr. Sanders would agree with this. I actually advise spinal "percaïne" for the very reason that haemorrhage is reduced, as in other pelvic operations, and, incidentally, shock, owing to the abolition of afferent sensory impulses from peritoncum and viscera.

I have a feeling that neither of these critics is well versed in the subject. Mr. Stanley-Jones, for example, does not seem to have followed the discussion in the *Journal* (November, 1945–April, 1946)

following the publication of an article by Dr. Louis Resnick (Nov. 24, 1945, p. 722), and a discussion at a meeting of the Section of Obstetrics and Gynaecology at the Royal Society of Medicine (reported in the *Journal* of April 5, 1947, p. 463). Dr. Resnick gave two series of cases totalling 394—137 caesarean and 257 operative vaginal deliveries—as well as a series of other gynaecological operations amounting to 1,500, all under spinal analgesia (heavy “nupercaine”), with no mortality. In your issue of Feb. 2, 1946 (p. 181), Mr. Rufus Thomas wrote to confirm Dr. Resnick's findings and to add his own experience of 2,000 cases—200 caesarean sections and others, including forceps deliveries, 15 ruptured ectopic gestations, therapeutic abortions, large ovarian cysts complicating pregnancy, etc., with not a single fatality. Criticisms by Drs. Helen Alcock (Dec. 8, 1945, p. 818) and Loftus Dale (Dec. 8, 1945, p. 819) were answered by Dr. Resnick (Jan. 26, 1946, p. 145), who said that for a long time he had been prejudiced against the use of spinal analgesia, being deterred by the “risks,” largely theoretical, which were advanced, usually by armchair critics. The dangers, complications, and methods of meeting them were fully discussed, and it would only be a waste of time to attempt to recapitulate them now. Another surgeon, Mr. W. C. Spackman (April 6, 1946, p. 546), told of 3,000 gynaecological cases with only two deaths (in elderly patients with large ovarian cysts). Dr. James Ross (Dec. 8, 1945, p. 819), detailing his special technique, gave caesarean section as a main indication for spinal analgesia.

I quote these surgeons because of the large experience they can adduce in this matter. I have had experience of spinal analgesia for the last twenty years or more in a fair number and in a fairly wide variety of surgical cases with the utmost satisfaction. My practice is to use light nupercaine (or nupercaine) for every major operation below the umbilicus, for any age, unless there is some very definite contraindication. These contraindications become less and less as one gains experience in the judgment of dosage and confidence in one's technique, including pre-medication, position of patient on the table and afterwards in bed, etc. I may say that my chief contraindication has been where a patient has been scared by hearing of some friend's unfortunate experience with a badly given spinal analgesic and her report that “she felt everything”; or, again, where some silly member of the nursing staff has a personal prejudice and in some way, perhaps indirectly, lets the patient know about it—another example of the need for good team work.

Operating under a good spinal analgesic is very satisfactory for the surgeon, and it is very pleasant at the end of the operation to tell the patient that the job is finished and to hear his surprise and also his expression of feeling very well indeed. It seems to me very reasonable to anaesthetize as nearly as possible only that part of the body on which one has to work. If a local anaesthetic will do, so much the better; but there is no doubt that for lower abdomen and pelvic work spinal analgesia is the thing. I pointed out in a letter some years ago that every ship surgeon should be master of the technique, giving him the advantage of perfect operating conditions where no skilled anaesthetist is available.—I am, etc.,

Chiswell, Essex.

N. BEATTIE.

The Mc'Naghten Rules

SIR,—Dr. Frederick Dillon (Dec. 18, 1948, p. 1083) may lead less experienced men astray unless it is pointed out that the presumption of law is that a man is innocent until he is proved guilty. His procedure may apply where the prisoner intends to plead guilty and to prove extenuating circumstances, or where, with a plea of guilty, such circumstances are capable of proof irrespective of the prisoner's attitude to them. Otherwise the witness on either side who goes into court assuming that the prisoner committed the crime but that there is a good explanation of why he did will soon find himself in trouble.

The prosecution undertakes to prove that the prisoner, and no other, did a deed which is criminal. It may be that they succeed in proving he did the deed and fail to establish criminality, or that they fail to prove he without reasonable doubt did a deed certainly criminal. In either event the trial ends there: the prosecution have failed to set up a case demanding answer. Only when both requirements are satisfied is any answer required; and that answer may either show the prisoner did not without reasonable doubt do the deed, or that the deed was not certainly criminal, or both. In either event acquittal follows. Any accused person has therefore a double defence: (1) the prosecution may fail to establish its case, and (2) the defence may, if the case is established, break it down.

It is, perhaps, fortunate for the prisoner that the zealous medical witness for the defence has no opportunity to say, “Of course he cut his wife's throat, but I can tell you why he did, and it is not his fault,” until the prosecution has satisfied the judge and jury that

there is a strong probability he did, whether it was his fault or not. Dr. Dillon starts off by assuming that there is a case to answer, which, although it is the opinion of experienced legal advisers of the police and of the Director of Public Prosecutions before the case is brought before a court, and of the court of first instance before trial by judge and jury, is not the opinion of the trial court until or unless they are themselves, by evidence actually brought before them (although earlier adduced elsewhere), satisfied that there is a case to answer.

Dr. Dillon's strictures on prison medical officers are certainly not borne out by such experience, as I possess. His proposals again contravene the prisoner's rights, for, although the prosecution is bound to disclose all its evidence in the depositions in the lower court in order that the defence may know what the case is they may have to answer, it is quite open to the defence, and a frequent practice, to plead not guilty and reserve the defence for the trial court, when the investigations of the visiting psychiatrist can be kept as a surprise packet for the medical witness for the prosecution under cross-examination before the medical witness for the defence is allowed in the court at all. If this fails to break down the prosecution, the psychiatrist can then himself have a second try in his evidence for the defence.

The prison doctor is not entitled to be informed of what the defence has ready for him in cross-examination any more than any other prosecution witness is, and defence counsel frequently make use of denial to witnesses of advance information such as Dr. Dillon wants them to have. His suggested alteration of legal, not medical, practice would, by preparing a material witness for cross-examination, increase the chances of conviction; and no matter how the medical or psychiatric rules on the subject are expressed the medical witness for the defence would be left to explain how it is not the prisoner's fault, against the prosecution witness who has said it is.

Medical jurisprudence, or forensic medicine, was not in my time a subject of much interest to most students; but it is essential for any medical man who wishes to do his duty in any court to realize that it is, as the second and better name implies, essentially forensic. If he is not prepared to learn the rules of cricket before he goes on to the field, his wisest course, and that in the best interest of his patient, is to stay on his own golf course, where he can play singles to his heart's content, and keep out of the courts, where he is expected to be one of a team.—I am, etc.,

London, S.W.6.

C. T. NORRIS.

Master Minds

SIR,—I note in your issue of Jan. 1 (p. 23) reference to a report of a speech made by me at a recent meeting at Hendon. It is to be deplored that you should publish such references to myself without consulting me to see whether or not the report in question was in accordance with what was said. The only part of the report that had any reference to me at all was the reference to the fact that patients could attend a doctor's surgery at certain hours of the day; the rest of what was reported was said by other speakers and not by me.

I have always held the view that the medical profession has nobly undertaken the arduous duties of a public service, but in honesty I have been compelled to refer to the lack of organization in the general practitioner service. Believe me, I made no reference to a master mind, nor do I think that there is a master mind in the Service; for it to be successful it must be a co-operative service, each one playing his proper part.

The paper in which the report appeared is, of course, definitely opposed to my political views, but if the notes of the reporter were examined it would be found that through the whole of my speech I made no reference at all to politics.—I am, etc.,

House of Commons

FRED MESSER.

* In its account of the meeting of the North-West Branch of the Socialist Medical Association the *Hendon Times* reported Mr. Messer's speech in forty lines of print. In view of the British journalist's well-earned reputation for accurate reporting we did not consider it necessary to consult Mr. Messer about the accuracy of a strictly objective report free from comment.—ED.. B.M.J.

POINTS FROM LETTERS

Procaine Penicillin

Dr. DAVID WHEATLEY (Twickenham, Middlesex) writes: Dr. T. David Lambert (Dec. 25, 1948, p. 1119) has recorded some of his experiences with this preparation in general practice. This prompts me to mention an alternative method of penicillin administration which I have used for some time past in general practice. I refer to the administration of pure crystalline penicillin by subcutaneous injection as has been advocated by Hoffman (*J. Lab. clin. Med.*, 31, 1165). I have administered penicillin by this method to over 50 cases and have not encountered any case of pain or local reaction at the site of injection, and my cases have included many children, amongst them a baby of six months. These cases included pneumonias, acute otitis media, whitlows, carbuncles, etc., and puerperal mastitis. In all, the results were considered very satisfactory by physician and patient alike and compare favourably with Dr. Lambert's results with procaine penicillin. The dosage usually employed was 200,000 units dissolved in 1 ml. of sterile water every 24 hours for four days. The debatable theoretical basis for this particular dosage scheme does not come within the scope of this communication. In conclusion I would suggest that the extreme ease and simplicity of the subcutaneous injection of crystalline penicillin make it a very convenient procedure in general practice.

Rhinitis Caused by Friedländer's Bacillus

Dr. H. FARRAG (Cairo) writes: The following case report may be of interest. A patient 49 years old was suffering for the last 20 years from chronic persistent rhinitis associated with sneezing, mild cough, and absence of the sense of smell. . . . A swab was taken from the nose and examined bacteriologically. The material proved to be a pure culture of Friedländer's bacillus (*Klebsiella pneumoniae*). An autogenous vaccine prepared in the usual way (bacterial suspension killed by heat at 60° C. for one hour and 0.5% phenol added as preservative) was prepared, but gave no result. Another method was tried: the organism was grown in ordinary broth for ten days at 37° C. to allow complete disintegration. The culture was filtered through a Seitz filter, and the filtrate was tried locally in the form of a nasal spray twice daily after diluting it with three times its volume of sterile saline. This treatment proved excellent and relieved the patient within a week of application. It was continued for one month, and the patient was apparently cured. Freshly prepared filtrate of the lysed organisms by prolonged incubation seemed to be the only effective method to maintain the antigenicity of the organism unaltered, as it was found that heating or the addition of any chemical preservative to the filtrate destroyed its effect.

Prolonged Gestation Period

Dr. S. M. WELLS (Valparaiso, Chile) writes: Your account of "The Longest Gestation Period" (Nov. 6, 1948, p. 840) recalls a case of mine details of which were published in *Guy's Hospital Gazette* (Nov. 6, 1948, p. 299). This was a woman of 36 whose last menstrual period was on May 5, 1947. On July 26 the size of the uterus corresponded to a pregnancy of between two and three months. Her confinement was expected on Feb. 9, 1948, but she was not delivered until April 3. The child was a boy weighing 4.05 kg. (nearly 9 lb.). We now know that conception usually takes place fourteen days before the next expected period, the day on which ovulation is supposed to take place. Estimating, however, the length of pregnancy as it is still usually done, from the first day of the last period, this particular pregnancy lasted 334 days, i.e., 54 days above and beyond the normal 280 days.

Plain Words on Dimensional Lesions

Dr. EDWARD S. STERN (Warwick) writes: I protest against the use of the phrase "space-occupying lesion" instead of morbid swelling. It is physically impossible for a lesion not to occupy space. I would write more on this subject but cannot, owing to the space-occupying lesions on my fingers caused by chilblains.

Whooping-cough and Measles

Dr. C. L. MALHOTRA (Jubbulpore, India) writes: Dr. Frederick Rothenburgh (Nov. 6, 1948, p. 839) has mentioned that a sudden attack of pertussiform cough with heavy fits similar to whooping-cough may be a precursor of measles. That may be so, but I have seen the reverse. Attacks of whooping-cough, in no way distinguishable, during which the child in fits of coughing hugged the nurse for support, have followed a moderately severe attack of measles. The "whooping-cough" was relieved by two or three days' use of codeine cough mixture. The measles was picked up in school when it was prevalent, and there was no whooping-cough about.

Obituary

Dr. THOMAS ROGER REES died on Nov. 21, 1948, at the age of 56. A native of Alltwn, near Swansea, and the son of a well-known Nonconformist minister, he served in the R.A.M.C. in Mesopotamia in the 1914-18 war. He received his medical training in Cardiff and at St. Bartholomew's Hospital, qualifying in 1922. After a period as house-physician at the Cardiff Royal Infirmary he went into general practice in Cardiff. There he continued in active and busy practice until his last illness, though he had known for many years that his health was undermined. Throughout his time in Cardiff Dr. Rees had participated with keen interest in B.M.A. affairs, being a member of many of the local committees, including the Local Medical War Committee; he was chairman of the Cardiff Division in 1944-5. During the recent war he became a member of the Cardiff City Council, and more recently he served on the Cardiff Hospitals Management Committee, and as vice-chairman of the Cardiff Executive Council under the Health Act. He also took a lively interest in political affairs and sport, and was a valuable member of any committee, ever ready to maintain his point of view. He had a keen insight and a sense of humour which made him a delightful companion. Dr. Rees was very loyal to his patients and continued to attend them when he was not really fit for any of the work of general practice. Many of us regret the passing of "Tom," as he was familiarly known to us, and will miss his cheery laugh and high spirits, his personality and companionship, as well as his regular attendance and help at committees. He leaves a widow, to whom we extend our sympathy.—J. W. T. T.

Dr. WILLIAM BLAYNEY, son of Alexander Blayney, of Cushendall, died at his home in Watford, Hertfordshire, on Dec. 4, 1948, at the age of 71. He was educated at St. Malachy's College, Belfast, and entered the Royal Irish Constabulary in 1899. He was county inspector for Clare at the time of the disbandment of the Royal Irish Constabulary in 1922. He served in the 1914-18 war as assistant provost marshal of the 57th Division, and was for a time musketry instructor at the R.I.C. Depot in Phoenix Park. He studied medicine at St. Thomas's Hospital, and qualified M.R.C.S., L.R.C.P. in 1927 at the age of 50. Dr. Blayney practised in Harrold, Bedfordshire, until his retirement in 1943. He was highly esteemed in the district, and his thoughtfulness and kindly nature made him many friends. Both he and his wife took a very active part in village affairs, and among other activities Dr. Blayney was chairman of the Carlton and District British Legion for a number of years. He was a delightful companion, gifted, highly intelligent, and well read. His brothers were the late Mr. Alexander Blayney, a distinguished Dublin surgeon, and Dr. N. J. Blayney, of Portlaoighaise. He married in 1917 Miss Mary Beveridge, a daughter of John Beveridge, town clerk of Dublin, who survives him with four sons and three daughters.

Dr. JAMES MURDOCH MACKAY, who died at Cheltenham on Dec. 28, 1948, had a distinguished career in the West African Medical Service. He was a student of Glasgow University, and graduated M.B., Ch.B. in 1915.

A colleague writes: The death of J. M. Mackay at a comparatively early age was a direct outcome of his service in the first world war, when he was severely gassed. He served with much distinction, being awarded the M.C. and mentioned at least twice in dispatches. It was characteristic of his courage that, though granted a pension at the time, he gave this up voluntarily and proceeded to join the West African Medical Service. Here he served respectively in Sierra Leone, in Nigeria as A.D.H.S., and on the Gold Coast, where he became director of the Health Service. On the outbreak of the second world war, in spite of indifferent health, he organized and commanded the Gold Coast Regiment Field Ambulance (R.W.A.F.F.) and went right through the Abyssinian campaign. Later, taken gravely ill while on troopship duties, he had to be invalided out, and he returned again to his civilian administrative post in the Gold Coast, which he relinquished in 1945. Not content with retirement, he then joined the Ministry of Pensions staff, and was actively employed right up to his last illness. Mackay was over six feet in height and had a fine imposing presence. He was the most loyal of colleagues as well as an able administrator. He never let anyone down. His modesty, lack of self-seeking, and his sense of justice and fair play made him what he was, one of the best medical officers it was possible to serve under. He never forgot to interest himself in his juniors and to encourage them in their work. He was no "yes man" and would fight for right, if necessary at the very highest level. He was a worthy son of his Highland ancestry, of which he was

Painless INTRAMUSCULAR INJECTIONS

e.g. of PENICILLIN, LIVER EXTRACTS,
ARSENO-BENZOLS, BISMUTH, etc.

Many substances create some pain on intramuscular injection. Novutox injected at the same time will prevent this pain.

Most substances are compatible with Novutox, which is also non-destructible to penicillin during the time that the latter is undergoing absorption.

Mixtures with Novutox should be made
immediately before use ONLY.

NOVUTOX

*Self-Sterilising
Local Anaesthetic*

Each c.c. of Novutox 2% contains 0.02 gm. ethocaine hcl., 0.00002 gm. epinephrine and 0.00002 gm. capryl hydrocupreinotoxin hcl. Other strengths of Novutox contain these elements (with or without epinephrine) in varying proportions.

PHARMACEUTICAL MANUFACTURING CO. LTD.
THE LABORATORIES, CHELTENHAM, GLOS.

SPARKLING CLEANLINESS

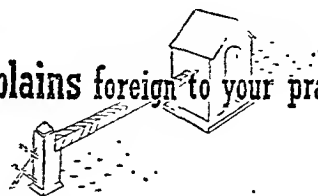
Radiographers know that they are assured of exceptional latitude, sparkling cleanliness and excellent contrast when they use Ensign STANDARD X-ray film. The difficulties of chest radiography are manifold. Geometrical distortion by the size of the tube focus, physiological movement and grain of the intensifying screen make the use of Ensign Standard essential. Standard Exposure times can be varied without impairing the high quality of the finished radiograph. Ensign STANDARD is a film of normal speed that will give you the finest possible definition even when dark room conditions are not too favourable.

Ensign
STANDARD
X-RAY FILM

Distributors

Barnet Ensign Ross Ltd., Fulbourne Road, Walthamstow,
London, E.17

are chilblains foreign to your practice?



In Britain now the 'chilblain season' is focussing attention on calcium therapy and on the simple but efficient treatment that Ostocalcium Tablets provide. But neither weather nor whereabouts limit the use of Ostocalcium.

Allergic skin diseases, migraine and even the 'general debility' met with in general practice the world over—these are typical of the conditions in which Ostocalcium is used to good purpose. Ostocalcium is also valuable, of course, during such times as pregnancy and lactation when the need for calcium is increased. And when you prescribe Ostocalcium the patient receives not only calcium itself but also sufficient vitamin D to ensure proper assimilation of the mineral.



In containers of 50 and 100* tablets.

*This size available only in the British Isles

Each tablet provides 125 mg. calcium and 500 i.u. of vitamin D

Research Laboratories: Manufacturers of medical products and foods
Glaxo Laboratories are represented by associate companies or agents in almost every
country in the world

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX, ENGLAND

«WB»

ADAPRIN TABLETS *for the prevention and treatment of* CHILBLAINS

One ADAPRIN tablet taken three or four times daily usually effects relief within a short period and recurrence of the symptoms can generally be prevented by the administration of one or two tablets per day.

ADAPRIN is a combination of the Vitamin K analogue (Acetomenaphthone 10 mgm.) and Vitamin PP (Nicotinamide 50 mgm.) in tablet form, suitable for the effective treatment and prevention of chilblains. ADAPRIN tablets are non-toxic and can be of additional value in counteracting any deficiency of Vitamin K or Vitamin PP in the patients' diet.

Detailed information available on request.



WARD, BLENKINSOP & CO. LTD.
6, HENRIETTA PLACE, LONDON, W.1
TELEPHONE: LANGHAM 3185. TELEGRAMS: DUOCHEN, WESDO, LONDON



Camp Post-Operation Supports

Used for treatment in abdominal surgery and in general practice. The patented adjustments, simple and easy of manipulation, regulate the required degree of support prescribed for specific individual needs.

MADE ONLY TO
MEDICAL PRESCRIPTION

CAMP SUPPORTS ARE NOW OBTAINABLE THROUGH
THE NATIONAL HEALTH SERVICE



S. H. CAMP & COMPANY LTD.

19, Hanover Square, London, W.1. Tel: MAYfair 8575 (4 lines)

KCR 1882/131

BELLADENAL

Antispasmodic .. Anticonvulsive
:: Sedative ::

BELLADENAL combines the central sedative action of phenobarbitone with the peripheral antispasmodic action of the total laevorotatory alkaloids (Bellafoline) of Belladonna leaves. Bellafoline is only half as toxic as atropine in doses which are therapeutically equivalent in their effect on the parasympathetic.

Each tablet of Belladenal contains:

Bellafoline	0.25 mg.
Phenobarbitone	0.05 Gm.

The components of Belladenal act synergistically with each other so that a powerful antispasmodic and sedative effect is obtained with comparatively small doses.

Full particulars and samples on request

SANDOZ PRODUCTS LIMITED
134, Wigmore Street, London, W.1

CELLON LABORATORIES LTD.

The following tested preparations are available for prompt delivery:—

CELETANE (REGD.) — MEDICATED (LETHANE) HAIR OIL—N.W.F.

The modern insecticide for eradication of head lice (Pediculosis Capitis), as employed by many Medical Officers of Health, etc.

BENZELIA (REGD.)—BENZYL BENZOATE EMULSION—25%

A well-established preparation for rapid eradication of scabies within 48 hours. Also supplied in form of vanishing cream.

OLEOCIDE (REGD.)—OLEO-SULPHONAMIDE

This valuable preparation is a marked advance in Sulphonamide Therapy. Ensures rapid relief of ulcers, impetigo and other streptococcal infections of the skin; first and second degree burns—broken or unbroken.

CELOZENE (REGD.)—ANTISEPTIC

A powerful non-toxic, non-irritant antiseptic of great value for wounds and cuts, having a Rideal Walker value of 4.0. A special grade can be supplied for sterilising instruments.

SKLEN (REGD.)—PLASTIC BANDAGE REMOVER (NON-INFLAMMABLE)

A solution for dissolving adhesive of plastic bandages enabling easy removal of plaster and subsequent cleansing of adhesive remaining on the skin.

Further information, samples and prices upon request from:

CELLON LABORATORIES LTD.

KINGSTON-ON-THAMES

Kingston 1234 (7 lines)

CVS-38

SPASTIC DYSMENORRHOEA ?

MENOVO

indicated!

A CAUSAL AND SYMPTOMATIC THERAPY

"MENOVO" combines the causal antispasmodic effect of Ephedrine and Belladonna with the symptomatic analgesic action of Phenacetin and Codeine and the sedative effect of Bromisovalerylurea and Carbromal. The preparation is of proven clinical value in the treatment of uterine spasms and other disturbances associated with Spastic Dysmenorrhoea.

ACTIVE INGREDIENTS

Ephed. Hydrochlor B.P.	0.36%	Codein Phosph. B.P.	0.63%
Ext. Bellad. Sec. B.P.	0.72%	Bromisovalerylurea	3.12%
Phenacet B.P.	37.50%	Carbrom B.P.	9.18%

TOTAL WEIGHT OF TABLET, 8 Gr

Literature and Clinical Samples will be gladly supplied on application to:

CLINICAL PRODUCTS LTD.
RICHMOND, SURREY

IMPORTANT

"C.P.L." Pharmaceutical Products have no official B.P., B.P.C. or N.(W.)F. "equivalents."

CPL

so justly proud. Not only will he be missed by the West African Medical Service and those he served under in the recent war, and by the Ministry of Pensions, but by his old comrades of the D.C.L.I., to whom he was regimental M.O. in France. To his children and to his widow our deep sympathy must be extended.

Dr. RICHARD CECIL HUTCHINSON died on Christmas morning at his home in Worthing following a second coronary occlusion. A Lancashire man, he graduated M.B., Ch.B. with honours at Manchester University in 1910 and proceeded M.D. ten years later. In 1913 he took the D.P.H. After acting as house physician at the Manchester Royal Infirmary and at the Brompton Hospital, he was appointed to the staff of the King Edward VII Welsh National Memorial Association, being in charge of the Carmarthen and Cardigan Area. Two years' active service in France followed with the rank of captain, R.A.M.C. He was then medical superintendent successively of the Baguley Sanatorium, Manchester, the Royal National Hospital, Ventnor and the Tor-na-Dee Sanatorium, Banchory. In 1928 Hutchinson moved to Worthing where he spent twenty busy and fruitful years. Quiet and kindly in demeanour, a thoughtful and thorough clinician, he was at once a success in private practice. His long experience of chest work stood him in good stead. He was quickly recognized as possessing special knowledge and skill in that branch of medicine, and his services became of increasing value alike to his patients and to his professional colleagues. It was not long before he was overworked, and he never spared himself. During the war years he gave fine service to the Royal Sussex County Hospital, working long hours in the out-patient department and then, in the winter months, driving home twelve miles in the blackout. He was subsequently elected a life governor of the hospital. Dr. Hutchinson had served the Brighton and Sussex Medico-Chirurgical Society as financial and as literary secretary and had he lived would soon have been its president. He joined the B.M.A. in 1913, was an active member of the West Sussex Division, and had completed three years on the executive committee. A keen sportsman and country lover, "Hutch" was equally happy with rod or with gun. Last August in company with the writer he caught his last salmon from a boat and shot his last grouse from a butt. His family life was happy, and he is survived by his widow, two married daughters and a son. Shortly before his death he had after a lengthy search found a farm in West Sussex for his son, demobilized from the R.E. There, within reach of Worthing, it had been his hope to live and to continue his work but at lessened pressure.—D.H.

Mrs. T. Twiston Higgins writes: Hutchinson enjoyed natural gifts of observation, critical insight, and shrewd judgment which made him one of the most able doctors I have known. His special skill and experience in chest disease brought him a well deserved reputation, and in any company of physicians he could claim distinction. But not for this alone will he be remembered by all who knew him. Professional prowess was not foremost in the minds of those who gathered from far and wide at Christ Church, Worthing, in the wintry sunshine to do honour to his name. For each of us in that impressive congregation a personality had passed to whom, in our several ways, we owed a debt which could be acknowledged but never repaid. For above all "Dick Hutch" was a very gallant gentleman who gave of himself to others without stint or question. Such men are rare. Their lives are an inspiration, and when they no longer march with us our sadness is tempered by thankfulness that we have been privileged to know them on the way.

Dr. A. F. Sladden writes: I was intimately associated with Hubert Phillips (Jan. 1, p. 35) for the past forty-five years. His death has taken from Port Talbot and South Wales a most notable and beloved doctor. He will be remembered by his contemporaries at Oxford and St. George's Hospital, where as a student he had a distinguished career and impressed his personality on a wide circle of friends. He could undoubtedly, had he wished, have established himself as a consultant in London but chose instead to exercise his great gifts in his native country, and who shall say that he took a wrong course? Phillips was a Pembrokeshire man well versed in the history and customs of Wales, and spoke Welsh with facility. His broad education and experience of a wider world, however, made him a cosmopolitan free from any narrow nationalism. He was by inclination a surgeon, but his work as a physician was quite outstanding, and with his gifts of sympathy and untiring devotion he manifested all the qualities desirable in a general practitioner of the very best type. As a surgeon he was attached to the Port Talbot General Hospital where his colleagues confidently referred their surgical problems to him. In consequence a heavy toll of operating was added to his other labours but he preferred it so in spite of the excessive

burden involved. There is little doubt that his continuous work latterly injured his health but he refused to relax. In spite of his arduous professional life he found time to engage in other interests. He was gifted artistically, and with pencil and brush produced a series of coloured cartoons with grotesquely humorous figures and faces which were the delight of his friends. His garden, and particularly his roses, were a constant joy to him, and in later years he became an enthusiastic and proficient photographer. Phillips was a good conversationalist and a man of wide intellectual interests. His scientific training had not obscured for him the spiritual and philosophical aspects of life, and he was happy in being able to realize for himself a satisfactory synthesis between science and religion. Hubert Phillips was the elder son of the late Canon Phillips, of Newport, Pembrokeshire, and he married Irene, daughter of the late Canon I. J. Williams of Llanwenarth, Monmouthshire. He had one son, Dr. Geoffrey Phillips, now practising at Ware, and the sympathy of all his friends goes out to his widow and son. They may well be proud of his memory.

Dr. J. B. Horgan writes: It is nearly forty years since I first met Lionel Colledge (Jan. 1, p. 34) at the hospital at Golden Square, where I was acting house-surgeon. In after years I was a welcome visitor at the clinics where he worked and I often profited from his counsel and co-operation in difficult cases. I would like therefore to express a few words in gratitude to his memory and of condolence with his British colleagues from the other side of the Irish Sea. Colledge had a stern appearance and a reserved manner which however, hid a gracious personality with a subtle sense of humour. He was extremely modest of his high achievement in the specialty which is so much the poorer for his passing.

Medico-Legal

ANAESTHETIC EXPLOSIONS

[FROM OUR MEDICO LEGAL CORRESPONDENT]

Explosions in the operating theatre are fortunately rare in the United Kingdom, largely because its damp atmosphere is unfavourable to the accumulation of static electricity which constitutes such a problem in the dry air of the United States and other countries. A fatal accident of this kind however, took place in November, 1948, in the Southend General Hospital when during an operation the anaesthetic apparatus was wrecked, the patient mortally injured, and the anaesthetist, Dr. Noel Vincent, momentarily stunned. Dr. Vincent said in evidence at the inquest¹ that the explosion had been reported to the British Oxygen Company, a representative had visited the hospital, and the apparatus had been taken to the works and reconstructed to simulate its condition before the accident. The report stated that a leakage in the explosive mixture was present, and the source of the ignition had not been ascertained. The leakage had been found between the breathing-bag and the bag mount. The apparatus had been modified at the hospital, the concertina type of breathing-bag being superseded by a length of corrugated rubber hose and a new breathing-bag. The coroner said that the evidence showed death to have been due to collapse of the lungs as a result of pulmonary shock consequent on the explosion. He found that there was no criminal liability and expressed his sympathy with the relatives and with Dr. Vincent that such an accident should befall him after so many years of experience.

The newspaper report does not say whether any electrical machinery was in use at the time of the explosion, presumably if it had been the company's report would have mentioned it. A high temperature generated in a theatre by central heating may of course reduce humidity to such an extent that static current may be accumulated in apparatus if this is not earthed, and then even a small spark may conceivably ignite an inflammable mixture escaping from a defective joint.

A different type of explosion was that reported recently to the Birmingham City Coroner, Dr. W. H. Davison². A man aged 63 was undergoing an operation in Queen Elizabeth's Hospital, the intention being to obliterate the cavity left after pneumonectomy. Cyclopropane anaesthesia was being used and the electric cautery needle entered the cavity, with the result

¹ See *Third Times*, Nov. 17, 1948.
² *Daily Telegraph*, Jan. 5, 1949.

that the anaesthetic exploded. Mr. R. H. F. Brain, surgeon at the hospital, said that the risks of this method were appreciated, but it was considered that they were outweighed by the advantages. Death was due to blast, and a verdict of misadventure was recorded.

Universities and Colleges

UNIVERSITY OF DURHAM

The following medical degrees were conferred at a Congregation held on Dec 17, 1948:

MB, BS—G L Anderson, Anne R. Boon, P G Buck, Maureen T. Cunningham, June Dickson, Irene N. Dodd, Mildred C. Gardner, Sheila L. Harrison, Elizabeth J. Hunter, A. P. M. Hurst, Eileen Hutton, Hazel E. Jophing, R N C. Lockey, J. McManners, J. G. Noble, Edith M. Robertson, D. Smith, J. D. R. Smith, Joan Stephens, A. E. Wright

UNIVERSITY OF LONDON

A Special University Lecture on "Surgical Aspects of Meningitis" will be given by Sir Hugh Cairns at Westminster Medical School, Horseferry Road, London, S.W., on Thursday, Feb. 10, at 5 p.m.

Professor B. G. Macgrath will give a Special University Lecture on "Malaria as a World Problem" at Westminster Medical School, Horseferry Road, London, S.W., on Thursday, Feb. 24, at 5 p.m.

The above lectures are addressed to students of the University and to others interested in the subject. Admission is free, without ticket.

UNIVERSITY COLLEGE

The following lectures will be delivered at the College (Gower Street, W.C.): Jan. 18 and 25 and Feb. 1 and 8, 5.15 p.m., Dr. E. Ashworth Underwood, "The Development of Modern Physiology, 1700-1900"; Jan. 24 and 31 and Feb. 7 and 14, 4.45 p.m., Mr. P. Johnson, Ph.D., "The Ultracentrifuge and Electrophoresis Apparatus in Protein Research"; Jan. 27, 1.15 p.m., Professor J. B. S. Haldane, F.R.S., "Some Modern Views on Evolution"; Jan. 28 and Feb. 4 and 11, 5.15 p.m., Mr. F. Bergel, Ph.D., "Some Aspects of Pharmacological Chemistry"; Feb. 2, 5 p.m., Mr. D. Abercrombie, "Speech and Society"; Feb. 15 and 22 and March 1, 8, and 15, 5.15 p.m., Dr. A. Schweitzer, "Reflexogenic Areas of the Vascular System"; Feb. 17, 1.15 p.m., Mr. G. Burniston Brown, Ph.D., "The New Philosophy of Science"; Feb. 28 and March 7, 4.45 p.m., Professor C. Rimington, "Haem Pigments in Nature". Admission to all lectures is free, without ticket.

Cedric Keith Simpson, M.D., has been appointed to the part-time University Readership in Forensic Medicine (tenable at Guy's Hospital Medical School), from Oct. 1, 1948.

The title of Reader in Applied Pharmacology in the University has been conferred on Andrew Wilson, M.D., Ph.D., Ph.C., in respect of the post held by him at University College and University College Hospital Medical School.

The following candidates have been approved at the examination indicated:

MS—Branch I (Surgery) D. T. A. Brown, S. I. Green, H. O. Jones, D. W. Williams

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Royal Faculty of Physicians and Surgeons of Glasgow held on Dec. 6, 1948, with Dr. W. R. Snodgrass, President, in the chair, the following were admitted Fellows of Faculty *qua* Physician: J. D. Atchison, M.B., R. D. C. Brackenridge, M.B., J. H. Haldane, L.R.C.P.&Sed, G. Johnston, M.B., W. P. Kennedy, Ph.D., L.R.C.P.&Sed, H. R. F. Macdonald, M.B., J. Rankin, M.D.

The following were admitted Fellows of Faculty *qua* Surgeon: H. A. Benjamin, M.B., J. Cohen, M.B., W. Y. Cornock, M.B., J. M. McBride, M.B., J. D. McCardell, M.B., D. M. Macdonald, L.R.C.P.&Sed, W. Macintyre, M.B., N. McLean, M.B., R. G. MacLeod, M.B., R. G. Main, M.B., A. J. M. Mathieson, M.B., A. B. May, M.B., K. M. Mayall, M.B., I. P. Munro, M.B., T. A. Ramsay, M.B., R. P. Schach, M.B., J. M. Scott, M.B., D. M. Sinclair, M.B., R. B. Watson, M.B., T. M. Welsh, M.B., W. F. White, M.B.

The Services

The Efficiency Decoration of the Territorial Army has been conferred upon Lieutenant-Colonel W. H. Wolfstenholme, O.B.E., Major (Acting Lieutenant-Colonel) A. Cowie, D.S.O., Major (Honorary Lieutenant-Colonel) G. Tudhope, and Majors E. C. Ellis and E. M. Wright, R.A.M.C., T.A.

No 52

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Dec. 2.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for (a) England and Wales (London included) (b) London (administrative county) (c) Scotland (d) Eire (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease are for (a) The 126 great towns in England and Wales (including London) (b) London (administrative county) (c) The 16 principal towns in Scotland (d) The 13 principal towns in Eire (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases, a blank space denotes disease not notifiable or no return available.

Disease	1948					1947 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	22	—	13	—	1	26	4	16	1	—
Deaths ..	—	1	1	—	—	—	1	1	—	—
Diphtheria ..	100	6	32	7	11	157	18	65	8	—
Deaths ..	3	—	—	—	1	6	—	—	—	—
Dysentery ..	30	5	28	—	3	53	6	27	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute ..	—	—	1	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	1	—	—	—
Erysipelas ..	—	1	54	6	1	—	—	33	6	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years ..	28	2	8	28	2	52	5	6	13	1
Deaths ..	—	—	—	—	—	—	—	—	—	—
Measles* ..	8,959	110	86	29	50	2,583	115	278	93	—
Deaths† ..	—	—	1	—	1	2	—	2	—	—
Ophthalmia neonatorum ..	18	1	3	—	—	30	2	13	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	3	—	—	—	—	22	1	1(A)	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza Deaths (from influenza)‡ ..	792	35	2	9	1	690	38	13	3	—
Deaths ..	25	2	2	—	—	20	4	—	—	—
Pneumonia, primary ..	258	51	337	23	10	37	372	11	8	—
Deaths ..	—	—	—	7	—	—	—	—	—	—
Polio-encephalitis, acute ..	2	—	—	—	—	4	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Polio-myelitis, acute ..	17	2	1	1	—	44	2	3	1	—
Deaths§ ..	2	—	—	—	—	—	—	—	—	—
Puerperal fever ..	—	3	—	—	—	—	—	7	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| ..	78	7	5	1	1	68	6	10	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Relapsing fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Scarlet fever ..	1,154	42	246	120	40	1,469	104	297	18	2
Deaths† ..	—	—	—	—	—	3	—	—	—	—
Smallpox ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Typhoid fever ..	4	1	1	2	1	2	—	2	1	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Typhus fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	1,791	100	130	66	8	1,141	67	14	27	—
Deaths ..	16	1	—	1	1	5	1	—	—	—
Deaths (0-1 year) Infant mortality rate (per 1,000 live births) ..	315	42	47	16	8	336	38	77	15	1
Deaths (excluding stillbirths) Annual death rate (per 1,000 persons living) ..	4,854	738	551	158	110	4,577	706	650	150	11
Deaths ..	—	—	11	9	—	—	13	5	9	—
Live births Annual rate per 1,000 persons living ..	6,263	992	766	239	200	5,351	751	880	156	18
Deaths ..	—	—	15	5	15	—	17	7	9	8
Stillbirths Rate per 1,000 total births (including stillborn) ..	175	28	18	—	—	145	18	26	—	—
Deaths ..	—	—	23	—	—	—	29	—	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the return are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county) will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Influenza

England and Wales have been singularly free from epidemic influenza in recent years, and, apart from a few outbreaks due to virus A in residential communities at the beginning of 1947, there has been nothing to report since the mild epidemic due to virus B early in 1946. The first quarter of 1948 had the lowest figure ever recorded for deaths from influenza in the great towns. (See Table below.)

So far there has been no indication of epidemic influenza in England and Wales this year, but reports have been received of an epidemic probably due to a variant of virus B in Italy (Jan. 1, p. 39) and recently of a mild type of influenza in France and Belgium. It is not yet known what virus type, if any, is involved in France or Belgium. Since the importation of the disease into this country may be imminent it may be desirable to recapitulate briefly the main clinical features and certain measures which may be useful.

Clinical Features.—Diagnosis of an individual case of true virus influenza is usually difficult and often impossible; the occurrence of a number of similar cases at the same time is one of the most important leads to diagnosis. The onset is generally more sudden than that of a simple febrile catarrh, and the catarrhal symptoms are usually less marked at onset. Malaise and high fever with aching back and limbs are early symptoms. Headache, photophobia, and shivering are common. The clinical features vary a little in different outbreaks.

Treatment.—Penicillin and the sulphonamides are ineffective in the treatment of the primary virus infection but may be of value in the treatment of complications. Prophylactic doses of sulphonamides may be of value in an institutional outbreak where secondary infections with a sulphonamide-sensitive organism are known to be occurring.

Vaccines.—In recent epidemics in different parts of the world variants of the two main types A and B have been reported, and protective vaccines prepared against the main types have been ineffective against these variants. It is not yet known whether any existing vaccines are likely to have any value in protecting against the prevailing type, and in any case protective vaccination is impracticable as a general measure. It should be reserved for those who run special risks.

Infectious Diseases in 1948

Summation of the weekly figures for 1948 shows that the most notable feature during the year was the low incidence of influenza. The usual trend of influenza is one of a steady increase to a maximum during the first weeks of the year, but in 1948, for the first time in recent experience, no increase in mortality occurred. Whooping-cough was very prevalent, and the notifications were about 50% above the totals of recent years. The incidence of scarlet fever was also high. Notifications of acute pneumonia were slightly below the level of the preceding years. Notifications of diphtheria, which have been decreasing steadily since 1941, showed a further large fall. The incidence of cerebrospinal fever was about two-thirds that of 1947, but remains at about twice the pre-war level. Following the outbreak of 1947 the incidence of acute poliomyelitis declined considerably, but continues at about three times the pre-epidemic level in 1948. Notifications of the principal infectious diseases in England and Wales for 1948 and the four preceding years were as follows.

	No. of Notifications				
	1944	1945	1946	1947	1948
Scarlet fever	93,801	74,392	57,614	60,524	75,460
Whooping-cough	93,107	62,022	92,028	94,241	145,878
Diphtheria	29,446	25,059	18,156	10,258	7,903
Measles	117,437	443,002	154,526	399,461	396,841
Acute pneumonia	38,175	34,059	36,106	34,348	31,096
Cerebrospinal fever	2,583	2,691	2,627	3,147	1,971
Dysentery	10,150	16,333	8,441	4,179	5,534
Enteric (paratyphoid and typhoid) fevers	536	679	1,367	880	873
Acute poliomyelitis	510	799	703	8,592	2,017
Influenza. Deaths in the great towns	1,744	1,307	2,629	1,774	610

Poliomyelitis in Mauritius

Information now received from the island of Mauritius states that up to Dec. 31 a total of 192 cases have been notified with 5 deaths. Cases have occurred in ten different localities in the island, and there appears to be some spread from Port

Louis, which reported the greatest number of cases in the early stages of the epidemic. Of all the cases notified 80% have been in children aged 1-5.

Inoculation and Vaccination of Travellers

Many countries insist that travellers, before entering their territories, should produce satisfactory evidence of having been recently immunized against certain diseases—particularly smallpox and yellow fever. Inoculation against yellow fever is required of travellers who have come from or passed through an "endemic yellow fever area" when they arrive by air in a country where, although the disease does not exist, there may be conditions which permit of its development. In order to avoid detention or delays at the frontiers of countries requiring these measures travellers must provide themselves with certificates of vaccination or inoculation on the appropriate prescribed international forms.

The Ministry of Health is often asked for advice on the optimum safe time limits which should be allowed to elapse between smallpox vaccination and yellow fever inoculation. A meeting of experts was therefore convened recently to review the subject. The following is a brief summary of the conclusions reached and should be considered as the official advice to those concerned.

1. That yellow fever inoculation should precede primary vaccination against smallpox.
2. That there should be an interval of at least four days between yellow fever inoculation (when given first) and primary vaccination against smallpox (when given subsequently).
3. That if primary vaccination against smallpox is done first there should be an interval of 21 days from the date of the vaccination before the yellow fever inoculation is given.
4. That where there is evidence of previous successful vaccination against smallpox, yellow fever immunization and re-vaccination against smallpox may be carried out at the same session, but if time permits yellow fever immunization should always precede revaccination by at least four days.

Minimum Age for Inoculation

For each of the commoner immunizing procedures recommendations were also made in regard to the minimum age under which it is not desirable to vaccinate or inoculate.

Immunizing Procedure	Minimum age below which it should not be carried out
Smallpox vaccination	No lower limit. Primary preferably before 6 months (optimum 3-4 months)
Yellow fever inoculation	No lower limit. 14 days, if necessary, be given in first week of life at full dose.
Typhoid-paratyphoid inoculation	Not under 1 year of age
Cholera inoculation	Not under 1 year of age
Typhus inoculation	Not under 1 year of age

Discussion of Table

In England and Wales the notifications of infectious diseases fell sharply. There were marked decreases in the incidence of measles 841, whooping-cough 680, acute pneumonia 290, scarlet fever 272, diphtheria 24, and dysentery 24.

In contrast to the general decline in the incidence of measles large increases were recorded in Southampton 225 (due to the continuing outbreaks in Portsmouth C.B. and Southampton C.B.), Middlesex 59, and Nottinghamshire 47. A decrease in the number of notifications of whooping-cough was general throughout the country; the largest falls were in Lancashire 154 and Kent 75.

There was a decrease in the incidence of diphtheria in most areas, the only exception of note being an increase of 6 in Yorkshire West Riding. The largest fall in the notifications of scarlet fever was 44 in Lancashire.

Cases of poliomyelitis were notified in Surrey 3, London 2, Oxford 2, and Southampton 2 (Andover M.B. 2).

In Scotland there was a fall in the notifications of acute primary pneumonia 114, whooping-cough 48, scarlet fever 42, and dysentery 18.

In Eire a decrease was reported in the notifications of scarlet fever 53, measles 31, and diarrhoea and enteritis 12.

In Northern Ireland there were increases in the incidence of measles 13 and diphtheria 5 in Belfast C.B.

Week Ending January 1

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,125, whooping-cough 2,015, diphtheria 142, measles 11,121, acute pneumonia 1,050, cerebrospinal fever 28, acute poliomyelitis 20, dysentery 53, paratyphoid 3, and typhoid 7.

Medical News

Adviser on Palestine Refugees

Dr. J. D. Cottrell, medical officer of the World Health Organization, has been appointed adviser to the United Nations relief scheme for Palestine refugees.

Safety Codes

The Birmingham and District Industrial Safety Group have prepared a booklet, *Safety in the Works*, which includes three codes of safety practice for entry into tanks, vats, pits, pipes, flues, sewers, manholes, and similar confined spaces; construction and maintenance of floors, passages, stairs, and ladders in industrial premises; and for crane drivers. The booklet also reprints a note on personal protective appliances and devices by Mr. E. A. Kite, and there is also a short section by Mr. W. A. Bond on the safe guarding of milling machines. The booklet is well produced, and copies may be obtained price 1s, from the secretary of the Birmingham and District Industrial Safety Group.

World Federation for Mental Health

The articles of association of the World Federation for Mental Health, which was set up in London in August, 1948, have now been oriented. The aims of the Federation include the promotion of mental health among all peoples, and of research to that end. Members of the Federation are national mental health organizations. The president is Dr. J. R. Rees, and the honorary secretary Dr. Kenneth Soddy.

Fund for Dr. J. R. Rees

Dr. J. R. Rees, President of the World Federation for Mental Health, has been voted £1,250 by the New York International Committee for Mental Hygiene for "courageous and inspiring leadership in promoting mental health and good relations among individuals, groups, and nations."

Wills

Professor John Kay Jamieson, of Trinity College, Dublin, and the University of Leeds, left £12,790. Dr. Thomas Henry Harker, chairman of the Board of Management of Southport General Infirmary, left £18,139. Dr. John Cameron, of Fortrose, left £11,298; Dr. Philip Meredith Roberts, Barton-on-Sea, Hants, £33,874; and Dr. Arthur Harold Shepard, of Dogmersfield, Basingstoke, £30,344.

COMING EVENTS

Chadwick Lectures

The following public lectures have been arranged by the Chadwick Trust (204, Abbey House, Westminster, London, S.W.1): Tuesday, Jan. 18, 2.30 p.m., at 26, Portland Place, London, W., Dr. R. F. Bridgman (Paris), "Health Services in France"; Tuesday, March 22, 4.30 p.m., at Westminster Medical School, 17, Horseferry Road, London, S.W., Dr. Helen M. M. Mackay, "A Health Service for Children"; Tuesday, June 21, 2.30 p.m., at 26, Portland Place, London, W., Dr. Sibyl Horner, "Evolution of Industrial Work for Women and Young Persons and its Effect on the National Health." Admission to the lectures is free.

Medical Films

The Scientific Film Association (34, Soho Square, London, W.1) has arranged the first of a series of monthly screenings of recent films to be given at the Medical Society of London, 11, Chandos Street, London, W., on Thursday, Jan. 20, at 6 p.m. The films to be shown on this occasion will deal with the subject of paediatrics and will include "Your Children's Sleep," "Progress Afoot," "A Case of Sturge-Weber Syndrome," "Infant Care," and "Know Your Baby." The screenings are organized primarily for the benefit of teachers of medicine.

Education for Family Life

The British Social Hygiene Council will hold a discussion on "Education for Family Life" at the Planning Centre, 28, King Street, Covent Garden, London, W.C.2, on Jan. 26, 1949, at 6.15 p.m. Mrs. Eva Hubback, Principal of Morley College, and chairman of the Education Committee of the L.C.C., will be in the chair, and Dr. Letitia Fairfield, Dr. Ethel Dukes, and Mr. Geoffrey Martin will take part. Ample time will be allowed for discussion. Information and tickets (price 1s) can be obtained at the door or from the Planning Centre.

Nursing Conference

The Royal College of Nursing will hold a conference, "Health and Sickness," from Jan. 31 to Feb. 2, 1949. Discussion will centre round ways of achieving a closer unity between preventive and curative nursing in the light of Dr. John Cohen's minority report on the recruitment and training of nurses.

Association of Whole-time Salaried Specialists

A meeting open to all whole-time salaried specialists, whether members of the Association of Whole-time Salaried Specialists or not, to discuss matters of common interest particularly in connexion with the National Health Service, will be held at the Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., on Friday, Jan. 28, at 4 p.m., with Dr. Horace Joules, President of the Association, in the chair. Tea will be served from 3.45 p.m.

Oxford Graduates Medical Club

The Oxford Graduates Medical Club dinner will be held at the Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., on Friday, Feb. 18, 1949, at 7 p.m. for 7.30 p.m. The cost is 26s., inclusive of drinks with the meal. Dinner jackets will be worn. All Oxford graduates who are medically qualified are members of the club. All who wish to attend should communicate with the honorary secretary, Mr. E. G. Tuckwell, F.R.C.S., 73, Harley Street, London, W.1.

The Association of Surgeons

The annual meeting of the Association of Surgeons of Great Britain and Ireland will be held in Dublin on May 26-28. The provisional arrangements are as follows: *Thursday, May 26*.—Business meeting. Discussion on "Surgical Ritual," opened by Sir Hugh Cairns, Sir Reginald Watson-Jones, Mr. Julian Taylor, Mr. F. Gill, Mr. D. M. Douglas. *Friday, May 27*.—Discussion on "The Use and Abuse of Streptomycin" (speakers to be announced later). *Saturday, May 28*.—Discussion on "The End Results and Treatment of Injuries to Peripheral Nerves," opened by Mr. H. J. Seddon (other speakers to be announced later). Fellows and Associate Fellows are invited to submit the titles and précis of short papers they wish to read at the annual meeting to the honorary secretary by the end of January. Those requiring accommodation in Dublin should apply as soon as possible to Hewett's Travel Agency, Hewett's Corner, D'Olier Street, Dublin. The agency is also prepared to make travel arrangements.

SOCIETIES AND LECTURES

Saturday

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.—At Royal Free Hospital, Gray's Inn Road, London, W.C., Jan. 15, 3 p.m. Clinical meeting.

Monday

HUNTERIAN SOCIETY.—At the Mansion House, London, E.C., Jan. 17, 8.30 p.m. "The Founding and Influence of a School of Surgery." Hunterian Lecture by Dr. John M. Finney, junr. (Baltimore).

Tuesday

CHADWICK TRUST.—At 26, Portland Place, London, W., Jan. 18, 2.30 p.m. "Health Services in France," Chadwick Public Lecture by Dr. R. F. Bridgman (Paris).

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Jan. 18, 5 p.m. "Principles and Practice of Treatment," by Dr. R. M. B. MacKenna.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Jan. 18, 11 a.m. "Systemic Gonorrhoea," by Dr. A. H. Harkness.

ROYAL PHOTOGRAPHIC SOCIETY, 16, Prince's Gate, London, S.W.—Jan. 18, 7 p.m. "Some Observations on American Medical Photography," by Dr. Peter Hansell.

SOCIETY OF CHEMICAL INDUSTRY: FINE CHEMICALS GROUP.—At King's College (Large Anatomy Lecture Theatre), Strand, London, W.C., Jan. 18, 7 p.m. "The Approach to the Chemotherapy of Tuberculosis," discussion to be opened by Dr. James Walker, D.Sc., and Dr. P. M. D'Arcy Hart, F.R.C.P.

UNIVERSITY COLLEGE LONDON.—At Physiology Theatre, Gower Street, London, W.C., Jan. 18, 5.15 p.m. "Blood and Circulation," by Dr. E. A. Underwood.

Wednesday

HARVEIAN SOCIETY OF LONDON.—At 26, Portland Place, London, W., Jan. 19, 8.15 p.m. Annual general meeting. "A History of Surgery." Presidential Address by Mr. E. G. Muir.

INSTITUTE OF LARYNGOLOGY AND OTOTOLOGY, 330-2, Gray's Inn Road, London, W.C.—Jan. 19, 3.30 p.m. "The Larynx. Organic Nervous Affections of the Larynx, Laryngeal Paralysis. Treatment—Educational and Operative," by Mr. V. E. Negus.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Jan. 19, 11 a.m. "Treatment of Gonorrhoea and Complications," by Dr. A. H. Harkness.

Thursday

BRITISH INSTITUTE OF RADIOLOGY, 32, Welbeck Street, London, W.—Jan. 20, 8.15 p.m. Discussion: "The Problems of Dosage in Heterogeneous Media."

DURHAM UNIVERSITY: DEPARTMENT OF SURGERY.—At Royal Victoria Infirmary, Newcastle-upon-Tyne, Jan. 20, 5 p.m. "Physiology and Surgery." Fourth Rutherford Morison Lecture by Sir Henry Dale, F.R.S.

'ESTIGYN'

ETHINYL OESTRADIOL B.D.H.

*An Orally Active Derivative of
the Natural Oestrogen, Oestradiol*

Ethinyl oestradiol is unique in that it is a simple derivative of the natural ovarian hormone which is highly active when administered orally. It is now available for clinical use as 'Estigyn'.

Ethinyl oestradiol is remarkable for its high potency and dosage should be the lowest which produces the desired therapeutic effect. Manifestations of overdosage are more likely than symptoms of toxicity.

Toxic reactions, such as headache, nausea and vomiting, are rare following the administration of 'Estigyn' and are most unlikely after the usual therapeutic doses. 'Estigyn' is issued in tablets containing 0.05 mg., each tablet scored for convenience in giving doses of 0.025 mg. when the same are required. Literature and trial sample are available on request.

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1
25, CLOAKWELL 3000 TELEGRAMS: TETRADOME TELEX LONDON

SHer/Z 192

Vasodilatation

There is considerable evidence of the outstanding value of Cardophyllin in producing vasodilatation. The coronary vasodilatation is manifested in an increased coronary blood flow and a beneficial effect on the myocardium; the renal vasodilatation is indicated by the powerful diuresis. It also causes bronchodilatation.

Cardophyllin

THEOPHYLLINE-ETHYLENEDIAMINE

INDICATIONS

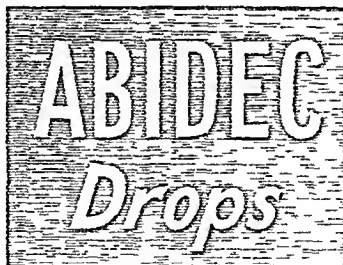
DISEASES OF THE CARDIOVASCULAR SYSTEM
OEDEMA - ASTHMA

LITERATURE AND SAMPLES ON REQUEST

IN TABLETS FOR ORAL USE AMPOULES AND SUPPOSITORIES

Manufactured by WHIFFEN & SONS LTD
Home sales distribution by
BRITISH CHEMICALS & BIOLOGICALS LTD.
(Benger's-Genatosan Division) Loughborough,
to whom all orders and enquiries should be sent.

A NON-OILY MULTIVITAMIN SOLUTION



This new Parke-Davis preparation represents an important advance in the administration of vitamins. In "Abidec" Drops it is now possible to give six essential vitamins, of both "water-soluble" and "fat-soluble" groups, in a stable, non-oily and non-alcoholic solution.

The ready miscibility and small dosage of "Abidec" Drops enable them to be added to infants' and children's food, either solid or liquid, without appreciably altering either taste or appearance; or the dose may be dropped directly on to the tongue with little risk of nausea.

"Abidec" Drops contain in each 10 minim adult dose:—

Vitamin A ..	5,000 Int. units	Vitamin B ₁ (Ribo- flavin) ..	0.4 mgm.
Vitamin D ..	1,000 Int. units	Nicotinamide ..	5 mgm.
Vitamin E (Aneurine hydrochloride) ..	1 mgm.	Vitamin C (Ascorbic acid)	25 mgm.

Available in 10 c.c. vials with droppers.

PARKE, DAVIS & COMPANY
HOUNSLOW, MIDDLESEX. Inc. U.S.A., Liability Ltd.

For **MULTIPLE DEFICIENCIES**— A *single* supplement of **Vitamins and Minerals**

All restricted diets call for special care to guard against limitation of essential nutrients. Cases still, unfortunately, occur where patients on roughage-free diets become depleted of vitamin C and even develop signs of scurvy.

Specific deficiencies can be avoided by the use of the appropriate preparations of single vitamins or minerals, e.g., Ascorvel for vitamin C, Betavel for vitamin B₁, iron for hypochromic anaemia and so on—or, to prevent multiple deficiencies, a single supplement of vitamins and minerals such as Complevite may be employed.

COMPLEVITE

The recommended adult daily dose provides :

vitamin A	2,000 i.u.	vitamin C	20 mg.	iodine	not less
vitamin D	300 i.u.	calc. phosph.	480 mg.	manganese	than 10
vitamin B ₁	0.6 mg.	ferr. sulph. exsic.	204 mg.	copper	p.p.m. each

References:—Full documentation may be obtained on application to Medical Dept. S.O.A.



Vitamins Limited

Upper Mall, London, W.6.

Spirella

INDIVIDUAL & SURGICAL
CORSETRY SERVICE



THE Spirella System of Corsetry operates as follows. First, the Spirella Corsetiere adjusts the patented Modelling Garment (picture No. 2). Then measurements are taken over the supported figure, from which measurements the finished garments are individually made (picture No. 3). The finished Spirella gives control in an upward and backward direction in harmony with muscular action. Illustrations are from un-retouched photographs.

For name and address of nearest Corsetiere, see the Spirella full-page advertisement in the local Telephone Directory

THE SPIRELLA COMPANY OF GREAT BRITAIN LIMITED
LEICHTWORTH, HERTS., and SPIRELLA HOUSE, OXFORD CIRCUS, LONDON, W.1.
Contractors to the Ministries of Health and Pensions under the National Health Service Act, 1946, Con/Gen. 85/4.

"DILAUDID" (KNOLL)
brand
DINHYDROMORPHINONE
THE
MODERN ANALGESIC

*prompt and persistent
suppression of acute pain
without the emetic & constipating
side effects of morphine.*

*Does not cause vertigo or
depression of mental faculties.*

LITERATURE AND SAMPLES ON REQUEST

SAVORY AND MOORE LTD.
WELBECK STREET, LONDON. W.1.

EDINBURGH CLINICAL CLUB—At B.M.A. Scottish House, 7, Drumsheugh Gardens, Edinburgh, Jan. 20, 8 p.m. "Stricture of the Oesophagus," by Mr. A. Logan.

INSTITUTE OF UROLOGY—At St Paul's Hospital, Endell Street, London, W.C., Jan. 20, 11 a.m. "Infections due to *Trichomonas vaginalis*," by Dr. W. N. Mascall.

MIDDLESEX COUNTY MEDICAL SOCIETY—At Park Lane Health Centre, Tottenham, N., Jan. 20, 3 p.m. Meeting.

ROYAL PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN: SCIENTIFIC AND TECHNICAL GROUP, 16, Prince's Gate, London, S.W.—Jan. 20, 7 p.m. "The Kinephotomicrography of the Living Cell," by Dr. A. Hughes.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE—At 26, Portland Place, London, W., Jan. 20, 7.30 p.m. "A Critical Review of Malignant Malnutrition (Kwashiorkor)," by Dr. H. C. Trowell. A discussion will follow.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—At Laetoe Lecture Theatre, Jan. 20, 4.30 p.m. Lecture-demonstration: Psychiatry.

Friday

BRITISH INSTITUTE OF RADIOLOGY, 32, Welbeck Street, London, W.—Jan. 21, 8.15 p.m. "Intracranial Aneurysms—a Correlation of Their Pathology with the Radiological Appearances," by Dr. R. G. Reid and Mr. R. Johnson.

FACULTY OF RADIOLOGISTS—At Royal College of Surgeons, Lincoln's Inn Fields, London, W.C., Jan. 21, 2.15 p.m. Diagnosis Section meeting. "Radiological Investigation of Pancreatic Disease," by Dr. R. A. Kemp Harper. "The Vascularization of the Human Stomach and the Shunting Effect of Trauma," by Dr. A. E. Barclay and Professor F. H. Bentley.

LONDON CHEST HOSPITAL, Victoria Park, E.—Jan. 21, 5 p.m. "Pain in the Chest," by Dr. N. S. Plummer.

ROYAL INSTITUTE OF PHILOSOPHY—At University Hall, 14, Gordon Square, London, W.C., Jan. 21, 5.15 p.m. "The Ethics of Liberalism and the Ethics of Socialism," by W. B. Gallie, M.A.

ROYAL MEDICAL SOCIETY, 7, Melbourne Place, Edinburgh—Jan. 21, 8 p.m. "Medical Research as an Aim in Life," by Sir Henry Dale.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY—At South Kensington Hotel, 41, Queen's Gate Terrace, London, S.W.—Jan. 21, 7.15 p.m. for 7.30 p.m. Dinner meeting. 8.30 p.m. "American Medicine" by Professor John McMichael.

Saturday

BIOCHEMICAL SOCIETY—At British Postgraduate Medical School, Duane Road, Hammersmith, London, W., Jan. 22, 11 a.m. 272nd Meeting.

BRITISH ASSOCIATION OF ALLERGISTS—At University College Hospital Medical School, University Street, London, W.C., Jan. 22, 11.30 a.m. and 2.15 p.m. Annual general meeting. "Some Biochemical Investigations on the Allergens of Household Dust," by Professor C. Rimmington. "Some Immunological Aspects of Desensitization with Allergens of Household Dust" by Dr. Kate Maunsell.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Benson.—On Dec. 30, 1948, to Eileen (nee Arthur) wife of Ronald Benson F.R.C.S. a daughter.

Powell.—On Jan. 3, 1949, at Milland Vicarage, Liphook, Hants, to Leonore (nee Trench) and Denis Powell M.A. M.B. Ch.B. a second daughter.

Prentice.—On Dec. 17, 1948, at Colchester, the wife of Ian Prentice M.C. M.B. twins, a son and daughter.

MARRIAGES

Crowell—Gunderson.—On Dec. 24, 1948, in London Patrick L. Crowell to Eileen M. Gunderson.

McGhee—Copeland.—On Dec. 4, 1948, at Caxton Hall Westminster, London S.W. David McGhee, M.B., Ch.B., Ph.C., to Victoria Eugénie Copeland, of Bollington, Cheshire.

Purdie—Roberts.—On Dec. 18, 1948, in London, Anthony W. Purdie, M.B., Ch.B., F.R.F.P.S. M.R.C.O.G., to Erica M. G. H. Roberts B.Sc., M.B., Ch.B., D.Obst. R.C.O.G.

DEATHS

Addison.—On Jan. 5, 1949, at St Mary's, Isles of Scilly, William Bruce Addison, M.B., B.Ch., aged 85.

Alexander.—On Jan. 4, 1949, at Killearn Hospital, John Cassels Alexander, M.B., Ch.B., formerly missionary at Idu, Calabar, Nigeria.

Bullen.—On Dec. 31, 1948, at Yelverton John Weiply Bullen, M.D., Colonel A.M.S., retired, aged 88.

Falkner.—On Jan. 7, 1949, at a Bournemouth nursing home, after a short illness Berkeley Foote Falkner, L.R.C.P.S.I. and L.M., much loved husband of Annie Elizabeth, late of Woodleigh Vivian Park, Swanage, aged 81.

Gibson.—On Jan. 5, 1949, as the result of an air crash, Anne Gibson, M.D. Ed Passmore.—On Dec. 31, 1948, William Henry Passmore, M.R.C.S., L.R.C.P., of Mornacott, Carshalton, Surrey, aged 76.

Phillips.—On Dec. 25, 1948, at Balch Glas, Nevin North Wales George Phillips, M.D. Ed., aged 79.

Fullin.—On Dec. 25, 1948, at Raber, Honiton Devon Bingley Gibbs Fullin, M.R.C.S.

Raw.—On Dec. 26, 1948, at Alnmouth Northumberland, Stanley Raw, M.D., F.R.C.S. Ed., aged 70.

Sotman.—On Dec. 23, 1948, William Surman, M.D., of the Department of Pathology, Manchester University, aged 53.

Wilson.—On Dec. 28, 1948, at River de 9 Trowlock Avenue, Teddington, Middlesex, Graham Lionel John Wilson, M.R.C.S., L.R.C.P., aged 84.

Young.—On Dec. 28, 1948, at Bedford, William John Young, M.R.C.S., L.R.C.P., of Bath House, Harston, Cambridge, aged 79.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

"Rapid" Rat Test for Pregnancy

Q.—A request for the Aschheim-Zondek reaction of a patient complaining of 7½ weeks' amenorrhoea, and whose physical signs were compatible with early pregnancy, has been answered by this report: "Rat test weakly positive." What is the breed of rat used, how is the test carried out, and what is the percentage reliability?

A.—Many biological tests for pregnancy in which the rat is used as a test object are available, but that most likely to have given rise to this question is one introduced in recent years, often called the "rapid" rat test. Here again several techniques are described. Tame female albino rats 21 to 30 days old are injected either subcutaneously or intraperitoneally with 1 ml. of a first morning specimen of the urine under test. The animal is killed two hours later and the ovaries are immediately exposed and examined. If they are pale or pale pink the reaction is negative, but if one or both are light to dark red it is positive. In other words, the criterion is the degree of vascularity of the ovaries, and it will be appreciated that the accuracy of the test depends a good deal on the experience of the observer. It is stated that it is more reliable if two or three rats are used for each test, but with only one rat many workers still claim 95% accuracy. Further details of this type of test are given by U. J. Salmon and others (*J. clin. Endocrinol.*, 1942, 2, 167), H. S. Kupperman and R. B. Greenblatt (*Sth. med. J.*, Nashville, 1946, 39, 158), and P. H. Fried (*Amer. J. Obstet. Gynec.*, 1947, 54, 689).

Testosterone for Prostatic Enlargement

Q.—(a) Is there reasonable evidence that benign enlargement of the prostate is reduced by administration of testosterone propionate? (b) Has prolonged administration of this drug any harmful effect? (c) If so, what is the safe maximum dose and over what period should it be given?

A.—Testosterone was originally suggested as a method of treatment for benign enlargement of the prostate, on the ground that such enlargement occurs in later life when the testicular secretion of testosterone is beginning to fail. There have been many clinical reports of symptomatic improvement. However, a subcommittee of the Medical Research Council was unable to produce convincing evidence—at least in so far as objective data were concerned—that testosterone had such a beneficial effect. There is no evidence of any harmful effects of this substance given in therapeutic dosage over a long period in adults.

Pressure-cooker as Sterilizer

Q.—Can a pressure-cooker be used for sterilizing small dressings? The working pressure is given as 15 lb. What would the method be?

A.—The answer to both parts of this question depends on the design of the cooker. A pressure of 15 lb. (6.8 kg.) of steam will not ensure absolute sterility—although, of course, it will in any case destroy all pyogenic cocci and other non-sporogenous bacteria—if the steam is mixed with the whole of the air contained in the cooker when it is closed. For efficient operation there should therefore be a tap through which the contained air can be expelled by steam before the pressure is allowed to rise; alternatively, the cooker could be closed when the water is already boiling in it, but this might be difficult and liable to produce scalded fingers. Dressings so treated would be damp. Presumably it is not suggested that this proceeding should be resorted to except in an emergency. Apart from being possibly unsatisfactory for the reasons given, it is a waste of time when sterile dressings can so easily be obtained commercially.

Russell Viper Venom

Q.—What is the explanation of the fact that, while the venom of the Russell viper is used as a source of thromboplastin in the estimation of prothrombin and as a haemostatic in haemophilias, when it is injected by the snake itself it causes intense haemorrhage with constant oozing of blood from the punctures?

A.—It is true that Russell viper venom is an extremely powerful blood coagulant, but this action is most pronounced when the venom is diluted 1 in 1,000 or even 1 in 10,000. At higher concentrations there is an anticoagulant effect which outweighs the clotting activity, and, moreover, the undiluted venom may quite rapidly dissolve any clots which form. The haemorrhage from the site of injection of venom by the snake is therefore probably due to this local proteolytic and anticoagulant effect where the venom is highly concentrated, and to the necrosis which results from capillary thrombosis and damage to tissue cells produced by the venom as it spreads through the tissues.

Vegetable Fats and Gall-stone Formation

Q.—Is it safe to give fats of purely vegetable origin to persons with a gall-stone diathesis? Is phytosterol liable to form gall-stones if taken in any quantity?

A.—It is generally believed that vegetable sterols are not absorbed by mammals, although this is disputed. However, the amount of cholesterol excreted in the bile is not related either to the concentration in the blood or to the amounts in the diet. There is therefore no reason to suppose that the amounts of vegetable sterols in the diet have any influence on the formation of gall-stones.

Respiration at Birth

Q.—Can you explain the mechanism by which a newborn infant's respiratory centre is stimulated to initiate breathing during normal labour?

A.—From the end of the first trimester of pregnancy the foetus in utero can, and in certain circumstances does, exhibit movements of the chest wall and diaphragm similar to those of respiration. Post-natal respiration can therefore, to some extent, be considered a continuation of an intrauterine function which has appeared along with the development of the nervous and muscular systems. Several factors seem to play a part in the onset of breathing after birth, but probably the most significant are the oxygen and carbon-dioxide levels in the blood. It is still unknown whether an increase in the latter or a decrease in the former is the more important, or whether both act together in a cumulative way. There is, however, an optimum concentration of these gases, and too little or too much of either hinders the onset of respiration. The physiological degree of asphyxia present at birth is a continuation of an intrauterine state, increased by the effect of uterine contractions on the placenta during labour, and ultimately brought to a head by the spontaneous cessation of the circulation in the placenta and cord or by ligation of the cord. Incidentally the natural birth process may also favour post-natal respiration in that compression of the chest wall, which is inevitable in the second stage, tends to squeeze out any liquor amnii from the trachea and bronchi.

In addition to the chemical stimulus to the central nervous system other factors undoubtedly play an important part in the onset of respiration, and among these are the numerous external stimuli to which the child is suddenly exposed. These include not only the sensation of cold and touch applied to the skin, but probably muscle and joint sensations. The face, particularly the area around the mouth and nose, is thought to be especially susceptible to external stimuli. It has also been suggested that a rise in blood pressure associated with cutting off the placental circulation may reflexly initiate respiration by stimulating the aortic and carotid sinus mechanisms. This, however, has been shown not to be an essential factor. It is possible that the different types of respiration seen at birth—for example, "the gasp" as opposed to a quiet rhythm—are the result of different mechanisms, the gasp implying some disarrangement of the higher nerve centres, often due to asphyxia. The whole problem is complicated, and for further

details reference should be made to *Researches in Pre-natal Life*, by Sir Joseph Barcroft (Blackwell Scientific Publications, 1946). Attention was drawn recently to the importance of Sir Joseph Barcroft's work in this connexion by Dr. W. N. Leak (*Journal*, Oct. 30, 1948, p. 797).

Neglected Cleft Palate

Q.—A woman aged 30 has a large congenital cleft of the palate involving only the soft palate and uvula and affecting her speech. She is very nervous, and it is thought that her defect contributes largely to this state. (a) Would an operative repair followed by speech training improve speech at this stage? (b) Is it possible to construct a prosthesis to fill a defect so far back in the mouth, and would this, again followed by training, improve speech?

A.—In a neglected cleft of this kind the value of operation depends on several circumstances, local and general; these include the width of the cleft at its posterior end (at the uvula), and the distance of this point from the posterior pharyngeal wall; in general, operation is more justified for the intelligent patient, who will co-operate fully in later speech therapy. If the patient fears an operation, this will weigh against advising it. A prosthesis can always be constructed, but its efficiency depends on local conditions. It will never give normal speech, but with careful training it will usually confer some improvement.

Retinitis Pigmentosa

Q.—What vitamins should be pushed in the treatment of retinitis pigmentosa? Please recommend a suitable dosage for a primigravida of 26 with this condition.

A.—None. There is no rational basis for the use of any of the vitamins in retinitis pigmentosa. Some years ago the intramuscular injection of vitamin A was much publicized, but without justification.

Galvanism in Hemiplegia

Q.—What is the value of the treatment of hemiplegia by a galvanic current passing between an anode on the parietal region and a cathode over the side of the neck? It is claimed that this stimulates the cervical sympathetic ganglia and improves the cerebral circulation, resulting in restoration of function. I shall be grateful for your opinion and references to literature.

A.—There is no scientific basis for such a form of treatment. Krusen (*Physical Medicine*, Saunders, Philadelphia, 1944) states: "It was claimed that the current from the negative pole produces a 'stimulating' effect on the tissues beneath the electrode. Recent reports indicate that this is untrue." Similarly Kovacs (*Light and Electrotherapy*, Kimpton, London, 1945) points out that there is no good evidence that the cathode has any more stimulating effect than the anode. If the cervical ganglia were stimulated by this means it is open to question whether the effect would be beneficial. Vasoconstriction would result and the cerebral circulation might be further impaired.

NOTES AND COMMENTS

Invalid Tricycle Association.—This is a non-profit-making organization which was founded in January, 1948, to help disabled people who use invalid carriages. It puts members in touch with each other, advises them on touring in this country and abroad, helps them with any problems of maintaining and insuring invalid tricycles, and runs a quarterly magazine called the *Magic Carpet*. Information may be obtained from the honorary secretary, Mr. Robert Lee, 18, Kings Drive, Edgware, Middlesex.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Attilory, Western, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1. Hours: 9 a.m. to 5 p.m. TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads, Western, London*. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra, Western, London*.

B.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JANUARY 15 1949

THE SECRETARY REPORTS

A LARGER MILEAGE FUND

The Ministry has responded to the General Medical Services Committee's urgent representations on behalf of rural practitioners made at a meeting on Dec. 22, 1948. The Mileage Fund, now standing at £1,300,000 per annum, has been raised to £2,000,000 per annum, an increase of rather more than 50%, the increased fund to operate as from July 5, 1948. Of the £700,000 increase £200,000 comes from the Special Inducement Fund and £500,000 is new money provided for the purpose. The new mileage fund of £2,000,000 will cover rural mileage generally and mileage for rural practitioners undertaking maternity under the official scheme.

Betterment

It had been intended to await the establishment of the Whitley machinery before pressing the profession's claim for a betterment factor bearing some relation to the fact of changed money values. But, in view of the delays in establishing Whitley machinery through the difficulties raised by local authorities in their particular field, it has been decided to press for an improved betterment factor forthwith. The newly created Joint Committee of Consultants and Specialists will co-operate with the General Medical Services Committee in presenting a case to the Ministry.

An expert's up-to-date report has been obtained which shows that, if 100 is taken as the professional classes' cost-of-living figure in 1938, the appropriate figure for to-day is 185. A summary of this report will be published in these columns next week. When the Ministry laid down the figure of 20 for betterment, the professional cost-of-living figure, in relation to 100, was 150. The margin between 150 and 185 represents the increased cost-of-living for the professional classes between 1946 and 1948. These figures speak for themselves. The Ministry has been asked to receive a joint deputation from the two Committees on the subject.

Graduated Capitation Fee

It was suggested in a recent letter that the only satisfactory way to deal with the insufficiency of remuneration of those with smaller lists would be by a system involving a graduated capitation fee, with a higher capitation fee for, say, the first 1,000 patients, and a falling capitation fee as the number rises. It may be useful to examine the pros and cons of this kind of proposal, taking as an example the figure of 1,000, though the figure might be larger or smaller.

The idea can be examined quite apart from the size of the capitation fee or, better still, on the assumption that a satisfactory capitation for the maximum list is paid. The higher capitation fee for the first 1,000 would be balanced by a lower capitation fee for the last 1,000, the average for the maximum list being the agreed average capitation fee. It seems likely—the investigations now proceeding will confirm or refute it—that a substantial part of the hardship now being experienced is falling on those with smaller lists. It may well prove that it is at this end of the scale that Spens is least applied. It is certainly true that in rural areas generally the lists are too small to secure an adequate remuneration—a position which will be ameliorated to some extent by the increase in the mileage fund.

Is the tapering system open to objection on principle? When it first appeared in the Willink White Paper we criticized it on the ground that it was an illustration of a commercial practice

of a penny each or three for tuppence. One of the criticisms of the universal basic salary proposal was that it led to a tapering capitation fee position. Nevertheless, it has been suggested that it may be useful while we are awaiting the results of the Spens inquiries to examine such a proposal without prejudice.

What are the reasons for smaller lists? They may be due, as in rural areas, to relative sparsity of population. They may be due to a higher-than-average ratio of doctors to population, this, in turn, being due to other causes. In the case of an individual practitioner not in such an area the smaller list may be due to his own decision, to the thoroughness or slowness with which he prefers to work, or to simple failure to attract patients to himself. The proposal to make higher than average the rate of remuneration for, say, the first 1,000 or 2,000 patients, with a corresponding reduction for additional patients, would presumably be generally applied. This would mean that practitioners in all the groups just described would benefit. Would that be fair? Wherever, by the circumstances of the area, it is impossible for practitioners to have higher than average lists, the result would certainly be fair. Whether it would be equally fair in the case of the practitioner who just does not attract patients to himself, or who deliberately restricts his list, is open to discussion, though it might be argued that the over all result would be no less satisfactory than the uniform capitation fee system.

Such a tapering arrangement might, one supposes, encourage voluntary limitation of lists. It would raise the average rate of payment per patient for the smaller lists without interfering with the existence of or the remuneration for larger lists. It would meet the point that the ratio of expenses to receipts is likely to be higher in the smaller practice than in the larger one. It would probably make it possible to abolish basic salary and the inducement fund—except in exceptional cases such as the Highlands and Isles. The Mileage Fund arrangements—with a large fund—would continue in operation. It would probably be preferred to the universal basic salary as a way of securing the application of Spens to practitioners with smaller lists. Though it may be difficult to justify on grounds of principle a method to which the Association has in the past been opposed—namely, the application to medical remuneration of the idea of reduction for quantity—what can be agreed is that, like other ways of solving our current problems, it is a method which should be considered.

Theoretically another possibility is an increased capitation fee for the second thousand on the list or for the thousand between 1,500 and 2,500.

Perhaps correspondents to these columns would discuss this and other ways of solving this particular aspect of the remuneration problem.

Voluntary Levy

Should the expenses of local medical committees be paid from national funds or from local medical pools? This was a question which came before the last Conference of Local Medical Committees. At first sight it might appear that a good case exists for asking the State to pay. But the State does not pay without exercising control in proportion to what it pays, and it would no doubt want to supervise the payments made and possibly the staff appointments also. The Conference came down strongly in favour of a continuance of the system of Insurance Acts under which the expenses of local medical committees are met by the practitioners themselves. Only in this way can the freedom of local medical committees to conduct their own affairs in their own way be retained.

The sum of money in ordinary cases relatively small, but a special problem does exist in such sparsely populated areas as Northern Scotland, where the cost incurred by local medical committees for the travelling and subsistence expenses of its members in attending meetings is proportionately very high. Rather than depart from the principle, the Conference asked the General Medical Services Committee to look into this as a special problem and to find a solution.

National Health Service

SPECIALISTS' FINAL CONTRACTS

The Joint Committee of Consultants and Specialists discussed with the Ministry of Health on Jan. 7 the Ministry's proposals for the final contracts for consultants and specialists under the National Health Service. Further discussions will take place.

SCOTTISH ASSISTANTS TRAINING SCHEME NO MINIMUM LIMIT

The arrangements made for the Training of Assistants Scheme under the Scottish Act differs in certain respects from the English Scheme described in the *Supplement* of Oct. 30, 1948 (p. 149). The Department of Health for Scotland has agreed, in consultation with the General Practice Subcommittee of the Scottish Negotiating Committee, that to limit the application of this scheme to practices of 2,000 and over would, in Scotland at any rate, very probably preclude from participation in the scheme a number of rural practitioners who would be eminently suitable as trainers of young general practitioners. Each application will therefore be considered on its merits regardless of the number on the list of the applicant.

Selection will not be as in England by local medical committees, but on a regional basis by a committee representative of the local medical committees in the region, as well as consultants probably selected from a panel to be nominated by the regional consultants and specialists (including hospitals) committees, and one representative of the university of the region.

TRAINEE ASSISTANT SCHEME

Local medical committees are having difficulty in considering claims put forward by practitioners for the employment of trainee assistants. A number of points require clarification, and discussions have taken place with the Ministry in the hope that a further circular can be issued setting out some general lines on which applications should be judged.

CONFIDENTIAL TREATMENT OF V.D.

The Minister of Health has made regulations to maintain the principle that information about people attending venereal disease treatment centres shall be treated as confidential (S.I. 1948, No. 2517). This principle was originally contained in the Public Health (Venereal Diseases) Regulations, 1916, which were revoked by the National Health Service Act. The Ministry states that the reasons for singling out venereal diseases in particular for statutory regulations are essentially psychological, for the real safeguard lies in the normal confidential relationship between doctor and patient. The records of all patients, whatever they may be suffering from, should be treated as strictly confidential in the sense that the condition of individual patients should not be disclosed without their consent.

PRIORITY MILK FOR SICK CHILDREN

On the recommendation of his medical advisers, the Minister of Food has arranged for the medical certificates recommending priority allowances of milk for sick children temporarily absent from school to be valid for a period of four weeks instead of one week as at present.

NO MORE FLAG DAYS HOSPITAL APPEALS FORBIDDEN

The Minister of Health has announced that since hospitals in the N.H.S. are no longer dependent on voluntary financial help for normal needs he regards it as improper for them to appeal for funds. There is no objection to their accepting gifts of money from independent bodies or people, but the following practices should cease: Advertisements in the Press or elsewhere (existing posters should be removed). Requests to indi-

vidual subscribers by letter or otherwise. Placing of collection boxes in railway stations, public houses, etc. Requests to patients for donations; contributory schemes conducted by the hospitals themselves. Radio appeals, flag days, bazaars, fêtes, etc. Employment of hospital staff in collecting voluntary funds (there can be no objection to staff giving their own time to outside voluntary efforts, such as Alexandra Rose Day, but the use of uniformed nurses for this purpose should cease).

WINCHESTER MEMORANDUM

At a recent meeting of the Organization Committee representatives of the Winchester Division who had come up to London at the invitation of the Committee explained the proposals contained in their Memorandum. (The Winchester Division has since issued a revised Memorandum.)

The Winchester Memorandum has been circulated to all Divisions and Branches and has aroused much interest. It criticizes the present constitution of the central Council and calls for the election of a larger proportion of members by direct vote, the aim being to secure a closer link between members of Council and constituencies they represent. The Memorandum also expresses the view that new methods should be found to cope with the burden of work at Representative Meetings and makes certain suggestions for dealing with this and other problems. That there is widespread agreement with the aims of the Memorandum, though not necessarily of the methods proposed, was shown by a carefully prepared and detailed analysis of the comments and views of other Divisions drawn up by the secretary of the Winchester Division.

The Organization Committee has also considered resolutions and suggestions from other sources, and in the near future will submit to the Council suggestions for dealing with the problems raised. In due course the Council's own proposals will be published, and opportunity will thus arise for full discussion both in the Divisions and by the Representative Body.

HEARD AT HEADQUARTERS

Wide Spectacles

A correspondent complained in these columns last week (p. 17) that spectacles for eyes whose pupil distance exceeds 70 mm. are not obtainable through the N.H.S. This is incorrect, though the procedure by which they are obtained is rather tortuous. After the patient has got the appropriate form from his G.P. and had his eyes examined he presents the prescription to a dispensing optician. If the pupil distance is 68 mm. or less, well and good; if it is greater, N.H.S. spectacles can be obtained only through the hospital service. However, we are told that some opticians are sparing the tempers of these unfortunate people by accepting prescriptions for spectacles for wide-set eyes and meeting the extra cost themselves from the ordinary dispensing fees.

The Association's Founder

It is just a hundred years ago—in 1849—that the founder of the Association, Charles Hastings, became its President. He had been Chairman of Council ever since the Association was formed 17 years earlier and was to remain Chairman for 16 years more, but he was President for only one year, 1849–50, when the Association returned for its annual meeting to its native Worcester. It was in the year of his presidency that he was knighted. There have been six other instances of the Chairman of Council becoming President, though only one of them in this century—Mr. Souttar being elected Chairman of Council in 1939 and subsequently becoming President. There have been two instances in the history of the Association of a man holding all three offices, of President, Chairman of Council, and Treasurer.

The School Medical Service

It was interesting to hear the head mistress of the Accrington High School for Girls state at a health education symposium arranged recently by the Ling Physical Education Association that the "Charter for Health" prepared by the British Medical Association was being used in her school as a 'textbook' for health teaching. A great deal of care was given to the Charter, and it might well form a framework for instruction in health. One of the addresses in the symposium was given by Dr J. L. Dunlop, M.O.H., Hertfordshire, who discussed very frankly the limitations of the school medical service. He felt that now that a comprehensive medical service was available for everybody the school medical service was likely to become more and more just a means of detecting children with defects, and not very effective at that. He would feel happier if he knew that in each school there was a teacher, or more than one teacher, charged with the definite responsibility of observing the performance of the children from the health point of view, so that the doctor coming to the school once a year or every six months could have the children who needed particular attention brought to his notice.

The Future of Nursing

The Association's Committee on Nursing, whose last report to the Council was highly praised, is continuing some useful work behind the scenes. The proposals for nursing legislation which it is considering and revising in the light of consultations are confidential. The Committee is also considering the economics of the employment of skilled nurses and the use of hospital facilities, and studying the economical use of nurses in industry. These nurses are said to number about 4,000—many more than before the war, but not so many as during the war years—and it is estimated that during the next five years at least another 5,000 nurses may be needed in this developing field. The use of trained nurses in radiology, in public health, and in mental health is also on the Committee's agenda.

Questions Answered

We publish here the answers to a selection of questions that seem to be of general interest.

Engaging an Assistant

Q.—I am taking a new assistant. Should I notify the executive council of his acceptance or should I leave it alone?

A.—The terms of service require that a practitioner shall not, except for a period of less than three months employ an assistant to attend his patients without the consent of the executive council. The terms of service also require that the name of any assistant should be notified by the practitioner to the executive council. The responsibility for approving the employment of assistants rests on the shoulders of the local executive council. The approval of the Medical Practices Committee is not required to the employment of an assistant unless it is proposed to place the assistant's name on the medical list.

Disposal of Superannuation Contributions

Q.—Is the balance of the 6% contributions for the superannuation scheme plus 8% contributions by the State paid to the doctor's estate if he dies shortly after receiving his pension and his wife dies a year or two after him or predeceases him?

A.—No. But in every case the doctor or his estate will receive in one form or another at least the equivalent of his own contributions to the superannuation scheme. For example, a doctor who is entitled to no benefit or transfer value under the scheme receives back his own contributions with compound interest at 2½%. A doctor who is not entitled to a pension but who is entitled to a retiring allowance the amount of which is less than the amount of his contributions plus compound interest will have his retiring allowance increased by the amount of the deficiency. In the case of a doctor who dies shortly after receiving his pension and retiring allowance, his legal personal representatives would become entitled to a death gratuity, and his widow would receive a widow's pension under the scheme.

If, while receiving the widow's pension, his wife dies or remarries and the aggregate amount of the payments to her, to her husband, or to her husband's legal personal representatives by way of pension, retiring allowance, or death gratuity is less than the amount of his own contributions with compound interest, the widow or her legal personal representatives would receive a sum equal to the deficiency.

Correspondence

Implementation of Spens

SIR,—General practitioners will welcome the Secretary's report in the *Supplement* of Dec 25 (p. 235). The report clarifies to a great extent the position with regard to the application of the Inter-Departmental Committee's findings. At the recent Conference of Local Medical Committees I asked if actuarial figures were available to show how the total sum available for general practitioner services measured up to the Spens recommendations. The Secretary's report shows that we are receiving only the shadow for the substance. The total sum available for general practitioner services falls far short of the Spens recommendations.

The Spens Report states that, "having regard to the conditions of general practice, not only in the age groups above 40-49 but between 35 and 40 and even between 30 and 35 doctors ought to receive substantially the same remuneration as between 40 and 49 for the same burden of practice." It must be quite apparent from the Secretary's report, even applying only the 55% and the disputed 20%, to the 1939 figure that the total sum for general practitioner remuneration must be very substantially increased. The 20% betterment figure which the Government proposes does not "have direct regard not only to estimates of change in the value of money but to increases which have taken place in incomes in other professions."

If we accept the Government figure as a temporary basis of remuneration, 75% of general practitioners between 30 and above to the age group 40-49 for the same burden of work should receive over £2,010, 50% should receive over £2,613, 25% over £3,216, slightly less than 10% over £4,020, and a small proportion at least £5,025. The Secretary states "that a betterment factor of one third applied to the gross income and of one-fifth to the net income in no way represents the change in money value which has taken place." Most of us will heartily agree with this statement.

The total remuneration provided for general practitioners under the N.H.S. Act is approximately £45 million. Can anyone seriously claim that the latter figure interprets the Spens recommendations? If we take the Minister's figure of population at 47,750,000 and take 95% of this, we get 45,362,500. At 18s per head this would produce a central fund of £40,826,250 and after deducting £1,000,000 for mileage we are left with £39,826,250. On the assumption that 20,000 principals are taking part, the average payment is £1,991 6s 3d gross, if assistants are included this sum should be reduced accordingly. This gives a net figure in the region of £1,327 10s 10d per doctor spread over the whole general practitioner service.

The Minister has frequently publicly asserted that practically the whole population is availing itself of the public service. In Glasgow it is claimed that at Sept.-30, 1948, only 14,381 out of a population of 1,093,580 were not on a doctor's list. Even with a 4,000 list the Spens figure cannot be reached, and most practitioners will agree that this number is much too large for proper treatment. Unless there is an immediate all-round increase in remuneration, based on a reasonable number of patients not only the Service but the doctors will break down. Rural and suburban areas must have special consideration where relatively more time is required for visits. There is ground for suspecting that the capitation fee has been based more on the inadequate N.H.I. rate than on the Spens Report.

The committee recommended a net capitation fee of 15s 6d in terms of 1939 values, or 15s after deductions for mileage, indemnities, etc. This represents over 22s 6d on 1939 values and even if the Government betterment figure of 20% is applied the total is 27s. On the basis of 45 million making use of the Service the total sum available for distribution should be

£60,750,000, with a further £2,062,500 for, *inter alia*, mileage grants and special payments. Pandora's box has been opened and we are left with hope and charity. The humiliating basic salary should either be applied *ipso jure* or abolished.—I am, etc.,

A. SMITH POOL.

Car Allowances for Whole-time Specialists

SIR,—We strongly endorse the views expressed by the Leicester group of whole-time specialists (*Supplement*, Dec. 18, 1948, p. 229). We too are whole-time specialists responsible for the treatment of approximately 50,000 accidents a year, with a high incidence of serious accidents referred to us by other hospitals.

Our old board of management, in founding this new type of hospital for accidents in 1941, aimed at establishing an immediate specialist service on a 24-hour a day basis for all serious accidents. This board asked us to establish our homes as close to the hospital as possible, and to provide an efficient telephone service and quick transport facilities to the hospital. The last requirement meant the purchase and maintenance of a car, for public transport cannot adequately cover our emergency calls. The board recognized this, and a car allowance towards these expenses was given. The years of our experience confirm the correctness of this decision.

Since July 5 we are informed that no car allowance other than 6d. a mile for "emergency visits" will be allowed to us. This concession, in our experience, is entirely inadequate. For example, on our 24-hour duty day we are responsible for all admissions. On that day we prefer to stay in the hospital until a late hour. Only then have accident admissions ceased and is it reasonably safe to go home; by then, too, public transport has also ceased and our cars are essential to take us on this journey. In order to qualify for "emergency visits" are we to quit the hospital, say, at six o'clock, knowing well that we will have to answer several emergency calls?—a state of affairs which would sadly and unnecessarily affect our efficiency and indeed the very spirit of our service to our patients. Yet under present regulations we have no other alternative, for without an adequate car allowance we cannot afford to maintain our cars. Since July 5 we have continued to provide our emergency service in the old manner but at our own expense, believing that authority has not yet had time to examine the problem in detail.

We are rather amused that our hospital is euphemistically considered to be "our office," that regulations then proceed to consider transport problems to "our office" on equal terms with those to any other office. Anything less like the accepted meaning of an office than a modern large accident hospital, with its urgent demands at all hours to its staff, is difficult to imagine. The term ceased to be amusing when we sought a measure of relief from our car expenses under Schedule E. The income tax inspector, when asked how we were to fulfil our duties to our patients at times when public transport was not available, replied, to use his own words, that "he couldn't care less." We were not on duty, in his official view, until we actually reached "our office," and how we got there was not his affair.

We feel, therefore, that these matters should be brought to the notice of the Ministry and that any contract we may be asked to sign shall contain recognition that in such an emergency service a car is essential to our work. This can be done either in the form of an adequate annual allowance or by a clause recognizing the necessity of a car in order that an income tax rebate under Schedule E may be obtained.—We are, etc.,

WILLIAM GISSANE.

E. MERVYN EVANS.

RUSCOE CLARKE.

STEWART H. HARRISON.

P. ESSEX-LOPRESTI.

C. C. JEFFERY.

J. S. HORN.

Birmingham Accident Hospital.

Remuneration

SIR,—I wish to congratulate Dr. A. W. McHaffie on his letter published in the *Supplement* of Dec. 4 (p. 209). I do not, however, wish to congratulate the officials of the Scottish office of the B.M.A. on the statement made to the Press and published in the *Glasgow Bulletin* on Saturday, Dec. 4. The state-

ment so far as I could make out implied that the Scottish Secretary thought that the doctors were merely grumbling because the quarterly cheques did not come up to standard. It was clearly stated by the Scottish Secretary that the doctors were multiplying the amount received by four and saying, "Is that all we are going to get?" Well, may I ask what does the Scottish Secretary think we should do—multiply by 8 and subtract the number we first thought of and then divide by 2 and hope for the best? This is the help we are getting from the officials of the Scottish office of the B.M.A.

I thought we were fighting for an all-round increase in remuneration, and the kind of statement published in the Press is only likely to convey to the public the idea that we are grumbling about nothing. The officials suggested that "the interim payments [made to account] would adjust themselves by the end of the financial year." So things have just to be left alone and they will adjust themselves. Isn't that good helpful advice coming from B.M.A. officials in Edinburgh? Just sit back and the capitation fee of 15s. 2d. will adjust itself by the end of the financial year; the inadequate mileage will automatically adjust itself, and the basic salary will be sent to all who require it—just like that. I fear that the B.M.A. officials in Edinburgh could not possibly have read the last paragraph, column 2, p. 204, *Supplement*, Dec. 4, 1948.—I am, etc.,

Callender, Perthshire.

F. C. M. McILWRICK.

* The Scottish Secretary writes: The statement to which Dr. McIlwrick objects referred only to the September payment, which was for a number of reasons much below a normal quarterly payment. Endeavour was made to explain some of the misapprehensions to which this incompleteness had given rise. No reference was made to the inadequacy of the capitation fee. As was explained in a personal letter to Dr. McIlwrick on Nov. 8, the Association is already taking active steps towards overcoming the difficulties experienced by many rural practitioners since the inauguration of the new Service. These steps are aimed at securing a satisfactory increase both of the capitation fee and mileage payments.

Appealing for Basic Salary

SIR,—I have made my appeal for the basic salary and in doing so have given the local medical committee sundry painful reasons for my request. The following letter from the executive council arrived in due course:

"I beg to inform you that my Council after consultation with the Local Medical Committee have decided not to consent to payment to you of the fixed annual amount of £300.

"If you wish to appeal you have a right to do so to the Minister of Health."

That is all, absolutely all. No reasons given, just the above autocratic curt refusal—not even the season's greetings—so brutal it might well have emanated from the Kremlin. Besides which, in order to make my appeal to the Minister more than just a gesture, I need the reasons for refusal. Surely I am entitled to know why my request has been turned down, or is this expecting too much from the executive council? Perhaps I am being fussy and am merely unfortunate in my correspondents, but the council's letter to my mind somehow carried a sting. Perhaps it was the lack of punctuation.—I am, etc.,

Thame, Oxon.

E. GRANGER.

Evening Surgeries

SIR,—I would like to hear the opinions of your readers on the cessation of evening surgeries. To my mind these are totally unnecessary. I would rather do three hours of consultations in the morning, leaving the rest of the day for visits without rushing back to a hurried meal and start again. I would get more time for leisure and study and feel fitter for another day's work. My surgeries are sadly depleted when a good film appears at a local cinema or a prize fight is being broadcast.

I contend that these evenings are a waste of time. Patients for whom I prescribe medicines never see them until the following evening, when they come home from work. Most of them look tired and hungry and would be better off at home than sitting in a waiting-room. I never see children at night. Most patients require certificates only, which could easily be picked up, say, on Saturday mornings. After holding a census of my evening surgeries I find they are made up of women with

domestic troubles—where I do not wish to interfere—young boys and girls for tonics—who should go to a youth club—and one or two boils or abscesses—where the owners are unfit for work and could see me in the mornings.

Abolishing evening surgeries would ease practice expenses both for the hard-pressed rural doctor and me. It would please the wife and the Ministers of Fuel and Power and Transport. I feel that this is a question which should be seriously considered.—I am, etc.,

London, N.13.

VICTOR M. SEIFERT.

Better Capitation Fee

SIR.—The doctors who are now so desperately anxious to limit the number of patients to 2,500 or less should remember that no one has more patients than he had before July 5; the only difference is that they are now State patients. The inference, therefore, is that these doctors are unwilling to give the patients the extra attention which they now demand.

Whereas I heartily agree that 18s. per head is inadequate, it is dangerous to say with one voice we are not paid enough and with another to claim that the successful man, whether his success is due to his bedside manner or to his ability, should be paid less per head than at present, for that is what the scaling down of the capitation fees over a certain maximum number of patients amounts to. I would point out that the upper limit was agreed to by the profession, knowing full well what a vast amount of extra work would follow the introduction of the Health Service. To sum up, let us fight for the better capitation fee, so that a man with 2,000 patients can live comfortably, but let there be no brake on incentive and ability.—I am, etc.,

Newport Pagnell, Bucks.

A. A. CLAY.

A Call to Action

SIR.—By a *volte face* and a snap plebiscite at a time when the profession was in a strong position the B.M.A. advised the profession to take service under the National Health scheme, although a majority of votes was against it. Now the Association can see what they have let the profession in for. So can those members whose apathy throughout was such a handicap. I hope they are feeling the pinch! The fact that hundreds, if not thousands, of medical men and their families are faced with stark insolvency is surely a matter for concern not only of the profession but of the public.

We are dealing with a strike-minded Government who have prised their way to office by that method. Student nurses put up an exhibition which we all deplored, for the strike is an unthinkable weapon for use by the profession—whether nurses or doctors. But their action was understood by the Government and they got what they wanted, to the prejudice of nursing sisters of long service. Remember that.

The public must not be surprised if desperate men take desperate measures. I feel that the time has come for something to be done for our brethren who are in dire straits, and it must be done at once. The time for leisurely and interminable "negotiations" is past. If the Association can do no more to help than they have done in the past, other methods must be found. Are we going to stand by while so many are faced with ruin? What about it?—I am, etc.,

Brookwood, Surrey.

H. M. STANLEY TURNER.

Rural Practice

SIR.—The plight of many rural practitioners is as acute as any abdominal emergency, and prompt action is urgently needed to relieve their unhappy condition. With incomes reduced by anything up to half their value before July 5, it will be imperative for them to take drastic action if the Minister does not soon do something to remedy the situation. Panel work before July 5 was in this district subsidized by fees from private patients, and the slight increase in the capitation rate in the new scheme does not nearly make up for the loss of private fees, which have now almost disappeared.

Mileage rates must be sufficient to cover not only the heavy car expenses but also capitation fees lost by reason of smaller lists compared with urban districts. When it is necessary to cover 60 to 80 miles a day at least three or four hours are spent daily in travelling which might otherwise be spent actually seeing patients. Rents for outlying surgeries and heavier tele-

phone costs are among other expenses that must be taken into consideration. It is also necessary to visit many patients in the country who might attend the surgery in a town, because of lack of public transport.

We thoroughly agree with Dr. S. T. Pybus (*Supplement*, Oct. 16, 1948, p. 143) that all who think as he does should write to the B.M.A. We should like to add the urgent suggestion that the B.M.A. should do all it can to find out as soon as possible how many are financially affected and are willing to resign, so that concerted action shall be taken without delay. If all with similar ideas would write to their B.M.A. Divisional secretaries the required information could be easily obtained.—We are, etc.,

G. G. M. EDELSTEN.

F. G. LOUGEE.

Winchester.

SIR.—May I, as a "truly rural doctor," support all that has been written about our problems? May I also add that in many sparsely populated areas some of us have only 1,000 on our list. Further, these areas are often over-doctored, as in this area, by squatters who have not paid for any goodwill. Our chief source of income—our private practice—has almost ceased since July.

I also wish to raise a further point—namely, the case of those of us who were over 60 on July 5. We can earn no pension; service in the N.H.I. (30 years in my case) counts for nothing; we are not allowed to serve 10 years and yet are told no age for retiring is fixed. Would it not be reasonable and fair to allow us a pension after 5 years' service under the new Service, or in the event of retirement forced by ill-health?

Some of us owing to ill-health have suffered heavy financial loss—locum fees, nursing-homes, etc.—so that we cannot afford to retire. For example, in my case I have had to buy two practices owing to ill-health at two years' purchase and two houses, and at the age of 63 my overdraft is £3,500. There must be many worse off than I. Can we appeal to the B.M.A. to recognize our position and persuade the Minister to grant us a sufficient income for a doctor and his wife to be able to meet old age in comparative comfort—surely well earned?—I am, etc.,

SENEXUS.

Obstetric Fees

SIR.—Surely there is a mistake in the answer under "Questions Answered" (*Supplement*, Dec. 18, 1948, p. 228) regarding attendance at confinements? According to my reading of the regulation, to qualify for the seven-guinea fee one must attend the mother and child during the puerperium and give post-natal care of the mother including a pelvic examination at or about the sixth week. I think it only reasonable that the full fee should be paid, but I feel very doubtful if it would be if strict adherence to the regulation was made, and the question cannot be so easily answered as you have done.—I am, etc.,

Farnham, Surrey.

G. HUMPHREY WARD.

* The answer given in the *Supplement* of Dec. 18, 1948, assumed that on discharge from hospital the patient received post-natal care and the prescribed pelvic examination from her own doctor.—ED., B.M.J.

Payment by Patients

SIR.—It is quite clear now that an immediate improvement in remuneration of the general practitioner must take place. Even in the relatively happy days of private practice the finances of the general practitioner were a source of constant anxiety to bank managers throughout the country. To-day, with the rising cost of living, we are faced with a reduction in our standard of living out of proportion to that borne by any other section of the community.

In order to make a last endeavour to maintain the personal relationship between practitioner and patient I suggest that the increase in remuneration be paid direct by the patient, either in the form of an additional yearly capitation fee, or preferably by a fee per visit, surgery attendances being free from any additional charge. In this way the practitioner who prefers to give more detailed attention to a smaller number of patients would have his reward, while the practitioner who prefers the larger number of patients would perhaps need to make only very

small additional charges. The patients would approve this scheme; it would help to remove the bitterness which is so widespread in our ranks; but what would be the attitude of the Minister?—I am, etc.,

Huddersfield

C. A. BARRETT.

Representation of Non-teachers

The following letter has been sent to the Chairman of the Negotiating Committee (with a request to the Editor that it be published in the "B.M.J.") in reply to a letter from the Chairman relating to the continued existence of the Committee.

Dear Dr. Dain,

I thank you for your letter of Dec. 23 relating to the disbanding of the Negotiating Committee, and I would like to express my gratitude to you for the immense trouble and care you have taken in presiding over this composite body that at times showed a certain centrifugal tendency.

While I have endeavoured to uphold the legitimate interests of those whom I represented—i.e., the Association of the Honorary Staffs of the Major (Non-Undergraduate Teaching) Voluntary Hospitals of England and Wales—I hope that my contributions to the deliberations of the committee were of value in a wider field.

For myself, having been a member appointed by the Council of the B.M.A. to represent non-teachers in the original Representative Committee in the time of Dr. Anderson's secretaryship, and having served in the Negotiating Committee which followed it, my feelings are rather mixed. I have done my share, and am glad of some relaxation; on the other hand I am sorry to be out of touch with contemplated changes. Furthermore, I am profoundly disturbed at the composition of the present body which claims to speak for consultants and specialists. Of seventeen members I understand that only six—i.e., those nominated by the B.M.A.—can in any sense be considered to have been elected democratically.

When the non-teachers were asked to meet the Provincial Teachers at B.M.A. House with a view to forming the new Consultants and Specialists Committee of the B.M.A., we, the non-teachers, gave away the major representation granted in the draft document, wherein it was suggested that the non-teachers, forming as they do the majority of consultants and specialists, were to have representation bearing some relationship to their numbers, and in order to attain unity we agreed to equal representation with the minority formed by the teachers. We did so under the belief expressed to us in the most authoritative way that this committee would be the committee, subordinate to no other body, that would represent the consultants and specialists in future negotiations. Its autonomy was stressed strongly.

Within a few weeks, however, a joint committee was set up, and this autonomous representative consultants and specialists committee of the B.M.A. had been reduced to a minority in the new joint committee. And that as far as non-teachers are concerned, only two of the six B.M.A. representatives do not hold appointments in undergraduate teaching hospitals.

We of the non-teaching hospitals have increasing reason to fear for our future, both as regards security of tenure as well as terms and conditions of service. Regional boards are more remote than boards of governors in relation to any particular consultant or specialist, who might have considerable difficulty in putting forward his case if he felt that he had been badly treated.

The Association which I represented in the Negotiating Committee is in process of reorganization to meet the new arrangements, and will continue to do its best to safeguard the interests of those employed by regional boards, and it is to me a matter of regret that, while other bodies such as the Colleges and Scottish Corporations are represented in the new joint committee, this Association, representing such a very large proportion of consultants and specialists, should be no longer represented in future negotiations.

In order that my constituents may be informed that they are no longer directly represented in the new body, I have asked the Editor of the *B.M.J.* if he will publish this letter.

Yours sincerely,

H. J. McCURRICH.

Payment for Work Done

SIR,—We are unhappy doctors because we are attempting to work an unsatisfactory National Health Service under unsound conditions. We are in it against the better judgment of the majority of us, for even the ill-starred second plebiscite showed a good majority still not in favour of the National Health Service.

We ought never to have joined without having first secured sound and satisfactory conditions of work, but we suffered the cruel coercion of barfaced financial blackmail. The dentists had no such loss of capital value of practices to fear, and they held out against the Act after the appointed day. The result? A golden haul for the dentists.

There can be no satisfaction in work as arduous and responsible as medical practice until some relationship exists between work done and money received. The only result of continuing as at present is a steady and inevitable deterioration in the quality of our service. I suggest that the time of polite waiting for the fulfilment of promises—e.g., the honest application of Spens—is over. I suggest that a quick and satisfactory solution to our problems can be achieved by a mass threat to resign from the Service. It is apparently the only language understood by the Minister: he understood similar language in 1946 so promptly that a capitation fee of 15s. 6d. was offered (when only 15s. was asked) ere ever the controversy reached the Press, so that even to-day the public does not realize how close to collapse was the N.H.I. in its last lap.

We joined by July 5, thus establishing our right to claim compensation. Now let us threaten to resign unless our reasonable demands are met. We shall soon have nothing to lose.—I am, etc.,

Bridport, Dorset

J. MAXWELL JONES.

Payment for Services Rendered

SIR,—It is amazing that a profession trained in the art of scientific reasoning and the deduction of cause and effect should show itself so incapable of applying this training to political matters. The most striking example of this incapacity was the failure of the majority to appreciate the results which would flow from the introduction of a 100% "free" service instead of a 90% service with an income limit, as advocated by the minority. It should have been obvious to the lowest intelligence that if 100% of the population were compelled to contribute to National Insurance practically 100% would later seek to make use of it in the only way open to them, and whatever the Government may tell them to the contrary most people believe that their National Insurance contributions are paying for the "free" Health Service.

The argument was used that, because free education was available to everybody but not used to any great extent by the middle and upper classes, in the same way the free health service would be scorned, and that these "higher income groups" would remain private patients. A few moments' thought should have made anyone realize that the two services were in no way similar: in education, those who prefer to pay are satisfied that they are buying a superior type of education to that which is provided free by the State, whereas in the Health Service the free service is to be the best possible, so why pay twice over? Nevertheless, that this reaction was not anticipated by the bulk of the profession was proved by the various votes which always went in favour of a 100% service. Those who attended "group discussions" in their divisions soon after the Beveridge Report came out will remember how impossible it was to persuade the majority that they were wrong.

The result of this gross miscalculation is now to be seen in the plaintive letters from doctors in rural areas who find their high-class practices ruined and themselves rapidly approaching bankruptcy. How can it be otherwise if the people living at the Hall who never minded paying 25s. per visit have now joined the State Service and expect the same amount of attention for 18s. per annum?

What is to be the remedy? I would suggest that many of the people in the "higher income groups" who have joined the Service have done so unwillingly, and would be only too glad to contract out of National Insurance with all its "benefits" if that were allowed. The tide of Socialism is receding, and there

are many signs of a reaction. The time will come, perhaps soon, when we have a less theory-bound Government and one which may be glad to cut down national expenditure. Then will be the time to urge amendment of the National Insurance Act to allow anyone paying over a certain amount in income tax to contract out of the whole scheme and *pro facto* to "cease insurance" and become private patients again. It will surprise the Government to find how many people will be glad to do so. One cannot believe that the principle of unwilling compulsion can prevail for long on British soil.

However, a more immediate remedy is called for, and it should be realized forthwith that no remuneration system of payment covering the entire population can ever work out fairly as between the different types of practice. If the capitation fee were raised to £10 per head, no doubt those with small, select, and very widespread practices would find themselves no worse off than before; but of course those in crowded urban areas with a maximum list would be making £40,000 per annum gross—and I doubt whether any G.P. would suggest that he ought to compete with the heads of the legal profession.

In my view there should be a small capitation fee for registration of a patient—say 5s. per annum. This would be recognized as payment for maintaining a unit of the Service, and would perhaps cover the bulk of practice expenses. In addition there should be a fee for each item of service performed. If this can be done for maternity work and for dental fillings, etc., I see no reason why it could not be done for ordinary consultations and visits, with a sliding scale for the latter fixed by the character of the district. It would be a simple matter to fill up a small form at each attendance, which would be initiated by the patient, showing the charge according to a fixed scale—e.g.: visit + any necessary prescriptions and certificates 7s. 6d.; extra for injection of vaccine 3s. 6d.; consultation at surgery 5s., and so on. The bunch of forms would have to be sent in to a pricing bureau in the district each week, just as the chemists send in the prescriptions, and this would find useful work for girls displaced from the petroleum office no longer required after the termination of petrol rationing. A check on unnecessary visiting could be devised and operated by the regional medical officers and executive committees, and an added deterrent could be provided by making the patient pay the first 1s. of each fee, with exceptions for cases of unemployed and other forms of hardship. I hope this suggestion will receive careful consideration.—I am, etc.,

Coventry.

D. MURRAY BLADON.

Estimate of Income

SIR,—In my letter (*Supplement*, Dec. 25, 1948, p. 241) I gave figures to show that your assertion in the leading article in the *Journal* of Nov. 13 (p. 864) that "in an industrial country such as Britain the majority of general practitioners will receive the greater part of their income from what were formerly described as 'panel patients'" had no foundation in fact, and that therefore the inference drawn from it was unwarranted. Your comment (p. 241) that the total pre-war income of general practitioners was £28 millions was a mathematical computation by Professor Bradford Hill has no relevance to the very important point raised, and I can only suggest the obvious conclusion.—I am, etc.,

London, S.W.3.

MORRIS CUTNER.

Form a Trade Union

SIR,—I have read every letter which has appeared in the *Supplement* since July 5, 1948. They make very depressing reading, and this section of the *Journal* has almost become an agony column.

Two recent letters, however, stand out by reason of their more comprehensive grasp of the problem involved. I refer to the letters by Dr. R. E. Newman on remuneration (*Supplement*, Dec. 25, 1948, p. 239) and Dr. R. N. Deane's masterly and mathematical contribution (Jan. 1, p. 5) on remuneration and size of lists. I was especially interested in Dr. Deane's conclusion in paragraph 8 of his letter that 1,500 patients was the maximum to which any general practitioner could decently attend. I myself reached an identical conclusion several years ago by pure trial and error. For some years I have limited my patients approximately to this figure and find that I work 60

hours a week, even with very generous secretarial help, and that this is all the work I feel I can adequately do. I agree with Dr. Deane that as the patients under one's care exceed this figure the quality of one's work must deteriorate. To attend 2,500 patients is not medicine; to attend 4,000 is sheer tomfoolery.

I did not join the National Health Service on principle. To nationalize the family doctor is a catastrophe whatever argument there may be for the nationalization of hospital and other medical services. It is bad for the patient, bad for the doctor, and bad for the practice of medicine. Alas, like Esau of old, the medical profession has recently sold its heritage for a mess of pottage (security) and must now take the consequences. In my opinion the whole matter is irremediable, irreparable, and irreversible.

The best that can now be done is for the medical profession to accept the situation and quickly set about the formation of a trade union with power to strike and power to deal with blacklegs; to drive an increasingly hard bargain with the community, through its Government, for better pay and better conditions, as is now being done by most sections of the community. I admit that this would be a tragedy, but no greater tragedy than that which befell the profession on July 5.—I am, etc.,

Purley, Surrey.

C. E. TAYLOR.

Salaries of Tuberculosis Officers

SIR,—The claims of general practitioners for satisfactory rates of pay have been ably expressed in recent weeks, and the full weight of the B.M.A. is behind them. Last week we learnt that strong measures are also being taken to ensure that the needs of public health officers for a salary scale in line with present requirements are not to be ignored. May I now write on behalf of tuberculosis officers?

Until July 5 the salaries of T.O.s were related to public health salaries. Now T.O.s are mainly in the service of hospital regional boards. Details of future status are still unknown, but alarming rumours are current to the effect that most T.O.s will not be given specialist status, even although they may have been holding posts of clinical responsibility under their local authorities. These rumours are strengthened by the fact that in almost all recent advertisements for tuberculosis physicians the posts are classed "Assistant Chest Physicians" and carry a salary equal approximately to that which most T.O.s now get and which is generally regarded as inadequate.

A policy which placed most T.O.s in the category of "assistant" would effectually be in contradiction to the Spens Report, which stated that all specialties were to be regarded as of equal status. More important, the policy would cause such resentment as to interfere with the proper development of the tuberculosis service and the encouragement of future recruits.

I hope that these rumours are not founded on fact and that there is no intention of relegating tuberculosis work to an inferior status. I should welcome, of course, official comment and that of colleagues.

Finally, may I ask that, if one's worst fears are substantiated, tuberculosis officers should get the same support that other groups of the profession are obtaining?—I am, etc.,

Welwyn Garden City, Herts.

B. COLTS

Dictatorial Action

SIR,—I am forwarding a copy of a letter received from the Executive Council for Cheshire in reply to my application for basic salary. I have forwarded a copy of the letter to the Minister of Health, etc.

"Your claim for the payment of the basic salary at the rate of £300 per annum for the quarter ending Dec. 31, 1948, has been duly considered by the Executive Council after consultation with the Cheshire Local Medical Committee and after submission to the Joint Consultative Medical Committee.

"The Executive Council resolved that your application be disallowed on the grounds that you failed to submit the requisite information upon which to enable the Council to arrive at a considered decision."

It will be noted that requisite information was not requested by the executive council prior to refusing my application for basic salary. If this dictatorial action is typical of the State medical service, how can doctors be expected to co-operate in

making it a success? As a member of the B.M.A. I demand that action be taken, and the widest publicity given to this case.—I am, etc.,

Meols, Cheshire.

E. S. A. ASHE.

Marriage Allowances for Medical Officers

SIR,—No one affected by the Government's decision to increase the taxable allowances of serving officers other than those on a temporary engagement will fail to realize that this differential treatment is in fact a financial inducement to conscripted medical and dental officers to apply for permanent commissions in the Services. Dr. E. J. Trimmer (*Supplement*, Jan. 1, p. 8) suggests that this is unjust.

It would appear, however, that it is perfectly reasonable for an employer to pay more to a member of his staff on a voluntary long-term contract than to a conscripted locum. Where an injustice was committed was in the Government's deciding to ignore the fact that the high cost of living applies to both permanent and temporary officers' families for fear of falling into the trade union heresy (*sic*) of abandoning the principle of the rate for the job.

The unmarried conscript officer is not financially differentiated from the unmarried regular. Once more the Government hits the person who complains least in the way that hurts most—the housewife through her family budget. It would be interesting to know how much money is saved by this cheese-paring discrimination.—I am, etc.,

London W 2

J. B. LOUDON.

POINTS FROM LETTERS

Allowance for Drugs

Dr. J. M. RAPHAEL (London, S.W.5) writes: In his letter on "Drugs Stocked by Doctors" (*Supplement*, Dec. 25, 1948, p. 238) Sir Ivor Beauchamp refers to an allowance of 2s. 6d. per 100 persons on doctors' lists for drugs administered in person. A few weeks ago I raised this question in correspondence with the London Executive Council, and this is the Council's reply *verbatim*: "There is no form for ordering a supply of drugs a practitioner is required to administer in person. This is covered by an extra allowance of 1s. per hundred patients, which is made to all medical practitioners." Is there any reason for the discrepancy between Sir Ivor Beauchamp's and the official figures? . . .

** The executive council seems to have made a mistake.—ED., B.M.J.

Just Claim Not Met

Dr. SYDNEY J. BELLGARD (Cardiff) writes: A good many medical men are at present going through a very precarious time, and I suggest that representations should be made to the Minister to meet their financial distress by payment of their full compensation. Why should anybody have to wait until his 65th birthday to claim his full compensation? . . . The position lies now with the doctors themselves. We have tried to obtain our requirements by democratic means without success. It is quite obvious that the terms of granting of the basic salary were only a red herring to divide the profession. I feel that he has practically been successful. I regret to say that reading through some of the articles published weekly in the *British Medical Journal* some medical men are quite indifferent to the plight of their less fortunate comrades and extremely selfish in their attitude. The medical profession must work as a team and must follow the lines of the trade unions. If any member of the trade union is unjustly treated a strike is called to meet the situation. The doctors have a just claim, which has not been met, so the alternative is to resign. The medical representatives should clearly place the facts before the Minister with the option of mass resignations from the Service. The doctors want the Service to work on an equitable basis, and not as a lackey to its auxiliary services. . . .

Master Minds

Dr. R. E. M. COKE HARVEY (Berkhamsted, Herts) writes: Your annotation in the *Journal* of Jan. 1 (p. 23) was indeed an eye-opener. . . . The anger your article aroused in me has prompted the question, How long is the medical profession prepared to endure such taunts, threats, sneers, if not actual ill-treatment, without doing something about it? Are we doctors to be the worm that never turns? The lesson is easy. Had the position been reversed organized Labour would by now have forced the rash speaker to eat his words or worse. . . . Our masters have achieved their present positions of power and influence through adherence to the principle of strength through union and unhesitating use of the threat of force at no matter what inconvenience to the general public.

Doctors, with far greater potential power than ever Labour had, will deserve to become actual scrofs if they cling to the ethereal ethic of an age outworn, however noble and good in its time, in the brutal, striving, loveless, realistic world of to-day. . . .

Ophthalmic Service: Correction

Dr. LESLIE HARTLEY (Camberley, Surrey) writes: In my letter on the Ophthalmic Service (*Supplement*, Jan. 8, p. 18) I should have stated that when "the refraction fee for a patient for ophthalmic medical practitioners had been cut from £1 11s. 6d. to 12s. 6d. for school clinics it seemed a little strange that the optician who measured the patient for glasses should continue to receive £1 5s. 6d. for this service. . . ." I should be grateful if you could correct this error, as the fee has so far only been cut in the case of school clinics.

B.M.A. LIBRARY

The following books have been added to the Library:

- Bedford, T.: *Basic Principles of Ventilation and Heating*. 1948.
Berg, C.: *Clinical Psychology*. 1948.
Bergey's Manual of Determinative Bacteriology: sixth edition by Robert S. Breed *et al.* 1948.
Beveridge (Lord): *Voluntary Action: a report on methods of social advance*. 1948.
Cyriax, J.: *Deep Massage and Manipulation Illustrated*. Third edition. 1948.
Evans, W.: *Cardiology*. 1948.
Ewing, O. R.: *The Nation's Health: a ten year program. A report to the President*. 1948.
Foot, N. C.: *Identification of Tumors*. 1948.
Gosse, P.: *An Apple a Day*. 1948.
Gradwohl, R. B. H.: *Clinical Laboratory Methods and Diagnosis*. Fourth edition. Three volumes. 1948.
Grandpierre, R., *et al.*: *Elements de Médecine Aéronautique*. 1948.
Harlow, F. W. (Editor): *Modern Surgery for Nurses*. 1948.
Hart, F., and Waldegrave, A. J.: *A Study of Hospital Administration*. 1948.
Isaacs, S.: *Troubles of Children and Parents*. 1948.
Jackson, M. H., *et al.*: *Problems of Fertility in General Practice*. 1948.
Johnstone, R. T.: *Occupational Medicine and Industrial Hygiene*. 1948.
Keith, Sir A.: *Human Embryology and Morphology*. Sixth edition. 1948.
Long, P. H.: *A-B-C's of Sulfonamide and Antibiotic Therapy*. 1948.
Mair, G. B.: *Surgery of Abdominal Hernia*. 1948.
Maximow, A. A., and Bloom, W.: *Textbook of Histology*. Fifth edition. 1948.
May, H.: *Reconstructive and Reparative Surgery*. 1947.
Morrison, R., and Saint, C. F. M.: *Introduction to Surgery*. Fourth edition. 1948.
Myers, J. A., and McKinlay, C. A. (Editors): *The Chest and the Heart*. Two volumes. 1948.
Noyes, A. P.: *Modern Clinical Psychiatry*. Third edition. 1948.
O'Connor, W. A.: *Psychiatry: a short treatise*. 1948.
Ormsby, O. S., and Montgomery, H.: *Diseases of the Skin*. Seventh edition. 1948.
Practitioner (The): *The Practice of Endocrinology*. Edited by Raymond Greene. 1948.
Progress in Neurology and Psychiatry. Edited by E. A. Spiegel Vol. III. 1948.
Rhine, J. B.: *Reach of the Mind*. 1948.
Ross, J. M.: *Post-mortem Appearances*. Fifth edition. 1948.
Samuels, J.: *Endogenous Endocrinotherapy including the Cause of Cure of Cancer*. Second edition. 1948.
Short, A. R., Pratt, C. L. G., and Vass, C. C. N.: *Synopsis of Physiology*. Fourth edition. 1948.
Smart, J.: *Handbook for the Identification of Insects of Medical Importance*. Second edition. 1948.
Smith, R.: *Acute Intestinal Obstruction*. 1948.
Society for Experimental Biology: *Symposia No. 2. Growth in Relation to Differentiation and Morphogenesis*. 1948.
Somervell, T. H.: *Surgery of the Stomach and Duodenum*. 1948.
Sorsby, A.: *Short History of Ophthalmology*. Second edition. 1948.
Speller, S. R.: *National Health Service Act, 1946: annotated*. 1948.
Thomson-Walker, Sir J.: *Genito-urinary Surgery*. Third edition by Kenneth Walker. 1948.
Tomkins, S. S.: *Thematic Apperception Test*. 1947.
Trussell, R. E.: *Trichomonas Vaginalis and Trichomoniasis*. 1947.
Verzar, F. (Editor): *Höhenklima-Forschungen des Basler Physiologischen Institutes*. 1945.
Wallace-Jones, H., Chamberlain, E. N., and Rubin, E. L.: *Elementary Atlas of Cardiology*. 1948.
Walshe, F. M. R.: *Critical Studies in Neurology*. 1948.
Wexberg, L. E.: *Introduction to Medical Psychology*. 1948.
Wolf, S., and Wolff, H. G.: *Human Gastric Function*. 1947.
Zürcherische Arbeitsgemeinschaft zur Erforschung und Bekämpfung der Silikose in der Schweiz. *Über die Silikose*. 1947.

The Minister of Health has made the following appointments to the Board of Governors of the Moorfields Westminster and Central Eye Hospital: Mr. Bryn Roberts, in succession to Sir Harold Morris; Mr. A. Gorman, in succession to Mr. E. W. Hall.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils—Fulham, Hackney, Poplar.

Non-County Borough Councils—Dartford, Radcliffe (limited to future appointments), Wallsend

Urban District Councils—Denton, Droylsden, Houghton-le-Spring, Hutton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

H.M. Forces Appointments

ARMY

Major Generals Sir Gordon Wilson, KCSI, CB, CBE, MC, late R.A.M.C., Sir Robert Hay, KCIE, late IMS, retired, and Sir G. G. Jolly, KCIE, IMS, retired, have been granted the honorary rank of Lieutenant-General.

Brigadier (Temporary Major-General) F. Harns, CBE, MC, KHS, late R.A.M.C., to be Major-General.

Colonel J. M. Macfie, CBE, MC, late R.A.M.C., to be Brigadier.

Colonel D. C. Bowie, OBE, late R.A.M.C., to be Consultant and has been granted the local rank of Brigadier.

Colonel F. D. Annesley, MC, late R.A.M.C., has retired on retired pay and has been granted the honorary rank of Brigadier.

Colonels F. S. Gillespie, J. H. C. Walker, G. D. Carr, MC, C. O. Shackleton, R. McKinlay, OBE, J. A. Crawford, J. Bigham, MC, KHP, and D. W. Beamish, MC, late R.A.M.C., have retired on retired pay.

Colonels E. M. Townsend, MC, and G. D. Gripper, late R.A.M.C., having attained the age for retirement, are retained on the Active List supernumerary to Establishment.

Colonels J. Bigham, MC, KHP, and T. F. Kennedy, OBE, late R.A.M.C., having completed four years in the rank have been retained on the Active List supernumerary to establishment.

Lieutenant-Colonels F. C. Hilton-Sergeant, W. R. D. Hamilton, OBE, R. Murphy, A. M. Simson, F. J. O'Meara, R. J. Rosie, K. Fletcher-Barrett, OBE, J. Huston, C. W. Greenway, and L. Handy, from R.A.M.C., to be Colonels.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Lieutenant-Colonel R. C. Clarke, OBE, TD, having attained the age limit has relinquished his commission and has been granted the honorary rank of Colonel. (Substituted for the notification in a Supplement to the *London Gazette* dated July 2, 1942).

Major J. B. S. Guy, CBE, TD, has been granted the acting rank of Colonel.

War Substantive Major (Temporary Lieutenant-Colonel) M. H. Evans, MBE, to be Major.

Captain (War Substantive Major) G. G. Farrington to be Major. Captain B. F. Longthorn to be Major. (Substituted for the notification in a Supplement to the *London Gazette* dated Dec. 7, 1948).

Captains J. L. Fraser, G. E. W. Wolstenholme, OBE, and J. H. Whittles to be Majors.

Captains K. H. Smith and J. H. Dean to be Acting Majors.

Lieutenant J. Donovan to be Captain and has been granted the acting rank of Colonel.

Lieutenants P. G. McGrath and M. J. G. Lynch to be Captains and have been granted the acting rank of Major.

Captain J. G. Bourne, Reserve of Officers, to be Captain.

Captain H. C. Miller has relinquished his commission on account of disability and has been granted the honorary rank of Captain.

Lieutenant (War Substantive Captain) D. W. L. Leslie to be Captain, and has been granted the acting rank of Major.

Lieutenant S. F. Seelie to be Captain and has been granted the acting rank of Major. (Substituted for the notification in a Supplement to the *London Gazette* dated Aug. 20).

Lieutenants P. Jacobs, W. Rankin, J. Petrie, D. K. W. Picken, H. V. Roberts, T. G. Lowden, J. P. D. Bates, K. H. Smith, J. J. A. Reid, A. B. Tompkins, J. H. Challenger, A. C. D. Parsons, F. W. E. Rutter, J. Nicholson, and N. D. H. Hennehan to be Captains.

H. M. Price to be Lieutenant.

INDIAN MEDICAL SERVICE

Colonels H. M. Strickland and L. K. Ledger, CIE, OBE, have retired.

Lieutenant-Colonel A. H. Craig has retired and has been granted the honorary rank of Brigadier.

Lieutenant Colonel B. P. Baliga, OBE, to be Colonel.

Lieutenant-Colonels F. M. Collins, G. M. Irvine, P. L. O'Neill, E. P. N. M. Early, H. T. McWilliams, G. H. Fraser, C. V. D. Rose, A. V. O'Brien, and V. E. M. Lee, MC, have retired and have been granted the honorary rank of Colonel.

Lieutenant-Colonels J. E. Gray, F. E. B. Manning, K. F. Alford, S. R. Prall, P. L. O'Neill, M. R. Sinclair, OBE, P. R. Vakil, E. M. Sewell, and B. G. Mallya have retired.

Majors (War Substantive Lieutenant-Colonels) V. D. A. Blackburn, P. J. Franks, W. Mackie, C. W. Greene, W. L. Fennell, OBE, P. N. McSwiney, J. J. Barton, J. W. R. Saikies, T. K. White, and J. Edis have retired and have been granted the honorary rank of Colonel.

Majors N. I. McLeod, L. U. Camm, J. H. Walters, W. Laurie, D. S. O. R. J. Henderson, E. J. Crowe, OBE, J. G. Stotham, W. J. Stewart, W. W. Coppinger, R. J. McGill, T. Denness, J. H. Bowie, A. D. Barber, G. F. J. Thomas, J. Duffy, R. J. Jarvie, W. S. Davidson, L. D. B. Frost, F. C. Griggs, D. W. Taylor, F. J. Doherty, R. D. Ewing, B. de Burca, MBE, G. E. S. Stewart, MBE, S. G. O'Neill, F. E. MacLaughlin, and E. C. Hicks have retired, and have been granted the honorary rank of Lieutenant-Colonel.

Major H. J. Gibson has retired.

Captains (War Substantive Majors) F. W. Sneddon, OBE, W. S. Hacon, H. F. T. MacFetridge, DSO, L. H. Cooper, and R. M. McCullough have retired and have been granted the honorary rank of Lieutenant-Colonel.

Captain (War Substantive Major) R. O. Yebury has relinquished his commission on appointment to the R.A.F.

Captain N. A. Michael has retired.

The surname of Lieutenant Colonel R. C. Wats is as now described and not as notified in a *London Gazette* dated July 30, and in the Supplement to the *Journal* dated Aug. 28 (p. 98).

EMERGENCY COMMISSION

Captain A. E. Evans has relinquished his commission and has been granted the honorary rank of Major.

COLONIAL MEDICAL SERVICE

The following appointments have been announced: J. D. R. Perkins, LMSSA, Medical Officer, Tanganyika; C. E. Gordon Smith, MB, Medical Officer, Federation of Malaya; J. L. Q. Vanderpuye, LRCS, LRFPs, Medical Officer, Nigeria; H. R. Wilson, MB, Woman Medical Officer, Northern Rhodesia; H. M. S. G. Beadnell, LRCP, Assistant Superintendent, Mental Hospital, Barbados; A. M. Dunn, MRCS, Medical Officer Grade C, Trinidad; J. M. Hagen, MB, House Surgeon, Federation of Malaya; C. R. Jones, MB, Medical Officer, British Guiana; F. A. Pearson, MRCS, Temporary Medical Officer, Nigeria; P. J. Boyd, MD, Medical Officer of Health, Leeward Islands; E. J. Bury, MRCS, DTM&H, Senior Health Officer, Nigeria; J. Cook, FRCS, Surgical Specialist, Hong Kong; R. S. F. Hennessey, MD, MRCP, Deputy Director of Medical Services, Uganda; H. R. Hudd, MB, Medical Officer, Uganda; F. McLagan, MB, MRCP, Director of Medical Services, Sierra Leone; D. J. A. McLean, MB, Medical Officer, Nyasaland; S. L. A. Manuwa, FRCS, Regional Deputy Director of Medical Services, Nigeria; W. E. S. Merrett, MB, Principal, Medical School, Nigeria; D. Murray, MB, DPH, Regional Deputy Director of Medical Services, Nigeria; M. A. Byers, MB, Senior Medical Officer, St. Lucia; R. O. Cooke, DM, M.S., Senior Medical Officer, Mental Hospital, Jamaica; K. C. Roy, MRCS, Medical Officer, Mental Hospital, Jamaica; L. R. Wynter, DM, Ophthalmic Surgeon and Assistant Medical Superintendent, Leeward Islands.

Association Notices

FORMATION OF MANICANDLAND BRANCH

The Council of the Association has formed a Manicandland Branch in the area of Southern Rhodesia. The new Branch comes into existence as from the date of publication of this notice.

CHARLES HILL,
Secretary

NATHANIEL BISHOP HARMAN PRIZE

The Council of the British Medical Association is prepared to consider the award of the Nathaniel Bishop Harman Prize in the year 1949. The value of the prize is approximately £100. The purpose of the prize is the promotion of systematic observation and research among consultant members of the staffs of hospitals who are not attached to recognized medical schools. It will be awarded for the best essay submitted in open competition. The work submitted must include personal observations and experiences collected by the candidate in the course of his practice. A high order of excellence will be required. No study or essay that has been previously published in the medical press or elsewhere will be considered eligible for the prize.

Any registered medical practitioner who is a consultant member of the staff of a hospital in Great Britain or Northern Ireland and is not attached to a recognized medical school is eligible to compete. If any question arises in reference to the eligibility of a candidate or the admissibility of his essay the decision of the Council shall be final.

Should the Council of the Association decide that no essay submitted is of sufficient merit, the prize will not be awarded in 1949 but will be offered again the year next following this decision, and

in this event the money value of the prize on the occasion in question shall be such proportion of the accumulated income as the Council shall determine.

The writer of the prize-winning essay may be required to prepare a paper on the subject for publication in the *British Medical Journal* or for presentation to the appropriate section of the Annual Meeting of the Association. Each essay must be typewritten or printed in the English language, and must be distinguished by a title and a motto. The essay must not bear the name of the writer, which should be sent with the essay in a sealed envelope, bearing only the motto on the outside.

Essays must be forwarded to reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, not later than March 31, 1949. The title of the proposed essay and the motto should also be notified in writing to the Secretary by Dec. 1, 1948, and should not be accompanied by the writer's name. The prize will be awarded at the Annual Meeting of the Association to be held in 1949. Inquiries relative to the prize should be addressed to the Secretary.

PRIZES FOR MEDICAL STUDENTS

The Council of the British Medical Association is prepared to consider the award in 1949 of prizes to medical students for essays submitted in open competition. The subject of the essays for 1949 shall be: "The Value of Observation in the Training of the Medical Student." The purpose of these prizes is the promotion of systematic observation among medical students. In awarding the prizes *due regard will be given to evidence of personal observation*. No study or essay that has previously been published in the medical press or elsewhere will be considered eligible for a prize.

The following prizes are offered:

National Prizes—six, each of the value of £25.

Regional Prizes—as detailed below, based on the four Regions of the British Medical Students Association:

London Region, 6 prizes (1 of the value of £15; 5 of the value of £7).

Midland Region, 3 prizes (1 of the value of £15; 2 of the value of £7).

Northern Region, 3 prizes (1 of the value of £15; 2 of the value of £7).

Scottish Region, 5 prizes (1 of the value of £15; 4 of the value of £7).

Any medical student who is a registered member of a medical school in Great Britain or Northern Ireland at the time of submission of the essay is eligible to compete for the prizes. The winners of the National Prizes will be ineligible for the award of a Regional Prize. If any question arises in reference to the eligibility of a candidate or the admissibility of his essay, the decision of the Council shall be final. Should the Council of the Association decide that no essay entered is of sufficient merit, no awards shall be made.

Each essay must be typewritten or written legibly in the English language, and must be unsigned and accompanied by a detachable sheet giving the name of the candidate, his medical school, and his B.M.S.A. Region. Essays must be forwarded so as to reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, not later than March 31, 1949.

SCHOLARSHIPS IN AID OF SCIENTIFIC RESEARCH

The Council of the British Medical Association is prepared to receive applications for research scholarships as follows: An Ernest Hart Memorial Scholarship of the value of £200 per annum, a Walter Dixon Scholarship of the value of £200 per annum, and four Research Scholarships each of the value of £150 per annum. These scholarships are given to candidates whom the Science Committee of the Association recommends as qualified to undertake research in any subject (including State medicine) relating to the causation, prevention, or treatment of disease. Preference will be given, other things being equal, to members of the medical profession.

Each scholarship is tenable for one year starting on Oct. 1, 1949. The scholar may be reappointed for not more than two additional terms. A scholar is not necessarily required to devote the whole of his or her time to the work of research but may hold an appointment at a university, medical school, or hospital, provided the duties of such an appointment do not interfere with his or her work as a scholar.

In addition, applications are invited for the award of the Insole Scholarship of the value of £250 for research into the causes and cure of venereal disease.

Applications for scholarships must be made not later than March 31, 1949, on the prescribed form, a copy of which will be supplied on application to the Secretary of the Association, B.M.A. House, Tavistock Square, London, W.C.1. Applicants will be required to furnish the names of three referees who are competent to speak of their capacity for the research contemplated.

PRIZES FOR NURSES

The Council of the British Medical Association is prepared to consider the award in 1949 of three prizes each of the value of 20 guineas for the best essay and three prizes each of the value of 10 guineas for the second best essay submitted in open competition by each of the following categories of nurses: (i) Pupil nurses; (ii) State-registered nurses working in a hospital; (iii) State-registered nurses not working in a hospital—i.e., district nurses, private nurses, etc.

The subjects of the essays for 1949 shall be: category (i), "What discipline do you think necessary in the training of nurses?"; category (ii), "What part of nursing duties can be delegated to others with safety?"; category (iii), "The care of old people in their own homes."

The purpose of these prizes is the promotion of systematic observation among nurses. In awarding the prizes *due regard will be given to evidence of personal observation*. No essay that has previously appeared in the medical press or elsewhere will be considered eligible for a prize. Nurses who are undergoing training at a hospital are eligible to compete under category (i); nurses registered by the General Nursing Council are eligible to compete under categories (ii) and (iii). If any question arises in reference to the eligibility of a candidate or the admissibility of his or her essay, the decision of the Council of the British Medical Association shall be final. Should the Council decide that no essay entered is of sufficient merit, no award shall be made. Each essay must be typewritten or legibly written, must be unsigned, and must have attached to it a sealed envelope containing the name and address of the candidate and the category into which he or she falls. Essays must reach the Secretary of the British Medical Association not later than March 31, 1949. Inquiries about the prize should be addressed to the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1.

Diary of Central Meetings

JANUARY

27 Thurs. Publishing Subcommittee, 11 a.m.

Branch and Division Meetings to be Held

AYRSHIRE DIVISION.—At Ayrshire Central Hospital, Sunday, Jan. 16, 7 p.m. Professor Matthew Stewart: "A Pathological Pot-pourri."

GREENWICH AND DEPTFORD DIVISION.—At St. Alfege's Hospital, 48, Vanbrugh Hill, London, S.E., Wednesday, Jan. 19, 8 p.m. Clinical meeting. Members of the Woolwich Division are invited to attend.

METROPOLITAN COUNTIES BRANCH.—In the Great Hall, B.M.A. House, Tavistock Square, London, W.C., Thursday, Jan. 27, 8 p.m. Address by Dr. Charles Hill: "Terms of Service."

STOCKTON DIVISION.—At Stockton and Thornaby Hospital, Bowesfield Lane, Stockton-on-Tees, Monday, Jan. 17. B.M.A. Lecture by Dr. Wilfred Sheldon: "Stomatorrhoea in Childhood." To be preceded by supper at 7 for 7.15 p.m.

SUNDERLAND DIVISION.—At Sunderland Royal Infirmary, Friday, Jan. 21, 8 p.m. Address by Dr. G. D. Kersley (Bath).

WEST MIDDLESEX DIVISION.—At Town Hall, Ealing, Friday, Jan. 21, 8.30 p.m. Clinical film: "Studies in Human Fertility."

WESTMINSTER AND HOLBORN DIVISION.—At Westminster Children's Hospital, Vincent Square, London, S.W., Thursday, Jan. 20, 5 p.m. Clinical meeting. Demonstrations and photographs: (i) hare lips and cleft palates; (ii) whooping-cough, diagnosis. Dr. Anderson: "Treatment in Congenital Heart Disease." Dr. Dean: "Early Diagnosis of Erythroblastosis." Dr. Norman: "Out-patient Treatment of Gastro-enteritis."

Meetings of Branches and Divisions

COVENTRY DIVISION

The B.M.A. Lecture for 1948 was delivered by Mr. R. C. Brock at the Coventry and Warwickshire Hospital on Dec. 14, 1948. The subject was "The Present Position of Thoracic Surgery." The chair was taken by Dr. A. F. Wright, chairman of the Coventry Division. More than 50 members of the Division were present, and among the visitors was Mr. Pracey, president of the Birmingham Branch.

Mr. Brock began with an anatomical survey of the main bronchi and discussed and illustrated the importance of the bronchial direction in the causation of lung abscess. He commented on the increased incidence of intrathoracic neoplasm in all classes of the community, and indicated the possibilities of surgery in its treatment. Pulmonary tuberculosis and its treatment by thoracoplasty was considered and Mr. Brock emphasized the great importance of its use in suitable cases. The problems, the achievements, and the potentialities of cardiac surgery were also considered. The lecture was illustrated by lantern slides and Mr. Brock replied to questions asked by the audience. The audience showed their appreciation in an enthusiastic vote of thanks, which was proposed by Mr. Pracey.

gushed violently from the vein. In some of the later cases venous pressure was measured as follows:

With the infant supine on a flat surface, a plastic catheter was passed up the umbilical vein for a distance of approximately 2½ in. (6.25 cm.); a little blood was withdrawn and the catheter was then connected to a fine-bored saline manometer. The level of saline in the manometer was raised above the expected venous pressure and allowed to run in slowly until equilibrium was attained and the infant was quiet. The readings were referred to the level of the lower part of the front of the chest, using a wooden rule and spirit level.

Results: A. Haemoglobin Values

Normal Infants

(a) *Cord Blood.*—The results of 52 tests on normal infants are plotted in Chart 1; their mean value was 16.35 g.% and their

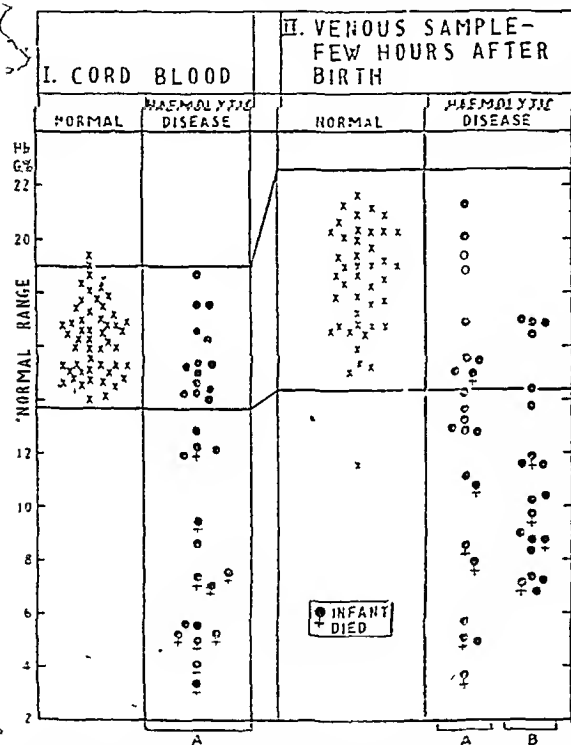


CHART 1.—Hb values in normal infants and in infants with haemolytic disease. I, cord blood; II, venous blood taken a few hours after birth. In II, series "A" are affected infants whose cord Hb is also plotted in I. Series B are infants whose cord Hb was not determined.

S.D. 1.34. The normal range throughout this paper has been expressed as "observed mean ± 2 S.D.," which gives a calculated range of 13.7–19 g.%, rather than the observed range of 14–19.4 g.%.

(b) *First Day; Venous Blood.*—The mean of 43 observations was 18.45 g.% (S.D.=2.04); these observations are also plotted in Chart 1. Again the calculated normal range (mean ± 2 S.D.) has been considered as the normal range in this paper.

(c) *First Day; Capillary Blood.*—The mean value of 33 observations* was 19.1 g.% (S.D.=1.84).

(d) *Changes in Individual Cases.*—In Chart 2 the changes in four selected cases are illustrated. It will be noted that when the cord is tied late the haemoglobin value a few hours after

birth is considerably higher than that of cord blood, whereas when it is clamped immediately after birth there is little or no rise in the haemoglobin value. (For detailed observations upon this phenomenon, see De Marsh *et al.*, 1942; these illustrative normal cases are described because they have such a very important bearing on the changes observed in the affected infants.)

(e) Haemoglobin Values After

the First Day of Life.—Only a small group of normal infants was tested at intervals during the first 60 days of life. No infant had a haemoglobin value of less than 11 g.% during this period.

Affected Infants

(a) *Cord Blood.*—Thirty infants were tested; 14 had values within the normal range and 16 had values below it, ranging from 3.4 to 12.8 g.%. No deaths occurred among the infants with normal values, whereas there were 10 deaths among the 1 anaemic infants. Moreover, among the 10 infants with cord haemoglobin values below 8 g.% there were only two survivors (see Chart 1).

(b) *First Day; Venous Blood.*—Forty-three infants were tested; 14 had values within the normal range and 29 had values below it, varying from 3.7 to 14.3 g.%. These 43 cases included 23 whose cord-blood haemoglobin had been determined. As expected, the first-day values were on the average higher. At the same time the difference was a small one, and this was probably because in many instances the cord had deliberately been clamped as soon after birth as possible.

There were two cases of special interest: two infants whose cord-blood haemoglobin had been 12.3 and 12.8 g.% were found a few hours later to have values of 15 and 15.4 g.% respectively. Thus these two infants had values definitely below the normal range in cord blood, but a few hours after birth, doubtless owing to the fact that they recovered a fair amount of placental blood they had values within the normal range; that is to say, haemoglobin values no lower than that of a normal infant recovering little or no placental blood.

Of the 20 infants whose cord blood was not tested but from whom a venous sample was taken a few hours after birth four died subsequently; the haemoglobin value of all these four infants was below 12 g.%.

(c) *First Day; Capillary Samples.*—In a few infants capillary samples were taken at the same time as venous samples; as in normal infants, the capillary samples gave distinctly higher values.

In Chart 3 are plotted the haemoglobin values observed in one affected and one normal infant. The affected infant is one of the two mentioned above whose cord haemoglobin value was 12.8 g.% and whose first-day venous haemoglobin value was 15.4 g.%; capillary samples taken at the same time as the "first-day venous" sample showed a further rise to 18 g.%. Thus it is clear that a haemoglobin value of 18 g.% in a capillary sample taken from an infant a few hours after birth does not exclude the possibility that a definite anaemia existed at the moment of birth.

The normal infant's cord haemoglobin value was 2.4 g.% higher than that of the affected infant, but because it recovered little placental blood its venous and capillary haemoglobin values a few hours later were no higher than those of the affected infant.

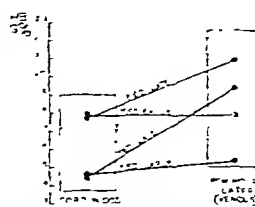


CHART 2.—Four normal infants selected to illustrate the effects of early and late tying of the cord.

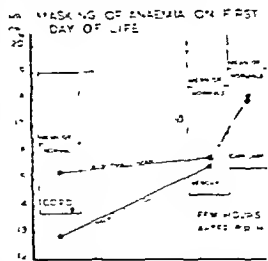


CHART 3.—The Hb value of an infant may rise from 12.9 to 15.4 g.% within a few hours after birth, owing to the transfer of placental blood; on the other hand, the Hb value may change only from 15.2 to 15.8 g.% in an infant who receives a negligible amount of placental blood. The difference between the two infants is thus temporarily masked. Capillary samples usually give considerably higher values than venous samples and thus further mask anaemia.

*This group of observations is not strictly comparable with (b). Direct comparisons on the same infants have revealed distinctly greater differences between capillary and venous samples.

(d) *Haemoglobin Values After the First Day of Life.*—Seven infants with cord haemoglobin values between 15.1 and 18.7 g.% were left untreated; two other infants seen for the first time during the first three days of life were also judged to be very mildly affected (haemoglobin value within the normal range, mild icterus, weak positive direct Coombs reaction) and were not treated; one further infant was first seen on the 30th day of life and then found to have a moderately strong positive direct Coombs reaction. This infant was known to have shown no trace of jaundice in the neonatal period. The haemoglobin changes during the first two months of life in these ten mildly affected infants are plotted in Chart 4. In

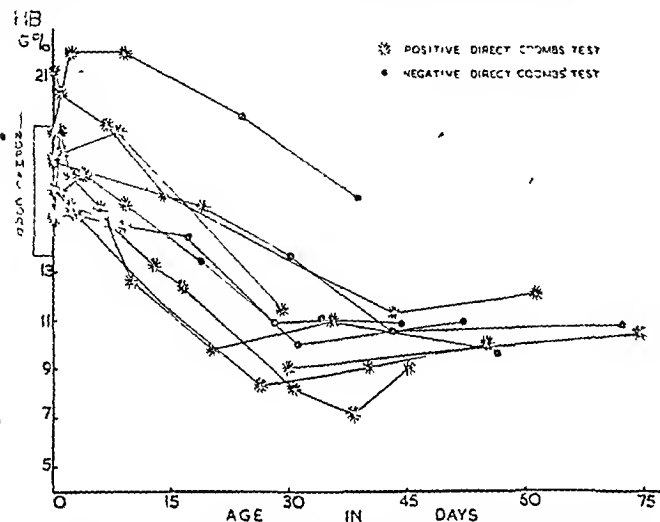


CHART 4.—Hb changes in 10 very mild cases of haemolytic disease. Cord blood: range, 15.1–18.7 g.% (7 cases tested); 30-day venous sample: range 8.2–18 g.% (10 cases tested).

addition, an indication is given of the time for which the direct Coombs test remained positive. It is clear that an infant can have a positive direct Coombs reaction for one and even two months after birth without developing any serious degree of anaemia, and can have a positive reaction for two to three weeks without developing any subsequent anaemia at all.

In the cases treated by exchange transfusion the infant was usually provided with a concentration of some 4–5.5 million Rh-negative erythrocytes per c.mm., and this population of cells disappeared at the rate of only 1% a day (with a single exception). Only in two cases in which the infant grew unusually rapidly and in two cases in which the infant was provided with a concentration of less than 3.5 million Rh-negative cells per c.mm. did the haemoglobin concentration subsequently fall to such a level (7 g.%) that it was considered necessary to give a further transfusion. In the remaining infants the haemoglobin fell to 8.5–10 g.% at the end of 30–60 days and then slowly rose spontaneously.

B. Erythroblastaemia

In 49 affected infants a blood film was examined on the first day of life. In 16 cases there were less than 10 nucleated red cells per 100 white cells; in 11 of these 16 the cord haemoglobin had been estimated and in only two was the value below 15 g.% (in these it was 12 and 12.9 g.%). In the remaining five infants, examined a few hours after birth, the haemoglobin varied from 11.6 to 16.9 g.%. All of these 16 infants recovered uneventfully, some without treatment.

In the remaining 33 cases there were at least 20 nucleated red blood cells per 100 white blood cells; in many instances the nucleated red cells far outnumbered the leucocytes and there were numerous primitive forms. Fifteen of these 33 infants died and the remaining 18 all required treatment.

C. Bilirubin Values

Normal Infants.—Cord blood. Twenty-one normal infants were found to have a mean value of 1.6 mg. per 100 ml. with a range of 0.8–2.6 mg.

Affected Infants.—(a) *Cord Blood.*—Thirty-two infants were tested; values ranged from 1 to 9.3 mg. per 100 ml. (see Chart 5).

Amongst 11 infants with cord bilirubin values over 4 mg. per 100 ml. there were six deaths. There were only two deaths amongst the 13 infants with bilirubin values between 3 and 4 mg. per 100 ml., and all of the eight remaining infants with values below 3 mg. recovered uneventfully. (b) *First Few Days of Life.*—In the 7 mildly affected infants (referred to above) whose cord haemoglobin lay between 15.1 and 18.7 g.% and who were left untreated, bilirubin values rose from 1–3.2 mg. per 100 ml. in the cord blood to peak values of 1.3–15.8 mg. between the second and fifth days of life.

It is difficult to make useful comparisons between this group of cases and those whose blood had a low haemoglobin value on the first day of life, because the latter infants were treated by exchange transfusion. However, it was striking that in this group the five infants who died at the age of 2–5 days became profoundly jaundiced despite exchange transfusion, and as early as 24 hours after birth showed bilirubin values between 17 and 21 mg. per 100 ml.

In one infant (which did not develop kernicterus) exchange transfusion was not carried out until it was 12 hours old; during this period the plasma bilirubin rose from 8.1 to 19.3 mg. per 100 ml.

It is obvious that for purposes of comparison it is essential to take cord samples rather than samples a few hours after birth.

Correlation Between Haemoglobin and Plasma Bilirubin Values in Cord Blood

In Chart 6 the haemoglobin and plasma bilirubin values of the cord blood of 24 infants are plotted against one another. It will be noted that there is a correlation between low haemoglobin and high bilirubin values. As expected, the relationship does not appear to be linear. The haemoglobin value doubtless reflects the rate of blood destruction, so that, in general, higher bilirubin values are to be expected when the haemoglobin is low. Nevertheless the amount of bilirubin produced also depends upon the total amount of breaking-down haemoglobin, so that some falling off will be expected when the haemoglobin values are very low. From the Chart it appears that this is the case.

In Chart 6 the infants who died subsequently have been specially marked. It will be noted that there is some suggestion that the bilirubin value and haemoglobin value of a sample of cord blood, when taken together, give a better indication of the prognosis than either value considered separately. A slanting line could be drawn through the observations in such a way as almost completely to separate the living from the dying.

D. Serological Tests

Direct Coombs Test.

Tests were made on 69 Rh-positive infants born to mothers whose serum contained anti-Rh; all gave positive reactions, though a small number were weak. These weak reactions were shown by infants born to mothers

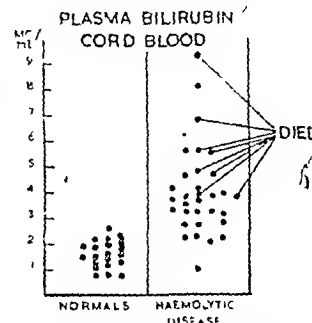


CHART 5.—Cord bilirubin values in 32 affected infants compared with a group of 21 normals.

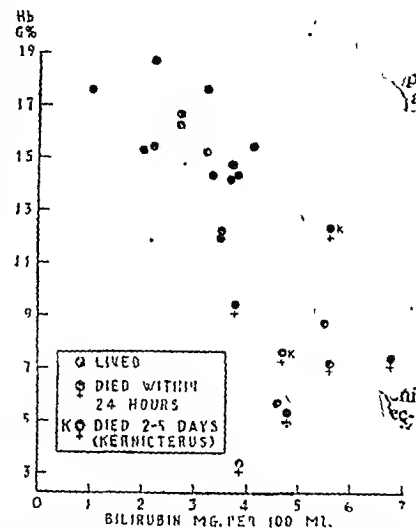


CHART 6.—Cord Hb concentration plotted against cord plasma bilirubin concentration in 24 affected infants.

whose sera contained low-titre albumin antibodies or saline antibodies of low or moderate titre. Further tests were made from time to time during the first three months of life. The results obtained in the untreated cases are shown in Chart 4, and it will be noted that even in mild cases the reaction remained positive for at least 10 days after birth and that in some cases it remained positive for as long as 60 days.

In infants treated by exchange transfusion with Rh-negative blood, Rh-positive cells often disappeared completely within a few days of transfusion or fell to a level of approximately 250,000 cells per c.mm. In these cases the direct Coombs test became negative and did not usually become positive again even when, at the end of 50 or 60 days, there were once more large numbers of Rh-positive cells in the circulation.

In infants treated by simple transfusion of Rh-negative blood there were usually more Rh-positive cells persisting in the circulation, and the direct Coombs reaction remained positive for long periods after transfusion. In one exceptional case the test was still positive 93 days after birth.

Tests for Free Antibody in Infant's Serum.—The sera of 41 infants were examined, either by the indirect Coombs test or by titration in albumin, or by both methods, for the presence of free Rh antibody; one or the other, or both, of the tests was positive in 35 cases.

In 18 cases sera were examined by both tests; in two cases where the infant's serum had a titre of only 2 in albumin the indirect Coombs reaction was negative, and in one case in which the serum gave a weak positive indirect Coombs reaction antibody could not be detected by the albumin test. In the remaining 15 cases the two tests were in agreement.

The amount of free antibody, determined by albumin titration, was not well correlated with the clinical manifestations. For example, amongst eight infants with a titre of 2 or less, three died, four were moderately severely affected, and one was very mildly affected and required no treatment. Among seven infants whose sera had an anti-Rh titre of 16 or more, four died, two were severely affected but recovered, and one was very mildly affected and required no treatment.

Persistence of free antibody does not by itself appear to be associated with tissue damage. In one infant given repeated simple transfusions of Rh-negative blood no Rh-positive cells could be detected between the 14th and the 30th days of life; at the end of this period the infant's plasma still contained Rh antibody to a titre of 32. By the 60th day there were once more many Rh-positive cells present, the direct Coombs reaction was positive again, and there was now only a trace of free antibody. The infant finally recovered completely.

Titre of Rh Antibody in Mother's Serum.—In 62 cases a sample of blood was taken from the mother within 24 hours of delivery. In every case the serum was titrated against CDe/CDe cells both in saline and in albumin. Seventeen of the 62 sera reacted equally well in saline and albumin (i.e., difference no greater than one tube). The remaining 45 sera gave higher titres in albumin; 26 of these gave no reaction at all in saline and 19 reacted only in the first tube or the first and second tubes of the saline titration. The remaining 10 sera had titres of between 4 and 32 in saline, but in each case had an albumin titre that was at least four times greater (i.e., more than two tubes higher in the titration).

It is clear that any simple classification of these results must be arbitrary, but it is convenient to consider Rh antibodies in two groups—namely, (1) "predominantly saline agglutinins" (i.e., reacting equally well in saline and albumin): 17 cases; and (2) "predominantly albumin agglutinins" (i.e., titre in albumin two tubes or more higher than titre in saline): 45 cases.

It was noted that amongst the 17 cases in which the mother's serum contained predominantly saline agglutinins there were no stillbirths or deaths within the first 24 hours. However, there were three deaths at the age of 2–5 days, presumably from kernicterus. Amongst the 45 cases in which the mother's serum contained albumin antibodies (predominantly) there were four stillbirths, seven deaths within the first day of life, and four deaths at 2–5 days.

On these figures the difference in total mortality between the group of infants whose mothers' serum contained saline agglu-

tinins (mortality 18%) and the group in which the mother's serum contained albumin agglutinins (mortality 33%) cannot be considered significant (S.E. of difference = 12.6%). Nevertheless the absence in the "saline group" of stillbirths and death within the first 24 hours of life is significant. The milder effect of saline agglutinins are further emphasized by Chart 7.

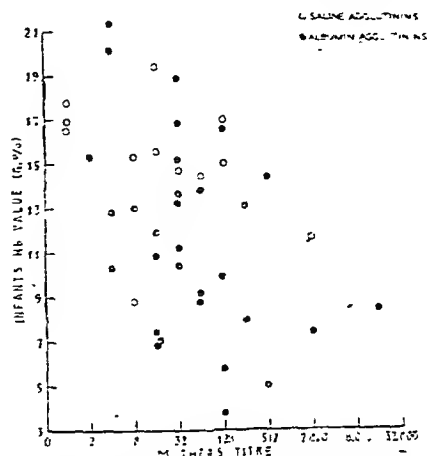


CHART 7.—Titre of Rh antibody in mother's serum (at delivery) plotted against infant's first-day venous Hb value in 43 cases.

which the kind of antibody predominating in the mother's serum, and its titre, have been plotted against the infant's first-day haemoglobin value. It will be noted that in 10 out of 12 cases in which the mother's serum contained saline agglutinins the infant's haemoglobin value was above 14 g.%.

With regard to sera containing albumin agglutinins predominantly, it appears that there is a correlation, though a poor one, between titre and degree of anaemia. There are few low haemoglobin values occurring with low maternal anti-Rh titres at few normal haemoglobin values occurring with high maternal anti-Rh titres. That this correlation is significant can be shown by dividing the cases into groups having, for example, an albumin titre of 128 or more and 64 or less respectively and showing that there is a significant difference in mortality. When the cases were analysed in this way and stillbirths (not appearing in Chart 7) were included, the results shown in Table II were obtained.

TABLE II.—Relation Between Titre of Albumin Agglutinins in Mother's Serum and Infant Mortality

Group	Total	Mother's Titre	Infants		Mortality
			Living	Dying	
I	23	1-64	22	6	21%
II	16	128 and over	5	11	69%

Observed difference between I and II = 48%. S.E. of difference = 14%.

E. Venous Pressure

Venous pressure was measured in 14 infants; in infants without anaemia or with only slight anaemia it was found to vary between +3 and +5 cm. of saline. It is to be noted that this is the pressure below the diaphragm, in the proximal part of the umbilical vein, and represents the pressure above the front of the chest. In infants with severe or moderate anaemia the venous pressure was usually raised, values of +9 to +11 cm. usually being recorded (Table III). In these latter cases the cord often bled violently when cut, and this sign is probably a reliable indication of a raised venous pressure. In a few infants violent bleeding was noticed, although pressure was not measured, and these cases have also entered in Table III.

TABLE III.—*Venous Pressure in Cases of Haemolytic Disease*

Name	Haemoglobin		Venous Pressure* (cm. Saline)	Violent Bleeding When Cord Cut	Outcome
	Cord (G. %)	1st Day (G. %)			
Cu. . .	3.4	3.7	+9	+	Died 12 hours†
St. . .	5.3	5.0	+11	+	Died 12 hours†
Ho. . .	—	7.1	+10	?	Died 96 hours†
Wat. . .	5.7	5.7	?	+	Lived†
Ti. . .	—	7.3	?	+	Lived†
O.B. . .	7.4	—	+9	+	Died 13 hours
Th. . .	—	7.4	+7	0	Lived†
Ri. . .	—	8.4	+4	0	Lived†
Ve. . .	—	8.8	+5	0	Died 60 hours†
Bl. . .	9.4	10.9	?	+	Died 3 hours†
Du. . .	—	9.8	+3	0	Died 43 hours†
Pl. . .	—	11.9	?	+	Died 24 hours†
Bus. . .	12.2	13.7	+5	0	Lived†
Da. . .	12.3	15.0	+5	0	Died 72 hours†
Sa. . .	12.9	15.4	+4	0	Lived
He. . .	14.7	—	+5	0	Lived†
But. . .	15.4	15.1	+3	0	Lived
Ta. . .	15.4	16.9	+5	0	Lived†

Summary

No. Tested	Haemoglobin (G. %)		Raised V.P. or Bleeding
12	Cord	3.4-9.4	9
	1st day	3.7-11.9	
6	Cord	12.2-15.4	0
	1st day	13.7-16.9	

* Normal V.P. +3 to +5 cm. † Treated by exchange transfusion

Deaths

Out of 74 cases there were five stillbirths, 10 deaths within the first 24 hours of life, and seven deaths between the second and fifth days of life. There were only two deaths later than this: one infant (Oa.), who was not seen before the third day of life and was treated by simple transfusion of Rh-negative blood, developed signs of kernicterus on the fourth day and eventually died, in a fit, at the age of 4 months; and one infant who recovered from haemolytic disease but developed congenital pyloric stenosis and died after operation. Of the remaining 50 survivors, only one has any signs suggestive of C.N.S. damage.

TABLE IV.—*Analysis of Fatal Cases*

Name	Haemoglobin		Erythro- blastaemia	Age at Death	Mother's Delivery Titre	
	Cord (G. %)	1st Day (G. %) (venous)			Sal.	Alb.
nt. . .	—	—	Not examined	Stillbirth	—	+
u. . .	—	—	" "	"	Nil	260,000
l. (3) . .	—	—	" "	"	Nil	2,048
r. . .	—	—	" "	"	16	128
ic. . .	—	—	+++	"	Nil	16
	5.1	—	Not examined	Few mins.	Nil	+
	4.1	8.7	+++	1 hr.	Nil	8
	5.3	—	+++	9 hrs.	Unknown	—
	3.4	3.7	+++	3 hrs.	Nil	128
	5.3	5.0	+++	12 hrs.	8	128
	7.4	—	+++	12 hrs.	2	512
	7.1	—	+++	13 hrs.	Nil	256
	7.6	7.9	Not examined	11 hrs.	32	256
	—	7.1	+++	60 hrs.	Nil	256
	—	8.8	+++	96 hrs.	Nil	16
	9.4	10.9	+++	60 hrs.	Nil	8
	—	9.8	+++	3 hrs.	Nil	16
	—	11.9	+++	43 hrs.	16	128
	12.3	15.0	+++	24 hrs.	4	16
	—	14.7 (cap.)	Not examined	73 hrs.	128	128
	—	—	+	96 hrs.	32	64
	—	—	+	40 hrs.	Nil	16
	—	9.1	+	4 mths.	Nil	256

* First examined on third day of life.

+++ = More than 70 nuc. r.b.c. per 100 w.b.c.

++ = 30-70 nuc. r.b.c. per 100 w.b.c.

+ = 10-30 nuc. r.b.c. per 100 w.b.c.

Table IV the time of death is recorded together with the haemoglobin and the first-day venous haemoglobin (when available). It is evident that there is a correlation between low haemoglobin and death on the first day of life. More than half of the seven infants dying between the second and fifth day of life had haemoglobin values well below the normal range a few hours after birth; one (Hi.) had a value just below the normal range and one (Da.) had a value just within the normal range; however, in this latter infant cord blood had

also been tested and found to be anaemic. In the seventh case the haemoglobin value was not determined before transfusion.

Discussion

It has already been mentioned that no infant with a cord haemoglobin value of over 14 g.% died, whereas of 10 infants with values under 8 g.% there were only two survivors. In the intermediate zone there were two deaths among six cases. The idea that the cord haemoglobin is a reliable index of severity receives further support from the observation that seven infants whose cord haemoglobin was within the normal range and who were left untreated pursued a benign course.

Data obtained from the infants first tested some hours after birth lend further support to the theory that initial anaemia is closely correlated with an unfavourable prognosis, since all four deaths in this group occurred in infants whose venous haemoglobin value a few hours after birth was below 12 g.%.

It has long been accepted that infants with hydropic foetalis have a severe anaemia at birth, and it might be suggested that our observations simply restate this fact. It is true that two of the infants whose cord blood was tested were frankly hydropic and others had varying mild degrees of oedema. However, these cases merged imperceptibly into the group who lived on beyond the first 24 hours only to die on the second, third, or fourth day of life; in most of these latter cases it was possible to establish by post-mortem examination that the infant had the changes of kernicterus.

It seems that two distinct mechanisms are operating, and it is to some extent coincidental that the degree of anaemia is correlated with both. It appears that very severe anaemia kills the infant by causing cardiac failure; doubtless the mechanism is similar in many respects to that of the hyperkinetic phase described by Howarth and Sharpey-Schafer (1947) in adults with severe anaemia. The process of birth presumably throws an additional strain on the infant's cardiovascular system and precipitates failure; doubtless also the transfer of placental blood, when it is allowed to occur, may add too great a load.

With regard to the deaths occurring two to five days after birth, two facts seem to be established. First, as Vaughan (1946) and Parsons (1947) have stressed, the deaths are not directly due to anaemia, since many of the infants have haemoglobin values within the normal range at the time of death; it is probable, as Hawksley and Lightwood (1934) first suggested, that the immediate cause of death in these cases is medullary failure consequent upon cerebral damage. On the other hand, these deaths are associated with a certain degree of anaemia at birth, as our observations make clear. The most likely explanation of this association is that the incidence of kernicterus is closely related to the severity of the haemolytic process.

If it is true that the severity of the haemolytic process not only determines the likelihood of the infant's dying from anaemia *in utero* or within 24 hours of birth but also largely determines the possibility of the infant developing kernicterus two to five days later, should it survive so long, other signs of rapid blood destruction besides anaemia should always be present in fatal cases of the disease.

The two most obvious signs to consider are erythroblastaemia and hyperbilirubinaemia. It has often been stated that erythroblastaemia is a variable sign in haemolytic disease, and in the present series of cases it was found in only 33 out of 49 infants examined on the first day of life. However, all of the 16 infants without erythroblastaemia were mildly affected, whereas among the 33 cases

showing erythroblastæmia there were none so mild as not to require treatment. Moreover, these 33 cases included 15 who died within the first five days of life, and in all of these erythroblastæmia was pronounced.

Raised bilirubin values must be interpreted more cautiously, since it is known that the newborn infant has a lowered capacity for excreting bilirubin, and this capacity varies widely from one infant to another; moreover, actual damage to the liver may occur in haemolytic disease (Hawksley and Lightwood, 1934). However, our observation of a moderate correlation between low haemoglobin and high bilirubin values suggests that in fact the hyperbilirubinaemia in infants with haemolytic disease is at least partly due to blood destruction.

The cord bilirubin value, taken alone, does not seem to be quite as satisfactory a criterion of severity as the cord haemoglobin, because only a narrow zone divides mild from severe cases. Not enough data are available to decide whether the haemoglobin and bilirubin values of cord blood, considered together, give a better estimate of severity than either value considered alone, but it is probable that they will prove to do so.

It appears that there is some connexion between the strength of the direct Coombs reaction and the severity of the haemolytic process, since in this series the weakest reactions were found in mildly affected infants. On the other hand, moderately strong reactions were not necessarily associated with signs of rapid blood destruction. One infant who never became jaundiced and developed only a very mild anaemia had a positive direct Coombs reaction for 60 days after birth.

The amount of free antibody in the infant's serum appears to be poorly correlated with severity, since some cases with only traces of free antibody were severely affected and others with moderate amounts of free antibody were mildly affected. At the same time it must be noted that the two infants with the largest amounts of free antibody were both severely affected.

It is evident that there is some correlation between the kind of antibody, and its titre, in the mother's serum and the severity of the disease in the infant, but that the correlation is low, so that exceptions are frequent. In this series the predominance of saline agglutinins over albumin agglutinins in the mother's serum was on the whole associated with milder forms of the disease.

When albumin agglutinins predominated in a serum their titre bore some relation to severity, for there were no very severe cases occurring with very low maternal titres, and deaths were significantly more frequent when the mother's titre was high. Similar conclusions have been reached by Davidsohn and Stern (1948).

Wiener (1946) suggested that the presence of saline agglutinins in the mother's serum caused a disease syndrome "erythroblastosis" associated with deep jaundice and kernicterus; this syndrome was said to come on after birth, since the agglutinins crossed the placenta only during labour and were then thought to cause agglutinative thrombi in the liver and brain; the presence of "blocking" antibodies was said to lead to a different syndrome—"congenital haemolytic disease," associated with anaemia and/or hydrops.

Wiener and Gordon (1948) now consider that saline agglutinins play only a minor part in haemolytic disease, though Wiener (1948) still believes that saline agglutinins may enter the infant's circulation "through placental defects or during labour."

A more convincing hypothesis is that saline agglutinins play no part in the aetiology of haemolytic disease and that sera which contain saline agglutinins can be regarded

as containing in addition a smaller amount of albumin agglutinins. This hypothesis would satisfactorily explain the milder effects of saline agglutinins and is also consistent with the evidence that the haemolytic process is already maximal at the moment of birth.

The idea that haemolytic disease "comes on" after birth has arisen from the fact that jaundice and pallor may be absent at birth but develop rapidly afterwards. However, it is well known that the plasma bilirubin rises rapidly after birth in normal infants, chiefly because of the poor excretory capacity of the liver in the newborn. Therefore a rapid rise in bilirubin after birth does not indicate that the rate of blood destruction is increasing. Our observations demonstrate that even in very mildly affected infants the plasma bilirubin is usually already raised at the moment of birth, and in severely affected infants is always far above the normal range.

A decline in haemoglobin value during the days following birth is also a phenomenon of all normal infants and has been shown to be due to a diminution in the production of erythrocytes after birth (Faxen, 1937; Shapiro and Bassen, 1941). It is very probable that the rapid fall in haemoglobin values during the first few days of life observed in many infants with haemolytic disease of the newborn is also due to a diminished production of erythrocytes rather than to any increase in the rate of destruction. In one severe case reported by Mollison (1943) the rate of destruction of Rh-positive erythrocytes in an infant with "icterus gravis" was measured on the fourth and seventh days of life and found to be distinctly slower on the second occasion. It is common knowledge that in infants with haemolytic disease the degree of erythroblastæmic diminishes rapidly after birth, and it is surprising that so much stress has been laid on blood destruction as a cause of the anaemia, to the complete exclusion of any consideration of changes in the amount of production.

It has been suggested that there is an inverse relationship between the degree of blood destruction and the development of kernicterus (Vaughan, 1946; Parsons 1947). It seems to us that this belief has arisen as follows.

Infants whose cord haemoglobin value is below 8 g.%, usually die within 24 hours of birth and therefore do not have time to develop kernicterus. Infants with cord haemoglobin values of, say, 10–12 g.% may acquire values of 12–15 g.% in venous samples taken a few hours after birth, and capillary samples may show values as high as 18 g.%. The infant's rapid production of cells does not fall off for two to three days after birth, and therefore an infant whose haemoglobin value was 12 g.% at the moment of birth may die on the third day of life with a haemoglobin value of, say, 16 g.%. The fallacy lies in regarding such a haemoglobin value as being necessarily normal. 16 g.% does lie within the normal range of haemoglobin values for the third day of life, but it is normal only for an infant receiving little or no placental blood. In an infant which has received a large amount of placental blood 16 g.% in a capillary sample taken on the third day of life is indicative of anaemia.

Summary

The haemoglobin value in the cord blood of an infant with haemolytic disease is well correlated with the severity of the disease. Infants whose cord blood contains less than 8 g.% are very likely to die within 24 hours of birth. These infants often show a raised venous pressure and probably die from cardiac failure. Infants with values over 14.5 g.% are very likely to recover without treatment. Deaths from kernicterus at two to five days occur in some of those infants who are anaemic at birth but not so anaemic as to die within 24 hours.

Haemoglobin values of blood samples taken after birth are much more difficult to interpret because of (a) the placental

transfer of blood, and (b) the large capillary/venous differences in the newborn.

The cord plasma bilirubin taken alone is a less valuable index of severity than the cord haemoglobin. However, taken in conjunction with the cord haemoglobin it is of definite value in assessing the severity.

In this series erythroblastaemia was present on the first day in all moderately severe cases and was a striking feature in the fatal cases; in mild cases the number of nucleated red cells was usually within normal limits.

The strength of the direct Coombs test and the amount of free Rh antibody in the infant's circulation are of very limited value in assessing severity.

The form of Rh antibody predominating in the mother's serum and the antibody titre show some correlation with the severity of the haemolytic process in the infant. In practice exceptions are frequent, and antibody tests can be used only to forecast probabilities.

These findings emphasize the importance of determining the haemoglobin and bilirubin values of cord blood as a means of grading cases of haemolytic disease of the newborn. Not only is this of help in deciding whether treatment is needed, but it should make it possible to compare one treated series with another and to decide whether equal numbers of severe cases have been included.

We should like to thank the members of the medical and nursing staffs of the Obstetrics Department of this hospital, who have helped in many ways, particularly in the collection of cord blood samples; and Professor A. A. Moncrieff and Drs. D. de la C. MacCarthy, R. Gordon, and R. J. Pugh, of the Department of Child Health, who have had clinical charge of the cases we have investigated.

REFERENCES

- K. E., Dodd, B. E., and Mollison, P. L. (1942) *British Medical Journal*, 2, 535.
 W., and King, E. J. (1942). *Ibid*, 2, 329.
 R. R. A., Mourant, A. E., and Race, R. R. (1946). *Lancet*, 1, 44.
 H. I., and Stern, K. (1948). *Amer. J. clin. Path.*, 18, 690.
 Sh., Q. B., Windle, W. F., and Alt, H. L. (1942). *Amer. J. Child.*, 63, 1123.
 L. K. (1947). *Proc. R. Soc. Med.*, 40, 546.
 Denton, R. L. (1945). *J. Lab. clin. Med.*, 30, 821.
 N. (1937). *Acta paediatr., Stockh.*, 19, Suppl. 1.
 Q. H., and Harrison, D. C. (1945). *Biochem. J.*, 39, 490.
 H., and Whidborne, Joanna (1946). *Ibid.*, 40, 81.
 G. A. D., and King, E. J. (1937). *Ibid.*, 31, 920.
 J. C., and Lightwood, R. (1934). *Quart. J. Med.*, n.s. 55.
 S., and Sharpey-Schafer, E. P. (1947). *Lancet*, 1, 18.
 J. (1947). *Microanalysis in Medical Biochemistry*, p. 149. Churchill, London.
 Gilchrist, M., Wootton, I. D. P., O'Brien, J. R. P., Joep, H. M., Birch, P. E., Peterson, J. M., Strangeways, D. H., and Ramsay, N. M. (1948). *Lancet*, 1, 478.
 Wootton, I. D. P. (1948). Personal communication.
 H. T., and Evelyn, K. A. (1937). *J. biol. Chem.*, 119, 481.
 Research Council (1948). Memorandum No. 19. H.M.S.O., London.
 n, P. L. (1943). *Arch. Dis. Childh.*, 18, 161.
 and Cutbush, Marie (1948). *Lancet*, 2, 522.
 s, L. G. (1943). *Ibid.*, 1, 534.
 o, L. M., and Bassen, F. A. (1941). *Amer. J. med. Sci.*, 202, 41.
 an, V. C. (1946). *J. Pediatr.*, 29, 462.
 er, A. S. (1946). *N.Y. St. J. Med.*, 46, 912.
 (1948). *Ann. Allergy*, 6, 293.
 and Gordon, Eve B. (1948). *J. Lab. clin. Med.*, 33, 181.
 H. (1922). *J. Biochem., Tokyo*, 2, 173.

The British Council for Rehabilitation, which was founded four years ago, has issued the first number of a quarterly magazine (price 2s.) entitled *Rehabilitation*. It publishes a lecture by Sir Hugh Griffiths surveying the field and describing the aims and methods of rehabilitation. "Rehabilitation is treatment," he says, "but it is not the treatment of a disease or an injury but the treatment of the individual suffering from the disease or injury"; and Dr. Edward Dunlop, discussing rehabilitation in Canada, makes the point in another way—"Each disabled person has his own rehabilitation problems, varying in extent and character." The journal is intended for medical men and ancillary workers as well as managers of industry and patients. It is obtainable from the British Council for Rehabilitation, 32, Shaftesbury Avenue, London, W.1.

CHEMOPROPHYLAXIS OF EXPERIMENTAL FILARIASIS IN THE COTTON-RAT

BY

W. E. KERSHAW, M.B., D.T.M.&H.

Lecturer in Medical Parasitology, Department of Entomology,
and Parasitology

J. WILLIAMSON, M.Sc.

May and Baker Research Fellow, Warrington Yorke Department
of Chemotherapy

AND

D. S. BERTRAM, B.Sc., Ph.D.

Lecturer in Entomology, Department of Entomology and
Parasitology

(From the Liverpool School of Tropical Medicine)

It is well known that the blood-sucking mite *Liponyssu bacoti* is a vector of *Litomosoides carinii*, a filarial parasite of the cotton-rat, and that the infection is used in this country and elsewhere for testing the filaricidal activity of drugs. The earlier investigations were made on wild cotton rats which were found naturally infected in the field. A caution is necessary in the interpretation of the results of such experiments (Kershaw and Bertram, 1948), the more recent chemotherapeutic trials have been made on infections of known duration artificially induced in the laboratory.

This may be done by exposing rats to infection by placing them for a few days in an artificial rat-nest containing a colony of mites previously maintained on an infected rat. In our experience and that of other workers successful infection of a rat by this method cannot be predicted with any confidence. One of us (D. S. B.), in studies on the role of the mite as a vector, has found that it is much more efficient than was suggested by earlier work. Infection rates of over 80% have been obtained for infective forms in batches of mites, and, although a mite usually contains only a few worms, instances of about 20 or 30, or in one case even 67, infective worms in a single mite have been observed. This range of variation in the number of worms per mite in mites of the same batch tends to be wide and irregular. The selection of a suitable host for the provision of such highly infective mites will be dealt with in a later communication elsewhere. Using batches of these highly infective mites we have been able to eliminate some of the unknown or uncontrollable factors arising from the use of rat-nests by exposing rats to infection by releasing small numbers of the mites (about 20) on each rat for about 24 hours.

In a series of 41 untreated cotton-rats exposed to controlled infection in this way, 35 out of 37 of those rats from which gorged mites were recovered subsequently showed microfilariae in the peripheral blood, but four rats from which no gorged mites were recovered remained negative. Thus about 95% successful infection was obtained provided there was evidence of the mites having gorged on the rat. On the other hand, these results suggest that unless the mites feed freely on the rat infection does not occur.

We have shown elsewhere (Bertram, 1947) that the mite does not transmit all their worms at the first infective blood meal. Consequently, any estimation of the number of worms transmitted to a rat necessitates dissections of a series of mites before, and of engorged mites after, the transmission meal. Since the number of worms per mite is so variable such estimates are likely to show

considerable deviation from the actual intensity of infection obtained, and in 10 rats for which estimates were made such discrepancies were found to occur. Nevertheless, these dissections are of value since they provide confirmative evidence of transmission having taken place during the act of feeding. Thus in one series the infection rate before the transmission meal was 76%, with a mean of 6.7 worms per mite, and the corresponding figures after the meal were 34% and 1.1 worms.

These observations indicate that, though it is unlikely that the method is suitable for the detection of partial prophylactic action, a drug may be regarded as a complete prophylactic if it prevents the development of infection in a number of animals exposed to infective mites, provided it is known that the infective mites had gorged on the treated animals. With this information at our disposal it has been possible to undertake preliminary experiments to test the prophylactic activity of filaricidal drugs on the following basis.

Basis of the Experiments

Recent work has established the therapeutic efficacy of organic preparations of antimony in filarial infections of man and of cotton-rats. It is not possible to compare the therapeutic activity of the antimonials tested by Culbertson *et al.* (1947a) on cotton-rat infections, but from the experiments on human infections the order of decreasing effectiveness was roughly "neostibosan" (Sb⁺), "urea stibamine" (Sb⁺), "anthiomaline" (lithium antimony-thiomalate) (Sb⁺), "solustibosan" (Sb⁺), "fouadin" (stibophen) (Sb⁺), and tartar emetic (Sb⁺).

Of organic preparations of arsenic only the trivalent derivatives appear to have been tested satisfactorily for therapeutic activity. Several of these show pronounced activity—e.g., phenyl arsenoxide, reduced tryparsamide, "halarsol," and neoarsphenamine (Hawking, 1940; Hawking and Sewell, 1948) (microfilariae of *Wuchereria bancrofti* in vitro and adults of *L. carinii* in vivo), the atypical "Melarsen oxide" (*p*-melaminylphenyl arsenoxide) (*W. bancrofti* in man), "maparside" (Otto and Maren, 1947) (microfilariae of *L. carinii* in vitro), and *p*-arsenosobenzamide dithioglycollate (Otto and Maren, 1947) (adults of *L. carinii* and *D. immitis* in vivo).

A number of metal-free organic preparations of known therapeutic activity in protozoal and bacterial infections—e.g., derivatives of acridine, sulphanilamide, quinoline, and phenanthridine—are relatively or totally inactive as filaricides (Culbertson *et al.*, 1947b; Hawking, 1947), but two new series of metal-free compounds of novel chemotherapeutic type have been recently reported as highly active—namely, (1) cyanine and styryl-dye-type compounds containing a resonating amidinium-ion system (Welch *et al.*, 1947), and (2) derivatives of piperazine, the most active of which is "hetrazan" (1-diethyl-carbamyl-4-methylpiperazine hydrochloride) (Hewitt *et al.*, 1947; Santiago-Stevenson *et al.*, 1947), the most promising filaricide to date. No adequate data appear to be available for the activity or otherwise of suramin ("antrypol"="germanin"="Bayer 205") or of the diamidines.

Compounds which are known to have pronounced prophylactic activity in trypanosome infections are antrypol, a new quinquevalent antimonial drug "MSb" (*p*-melaminylphenyl stibonate), (Friedheim *et al.*, 1947), and, to a less extent, the aromatic diamidines (Fulton, 1944). Antrypol has been shown to owe its prophylactic activity to retention on plasma protein (Dewey and Wormall, 1946), and tissue retention is responsible for the remarkable prophylactic activity of MSb (Friedheim *et al.*, 1947; Rollo *et al.*, in press): a similar mechanism doubtless obtains for the aromatic diamidines. For this reason, and since a number

of quinquevalent antimonials have been shown to exert filaricidal activity, the three compounds chosen for preliminary prophylactic tests on *L. carinii* infections of cotton-rats were (a) antrypol, (b) stilbamidine, and (c) MSb.

Results

The trial of these three drugs was undertaken by administering a single dose in solution into the peritoneal cavity and allowing the condition of the survivors to become stable. The rats were then exposed to the bites of about 20 highly infected mites, and estimations of the probability of their developing an overt infection were made by recording the number of gorged mites recovered and by dissections of samples of the mites before feeding and after recovery. Five groups of eight rats were exposed to mites, each group consisting of two controls which had not received any drugs and three pairs to which had been given MSb, stilbamidine, and antrypol.

The successful transmission of infection can be established by the appearance of microfilariae in the peripheral circulation about 50 days after the exposure to infective mites or by the examination of the animal some two or three months after exposure to determine whether adults have been produced, for it is possible in low-grade infections in which one or two adults have developed to maturity for one sex only to be present and for microfilariae thus to be absent. In this preliminary trial it was decided to allow the infections which might develop to run their natural course in the first three groups, as it was possible for infection to be delayed in appearance if not prevented, for its subsequent evolution to be protracted, or for its intensity to reach a lower level than those in the controls. The results are shown in the following table.

Chemotherapy of Experimental Filariasis

Drug	No. of Rats	Dose (mg. kg.)	Prophylactic Interval (Days)	Infection Developed
None	10	—	—	1-9*
MSb	10	1,000	3	D†
			4	—
			6-23	—
			7	—
			7-23	—
	10	500	3	—
			6-23	—
			7-23	—
			21	—
			21	—
Stilbamidine	10	50	2	D†
			3	D†
			3	—
			4	—
			17	—
	10	25	17	—
			4	—
			17	—
			4	—
			25	—
Antrypol	10	500	3	D†
			4	D†
			6	D†
			6	—
			7	—
	10	250	21	—
			21	—
			21	—
			21	—
			4	—

* Not expected to develop an infection, as no gorged mites were recovered.

† Died after exposure to mites.

‡ Developed an infection of low intensity. The antimony content of the blood as determined by trypanocidal titre *in vitro* was between that of a control and another animal which had received a smaller dose of drug. It is presumed that some of the drug had escaped into the gut or had been excreted.

§ Failed to develop an infection (infection probability 95% in control rats).

|| Died three weeks later from heart-stroke. Five adult females and one adult male were found.

The rats to which MSb had been given were examined at intervals varying from four months to nine months after exposure to determine whether adults might be present

in the absence of microfilariae in the peripheral circulation, but none was found.

It is evident that after a single dose MSb can act as a prophylactic against the development of filariasis in the cotton-rat by preventing the establishment of adults in the pleural cavity after the exposure of the animal to the infective larval form in the mite, so far as these experiments show, at a minimum dose of 250 mg. per kg. of body weight and with a maximum prophylactic interval of three weeks. Stilbamidine and antrypol are both inactive at doses of 50 mg. and 500 mg. per kg. respectively at shorter intervals.

We are indebted to Dr. E. A. H. Friedheim for supplying the MSb.

REFERENCES

- Bertram, D. S. (1947). *Ann. trop. Med. Parasit.*, 41, 253.
 Culbertson, J. T., et al. (1947a). *Trans. R. Soc. trop. Med. Hyg.*, 41, 18.
 — Rose, H. M., Hernández Morales, F., Oliver-González, J., and Pratt, C. K. (1947b). *Puerto Rico J. publ. Hlth*, 22, 139.
 Dewey, H. M., and Wormall, A. (1946). *Biochem. J.*, 40, 119.
 Friedheim, E. A. H., Vogel, H. J., and Berman, R. L. (1947). *J. Amer. chem. Soc.*, 69, 560.
 Fulton, J. D. (1944). *Ann. trop. Med. Parasit.*, 38, 78.
 Hawking, F. (1940). *J. trop. Med. Hyg.*, 43, 204.
 — (1947). *Trans. R. Soc. trop. Med.*, 41, 18.
 — and Sewell, P. (1948). *Brit. J. Pharmacol.*, 3, 285.
 Hewitt, R. I., Wallace, W. S., White, E., and Subbarow, Y. (1947). *J. Lab. clin. Med.*, 32, 1293.
 Kershaw, W. E., and Bertram, D. S. (1948). *Nature*, 162, 149.
 Otto, G. F., and Maren, T. H. (1947). *Science*, 106, 105.
 Rollo, I. M., Williamson, J., and Lourie, E. M., *Ann. trop. Med. Parasit.* (In the press.)
 Santiago-Stevenson, D., Oliver-González, J., and Hewitt, R. I. (1947). *J. Amer. med. Ass.*, 135, 708.
 Welleli, A. D., Peters, L., Bueding, E., Valk, A., and Higashi, A. (1947). *Science*, 105, 486.

INFECTED INTERVERTEBRAL DISK AFTER LUMBAR PUNCTURE

BY

L. L. BROMLEY, M.Ch., F.R.C.S.

J. DONALDSON CRAIG, M.D., M.R.C.P.

AND

A. W. LIPMANN KESSEL, M.B.E., M.C., F.R.C.S.

(From St. Mary's Hospital, London, W.2)

The use of lumbar puncture as a diagnostic and therapeutic measure is so common that any complication which results from it merits attention. In a review of the literature we found reports of 44 cases of injuries to intervertebral disks, clinically and radiologically established, following lumbar puncture. Only two of these, however, were complicated by infection of the disk or adjoining vertebral bodies.

The majority of cases occurred in children on whom lumbar puncture had been performed for meningitis; those in adults followed a spinal analgesic or some procedure such as encephalography. One of the two infective lesions reported, that by Findlay and Kemp (1943), describes osteomyelitis of the second and third lumbar vertebrae, with destruction of the intervening disk, in a 1-month-old child following an unsuccessful attempt at lumbar puncture in the presence of pyogenic skin infection. The second case (James, 1946), that of a 4½-year-old boy, has some features in common with our own. One week after a difficult lumbar puncture he developed a temperature of 104° F. (40° C.) and flattening and rigidity of the lumbar spine. Shortly afterwards a radiograph showed loss of L3-L4 disk space and later of L4-L5 space with sclerosis of the adjoining vertebral bodies. The illness was complicated by the

development of chicken-pox, but recovery followed plaster immobilization and penicillin therapy.

The clinical picture in all the reported cases—whether accompanied by infection or not—is remarkably constant. At a varying interval after lumbar puncture low backache occurs, accompanied by rigidity of the lumbar spine and diminution of the normal lumbar lordosis. Radiological examination subsequently reveals some loss of intervertebral joint space and, later, sclerosis of the adjacent cortex of the related vertebral bodies. Frequently lumbar puncture has either been repeated or been accomplished with difficulty.

In addition to the two infective complications already quoted, one case of spinal epidural abscess after lumbar puncture had been reported up to the end of 1945 (Rangell and Glassman, 1945).

Case Report

A girl had an attack of meningococcal meningitis in 1943, at the age of 12 years, for which she was treated first at a fever hospital and then at a general hospital elsewhere. Exact details are not known, but she remembers that at least one lumbar puncture was performed under an analgesic. She made a good recovery from her meningitis, but experienced backache and severe stiffness during convalescence. The backache has been present on and off ever since; it has never been severe, nor has it radiated from the lumbar region.

Two years after her illness she developed a tender mass above the middle of her left groin and was treated by sulphonamides and local heat. The mass persisted and she became ill, being admitted to hospital with an irregular pyrexia. A provisional diagnosis of actinomycosis was made at this time and she was given 5,500,000 units of penicillin. The mass softened centrally and discharged pus from which, however, no streptothrix filaments were isolated. After a further course of 7,500,000 units of penicillin the skin over the sinus healed and she was discharged in good general condition.

In October, 1947, she was admitted to St. Mary's Hospital for the first time with a recurrence of the swelling above the left groin. There had been no exacerbation or alteration in the intensity or character of her backache. A radiograph of the pelvis showed no abnormality. Examination under an anaesthetic revealed no palpable intra-abdominal mass. The swelling was subsequently explored and a specimen of tissue sent for histological examination. This revealed chronic inflammatory changes only, and showed that the deep part had not been completely excised. The wound healed, however, and the patient was discharged.

She was readmitted in January, 1948, because a sinus had formed at the site of the operation. Culture yielded *Staphylococcus aureus*. Lipiodol injection and x-ray examination of the sinus showed a track 16 cm. long going across the midline to just above the right anterior-superior iliac spine. A lateral radiograph revealed that the sinus lay in the anterior abdominal wall. No connexion with bone or viscus could be demonstrated.

It was decided to explore the sinus track, and this was done by Mr. A. E. Porritt on Feb. 11. The track lay in its proximal 8 cm. entirely superficial to the aponeurosis and, immediately to the right of the midline, passed deeply, lying on the anterior aspect of the rectus muscle and then between the aponeurosis of the external and internal oblique muscles. It was traced to just above the anterior-superior spine, where no further extension could be found. The wound was then closed, and it healed by first intention.

Further radiological examination was carried out by Dr. T. Richard Riley, who reported on the lumbar spine as follows. (See Fig.):

"There is a mild scoliosis convex to the right. The body of L3 shows evidence of irregular bone destruction on its lower surface. The affected margins are sclerosed and there is no sign of present activity. The upper surface of the body of L4 shows irregular shallow bone destruction and appearances otherwise as in L3. The intervertebral disk space between L3 and L4 is still present, but considerably reduced in depth. Comment:

The appearance of the contiguous surfaces of the bodies of L3 and L4 and that of the intervening disk space is consistent with an old localized infective process at this level. The appearance is not that of tuberculous infection. The retention of some degree of disk space, the absence of paravertebral shadow, and the limited involvement of the upper surface of the body of L4 are not consistent with tuberculous destruction. I would say that the appearances are consistent with a pyogenic infection secondary to lumbar puncture."



Radiograph showing antero-posterior view of lumbar spine.

was fitted with a lumbar support to be worn in the daytime only.

Discussion

The manner in which the infection in this case presented is interesting. No doubt intensive sulphonamide and penicillin therapy altered the course of the infection, but this cannot explain how an L3-L4 intervertebral abscess tracking laterally round the right side of the abdominal wall should present itself in the left mid-lateral line 5 cm. above the inguinal ligament. At first thought it is tempting to postulate that the pus followed the course of the anterior primary ramus of a lumbar nerve or of a lumbar branch of the abdominal aorta, but simple anatomical considerations show this to be unlikely.

In the majority of reported cases, as in this one, there was no history of sciatic or other root pain, or any related deep segmental pain, in spite of the obvious intervertebral joint disorder. A more detailed study of these patients may throw some added light on the mechanism of pain in intervertebral disk injuries.

The fact that the majority of reported cases have been in children could be accounted for because of the greater frequency of meningitis in children. It is, however, likely that, overall, at least as many lumbar punctures are performed on adults as on children, and the relative frequency of complications among children is therefore probably significant. The danger of intervertebral disk damage is clearly related to the fact that in children the depth of the disk from the skin is much less than in adults, which therefore allows for a smaller margin of error. The annulus fibrosus in young children is no more than 2-3 mm. in depth, and is considerably stretched and thinned in acute flexion of the spine, the standard position for lumbar puncture. Further, the nucleus pulposus is known to be under considerable tension, bulging backwards in acute flexion, and this makes for its easy escape along the needle puncture or its infection by the same means.

Consideration of all these factors might help to minimize the danger of intervertebral disk damage following lumbar puncture, particularly in children.

We are indebted to Mr. A. E. Porritt, under whose care this patient was admitted, for permission to publish this report, and to Mr. V. H. Ellis for helpful advice.

BIBLIOGRAPHY

- Billington, R. W. (1924). *J. Amer. med. Ass.*, 83, 683.
 Epps, F. G. (1942). *Proc. R. Soc. Med.*, 35, 220.
 Everett, A. D. (1942). *Ibid.*, 35, 208.
 Findlay, L., and Kemp, F. H. (1943). *Arch. Dis. Childh.*, 18, 102.
 Gellman, M. J. (1940). *J. Bone Jt. Surg.*, 22, 930.
 James, U. (1946). *Proc. R. Soc. Med.*, 39, 134.
 Kendall, D. (1947). *Quart. J. Med.*, n.s. 16, 157.
 Levinson, A. (1929). *Cerebro-Spinal Fluid*. St. Louis.
 Milward, F. J., and Grout, J. L. A. (1936). *Lancet*, 2, 163.
 Munro, D., and Harding, W. G. (1942). *J. Amer. med. Ass.*, 119, 482.
 Pease, C. N. (1935). *Amer. J. Dis. Child.*, 49, 849.
 Rangell, L., and Glassman, F. (1945). *J. nerv. ment. Dis.*, 102, 8.
 Sheldon, W. (1943). *Proc. R. Soc. Med.*, 35, 379.
 Stewart, V. A. F., and Owen, A. (1943). *Med. J. Aust.*, 2, 295.
 Stump, J. P., and Narins, S. A. (1943). *Nav. med. Bull.*, Wash., 41, 400.

COUGH FRACTURE OF RIBS

BY

RAYMOND C. COHEN, M.D., D.P.H.

Deputy Medical Superintendent and Physician to Pulmonary Tuberculosis Unit, Black Notley Hospital; Tuberculosis Officer, N.E. Metropolitan Regional Hospital Board

The purpose of this paper is to call attention to an infrequent but possibly often unrecognized cause of pain in the chest of sudden onset and resembling dry pleurisy in its symptoms. I have observed a number of cases of "spontaneous" fracture of ribs occurring in tuberculous subjects, in some of which there was a clear history of pain following violent expiratory effort as in coughing or sneezing. These cases happen to have been discovered in women aged between 18 and 35, but other authors have recorded it occasionally also in men.

This condition, which I will describe as cough fracture of ribs, is not widely recognized, and the literature on the subject is scanty.

Hallivell (1929) reported fracture of the sixth, seventh, and eighth ribs after a bout of coughing in a doctor aged 40, of good physique and convalescent from pleurisy and "pseudo-asthma." About a month later, on getting out of a bus, he had another attack of coughing, and x-ray examination revealed a fracture of the ninth rib on the same side as before and in line with the other three. Recovery was uneventful. Howson (1934) was able to trace, in all, 58 reported cases, and added a further case of his own. This occurred in a woman of 26 with bilateral pulmonary tuberculosis who had had a thoracoplasty on the left side, and several months later was found to have a recent fracture of the ninth right rib, older fractures of the tenth and eleventh right ribs, and a fracture of the left tenth rib "with considerable callus formation." Sakka (1938) also described three cases of spontaneous rib fracture occurring in North African natives which he thought were due to tuberculous osteitis. The subjects were all men between 24 and 27, two of whom were suffering from pulmonary tuberculosis. Cramer (1943) described four cases—three in women aged 26, 65, and 72, and one in a man of 72. He thought the fractures were due to muscular action on areas of rarefaction in the ribs, and suggested that the upper five ribs are unlikely to fracture from cough because they are shorter and are supported posteriorly by the scapular musculature.

Case Reports

Case 1.—A woman aged 23 was admitted to Black Notley Hospital on April 8, 1937, for tuberculosis of the left lower lobe. X-ray examination on admission revealed, in addition to the tuberculous disease, a recent fracture of the seventh left rib about 1½ in. (3.75 cm.) from its junction with the costal

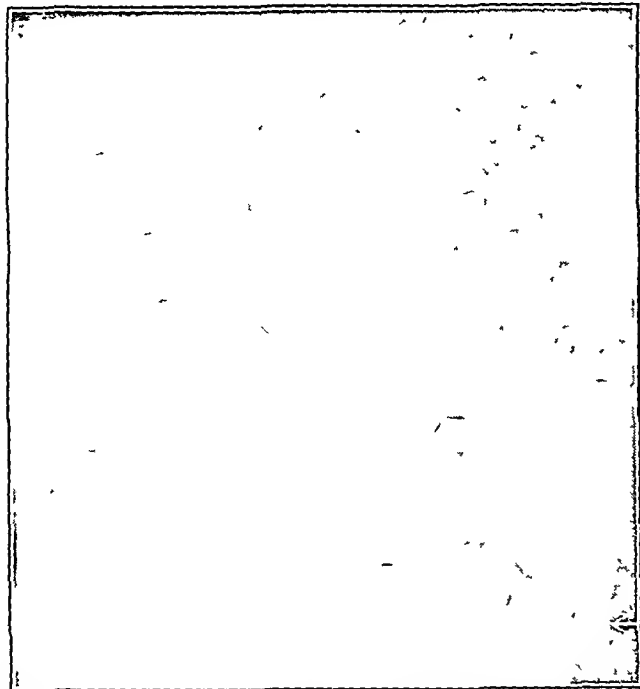


FIG 1.—Case 2 Dec 20, 1937 Oblique film Fibrocaceous tuberculosis of right upper lobe; recent fracture tenth left rib.

cartilage. The patient gave no history of trauma or sudden pain, but confessed to having had some pain in that area shortly before admission. She had had cough and sputum for about three months.

Case 2—A woman aged 28 was admitted on Oct. 14, 1937, for sluggishly active tuberculous disease of her right sub-apex with a small cavity. On Dec 30 she complained of soreness in her left side, which she first felt during a bout of coughing. Physical examination revealed a small bump palpable on the angle of the tenth rib, and x-ray examination revealed a fractured rib in that position (Fig 1). Subsequent films showed callus formation which had almost completely absorbed by June, 1938.

Case 3—A woman aged 22 was admitted on Feb. 18, 1938, for fibrocaceous tuberculosis of her right upper lobe with cavitation. A radiograph on admission showed recent fractures of the anterior ends of her seventh and eighth left ribs, $1\frac{1}{2}$ in. from the costo-chondral junctions. She had not complained of pain at that site, and there was no history of trauma.

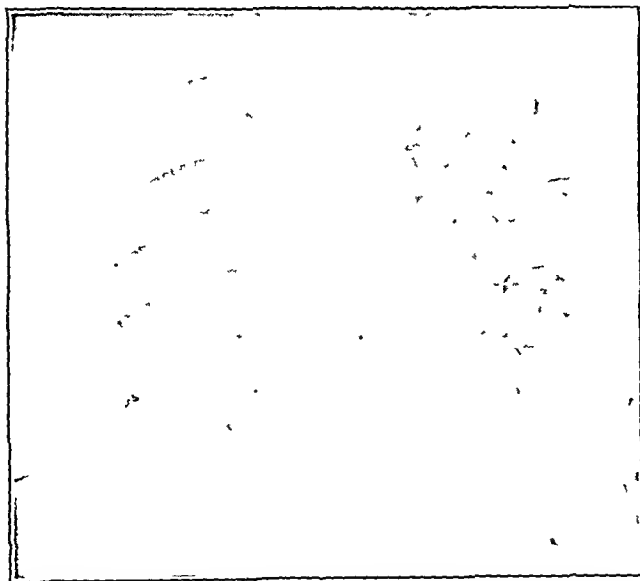


FIG 2.—Case 4. Sept. 26, 1941. Right artificial pneumothorax, with small effusion; fracture with callus formation.

Case 4—A woman aged 18 was admitted on April 26, 1938, with acute exudative tuberculosis of the right lung with cavitation. Right artificial pneumothorax was induced on May 2 and adhesions were cut on Nov. 9. She was discharged quiescent on May 7, 1939, and thence attended as an out-patient for refills. A routine x-ray examination on Sept. 26, 1941, showed a fracture of the seventh right rib about 2 in. (5 cm.) from the corresponding transverse process, with some callus formation (Fig. 2). The patient gave no history of pain or trauma.

Case 5—This patient, aged 19, was admitted on Dec. 1, 1939, for exudative tuberculosis with cavitation of her right middle and lower lobes. A radiograph on Dec. 5 showed a fracture with early callus formation of the anterior end of her ninth right rib, about 1 in. (2.5 cm) from the costo-chondral junction. There were no symptoms at the time of discovery, but on inquiry the patient recalled an acute pain which she had felt low down in her right chest, after a sneeze, a few days before admission.

Case 6—A woman aged 33 was admitted on March 8, 1948, for fibrocaceous tuberculosis of the left lung with upper-lobe cavitation. A radiograph showed old nearly healed fractures of the fifth, sixth, and seventh ribs on the right side, about 4, $3\frac{1}{2}$, and 3 in. (10, 8.75, and 7.5 cm.) respectively from the

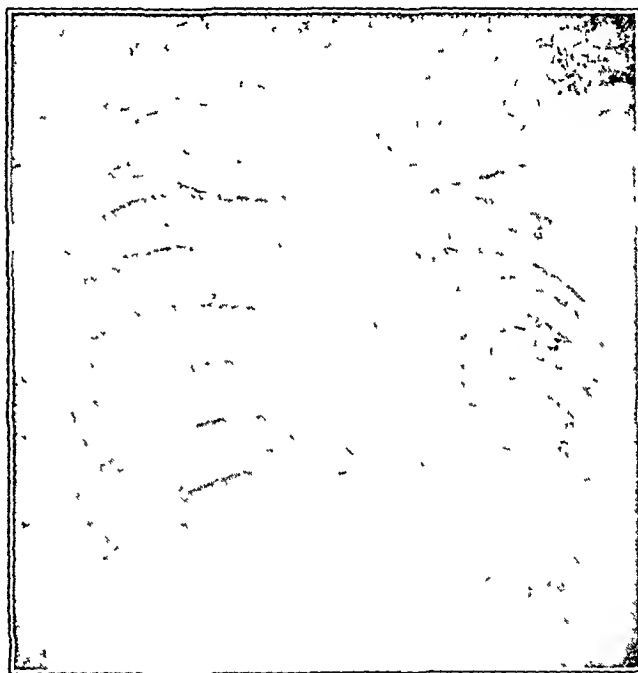


FIG 3.—Case 6 April 6, 1948. Bilateral tuberculosis of acute exudative type, with cavitation left apex and right sub-apex; fractures with callus formation of fifth, sixth, and seventh right ribs

costo-chondral junction, so that the fractures appeared vertically above each other (Fig. 3). In November, 1947, she had felt a sudden pain in the right side of her chest, much worse on coughing and catching her breath. She found relief by pressing her hand to her side. The pain lasted about two weeks, gradually diminishing.

Case 7—A woman aged 35 was transferred to Black Notley Hospital from another sanatorium on March 31, 1948, for fibrotic tuberculosis of her left lung. A radiograph on April 2 showed a fracture of the anterior end of her sixth left rib, 1 in. from the costo-chondral junction. Reference to her previous radiographs showed that the fracture first appeared on an x-ray film dated Feb. 13, 1948—it was not seen on the preceding film of Dec. 3, 1947. About Dec. 20 she had felt a sudden pain in the lower part of her left chest which "caught her breath" and was diagnosed as pleurisy. Her chest was strapped for seven days and the pain eased off after a day or two. There was no history of trauma, and she did not think the pain followed coughing, but could not remember for certain.

Discussion

These cases, together with those already reported by other writers, show clearly that it is possible for ribs to fracture as a result of otherwise normal respiratory exercise. The occurrence must be a rare one, but is likely to be observed occasionally by those who see a sufficient number of chest radiographs, and it probably occurs more often than might be supposed. Cases are easily missed if chest radiographs are not carefully examined and the condition borne in mind.

The mechanism of such fractures is difficult to determine. Primary tuberculous osteitis of ribs is generally believed to be so uncommon that it is unlikely to be the basic cause. There was no evidence of it in my own cases, though it is conceivable that areas of bone rarefaction may occur in a rib adjacent to a cold abscess arising from a caseous tuberculous gland; and, so far as I have been able to ascertain, most reported cases, excluding those due to gross localized changes such as secondary malignant deposits or osteitis fibrosa, have occurred in tuberculous subjects, but the condition is not confined to them. Cough fractures of ribs have also been known to occur in elderly subjects, probably associated with increased fragility of bones associated with advancing age, and it would not be surprising if it occurred also, for example, in cases of rheumatoid arthritis, in which rarefaction of bones is sometimes found.

The apparently high incidence in tuberculous subjects suggests a possible constitutional effect on bone structure, but it must also be remembered that such subjects are repeatedly having their chests x-rayed and the lesion is therefore more likely to be discovered.

I have been unable to find any evidence to suggest that the ribs of a tuberculous patient are particularly liable to decalcification, except in so far that prolonged bed-rest may lead to some degree of this from diminished use. Certainly the blood calcium level remains remarkably constant in tuberculous subjects. Healing of the fractures has followed normally, and there does not appear to be any delay in callus formation and eventual union.

The most reasonable explanation of these fractures seems to be the violent and abnormal action, probably associated with asymmetrical posture producing uneven action on the ribs, occurring during the violent expiratory effort of a cough or sneeze. Diminished use of the thoracic musculature that occurs in a patient confined to bed for long periods may also lead to a mild degree of decalcification and be a contributory factor.

REFERENCES

- Cramer, A. (1943). *Rev. méd. Suisse rom.*, 63, 333.
Halliwell, B. T. (1929). *British Medical Journal*, 2, 1056.
Howson, C. R. (1934). *Amer. Rev. Tuberc.*, 30, 566.
Sakka, A. (1938). *Rev. Tuberc.*, 4, 949.

The Mental Survey Committee of the Scottish Council for Research in Education has recently completed an investigation into the intelligence of Scottish children. The results were briefly described in *The Times* of Nov. 17, 1948, by Professor Godfrey Thomson, the chairman of the committee. The full results are to be published in a series of volumes, the first of which will appear in the spring. The main task of the investigators was to repeat a group intelligence test given in 1932 to 87,498 Scottish children whose eleventh birthday fell in that year. The same test was given to 70,805 children whose eleventh birthday fell in 1947, but on this occasion much additional sociological information was collected about each child. The possible score was 76 points, and in 1947 the mean score, 36.7, was higher than the mean score, 34.5, in 1932. The boys went up 1.3 and the girls no less than 3.2 points. At least as a first deduction this appears to show that no decline in intelligence is going on, but Professor Thomson thinks the rise may be due to the fact that children are now much more familiar with intelligence tests. The now common observation that intelligent children are more frequently found in small families than in large ones is confirmed. The average score obtained by the only children, 7,824 out of 70,805, was 42 points, and children of families of two averaged nearly as much. But for families of four the average score was 35.3 and for those of eight 28.8.

COUGH FRACTURE IN LATE PREGNANCY

BY

J. W. PAULLEY, M.D., M.R.C.P.

First Assistant, Professorial Medical Unit, Middlesex Hospital

D. H. LEES, F.R.C.S.Ed., M.R.C.O.G.

Lately Chief Assistant, Department of Obstetrics and Gynaecology, Central Middlesex Hospital

AND

A. C. PEARSON, M.B., B.S.

Obstetric and Gynaecological Registrar, Middlesex Hospital

Rib fractures due to cough alone, or with an added factor of shearing stress from simultaneous action of other muscles, have been recognized for many years (Gurli, 1862; Tunis, 1890; Hawley, 1890; Skyrme, 1890; Bähr, 1894). In addition, sneezing, choking, vomiting, and straining at stool are recorded as causes among other varieties of expiratory effort. Numerous forms of exertion, such as a handspring or mounting a restive horse (Hilton, 1852; Seilin, 1917), have also been blamed, although here again associated grunting expiration through partly closed cords may have been responsible.

In recent years the number of cough fractures reported from sanatoria has tended to overshadow the non-tuberculous cases, which may be more numerous but have less chance of being diagnosed. Oechsli in 1936 found 77 cases of cough fracture in the literature to that time. He indicated that when a routine search was made in chest films the incidence of the condition was high. In his series of approximately 3,000 admissions to Olive View Sanatorium 22 cases with cough fracture were found. At the same time Richardson (1936) at Ray Brook Sanatorium reported 20 cases out of 1,903 tuberculous admissions. Osteoporosis in the late stage of phthisis has often been suspected as predisposing to cough fracture, but evidence that it is the chief cause is as yet unconvincing.

Tunis (1890), analysing 40 such stress injuries from muscular action, noted that more than 25% occurred in patients in whom bone fragility could be excluded as a factor, and Seilin (1917) supported this view. Reports since published do not suggest a different conclusion.

Kleiner (1924), quoting Tunis and bringing the literature up to date, found that of 57 cases (which included 14 by muscular action other than coughing) 28 were left-sided, 17 were right-sided, and the side was unrecorded in the remaining 12. There were more fractures of lower ribs than upper, the site of fracture on 19 occasions being the upper seven ribs and on 36 occasions the eighth, ninth, tenth, and eleventh ribs. (The apparent discrepancy is due to more than one rib being involved in some instances.) Kleiner's analysis was made before the papers on the large series of tuberculous cases had been published. In seven of eight patients with fracture of the eleventh rib reported by Tunis and Seilin this was the only rib affected. Multiple fractures appear to be more frequent when the higher ribs are involved.

The older writers (Tunis, 1890; Bähr, 1894) suggest that the preponderance of left-sided damage pointed to a cushioning action of the liver on the right side. Oechsli found no left-sided prevalence and was therefore sceptical of this theory, but the majority of his fractures were mid-thoracic and above liver level. Richardson in a similar series of tuberculous patients noted that the sixth and seventh ribs in the mid-axilla were the commonest sites.

In the literature there are six reports of this accident in pregnancy. Only one occurred during labour, and that in

a coughing fit (Ahern, 1894). Wahl (1926) remarked on the coincidence that four out of five cases described had occurred at the end of pregnancy; the duration of cyesis in the other was not recorded. These cases reported by different authors over many years, together with the four patients in the present series, appear to have features in common: (1) they occur late in pregnancy; (2) they tend to be left-sided; (3) lower ribs are chiefly involved; and (4) multiple fractures are the exception. The details are summarized for convenience in the Table.

Author	Patients' Age and Previous Pregnancies	Duration of Pregnancy	Site of Rib Fracture	Remarks
Hérard (1855) ..	22	7 months	Left 11th	Cough for 6 months
Benoit (Bähr, 1894)	—	In 9th month	Left 9th	Coughing fit (ch bronchitis)
Chonery (Bähr, 1894)	23	—	—	Coughing fit
Dogadkin (1885) ..	27 multipara	In 9th month	Left 8th	" "
Blanc (1908) ..	—	At end of pregnancy	Multiple	Coughing
Ahern (1894) ..	—	In labour	Left 6th	Coughing fit (ch bronchitis)
Paulley <i>et al.</i> ..	21 primipara	36 weeks	Left 10th	Coughing mildly
" " ..	25 multipara	38 "	Left 9th and 10th	Lifting and coughing
" " ..	36 "	40 "	Left 11th	Coughing after previous choking
" " ..	25 primipara	29 "	Left 11th	

Case Reports

Case 1.—Primipara aged 21. 36 weeks. No previous fractures. When seen on Jan. 12, 1947, gave a history for 14 days of sharp pain in the lower left chest posteriorly. A non-productive barking cough had been present for the same length

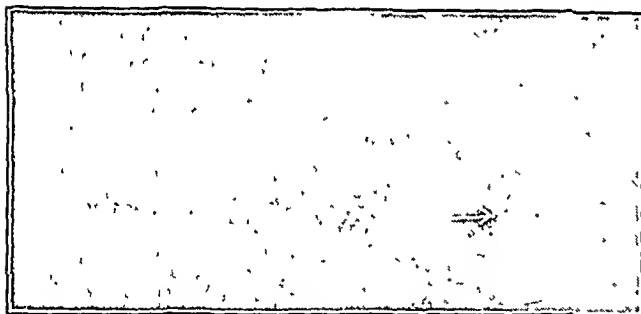


FIG. 1

of time. Physical signs suggested a small effusion at the left base and chronic bronchitis. X-ray film of chest was negative. Subsequent examination revealed a localized tender lump with crepitation over the tenth rib on the left side. Special views of this area confirmed diagnosis of rib fracture. Control films for bone density showed no osteoporosis. Serum calcium was 9.5 mg. per 100 ml. Serum inorganic phosphate was 3.8 mg. per 100 ml.

Case 2.—Multipara (one previous child) aged 25. 38 weeks. No previous fractures. Seen in antenatal clinic on Jan 7, 1948. In late November, 1947, began to cough and noted slight pain in left lower chest. In mid-December, 1947, three weeks before being seen, while coughing mildly felt a crack



FIG. 2

in same region, with exacerbation of pain. Pain had persisted. On examination, tender over left tenth rib in the posterior axillary line. Radiograph of this area confirmed fracture of this rib and of the ninth. Control films for bone density showed no osteoporosis. Serum calcium was 10.3 mg. per 100 ml. Serum inorganic phosphate was 4.6 mg. per 100 ml.

Case 3.—Multipara (four previous pregnancies, well spaced) aged 36. 40 weeks. Seen Feb. 14, 1948. Gave history of having had a cough for some time. Seven days previously coughing vigorously, and at the same time, when bending and lifting a child aged 3, experienced a sudden pain in the left side of chest and felt something "go." Thereafter unable to cough properly because of pain. Clinically, fracture of eleventh rib left side posterior axillary line with ecchymosis. A.P. radiograph of area confirmed fracture. Comparative control radiographs for decalcification revealed no abnormality. Serum calcium was 8.9 mg. per 100 ml. Serum inorganic phosphate was 4.5 mg. per 100 ml.

Case 4.—Primipara aged 25. 29 weeks. No previous fractures. Seen on Jan. 26, 1948, having had cough for three or four weeks. In early January had had a choking attack and subsequently noticed pain over the left lower chest. Two days before attending had gone out in the evening, and cold air in the street caused her to cough, which was followed by immediate sharp pain in the left side. Radiograph confirmed fracture of eleventh rib. Radiographs for bone density against control revealed slight osteoporosis present. Serum calcium was 10.8 mg. per 100 ml. Serum inorganic phosphate was 4.07 mg. per 100 ml.

A woman in late pregnancy was seen in April, 1946, with what was in retrospect a characteristic history. At the time pleurisy was suspected. A radiograph of the chest was negative and she was dismissed as having had an intercostal muscle tear. It is noteworthy that in her case the lesion was on the right side.

Two other probable cases have been seen, but the considerable administrative difficulties in the immediate antenatal and post-natal periods interfered with the necessary investigations.

The Clinical Picture

If the possibility of the condition is kept in mind a careful history will often give a pointer to the diagnosis. The sudden onset of severe sharp pain during a coughing fit is often supported by a story of something "giving" or "cracking." The four cases described, and the other three possibles, all occurred in the first quarter of the year, when hard unproductive coughs are prevalent and bronchitis are having their winter exacerbations. All the patients were in the last three months of pregnancy.

On examination there may or may not be some fever from the primary chest condition, and the respiration rate may be raised owing to pain on deep breathing. Movement and air entry are diminished at the affected base, and percussion is impaired because of poor aeration or a high diaphragm. Pleural rubs have been noted in some cases of cough fracture. The signs may suggest a small pleural effusion, but it must be stressed that postero-anterior and lateral chest films reveal no abnormality when the lower ribs are involved. If suspicion has not already been aroused it is now that a careful search should be made for a tender localized area on one or more of the ribs. Experience of these pregnancy cases suggests that the left ninth, tenth, or eleventh ribs are the most likely site. Antero-posterior and oblique views will be required to confirm a fracture with minimal displacement in or behind the posterior axillary line.

Discussion

Comparisons of bone density against controls of the same sex and age revealed slight osteoporosis in only one case. Blood calcium and phosphorus estimations were within normal limits. There was no history in any of the cases of previous fractures to suggest pre-existing bone fragility.

If calcium or phosphorus metabolism were a factor in late pregnancy patients one might expect a high incidence in the early puerperium, but so far there is no record of such a case.

If bone fragility can be excluded the remarkable incidence of fracture of lower ribs consistently left-sided and in late pregnancy could be due to a mechanical cause peculiar to the abdominal mass or compensatory lordosis.

It has already been shown that the mid-thoracic fractures occur along the line of interdigitation of the external oblique and serratus anterior (Oechsli, 1936), and are assumed to be the result of shearing stress. The likelihood of fracture is reported to be increased if the serratus is taut at the time of coughing, as it may be when the arm is raised or when the patient is resting on one elbow (Atkinson, 1898; Seilin, 1917; Oechsli, 1936).

In the group of cases in which fracture occurs in the lower ribs a different explanation must be sought. Expiration, normally passive, becomes forced on coughing, but there is some disagreement about which muscles are implicated. Mainland (1945) gives these accessory muscles as: (1) anterior abdominal muscles; (2) latissimus dorsi, but states that its mechanism is not clear; (3) the long back muscles, the lower parts of which are able to depress the ribs.

A study of the anatomy and fracture sites in the majority of pregnancy cases suggests that the shearing stress occurs along the line between the origin of the external oblique (from the lower four ribs) and the costal slips of the latissimus dorsi. This, however, ignores the long back muscles (sacrospinalis). In the pregnant stance the head and shoulders are thrown back; compensatory to this is a lordosis involving increased postural tone, and perhaps hypertrophy of the iliocostalis and longissimus portions of the sacrospinalis. Incoordination or action of more than normal violence might occur in this muscle in such circumstances. Thus forcible expiration, as in coughing with depression of the lower ribs by the iliocostalis, could provide conditions for a shearing stress sufficient to fracture a rib.

Another possible mechanism is that the uterine mass is driven backwards and upwards against the inner surface of the lower chest in coughing by contraction of the anterior abdominal muscles. The main force would be deflected to the left side by the liver on the right. Whether or not the protuberant abdomen is in any way responsible by altering the action or direction of pull of the external oblique must remain at present a matter for further consideration.

Although a fractured rib is a trivial injury it can produce extreme discomfort and insomnia, particularly in a patient who is coughing. That this is undesirable in late pregnancy is self-evident. It would appear from the literature quoted in this paper, and from the present series collected without propaganda in twelve months from two antenatal clinics, that the condition in late pregnancy is not a rarity, and its frequency is probably greater than hitherto appreciated.

The importance of wider recognition lies in the great relief of pain experienced by the patient with early diagnosis and adequate strapping of the chest. Almost equally important is the avoidance of tiresome confinement to bed and needless investigation, often in hospital.

Summary

A brief review of the literature of cough fracture is given, with particular reference to its incidence in late pregnancy.

The clinical picture usually found in this condition is described.

Brief histories of four cases are reported.

Suggestions are made about the mechanism of the condition.

A case is put forward for this rather trivial injury to be regarded more seriously, and a suggestion is made that its frequency may be greater than is generally recognized.

We wish to thank Drs. J. N. Pattinson, F. Pygott, and R. A. H. Kinch for their help, and Miss W. P. Cory and Miss D. Wighton for secretarial assistance. We are grateful to Mr. J. S. MacVine for access to three of the cases, to Mr. F. Roques for access to the fourth case, and to Professor J. Kirk and Dr. E. W. Walls for advice on the anatomy.

REFERENCES

- Ahern, M. J. (1894). *N.Y. med. J.*, 59, 503.
 Atkinson, A. (1898). *British Medical Journal*, 1, 490.
 Bähr, F. (1894). *Disch. Z. Chir.*, 39, 251.
 Blanc (1908). *Zbl. Gynäk.*, 32, 1153.
 Dogadkin (1885). *Ibid.*, 9, 535.
 Gurlt, E. (1862). *Handbuch der Lehre von den Knochenbrüchen*, 2, 191. Hamm.
 Hawley, D. C. (1890). *Med. Standard*, 7, 135.
 Hérard (1855). *Un. méd., Paris*, 9, 447.
 Hilton, J. (1852). *Lancet*, 1, 143.
 Kleiner, S. B. (1924). *Boston med surg. J.*, 190, 1034.
 Mainland, D. (1945). *Anatomy* Hamilton, London.
 Oechsli, W. R. (1936). *J. thorac. Surg.*, 5, 530.
 Richardson, E. C. (1936). *J. Amer. med. Ass.*, 106, 1543.
 Seilin, J. (1917). *Med. Rec., N.Y.*, 91, 281.
 Skyrme, H. E. (1890). *British Medical Journal*, 2, 733.
 Tunis, J. P. (1890). *Univ. med. Mag.*, 3, 57.
 Wahl, E. (1926). *Wien. klin. Wschr.*, 39, 1213.

LYMPHOBLASTIC LEUKAEMIA TREATED WITH URETHANE

BY

D. PULLEN, M.B., B.S.

Assistant Pathologist, Royal Alexandra and New Sussex Hospitals, Brighton

The use of urethane in the treatment of lymphatic leukaemia is a fairly recent development, and was first recorded by Paterson *et al.* (1946) in 12 cases of chronic lymphatic leukaemia. Five of these patients were alive at the end of the observation period, but the single case of acute lymphoblastic leukaemia showed no response to treatment.

The following case is noteworthy for the dramatic initial clinical and haematological response to urethane in a child with acute lymphoblastic leukaemia.

Case History

A girl aged 14 months, weighing 24 lb. (10.89 kg.), was admitted to hospital on July 19, 1947, with one week's history of anorexia and fretfulness, associated with vomiting for the previous two days. The mother had recently noticed that the child bruised easily. The past history was one of normal physical and mental development, the diet was normal, and no drugs had been taken. The family history was negative.

On examination the patient was seen to be a well-developed but abnormally quiet child with a very pale, slightly jaundiced skin. Small ecchymoses were present on the limbs, though petechiae were not seen. There was uniform enlargement of the cervical glands, and those of the axillae and groins were easily palpable. The spleen was enlarged to three finger-breadths below the left costal margin and was soft in consistency. The liver could not be felt; the mucous membranes showed neither haemorrhage nor ulceration, and no further abnormalities were detected.

A blood count on July 21 showed: Hb, 42%; white cells, 27,700 per c.mm. (polymorphonuclear leucocytes 2%, cells of lymphocytic series 98%). Blood film:—Red cells showed anisocytosis, but were well filled. There was no evidence of red-cell regeneration. The lymphocytic series was made up largely of lymphoblasts, but some degenerating "smudge" cells were also present. The granulocytes were of the early type. Platelets were few. The whole blood picture was highly suggestive of acute lymphoblastic leukaemia.

The count was repeated two days later, when the haemoglobin level had fallen to 28%. The clinical condition had markedly deteriorated, and the child was wretched with buccal ulceration

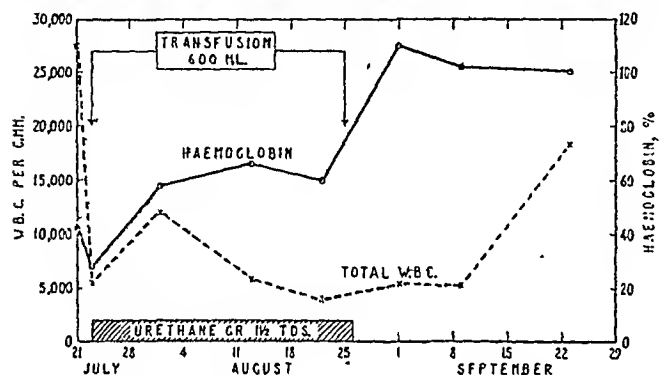
and was having haematemesis and melaena. The temperature rose intermittently to 102° F. (38.9° C.), and the pulse to 160.

As death appeared imminent from blood loss, 600 ml. of Group O blood was transfused, with marked clinical improvement, on July 23. The same day urethane, 1½ gr. (0.1 g.) thrice daily orally, was started.

The succeeding blood counts are shown in the accompanying Table and Chart. The changes in the blood picture were associ-

Record of Blood Counts

Date	Hb %	W.B.C. per c.mm.	Poly-morphs, %	Metamyelo-cytes, %	Lympho-blasts, %	Lympho-cytes and "Smudge" Cells, %	Mono-cytes, %
21/7/47	42	27,700	2	—	—	98	—
23/7/47	28	5,500	4	0.5	12	83.5	—
1/8/47	58	11,900	37	—	2.5	58.5	2
13/8/47	66	5,700	60	0.5	2	32	5.5
22/8/47	60	4,000	61	—	—	35	4
1/9/47	110	5,400	42	—	—	57	1
9/9/47	102	5,200	67.5	—	—	30	2.5
23/9/47	100	18,150	76.5	2.5	—	18	3



ated with slow but definite clinical changes from a moribund condition to that of a child behaving normally for its age. She was now apyrexial, and although the cervical lymph glands could still be palpated they were considerably smaller. On Aug. 22 the leucocyte count had fallen to 4,000 per c.mm., with 61% polymorphs. Urethane was discontinued, a total of 51 gr. (3.25 g.) having been given over 34 days. A further transfusion of 600 ml. of Group O blood was given to combat leucopenia.

The apparent recovery of the child called for a reconsideration of the diagnosis. A Paul-Bunnell test for glandular fever proved negative. When sent home on Sept. 28 the child appeared to be quite well.

Unfortunately she was not seen as an out-patient because she lived 50 miles away, but in a reply to a letter her private doctor stated that "she went downhill rapidly and died on Oct. 27."

Discussion

Watkins (1947) states that in acute leukaemia of children little or no benefit is obtained from urethane, and that there is not sufficient change to warrant its use other than experimentally. Undoubtedly in this case blood transfusion was a life-saving measure at first, but the dramatic clinical and haematological improvement was far greater than could have been due to transfusion alone. Spontaneous remissions are not uncommon after transfusion in acute leukaemia of children, but a remission rarely lasts more than a week, and the disease is usually fatal within two months of the onset. In the present case the improvement after transfusion was maintained, and would appear to have been enhanced and prolonged by urethane treatment.

The prognosis was exceedingly grave in view of the child's age and of the fall in haemoglobin level to 28%. Paterson *et al.* (1946) attach importance to the initial haemoglobin level, for in three out of four of their cases of lymphatic leukaemia in which the haemoglobin was below 55% the patient died despite adequate blood transfusions.

It is unfortunate that no blood count was done when the final deterioration began, as it is now impossible to say whether this was due to an exacerbation of the original disease or to the toxic effect of urethane on the myeloid cells. This was foreshadowed in the blood count of Sept. 23, when of 18,150 white cells 2.5% were metamyelocytes and 76.5% were young band forms of polymorphonuclear leucocytes.

The use of urethane in this case profoundly modified the disease process, and therefore seems to have been justified.

Summary

A case is described of acute lymphoblastic leukaemia which responded initially to urethane therapy.

The palliative effect in this case would seem to justify further trials of urethane in acute leukaemia.

It is uncertain whether the fatal outcome in the case described was due to the disease or to the toxic effect of urethane on cells of the myeloid series.

Whilst it is probable that the large volume of blood given to this child contributed largely to the remission in the leukaemic state, it seems reasonable to suppose that the duration of this remission was related to the use of the drug.

My thanks are due to Dr. E. D. Scott and Dr. M. A. Leslie-Smith for permission to publish the case, and to Dr. S. Instone for his encouragement and advice.

REFERENCES

- Paterson, E., Haddow, A., Ap Thomas, I., and Watkinson, J. M. (1946). *Lancet*, 1, 677.
Watkins, C. H. (1947). *Proc. Inst. Med. Chicago*, 16, 386.

Medical Memoranda

Malignant Tumour of the Small Intestine

Malignant tumours of the small intestine are relatively uncommon, although reports on more than 500 cases are now available. Carcinoma is said to occur more often than sarcoma in the proportion of 6 to 4 (Mayo, 1940), carcinoma being found most commonly in the jejunum and sarcoma in the ileum. The age incidence in carcinoma is accepted to be higher than in sarcoma, and the sex incidence is in favour of males in the ratio of 2 to 1.

The following report of a case of adenocarcinoma of the ileum differs from those recorded by Rankin and Mayo (1930) in that no loss of weight occurred and no occult blood was found.

CASE REPORT

A publican aged 59 was admitted on Jan. 6, 1948, complaining of generalized abdominal pain and vomiting. His symptoms first began 11 months previously, and consisted of gripping pains and vomiting in attacks lasting 10 to 14 days. He suffered some half-dozen such attacks, with intervals of about a month's freedom, before consulting his doctor. Two days before admission he developed generalized abdominal pain with vomiting and for the first time he had absolute constipation.

During the 1914-18 war he contracted malaria and sandfly fever while serving in Palestine. Since that time he had always had two or three loose motions daily, but at no time did he notice blood or mucus in the stools. He suffered, for many years from winter bronchitis.

On examination he was seen to be a well-built man with no obvious loss of weight. He was in considerable pain and was vomiting a fairly frequent intervals. The abdomen showed a generalized distension, with some diffuse tenderness on palpation, but no mass was felt. He had shifting dullness in the flanks, and loud borborygmi were heard. Rectal examination showed no abnormality. He was given an enema, which produced a faecal result in the form of a foul-smelling, pale, toothpaste-like ribbon. A further enema on the hour later was returned unchanged, and a diagnosis of intestinal obstruction was made, the cause of which was not obvious.

Operation.—The abdomen was opened through a lower right para median incision and a quantity of straw-coloured fluid escaped from the peritoneal cavity. There was marked distension of the small intestine down to a point 30 in. (76 cm.) from the ileo-caecal valve

A hard mass about the size of a tangerine orange involved the gut at this point and occluded the lumen of the bowel. A resection of 8 in. (20 cm.) of the bowel including the tumour, together with a wedge of mesentery containing enlarged glands, was carried out, continuity being restored by lateral anastomosis. The anastomosis was performed first, as the patient's condition had deteriorated, but as it subsequently improved resection became possible. The abdomen was closed and the patient returned to bed with an intravenous glucose-saline drip and a gastric aspiration in operation.

Pathology of the Tumour-bearing Intestine.—"The loop of small intestine is involved by a stenosing carcinoma of scirrhous appearance. The tumour is about 1 in. (2.5 cm.) in length and encircles the whole wall. No gross ulceration of the mucosa is observed and no polypi are seen. Careful search fails to reveal any associated lymph glands involved by metastases. Histological examination showed an adenocarcinoma which is deeply infiltrating the bowel wall, with an accompanying scirrhous reaction. The lesion is of oot of carcinoid origin, the tumour consisting of acini of varying size, showing irregularity in cell type and nuclear configuration."

Convalescence was lengthened by a post-operative pneumonia but was otherwise uneventful, and the patient was discharged on Jan. 23. When last seen two months later he was well and leading a normal life.

I am indebted to Mr. G. F. Mitchell, under whose care the patient was admitted, for permission to publish this case, and to Dr. R. L. Bishton and Dr. R. C. Hill for the pathological report on the specimen.

F. J. C. MATTHEWS, F.R.C.S.Ed.,
Assistant Surgeon, Hospital of St. Cross, Rugby

REFERENCES

- Mayo, C. W. (1940). *Coll. Pap. Mayo Clin.*, 32, 312.
Rankin, F. W., and Mayo, C. (1930). *Surg. Gynec. Obstet.*, 50, 939.

A Case of Inherited Spina Bifida

The aetiology of foetal deformity is still uncertain. Such diverse factors as heredity, multiparity, diabetes, placenta praevia, and maternal rubella have variously been incriminated. The inheritance of minor deformities along Mendelian lines is not uncommon; while the occurrence of a major deformity in siblings increases the chance of such deformity reappearing, though Gibberd (1947) considers this to be only a fourfold increase above the normal probability. Direct inheritance of major deformity from the mother is naturally uncommon, and the following example is worthy of record.

CASE HISTORY

A primigravida aged 21, in her 37th week of gestation, was admitted to hospital on May 7, 1947, with diagnosis of toxæmia and disproportion. The toxæmia proved to be minimal, but examination disclosed a fluctuant swelling the size of a coconut in the midline of the lumbar region, extending from the second lumbar to the first sacral vertebra. There was exaggeration of the lumbar lordosis, but no scoliosis; the swelling was compressible and had a well-marked cough impulse. Both feet showed pes cavus (right more than left). There was wasting of the thigh and calf muscles on the right, and $\frac{1}{2}$ in. (1.9 cm.) shortening of the right lower extremity. A diagnosis was made of meningocele, and the spinal deformity was confirmed by radiography at a later date.

Obstetrically, the case was one of brim disproportion, with a floating head and some slight degree of hydramnios. X-ray examinations were intended, but labour started spontaneously the night after admission, and vaginal examination soon showed that the disproportion was caused by a hydrocephalic head; this was perforated at half dilatation of the cervix, and a female foetus weighing 6 lb. 1 oz. (2.75 kg.) was delivered uneventfully. It showed a moderate hydrocephalus, with a gross dorsi-lumbar spina bifida of the open myelocele type.

COMMENT

No reference to the inheritance of spina bifida has been found in the available literature, and Ford (1946) does not include it in an exhaustive list of inherited disorders. Despite the difference in degree of the foetal and maternal condition it seems reasonable to suppose that some genetic factor had been transmitted and that further pregnancies would run a very considerable risk of being similarly affected. It is impossible to assess the relative importance of heredity and environment in relation to the developmental errors of the young embryo; the majority of gross abnormalities are lost as abortions, while of those which are born alive only a very small percentage reach reproductive life and have the opportunity of passing on to the next generation whatever genetic

factor may be involved. There is a growing tendency to find environmental factors such as dietetic deficiency (Warkany, 1944), rhesus iso-immunization (Wiener, 1946), and maternal rubella (Gregg, 1941) to account for foetal deformity, but it seems probable that many cases of gross defect are genetic in origin.

My thanks are due to Mr. Samuel Davidson for permission to publish this note.

W. G. MILLS, F.R.C.S., M.R.C.O.G.,
Late Resident Surgical Officer,
Maternity Hospital, Birmingham

REFERENCES

- Ford, E. B. (1946). *Genetics for Medical Students*. London.
Gibberd, G. F. (1947). *Short Textbook of Midwifery*. London.
Gregg, N. M. (1941). *Trans. ophthalm. Soc. Aust.*, 3, 35.
Warkany, J. (1944). *J. Pediat.*, 25, 476.
Wiener, A. S. (1946). *Amer. J. clin. Path.*, 16, 319.

Occurrence of Convulsions During Treatment with Calciferol

The value of high dosage of calciferol in the treatment of lupus is well established, and in view of the success of the method its use is likely to be further extended until the therapeutic effect has been evaluated in other tuberculous infections. Calciferol has been recognized as a potentially toxic drug, and anorexia, nausea, vomiting, and polyuria are well known to follow its use. So far, however, I have seen no record of the occurrence of convulsions after calciferol and therefore consider that the following case should be put on record.

CASE HISTORY

A boy aged 10 was admitted to the Surrey County Hospital with a history of malaise for one month and an unexplained pyrexia of one week's duration. On admission the temperature was 101° F. (38.3° C.). The abdomen was full and slight tenderness was present on deep palpation in the R.I.F. No definite mass was felt, but on bimanual examination with a finger in the rectum a large gland was discovered low in the right side of the abdomen. White cells numbered 7,500 per c.mm. (P. 70%, L. 20%, M. 9%, E. 1%). The Mantoux test was positive 1 in 10,000. X-ray examination of the chest revealed nothing abnormal. A diagnosis of tuberculous mesenteric adenitis was made, and treatment with calciferol 50,000 units twice daily was started. The temperature settled rapidly, with an occasional evening rise to 99° F. (37.2° C.). On Nov. 21, 1947, the boy was allowed home at his parents' request, to rest in bed and continue calciferol, 50,000 units twice daily. There had been no symptoms of intolerance during his stay in hospital, but the parents were warned of the possible occurrence of toxic symptoms. On Dec. 15 he was readmitted to hospital suffering from generalized convulsions. It appeared that, in addition to the 100,000 units of calciferol prescribed, an ampoule of sterogyl containing 600,000 units had been given by mouth a week previously. Soon afterwards nausea, occasional vomiting, and obstinate constipation had developed; he became increasingly drowsy and could not be roused for some hours before the first convulsion began.

On admission very frequent generalized convulsions were occurring; no focal signs were present on examination of the central nervous system except for an extensor plantar response on the right side, which became flexor 48 hours later. Treatment included 0.25 g. of soluble hexobarbitone intravenously, followed by $\frac{1}{2}$ gr. (0.1 g.) of soluble phenobarbitone intramuscularly two hours later. Apart from a further slight convulsion and slight vomiting recovery was uninterrupted, being complete in 48 hours. The blood calcium was 18 mg. per 100 ml. on the day of admission, falling to 14.8 on Dec. 22 and 12.9 on Dec. 29. The urinary output was well maintained and the urine contained no albumin or casts. The blood urea was not estimated.

There was no family history of fits, nor had the boy suffered previously from convulsions.

COMMENT

In view of the fact that increasing concentrations of calcium are known to decrease the frequency of impulses discharged from nerve cells stimulated with acetylcholine it seems likely that the fits were due to a direct toxic effect of calciferol rather than to the associated hypercalcaemia. Overdosage with calciferol is known to produce a rise in the blood urea, but in the absence of oliguria or albuminuria it seems unlikely that the convulsions were uraemic in origin.

HEWARD BELL, M.B., M.R.C.P.

Reviews

GENITO-URINARY SURGERY

Textbook of Genito-Urinary Surgery. Edited by H. P. Winsbury-White, M.B., Ch.B., F.R.C.S., F.R.C.S.Ed. With 39 Eminent Contributors. (Pp. 1046; 451 illustrations, many in full colour. £4 10s.) Edinburgh: E. and S. Livingstone. 1948.

There can be no doubt of the importance of this book. It is the first work written by many authors that has come from the British school of genito-urinary surgery, and as such it is sure of a welcome. To edit such a book is no light undertaking, and any criticisms of this impressive volume are made with a full realization of the arduous work that its production must have entailed for Mr. Winsbury-White.

One of his many difficulties must have been to select the contributors, of which there are thirty-nine. A skilful surgeon is not necessarily a clear exponent of his art, and even if he can write he may be tempted to give undue prominence to the methods of treatment he favours and to the particular technique he uses in operating, thus giving an unbalanced account of the subject he discusses. It is risks of this kind that an editor in command of so large a team must take. Inevitably the various contributions to this work are of unequal value, and it would be invidious to try to compare the quality of the different sections. All that can be said is that the editor has chosen contributors that are good representatives of British genito-urinary surgery, although one or two names we might have expected to see are missing. It would have been more convenient if the names of the various writers had appeared at the beginning of their articles instead of being tucked away at the end of them. So also might it have been preferable if such a bulky and heavy tome as this had been broken into two volumes, but the shortage of boards and the scarcity of binders may well have made this difficult. The illustrations and the coloured plates are of a very high order. The need for an up-to-date work by British urologists has long been apparent, and we confidently expect that this handsome volume will find a place on the bookshelves of a great many surgeons, not only here in England but abroad.

KENNETH WALKER.

MEDICAL RESEARCH IN AMERICA

American Medical Research Past and Present. By Richard H. Shryock, Ph.D. Studies of the New York Academy of Medicine Committee on Medicine and the Changing Order. (Pp. 350 14s.) New York: The Commonwealth Fund. London: Geoffrey Cumberlege. 1947.

This book is something new and exciting in medical literature. The author is a non-medical professional historian. It is essentially a social history of medical research which relates the development of medical research in the U.S.A. to the economic progress of society. There have been four phases in American medicine: the British influence from 1750 to 1820, the French from 1820 to 1860, the German from 1860 to 1895, and the independent American tradition thereafter. Until the end of the nineteenth century the mainspring of American life was commerce and the pursuit of wealth, and none of the disinterested arts—painting, music, or medical research—really flourished there. The turning points were the growing realization of the importance of science to national life and industrial prosperity, the foundation of the Johns Hopkins Hospital, which set a new pattern for medical education in America, and the Rockefeller bequests, which directly and indirectly stimulated the expansion of medical research.

Dr. Shryock discusses with dispassionate understanding many problems that still beset us—the difficulty of securing adequate rewards for teaching and research in a competitive society, the arguments for and against security for the research worker, the difficulties of team work, the problems of planning research in a free society. There are signs that in America also the era of private support for research is coming to an end owing to the diminishing number of large incomes under individual control. The State is becoming more and more the dominant partner in subsidizing research. It has been estimated that,

whereas just before 1940 total expenditure on all forms of scientific research in the U.S.A. was about \$250,000,000, of which only \$50,000,000 were Federal funds, by 1944 more than \$600,000,000 was being spent by the Federal Government alone. It has even been suggested that research should be established as a fourth branch of government. These developments have given rise to the usual fears of the regimentation of science, and the usual controversy for and against planning of work and on the relative importance of fundamental and applied science. Dr. Shryock's book is therefore more than a history of American medical research: it is a discussion of the basis and philosophy of research in general. It is clearly written and closely documented, and will be of the greatest value to all who benefit from, take part in, or make provision for medical research.

L. J. WITTS.

LECTURES ON PSYCHO-ANALYSIS

Lectures on Psychoanalytic Psychiatry. By A. A. Brill, Ph.B., M.D. (Pp. 259. 15s.) London: John Lehmann. 1948.

This book can be recommended without reservation. Unlike so many publications purporting to describe psycho-analysis, it is an authoritative work written by the acknowledged founder, and mainstay of psycho-analysis in the U.S.A., who until the day of his death practised and taught Freudian analysis with unswerving devotion to its principles. It consists of a series of lectures given annually to audiences of young psychiatrists for close on a quarter of a century. Based on a ripe experience of both psycho-analysis and psychiatry, and written in a clear and almost racy style, it can be read with understanding by any intelligent layman wanting to acquire some orientation in both subjects.

Of particular interest to the general reader is the introductory chapter, in which Brill describes the state of psychiatry when, shortly after his qualification, he made his first approach to the subject. The descriptive psychiatry of Kraepelin, which, thanks to the exertions of Meyer, was then much in vogue, soon left Brill dissatisfied, and a journey to Paris in search of more effective therapeutic methods was equally disappointing. At this point, Brill tells us, he nearly threw up the sponge; but a lucky recommendation to visit Burghölzli, where Bleuler together with Jung and others were investigating the theories of Freud some twelve years after they were first adumbrated, led to his complete conversion to the psycho-analytical approach. Incidentally, his asides on Jung's belligerent and irascible devotion to Freud are particularly intriguing in the light of Jung's later repudiation of Freud and all his works, or at any rate his abandonment of all that mattered in psycho-analysis. In these days, when newcomers to psychiatry are inclined to take for granted that the discoveries of Freud were just an important part of a general psychiatric progress, it is well to be reminded so uncompromisingly that Freud was the founder not only of psycho-analysis but of modern clinical psychology.

EDWARD GLOVER.

EARLY MEDICINE IN INDIA

The Beginnings of Modern Medicine in Madras. By D. V. S. Reddy. With foreword by Major-General J. B. Huban, Surgeon-General with the Government of Madras. (Pp. 240. 5 rupees.) Calcutta: Thacker, Spink and Co. (1933), Ltd. 1947.

Dr. Reddy's book is an interesting and very readable addition to the history of medicine in the Madras Presidency from the early days of the ship surgeons of the East India Company to the dawn of modern medicine there—the foundation of the Madras Medical School in 1835, the precursor of the present institutions, hospitals, colleges, and laboratories in the Presidency. The author dedicates his book to his teachers in the Madras Medical College and associated teaching hospitals, and in the opening words of his preface he says that this work, based on the study of original records, is the outcome of his love and gratitude to his alma mater, the Madras Medical College, and its parent institution, the Madras General Hospital—institutions that have trained thousands of medical men and saved the lives and health of millions of mankind, men, women, and children, of all nationalities and creeds. Nor in the reviewer's opinion is his claim exaggerated, for at the Madras

General Hospital there is probably a greater wealth of available medical material relating to tropical medicine than at any hospital in the world and an atmosphere as democratic is that in any large London hospital. One reason is that Madras has a longer history of close association with the West than any other part of India; it is almost the only part of that sub-continent where a large European, Eurasian, and native Christian community has long been naturally domiciled. The result has been that modern medicine has had a very favourable soil in which to develop.

In a prologue the author describes very briefly the general evolution of medicine, outlining its sources from Graeco-Roman, Arab, Ancient Indian, and Western European systems; he fixes the date for the beginning of modern medicine as barely 300 years ago. When the first ships from Europe touched the West Coast of India towards the close of the fifteenth century India was, as the author points out, neither a vast dark continent like Africa nor devoid of medical practitioners, as the edicts of Asoka and other records show. Nevertheless, modern medicine came from the West. Beginning with an account of the medical arrangements of the East India Company, he describes its history in those early days during which medical organization and technical advance passed by slow stages and often through troublous times to what blossomed forth into the modern medical institutions that now serve the needs of fifty millions of multitudinous race, creed, and social status.

RICKARD CHRISTOPHERS.

GUIDE FOR STUDENTS

The Clinical Apprentice. A Guide for Students of Medicine. By John M. Naisb, M.D., M.R.C.P., and John Apley, M.D., M.R.C.P. With foreword by Professor J. A. Ryle. (Pp. 200; 71 illustrations. 15s.) Bristol: John Wright and Sons. 1948.

This book is one of the best and one of the shortest of the many which undertake to guide the footsteps of the student newly entered upon his clinical career. The approach throughout is clinical in the strictest etymological sense, and the patient, instead of being disarticulated into a collection of unrelated systems, is allowed the privilege of remaining an indivisible whole. The authors have omitted any discussion of clinical pathology and the arid pages of anatomy and physiology which encumber so many books of this type. In simple, almost colloquial language, with a leaven of equally simple humour, they introduce the student to his first patient and explain the basic principles of physical examination. This lively and unpretentious little book provides the clinical clerk with just what he needs during his first few weeks in the medical wards without arousing despondency by revealing too clearly how much he has to learn.

R. BODLEY SCOTT.

The Hospitals Year-Book 1948 (British Hospitals Association, 52, Green Street, W.1; £1 1s.) is mainly a directory assembling a mass of useful information about the regional hospital boards, the grouping of hospitals under management committees, and the designated teaching hospitals under boards of governors. The list of hospitals disclaimed from the National Health Service by the Minister of Health is given. There are 256 of these, the majority being small or of a denominational character. The *Year-Book* also sets out the hospitals as they were on July 4, 1948. The statistical tables of the work and finances of the voluntary hospitals before the taking-over are now a closed chapter, but they have their interest. In particular it is shown what a tremendous financial burden the steeply rising costs became. The cost of the voluntary hospitals for maintenance alone rose by 115% between 1938 and 1946. However, there was a large increase in voluntary contributions under the shadow of impending change. The increase in cost was not confined to voluntary hospitals: municipal and mental hospitals show comparable increases. The editor, Mr. J. P. Wettenhall, suggests that the risk of remote control by no means yet a thing of the past, although the position has been considerably safeguarded by the final form of the Act and by certain subsequent regulations which imposed a considerable measure of responsibility on the new hospital management committees. It is clear from this compilation that there is a great public interest in hospitals and a desire on the part of many to do personal service. A constitution for Leagues of Friends, through which active interest and support for local hospitals may be rallied and maintained, has been drawn up by the British Hospitals Association.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Die Weiblichen Sexualhormone in der Pharmakotherapie. By O. Mühlbock and others. (Pp. 300. 24.80 Swiss francs.) Berne: Hans Huber. 1948.

The chemistry, pharmacology, and therapeutic uses of the female sex hormones.

Höhenklima-Forschungen des Basler Physiologischen Institutes. Edited by F. Verzar. 2nd ed. (Pp. 97. No price.) Basle: Benno Schwabe. 1948.

Papers on physiological changes at high altitudes.

Les Facteurs Vasculaires et Endocriniens de L'Affectivité. By A. M. P. Abely and others. (Pp. 190. 400 francs.) Paris: L'Expansion Scientifique Française. 1948.

A study of the physiological changes that may accompany affective disorders.

Schicksalsanalyse. By L. Szondi. 2nd ed. (Pp. 422. 28.50 francs.) Basle: Benno Schwabe. 1948.

Analysis of the individual's destiny in relation to his mental inheritance and family environment.

Heredity in Essential Hypertension and Nephrosclerosis. By P. Søbye. Vol. 16. (Pp. 225. No price.) Copenhagen: Arnold Busck. 1948.

The author concludes that the development of these disorders is probably always due to a hereditary gene.

Hungerkrankheit, Hungerödem, Hungertuberkulose. By A. Hottinger and others. (Pp. 297. 28 francs.) Basle: Benno Schwabe. 1948.

The pathological and clinical effects of starvation and its consequences.

Gadd's Synopsis of the British Pharmacopoeia. By H. W. Gadd. 15th ed. (Pp. 249. 5s.) London: Baillière, Tindall and Cox. 1948.

A summary of the 1948 B.P., with notes on the law relating to poisons and dangerous drugs.

A.M.A. Interus' Manual. Issued by the American Medical Association. (Pp. 201. 12s.) London: W. B. Saunders. 1948.

Notes on laboratory tests and on the uses and prescription of the commoner drugs.

Health Teaching in Schools. By R. E. Grout, M.P.H., Ph.D. (Pp. 320. 20s.) London: W. B. Saunders. 1948.

A manual for school teachers.

Clinical Studies of Besnier's Prurigo. By P.-H. Nexmand. (Pp. 236. No price.) Copenhagen: Rosenkilde and Bagger. 1948.

A monograph on the disorder, with special reference to its treatment.

The Principles and Practice of Rectal Surgery. By W. B. Gabriel, M.S., F.R.C.S. 4th ed. (Pp. 508. 45s.) London: H. K. Lewis. 1948.

The text has been revised and a new chapter on anal incontinence included.

Dictionary of Genetics. By R. L. Knight, D.Sc., Ph.D., A.I.C.T.A. (Pp. 183. \$4.50.) Waltham: Chronica Botanica. 1948.

Includes terms used in cytology and animal breeding.

Morals in the Melting Pot. By E. F. Griffith, M.R.C.S., L.R.C.P. (Pp. 295. 9s. 6d.) London: Methuen. 1948.

The author discusses such topics as contraception, divorce, extra-marital relationships, homosexuality, and preparation for marriage.

Human Physiology. By C. G. Douglas, C.M.G., M.C., D.M., F.R.S., and the late J. G. Priestley, M.C., D.M. 3rd ed. (Pp. 258. 18s.) London: Geoffrey Cumberlege. 1948.

A practical course for the student of physiology.

The Narrow House. By H. Fernce. (Pp. 272. 8s. 6d.) London: Christophers. 1948.

A thriller set in Soho.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JANUARY 22 1949

HAEMOLYTIC DISEASE OF THE NEWBORN

Haemolytic disease of the newborn continues to be the subject of intensive research, and advances in knowledge of two kinds have been published recently. In the first place the predictions of Fisher have been confirmed by the discovery by independent observers of both anti-d serum¹ and the Cde (Rh_y) type.² It is therefore probable that the boundaries of the Rh antigen-antibody scheme are now fully revealed, though within those boundaries Race and his co-workers have displayed in the elementary antigens C, c, D, and probably also E a complexity of antigenic structure at first unsuspected. In spite of lack of agreement on the terminology to be employed, whether the Rh-Hr or the CDE/cde system is the better, it is accepted on both sides of the Atlantic that the Rh group is of complex structure built up from a number of alternative components each of which may on occasion prove antigenic in those from whose constitution it is absent. Lack of agreement on nomenclature does not conceal the essential agreement on the facts now accepted by all workers in this field, who, whatever symbols they may use, realize that they are working with the same components.

The second type of advance is well exemplified by the authoritative paper by Dr. P. L. Mollison and Miss Marie Cutbush published in this issue of the *Journal*. While the fundamental cause of haemolytic disease of the newborn lies in the iso-immunization of the mother against a blood-group antigen which she herself lacks, Rh incompatibility being by far the most common cause, there has been a great deal of uncertainty about the exact mechanisms concerned and about when and how to treat the affected infants. Mollison and his co-workers have done more than anyone to fill in some of these gaps in our knowledge and understanding. The present publication supplements their earlier work on exchange transfusion³ and on physiological jaundice of the newborn,⁴ and provides for the first time easily accessible criteria of severity which every obstetrical unit should be able to determine. A group of 52 normal infants served as controls for 74 affected infants born to immunized Rh-negative mothers. Sixty-nine of the latter group were live-born, and of these 50 were seen on the day of birth. The tests included examination of the blood for haemoglobin and bilirubin content, and the direct Coombs test for sensitization of the red cells. In 41 of the affected infants the serum was also tested for free Rh antibodies, and in 62 the maternal serum was titrated for both saline-agglutinating and albumin-agglutinating antibodies.

Perhaps the most important observations made by Mollison and Cutbush are those on the prognostic value of haemoglobin estimations in the newborn and their significance in determining the line of treatment required. They

confirm the substantial rise in haemoglobin levels a few hours after birth brought about by reflux of blood from the placenta and show that anaemia in the newborn can thereby be concealed; capillary blood samples invariably gave higher readings than cord or post-natal venous blood. In normal infants the haemoglobin or cord blood has values of 14–19.4 g. per 100 ml., the mean value being 16.35 g.; within 24 hours the mean value rises to 18.45 g. if placental reflux has been permitted. Of 30 affected infants 14 had cord-blood values within the normal range, and none of these died; 16 had lowered values, and it is noteworthy that only two out of eight infants with less than 8 g.% of haemoglobin survived. When venous blood was examined a few hours later two infants with subnormal values in the cord blood were found to have values within the normal range of infants not recovering placental blood and this increase was even greater in capillary blood. It is therefore clear that assessment of anaemia in the newborn is much more accurately made on cord-blood samples than on post-natal venous or capillary blood. If only the latter are examined the extent of the haemolytic process may be underestimated and decisions about treatment might be adversely influenced. Some correlation also exists between the degree of anaemia and erythroblast aemia; infants with less than 10 nucleated red cells per 100 white cells had usually over 12 g.% of haemoglobin, and all of these recovered. On the other hand, 11 infants died among 33 whose nucleated red cells numbered more than 20 per 100 leucocytes; primitive forms were abundant, and in all except one the haemoglobin was below 12 g.%.

Another important criterion of severity is the bilirubin content of the blood. In normal infants the values lie between 0.8 and 2.6 mg.% (average 1.6 mg.%), whereas in affected infants the cord-blood bilirubin is raised, indicating that increased haemolysis has been going on *in utero*. Cappell⁵ drew attention to the pronounced yellow colour of the umbilical cord in affected children, an observation which may first attract the obstetrician's attention to the disease in the absence of generalized icterus. The level of cord-blood bilirubin has some prognostic significance, for six out of 11 infants with more than 4 mg.% died. In mildly affected infants left untreated, whose cord bilirubin values ranged from 1 to 3.7 mg., the amount in the venous blood rose between the second and fifth days of life to 1.3–15.8 mg. Obviously, therefore, blood bilirubin level is of prognostic importance only if the estimation is made on cord-blood samples.

In earlier studies Mollison⁴ brought forward evidence that the rate of destruction of erythrocytes does not increase after birth, being normally about twice as rapid in the first 10 days of life as at later ages. Physiological jaundice of the newborn is therefore largely due to functional inadequacy of the liver, and anaemia in the neonatal period as Faxan⁶ and Shapiro and Bassen⁷ showed, is largely due to insufficient replacement of the destroyed cells. In haemolytic disease the rate of blood destruction is maximal at birth, and the rapid onset of symptoms is due to the physiological stresses attendant upon the establishment of a separate existence.

Wiener⁸ claimed that the type of foetal disease could be accurately predicted from the nature of the maternal antibodies, Rh saline agglutinins being associated with icterus gravis, erythroblastosis, and kernicterus, whereas Rh albumin agglutinins were found in cases of hydrops and congenital anaemia. These views found little or no favour with other workers, but Wiener⁹ has recently modified them so that he now attaches little or no clinical importance to the presence of Rh saline agglutinins alone in the maternal serum and attributes all forms of haemolytic disease to the presence of antibodies of the albumin-agglutinating type, which he prefers to call univalent antibodies or glutinins. Wiener suggests that only univalent antibodies are capable of traversing the placenta, and he claims that their titre in the maternal blood is closely correlated with the severity of the resulting foetal disease: when the foetus is Rh-negative, and therefore unaffected, the univalent Rh antibody titres of maternal and cord serum are equal, but when the foetus is Rh-positive the foetal red cells become coated by adsorption of the antibodies, the titre in the foetal serum being thereby reduced. Wiener applies this concept also to cases of sensitization to A or B, holding that these are due to the development of immune univalent anti-A or anti-B; he explains the absence of haemolytic disease in most heterospecific pregnancies by failure of the normal isoagglutinins α and β to pass through the placenta in sufficient amount to cause harm.

Mollison and Cutbush, on the other hand, are less satisfied that there is any close correlation between the maternal antibody titre and the prognosis for the foetus. They agree that a high titre of albumin-agglutinin is usually associated with severe anaemia and is a bad prognostic sign, but the converse is not true and many exceptions are encountered. Cases with predominantly saline agglutinins are usually less severely affected, and none of these infants died within the first 24 hours. They stress the impossibility of separating cases sharply into the three main varieties of hydrops, icterus gravis, and congenital anaemia, and consider that these merge imperceptibly the one into the other. Their experience of titrating the Rh antibodies in the infant's serum is also rather different from Wiener's,¹⁰ and they found the amount of free antibody very poorly correlated with the severity of the haemolytic process—one infant with a titre of 1:16 was so mildly affected as to require no treatment, though the cells gave a positive direct Coombs test, while others died within 24 hours in spite of a very low titre. On the whole they favour the view that albumin agglutinins are all-important in the aetiology of the disease, since this is more in agreement with their conception of maximum haemolysis before and at birth rather than with the onset or aggravation of haemolysis after birth. In such a view none of the varieties of haemolytic disease is due to entry of maternal antibodies into the foetal circulation only during labour, nor is it necessary to postulate that the effects of blocking antibodies are increased by "conglutinin" rapidly produced after birth. Wiener's conception of this process is at variance with the morbid anatomy of the disease, as Cappell¹¹ emphasized.

In Mollison and Cutbush's series, out of 69 live births 50 infants survived, and of these only one has shown signs of cerebral damage: whereas in those dying on the second

to the fifth days nuclear jaundice was commonly present. Without doubt this complication greatly diminishes the chance of survival, but, as Parsons¹² has pointed out, this is not to be deplored. Although these infants were anaemic at birth, in some this was no longer apparent at the time of death, and a marked erythroblastemia was evidence of rapid regeneration of red cells in some cases. Mollison and Cutbush do not accept the idea of damage to the central nervous system by the direct action of Rh antibodies on tissue cells. Their work suggests that the three forms of haemolytic disease are merely manifestations of different degrees of haemolysis. If this has been severe and long-continued before birth the foetus is profoundly anaemic and hydropic and is either stillborn or dies within 24 hours, before there is time for severe jaundice and kernicterus to develop. If the process is less severe the infant may live over the first few days; when the excessive haemolysis and functional immaturity of the liver lead to a accumulation of bilirubin and other waste products formerly excreted through the placenta; damage to the liver may follow, and this in turn may play a part in determining the occurrence of cerebral damage. The mildest cases of all, the congenital anaemias, are those in which jaundice is not severe but anaemia of varying degree develops. The paradox of absence of severe jaundice but with progressive anaemia may be partly explicable by less severe blood destruction than in icterus gravis together with a more efficiently functioning liver, while the anaemia is probably attributable not only to some excess haemolysis but, perhaps even more to an exaggerated depression of haemopoiesis such as Shapiro and Bassen⁷ have shown to be concerned in the anaemia of normal infants in the neonatal period. If, therefore, haemolytic disease is due solely to the effects of the albumin agglutinins, it is a little surprising that there is not a better correlation with the titre of such antibodies in the maternal serum, and perhaps there may be some further type of antibody concerned, as Hill, Haberman, and Jones¹³ have suggested.

Mollison and Cutbush have demonstrated clearly the great value of the direct Coombs test, which they found invariably positive in affected infants; furthermore, the strength of the reaction was fairly well correlated with the maternal titre of albumin agglutinins and was to some extent of prognostic significance, in so far as a weakly positive reaction was not found in any severely affected infant. The converse, however, was frequently observed, and it is surprising to learn that the direct Coombs test may remain positive, in infants not treated by exsanguination transfusion, for longer than 93 days. If the transplacental passage of Rh antibodies is regarded as an example of passive immunization it would appear that when the cells are destroyed the antibody may be dissociated from the antigen in a form which is capable of

¹ Haberman S. *et al.*, *Blood*, 1948, 3, 682.

² van den Bosch, C., *Nature*, 1948, 162, 781.

³ *Lancet*, 1948, 2, 522.

⁴ *Ibid.*, 1948, 1, 513.

⁵ *British Medical Journal*, 1946, 2, 641.

⁶ *Acta paediatr. Stockh.*, 1937, Suppl. 1.

⁷ *Amer. J. med. Sci.*, 1941, 202, 341.

⁸ *Amer. J. clin. Path.*, 1946, 16, 477.

⁹ *Proc. Amer. Ass. Blood Bank.*, August, 1948 (in press).

¹⁰ *J. Lab. clin. Med.*, 1948, 33, 181.

¹¹ *Brit. J. med.*, 1947, 70, 486.

¹² *Lancet*, 1947, 1, 234.

¹³ *Blood*, 1948, Spec. Issue 2, 60.

function of the thyroid hormone is not clear. It is logical to assume that the increased metabolic rate which results from the administration of thyroid may necessitate an increased intake of the B vitamins. Many of the individual vitamins will give some protection against the loss in weight that occurs in experimental hyperthyroidism, although Bethell and his colleagues¹ at the University of Wisconsin have recently shown that none is as good in this respect as liver, which produces better growth and improves the chances of survival. The antithyrototoxic factor of liver is heat-stable, it is not destroyed by heating with acids or alkalis, and it does not appear to be identical with any of the known B vitamins. Work is in progress at the University of Wisconsin on the fractionation of liver preparations to obtain more information on the properties of this antithyrototoxic factor and to isolate it if possible.

MEAT INSPECTION

Meat inspection in England is far behind what is the practice in many other countries. In a paper read earlier this year at the annual conference of the National Veterinary Medical Association Mr. Horace Thornton¹ made several suggestions for its improvement, but his contention that there had been virtually no change in fifty years will not pass unchallenged. A reduction in the number of slaughter-houses from some 16,000 to under 600 during the war years and the appointment by the Ministry of Food of a team of advisers on meat inspection, mostly veterinary surgeons, have in fact resulted in a noticeable improvement. In England inspection is still done almost entirely by sanitary inspectors holding a special certificate in meat inspection, a system which many people think should give way to one supervised by veterinary surgeons.

Emergency killings—that is to say killings done without prior notice and in unauthorized places—have always caused trouble. Figures from Germany show that three-quarters of the illnesses caused by meat infected with *Salmonella* can be traced to emergency killings, in spite of the fact that there the law requires such carcasses to be detained until they have been examined bacteriologically; in Austria no emergency slaughter is allowed at all. In several countries tuberculous meat is passed after sterilization, but this has never been legalized here, and, though some meat would be saved, it is doubtful if even to-day the British public would look favourably on such a practice. In the past British standards of judgment were severe, and much good meat, when inspected at all, was condemned unnecessarily. But during the war meat inspectors began to show greater discrimination, and there is no reason to believe that they do not still pass as much meat as is possible without risk to the public.

Meat inspection in England could be greatly improved. The Ministry of Health has for over twenty years advocated the ante-mortem inspection of animals awaiting slaughter, but few local authorities have made the necessary veterinary appointments. Ante-mortem inspection reveals many animals which are obviously sick but which may show few physical signs of disease on post-mortem inspection. Such inspection is desirable, but the routine inspection of one carcass after another is dull and monotonous work which few veterinary surgeons would care to undertake even if there were enough of them, and it might be better to appoint trained and experienced men, not necessarily sanitary inspectors, to do the routine work under the general supervision of a veterinary surgeon, as

is the practice in Scotland. But such a change would not be possible unless the Government decided to restrict permanently the number of slaughter-houses. Many of them, too, need to be drastically improved. There is much to be said in favour of combining the supervision of slaughter-house inspection with the control of disease in herds, a function of the Animal Health Division of the Ministry of Agriculture.

THE PRODUCTION OF INSULIN

The demand for insulin continues to increase, since the number of patients who suffer from diabetes mellitus and remain alive grows larger every year and, in addition, patients with schizophrenia are now treated with insulin shock. The sole source of insulin is the pancreas obtained from cattle and fish, and reports received by WHO show that over a ten-year period there may be an annual deficit of 400,000,000 international units if production remains at the same level. In this country fortunately there appears to be no danger of shortage. Mr. J. C. Hanbury,¹ chairman of the British insulin manufacturers, has recently pointed out that "the production of insulin . . . is adequate to meet in full both home and export demands, and ample stocks are always maintained." The position in Germany, however, is not satisfactory, and great efforts have been made to improve the output. In order to obtain the best yield of insulin the pancreas glands should be cooled rapidly to a temperature of -20° to -30° C. This process is impracticable in the small abattoirs in Germany, and Dr. F. Lindner² has introduced a method of chemical dehydration. The fresh pancreas is collected as soon as possible after slaughtering, cleaned, and placed in cold storage at a temperature of $5-8^{\circ}$ C., which is fairly easily achieved. Some time within the next twelve hours the glands (12–15 kg. at a time) are placed on the plate of a butcher's rotary cutting machine and 700 g. of finely ground anhydrous sodium sulphate added for each kilogram of pancreas. The machine is then started and in ten minutes the pancreas has been completely disintegrated and intimately mixed with the sodium sulphate. The mass is spread on iron plates in a layer 5 cm. thick for one hour and then placed in the refrigerator. The next day the slabs are hard and are stored in a refrigerator at $5-8^{\circ}$ C. until needed, but they can be stored at room temperature, up to 30° C. if necessary, without damage. The extraction of the pancreas then proceeds in the usual way. It is stated that the yield is as good as that obtained by the freezing method, but Mr. Hanbury disagrees with this. It seems clear, however, that chemical dehydration will enable insulin to be extracted from pancreas which would otherwise be wasted and that it should help to increase the supplies of insulin in all countries in which the abattoirs have no means of freezing the fresh pancreas. Meanwhile research on the constitution of the insulin molecule continues, and success in this respect would probably soon lead to the synthetic production of insulin. Once this is achieved all anxiety about the supply of insulin should be at an end. It is to be hoped that the efforts of the chemists will soon be crowned with success.

The Milroy Lectures will be delivered by Dr. Marc Daniels, M.R.C.P., before the Royal College of Physicians of London (Pall Mall East, S.W.) on Tuesday and Thursday, Feb. 15 and 17, at 5 p.m. His subject is "Tuberculosis in Post-war Europe."

MODERN LANGUAGES IN THE SERVICE OF MEDICINE

BY

RAYMOND WHITEHEAD, M.D., D.Sc.

(From the Department of Pathology, University of Manchester)

At one time or another the problem of foreign languages presents itself to a large proportion of the medical profession. French and German are among the essential tools of the teacher and research worker, and are of at least temporary concern to the candidate for a higher degree by thesis. Other modern foreign languages are not widely cultivated by British medical men, but those who can read them are valued as translators, reviewers, and abstracters. For these reasons it is of interest to determine how far various languages are used by medical writers and to discuss the problems that the diversity of languages creates for medical libraries, readers, and authors.

Languages of Publications Indexed

Table I shows the publications indexed in the *Quarterly Cumulative Index Medicus* classified according to language.

TABLE I.—Languages of Publications Indexed

	Books			Journals		
	1937	1947	Changes since 1937	1937	1947	Changes since 1937
Czech	1	—	-1	6	4	-2
Danish	2	1	-1	3	3	—
Dutch	4	2	-2	7	10	+3
English	525	584	+59	417	531	+114
French	188	44	-144	197	103	-94
German	264	42	-222	176	41	-135
Hungarian ..	—	—	—	5	1	-4
Italian	112	122	+10	129	116	-13
Norwegian ..	—	—	—	2	—	-2
Portuguese ..	—	—	—	4	2	-2
Rumanian ..	6	13	+7	33	73	+40
Russian	5	7	+2	14	14	—
Spanish	13	56	+43	85	216	+131
Swedish	1	—	-1	1	1	—
Unclassified ..	13	8	-5	75	41	-34
Total	1,134	879	-255	1,161	1,159	-2

The figures were calculated from lists in the *Quarterly Cumulative Index Medicus*, Vols. 21 and 41. The lists relate only to the first six months of each year.

The figures for 1937 show that the leading languages were English, French, German, and Italian; in 1947, on the other hand, they were English, French, Italian, and Spanish.

The figures for other languages for both years raise doubts about the completeness of the *Index*. For example, it is difficult to accept the suggestion of the figures that only a dozen medical books in Russian appear each year or that the medical journals in this language number no more than fourteen. The figures for Swedish—one book and one journal—are likewise almost certainly too low; the catalogue of the Swedish Publishers' Association for 1946 lists sixty-three books and twenty-one journals dealing with medical subjects in the Swedish language. These comments are made not by way of criticism of the indexers, who obviously can deal only with publications accessible to them, but to indicate that a language may be used by medical writers more extensively than the *Index* would suggest.

Three languages show substantial gains since 1937—namely, English, Spanish, and Portuguese. Table II shows the contri-

TABLE II.—Main Sources of Indexed Journals in English, Spanish and Portuguese

	1937	1947	Gains since 1937	
			Actual	Percentage
British Isles ..	91	95	4	4.4
United States ..	272	372	100	36.8
Spain	13	27	14	107.7
Spanish America ..	68	186	118	173.5
Portugal	8	4	-4	-100.0
Brazil	23	66	43	187.0

The figures were calculated from the lists of journals indexed in the *Quarterly Cumulative Index Medicus*, Vols. 21 and 41.

butions of Europe and America to these gains. It also shows that each language gained in both Europe and America, but that the gains by each language were both absolutely and relatively greater in America.

Languages of Journals in a Library

The Manchester Medical Library takes approximately a quarter of the journals indexed; Table III shows (a) the language distribution that would be expected if its list of journals were a miniature replica of the list of journals indexed, and (b) the language distribution observed.

TABLE III.—Languages of Journals in a Library Taking a Quarter of the Journals Indexed

	Expected			Observed		
	1937	1947	Changes since 1937	1937	1947	Changes since 1937
English	104	133	+29	197	251	+54
French	49	26	-23	22	26	+4
German	41	10	-31	46	—	-46
Italian	12	2	-10	2	—	-2
Portuguese ..	8	18	+10	1	—	-1
Spanish	29	51	+22	1	5	+4
Others	31	20	-11	11	4	-7
Total	289	290	+1	288	285	-3

The "expected" figures were found by dividing the figures in Table I by 4, "others" including both the "unclassified" of Table I and languages not listed in Table I only. The "observed" figures were calculated from lists in the *Annual Report of the Manchester Medical Society* of 1936-7 and 1946-7.

In each year the observed figure for English is much higher than the expected; on the other hand, the observed figures for Spanish and Italian are in each year much lower than the expected.

Languages of Articles Abstracted and Books Reviewed

Table IV gives examples of the languages of (a) articles abstracted in *Abstracts of World Medicine*, and (b) books reviewed in the *British Medical Journal*.

TABLE IV.—Languages of Articles Abstracted and Books Reviewed

	Articles	Books		Articles	Books
Czech	1	—	Italian	25	1
Danish	5	—	Swedish ..	2	—
Dutch	3	—	Polish	9	—
English	816	245	Portuguese ..	1	—
French	56	22	Chinese	13	—
German	44	15	Spanish	10	—
Hebrew	1	—	Scandinavian ..	9	—
Hungarian ..	2	—	Turkish	1	—

The figures relate to the first 1,000 articles abstracted in *Abstracts of World Medicine*, 1937, Vol. 2, and to the 296 books reviewed in the *British Medical Journal* in 1947.

Of the articles abstracted, over four-fifths were in English, and the only foreign languages individually accounting for more than 2% of the total were French, German, and Italian. Of the books reviewed, over four-fifths were in English and the rest of the others were in French or German.

Languages and Library Policy

The importance of various languages varies with the point of view. The most general point of view is perhaps that of a library committee, whose task is to meet the needs of a medical community. One of the main functions of such a committee is the selection of journals; according to the funds and space at its disposal, it has to provide the journals that will be most useful to the readers; it serves. Its work may involve making judgments of quality between journals in the same subject, or deciding between the claims of journals in different subjects. General usefulness, as well as quality, must be considered; it would be uneconomic to take a journal, however excellent, if a language that no one could read. The decision not to take a particular journal therefore does not necessarily mean it is of poor quality; on the contrary it may be of high quality but in too small demand to justify a subscription. A decision does not entail hardship for the reader, who can usually borrow the journal from some

direct or through his local library; alternatively he may obtain an individual article in the form of a reprint from the author or of a photostatic or microfilm copy. In reaching decisions a library committee naturally bears in mind these various possibilities.

Comparison of the "expected" and "observed" figures in Table III shows a strong preference for journals in English. This is not surprising, since English is the language most widely read by users of the library. The library serves both practitioners and the university staff. It is known that requests for journals in foreign languages are virtually confined to the university staff, and it is accordingly their judgment that is reflected in the figures for French and German. The insignificant representation of other foreign languages probably means that few if any users of the library read them; it does not mean that the medical literature in these languages is unimportant—evidence to the contrary is provided by a steady demand for translations from them by those using the library. The language from which translations are required most often is probably Italian, and on some topics the literature in this language is substantial; for example, in a study of Still's disease (Langley, 1945) no fewer than 9 out of 30 references are to Italian papers.

Selection of Articles for Abstracting

The abundance of medical literature has led to a demand for summaries or abstracts of medical articles, and there are now, of course, several journals consisting entirely of such abstracts. The reading of abstracts is a convenient means of keeping in touch with developments in medicine, but it must always be remembered that an abstract is a second-hand account, however skilfully rendered. An abstractor has to condense pages into sentences, and must inevitably select for mention the points that he himself thinks important or interesting. As a rule, his selection of points can be made only in the light of his general experience; even if he happens to be an expert on the subject of an article, other experts might dissent from his judgment. Anyone working on a particular topic must consult an article in the original (or in translation) and form his own opinion of its value; all that he needs is a list of titles of articles such as those given in the *Index Medicus*. When all efforts to obtain access to an article have failed it is permissible to quote an abstract in the list of references at the end of a paper; such a quotation can properly be made only for information, for it would not be fair to an author to judge his work on the evidence of an abstract.

Because of their limited value, abstracts are costly. Their cost is to be measured less by the price of abstract journals than by the diversion from other work of the energies of abstractors, who are themselves often engaged in research. The preparation of abstracts is an exacting task and a severe test of critical and literary powers combined; if the text is in a foreign language great care is needed to avoid mistranslations. For these reasons the selection of articles for abstracting is a heavy responsibility, and the aim should be to provide the best possible service with the minimum expenditure of effort. Ideally, articles could be chosen for their quality or interest irrespective of the language in which they are written, but in practice the choice may fall short of the ideal owing to inaccessibility of journals or lack of linguists. The example in Table IV certainly suggests a preference for articles in English, but the best articles may in fact have been in English, in which case it would not necessarily represent a departure from the ideal policy.

Because of the widespread knowledge of English and the ready accessibility of journals in English, it might be suggested that articles in English do not need abstracting, and that abstract journals would be more useful if they confined themselves exclusively to abstracts of articles in foreign languages. Such a policy would undoubtedly have the advantage of disseminating information that would otherwise remain relatively inaccessible, but it is doubtful whether most users of abstracts would be willing to forgo the convenience of having a balanced review of the whole of current medical literature.

Selection of Books for Review

The restriction imposed by general ignorance of foreign languages is more severe for book reviews than for abstracts

and of the same nature as that influencing the selection of journals by a library. The abstractor is free to range widely in the literature in foreign languages, for many of his readers will be content with his abstracts and not read the original articles. The book reviewer, on the other hand, is largely concerned with introducing books to potential readers. Book reviews would therefore be expected to deal mainly with books in the mother tongue, and the range of foreign languages providing books reviewed would be expected to be narrower than for articles abstracted. The data in Table IV are therefore in agreement with expectation.

The Englishman already has access to a large amount of foreign literature in his own language; for English is of course the mother tongue of many foreign countries, the United States being simply first among them. At the same time the close genetic relation between medicine in the British Isles and medicine in the other English-speaking countries gives the medical literature of these countries a special interest for the Englishman, and the books they publish are often of more immediate use to him than those from countries speaking foreign languages. Books in foreign languages—especially textbooks—often reflect practice that differs considerably from that in the English-speaking countries; for this reason they are in general less interesting than books in English, and reviews are accordingly less necessary. There are of course notable exceptions, and it is most desirable that they should be reviewed; in this matter we must look to the enterprise of foreign publishers and foreign cultural representatives in this country in submitting books for examination.

Reviews for journals published in this country should preferably be written by natives of the British Isles, since the value of such reviews largely depends on their being written against the background of our own system of medical education and practice; a review of a foreign book (whether in English or some other language) by one of the author's fellow-countrymen could hardly carry the same weight. The medical profession in this country is large enough to provide reviewers of books in every important European language, and medical men with linguistic ability should be aware of this opportunity of serving their colleagues.

Languages and the Individual Reader

Medical men who have to read articles in foreign languages are mainly specialists, and therefore interested not so much in the total output in any language as in the leading journals in their own subjects. For any individual this probably means one or two journals in each of a considerable number of languages: if he cannot read a language he must have articles translated. The languages most frequently needed are French and German: anyone who has learnt both at school has thus saved himself much time and trouble. On this subject we could hardly improve on the observations of La Bruyère (quoted by Locke, 1692):

"One can scarce burden Children too much with the Knowledge of Languages. They are useful to Men of all Conditions, and they equally open them the Entrance, either to the most profound, or the more easy and entertaining Parts of Learning. If this irksome Study be put off to a little more advanced Age, young Men either have not Resolution enough to apply it out of Choice or Steadiness to carry it on. And if any one has the Gift of Perseverance, it is not without the Inconvenience of spending that Time upon Languages, which is destined to other Uses: And he confines to the Study of Words that Age of his Life that is above it, and requires Things; at least it is the losing the best and beautifullest Season of one's Life. This large Foundation of Languages cannot be well laid but when every thing makes an easy and deep Impression on the Mind; when the Memory is fresh, ready and tenacious; when the Head and Heart are as yet free from Cares, Passions, and Designs; and those on whom the Child depends have Authority enough to keep him close to a long continued Application. I am persuaded that the small number of truly Learned, and the Multitude of superficial Pretenders, is owing to the neglect of this."

French usually presents no problem, for it is commonly learnt at school and can be quickly revised if necessary. German, on the other hand, is less often studied at school and is generally considered to be the more difficult language. German is important owing to the large amount of good work

published in it before the war and will retain its value for years even if there is no revival in German medicine.

Whether any further language should be acquired is a matter for the individual to decide. The learning of French and German, especially if either has to be learnt after leaving school, may well take up all the time that can be spared for language studies, and only those with a special interest in languages are likely to proceed further. Those who do so will find that English and German together smooth the way to the other Germanic languages; Icelandic is highly inflected and at least as difficult as German, but the other important members of this group—Danish, Norwegian, Swedish, and Dutch—are all grammatically simpler than German and among the easiest of foreign languages for the Englishman. French is similarly helpful in the study of Italian, Spanish, Portuguese, and Rumanian, all five being descendants of Latin.

Tables I and IV together show that medical literature is published in fourteen foreign languages other than French and German, and the lists are almost certainly incomplete; the medical linguist thus has a wide choice, and the selection for study of a foreign language other than French and German may rightly be influenced by non-medical interests such as general literature or foreign travel. The medical reader of any foreign language other than French and German will probably attract as much work as he can comfortably cope with, and if he teaches in a university he may expect work from colleagues in any faculty.

Languages from an Author's Standpoint

The language problem for a medical author is relatively simple, for the choice lies between his mother tongue and one or other of the so-called world languages—English, French, and German—if he was not born into one of these. The advantages of writing in one's native language need no discussion, for no one can feel quite so much at home in any other; an Englishman would be the last to question an author's right to publish in his own language if he so desires. On the other hand, the disadvantages—namely, a limited public and the risk of being misunderstood by foreign readers—are equally obvious, and with many writers outweigh the advantages. Such writers vary in their choice of language, which is often determined by the traditional intellectual relations of their countries; thus German is often used by Russians and Japanese, and French by citizens of the other Latin countries. English ensures the widest public, and foremost among those who use it are the Scandinavians. Let us be grateful for their choice and hope that their example may be followed ever more widely.

Summary

Publications listed in the *Quarterly Cumulative Index Medicus* have been classified according to language. In 1937 the leading languages were English, French, German, and Italian; in 1947 they were English, French, Italian, and Spanish. English, Spanish, and Portuguese show substantial gains since 1937; each language gained in both Europe and America, but the gains by each language were both absolutely and relatively greater in America. In 1947 about one-half the indexed journals were in English and about one-fifth in Spanish; no other language accounted for more than one-tenth.

Comparison of indexed publications with (a) journals in a library, (b) articles abstracted, and (c) books reviewed shows a strong preference for journals, articles, and books in English; the implications of this preference are discussed.

The value of French and German, both as keys to medical literature and as aids to the study of other languages, is emphasized. The data show that medical literature is published in at least fourteen foreign languages other than French and German, and it is suggested that the selection for study of foreign languages other than French and German may rightly be influenced by non-medical interests. The advantages of publishing in world languages, especially English, are noted.

I am indebted to Mr. G. Wilson (Librarian) and to Mr. F. C. Hirst (Cataloguer), of the Manchester Medical Library, and to Professor S. L. Baker for their kindness in reading the manuscript.

REFERENCES

- Langley, F. A. (1945). *Arch. Dis. Childh.*, 20, 155.
Locke, J. (1692). *Some Thoughts Concerning Education*, ed. by R. H. Quick. Cambridge University Press, 1898, §195.

ORDER OF ST. JOHN OF JERUSALEM

The *London Gazette* has announced the following promotions in, and appointments to, the Venerable Order of the Hospital of St. John of Jerusalem:

As Knight: Dr. C. E. C. Wilson. *As Associate Knights:* Major-General K. S. Master, M.C., K.H.P., and Dr. Jivraj N. Mehta. *As Dame:* Dr. Margaret E. Douglass. *As Commanders (Brothers):* Brigadier R. A. Hepple, C.B.E., M.C., M.B., Colonel C. P. Gaboury, O.B.E., M.D., Major E. S. B. Hamilton, M.C., F.R.C.S., Drs. C. A. Verco and C. Thompson. *As Commander (Sister):* Lady Isabel E. Hutton, C.B.E., M.D. *As Officers (Brothers):* Brigadier F. A. E. Crew, M.D., Colonel M. MacEwan, D.S.O., O.B.E., D.F.C., T.D., M.B., Lieutenant-Colonels D. W. C. Gawne, M.D., F.R.C.S., R.A.M.C., H. F. Summons, M.B.E., M.B., G. N. Morris, F.R.C.S., Majors T. D. W. Fryer, M.B., C. D. Donald, M.B., Captain S. A. Nield-Faulkner, L.R.C.P.S., Drs. I. H. Beattie, R. I. Hyder, G. A. Macdonald, J. T. Whitley, O.B.E., H. R. Mustard, E. W. Lonsdale-White, H. M. Ayres, A. Tabone, and A. W. Azzopardi. *As Associate Officers (Brothers):* Rai Bahadur Captain K. S. Roy, M.B., and Dr. G. S. Vazkar. *As Officer (Sister):* Dr. Dora E. Wheeler. *As Serving Brothers:* Lieutenant-Colonel O. L. Appleton, T.D., L.R.C.P.S., R.A.M.C., Major M. J. Bett, M.D., Captains F. R. Wilson, M.D., R.A.M.C., J. B. W. Meredith, M.B., F. E. Barclay, M.B., Surgeon Captain V. F. Walsh, L.R.C.P.S., R.N., Drs. E. Sorabjee, J. G. Morgan, G. K. Arthur, J. F. E. Burns, W. J. Collins, C. E. Mathieson, D. S. Smith, H. T. H. Dimitriou, R. A. Simpson, R. B. Hick, L. W. Bradshaw, W. S. Couits, A. W. Ewing, G. E. Sawdon, F. R. Mutch, N. Wilson, T. D. Thorne, H. F. Sparling, M.B.E., J. M. Hain, G. R. Bourne, F. W. Gershaw, H. C. Powell, G. Saine, H. M. S. Tait, A. Parkison, F. G. Percival, O.B.E., and V. C. F. Tet. *As Associate Serving Brothers:* Drs. E. A. Levisseur and C. K. Khey. *As Serving Sisters:* Drs. Phyllis Burns, Mary E. Rolston, and Ellice E. P. Dart.

Reports of Societies

LONDON COUNTY MEDICAL SOCIETY

Addressing the London County Medical Society at a meeting held at Furnival House, Highgate, on Jan. 5, and presided over by Dr. C. D. Coyle, Mr. J. R. M. WHIGHAM, the retiring president, said that the ideal hospital had yet to be built. Design must have some relation to function, and "job efficiency" had always to be kept in mind. Nowhere in the hospital was this more necessary than in the ward. The subdivided ward, with opportunities for recreation for those able to enjoy it, was an urgent need for the future.

For the doctor hospital medicine was not total medicine, and every opportunity should be taken to fill in the gaps so that the patient could be studied in the light of his family, his house, his job, and his pay. Close contact with the relatives was desirable, and on transference back of the patient the general practitioner should be given a full account of the case.

Though the doctor was not immediately concerned with rising hospital costs he could by careful scrutiny see that the maximum use was made of the beds of which he was in charge. The aged sick who were acutely ill, and those likely to benefit by it, should receive hospital treatment. Others should be kept at home, and no one wanted this more than the elderly patients themselves. Unfortunately some homes were not only not fit to live in, they were not even fit to die in. The hospital had to rescue these unfortunate people. It was not realized, either inside the profession or outside, how numerous were the day-to-day administrative problems in a hospital dealing with all sorts and conditions of patients. The need for "a head" remained, and, a hospital being what it was—a medical service primarily—that head was most naturally a doctor. Medicine to be at its best must flow freely and naturally and not be forced along artificial channels. No two hospitals were alike; each had its own problems, and therefore must be allowed some degree of autonomy.

SCOTTISH SURGICAL PAEDIATRIC CLUB

In view of the increasing number of surgeons whose work is wholly or mainly concerned with infants and children, a Scottish Surgical Paediatric Club has been formed. The first meeting was held in Glasgow and was attended by twenty-seven members, representing Aberdeen, Dundee, Edinburgh, Glasgow, and Inverness. A dinner was held in the Royal Faculty of Physicians and Surgeons on the evening of Dec. 17. On Dec. 18 a very full day was spent at the Royal Hospital for Sick Children, Glasgow. Four short papers were read in the morning, and the afternoon was devoted to clinical and pathological demonstrations. The next meeting will be held in Aberdeen in May.

Preparations and Appliances

ENDOMETRIAL BIOPSY CURETTE

Dr. ERNST FRIEDMANN, Fertility Department, Royal Free Hospital, writes: The importance of endometrial studies in functional sterility and long-standing amenorrhoea has long been recognized. The number of instruments which have been recommended for endometrial biopsies shows that none has really proved satisfactory, whether it be endometrial punch forceps, the intrauterine suction apparatus, the suction cannula with syringe, or models like Sharman's curette, the disadvantage of which seems to be the "dead space" in it.

I have therefore designed a curette which can readily be used on out-patients without danger and with the least discomfort. The total length of this curette is 10½ in. (26.5 cm.). It has a flat handle with a groove at the distal end to allow a comfortable but firm grip. The stem is graduated, is malleable, and terminates in an inverted V-shaped loop, in which are incorporated two cross-bars which play an important part—i.e., retain the specimen. The calibre corresponds to the thickness of an ordinary uterine sound, which in my opinion should always be passed before introducing the curette. The cervix should be steadied with a vulsellum. The curette is then drawn down the upper part of either the anterior or the posterior wall or both with slight pressure only and without undue force. On immersing the curette in the fixing solution the piece comes off readily. Only occasionally have I found it necessary to shake the curette a little.



I have used this curette exclusively since 1946 in 300 biopsies. All but those very few cases in which a uterine sound could not be passed and consequently the curette could not be inserted the strip of endometrium was such that glands and stroma were not separated or fragmented. It was almost always a single strip which on section included practically the length of the glands with surface epithelium and stroma intact.

The instrument is manufactured by Allen and Hanburys Ltd. in stainless steel, and is available with straight or angled handle.

Edward A. Humphreys, M.D., of Columbus, Ohio, U.S.A., has been appointed President of the American Association on Mental Deficiency. Dr. Humphreys qualified in 1930; after working in the New York Psychiatric Institute and the Fifth Avenue Hospital he was for ten years Director of Research at Leitchworth Village. In 1945 he assumed his present post as Chief of the Bureau of Prevention and Education, Division of Mental Hygiene, Ohio, and has served as Acting Commissioner of Mental Hygiene for over a year.

Correspondence

Significance of Proteins in Nutrition

SIR,—Readers are supposed to serve some sort of useful service by calling attention to errors which they have detected and by making comments which may be of some interest to other readers. I hesitate to make these adverse criticisms of an otherwise excellent paper by Dr. D. P. Cuthbertson (Oct. 23, 1948, p. 731) on the significance of proteins in nutrition and their particular importance during convalescence.

1. The author at one point states, "Satisfactory nutritional preparations will undoubtedly extend the benefits of surgery," and includes in these "high-protein, high-carbohydrate diet fed where necessary by tubal methods"; yet elsewhere the contradictory statement is made, "There is little point in trying to supply the patient with food in excess of that which appetite dictates." It has become abundantly clear to me on the basis of many personal observations that nutritional depletion occurs in many surgical patients because the surgeon fails to combat anorexia. That Dr. Cuthbertson has failed to emphasize this important point is illustrated by a letter in your *Journal* (Nov. 27, 1948, p. 959) from Dr. E. Sakochansky, who quotes the Cuthbertson paper to justify reliance on the patient's appetite, saying, "Much needless anxiety would be removed thereby," and casting aspersions upon the feeling of relatives who "are apt to worry unduly because a sick person does not eat."

2. In deprecating the use of intravenous amino-acid mixtures Dr. Cuthbertson states, "Plasma and glucose are safer fluids," which is a little misleading inasmuch as these two substances can scarcely be compared on the basis of commonly observed potential reactions.

3. Spence, Evans, and Forbes (*Ann. Surg.*, 1946, 124, 131) are quoted as having made a study of a mixture of ten essential amino-acids (including their intravenous use), whereas these workers actually employed oral preparations of whole protein in their surgical cases.

4. Dr. Cuthbertson quotes a paper of mine incorrectly by stating that "90 g. of protein takes 8 to 9 hours in a volume of 2,500 ml." Actually, in my experience with thousands of injections 50 g. of amino-acid mixtures rarely require more than 3 hours, and this is given in a volume of 1,000 ml. Our routine is to give an average-sized adult patient unable to eat two litres per day, one in the morning and one in the afternoon, each requiring between 2 and 3 hours for the intravenous injection. Each litre contains 50 g. of amino-acid mixture and 50 g. of glucose, plus a little over 2 g. of sodium chloride.—I am, etc..

Saint Louis, Minnesota.

ROBERT ELMAN.

SIR,—Dr. Robert Elman was good enough to send me a copy of his letter (see above), and I should like to consider it paragraph by paragraph.

1. My statement that "satisfactory nutritional preparation will undoubtedly extend the benefits of surgery," including "high-protein, high-carbohydrate diet fed where necessary by tubal methods," refers to pre-operative treatment of depleted patients, when it is desirable to secure as much restitution as possible of body tissue by ingested or infused food material. When I make the statement, "There is little point in trying to supply the patient with food in excess of that which appetite dictates," I am referring to the immediate phase of protein catabolism following injury, when I consider that the body is not, in general, geared to anabolic activity. I had hoped that both these points were made clear in my paper.

2. Dr. Elman will find my most recent views on protein hydrolysates and pure amino-acid mixtures in my paper on "Assessment of Knowledge Concerning the Clinical Use of Protein Hydrolysates and Pure Amino-acid Mixtures" (*Amer. J. Med.*, 1948, 5, 879), which I was invited to contribute as the concluding paper to a series of seminars on protein hydrolysates and pure amino-acid mixtures presented by a group of experts including Dr. Elman.

3 and 4. I freely admit being in error over the reference to the paper by Spence, Evans, and Forbes, and to the one by Dr. Elman. The work referred to in both cases is that by S. C. Werner (*Ann. Surg.*, 1947, 126, 169). On looking over my earlier notes I find that by some mischance the references became misplaced, though on again reading Werner's paper (para. 1) it does seem as if he is quoting Dr. Elman when he states, "To administer the equivalent of 90 g. of protein requires eight or nine hours and a volume of 2,500 ml."

I am grateful to Dr. Elman for pointing out these errors in my references.—I am, etc.,

Bucksburn, Aberdeenshire.

D. P. CUTHBERTSON.

Resistant Staphylococci

SIR,—The annotation entitled "Resistant Staphylococci" (Jan. 8, p. 64) raises the interesting and important question how much the bacteriologist can help the clinician in deciding the probable effect of penicillin in a particular case of infection due to a penicillinase-producing strain of *Staph. aureus*. The important question for the clinician is not how much penicillinase can be artificially extracted from a given organism, but whether the organism can produce the enzyme in sufficient quantity and quickly enough to permit it to grow in concentrations of penicillin obtainable in the human body. The double sensitivity test, using two different-sized inocula, is probably the most informative; and, as pointed out by Gilson and Parker, the difference is directly related to penicillinase production. Investigations of this type on 18 penicillinase-producing staphylococci recently isolated from cases of infection in this hospital gave the following results:

Greatest Concentration of Penicillin permitting Growth		No. of Strains
Large Inoculum (Approx. 1,000,000 Organisms)	Small Inoculum (Approx. 1,000 Organisms)	
50 or more u./ml.	1-4 u./ml.	7
50 or more u./ml.	0.25-0.5 u./ml.	5
25 u./ml.	1 u./ml.	1
25 u./ml.	0.25-0.5 u./ml.	2
12.5 u./ml.	0.25 u./ml.	1
12.5 u./ml.	0.03 u./ml.	1
1.0 u./ml.	0.13 u./ml.	1

It seems probable from these results that some of the strains would respond more readily to penicillin treatment than others, but there are still at least three unknown factors. First, what is the number of organisms penicillin is likely to encounter in a given infection? Secondly, do staphylococci produce penicillinase at the same rate *in vivo* as *in vitro*? And thirdly, does an organism which only produces small quantities of penicillinase acquire the ability to produce more in the presence of small quantities of penicillin?—I am, etc.,

St. Thomas's Hospital, London, S.E.1.

MARY BARBER.

REFERENCE

J. Bact., 1948, 55, 801.

Pensions for Diabetics

SIR,—My letter (Nov. 13, 1948, p. 875) has aroused many letters of criticism from many angles. It is impossible to deal with all, but I should stress again some facts that made me write the letter.

(1) The Army Pensions Board seems to be very generous in awarding pensions to diabetics in cases of grave hardships in the Services after which diabetes has soon followed. But the great majority of appellant cases referred to me arise in circumstances comparable with, or even less straining than, those of civilian life, certainly less tense and difficult than wartime London. If all persons developing diabetes outside the Services under comparable conditions were to be pensioned, well and good perhaps. But merely to deserve a pension because diabetes develops while on war or post-war service is the position which I criticize in relation to pension awards.

(2) It should not be forgotten that the recognition of diabetes as a pensionable disability contradicts a status of ordinary working health and capacity which most diabetics cherish. They want to be, and are, capable of housewifery and other full employment, except in some quite unsuitable jobs. They want to be accepted for superannuation and limited life assurance and not to be shut out from the posts that twenty-five years of

insulin have proved the majority to fill normally for many a year.

I have been accused of being "unsympathetic" and "hard-hearted" to diabetics in my written attitude about pensions, and this rather hurts me. I was solaced last week to receive an unexpected letter from Dr. Elliot P. Joslin, of Boston, Mass., who has done more than anyone else in the world for diabetics' interests for fifty years. He wrote to say he supported my attitude towards pensions "one hundred per cent." But I could never be 100% certain of any point of view I formed on diabetes, although this is what the legal attitude asks one to be.—I am, etc.,

London, W.1.

R. D. LAWRENCE.

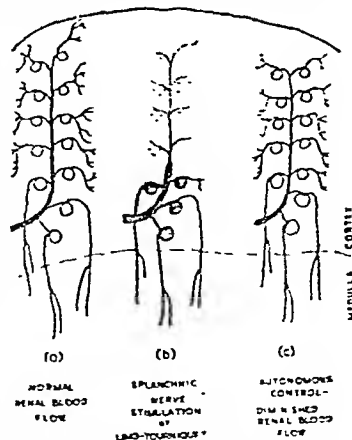
Anuria

SIR,—Permit me to correct a misstatement which appears in the paper by Drs. D. A. K. Black and S. W. Stanbury on the treatment of anuria (Dec. 25, 1948, p. 1101) and in your leading article on that subject in the same issue (p. 1111). Drs. Trueta and Barclay and their colleagues did not demonstrate, neither did they describe, a *shunt* in the renal circulation. They showed that in the rabbit the application of a tourniquet to a hind limb for some hours, or the stimulation of (1) the central end of the cut sciatic nerve or (2) the distal end of the cut splanchnic nerve, resulted in a short-circuiting or a diversion, or, *more correctly stated, an alteration, of the blood-flow through the renal cortex*, so that the greater volume, practically the whole of the blood, subsequently flowed through the medulla (at increased rate), while the amount flowing through the outer- and mid-cortex was so far reduced as to fail to show radiographically.

The recent misstatements have arisen, probably, chiefly from a lack of understanding of the anatomy of the renal circulation, and it is well that correction be made now before these misstatements are referred to or repeated elsewhere. The renal circulation is primarily glomerular and is shown as (a) in the accompanying diagram: all the glomeruli are situated in the cortex, and the blood which flows through the great majority (about 85%) traverses the peritubular capillary plexuses of the cortex. The blood which flows through the most proximal glomeruli, those of the boundary zone (about 15%), passes to the medulla, whose normal (and sole) blood supply it is—hence the name juxtamedullary which I gave to these proximal glomeruli in 1941.²

When a limb tourniquet is applied, or the central end of the cut sciatic or the splanchnic nerve is stimulated, vasoconstriction in the renal arteries brings about greatest reduction in the calibre of the cortical (intralobular) arteries, so that the circulation in the outer- and mid-cortical glomeruli (*circa* 80%) appears to cease, while as a consequence the circulation through the juxtamedullary (15%) and some (5%) deep cortical glomeruli and the medulla is greatly augmented, the juxtamedullary glomerular capillary loop-velocity much increased and the renal circuit-time reduced by half (see (b) in the diagram).^{2,3,4}

In the group of conditions in which lower nephron damage is a common feature—blackwater fever, crush syndrome, incompatible blood transfusion, concealed accidental haemorrhage in pregnancy, excessive vomiting in pyloric stenosis, cholera, and yellow fever—it is most probable that the extreme reflex vasoconstriction of cortical vessels (above mentioned) does not occur, but rather is the partial renal cortical ischaemia due to an exaggeration of the normal autonomous control in the kidney by which the intrarenal blood flow is adjusted to the varied conditions of the general circulation. In discussing the



pathogenesis of the renal failure in the three conditions first mentioned Foy and his colleagues⁴ drew attention to the dehydration in such patients, and they concluded that the anuria is associated with the diminution of blood volume, of renal blood flow, and of glomerular filtration. It seems reasonable, therefore, to conclude that in respect of the reduced renal blood flow in these conditions the degree and duration of cortical ischaemia are determined by the autonomous control of the kidney which increases the tone of the renal arteries (in endeavour to maintain the renal blood flow in the face of reduced blood volume), producing proportionately greater vasoconstriction in the intralobular arteries, so that there is partial ischaemia in the outer cortex—(c) in the diagram. Anaemic anoxaemia from external or internal blood loss and pigment athrocytosis from haemoglobinuria or myohaeomoglobinuria are to be regarded as additional factors in the pathogenesis of the tubular lesion and renal failure. Similar views are stated more fully in a leading article in the *Lancet*,⁷ and simple statement only need be made here to outline the intrarenal circulatory changes.

As regards true vascular shunts in the renal circulation such as those described by Steinach,⁸ Spanner,⁹ Trueta and his colleagues,⁵ and Simkin,¹⁰ the precise nature, number, and function of these are not yet fully understood.—I am, etc.,

London, N.18.

J. F. HEGGIE.

REFERENCES

- ¹ Bowman, W., *Philos. Trans.*, 1842, 132, 57.
- ² *Proc. R. Soc. Med.*, 1948, 41, 340.
- ³ Heggie, J. F., *Lancet*, 1946, 2, 436.
- ⁴ — *Ibid.*, 1947, 1, 385.
- ⁵ *Studies of the Renal Circulation*, 1947. Oxford.
- ⁶ *Trans. R. Soc. Trop. Med. Hyg.*, 1943, 36, 197.
- ⁷ *Lancet*, 1948, 2, 148.
- ⁸ *S.B. Akad. Wiss. Wien, Math.-nat. Kl.*, 1884, 80, 171. (Quoted by Shonyo, E. S., and Mann, F. C., *Arch. Path.*, 1944, 38, 287.)
- ⁹ *Verh. anat. Ges. Jena*, 1938, 45, 81.
- ¹⁰ *Arch. Intern. Med.*, 1948, 81, 115.

Whither Tuberculosis?

SIR,—The letters from the pens of Drs. G. Lissant Cox (Dec. 25, 1948, p. 1118) and Stephen Hall (Jan. 8, p. 70) are valuable contributions to a survey of the present situation. Volumes might be written on "Whither Tuberculosis?" But may I take up a little of your space?

Everyone to-day has to try to encompass too much, and this in spite of specialization and the splitting up of medical practice. Again, procrastination and delay are too common because of the shortage of beds, nurses, and, to some extent, of properly trained doctors and their valuable and numerous assistants. These things are largely due to post-war conditions and to the haste, uncertainty, and incompleteness of present changes. Delay leads generally to the disadvantage of the patient.

The desire of sanatorium physicians to share in the work of the clinic and to study environmental factors is laudable: enlarging the vision and widening the interests are healthy desires. But sanatorium doctors must realize it is a whole-time job to look after the treatment of the patients under their care. To make a complete diagnosis of the whole position is a first requisite of good treatment. In so far as this may necessitate a delving into causal factors, physical and mental, it may involve a study of sociological conditions and much else.

But the first duty of the sanatorium physician is to master all the details in the treatment. For example, an artificial pneumothorax is not a simple form of treatment, as Dr. Hall has pointed out. The complications which arise in its course are lessened and the end results improved according to the skill, experience, and clinical instinct of the managing physician; and this depends even more upon his competence in carrying the treatment along and through than upon his judgment on the choice of the patients for this particular form of collapse therapy. Furthermore, apart from the necessity of keeping abreast of the developments of thoracic surgery in order to use his acumen as a physician in supervising what to do and when to do it, the introduction of specific drugs and a closer supervision of the early stages of the rehabilitation of the patient all keep the sanatorium physician busier than ever. Perhaps the day has gone by when men of the stamp of Peter Edwards—to name only one—can make valuable contributions to many branches of the combating of tuberculosis.

So again I say, no longer can we repeat, as once was done, that prevention and cure go hand in hand. Whatever can be said about prevention and treatment going together in theory, in practice to-day they must be separated (*pace* Dr. Lissant Cox), otherwise "many will overlap and wrestle with too many details." By the way, I can make out neither head nor tail of one of Dr. Lissant Cox's sentences—"Tuberculosis, environmental and clinical, now merges into a general medical directive." This is a bit of new jargon to me. And I am a little puzzled by his, "If the new chest physician . . . exalts diagnosis and treatment and ignores prevention, he may gain entry into the . . . portals of general medicine but will have lost his soul." I would like every chest physician to "have his feet on the ground" in general medicine before he ever specializes.

It seems to me that the ways of collaboration between the chest physician and his colleagues in various other spheres are complicated and have by no means been worked out yet.—I am, etc.,

Mundesley, Norfolk.

S. VERE PEARSON.

SIR,—The letters of Dr. G. Lissant Cox (Dec. 25, 1948, p. 1118) and Dr. Stephen Hall (Jan. 8, p. 70) express some of the anxieties that are troubling many of us who are employed in the tuberculosis service. Both are worried by the apparent disintegration that is taking place at many levels and in certain aspects of the service. Some of the troubles are administrative and are the result of the National Health Service Act. One hopes that with advocates such as Dr. Lissant Cox and Dr. Stephen Hall to guide our destinies many of these difficulties will be overcome in the not too distant future.

Another change about which they are both concerned is the drift of the tuberculosis officer away from social and preventive medicine to "clinical" medicine; this is surely a symptom of our nursing shortage—hence shortage of beds for the assessment and treatment of the patient's disease. The tuberculosis officer is forced to use the bed available in the patient's home and his relatives to do the nursing. With an inevitable wait of six months before "active" treatment can be started in hospital or sanatorium he is greatly tempted to do something for his patient. Through no fault of his he has entered the field of treatment, a time-consuming business, and at the expense of his other functions.

Little has been said about the training for this specialty; the success or failure of the service depends on the medical mer it attracts. Rightly the emphasis in undergraduate training is on diagnosis, but it is still the practice to teach this at the bedside rather than at the chest clinic. Most postgraduate courses (Wales excepted) are held at sanatoria or university centres: why not the chest clinic or out-patient department?

The undergraduate has little time in his curriculum for social medicine; this he must learn later in general practice or some special centre. Advertisements for tuberculosis officers not uncommonly require a candidate to have a higher degree in clinical medicine: experience in general practice or social or preventive medicine is seldom asked for. It is possibly better that the potential chest physician should not be recruited from the medical officer of health's department, but it is equally unwise that his sole experience in tuberculosis should be gained treating the disease in hospital while working for higher degrees. If plans are being laid for the training of specialists in tuberculosis it is very necessary that experience in all branches of the specialty should be included if one is to stop this drift to "clinical" medicine which your correspondents foresee.—I am etc.,

Isleworth, Middlesex.

CHARLES J. STEWART.

SIR,—The letters of Dr. G. Lissant Cox (Dec. 25, 1948, p. 1118) and Dr. Stephen Hall (Jan. 8, p. 70) express a general anxiety felt at the moment by many workers in the old tuberculosis service. The necessity for a sustained campaign against the disease, using every possible method of control, direct or indirect, is so obvious to those with practical experience of the problem that any development which might appear to threaten it is naturally suspect.

This suspicion should not be interpreted as an indication that the tuberculosis service was regarded as perfect by those who worked in it. Far from it: the greater part of constructive

criticism over the last few years has in fact come from the service itself. The increasing complexity of diagnosis, the development of certain aspects of therapy in the dispensaries, and the ever-increasing numbers of cases of all kinds referred to them were recognized as a new responsibility requiring improved facilities, experienced staff, and a closer contact with other branches of medicine. Much has already been achieved, and the natural step now is to establish the modern type of clinic as a special hospital department like any other, with attached beds for diagnosis and assessment and treatment for "short-term" and emergency cases as may be appropriate.

It has also been suggested, and this is what Dr. Hall particularly questions, that the chest physician should have control of sanatorium beds, on the grounds that his experience of his specialty should be complete and a better continuity of control of the individual case established. This arrangement may or may not come about; there are arguments on both sides and it may in the end be found appropriate to one set of circumstances and not to another. Yet even without it there is certain to be an over-all increase in clinical responsibility on the part of the tuberculosis physician. It is thought that this may result in a diminished interest in the environmental and preventive aspects of the problem and that the conception of a really comprehensive tuberculosis service will be more difficult to maintain.

To add to the anxiety on this point, the responsibility for environmental and preventive work, rehabilitation, financial aid, and so on has been placed with other authorities, a matter already widely commented upon as introducing a distinct cleavage in what should be a single entity. Altogether there is need to watch developments very closely lest the attempt to meet well-recognized defects should result in the creation of new ones.

The new facilities made possible by the legislation of recent years must, however, be used to the full. Several important points come to mind, but there are two which if recognized will do much to achieve the desired end. First, the local area clinic must be regarded as the centre for the direction of anti-tuberculosis measures as a whole, and its medical staff permitted to exert a guiding influence over any outside organization concerned with the welfare of the individual patient or with the problem generally. Only in this way can the activities of the various authorities concerned be knit together into an effective comprehensive effort. Secondly, the training of staff for the senior specialist appointments must be thorough. There is a tendency in some quarters to regard a basic training in general medicine and in chest medicine as sufficient. This should certainly be the foundation, but it is not enough. Experience in sanatorium and in the chest clinics is the only way to obtain a true insight into the special characteristics of the disease and a clear understanding of the importance of epidemiological and environmental factors. Such experience should precede the appointment to a senior post. This would go far to ensure that the problem would be dealt with as a whole, without any particular aspect of it being neglected.

Finally, the multiplicity of authorities now involved will inevitably make administration difficult and complex. Auxiliary staff to deal with the detail of administration and the social side of the work must be adequate, and unless everyone appreciates the fact that the system is merely a means to an end the whole scheme will suffer. This is of the first importance in dealing with such a complicated problem as the control of tuberculosis.—I am, etc.,

Theydon Bois, Essex.

HUGH RAMSAY.

Anaesthesia in Ludwig's Angina

SIR,—Dr. John H. Willis (Jan. 1, p. 31) raises the question of anaesthesia in operations undertaken for the relief of acute inflammatory conditions in the neck. As he implies in his letter, the problems involved are not universally recognized even to-day. Chevalier Jackson stated that he considered the cause of death in many cases of Ludwig's angina to be respiratory failure as a result of the administration of sedative drugs. He based this conviction on the fact that many patients sent to him suffering from this condition were either moribund or dead on arrival, although they had started their journeys as healthy persons apart from the local condition; in all cases the common factor was the administration of morphine or other seda-

tive by well-intentioned practitioners in order to render the patients comfortable for the journey to Jackson's clinic.

The explanation of the sequence of events is clearly described by Macintosh and Bannister.¹ Briefly it is that the conscious patient is able to compensate for the early stages of respiratory obstruction by using his accessory respiratory muscles. As long as this extra thoracic effort maintains the alveolar oxygen tension at a sufficient level the patient will remain conscious. If, however, the condition is not relieved, the accessory respiratory muscles will become fatigued. Alternatively, the administration of a sedative drug will depress the respiratory centre, with consequent diminution in respiratory muscular efficiency. In either case the result is the same: the alveolar oxygen tension falls, the vital centres become anoxic, and the patient quietly stops breathing—usually without even developing laryngeal spasm.

All agents which produce unconsciousness are to a greater or lesser degree respiratory depressants at some stage in their action, and it therefore follows that to induce unconsciousness as a preliminary to surgical intervention in cases of Ludwig's angina is to court disaster. The three agents named by Dr. Willis—"pentothal," cyclopropane, and chloroform—are all potent respiratory depressants and are in my opinion contraindicated as inducing agents in the type of case under discussion unless a certain preliminary step is taken.

The rational preliminary approach to anaesthesia in cases of respiratory obstruction resulting from Ludwig's angina, carcinoma of the thyroid, and injuries involving the upper respiratory tract is either to perform a tracheotomy under local analgesia or to pass an endotracheal tube after "cocainizing" the larynx. This latter procedure is easily accomplished with the aid of a Macintosh or a Kenton spray. Kuhn's observation² that laryngeal intubation enables the surgeon to become and remain master of the field is probably never better exemplified than in this method of anaesthetizing such cases of respiratory obstruction, for when the field has been mastered by laryngeal or tracheal intubation any general anaesthetic agent may safely be used, according to the indications present, to induce unconsciousness and enable the surgeon to relieve the pathological condition.—I am, etc.,

Bristol

V. TORRY BAXTER.

REFERENCES

- ¹ *Essentials of General Anaesthesia*, 1947, pp. 283-6, Oxford.
- ² *Arch. Rhinol. Laryng.*, 1911, 25, 95. (Quoted by Gillespie, N. A., in *Endotracheal Anaesthesia*, 1948, p. 34, Wisconsin.)

SIR,—Dr. John H. Willis (Jan. 1, p. 31) comments upon the danger of using intravenous anaesthesia for the incision of acute inflammatory swellings of the neck, and I would like to carry the question one stage further back. Surely no "resident" (and here I use the term to refer to a man within a year or so of qualifying) should be expected to undertake the responsibility of anaesthetizing a patient with Ludwig's angina; the operation is rarely so urgent a matter that an experienced anaesthetist cannot be obtained.

Some residents seem frequently to be asked (or told) to give anaesthetics to dangerously ill emergency cases. I recall a well-known anaesthetist who was asked what advice he would give to a resident who had to deal with an acute intestinal obstruction; and his significant reply was, "He shouldn't: it's a specialist's job."

A "post-operative chest" following a simple herniotomy or other cold case may be regarded as a disgrace by some, but it appears that in some circles such a complication is looked upon almost as the rule after a serious upper abdominal emergency operation. Such complacency is tragic, especially when this added condition may well tip the balance fatally for the patient. So grave a responsibility surely should not rest on the shoulders of a junior but of a specialist.—I am, etc.,

Essex, Essex.

ERIC K. GARDNER.

Spinal Anaesthesia for Caesarean Section

SIR,—We feel that the statements of Mr. D. Stanley-Jones (Dec. 25, 1948, p. 1121) on this subject cannot be allowed to go unchallenged. It is true that there have been cases of collapse during caesarean section under spinal anaesthesia, both reported and unreported. But the fact remains that others who have developed safer techniques, including the use of smaller

dosages, have reported large series of cases with no fatalities attributable to this method of anaesthesia. Resnick,¹ Thomas,² and Malkin³ have reported between them more than 1,200 cases without a single anaesthetic death.

One of us has used spinal anaesthesia for caesarean sections over a period of more than ten years without observing the effects described by Mr. Stanley-Jones. Instead of the "massive vasodilatation of the largest and bloodiest organ in the body" we have invariably found caesarean sections under spinal anaesthesia to be associated with greatly reduced bleeding from the uterus, which contracts unusually well. Other authors have reported the same finding.^{1,2,4} Recent work has shown that, provided adequate oxygenation and capillary circulation is maintained, even a severe fall in blood pressure need have no untoward effects on the patient. However, there is no difficulty in maintaining the blood pressure within normal limits with the aid of "methedrine."⁵ The danger lies not so much in vasomotor "collapse" as in respiratory paralysis.^{6,7} The gravid uterus, filling and distending the abdomen, interferes with the descent of the diaphragm. If to this is added intercostal paralysis extending to a high segmental level, grave anoxia may occur rapidly and insidiously. We have seen this happen on two occasions. Once in the presence of a large ovarian cyst, and once at the beginning of a caesarean section. In each case inhalation of 100% oxygen, or inflation of the lungs with oxygen, prevented any serious consequences, and in each case respiration returned to normal after removal of the abdominal tumour.

It is now becoming generally recognized that for caesarean section analgesia should be limited to the level of the xiphisternum. This means in practice a smaller dose than that usually used for appendicectomy, for instance. If this is done, respiratory embarrassment is avoided, but as a precaution an efficient means of inflating the lungs with oxygen should always be available for immediate use in emergency, and the uterus should be emptied while "controlled respiration" or 100% oxygen inhalation is maintained. The steep head-down tilt adopted in the belief that this will assist the blood pressure merely increases the respiratory embarrassment and makes matters worse. Also, when using "gravity-controlled" solutions it should be remembered that the spinal curves are altered in late pregnancy. We are now using an isobaric solution of amethocaine diluted with spinal fluid to a concentration of 1 in 1,000. We find that 8 to 10 ml. is quite adequate for caesarean section, although 12 ml. would normally be used for, say, a hysterectomy.

From the foetal standpoint spinal anaesthesia is ideal, as the babies usually cry as soon as their noses are born and they are free from the effects of respiratory depressants. The method is therefore especially valuable with premature or otherwise handicapped babies.

To deride as malpraxis a method which has over a period of years given such good results in the hands of experienced obstetricians is unworthy of your columns. We feel that so long as attention is paid to the precautions described spinal anaesthesia remains a safe and effective procedure in the absence of shock or severe bleeding, and it is especially valuable when caesarean section is performed in the interests of the baby.—We are, etc.,

DUNCAN BALLANTINE.
F. L. ROBERTSHAW.

Rotherham.

REFERENCES

- ¹ *British Medical Journal*, 1945, 2, 722.
- ² *Proc. R. Soc. Med.*, 1947, 40, 557.
- ³ *Ibid.* 1947, 40, 568.
- ⁴ McIntosh Marshall, C., *Caesarean Section, Lower Segment Operation*, 1939. Bristol.
- ⁵ Griffiths, H. W. C., and Gillies, J., *Anaesthesia*, 1948, 3, 134.
- ⁶ Beecher, H. K., *The Physiology of Anaesthesia*, 1938, p. 69. London.
- ⁷ Macintosh, R. R., *Anaesthesia*, 1948, 3, 126.

Breast-feeding

SIR,—After having read Dr. James S. Hall (Jan. 8, p. 72), especially where he states that mothers are relinquishing the almost impossible task of synthesizing wholesome milk from snock, scraps, and sausage meat, I feel still more ought to be added to the recent controversy on the subject of breast-feeding.

Although of course the present-day rations contain substantially more and better items than those mentioned by Dr. Hall, it is only too well known that most inadequate nourishment of

the mother still assures a very high quality breast milk. I have spoken to doctors, and also with mothers, who have survived Hitler's concentration camps, and they were unanimous in saying that many children were born in these camps and all of them had to be breast-fed, as no other milk was available. The mothers often dying in the last stages of pulmonary tuberculosis still often managed to breast-feed their babies, and it was only in cases of extreme dehydration, when the mother was suffering from dysentery, etc., that one had the pathetic spectacle of seeing a mother putting the baby to a dry breast.

In addition I should like to say that Dr. Hall's belief of the equality of breast milk and the baby foods must be based on the knowledge that all the known chemical substances contained in breast milk are present in the artificial products. But even the most biochemically inclined paediatricians know that there are many other, mostly as yet unknown, factors present which make breast milk the superior nourishment.

The recognition of the importance of breast-feeding seems not only well established everywhere, but is increasing; this conclusion I draw from the fact that to-day in case histories, not only of babies but of younger and even older children, the mode of feeding as an infant has its definite place.—I am, etc.,

Whitchaven, Cumb.

JOHN ABELS.

SIR,—Picking up my *Journal* of Jan. 8 I find first (at p. 59) a very favourable review by Professor Charles McNeill of my book on breast-feeding, in which he remarks that "paediatricians proclaim and extol its importance"; and then, turning to a later page (p. 72), I find Dr. James S. Hall again taking up the cudgels for the bottle-fed infant. I am sure that Dr. Hall is right in saying that his cases of fully fed bottle babies compare very favourably with the under-fed breast babies which appear to be common in his practice. In my own practice, however, where no baby is underfed, whether it be on the breast or on the bottle, I do find a very real difference in morbidity rates between the two.

As feeding problems are attended to at the surgery, where I hold a weekly weighing and consultative session, my visits are genuinely for sickness. I have collected and recorded (the results are to be published shortly in the *Lancet*) the visits required during the first year of life by 100 consecutive babies in my practice. Briefly, the bottle babies required more than five times as many. Moreover, 73% of the breast-fed babies did not require a visit at all, as compared with 9½% among the artificially fed. In the present days of National Health Service and payment by capitation this argument for breast-feeding should at least appeal to the general practitioner, if only through his pocket.

I note that Dr. Hall, and the Dr. Hutchinson whom he quotes, are considering these children from the point of view of "adulthood or later life." I do not deny that the bottle-fed child may achieve both health and immunity in later life; but I prefer to save the mother the worry of the higher incidence of disease in infancy. What simply appals me is his picture of "maternal unhappiness and misery" caused by breast-feeding. None of my lactating mothers is unhappy or miserable. If they were, of course, they would undoubtedly underfeed their babies.—I am, etc.,

York.

F. CHARLOTTE NASH.

SIR,—Dr. J. S. Hall (Jan. 8, p. 72) is still not impressed. In his first letter (Nov. 20, 1948, p. 919) he said: "I cannot determine that artificial feeding has any deterrent effect whatsoever. . . . I am of course open to conviction should sufficient modern evidence be available to the contrary." I have supplied him with some evidence; but he passes it off with a light laugh because it comes from America, and is, he infers, a sort of medical Marshall aid.

The reason I quoted American figures was that this is the largest series available. By a *petitio principii* Dr. Hall chooses to ignore the data on pyloric stenosis (despite the fact that the series was not lease-lent, but came from Westminster). Of 46 bottle-fed babies with pyloric stenosis 5 died. Of 100 breast-fed babies with the same disease none died. If Dr. Hall (or any other reasonable person) were told that his next infant was destined to suffer from congenital pyloric stenosis would he still allow it to be artificially fed?

It may be that in England now (owing to the lack of domestic help, or the sneek, or some other factor) artificial feeding is easier than breast-feeding; but, Sir, the *British Medical Journal* goes all over the world. Please do not let us disseminate any authority from the medical profession for a further decline in breast-feeding.—I am, etc.,

Bristol.

HUGH R. E. WALLIS.

* This correspondence is now closed.—Ed., *B.M.J.*

Rhesus-testing in Pregnancy

SIR,—Doctors engaged in the practice of midwifery are now well aware of the importance of blood replacement in the treatment of the haemorrhages of pregnancy. Increasing use is therefore being made of the emergency resuscitation services which most maternity hospitals maintain for the purpose of transfusing women too ill to be removed into hospital.

It is, however, evident that some practitioners do not realize that blood transfusion cannot be undertaken with safety unless the rhesus status of the patient is known. The blood group can be determined at the bed-side, but the rhesus grouping can be ascertained only by a somewhat elaborate laboratory technique.

As one who has had some experience in emergency transfusions I write this letter to urge on all doctors responsible for the care of pregnant women the necessity to take steps to determine early in pregnancy the rhesus grouping of the patient. Too often one is summoned to women critically ill from blood loss only to find that the rhesus status is unknown, thus increasing the hazards of blood replacement. It is the bounden duty of all doctors who make themselves responsible for the care of the pregnant woman to see that the rhesus grouping is carried out as early as possible in the pre-natal period. The doctor who neglects this precaution is most certainly failing in his duty to the mother and her child.—I am, etc.,

Sheffield.

W. J. CLANCY.

Senile Deterioration of the C.N.S.

SIR,—I was very interested to read the article by Dr. Trevor H. Howell on senile deterioration of the central nervous system (Jan. 8, p. 56). I must, however, disagree with the conclusions reached. In assessing central-nervous-system physical signs in this age group, one important factor seems to have been omitted—namely the state of the vascular system. In addition the defective absorption of vitamins must be considered—achlorhydria being a not uncommon “normal” finding in this age group.

Any attempt to explain these phenomena by a central lesion seems to me erroneous. I would say that the factors operating are: (1) peripheral vascular occlusion which, although not gross clinically, has been sufficient to impair the blood flow to the vasa nervorum of peripheral nerves; and (2) vitamin B deficiency, which has again led to peripheral nerve lesions and also to mid-brain lesions with pupillary changes.

It is then on a basis of a peripheral neuropathy that I would explain the lesions found. In support of this I note that the pyramidal tracts are normal in practically all cases, and lesions in the legs are more pronounced than in the arms—a not uncommon finding in peripheral vascular disease.—I am, etc.,

Leeds.

RAYMOND C. GLEDHILL.

Cotton-dust Disease

SIR,—The following quotation is from your leading article (Dec. 18, p. 1069): “It seems more likely, however, that there are only two diseases, perhaps only one: mill fever is almost certainly the early stage of byssinosis, and the remaining two conditions are very similar to other diseases caused by mouldy organic matter such as grain, flax, hemp, jute, and bagasse.” This is not correct. There are three distinct conditions, distinct clinically and occupationally.

1. *Mill Fever*.—This will affect anyone unaccustomed to cotton mills, whether spinning mills or weaving sheds. It is a very mild febrile attack with anorexia after a day in the mills. After a night's sleep it is gone, giving protection, which, however, disappears if the visits to the mills are discontinued. I have often experienced it.

2. *Strippers' and Grinders' Asthma*.—This is a very chronic disease which takes many years to develop. It only concerns

men in spinning mills exposed to dust arising from raw-cotton bales. It is not seen in weaving sheds or among those who tend the spinning frames and self-acting mules to which the cotton sliver proceeds from the carding engines. I was the first to describe the condition in 1908.

3. *Weavers' Cough*.—This condition is only seen among cotton weavers, and only among weavers preparing cotton cloth for the bleachers and dyers. If the cotton thread being woven for this purpose gets damp on the warp beams, under conditions described by me in 1914, offensive moulds may grow on the threads, which become dark and smell badly. When such threads are woven the operatives experience epidemics of acute illness lasting several months and clinically resembling active pulmonary tuberculosis.

What byssinosis is I have often wondered. Βύσσις is a Greek word for linen.—I am, etc.,

Lossiemouth, Morayshire.

EDGAR L. COLLIS.

Mallet Finger

SIR,—Perhaps it is wise first to define the deformity “mallet” finger as a lesion of the mechanism controlling extension of the terminal joint of any finger (the thumb is excluded).

From experience in the treatment of this very common industrial and domestic lesion we suspected that it was not a simple problem, and that the pathological anatomy of the tears might be as varied as the end results we observed to follow routine plaster immobilization with flexion of the proximal joint and hyperextension of the distal interphalangeal joint. Following this routine we were not unduly worried when flexion of the terminal joint persisted at the end of treatment; as Dr. W. J. Lloyd (Jan. 1, p. 30) has observed, most workmen can accommodate themselves to this deformity and are not concerned with the appearance of a useful working finger. (Precision workers, however, find the loss of complete control of the terminal joint of the index or middle finger a real working disability.) We were worried, however, by a group who after treatment complained of such pain in the distal interphalangeal joint that they could not return to work, and this pain persisted for a long period.

Therefore six years ago this hospital undertook a planned investigation of the problem, continued its close study for almost two years, allowed a period of time to elapse before assessing all the patients included in the study, and finally published a detailed description of the varying surgical anatomy of these tears and a detailed account of the end results to be expected after surgical treatment.

From this study it is obvious, I think, that mallet finger cannot always be treated by a reassuring word, as Dr. Lloyd would seem to suggest. The open mallet finger caused by a grinding wheel, cutting or crushing violence—a not infrequent industrial injury—is an undisputed surgical matter.

The closed mallet finger, which may cause very troublesome and prolonged pain in the joint, is caused by the avulsion of a fragment of bone from the base of the terminal phalanx, taking with it a variable amount of articular cartilage. If the very disabling and painful traumatic arthritis of the joint is to be avoided, then early and accurate reduction of the fracture, in our view, is essential. If closed reduction fails, as it sometimes does, then early open reduction with internal fixation is essential.

The fracture type of mallet finger accounted for 25% of our series. Three-quarters of our patients had tears of the extensor tendon at varying levels, the level of the tear presenting its own problem in treatment—e.g., if any part of the tear was situated proximal to the joint, the prevention of adhesions between the tendon and the neck of the middle phalanx with the subsequent inability of the tendon to pull the joint into full extension still remains a problem.

The prognosis after surgical treatment of mallet finger seen early is not as bad as Dr. Lloyd's impressions indicate. In a close study of 61 consecutive mallet fingers treated by surgery, 20 regained full extension and a good range of flexion, the remainder had flexion deformities ranging from 10° to 30° and a good range of powerful controlled flexion. In the treatment of this condition there is undoubtedly an economic angle—we can both over-treat and under-treat: to do either may be unnecessarily expensive.

In my experience a common type of mallet finger is the partial tear in the middle-aged. The patient presents a terminal

joint with 20° to 30° flexion deformity with an ability to fully flex the joint and extend it to 20° or 30° of its full range. If such a tear is not associated with a fracture there is, I believe, a real place for the "reassuring word" in treatment. Most workmen can continue most jobs with such a finger, and within four or five weeks have accommodated themselves completely to the disability. The reassuring word, however, has no place in the economic treatment of the fracture type of mallet finger with extensive articular cartilage involvement. Symptoms of traumatic arthritis can be very prolonged. The treatment of painful arthritis by arthrodesis of the joint involves many months before the joint is so soundly fused that the finger has regained powerful and painless function.

The surgical and economic treatment of mallet finger is not a simple matter; it demands a clear understanding of the underlying pathology, very skilled technique in active treatment, and a degree of judgment in assessing those to treat and those to leave alone.—I am, etc.,

Birmingham Accident Hospital.

WILLIAM GISSANE.

REFERENCE

¹ *Brit. J. Surg.*, 1948, 35, 397.

Classical Caesarean Section

SIR,—The recent correspondence on the merits and demerits of the classical caesarean operation has had a good deal of interest, mainly reminiscent, and the views of my own generation will of course stay coloured by the excitement we experienced some twenty years ago when we found that with the lower-segment operation post-caesarean peritonitis need no longer be a dread, and that at last we had a conservative alternative to the high forceps operations and the perforations. This then seemed more important even than the risks of later rupture of the scar. Nowadays, although the risks of infection no longer bear the same weight, most would agree that technically the lower-segment operation is much sounder, and until the other week I would have said from the experience of quite a number of cases that it could always replace the classical operation. I then met the following case.

A primigravida had a transverse lie which could not be corrected. The usual lower-segment operation was begun. The anaesthesia used was gas, ether, and curare. After opening the abdomen I could not correct the oblique lie and extract the child, either as a breech or a vertex, so firmly was the uterus moulded round the child. The situation was exactly similar to a failed internal version for a shoulder presentation. In order to deliver the child it was necessary to make a free longitudinal incision upwards into the body of the uterus. This left an unpleasant T-shaped wound to be stitched.

Part of the difficulty may have been due to the oxytocic effect of the curare, and it might have been avoided by a deep relaxing anaesthesia, but deep anaesthesia is no proper solution to this sort of problem, and should I meet another case in which the uterus is contracted down on a transverse lie I would give serious thought to the advisability of an elective classical operation.—I am, etc.,

Liverpool.

PERCY MALPAS.

Carcinoma of Cervix

SIR,—My attention has just been called by a doctor long in practice in Kenya to the letter of Dr. E. Malcolm Clark (Dec. 4, 1948, p. 999) in which he attributes the relative freedom of Jewish women from carcinoma of the cervix to "some racial factor which we do not as yet fully understand," and disputes my conclusion that they are protected from the disease by the circumcision of Jewish males in infancy. He records a personal experience of twelve cases of carcinoma of the cervix among 82 cancers in Kikuyu women.

My correspondent says, "I feel that in fairness to you Dr. Clark should have made it plain that circumcision as practised by the Kikuyu differs in some important respects from circumcision as practised by Jews. Kikuyu males are circumcised in or about puberty, and the operation is so performed that a large spur of preputial tissue remains, extending outwards on each side of the frænum. It is very characteristic of the Kikuyu . . . the Kikuyu attach great importance to this tag of tissue."

It is hardly surprising that late and partial circumcision fails to give the female as much protection against cervical carcinoma as the complete operation in infancy. East Africa, with its

complex mixture of circumcised and uncircumcised tribes and its primitive codes of sexual conduct, is not a field where unequivocal evidence on the subject can be obtained. In Fiji, on the other hand, where 90,000 circumcised Fijians live alongside 70,000 uncircumcised Indians without mixing, during the year 1925–32 the Suva Hospital admitted only three cases of cervical carcinoma in Fijian women and 26 in Indian women. I have no statistics of penile carcinoma in Fiji, but my attention was drawn specifically during my visit to its occurrence in Indians and its absence in Fijians.

The evidence from Fiji shows that circumcision, even done as late as puberty, has much protective value for the female. I also negatives the postulated racial immunity of Jewish women. Hoffman's statistics for Amsterdam (1919–29) showed a higher incidence of cancer of the breast, rectum, liver, and gall-bladder among Jews than among non-Jews.

In conclusion let me say that I have never advocated the general adoption of circumcision in this country. I believe that all its advantages could be obtained without removal of tissue by the simple operation of universal dorsal preputiotomy in the first days of life.

I am indebted to the medical superintendent of the Suva Hospital for the information that from January, 1947, to November, 1948, twelve cases of malignant uterine tumour in Indians have been admitted and only a single case in a Fijian.—I am, etc.,

London, W.1.

W. SAMPSON HANDLEY.

Pre-suppurative Amoebic Hepatitis

SIR,—Dr. J. T. Harold (Dec. 11, 1948, p. 1034) states that no recent record exists of an amoebic abscess in a patient who had never been abroad. Dr. Francis Lowe (Jan. 1, p. 31) records a case, and I should like to report a second.

A male patient, aged 54 years, recently died in this hospital. He was admitted six months previously with an empyema of the right pleural cavity; there was no previous history of diarrhoea. Three months after admission he developed a typical amoebic dysentery motile vegetative amoebae being found in the stools and later in the pleural pus. Surgical treatment and emetine therapy were of no avail, and the patient died six months after admission. A necropsy revealed an amoebic abscess of the right lobe of the liver which had tracked through the subphrenic space into the pleural cavity. The patient had lived nearly all his life in Bolton and had never left this country.

—I am, etc.,

Townleys Hospital, Bolton.

M. W. JOHNSTONE.

Estimation of Prothrombin

SIR,—The report of the meeting of the Medical Society of London (Jan. 1, p. 26) contained statements concerning the control of dicoumarol therapy which might lead to misunderstanding. It is of great importance that ambiguities concerning the estimation of prothrombin should be avoided. Accident have occurred in the past during dicoumarol treatment because of lack of appreciation of the many pitfalls encountered in the calculation of results and the confusion which exists in their interpretation.

Dr. Paul Wood is quoted as saying that the prothrombin concentration should be kept to "round about 30 to 40 mg per 100 ml." Mr. Dickson Wright is said to have stated that "when less than 20 mg. per 100 ml. no dicoumarol was given. If the figure fell below 10 units (my italics) menadion bisulphite 30 mg. was given intravenously." In these two statements the prothrombin concentration is expressed both in "mg. per 100 ml." and in "units," neither of which is a customary procedure in this country. So far as I am aware there is no routine method for the estimation of prothrombin in milligrammes. It is nearly always expressed as a percentage of the concentration found in normal plasma, and it seems likely that the above quotations should read "30 to 40%," "20%," and "10%" respectively. If this is so, the minimum safe level advised by Mr. Dickson Wright is only half of that advocated by Dr. Wood.

It is not sufficiently realized that when prothrombin is estimated in dicoumarol plasma by a one-stage method^{1,2} the result depends upon the technique employed. It varies with the thromboplastin and also with the diluent used in the construction of the reference curve. Thus, if reference curves are

constructed by saline dilution of normal plasma and prothrombin is estimated in a dicoumarol plasma using venom-lecithin as thromboplastin,² the result will be higher than when brain emulsion¹ is used and very much higher than the result obtained with ox-lung extract.⁴ If the prothrombin is estimated by the two-stage method³ the result will probably differ from all three of those obtained by the one-stage procedures, though it will be nearest to that found by using venom-lecithin as thromboplastin.⁴ Not only is the reference curve obtained when prothrombin-free plasma is used for diluting normal plasma entirely different from that obtained when saline is used, but curves obtained with different prothrombin-free plasmas differ from one another, depending on the method used for the removal of the prothrombin.⁵

It is therefore important that any criteria for the limits of safety in dicoumarol therapy should be accompanied by a precise definition of the method used for the estimation of prothrombin. Differences in technique probably account for the apparent discrepancy which appears in your report between the recommendations of Dr. Wood and Mr. Dickson Wright.—I am, etc.,

Reading.

C. A. MAWSON.

REFERENCES

- ¹ Quick, A. J., *J. Amer. med. Ass.*, 1938, 110, 1658.
- ² Hobson, F. C. G., and Wits, L. J., *J. Path. Bact.*, 1941, 52, 367.
- ³ Conley, C. L., and Morse, W. I., *Amer. J. med. Sci.*, 1948, 215, 158.
- ⁴ Mawson, C. A., *J. Lab. clin. Med.*, 1949 (in the press).
- ⁵ Herbert, F. K., *Biochem. J.*, 1940, 34, 1554.

Temperature Recording

SIR,—Professor Alan Moncrieff and Dr. B. J. Hussey (Dec. 4, 1948, p. 972), as well as the author of the annotation (p. 991) on temperature recording, overlooked the basic fact, often noted in "Any Questions?", "Correspondence", and "Notes and Comments" (*British Medical Journal* since 1943), that it takes ten minutes for the mercury clinical thermometer to reach stability with the temperature of the surrounding media irrespective of the site. Orally there may be an appreciable difference of 0.2°–0.5° F. (0.1°–0.25° C.) between a 2–3-minutes reading and one of 10 minutes; the same difference may also be noted between a site under the tip of the tongue (the usual site the nurse chooses) and further back at the side of the faenulum.

While it requires great care—traumatic recto-urinary fistula from a thermometer may occur (*Medical Annual*, 1946, p. 53)—the rectal method, being the least sensitive to the atmospheric environment, is the best. In the ambulant patient the oral may be as misleading as the axillary; this was noted by the late Sir Thomas Lewis in the low-grade fever of bacterial endocarditis (*Diseases of the Heart*). Even during the diurnal cycle the maximum difference between oral and rectal (5–6 cm.) temperatures varies from 0.6°–1.2° F. (0.3°–0.7° C.), approximating on the upgrade and diverging on the downgrade, but the nexus may be neither proportionate nor constant. Allowance, of course, must be noted for the slight deviation of individual thermometers.

With low-grade fevers, as for example in rheumatic carditis, cited by the authors, the pyrexia may recur regularly or irregularly at times other than the usual maximum periods of 1 p.m., 7 p.m., or 11 p.m. Accurate thermometry would abolish much of the unnecessary routine laboratory tests in many chronic febrile diseases. Active rheumatic infection rarely may be present, as shown by the B.S.R. and leucocyte count, even if the normal rectal range of 97.7°–99.5° F. (36.5°–37.5° C.) is not exceeded; when the maximum rectal temperature is around 99° F. (37.2° C.) quiescence is assured (by the laboratory tests, the sleeping pulse, and the absence, at rest, of mild sensible perspiration day or night) in such cases.—I am, etc.,

Dublin.

A. D. MACDOWYER.

Spontaneous Amputation of Cervix

SIR,—As an interesting contrast with Mr. Walter Calvert's report (Jan. 8, p. 58) of difficult labour following surgical amputation of the cervix uteri, I beg to recall, in retirement, the following case.

Between 30 and 20 years ago a midwife summoned me to see something she did not understand in the vulva of a young primipara

after a normal, easy labour. Delivery was complete; the placenta and membranes were normal, and there had been no undue haemorrhage.

I found it to be a plum-coloured fleshy mass which I had no difficulty in recognizing as the whole undilated cervix, 1–1½ in. (2.5–3.75 cm.) in length, the os being about ½ in. (0.6 cm.) in diameter. Since it was attached by only a shred of tissue anteriorly I snipped it off and gave it subsequently to Professor Carlton Oldfield for the museum of the Leeds School of Medicine. It was clear that the child had been born through the split in the cervix at or near the internal os. The puerperium was normal.

Within two years the midwife called and told me that the patient had had another baby, born in a labour so quickly and easily that even she had not been able to get there in time. Again recovery was normal.

Can it be that a woman can amputate her own cervix better than even the most skilful gynaecologist?—I am, etc.,

Tolland Bay, I.O.W.

W. ARNOTT.

Lithium Ionization for Gout

SIR,—As one who has derived much personal benefit from lithium ionization in the treatment of an acute attack of gout, I deprecate the slighting reference to this treatment in the annotation on physiotherapy (Dec. 25, 1948, p. 1114). In the early days of my career I practised electrotherapy at a time when accurate medical ionization had only recently been introduced by Leduc and Lewis Joos, and I did some research and published papers on this subject.^{1,2} The effect of lithium ionization in many cases of acute gout is extremely striking, because it commences immediately. I have had a patient come into my consulting-room on crutches who at the end of the treatment was already able to walk on the affected foot. Other patients have come to me repeatedly to abort successive attacks. I looked up the reference to Sir Henry Cohen's article, and this by no means makes the sweeping condemnation suggested in your annotation. Actually lithium ionization is not mentioned, and the reference to lithium is probably to oral medication.—I am, etc.,

London, W.1.

N. S. FINZI.

REFERENCES

- ¹ *Proc. R. Soc. Med.*, 1909, 2, 140.
- ² *British Medical Journal*, 1912, 2, 1180.

POINTS FROM LETTERS

Manganese Therapy

Dr. C. A. ALLAN (Duodee) writes: Recent additions to the knowledge of the biochemistry of manganese have shown it to be concerned with antibody formation (Walhrum, L. E., *Acta path. microbiol. scand.*, 1944, 21, 3; Petherick, M. H., et al., *Proc. exp. Biol.*, N.Y., 1944, 59, 254), and also that it is an activator of a number of important enzymes. . . . This has suggested to me that there may be other aod as yet unexplored uses for manganese therapy, among which sensitization dermatitis, as a derangement of the body's normal defence mechanism, may possibly be included. With the object of testing this hypothesis manganese was recently used in two cases. The first was a bus driver, aged 39. From 1940–5 he was a motor transport driver in the Army, always in contact with diesel oil. He developed local skin irritation on legs and arms. From 1945–8 he had frequent absences from work as a bus driver; he was still in contact with diesel oil. He remained resistant to all treatment until colloidal manganese was used. Three doses of 1 ml. intramuscularly arrested the skin irritation, and he has remained free from any sort of this trouble to date, although still working daily with diesel oil. The second patient was a cook, aged 45. She was said to have had soap dermatitis for the past six months; arms and wrists affected, also neck. Prescription of soap, etc., had little effect. Again three doses of manganese, 1 ml., intramuscularly completely arrested this form of skin irritation. A routine examination of all the systems was made in each case and, soon recently, both have remained well.

Screening Aid for Mass Radiography

Dr. R. TREHARNE JAMES (Reading) writes: I was interested to read the description of a daylight screening aid for mass radiography units by Dr. S. W. Vivian Davies (Dec. 25, 1948, p. 1117). We have encountered the same difficulties as his unit in darkening our working sites and have for some months been using a similar screening hood. Though it is extremely useful it has one drawback, I think, in that the radiographer and his assistants are excluded from viewing the appearances. Time does not permit the examination to be repeated by several persons, nor does radiation dosage. Also it is desirable that the hood be removable easily and rapidly for laundering.

Obituary

STANLEY RAW, M.D., F.R.C.S.Ed.

Stanley Raw, who died with tragic suddenness at the age of 70 on Dec. 26, 1948, was one of the outstanding surgeons in the North of England. He was a student at the University of Durham, and he graduated M.B., B.S. in 1901. He proceeded M.D. in 1903, and took the F.R.C.S.Ed. in 1905. Raw was senior resident medical officer at the Sunderland Infirmary before starting in general practice in that town. He was later elected surgeon to the Children's Hospital. In 1915 he joined the R.A.M.C. and was surgeon to the Liverpool Merchants' Hospital, and spent some years in France. On his return he was appointed surgeon to the Royal Infirmary, Sunderland, and he gave up general practice. He also became surgeon to the Sunderland General Hospital. In 1931 the Durham colliery owners asked Mr. Raw to become medical officer to some of their groups. In 1945 he reached the retiring age and became consulting surgeon to the Royal Infirmary and to the General Hospital, but continued with his other work. He was chairman of the Sunderland Division of the B.M.A. in 1924-6 and a former president of the Northern Counties Clinical Society.

Raw was an accomplished surgeon with a leaning towards gynaecology. His results were good, and his surgical opinion was eagerly and widely sought. No one had more thought for the welfare of his patients, and his daily morning and evening rounds continued to the end. As a colliery medical officer, although there may have been disagreements from time to time, no pitman ever doubted his fairness, though sometimes his task was difficult. Raw's great interest was in the Royal Infirmary, Sunderland, and at endless discussions and innumerable committee meetings he did everything he could to advance its scope and improve its facilities. His ideas of hospital administration were much ahead of his time, and the Royal Infirmary, with which he was associated for forty-seven years, owes him an enormous debt. From 1930 to 1943 he was chairman of the medical board of the Infirmary. Sometimes a difference of opinion might become a personal disagreement and lead to temporary estrangement, but Raw himself had had some disappointments in earlier professional life.

He had climbed mountains, sailed small boats, and was golfing to the last. He was always advocating travel. Personally he was acute, astute, a wise counsellor, and a good companion. Being without children, he was most attached to his nephews and took great pride in their achievements. To those he was interested in or liked he was generosity itself. In his own world he was a very considerable figure; with some change of fortune he might have been much more widely known. Stanley was a personality with an English character; latterly he was an institution with a touch of magnificence. To his widow, who was his companion and helpmate for so many years, the sympathy of all his colleagues will be extended.—P.A.

H. L. Duke writes: As an Englishman who was privileged to enjoy close personal association with van Hoof during the fifteen months' sojourn in Uganda of the League of Nations Sleeping Sickness Commission, I should like to add a brief tribute to your account (Jan. 1, p. 34) of the personality of a very charming colleague. Van Hoof was a first-rate mixer, at home with all and sundry, high or low, black or white, peaceful or obstreperous. As a host he was ideal; an admirable raconteur, genial, with an acute sense of humour and a temperamental imperturbable and placid. He loved a joke, practical or otherwise. He had a wonderful way with the natives, and his staff worshipped him and rendered him unquestioning loyalty. He knew all about a motor-car, and was a truly invaluable companion on the long empty stretches of the tsetse country in which the Commission spent so much time. His English was excellent, and his knowledge of human nature apparently inexhaustible. Yet one felt in those days that his main concern was his scientific work, and he was always ready at a moment's notice to switch off into a serious discussion of the programme. A gallant gentleman and a sad loss to his many friends.

Dr. JAMES RUST died at Malvern on Dec. 10, 1948, at the age of 79. After completing his early education at the Aberdeen Grammar School, he took his M.A. degree as a student of Aberdeen University in 1889, graduating M.B., C.M. in 1892, and proceeding M.D. in 1895. He was house-surgeon to the late Sir Alexander Ogston before taking up an appointment in China. Returning to England, he bought a practice in Gt. Colmore Street, Birmingham, where he remained until his retirement about ten years ago. Before his retirement he had been operated on for pyloric stenosis; he recovered from this operation and enjoyed fairly good health until last year, when signs of heart failure preceded his death from coronary thrombosis. Dr. Rust was a kind and generous friend, well loved by everyone, and he will be greatly missed. He was medical officer to the V.A.D. Auxiliary Hospital in Birmingham from May, 1915, to December, 1916, and was also divisional surgeon of the St. John Ambulance Brigade. He was a member of the panel committee for several years, and also prime mover in the formation of the Aberdeen University Club for Birmingham and the Midlands, of which he became the first president. He presented a silver cup to be competed for by the golfing members of the club. Dr. Rust, who was unmarried, never really recovered from the death of his sister, who was devoted to him.—A.H.M.

Dr. ALEXANDER BROWN JAMIESON, who since 1919 had been a member of the tuberculosis service of the Lancashire County Council, died suddenly at his home in Great Ecclestone, Lancs, on Dec. 16, 1948. Dr. Jamieson graduated M.B., Ch.B. at Edinburgh University in 1910. For many years he worked in the districts served by dispensaries at Eccles, Leigh, Stretford, Farnworth, and Pendlebury, and also at the Peel Hall Pulmonary Hospital, Little Hulton. In February, 1945, he was appointed a member of the senior staff and became medical superintendent of the Elswick Sanatorium, near Kirkham, and consultant tuberculosis officer for the Fylde dispensary area. Recently the Manchester Regional Hospital Board established an enlarged dispensary area, bringing in Blackpool County Borough, and Dr. Jamieson became the chest physician of the Victoria Hospital in that town. Dr. Jamieson leaves a widow and one son. He was of a quiet disposition and was universally liked by his colleagues of the medical, nursing, and clerical staffs.

Medico-Legal

DURATION OF AGGRAVATION

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

A soldier contracted bronchitis while serving in the Army before the war. He was passed fit for service in 1939 and was put on guard duties which exposed him to the weather. In January, 1940, he became ill with influenza and a specialist reported that he was suffering from chronic bronchitis. For the next two years he was constantly on the sick list, and he was discharged in May, 1942. Seven months later a medical board found that his working capacity was reduced owing to shortness of breath. In 1944 his claim for a pension was rejected by a pensions appeal tribunal. In 1947 it was again rejected by a special tribunal which found that he had been in the Army for nearly three years, during which he was subject to no conditions which could be supposed to have exercised any influence on his bronchitis. He appealed to the court, and Mr. Justice Denning¹ held that the finding of the tribunals could not be reconciled with the evidence, and that the only reasonable conclusion was that at the date of the appellant's discharge his complaint had been aggravated by war service.

The question was raised whether the aggravation due to war service had not passed away, and whether a tribunal making such an award could say for how long the aggravation had continued, and if and when it had passed away. His lordship thought a tribunal could do so, provided that both parties had notice that the point was to be considered. A claim made immediately on discharge, he said, took some time to reach a pensions appeal tribunal, and the claimant usually pleaded not only that the disease was aggravated at the date of discharge but also that it remained aggravated at the date of the hearing. When the Minister rejected such a claim, he said that the

¹ *Ansell v. Minister of Pensions*, 1948, 2 All E.R. 789.



"Yes, Johnny's
doing well . . .

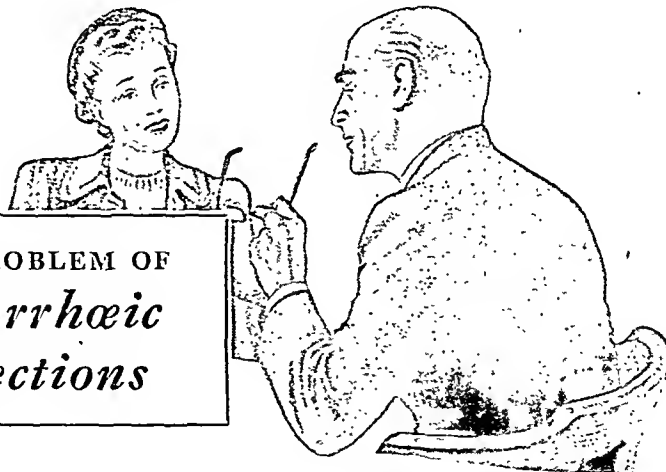
... but keep him on

'KEPLER'
COD LIVER OIL WITH MALT EXTRACT

'Kepler' contains 50 per cent more
cod liver oil than the B.P. prepara-
tion. Only the finest malt extract
is used in its manufacture.



BURROUGHS WELLCOME & CO. (The Wellcome Foundation Ltd.) LONDON



THE PROBLEM OF
Seborrhæic
affections

CHRONIC skin diseases such as acne, seborrhœa oleosa, and rosacea are very distressing to the patient. In the case of women it is particularly difficult to treat facial lesions without further disfigurement.

Genatosan Products offer two happy solutions to the problem. Dermatological Cream No. 10 (Zinc. Sulph. 3%, Potass. Sulphurat. 3%) contains the active in-

gredients in a non-greasy base. For day use the cream may be employed as a powder base without detracting from its therapeutic value, and your patients will appreciate the lack of restriction on the use of cosmetics.

Alternatively, or additionally 'Fissan' Ichthammol Powder (2% Ichthammol) is flesh tinted and can be used as a face powder.

Information and literature upon request to the Medical Department.

GENATOSAN LTD.

Division of British Chemicals & Biologicals Ltd.

LOUGHBOROUGH, LEICESTERSHIRE Tel: Loughborough 2292

trade mark **'ANTHISAN'** brand mepyramine maleate

— a powerful antihistaminic of low toxicity for symptomatic relief and for the control of allergic conditions and anaphylactic reactions.

— a highly effective local antipruritic agent.

Supplied in tablet and elixir form for oral administration and in a water-soluble cream base for topical application.



manufactured by

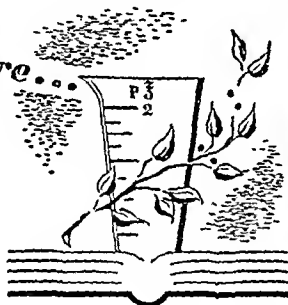
MAY & BAKER LTD

distributors

PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD. DAGENHAM

To supplement nature...

the
natural
oestrogen



The use of 'PROGYNON' in gynaecology ensures:

... Freedom from toxic effects

... true physiological action and no other

... The restoration of the sense of well-being

normally dependent on ovarian sufficiency

'PROGYNON B OLEOSUM'

1 mg and 5 mg
oestradiol benzoate
in 1 cc ampoules



167-169 GREAT PORTLAND STREET · LONDON · W.1

302 H

For chilblains
'PERNIVIT'

Tablets of Acetomenaphthone
and Nicotinic Acid B.D.H.

Considerable success in the treatment of chilblains has been reported following the use of acetomenaphthone in one group of patients and of nicotinic acid in a second group.

It may be that abnormal venous permeability and prolonged blood clotting time on the one hand and venous stasis from vasoconstriction on the other are both contributory causes of chilblains.

Trial of a combination of acetomenaphthone and nicotinic acid collaterally, therefore, seems justified. 'Pernivit' is now available as tablets, each containing

Acetomenaphthone 7 mg.
(Prokayvit Oral)

Nicotinic Acid 25 mg.
Bottles of 50 and 500 tablets

MEDICAL DEPARTMENT

THE BRITISH DRUG HOUSES LTD LONDON N.1

Priv/E/525

disease was not aggravated either at the date of discharge or at the date of the hearing. The evidence before the tribunal included medical evidence which brought the position right down to the date of the hearing. It was therefore obviously undesirable that the tribunal should confine itself to the moment of discharge and leave the question of duration to another tribunal. As a rule it was right and proper that the tribunal should consider not only the question whether aggravation remained at the date of discharge but also the question whether it remained aggravated at the date of the hearing, and, if it had passed away, at what date it did so. So long as both parties had notice of the case they would have to meet, it was open to the tribunal to find that any aggravation passed away at any time since discharge. The judge then remitted this case to a tribunal to decide whether the aggravation still remained, or at what date it had passed away.

Universities and Colleges

UNIVERSITY OF ST ANDREWS

The following candidates have been approved at the examination indicated:

FINAL M.B., CHB — H M G Ewan, Jean A Houston, Maria I Insh B R B
Lumb A. H. Moyes, Phyllis Norrie, W P R Rintoul A. J Smith.

UNIVERSITY OF LONDON

A course of two Special University Lectures on "The Use of Radio active Tracers in Biological Research" will be given by Professor F A Paneth, F.R.S., at the School of Pharmacy, 17, Bloomsbury Square, London, W.C., on Wednesday and Thursday, Jan 26 and 27, at 5.30 p.m.

A Special University Lecture on "Virus Research and the Virus Problem" will be given by Dr Pierre Lépine, of the Institut Pasteur, Paris, at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C. on Tuesday, Feb 8, at 5.15 p.m.

At the Foundation Day ceremony on Nov. 18, 1948, the honorary degree of D.Sc. was conferred on Sir Alexander Fleming, M.B., F.R.C.P., F.R.C.S., F.R.S.

Dr E. R. Boland, Dean of the Faculty of Medicine, has been appointed a member of the Academic Council for 1948-9

Professor J M Mackintosh has been appointed delegate of the University at the Health Congress of the Royal Sanitary Institute to be held at Brighton from May 23 to 27, and Professor Wilson Smith delegate at the fifth International Congress of Comparative Pathology to be held at Istanbul in May.

The following have been recognized as teachers of the University in the subjects indicated in parentheses *St Bartholomew's Hospital Medical College* Mr J C Hogg and Mr N A Jory (Oto-rhinolaryngology), Mr John Hawkins (Obstetrics and Gynaecology), St Archibald McIntosh, Mr D F E Nash, Mr O S Tuhhs, and Mr E G Tuckwell (Surgery), Dr B Rait Smith (Anaesthetics) *St Thomas's Hospital Medical School* Mr T W Mumpriss (Surgery), Dr J S Richardsou (Medicine), Mr N H L Ridley (Ophthalmology) *Middlesex Hospital Medical School* Dr C C Chesterran (Tropical Medicine) *Claring Cross Hospital Medical School* Dr R J Clausen (Anaesthetics), Dr R J Harrison (Anatomy), Mr J G Milner (Ophthalmology) Mr H S Sharp (Oto-rhino laryngology), Dr T F Tierney (Radiology, prohaunary for two years) *Westminster Medical School* Dr F Dudley Hart (Medicine), Mr B St J Steadman, M.R.C.S., L.R.C.P., and Mr R S Tavior, M.R.C.S., L.R.C.P. (Dental Surgery) *Royal Free Hospital School of Medicine* Dr J D S Flew (Obstetrics and Gynaecology) *King's College Hospital Medical School* Dr J D N Hill (Mental Diseases (Psychiatry)) *London School of Hygiene and Tropical Medicine* Dr I E McCracken (Public Health)

The following candidates have been approved at the examination indicated.

M.D.—*Branch I (Medicine)* P Arnold S Balasingam F A Binks V M
Borrelli W F Cavenagh F B Charatan A G C Cox R H Cuthbert J J Y
Dawson V Edwards I G Ferguson I W Gallant O Garrod J Gilbert
Andrew Harston J C Harland G P Hartigan J C Keaton H Head-
rson J Henneman J W Jordan P G Keates C C Keen H A Legge-
Lovell K M Mackenzie J C H Maidment T P Mann R M Mayon Whit-
I C L Patch J J Pettit T R E Pilkington A Polakchoff F Riley,
R W Rowan J R Sinton H E Thomas H R Thomson M H West J B
Wild *Branch (Pathology)* J A B Brown M G H Coovarr R H Gornall
F C Gossard R H Hupinstall J Marks, R D de A Senavirat—D A
Salem J B Walter A J V Warrick *Branch III (Psychological Medicine)*
T G Williams *Branch II (Midwifery and Diseases of Women)* Allen M
D L B *Branch I (Hygiene)* J B M Davies R E Lane *Branch VI (Tropical*
Medicine) D A B Hopkins

UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examinations indicated

MD - C D Alford, H Angelman, H B N Jannings, J Mills, R H M Stewart, R H White-Jones, F W Jackson
M CHORTH - G W Baker, R F Browne, N A G Cowell, R H Dawson, T Denness P K Durawamsi, M J Gallagher, J R Hughes, W A Hugh Smith, A F McSweeney, A B D Minnaar, L Murkin, B Mukopadhyaya, R F O Driscoll, W H G Patton, J H G Robertson, A K Saha, G D L Sharwell, C C Slack, E. A. Smyth, I D Sutherland, W J Virgin.
D.P.H. - Part I Kazanir H Abramowicz, D J Coster, K G Kosh, H Macdonald D A Nugent, G P Reed, H D Sutherland, F W Williams
CERTIFICATES PUBLIC HEALTH - E G Donovan, H B Kiro, B J J McConnell, Margaret M O'Rourke, R B Smith, C M Webb
M.B., Ch.B. - Part III (Old Regulations) C E Arde, N O Croft, G Bilbaird, J D E Edwards, Elsworth M Evans, J A Finnigan, G W E Hughes, T J M Hughes, Gwenth H Kendrick, J H Murray, N C W Owen, W H Parry, Edme Rees, Joyce L Rowley *Passed in separate subjects* S Plumptre (Medicine, Obstetrics and Gynaecology) Part II (Old Regulations) Rosemary J Boland, K W Brewster, W Ellis G Jones, R E Jones, J G Kay, J J Cameron, Judith E A Rootstein Part I (Old Regulations) Varon, J Burke, J J Cameron, Judith E A Rootstein, B Evans, J G Jones, Lorna Freeborough, A W G Housby, Doreen Jacobs, D H Jones, Eileen F Macdonald, J Mary Malon, E N Marks, Jean A Raff, G F Stone *Passed in separate subjects* Ludwicka Haas (Pharmacology) and General Therapeutics.

¹ Distinction in Obstetrics and Gynaecology

ROYAL COLLEGE OF SURGEONS OF ENGLAND

FACULTY OF ANAESTHETISTS

The first annual general meeting of the Faculty of Anaesthetists will be held on March 16, at 3.30 p.m. Notice of motions for decision at the meeting must be received by the secretary not later than ten days before the meeting. At 5 p.m., the first Joseph Clover Memorial Lecture will be given by Mr A. D. Marston. On the same day, the first anniversary dinner of the Faculty will be held, and all Fellows and Members of the Faculty are eligible to attend. Owing to the limited accommodation available it will not be permissible for Fellows and Members to have more than one ticket. The dinner will be at 7.30 for 8 p.m., and the dress will be dinner jacket. Applications for tickets, accompanied by cheques for £2.2s, should be made as soon as possible to the secretary, Faculty of Anaesthetists, Royal College of Surgeons of England, Lincoln's Inn Fields, London W.C.2.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF
GLASGOW

Professor J R Learmonth, CBE, FRCS, will deliver the Dr John Burns Lecture in the Hall of the Faculty (242, St Vincent Street, Glasgow) on Wednesday, Jan 26, at 5 p.m. The title of the lecture is 'Some Aspects of the Surgery of the Spleen'. All medical practitioners are invited to attend.

The Services

The President of the French Republic has conferred the decoration of Insignia of Chevalier of the Legion of Honour upon Captain B J Fowler, R.A.M.C. surgeon at the military hospital in Tobruk, in recognition of valuable services rendered by him on the occasion of a mine explosion in April, 1947.

The *London Gazette* has announced the following appointments and mentions in dispatches in recognition of gallant and distinguished services in Palestine. The periods are indicated in parentheses.

OBE (Military Division)—Lieutenant-Colonel (Temporary)
G H C Ovens, R.A.M.C (Sept 27, 1947, to March 26, 1948)

M.B.E (Military Division)—Major (Temporary) W J G Brunt,
R.A.M.C (Sept 27, 1945, to March 26, 1946)

Mentioned in Dispatches—Majors (Temporary) J A G Horton and A Steer, R.A.M.C (Sept 27, 1945, to March 26, 1946), Colonel W H O'Riordan, R.A.M.C (March 27, 1946, to Sept 26, 1946), Colonel A J Beveridge, O.B.E., M.C., Lieutenant Colonel R R. Leanne, Major A D Young, D.S.O., Majors (Temporary) J T Landau and S A Lane, Captains C G H Bourhill, A C Cobban, and D Peebles, R.A.M.C (Sept 27, 1946, to March 26, 1947), Major W R Lamb, M.C., Captains K W Leech, E S Machell, and H R Turner, Captain (Temporary) W A Reynolds, R.A.M.C (March 27, 1947, to Sept 26, 1947), Lieutenant-Colonel (Temporary) S Ward, Majors (Temporary) A S Douglas, D F Freehold, and J G Hoult, Captains M P Durham G L MacKav, C G Teveron, and R A L Wenger, Captains (Temporary) I A MacGregor and W A Reynolds, R.A.M.C (Sept 27, 1947, to March 26, 1948), Lieutenant-Colonel (Temporary) J C Lamhkin, Major (Temporary) (Miss) E C Brownlie, Captains A Batty-Shaw, M P Durham, M M Herbert, and H A F Mackay, Lieutenant W Havhurst, R.A.M.C (March 27, 1948 to June 30, 1948)

No. 1

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Jan. 1.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are far: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	28	3	18	2	—	55	4	26	1	2
Deaths ..	—	2	—	—	—	—	2	1	—	—
Diphtheria ..	142	18	26	5	2	225	22	31	10	3
Deaths ..	3	—	—	—	—	5	1	—	—	—
Dysentery ..	53	9	39	—	—	86	11	19	1	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute ..	—	—	—	—	—	2	—	1	—	—
Deaths ..	—	2	—	—	—	—	—	—	—	—
Erysipelas ..	—	—	35	9	2	—	1	31	11	2
Deaths ..	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	39	5	8	36	5	59	3	11	36	5
Deaths ..	—	—	—	2	—	—	—	—	—	—
Measles* ..	11,121	294	41	81	52	4,490	251	163	174	23
Deaths† ..	—	—	—	1	—	1	—	1	—	—
Ophthalmia neonatorum ..	48	5	16	—	—	58	5	10	1	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	3	1	—	1(B)	—	39	2	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal ..	1,050	59	6	6	4	1,098	99	3	5	10
Deaths (from influenza)‡ ..	29	3	2	—	—	35	7	5	—	1
Pneumonia, primary ..	—	—	373	54	—	—	—	284	41	—
Deaths ..	330	62	14	11	—	60	—	18	—	12
Polio-encephalitis, acute ..	3	—	—	—	—	4	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Polio-myelitis, acute ..	20	—	5	3	—	59	7	5	2	—
Deaths§ ..	2	—	—	—	—	—	—	—	—	—
Puerperal fever ..	—	—	9	—	—	—	3	6	—	1
Deaths ..	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| ..	66	4	5	—	—	112	11	11	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Relapsing fever ..	—	—	—	—	—	1	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Scarlet fever ..	1,125	54	245	109	42	1,786	125	298	42	34
Deaths† ..	—	—	—	1	—	—	—	—	—	—
Smallpox ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Typhoid fever ..	7	1	—	2	—	5	—	2	1	1
Deaths ..	2	1	—	—	—	—	—	—	—	—
Vphus fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	2,015	133	50	70	15	1,891	135	20	65	9
Deaths ..	10	2	—	1	—	5	—	—	1	—
Deaths (0-1 year) ..	359	44	56	30	15	420	41	73	28	22
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding still-births) ..	6,362	1047	743	242	121	5,720	968	665	236	165
Annual death rate (per 1,000 persons living) ..	—	—	15.0	15.1	—	—	—	13.8	14.9	—
Live births ..	7,253	1172	898	379	280	9,608	1535	963	470	291
Annual rate per 1,000 persons living ..	—	—	18.1	23.7	—	—	—	19.4	29.7	—
Stillbirths ..	186	31	23	—	—	227	31	26	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	25	—	—	—	—	26	—	—

* Measles and whooping cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county) will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county) and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Influenza

Deaths certified as due to influenza in the 126 great towns rose to 47 in the week ended Jan. 8, compared with 29 in the previous week. This is the largest weekly total since the spring of 1947. The rise is not disproportionate for the season and suggests that virus influenza had not reached epidemic proportions in England and Wales. There is, however, confirmation that influenza has spread across Europe from the south-east. The disease appeared in Italy early in December, 1948, and had crossed to the Haute-Savoie about Dec. 15. It spread up the eastern border of France between Dec. 15 and Dec. 20 and affected most of the country, sparing only a few departments. It seems that it was not present in Paris until about Dec. 20, and the attack rate increased about Christmas. In Paris it took about fourteen days for the disease to reach a maximum incidence. There is, so far, no sign of regression. A conservative estimate of incidence up to the present is 15% of the population of France. Some communities have experienced attack rates up to 30 or even 40%.

The spread to the Northern European countries continues. In Holland the disease entered at Eindhoven on Dec. 31 and appeared in Leiden seven days later. Outside France and Italy, according to telegraphic reports received in Geneva up to Jan. 11, there had been no abnormal increase in influenza in Scandinavia, Spain, Hungary, and the American zone of Germany. The disease was prevalent in the Vorarlberg Tyrol of Austria. In Switzerland thirteen cantons were affected, particularly Tessin, Geneva, and Basle. To the east there were small foci in certain towns in Turkey, but no epidemic. In Northern Europe the epidemic was still confined to South Holland.

Clinical Features.—The disease occurring in France is typical and easily distinguished from the benign seasonal catarrhs. The average case has an abrupt onset with headache, weakness, muscle pains, and fever. Apart from a sore throat, signs referable to the respiratory system are few at onset. In the ordinary case the illness lasts seven days and is followed by some debility. Complications are few and encephalitis has not been reported. Pulmonary complications have killed elderly people. A few deaths from acute pulmonary oedema in the first thirty-six hours of the illness, particularly in children under 2, have been mentioned.

Virus.—In a previous announcement "virus B" was mentioned. It now seems more probable that the virus mainly responsible is more closely related to virus A. Identification experiments at the World Influenza Centre laboratory at Hampstead are incomplete.

Local Health Authorities.—The Ministry of Health has advised local authorities in England and Wales that the increased incidence of influenza in parts of Europe may foreshadow an early outbreak in this country, although there are no signs of this at present. It is suggested that medical officers of health and local authorities should plan in advance the arrangements which may have to be made if there is an unusually heavy incidence of influenza. These measures will be related to the local health authorities' services under Part III of the National Health Service Act, and the home nursing and domestic help services may both have to meet considerable extra demands. In a circular issued recently the Ministry urges that at the moment local health authorities should do no more than shape precautionary plans against the possibility of a large-scale outbreak.

Annual Report of England and Wales for 1946

The crude death rate during 1946 was 12.0 per 1,000, but when corrected for age the Comparative Mortality Index was 0.881 and was the lowest value yet recorded. Infant mortality was 42.85 per 1,000 live births and was the lowest value ever recorded. The neonatal mortality of 24.46 was 0.30 below the value for 1945 and 0.11 above the value for 1944. Maternal mortality decreased from the previous lowest level of 1.47 in 1945 to 1.24 per 1,000 total births. The death rates per million children under the age of 15 were 40 for diphtheria, 3 for scarlet fever, and 22 for measles, and were the lowest rates ever recorded; the rate for whooping-cough was 91, an increase of 12 on the 1945 rate but appreciably lower than the pre-war average.

Discussion of Table

In England and Wales during the week under review there were increases in the notifications of measles 2,162, acute pneumonia 258, whooping-cough 224, diphtheria 42, and dysentery 23. The only decrease was in the incidence of scarlet fever 29.

The largest increases in the notifications of measles were Lancashire 484, London 184, Staffordshire 157, Cheshire 146, Somerset 117, and Berkshire 116. The largest changes in the incidence of whooping-cough were increases in Lancashire 96

and Warwickshire 52, and a decrease in Glamorganshire 50. There was an increase of 12 in the incidence of diphtheria in London. Little change was recorded in the local incidence of scarlet fever. A rise in the notifications of acute pneumonia occurred in every region of the country.

The largest returns of dysentery were Lancashire 12 (Liverpool C.B. 7) and London 9 (Hackney 7). Two of the 3 cases of paratyphoid fever and 4 of the 7 cases of typhoid fever were notified in Lancashire. Only two counties had more than one notification of acute poliomyelitis: Worcestershire 4 (Kidderminster M.B. 3) and Derbyshire 2, both notified in Whaley Bridge U.D.

In Scotland there were decreases in the notifications of whooping-cough 80 and measles 45, while rises were reported for acute primary pneumonia 36 and dysentery 11. A small increase in the incidence of dysentery was recorded in all except the northern areas. The rise in the incidence of pneumonia occurred mainly in the north-eastern and eastern area.

In Eire increases of 52 in the notifications of measles and of 31 in the notifications of pneumonia were the only changes of note. The largest outbreak of measles was at Laoighis, Athy No. 2 R.D. 32.

In Northern Ireland a fall from 11 to 2 in the notifications of diphtheria was the chief feature of the returns.

Quarterly Returns for Northern Ireland

The birth rate for the September quarter was 21.5 per 1,000 and was 1.3 below the average for the third quarters for the preceding five years. Infant mortality was 41 per 1,000 registered births and was 12 below the five years' average. The general death rate was 9.9 per 1,000 and was 0.4 below the average for the five third quarters. Deaths attributed to the principal infectious diseases numbered 56 and included 26 from infantile diarrhoea and enteritis, 14 from measles, and 10 from whooping-cough. No deaths were due to diphtheria. Deaths from pulmonary tuberculosis numbered 166 and from other forms of tuberculosis 48; these totals were 14 and 9 respectively below the averages of the five preceding quarters.

Week Ending January 8

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,022, whooping-cough 2,306, diphtheria 126, measles 13,185, acute pneumonia 1,181, cerebrospinal fever 43, acute poliomyelitis 19, dysentery 81, paratyphoid 2, and typhoid 4.

Medical News

Dr. Anne Gibson Survives Air-crash

On the basis of information in the daily press we announced last week the "death" on Jan. 5, 1949, as the result of an air crash, of Dr. Anne Gibson, of St. James's Hospital, Balham, S.W.12. Happily Dr. Gibson survived the disaster. We much regret the error and any distress the announcement may have caused Dr. Gibson, her relatives, and her friends. Dr. Gibson was a passenger in an airliner which crashed in Brazil while on its way to Chile. The medical superintendent of St. James's Hospital informs us that a message has recently been received from Dr. Anne Gibson stating that she is alive and well.

King Edward's Hospital Fund

His Majesty the King has sent an annual subscription of £1,000 for 1949 to King Edward's Hospital Fund for London. The Fund has also received a further instalment of £150,000 from the Nuffield Trust for the Special Areas. To founding this Trust Lord Nuffield provided that any sums that might be available by way of repayment of loans or otherwise from his Trust for the Special Areas should pass to King Edward's Hospital Fund for London. A total sum of £1,150,000 has now been received.

Prospective Parliamentary Candidate

Dr. A. D. D. Broughton has been chosen by Batley and Morley Labour Party (Yorks) as prospective candidate in the by-election caused by the death of Captain Beaumont. In 1945 Captain Beaumont had a majority for the Socialist Party of 11,592.

London County Medical Society

At the annual general meeting of the London County Medical Society on Jan. 5 the following officers were elected: president, Dr. C. D. Coyle; vice-president, Mr. Iain Matheson; hon. treasurer, Dr. L. T. Hilliard; hon. secretary, Mr. J. Gabe. A full programme for the forthcoming year is being arranged. The next meeting of the Society will be held on Thursday, Feb. 3, at 4.30 p.m. at

Mile End Hospital, Bancroft Road, E.1. Dr. A. F. Mohun and Dr. J. Rubie will open a discussion on streptomycin in the treatment of tuberculosis. The annual subscription of five shillings is now due and should be sent to Dr. L. T. Hilliard, the Fountain Hospital, S.W.17. Membership is open to any medical practitioner. Inquiries should be addressed to Mr. J. Gabe, F.R.C.S., St. Alfege's Hospital, Vanbrugh Hill, S.E.10.

French Award

The French Government has recently conferred the Médaille de la Reconnaissance Française on the following: Lord Morao, P.R.C.P., Dr. K. E. Eckenstein, Dr. N. M. Goodman, Dr. Dorothy Gough, Mr. Holmes Sellors, Dr. L. E. Houghton, Dr. J. Moore, Dr. A. J. Morland, Dr. Eugene Nassau, Dr. P. G. Stock, Dr. R. E. Stuart-Webb.

COMING EVENTS

National Health Service Act

Dr. Charles Hill, Secretary of the Association, will address a meeting of members of the Metropolitan Counties Branch on Thursday, Jan. 27, at 8 p.m., in the Great Hall, B.M.A. House, Tavistock Square, London, W.C. The title of the address will be, "Terms of Service."

Guild of St. Luke, SS. Cosmas and Damian

A dinner-dance organized by the Westminster Branch of the Guild of St. Luke, SS. Cosmas and Damian will be held at Dorchester Hotel, Park Lane, London, W., on Thursday, Feb. 3, at 7.30 p.m., when guests will be received by His Eminence Cardinal Griffin. Tickets (£1 11s. 6d. each) may be obtained from the honorary secretary, 5, Wimpole Street, London, W.1 (Tel.: Langham 3230).

Edinburgh Lectures

A series of Honyman Gillespie Lectures has been arranged, in association with the Edinburgh Postgraduate Courses, to take place during the spring term in the West Medical Theatre of Edinburgh Royal Infirmary on Thursdays, Feb. 10, 17, and 24, at 5 p.m. The lectures are open to all graduates and senior students. Details will be published in the diary columns of the *Journal* week by week.

Public Health and Hygiene

The Royal Institute of Public Health and Hygiene announces that the next course of instruction for the Certificate in Public Health and for the Diploma in Industrial Health (Part I) will commence on March 25. Prospectuses, enrolment forms, and full details may be obtained from the secretary of the Institute, 28, Portland Place, London, W.1.

Banting Memorial Lecture

Professor John Beattie, Bernhard Baron Research Professor at the Royal College of Surgeons of England, will deliver the Banting Memorial Lecture at Toronto next month.

Rheumatic Diseases Conference

The 7th International Congress on Rheumatic Diseases will be held in New York City on May 30-June 3 under the auspices of the International League against Rheumatism (*Journal*, Dec. 4, 1948, p. 1003). The date by which information on the presentation or discussion of papers is requested has been extended to Feb. 15. Information may be obtained from Dr. Ralph Pemberton, 1901, Walnut Street, Philadelphia, Pennsylvania, U.S.A.

Congress of Life Assurance Medicine

The Third International Congress of Life Assurance Medicine will be held in Rome on June 6-9. The titles of the subjects for discussion and the names of the opening speakers are as follows: "Medical Examination on Life Assurance—Its Difficulties and Pitfalls": Professor H. Courcoux (Paris), Dr. R. de Beden (Trieste). "The Influence of Heredity on Mortality": Professor R. Sand (Brussels), Professor V. Bisceglie (Catania). "Heart Disease and Life Assurance"—(a) "Valvular Defects": Dr. H. D. E. Milders (Rotterdam), Dr. Terence East (London); (b) "The Arrhythmias": Dr. J. R. B. Hutchinson (Washington), Dr. V. Mortensen (Copenhagen). "The Lessons of the War in Relation to Preventive Medicine": Professor Ch. Richet (Paris), Dr. F. Kaufman (Zurich), Professor G. Mazzetti (Florence), Dr. A. Starna (Rome). All doctors interested in life assurance medicine are entitled to attend, and any wishing to take part in the discussions should communicate with the secretary of the Congress at Piazza San Bernardo 101, Rome, not later than the end of March, 1949, sending a summary of their communication, which should not exceed 200 lines and which should be accompanied if possible by translations in French, German, and Italian, the three official languages of the Congress. Information about travelling arrangements and accommodation can be obtained from the secretary of the Life Assurance Medical Society—Dr. Kenneth Dickson, 3, Lombard Street, E.C.3.

SOCIETIES AND LECTURES

Saturday

SOUTH EAST METROPOLITAN REGIONAL TUBERCULOSIS SOCIETY.—At Preston Hall, Aylesford, Kent, Jan. 22, 10.30 a.m. General meeting.

Monday

UNIVERSITY COLLEGE LONDON.—At Physiology Theatre, Gower Street, London, W.C., Jan. 24, 4.45 p.m. "The Ultracentrifuge and Electrophoresis Apparatus in Protein Research," by Dr P. Johnson, Ph.D.

Tuesday

EUGENICS SOCIETY.—At Royal Society, Burlington House, Piccadilly London, W., Jan. 25, 5.30 p.m. "The Work of the Galton Laboratory," by Professor L. S. Penrose.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Jan. 25, 5 p.m. "Histopathology of the Skin," by Dr. I. Muende.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Jan. 25, 11 a.m. "Infections of Urogenital Tract Due to *Candida Albicans*," by Dr. W. N. Mascall.

UNIVERSITY COLLEGE LONDON.—At Physiology Theatre, Gower Street, London, W.C., Jan. 25, 5.15 p.m. "Respiration," by Dr. E. A. Underwood.

Wednesday

BRITISH ASSOCIATION OF PHYSICAL MEDICINE.—At St. Thomas's Hospital, London, S.E., Jan. 26, 5.30 p.m. "How to Examine a Joint." Demonstration by Dr. J. H. Cyriax.

INSTITUTE OF PSYCHIATRY (UNIVERSITY OF LONDON).—At Maudsley Hospital, Denmark Hill, London, S.E., Jan. 26, 2.45 p.m. "The *Thalamus*," by Professor W. E. Le Gros Clark.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Jan. 26, 11 a.m. "Ocular Manifestations of Venereal Disease," by Dr. A. H. Harkness.

LONDON UNIVERSITY.—At School of Pharmacy, 17, Bloomsbury Square, London, W.C., Jan. 26, 5.30 p.m. "The Use of Radio-active Tracers in Biological Research," by Professor F. A. Paneth, F.R.S.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW, 242, St Vincent Street, Glasgow.—Jan. 26, 5 p.m. "Some Aspects of the Surgery of the Spleen," by Professor J. R. Learmonth.

Thursday

DEWSBURY: STAINCLIFFE GENERAL HOSPITAL.—Jan. 27, 9 p.m. "Clinical Problems in the Diagnosis and Treatment of Thyroid Disease" by Professor R. E. Tunbridge.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Jan. 27, 11 a.m. "Chancroid," by Dr. W. N. Mascall.

LONDON UNIVERSITY.—At School of Pharmacy, 17, Bloomsbury Square, London, W.C., Jan. 27, 5.30 p.m. "The Use of Radio-active Tracers in Biological Research," by Professor F. A. Paneth, F.R.S.

MEDICO-LEGAL SOCIETY.—At 26, Portland Place, London, W., Jan. 27, 8.15 p.m. "The Coroner, the Doctor, and the Public," by Robert Forbes.

ROYAL SANITARY INSTITUTE.—At Town Hall, Wolverhampton, Jan. 27, 10.15 a.m. Discussions. "The Present Housing Problem—Is New Legislation Necessary?" to be opened by Mr. F. B. Hartley. "The Scope of Care Work and Who Should Undertake It," to be opened by Dr. G. Ramage.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—At Large Lecture Theatre, Jan. 27, 4.30 p.m. Lecture demonstration. "Neurology."

UNIVERSITY COLLEGE LONDON.—At Anatomy Theatre, Gower Street, London, W.C., Jan. 27, 1.15 p.m. "Some Modern Views on Evolution," by Professor J. B. S. Haldane.

Friday

KENT AND CANTERBURY HOSPITAL, Canterbury.—Jan. 28, 5 p.m. to 7 p.m. Clinical meeting.

LONDON CHEST HOSPITAL, Victoria Park, E.—Jan. 28, 5 p.m. "Extrathoracic Pain in Cardiovascular Disease," by Dr. J. L. Lovibond.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES, 11, Chandos Street, London, W.—Jan. 28, 8 p.m. General meeting. "Modern Interpretations of Serum Tests," by Dr. I. N. Orpwood Price.

NORTH OF ENGLAND SOCIETY OF ANAESTHETISTS.—At Royal Victoria Infirmary, Newcastle-upon-Tyne, Jan. 28, 7.30 p.m. Third meeting. "Dental Anaesthesia," by Dr. Bernard Johnson.

ROYAL MEDICAL SOCIETY, 7, Melbourne Place, Edinburgh.—Jan. 28, 8 p.m. Debate.

UNIVERSITY COLLEGE LONDON: DEPARTMENT OF PHARMACOLOGY.—At Physiology Theatre, Gower Street, London, W.C., Jan. 28, 5.15 p.m. "The Relationship Between Physico-chemical Properties of Drugs and Their Pharmacological Activities," by Dr. F. Bergel, Ph.D.

Saturday

NORTH OF ENGLAND OTOLARYNGOLOGICAL SOCIETY.—At Eye and Ear Infirmary, Myrtle Street, Liverpool, Jan. 29, 2 p.m. Clinical meeting.

APPOINTMENTS

CASSON, F. R. C., M.B., D.P.M., Clinical Assistant, Department of Psychological Medicine, King's College Hospital, Denmark Hill, London, S E

COWAN, KENNETH, M.D., D.P.H., County Medical Officer and School Medical Officer for Essex.

FOGARTY, T. N., M.B., B.Ch., D.M.R.E., Consultant Radiologist, Lurgan Banbridge, Portadown, Dungannon, and Armagh City Hospitals

FRASER, JOHN, M.B., Ch.B., Medical Superintendent Edinburgh Convalescent Hospitals Group, Scottish South-Eastern Regional Hospital Board

HARVEY, F. C. B., M.R.C.S., L.R.C.P., Full-time Medical Officer of Health for District No. 9 (including Abergavenny Borough and Rural areas), Wels Board of Health.

HILDITCH, J. HAWORTH, M.B., Ch.B., D.P.H., Medical Officer for Wigan.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, London, W.C.—House physicians, M. G. Philpott, M.B., B.S., M.R.C.P., H. J. W. Fisher, M.B., B.S. M.R.C.P., House-surgeon, M. E. Large, M.R.C.S., L.R.C.P., D.R.C.O.G., Medical Registrar and Pathologist, S. D. V. Weller, M.D., M.R.C.P. Registrar to the Department of Psychological Medicine, R. Meyer, M.B., B.Ch., M.R.C.P.

HURFORD, J. V., M.D., M.R.C.P., D.P.H., Physician-Superintendent, King George V Sanatorium, Godalming, Surrey.

LONGBOTTOM, DONALD, M.B., Ch.B., D.P.H., Divisional Medical Officer and Medical Officer of Health to the Altrincham Division Cheshire County Council

OWEN, EVELYN D., M.B., B.S., D.P.H., Full-time Medical Officer for Cwmbran and Caerleon Urban Districts (Area No. 8), Monmouthshire

SILVERTON, M. I., M.R.C.S., L.R.C.P., Medical Officer of Health, Battl Rural District, Sussex

SOUTH-WESTERN REGIONAL HOSPITAL BOARD.—The following appointments are announced: J. A. Pitt Evans, M.B., B.S., Pathologist, Cheltenham General Hospital; N. R. W. Simpson, M.B., B.S., Director of Physiotherapy, North Gloucestershire Group of Hospitals

TATTERSALL, P. E. R., M.D., M.R.C.P., Physician, Tyrone County Hospital, Omagh, under Northern Ireland Health Service.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Lee.—On Jan 7, 1949, at Liverpool Maternity Hospital, to Hazel (née Green) wife of Dr. David Lee, 1, Storr'sdale Road, Liverpool, a son

Mansour.—On Jan 4, 1949, at Liverpool Maternity Hospital, to Enid Elisee (née Huston), wife of Dr. Joseph Mansour, a son

O'Hagan.—On Dec 23, 1948, to Dorothy (née Pledge, M.B., B.S.), wife of Stanley A. O'Hagan, M.B., B.S., D.P.H., of Winterringham, Scunthorpe a son—Michael Stanley

Ritchie.—On Jan 13, 1949, at Edinburgh, to Professor Anthony and Dr. Elizabeth Ritchie, University of St. Andrews, a son

Rosser.—On Dec 25, 1948, at the Birmingham Maternity Hospital, to Peggy (née Dash, M.B., B.S.), wife of Binley M. Rosser, a son

DEATHS

Bainbridge.—On Jan 8, 1949, suddenly, Dr. Matthew McLintock Bainbridge of 316, Monument Road, Birmingham. Dearly loved husband of Eva and second son of the late Reverend Philip and Mrs. Bainbridge, of Makerstoun Kelso.

Barker.—On Jan 11, 1949, at 3, Randolph Place, Edinburgh, Duncan McFarlan Barker, M.B., Ch.B.

Blake.—On Jan 10, 1949, at 6, Regent Road, Great Yarmouth, Valentin Henry Blake, M.B., B.S.

Denmark.—On Jan 10, 1949, Alexander George Denmark, M.D., of Burleigh Bishopsteignton, Devon

Foggie.—On Jan 13, 1949, at Dundee Royal Infirmary, William Edward Foggie, D.S.O., M.D., F.R.C.P.Ed

Graham.—On Jan 2, 1949, Thomas Graham, M.C., M.B., Ch.B., of 46, Cranston Avenue, Bexhill, aged 72.

Grant.—On Jan 11, 1949, John Wemyss Grant, M.B., C.M., D.P.H., Lieutenant Colonel, I.M.S., retired of 29, Carlton Avenue, Broadstairs, Kent, aged 79

Hewitt.—On Dec 28, 1948, at Canford Lane, Bristol, John Hewitt, L.R.C.P.&S.I. and L.M., of Clevedon Road, Weston-super-Mare, aged 73

Hodgson.—On Jan 2, 1949, at 162, Northway, Maghull, Liverpool, Albert Ernest Hodgson, M.D., D.P.H., aged 68.

Holthouse.—On Jan 2, 1949, Edwin Hermus Holthouse, F.R.C.S., of 6, Gilbert Road, Ramsgate, formerly of 1, Park Crescent, London W., aged 93

Hutchinson.—On Jan 11, 1949, at Bournemouth, Leslie Thomas Ross Hutchinson, M.D., D.P.H., Lieutenant-Colonel, I.M.S., retired

Leach.—On Jan. 9, 1949, at Royal Northern Infirmary, Inverness, William John Leach, M.B., Ch.B., of Eileanodan, Beaulieu, Inverness-shire

Lees.—On Jan 10, 1949, Edwin Leonard Lees, M.D., of Clifton, Bristol, aged 85

MacLaren.—On Jan 6, 1949, at 10, Seardsdale Villas, London, W., James Alexander MacLaren, M.B., C.M.Ed., aged 89.

Messer.—On Jan 1, 1949, Andrew William Messer, M.B., C.M.Ed., J.P., of Lemington-on-Tyne, Northumberland, aged 82.

Nicol.—On Jan 7, 1949, at a Bournemouth nursing home, Alexander Campbell Nicol, M.R.C.S., L.R.C.P., formerly of Springfield Crescent, Parkstone, Dorset, aged 76

Rees.—On Nov 21, 1948, Thomas Rogers Rees, M.R.C.S., L.R.C.P., of Cardiff, aged 56

Russell-Cargill.—On Jan 7, 1949, at 162, Ashley Gardens, London, S.W., James Alexander Russell-Cargill, M.B., Ch.B.Ed.

Rust.—On Dec 10, 1948, at Graham Road, Malvern, Worcs, James Rust, M.D., aged 79

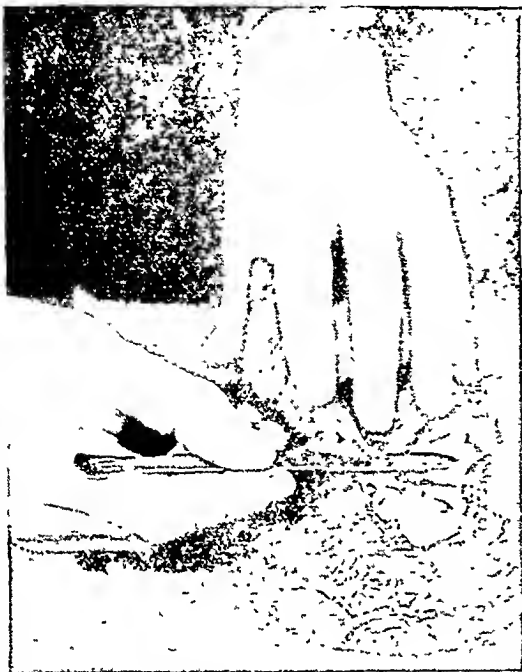
Sadlier.—On Jan 5, 1949, at Masterton, New Zealand, Horace William Sadlier, M.B., B.Ch.

Sands.—On Jan 6, 1949, at his home, Gringley-on-the-Hill, Doncaster, Howard Sands, M.B., B.Ch., late of Chapeltown, Sheffield, aged 83

Watt.—On Jan 2, 1949, at Perth Royal Infirmary, John Watt, L.R.C.P.&S.Ed., L.D.S. of St. Margarets, Muthill, Perthshire, eldest son of the late J. W. J. Watt, Glasgow

Wild.—On Jan 6, 1949, at New End Hospital, London N.W., Granville Burnett Wild, M.B., Ch.B., Lieutenant-Colonel, R.A.M.C., aged 57

HANDS AND THE MAN . . . NO. 5



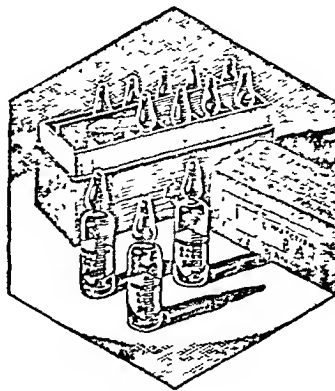
Mr., Thoracic Surgeon

PNEUMONECTOMY. In these skilful hands is the excised lung under post-operative scrutiny with the carcinoma clearly exposed. A thoracic operation demanding from the surgeon exceptional courage and dexterity, during which he can rely upon ligatures and sutures only of the highest integrity. Ethicon sutures are the continual and specialised concern of the largest organisation of its kind in the world. Every Ethicon suture sold in the United Kingdom is of British manufacture.

All orders for Ethicon and Ethicon Mercutures should be sent to your usual wholesaler



MEYERSONS (SUTURES) LTD
ST. JOHN'S HILL - EDINBURGH - SCOTLAND



An effective new antidote for ARSENIC, MERCURY & GOLD POISONING

Originally introduced during the war for the treatment of Lewisite gas poisoning, B.A.L. has now been applied to the treatment of poisoning by other arsenical compounds as well as mercury and gold salts.

Injection of B.A.L. consists of a sterile 5 per cent. solution of 2, 3-Dimercaptopropanol in arachis oil containing 10% Benzyl Benzoate. Supplied in boxes of 12 x 2 c.cm. ampoules.

B.A.L.

(BRITISH ANTI-LEWISITE)



Further information gladly sent on request to
THE MEDICAL DEPARTMENT,
BOOTS PURE DRUG CO. LTD., NOTTINGHAM, ENGLAND
S-1

For early control of urinary infections

'Mandamine' is a valuable urinary antiseptic, which combines the well-established antibacterial actions of mandelic acid and methenamine in one chemical compound. The tablets are effective against a wide range of organisms encountered in urinary infections and are indicated in: cystitis, prostatitis, pyelonephritis, and infections accompanying renal calculi and neurogenic bladder. Its safety and facility of therapy make 'Mandamine' especially suitable for administration during pregnancy, to children, and in stubborn cases where treatment is necessarily prolonged.



Each enteric-coated tablet contains 0.25 g. (3½ gr.) methenamine mandelate

Samples and literature on request

MENLEY & JAMES, LTD.
123 Coldharbour Lane, London, S.E.5

5 ADVANTAGES OF 'MANDAMINE'

1. Virtual freedom from side-effects
2. Wide range of bactericidal effectiveness
3. No supplementary acidification is required
4. No dietary control or restriction of fluid intake is necessary
5. Early control of the infection is the characteristic response

'Mandamine' is the registered trade mark of Nepera Chemical Co. Inc., New York, to designate its brand of methenamine mandelate

M 1

'PALUDRINE'

TRADE MARK

The New Antimalarial

Extensive clinical investigations have established that 'Paludrine' is a highly efficient antimalarial with important advantages over mepacrine and quinine.

- 'Paludrine' controls the clinical symptoms of all forms of malaria and terminates the attack.
- 'Paludrine' is a true causal prophylactic in malignant tertian malaria and a partial causal prophylactic in benign tertian malaria.
- It produces radical cures in malignant tertian malaria and controls relapses in benign tertian malaria indefinitely on a twice-weekly dosage.
- 'Paludrine' is a colourless drug and in normal dosage does not produce unpleasant symptoms of any kind.

Tablets of 0.1 gramme (containers of 30, 100 and 1,000). Tablets of 0.025 gramme (containers of 20 and 500). Solution: Ampoules of 2 c.c. containing 0.1 gramme as 5% solution. Boxes of 5 and 25.

Literature on request.

IMPERIAL CHEMICAL [PHARMACEUTICALS] LTD.

(A subsidiary company of Imperial Chemical Industries Ltd.)

MANCHESTER



Ph.353

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Home-cured Tobacco and Amblyopia

Q.—Is there any evidence to support the suggestion that the smoking of home-cured tobacco may lead to tobacco amblyopia more readily than the smoking of tobacco cured commercially?

A.—Before any attempt is made to guess at the possible results of the use of home-cured tobacco, it may be as well to consider the factors generally accepted as leading to tobacco amblyopia. This is due to a breakdown in tolerance to nicotine and occurs when the intake of toxic substances exceeds the capacity of the liver to deal with them. The problem concerns the functions of the liver, and especially its formation of glycogen, in addition to the local reaction in the eye. Schepens was able to observe a large number of cases in Belgium during the recent war (*Trans. ophthalm. Soc. U.K.*, 1946, 66, 309). He found that tobacco amblyopia, a rarity before the war, had increased about ten times. Several factors must be considered in each case—type of tobacco, alcohol consumption, food deficiency, and mental strain.

Tobacco as sold commercially has a small nicotine content owing to the breakdown of that substance by fermentation during the process of curing. In "green" tobacco the fermentation has not been completed and the percentage of nicotine is high. The stalks and ribs are more toxic than the leaf, and so, if they are not to be removed, they must be well crushed and broken up to allow of better fermentation. It was found in Belgium during the war that a poor quality of tobacco, as judged by the smoker, need not be as toxic as an apparently better tobacco. It was also found that the home-grown leaf was responsible for more cases of amblyopia than the commercial brands. In the past it has been taught that a high consumption of alcohol, especially spirits, predisposes to amblyopia. The pendulum is now swinging in the opposite direction, and many assert that alcohol has little or no influence in making the eyes more susceptible. Food deficiencies, especially in proteins and fats, are definitely in the picture. Many cases of amblyopia were seen by Dr. Wecker in the Siege of Paris in 1870, and the numbers were found to be increased in Germany after the 1914-18 war. With such deficiencies recovery is slower and sometimes minor lesions are to be detected in the fundus. Despite the prominent position of vitamins in the dietary, a reduced intake probably has no influence at all on the occurrence of tobacco amblyopia. Mental strain seems to increase susceptibility to the disease, and this was obviously present during the Siege of Paris, in Germany during the war of 1914-18, and in Belgium in the last war. It may have an effect *per se*, or lead to a greater consumption of tobacco in order "to soothe the nerves" and allay hunger.

Amblyopia is most prevalent between the ages of 55 and 60, but under the adverse conditions listed above cases have been recorded at 30. The lesion is now considered to be primarily in the retina itself, the optic nerve being only secondarily affected at a late stage. Cure of the condition usually confers immunity, and recurrence is rare. To sum up, home-grown tobacco need not be toxic and produce tobacco amblyopia if it is properly fermented and cured before use. The danger, however, is greatly enhanced if there is any dietary deficiency or excessive mental strain.

Threatened Abortion

Q.—(a) Has progesterone any place in the treatment of threatened abortion in the absence of facilities for a pregnanediol excretion test? (b) Please recommend the routine most likely to be successful in preventing abortion when a woman, three months pregnant and with no apparent abnormality, starts to bleed.

A.—(a) There is still some dispute, but the evidence so far available suggests that progesterone should not be given indis-

criminate to all cases of threatened abortion. Only about 40% of cases show evidence of progesterone deficiency as determined by pregnanediol excretion tests, and the administration of progesterone to the others may encourage abortion. Therefore the overall results for any large series of cases are probably better if progesterone is not used at all.

(b) The most important part of treatment is complete rest in bed, and that for at least a further seven days after all bleeding has ceased. This may be supplemented, at any rate in the initial stages, with morphine or such sedatives as the bromides or phenobarbitone. If possible, arrangements should be made for a biological test for pregnancy and for a pregnanediol estimation to be carried out on a first morning specimen of urine, and progesterone therapy should be withheld until the result is available. Synthetic vitamin E, 30 mg. thrice daily, appears to help sometimes and can do no harm. After the symptoms have settled down the patient needs to live a restful life, avoiding coitus and travelling, and she may continue to take vitamin E.

Combined Pertussis Vaccine and Diphtheria Prophylactic

Q.—There seems to be some difference of opinion about the combined injection of pertussis vaccine and A.P.T. Is there any contraindication? The anti-pertussis vaccine is sometimes given at monthly and sometimes at weekly intervals. Which do you advise, and why?

A.—The main objection at present to the combination of a pertussis vaccine with diphtheria prophylactic is that we still cannot tell whether any particular pertussis vaccine will prove an effective immunizing agent or not. If, therefore, a poor pertussis antigen is combined with A.P.T. its failure to protect children against whooping-cough may adversely affect the attitude of parents to diphtheria immunization and they may decide that prophylactic injections in general are of little value. Another objection is that immunization against whooping-cough should be begun as early in life as possible, say at 3 months, since infections may occur early and are most severe in infancy. On the other hand, diphtheria prophylactic is more useful and probably more effective if given towards the end of the first year of life.

The optimum dosage or interval of injection with pertussis vaccines is still not known. There is some evidence that a better antibody response is obtained by injections at three- or four-week intervals than by weekly injections, and the present tendency is to give two or three injections of 10,000 million to 30,000 million organisms at monthly intervals. The combination of pertussis vaccine with diphtheria prophylactic has no inhibitory effect on the antibody response to either antigen; indeed, the antitoxin response to diphtheria prophylactic is usually enhanced when a combined antigen is used.

Intravenous Iron

Q.—What is the present opinion of parenteral iron preparations? What are the methods of use and dosage? I have a woman patient, aged 27, who has a severe iron deficiency anaemia which responds rapidly to iron therapy. Unfortunately, in spite of trial of every oral form of iron, she shows a marked intolerance to this treatment, which causes abdominal pain and diarrhoea whenever it is given. Her haemoglobin level is now about 50%.

A.—Intramuscular injections of iron are not widely used in Britain, as an adequate amount cannot be given without risk of toxic symptoms and the injections tend to be painful. Nissim (*Lancet*, 1947, 2, 49) reported the use of intravenous saccharated iron oxide. The commercial preparation "ferrivenin" is now available for the treatment of hypochromic anaemias which prove refractory to oral therapy. Each 5-ml. ampoule contains 100 mg. of elemental iron as an iron-sucrose preparation, and it is claimed that there is "100% utilization" of such iron as compared with about 14% for ferrous sulphate and 1.5-3.0% for ferri et ammon. cit. taken by mouth. A test dose of 1.5 ml. is injected intravenously on the first day, 3 ml. on the second, and subsequently 5 ml. or 10 ml. either daily or on alternate days until a "satisfactory response" is obtained. Intravenous injections should be carefully performed, and it is important to prevent any of the iron solution escaping into the tissues.

Reactions—for example, malaise, pain in the back, etc.—may occur, but are uncommon. When injections are given slowly (about 2 ml. a minute) venous thrombosis does not often take place and no "washing through" of the needle with glucose saline is necessary. As 25 mg. of iron are calculated to raise the haemoglobin 1% it is reckoned that each ampoule should increase the haemoglobin by about 4%. A large infusion of 5% glucose with 2% ferrivenin has been suggested in order to avoid repeated venopuncture. Further reports of the latter technique are awaited. In the case mentioned, intravenous iron would seem well worthy of trial. In every case of so-called refractory iron deficiency anaemia, however, it is all-important to make sure that the anaemia is not secondary to such conditions as reticulosis, neoplasm, or nephritis, and that there is no evidence of blood loss.

Fat Intolerance

Q.—A man of 56 is very intolerant of fat, and it is thought that recurrent infections may be due to too low a vitamin A intake. All the usual preparations of vitamin A cause digestive disturbances. Could carotene be given instead? Is it unwise, in general, to give vitamin D in concentrated form to elderly people?

A.—There is no evidence that recurrent infections in man are due to a low intake of vitamin A. If it is desired to give this patient supplements of vitamin A, liquid vitamin A conc., B.P., may be administered in daily doses of 1½ minims (0.09 ml.). This is suspended in oil, but surely so small an amount would be tolerated. In any case, it could be administered in food without the patient's knowledge. Carotene can be given instead, if necessary, in the form of tablets containing 4,500 units (daily requirement, 4,000 units). Actually carotene is equivalent to just over half its weight of vitamin A, so that the dose would be two tablets daily. Carotene is absorbed from the gut and converted into vitamin A in the body. There is no objection to old persons taking vitamin D concentrates, provided they do not take more than approximately 800 units daily. Why not give the patient a combined preparation of vitamins A and D? There are preparations available 1 minim (0.06 ml.) of which contains a day's requirements of vitamins A and D.

Ammoniacal Dermatitis in Infants

Q.—What causes ammoniacal urine and the associated dermatitis in babies, and what can be done to prevent it?

A.—There are two main theories about ammoniacal dermatitis in infants. The first is that a urea-splitting ferment in the napkins sets free ammonia. Hence the treatment is to kill the ferment by boiling the napkins after soaking them in perchloride of mercury solution overnight, and to apply soothing powders or calamine lotion to the inflamed skin. The other view is that ammonia is set free by the action of soda in the napkins upon combined ammonia salts in the urine. If excessive acid bodies are being passed as a result of fever or too much fat in the diet, then there is more combined ammonia in the urine as the outcome of a renal compensatory mechanism, with a greater chance of ammonia being liberated. Here it is important to reduce fat in the dietary, to give alkalis by mouth, such as citrate 5 to 10 gr. (0.32 to 0.65 g.) three times a day, and to use boric powder freely in the napkin area to mop up free ammonia. If the dermatitis in boy babies goes far enough to produce a meatal ulcer, then boric ointment should be applied. Either theory or both may be correct. Experience in welfare-centre work suggests that adoption of the second view gives better practical results as a working basis.

Insulin Sensitivity

Q.—A woman aged 75 suffers pain on injection of protamine zinc insulin, and subsequently reddened, indurated, tender swellings appear at the sites of injection. Bacterial contamination has been excluded. I am informed that all brands of insulin now come from a common "pool." If this is the case, is there any other form of insulin that can be tried?

A.—The varieties of insulin available differ to some extent, since the processes of extraction from the pancreas and methods of purification are not identical. As one brand of protamine zinc insulin is causing local reactions, the two others should be tried and the one which gives the least reaction persevered with.

The swellings will probably soon disappear, but if they do not the method of desensitization outlined in the answer to the question on sensitivity to insulin (*British Medical Journal* Sept. 20, 1947, p. 475) should be adopted.

Athlete's Foot

Q.—It has been reported to me that there was an increase of athlete's foot last summer and that the persons affected had attended the public swimming-baths. Now it is winter, what is the best way to disinfect the duck-boards, as they appear to be a possible source of infection? What would be the best way to disinfect them in the summer, apart from scrubbing them with soap and water daily?

A.—It is doubtful if duck-boards, etc., are a very serious source of infection, but in winter a thorough treatment with formalin would probably be wise, followed by scrubbing with soap and water. This measure could also be employed occasionally in the summer.

NOTES AND COMMENTS

Leukoplakia and Kraurosis Vulvae.—Mr. STANLEY WAY (Newcastle-upon-Tyne) writes: In "Any Questions?" (Dec. 4, 1948, p. 1005) your writer gave a brief and concise account of kraurosis and leukoplakia of the vulva, and, in giving the incidence of the association of carcinoma of the vulva with leukoplakia, quoted along with the figures of Bonney and Taussig my own findings as published in my recent Hunterian Lecture to the Royal College of Surgeons. In your issue of Jan. 1 (p. 42) Dr. Elizabeth Hunt states that when cancer occurs in association with leukoplakia it is found on the internal surface of the vulva only, and from this she concludes that excision of the vulval skin is not justified. This statement is completely erroneous. I cannot give the exact figures for my last 100 cases, but I can state with certainty that in the last 20 cases of cancer of the vulva which I have treated and in which leukoplakia existed the external surface of the vulva was affected by tumour in every one. In six both the external and internal surfaces were involved with tumour, and only in two was the tumour confined to the mucous surface, but this was extensively affected by leukoplakia. Is Dr. Hunt not aware that both the skin and the mucous surfaces can be affected by this disease? I think it is probable that some cases of leukoplakia of the vulva may never become malignant, but there is absolutely no means of telling which are which, and therefore I feel most strongly that immediate excision of the leukoplakic vulva is the right and proper treatment. Cancer of the vulva is one of the very few examples of malignant disease in which prophylactic treatment can be applied with a fair measure of success. It seems a pity then that your readers should have doubts about this put before them by such an authority as Dr. Hunt. Finally, whilst I would agree with Dr. Hunt that there are lesions of the vulva which are wrongly called leukoplakia, there are far more lesions which are given high-sounding names by dermatologists but which are in fact the disease which less ambitious gynaecologists are content to call leukoplakia.

Rh Factor and Pregnancy.—Dr. S. A. DOXIADIS (Sheffield) writes: In "Any Questions?" (Jan. 1, p. 42) it is stated that in the presence of Rh antibodies in the mother's blood the infant should be transfused "without delay if its cells are found to be sensitized to Coombs's test." May I suggest that unless the writer had in mind replacement transfusion his advice is contrary to the opinion of many experienced workers? To give an ordinary transfusion to an infant before it becomes anaemic is unjustified and potentially dangerous. It is further stated that "there is little or no danger to the first foetus from this cause (presumably haemolytic disease of the newborn) unless in twin pregnancy." As far as I am aware twins are not more likely to be affected by this disease than single foetuses either in the first or subsequent pregnancies. Should there be any evidence for such a likelihood a reference to it would be much appreciated.

Correction.—In the note in "Books Received" (Jan. 15, p. 104) on *Cardiology* by Dr. W. Evans, we should have stated that his book is intended for postgraduate students and medical practitioners as well as medical students.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: ATHLOGY, Westcent, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: Britmedads, Westcent, London. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, EUSTON 2111. TELEGRAMS: Medisecra, Westcent, London. B.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JANUARY 22 1949

THE SECRETARY REPORTS

THE BETTERMENT FACTOR

185% FOR PROFESSIONS

The B.M.A. has recently taken the opinion of an expert economist on the change in the cost of living for professional families from mid-1939 to the end of 1948. The data available have enabled him to make the comparison between 1938 (average) and October, 1948, but he considers that the comparison holds true for the other dates because prices in the middle of 1939 were about 1% higher than in 1938, and a little higher at the end of 1948 than in October, 1948. The increase in the cost of living is the percentage increase in money income needed by a family—in this case an average professional family—to obtain the same satisfaction or to maintain the same standard of living as in a given base period (1939). A family is assumed to make all the substitutions (e.g., cheaper for dearer items) which it can make under the existing market conditions.

In practice a rather different index is obtained—namely, one showing the increasing cost of a fixed budget. The amounts actually bought in the base period are repriced at the ruling prices at a subsequent date, no substitutions are allowed and no account is taken of rationing, controls, and other limitations on consumer choice.

Incompleteness of evidence precludes a precise formulation of a cost-of-living index for other than working class families, the corresponding indexes for middle class families can be estimated only very roughly. An additional difficulty in inferring a middle-class index from a working-class index is that, even if the two types of family paid identical prices for every individual item, the fixed budget used in the comparison is different for the two classes. A reliable figure for the increase in cost for working-class families from 1938 to October, 1948, is 75%. In making the working-class figure applicable to the middle classes two modifications are required.

The index is based on eight groups of commodities budgeted for—food, rent and rates, clothing, fuel and light, household durables, miscellaneous goods, services, drink and tobacco. The first step is to raise the price changes in three groups for upper middle-class families—food, clothing, and miscellaneous goods—to allow for the fact that these families purchase "luxury" items in these groups and that the prices of luxuries have risen more than the average. The price increase from 1938 for household durable goods is probably higher for middle class families. But this is offset by the fact that middle-class families consume more spirits and less beer and more electricity and less gas than working-class families. The price increase is less for spirits than for beer, while the price of electricity is actually lower than in 1938. The distribution of expenditure on these eight groups is apportioned differently for working-class and middle-class families therefore the second step is to allow for this by "weighting." This makes a good deal of difference in the final index figure, since the weights—i.e., the

distribution of expenditure—are very different. In percentages, the costs of the pre-war budget at prices in June, 1947, are given in Table I.

Tables II and III illustrate the indexes of retail prices with those for 1938 (average) taken as 100.

TABLE II—Working class Families Index of Retail Prices

	Weights	Average 1938 = 100			
		Average 1946	Average 1947	June 1947	Oct. 1948
Food	348	129	137	138	148
Rent and rates	88	105	108	110	109
Clothing	97	171	175	175	200
Fuel and light	65	142	147	145	163
Household durables	71	205	219	215	234
Miscellaneous goods	35	140	148	145	158
Services	79	138	144	145	153
Drink and tobacco	217	241	274	285	316
All	1 000	140	160	161	175

TABLE III—Upper Middle class Families Estimated Index of Retail Prices

	Weights	Average 1938 = 100			
		Average 1946	Average 1947	June 1947	Oct. 1948
Food	122	190	213	215	232
Rent and rates	40	105	108	110	109
Clothing	172	204	210	210	240
Fuel and light	6	142	147	145	163
Household durables	67	205	219	215	234
Miscellaneous goods	140	175	185	185	202
Services	317	138	144	145	153
Drink and tobacco	126	241	274	285	316
All	1 000	167	178	179	194

In round figures the increase from 1938 in the cost of the pre-war budget of upper middle-class families was, in 1946, 67%, in 1947 78%, and in 1948 94%. Nevertheless, these figures do not represent the increased cost of living. If there were free choice of goods and services the figures would generally be biased upwards. But choice is limited at present in various ways (e.g., by rationing), though in a few cases it is still possible to substitute cheaper for dearer items—e.g., greater use of electricity, which is no dearer than in 1938, as compared with gas, which has risen considerably in price.

The index given assumes controlled rents and is appropriate only to families still renting houses at pre-war rentals. Families occupying houses bought before the war will have somewhat higher housing costs than pre-war because of an increased repair bill, for families who have rented or bought houses since the war the rental or housing cost can be considerably higher than before the war, but the effect would not be large on the over-all index.

The index is one of *market prices*—i.e., prices inclusive of indirect taxation and after allowing for subsidies. The economist considers that in relating prices to salaries it is better to use an index of *factor prices* (deducting indirect taxes and adding back the subsidies). No official index of factor prices is available and he has assumed that for upper middle-class families it may be 5-10 points lower than the index of market prices given here.

He concludes that a fairly conservative estimate for use in determining professional salaries would put the level of prices at the end of 1948 at about 185% of that at the end of 1939.

TABLE I

	Food	Rent and Rates	Clothing	Fuel and Light	Household Durables	Misc. Goods	Services	Drink and Tobacco	All
Working-class families	34.8	8.5	9.7	6.5	7.1	3.5	7.4	21.7	100
Upper middle-class families	12.2	5.0	17.2	0.6	6.7	14.0	31.7	12.6	100

National Health Service

SPECIAL REPRESENTATIVE MEETING

A Special Representative Meeting will be held in March in accordance with a decision taken by the Council at its meeting on Jan. 12, a report of which appears on another page.

SPECIALISTS' REPRESENTATIVES

The following are the members of the Joint Committee of Consultants and Specialists, which represents these practitioners in discussions with the Government:

Chairman.—Sir Lionel Whitby.

Royal College of Physicians.—Lord Moran, Professor W. G. Barnard, Dr. H. E. A. Boldero.

Royal College of Surgeons.—Lord Webb-Johnson, Mr. E. F. Finch, Mr. R. McNeil Love.

Royal College of Obstetricians and Gynaecologists.—Sir William Gilliatt (deputy chairman), Mr. H. J. Malkin.

Royal College of Physicians of Edinburgh.—Dr. J. D. S. Cameron.

Royal College of Surgeons of Edinburgh.—Sir Henry Wade.

Royal Faculty of Physicians and Surgeons of Glasgow.—Dr. W. R. Snodgrass.

Consultants and Specialists Committee established by the British Medical Association.—Dr. T. Rowland Hill, Mr. C. E. Kindersley, Mr. W. S. Mack, Mr. A. M. A. Moore, Mr. R. L. Newell, Mr. T. Holmes Sellors.

N.H.I. FINAL SETTLEMENT

The Distribution Committee, on which the B.M.A. has representatives, will meet at the end of January to decide the final payments due under the N.H.I. scheme. The settlement will include those payments due for the first four days of July, 1948.

NATIONAL MORBIDITY INQUIRY

PROFESSIONAL SECRECY MAINTAINED

The Hospital In-patient Summary—a form used to provide information for the National Morbidity Inquiry—requires for its completion full details of the patient's clinical condition as well as of his identity (name and National Registration number). The completed form will pass through lay hands, and the profession has objected that confidential information obtained in the course of professional work will be disclosed. The Ministry of Health agrees that professional secrecy must be preserved, and, at the B.M.A.'s representation, has altered the instructions on filling in the form so that only the patient's initials and the numerical part of his National Registration number are required.

AREAS CLOSED BY M.P.C.

SECOND LIST

The Medical Practices Committee has decided that the number of doctors providing general medical services in the following places is adequate (for first list see *Supplement*, Dec. 11, 1948, p. 214):

Fairford district (Gloucester county and city).

Garston district (Hertfordshire).

Hastings

Helmsley district (North Riding of Yorkshire).

Irby, Heswell, Barnston, and Pensby (Cheshire).

Lustleigh, Bovey Tracey, and Moretonhampstead (Devon).

St. Helens and Sea View district (Isle of Wight).

Stanmore district (Middlesex).

Sussex West (districts in West Sussex adjacent to Hindhead, Grayshott, and Haslemere districts in Surrey).

Washington, Ashington, Dial Post, Sleepy Hollow, and Storrington (West Sussex).

HEARD AT HEADQUARTERS

Hospital Appeals

When Mr. Bevan announced that hospitals must no longer appeal for money by means of flag days, advertisements, and so on he emphasized "that boards or committees should not participate directly or indirectly in appeals or in collections for their hospitals." Mr. John Dodd, Honorary Secretary of the British Hospitals Contributory Schemes Association (1948), protests that this interdict must not apply to the members of these boards or committees taking part in the existing contributory schemes. There are 35 schemes providing benefits to their members and dependants supplementary to those obtained free under the National Health Service, and some in addition collect charitable contributions for medical research and medical charities. Government spokesmen have agreed that there is still an important place for such work. We can see no reason why members of hospital boards should not continue to devote some of their time to such an entirely worthy purpose as charity for the sick.

Display Cards

One of the difficulties that the Whitehall administrators have to face is that most men do not like being administered. Apparently many insured persons are failing to quote their National Insurance number when claiming National Insurance benefits. This causes delay in payment of the benefit and additional administrative work. The Ministry of National Insurance has therefore prepared a card for exhibition in suitable places reminding people to quote their number when claiming. The Ministry would like the card to be displayed in doctors' waiting-rooms, among other places, and they are sending them round to executive councils with the request that they should be distributed to doctors. On being consulted by the Ministry about this, the B.M.A. told them that doctors must decide individually whether they want to show the cards or not; the B.M.A. sees no objection to their doing so.

Sorry to Trouble You

A doctor sends us the following letter which he received from a patient:

Dear Dr. X.,

Many thanks for sending permit to buy vacuum flask. I should be grateful if you will kindly send me permits as below:

(1) Surgical shoes.

(2) Bi-focus glasses (my reading-glasses were stolen from Rest Room).

(3) Artificial teeth.

When not too busy, perhaps you would call in, if further explanation is necessary? So sorry to trouble you. With many thanks in anticipation,

Yours sincerely,

A. B. C.

P.S.—Since leaving off cow's milk, the indigestion is very much reduced. Nestle's condensed milk suits fine. But the allocation is insufficient. My grocer says, "Ask your Dr. for a permit, and the Food Office will supply."

I should like 6 tins per month. So please:

(4) Permit for Nestle's Cond. Milk.

Nutrition Survey

The documents considered and the reports prepared by the special B.M.A. committee on nutrition already make a considerable library. A subcommittee was set up to examine data on family consumption of food, but it felt that the word "family" was too restricted and therefore decided to investigate all the available information about food consumption during and since the war. Yet at the end of its heavy labours this small committee confesses its concern at the lack of recent data, and one of its recommendations will be that machinery should be provided for ascertaining at regular intervals the consumption of food by representative groups. The result of its investigation is very much what might have been concluded from individual experience—that the supply of calories has been maintained and of most nutrients increased, but there has been deterioration in variety and palatability. This is supported by a mass of authoritative information.

British Medical Association

PROCEEDINGS OF COUNCIL

Wednesday, Jan. 12, 1949

A meeting of the Council was held at B.M.A. House, London, on Jan. 12, with Dr. H. Guy Dain in the Chair.

The death was reported of Dr. Lewis Lilley, who was a member of Council for 12 years and for a much longer time a member of the Insurance Acts Committee. The Chairman, in a brief tribute, spoke of Dr. Lilley's quiet but effective service and his versatility. The members stood for a few moments in silence.

The Council congratulated the 25 members of the Association whose names were in the New Year Honours List.

It was agreed that the business proceedings of the Annual General Meeting at Harrogate should take place, following the Representatives' Dinner, on Monday evening, June 27, and that the Sections should start their work on the Tuesday morning, though the Annual Representative Meeting could continue on that morning if necessary.

It was intimated that Mr. Zachary Cope, having been appointed chairman of the Ministry of Health committee which is to make a full inquiry into the question of auxiliary medical services, had resigned the presidency of the Board of Registration. The Council nominated Mr. A. M. A. Moore, already a member of the Board, for the presidency, and Mr. N. Ross Smith to fill the vacancy in the membership.

Dr. James Fenton and Dr. J. A. Ireland were appointed by the Council to attend the congress of the Royal Sanitary Institute at Brighton in May, and Lord Horder was invited to represent the Association at a conference on cremation to be held at Hastings in June.

REMUNERATION IN THE NATIONAL HEALTH SERVICE

Demands for Special Representative Meeting

A number of resolutions from Divisions were before the Council concerning remuneration in the National Health Service. Eight of them called for a Special Representative Meeting.

The Secretary (Dr. Hill) made the announcement which appeared in last week's *Journal* that as from July 5, 1948, the Mileage Fund, which had stood at £1,300,000 a year, would be raised to £2,000,000 a year, an increase of more than 50%. Of the £700,000 increase £200,000 would come from the Special Inducements Fund, but half a million was new money. The enlarged fund would meet general mileage and mileage for rural practitioners under the maternity scheme. The General Medical Services Committee, jointly with the Joint Committee of Consultants, was proceeding immediately to deal with the betterment factor. The betterment factor could not await the Whitley Council arrangement, for until this factor was determined the remuneration of consultants and specialists could not be fixed.

Dr. H. H. D. Sutherland said that the announcement concerning mileage was satisfactory, but practitioners could not live on mileage grants alone. There was a great deal of discontent throughout the country, and he hoped that a Special Representative Meeting would be summoned. Dr. N. E. Waterfield said that the profession was entirely dissatisfied with the capitation fee, and a number of doctors were facing financial disaster because of its inadequacy and the decline of private practice. Dr. W. Jope said that the discontent arose over the matter of the betterment factor. Dr. S. F. L. Dahne said that there was immense dissatisfaction, and it was important for the Council to have a clear policy.

A resolution from the Harrogate Division urged that immediate steps be taken to ascertain the legal position, if necessary by a test case in court, with regard to the withholding of free drugs from private patients. It was stated to be the legal view that under the Act as it stood at present public prescriptions could be presented only for N.H.S. patients; the remedy was a clause in the Amending Bill. Dr. J. A. Gorsky said that the

legal opinion was based on Sect. 38 of the Act, which placed a duty on local executive councils to provide free medical services for all who had signed on doctors' lists, but Sect. 1 still remained, which declared that it was the duty of the Ministry to provide free medical services for all. In reply to Sir Ernest Graham-Little the Minister had said that he could not allow the provision of free medicines for private cases, because diagnosis, treatment, and provision of drugs must all be regarded as part of one process. That, of course, was an *ipse dixit* of the Minister—not a regulation. Later the Minister seemed to have changed his position, and in reply to Sir W. W. Wakefield he said that the reason he would not allow free medicines for private patients was because the doctor would have no responsibility for observing the general provisions governing prescribing at public expense. Again, in reply to Mr. Thorneycroft, the Minister agreed that a pregnant woman might engage a doctor privately and pay his fees for her confinement without losing the nursing and other benefits available under the N.H.S. If nursing and other benefits could be provided freely to private patients in maternity cases there was surely no justification for denying to private patients the right to free medicine under the Act.

Dr. J. A. Pridham raised the question of the Special Inducements Fund and the effect of its depletion in order to increase the mileage allowance. The Chairman said that the Ministry had stated that there had been very few applications for grants from the Special Inducements Fund. A request had been made to the Minister that the "lid" should be taken off that fund, which should be made available to practitioners to any extent necessary, but the answer was that practitioners were chary, apparently, of making applications.

On the general question of practitioners' incomes, the Secretary stated that even though the overall picture in Lancashire or anywhere else might prove to be mainly satisfactory, individual doctors, particularly in the higher-class or mixed suburban areas, had lost substantially in income. It seemed necessary to move away from the mathematical overall application of "Spens" and get closer to the actual position as it affected groups of practitioners, particularly those with lists of average size and less. The Chairman added that the "Spens" income was intended to be for a reasonable amount of work, but it was now discovered that the practitioner with a moderate list as well as the one with a large list was being overworked.

In reply to a question concerning payment calculations it was stated that certain payments had not yet been made, as, for example, for July 1 to 4—the final payments under National Health Insurance—and the temporary resident payments; these were some of the unknowns, but there were also certain "knowns," the 5% for contingency, and the amount retained in respect of the practitioner's contribution to superannuation and the amount existing in respect of the Government's contribution. When this was taken into account it was conservatively estimated that the quarterly cheque, multiplied by four, with 20% added, represented the annual income. In the case of rural practitioners these figures required to be modified by the new mileage arrangement.

Special "Panel" Conference and Special Representative Meeting

Following this general discussion the Council agreed to suggest to the General Medical Services Committee that when it had completed its survey of the information available it should consider the desirability of calling before the end of February a Special Conference of Local Medical Committees to express the general practitioner view on remuneration. The Committee would consider this request at its meeting on Jan. 19. Dr. Gregg pointed out that it was necessary for the material for this Conference to be well considered; it must not be a flash in the

pan—a yell of protest with no weight or mass of evidence behind it. The Council also decided, following the expressions of opinion already made, to summon a Special Representative Meeting in March, before which the conclusions of the Special Conference would be placed.

Mr. Lawrence Abel mentioned the position of consultants, many of whom, he said, were suffering extreme degrees of hardship, having sustained not a 25 or 50% but in some cases a 90% diminution of income. The Chairman said that the Council very fully appreciated the hardships of consultants.

Lord Horder raised the question of the demise of the Negotiating Committee, and asked whether it was a case of homicide or *felo de se*. The Chairman said he had sent out a letter to the members of the Committee, and had had no suggestion from any member for its continuance. With the setting up of the General Medical Services Committee and the Joint Committee for Consultants and Specialists it seemed advisable now to revert to the ordinary machinery. Lord Horder said that he agreed, but it was a constitutional point, and the Council which had originally set up the Negotiating Committee and had invited other bodies to participate should be consulted on its dissolution. The Council formally approved the action taken by the Chairman in bringing the Negotiating Committee to an end.

The Council set up a committee to draw up a full list of amendments to the Act required by the profession in the light of experience. The subcommittee consisted of the Chairmen of Council, of the Representative Body, of the Conference of Local Medical Committees, of the General Medical Services Committee, and of the Consultants and Specialists Committee, with Mr. Lawrence Abel, Dr. Frank Gray, Dr. J. A. Gorsky, Dr. A. Staveley Gough, and Dr. N. E. Waterfield.

PROPOSED REORGANIZATION OF CENTRAL COUNCIL

Dr. J. A. Pridham, chairman of the Organization Committee, introduced certain proposals for the reform of the method of election to the Central Council of the Association. He said that it was a very difficult task to rearrange the method of election of an elected body. For a considerable time it had been evident to some of them that there was a weakness in the link between the Council and the periphery. The Winchester Division, which had taken an immense amount of trouble over this subject, had issued a memorandum which had gone out to the Divisions. The Organization Committee found itself in general agreement with the aims of that Division though it might differ on details. Resolutions had also been received on the subject from the North of England Branch. It was axiomatic that members of Council should be well known to the rank and file of the Association, and that the rank and file should have a good voice in choosing them. As matters stood, however, out of a possible Council membership of 66, only one-third were directly elected by members in the Divisions and Branches at home. The chief point in the Committee's proposals was that this number—22—should be increased to 42, but without any significant enlargement of the total membership. This would be effected chiefly by the elimination of certain of the *ex-officio* members, who now numbered 12, and by the abandonment of the method of electing twelve members of Council by grouped representatives at the Annual Representative Meeting. It was considered by the Committee that the eight members of Council elected by the Representative Body as a whole offered a good opportunity for "elder statesmen" to have a place on the Council and also for those who had demonstrated their capacity at Representative Meetings to gain a place. But the election of twelve by grouped representatives had tended rather to become a means of temporary escape from disappearance from the Council on the part of those who had completed their six-year tenure of office as members directly elected by the Divisions and Branches.

The new Council, if the Committee's proposals were accepted, would consist of 8 *ex-officio* members, 42 directly elected by home Branches, 8 directly elected by the Representative Body as a whole, 3 Service members, 2 members representing the Public Health Service, 1 woman member, and up to 7 members from overseas. The distribution of seats of the 42 directly elected members would be 31 for England, 3 for Wales, 6 for Scotland, and 2 for Northern Ireland, which retained, but did not increase, the "weighting" in favour of the three latter

countries. Dr. Pridham concluded by saying that this would be a gesture to show that the Council was fully alive to its duties and responsibilities by making drastic and even self-sacrificing alterations in its constitution.

Dr. O. C. Carter considered that the Winchester memorandum was ill-informed when it stated that the Council was out of touch with the rank and file of the profession. Had it been so they would have heard of it, and they had not heard of it. The increased membership of the Association was not an argument for changing the method of election to the Council; it was not as if a new geographical area had been brought in. He thought that there were many arguments for retaining the election of twelve members by grouped representatives.

Dr. Waterfield said that electoral areas were much too large, and if there were more directly elected members it would be possible to have smaller areas. He himself spoke as representative of the Southern and Surrey Branches, but it was rather a hardship to Hampshire that it should continue to be represented by a Surrey member.

Dr. Dahne and Mr. A. S. Gough supported the proposals, the latter saying that, while the election by grouped representatives had much to recommend it, the electors knowing their candidates, the disadvantage of losing this method would be offset by having smaller electoral areas in the country.

Dr. S. Wand considered that the Organizing Committee had failed to recognize that the geography of this country from the medical point of view had changed during the past year. It had become a country of regions, and whether for the purpose of elections those regions should be divided into two or three segments or whether two or three members should be elected by the region as a whole was one which the Committee should discuss. In the Association they would have to think in terms of regions rather than of Branches. He thought also that a Council of over 70 members was too large, that it was unnecessary to retain three Service members, and that power of co-option should be given. Dr. P. J. Gibbons also thought the reorganization should be regional, but Dr. J. G. Thwaites held that there was no valid reason why, because hospital organization was regional, the Association, which had completely different functions, should be organized on a regional basis. Dr. A. Beauchamp thought the Council should see the whole picture of the new constituencies before arriving at a decision.

Dr. F. Gray said that the advantage of election by grouped representatives was that people were elected who were personally known to those electing them; they were likely to be people attending frequently at Headquarters and whose work for the Association was known and appreciated. With the disappearance of that mode of election a valuable element would be removed from the Council. The weak link in the Association was not between the Council and the periphery but between the members of the local executive or those who came regularly to Association meetings on the one hand and the rest of the profession on the other, and that would not be strengthened by these proposals.

Dr. R. G. Gordon held that before these proposals were discussed in detail it should be considered whether a new distribution of Branches was desirable. As things stood, the cart was being put before the horse. Dr. J. C. Arthur considered that full information should be given about the distribution of electoral areas and the possibility of fitting Branches into hospital regions before reaching a decision.

The Chairman suggested that in view of the discussion the Organization Committee should give the Council an opportunity of seeing a map of the constituencies in their relation to regions.

Dr. Pridham said that the Committee had had a map before it and had some ideas on redistribution but had not wished at this stage to put them before the Council. He undertook to bring the matter forward again at a later meeting of Council with this additional information.

Public Health Salaries

On the recommendation of the Public Health Committee, presented by Dr. R. H. H. Jolly, the Council resolved to inform the Minister of the serious unrest and dissatisfaction among members of the public health service occasioned by the continued delay in opening negotiations on the new scales and

conditions of service, and, further, that if negotiations through approved Whitley machinery were not begun by the end of February advertisements from local authorities would not be accepted by the *British Medical Journal* unless the salaries offered were in conformity with the Association's own proposals for the new scales. The recommendation was passed by the Council unanimously. It was pointed out that the Association's proposals for the new scales and conditions were submitted to the Ministry as long ago as July, 1948, and in spite of repeated efforts it had not yet been possible to open negotiations.

General Medical Services Committee

Dr. Wand, presenting the report of the General Medical Services Committee, covered again some of the ground of the earlier discussion in the Council on remuneration. He said that the Committee was exploring all possible methods of improving the position of general practitioners who had suffered financial hardship as a result of the introduction of the National Health Service. It was collecting information from four county areas and two county boroughs which would enable it to form a reasonably reliable estimate of the extent to which the Spens recommendations were being implemented. A pilot inquiry was also being made into the extent to which the volume of work had increased since the introduction of the Service. One point which was being taken up with the Ministry was the question of the number of general practitioners in the Service in excess of 17,900, the figure on which the Central Practitioners Fund was based. The Ministry had been asked to agree the correct figure as soon as possible with a view to the increase of the fund by the appropriate proportion. He hoped it might be left to his committee to deal with this and other points as they arose.

Dr. G. MacFeat said that the Highland and Islands Committee and the Rural Practitioners Committee in Scotland had discovered that practitioners did not like to apply for Special Inducements Fund payments because they regarded it as the acceptance of charity. The practitioners concerned had been asked to state their working expenses and an endeavour was made to build up a case from these. Dr. J. A. Ireland said that one of the reasons why claims on the fund were not made was because practitioners were not yet in a position to know exactly how much they were down on their practices.

Consultants and Specialists

Mr. R. L. Newell presented the report of the Consultants and Specialists Committee. The terms of reference of the Committee had given rise to some doubts, and the Committee proposed and the Council agreed to amend them so that they would read that the Committee

"shall be an autonomous body with full powers to determine policy and action on consulting and specialist and hospital matters through the administrative machinery of the Association. The decisions of the Committee within that sphere shall not be subject to approval of the Council or the Representative Body."

Mr. Newell reported that after much discussion a joint committee had been formed with the Royal Colleges and Royal Scottish Corporations, thus providing an appropriate and effective machinery for presenting the views of consultants and specialists through one channel to the Ministry. Sir Lionel Whitby, President of the Association, had accepted the chairmanship of the joint committee.

Dr. Wand drew attention to the financial position of junior hospital staff. The method of appointment of new house-men at the moment was causing anxiety because men studying for a higher degree found that the jobs which would be suitable for them with that end in view had already been taken by men holding that degree, of whom there were at present a large number available. He hoped that a subcommittee would be set up to deal with this problem and would include young men who could give first-hand information. Mr. Newell said that his committee was aware of these facts and had drawn the attention of the Ministry to the financial position of these junior officers, many of whom were over 30, married, and with a family. The Committee was deeply concerned in all aspects of the problem.

Private Practice

Dr. Wand, on behalf of the chairman of the Committee, Dr. I. D. Grant, who is not a member of the Council, also presented the report of the Private Practice Committee. Some of the

subjects included in this report were recorded in the account of the Committee proceedings in the *Supplement* of Jan. 8 (p. 13).

Women Medical Officers in the Armed Forces

Sir Percy Tomlinson, chairman of the Armed Forces Committee, asked the Council to rescind a resolution which it passed in June, 1947, in support of the Medical Women's Federation in its representations to the Government on the employment of women doctors in the armed Forces. He recapitulated the points he had made at the previous meeting of the Council, to which a reply had now been made by the Executive Committee of the Federation. He considered that the equality for which women doctors asked was not really equality but privilege. Physically a woman could not perform a number of jobs which fell to a man in the Army; she could not be in the front line: as a doctor she was the equal of man, but on the military side she was not equal. The Council had passed its resolution in 1947 without being aware of what was to be said from the military point of view. In the Navy no women were sent to any fighting ship, and on inquiring into the position in the U.S. Army and Air Force he had been informed that the existing regulations made no provision for commissioning female physicians and surgeons into the medical corps.

Dr. Janet Aitken said that women doctors had never claimed that they should or could do in the armed Forces exactly the same things as men. All they had said was that if they were called up as doctors they should be called up in the military forces. They did not seek privilege; they sought only the same opportunity as men to do their duty to their country. It was said that because women doctors could not conveniently go into the front line they must not be commissioned in the R.A.M.C. This was to forget that large numbers of men doctors in the R.A.M.C., as in other branches of the Army, never went into the front line, nor even left this country, but no one thought of saying that they should not be in the R.A.M.C. During the war the Navy had women doctors in its service under exactly the same terms as men, and this was true of the American Army and Air Force, whatever might be the position in peacetime.

Surgeon Rear-Admiral W. H. Edgar, R.N., said that it seemed likely that in the near future women would be entered in a women's corps and seconded for service in the R.A.M.C. Air Commodore J. Kyle described the position in the R.A.F. Two points in the women's service in the R.A.F. differed from men's: the women were taken into the W.R.A.F., and so far as their terms of service were concerned a permanent commission with pension was not visualized. Dr. W. M. Knox pointed out that in modern warfare not more than 25% of the forces were ever in the front line, so that the main argument of the Armed Forces Committee did not seem to hold water. The Council would make a great mistake if it rescinded this resolution.

The Chairman said that the Government was at the moment considering the establishment of women's units. Should the Council go back on anything it had done in the past when it was likely to be confronted very soon with a new set of circumstances? It would be wise to wait until the nature of the new set-up was known. The Council would never give way on the question of the equality of medical women as such, but there were other problems which arose in connexion with the fighting Services.

It was agreed to pass to the next business, the Council's resolution of June, 1947, still standing.

Medical Ethics

It was agreed on the recommendation of the Central Ethical Committee that a further edition of the *Medical Practitioner's Handbook* should be prepared at an early date, as it seemed essential for the principles and details of medical ethics to be brought to the notice of all newly qualified members of the profession.

The Council also expressed the opinion that while the position in law might be that a practitioner suitably qualified might enter his name on two or more lists under the National Health Service, for example, as a general practitioner and an optician or a pharmacist or both.

"this possibility is deplored on the ground that it is beneath the dignity of the profession so to act and may promote unethical practices."

One member mentioned that a certain practitioner, in addition to being on the medical list and the ophthalmic list, was on the pharmacists' and the opticians' lists, though now on these latter lists the word "limited" was added to his name.

The Committee, in reply to a request, had also recorded its opinion that it was undesirable for an optician to use a doctor's surgery, as it might lead to unethical practices. A request had been received for a ruling on the association of doctors with central clinics established by dispensing opticians without the approval of local ophthalmic medical practitioners.

Finance and Journal

The Treasurer (Mr. A. M. A. Moore) reported that up to the previous day, Jan. 11, subscriptions had been received from a rather larger number than had paid during the first eleven days of 1948. There was no indication of any extensive change in the membership of the Association. The membership now topped 60,000. Regional offices had been established at Oxford, Cambridge, Leeds, Sheffield, and Liverpool, and shortly there would be a regional office in Manchester.

Dr. O. C. Carter, for the Journal Committee, explained certain difficulties in carrying out the suggestion that the *Supplement* should be stitched separately and inserted loosely in the middle of the *Journal* so that it could be taken out and filed. Other suggestions were being considered.

The Chairman congratulated the Journal Committee, the Editor, and the Secretary of the Association on the recent improvement in the appearance of the *Supplement* and in the informational value of its contents.

Dr. G. Ostlere was appointed on probation an assistant editor of the *Journal*.

Special Committees

Lord Horder presented an interim report on behalf of the Committee on Nutrition. He said that the work of the Committee had proved to be rather larger than was expected. Four subcommittees had been formed, and a great deal of information had been collected and authoritative opinions obtained. Four reports would be published, together with an introduction, and it would be for the Council to decide what should be done with the report, and whether some more popular presentation of the conclusions should be made. He said how highly the Committee appreciated the exceptional help given by its secretary, Dr. A. Macrae.

Dr. Mary Esslemont presented a report from the Committee on Nursing. It dealt with the proposals for nursing legislation which had been submitted confidentially by the Ministry of Health. The Committee had made certain observations on these proposals, and the Council agreed that further representations should be made to the Ministry in accordance with these observations, and that steps should be taken to secure appropriate amendments of the proposed Nursing Bill.

Dr. J. G. Thwaites introduced a further report of the Joint Committee (with the Magistrates' Association) on Psychiatry and the Law. The Committee has prepared a memorandum on criminal law and sexual offenders, and the Council agreed that this be approved, published in the *Journal*, and also circulated in appropriate quarters. Several members of Council spoke in praise of the document as containing most constructive and sensible suggestions.

Dr. R. P. Liston reported for the Film Committee. He said that the Committee was anxious to encourage the production of medical films, but it could not commit the Association financially for such a purpose. Certain reputable pharmaceutical houses, however, undertook the production of medical films, which had generally found favour with the profession and had been ethically acceptable, although, of course, the firm concerned obtained a certain advertising value. The Committee was anxious to sponsor the production of a film on the treatment of infections of the fingers and hands, and the opportunity had arisen for the production of such a film under auspices which would ensure that the work was of high standard and formed a valuable contribution to the subject.

The Council agreed to a recommendation that such a film be made.

Scottish and Welsh Committees

Dr. G. MacFeat brought forward a report for the Scottish Committee on Whitley Council machinery for those employed

in the National Health Service. The Committee, for reasons which were set out in the report, favoured the early institution of standing Whitley Council machinery to deal with the terms and conditions both of doctors employed under the National Health Service Acts and those employed by local authorities. He brought forward a recommendation that it should be a condition of the Association's acceptance of such machinery that it covered all doctors in these categories, and that it should contain a provision for a standing Scottish Committee of the medical functional council to which should be referred matters needing special consideration in the light of Scottish experience. This recommendation was agreed to, and, on the Chairman's suggestion that Scotland should not proceed further until a Whitley Council was established for the whole country, Dr. MacFeat agreed to defer consideration of certain further detailed proposals.

A proposal for the appointment of an Assistant Scottish Secretary was referred to the Staffing Committee, the Secretary being asked to make a report to the Committee.

Dr. H. R. Frederick reported that the Welsh Committee was making continued efforts to secure increased representation of the medical profession on hospital management committees. The Committee was also reviewing its own constitution and functions.

Other Business

Dr. Dain reported for the Committee on the Constitutional Position of the Association, which had held two meetings. It was hoped to have a report available for a special meeting of the Council in February so as to enable the report of the Council to be submitted to a Special Representative Meeting in March. The Council favoured the proposal that the Special Representative Meeting should be called for two days, one day to be devoted, as already decided, to terms and conditions under the National Health Service, and the other to the constitutional problem.

The Coroners Acts Committee, following upon representations from the Consulting Pathologists Group Committee, brought forward certain amendments in detail of the recommendations concerning mortuary accommodation and pathological facilities which appeared in the last Annual Report of Council. The Committee and the Council agreed: (1) To amend Clause iv of the recommendation contained in paragraph 118 of the Annual Report of Council, 1947-8, and approved by the A.R.M., 1948, as follows:

(iv) That mortuaries be made available at central points in each coroner's jurisdiction, equipped with refrigeration and a separate viewing room for relatives, the post-mortem room being furnished with good lighting, heating, and an ample supply of running water, and with facilities for the collection of specimens for histological and toxicological examinations; that the assistance of trained mortuary attendants be made available; that adequate transport facilities for bringing cadavers to the central post-mortem establishment from outlying mortuaries be provided; and that exception be not taken to the use of the local hospital mortuaries for the conduct of necropsies provided the pathologist nominated by the coroner is given facilities to use these premises for the purpose.

(2) To substitute the following recommendation for that contained in paragraph 119 of the Annual Report of Council, 1947-8:

That as an interim measure urgent consideration be given to the adoption of practical steps for mobilizing pathologists and enabling them to travel to the various outlying mortuaries, but that whenever practicable the cadaver be brought to the pathologist for examination.

Dr. R. G. Gordon reported that the Committee on the Post-graduate Education of General Practitioners had been fortunate enough to secure the services of Sir Henry Cohen as its Chairman.

The Council resolved to appoint as its delegates to the British Commonwealth Medical Conference at Saskatoon from June 7 to 9 the President of the Association or, failing him, the Immediate Past-President, and the Chairman of Council or, failing him, the Chairman of the Representative Body.

It was agreed to appoint a part-time Public Relations Officer for Scotland.

Routine reports were presented on behalf of the Office, Building, Charities, and certain other committees.

Questions Answered

Superannuation and Pension

Q.—Is a G.P. entitled to superannuation as well as retirement pension at 65 years of age? My son is a full-time student (medical), and I do not see much point in paying for unemployment stamps for him (except for a hypothetical widow's benefit) if he is not so entitled.

A.—For entrants to the National Health Service after July 5, 1948 (as distinct from those who entered on July 5, 1948), the contributions and pensions payable under the Health Service Superannuation Regulations will be reduced to take into account the National Insurance retirement pension of 26s. a week. This is being done in all public service schemes. The reduction in the Health Service pension varies for different classes, but in general it will be in the neighbourhood of £1 14s. a year for each year of contributing service during which the reduced contributions have been paid.

Change of Job

Q.—I cannot afford to continue in practice here. Will you please say when and whether I can claim compensation and refund of superannuation contributions if (a) I enter another branch of medicine, (b) I enter some occupation outside medicine?

A.—Under Regulation 13 of the National Health Service (Medical Practices Compensation) Regulations, 1948, the compensation payable to a practitioner will be paid on his retirement from practice or death, whichever occurs first. For the purpose of this regulation retirement from practice means retirement from practice as a medical practitioner providing general medical services under Part IV of the Act or under Part IV of the National Health Service (Scotland) Act, 1947. A practitioner receiving compensation on retirement from practice in the Service does so without prejudice to his right to engage in other fields of medical work.

In regard to superannuation, a general practitioner's superannuation rights are preserved if he enters another branch of medicine within the National Health Service—for example, if he accepts a hospital appointment. If he leaves the Health Service without having become entitled to any of the benefits of the superannuation scheme his contributions will be refunded with 2½% compound interest.

Schoolboy from Overseas

Q.—I am resident and domiciled in Jersey. How does the N.H.S. affect my son, aged 8, who is at a preparatory school in the United Kingdom? He is on the school doctor's list, but how is the doctor paid? Jersey being outside the U.K., the N.H.S. does not apply, and we pay no contributions.

A.—The benefits of the National Health Service are not limited to those who are contributors under the National Insurance Scheme. Neither are they limited under the Act as it stands at present to the people of England and Wales. The Minister has announced that the facilities of the Service are available to visitors from overseas. Your son is therefore entitled to general-practitioner attendance under the Act, and if his name has been placed on the list of the school doctor that doctor will receive remuneration by way of the ordinary capitation fee.

Leave with Pay

Q.—I assume that the holders of resident B appointments in the N.H.S. are entitled to leave with pay. If a practitioner has a six-months contract, how much leave is he entitled to take, and can it be taken during the end of the six-months period or has he to wait until it is completed?

A.—Present position: Hospital residents are part of the "transferred" staff of hospitals during the interim period. Their terms and conditions of service have been unaltered, and consequently if there was any agreement with regard to holidays that arrangement would still stand. If no agreement exists it would be perfectly reasonable for a resident to ask for, and expect to receive, two weeks' leave in six months. This has

generally been the custom in connexion with resident appointments—e.g., in the old Middlesex County Hospitals residents were allowed to take two weeks at the end of their six-months appointment and often took their two weeks' pay for holiday following the termination of the appointment.

Provision will be made for the holiday leave of residents in future contracts.

Pensions and the Elderly

Q.—I was 68 when I entered the Service on July 5, 1948. Although it seems to say in the regulations that a doctor is entitled to a pension after 10 years' service, the Ministry has told me that, owing to my age, even though I do 10 years' good service, I shall not be entitled to a penny of pension. Why is this? Also, the Ministry of National Insurance has told me that, owing to age and having been a non-contributor before July 5, neither I nor my wife, who is 20 years younger than me, can stop cords and get 26s. a week and 16s. respectively when I retire. Why is this?

A.—"Service," for the purpose of the regulations, means service after attaining 18 years of age and before attaining pensionable age. "Pensionable age" is the age at which contributions cease to be payable and service ceases to count. This is normally 65 years of age, but for practitioners on executive council lists it may be extended by the Minister up to but not beyond the age of 70. A practitioner who enters the Service after the age of 60, therefore, cannot qualify for a pension on retirement on age grounds, though he may qualify for an injury pension in the event of permanent incapacity through accident or injury arising from his duties (for which there is no qualifying period). If no benefits are payable under the scheme, the practitioner's contributions are refunded with 2½% compound interest.

On the second point the Ministry of National Insurance states:

"Your correspondent is not eligible to pay contributions under the main National Insurance scheme, and neither he nor his wife will therefore be able to qualify for its benefits.

"The position of elderly persons in relation to the National Insurance Act, 1946, received very careful consideration when the National Insurance Bill was being framed. It was decided, however, that it would not be possible to bring within the scope of contributory benefits persons who had already reached pensionable age (i.e., 65 for a man and 60 for a woman) and had no insurance qualifications at the start of the new scheme of National Insurance."

"The scheme is based on insurance principles and assumes that, in the normal way, benefits will be provided in return for contributions paid throughout working life until pensionable age is reached. In the case of a man this is a period of 49 years. Although considerable concessions have been made in the case of elderly persons who are liable to pay contributions up to the 65th birthday (60 for a woman) enabling them to qualify for a retirement pension after a minimum qualifying period of 10 years, it would not be possible to go further than this and extend the contributory benefits to persons who were over pensionable age at the start of the scheme."

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-County Borough Councils.—Dartford, Radcliffe (limited to future appointments), Wallsend.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

SECRETARY TO LONDON MEDICAL COMMITTEE

At a recent meeting of the Executive Committee of the Wandsworth Division, Dr. Alexander proposed, and Dr. Walshe seconded, the following resolution: "That this meeting of the Executive Committee of the Wandsworth Division of the B.M.A. heartily congratulates Dr. Frank Gray on his appointment as Secretary to the Local Medical Committee for the County of London; expresses its grateful thanks to him for his invaluable services to the Division over a great number of years; and extends to him its sincerest good wishes for his health, happiness, and success in his new sphere of activity." The resolution was passed with acclamation.

Correspondence

Lack of Support for Negotiators

SIR,—A letter from Dr. G. M. Woddie (*Supplement*, Jan. 8, p. 16) has a sinister significance. He relates that the Nottingham Branch of the B.M.A., worried by the plight of rural practitioners, called a meeting on a Saturday afternoon to discuss what measures could be taken to correct it. Invitations were therefore sent to 120 members of the Branch, giving the purpose of the meeting, and only 15 attended, of whom seven were members of the executive.

One hears similar stories of sparsely attended Divisional meetings throughout the country. There are several explanations. Doctors are grievously overworked, dispirited, suspicious of their leaders, and generally apathetic and indeed despairing. I want to point out what I think may be a very serious outcome of this absenteeism from meetings. A large part of the administration of the general practitioner service will be in the hands of local executive councils and local medical services committees. Both of these bodies have a delicately balanced composition. On both committees half the members are lay and half professional, with a lay chairman. If the professional members are slack in their attendance the lay members certainly will not fail to take advantage of the position, and a situation may come about in which the profession will be largely governed by local authorities, a fate which was feared and which was stoutly resisted at successive meetings of the Representative Body, whose opposition finally defeated the earlier proposals offered by the Coalition Government, which would have placed the local authorities in control of the profession. *Verb. sap.*

The framers of the N.H.S. Act, 1946, consistently sought to diminish the share allotted to the profession in the administration of the Health Services. A recent incident illustrates this tendency. At a meeting of the board of governors of a great London teaching hospital one of the newly added lay (Socialist) members broke into the discussion with the truculent observation, "It is time the medical staff realized that not they, but we, the lay members, are running this hospital now." The senior physician to the hospital, a member of the board, from whom I had this story, blandly countered with, "Perhaps you would prefer to run the hospital without the medical staff."—I am, etc.,

House of Commons

E. GRAHAM-LITTLE.

SIR,—The Honorary Secretary of the Nottingham Branch of the B.M.A. writes a complaint (*Supplement*, Jan. 8, p. 16) about the non-attendance of rural practitioners at a special meeting held in Nottingham on a Saturday afternoon. He appears to require a little instruction on the "facts of life" as they affect the rural practitioner (and others) at present. The simple truth is that the average G.P. has no time to attend meetings on Saturday or any other afternoon. Two long "surgeries" and visits sandwiched between give little time for travelling to Nottingham at this time of the year. I can assure him that most of us would consider attendance at such meetings a luxury or relaxation.

He also says that "to safeguard our interests we must act in an organized fashion." Now where have we heard that one before?—I am, etc.,

ewark, Notts.

J. J. KENNEDY.

Payment per Item of Service

SIR,—It is to be hoped that the survey of sample practices being investigated will yield some information on the question of average payment per item of service under N.H.S., a point I have never yet seen mentioned. I believe that under N.H.I. the figure was about 1s. 6d. when the capitation fee was 9s. 6d. At present N.H.S. rates it is therefore unlikely to be more than 2s. 3d., and probably much less, since more women, elderly patients, and children are now at risk.

When one considers that 10s. 6d. is considered a fair fee for an antenatal examination carried out at the surgery, the average payment for other services is economically ridiculous, and on this basis the capitation fee should be at least trebled. If we cannot obtain payment on an item-of-service basis, like

our dental or New Zealand colleagues, then we should at least receive a capitation fee that gives us a fair average payment.

Another point which must be borne in mind in considering sample practices is the amount of private practice remaining in them. Any loss of income shown by them is likely to increase as time goes on and private practice contracts still further, so that in addition to *actual* loss shown at present some estimate should be made for *increasing* loss.

If it is found that the average payment per item of service under N.H.S. is, say, 2s. 3d., then we are $x-2s. 3d.$ worse off each time we see one of our erstwhile private patients, where x = the fee previously paid. In effect, it may be argued that we are subsidizing our old private patients so that they may maintain their standards of living. This was well exemplified by a remark made to a colleague by a patient: "I am afraid I shall have to join the Health Service after all. I have had so many expenses lately. I have just had to buy a new fur coat."

In spite of what I have just written about capitation fees I still consider that the New Zealand system is fairest and would be most acceptable to doctor and patient alike. The latter is relieved of financial worry, the former is paid on a basis of actual work done, and by raising his fees in certain instances above the Government level he can receive extra payment for special attention and services, or use that means as a deterrent to the over-demanding patient. It is, moreover, a means of raising standards to those of the best private practice instead of lowering them to the worst panel standards, as is bound to happen under the present system, which will also lead to a lowering of quality in future entrants to general practice. What inducements now exist to the prospective entrant to take higher degrees or do a series of postgraduate appointments when he is ranked by the Minister on the same level (16s. a head) with a man with minimum diplomas and no special experience?—I am, etc.,

Maher, Worcs.

G. JAMIESON MEIKLE.

Some Fundamentals

SIR,—In the smother of words poured out before and since July 5 we are inclined to forget the fundamentals for which we should assiduously campaign:

- (a) A bigger capitation fee.
- (b) A country doctor with 2,500 on his list to have income parity with a city doctor with 4,000.
- (c) That compensation be related to a special cost-of-living index based on, say, the price of a car and several articles of clothing and food. (What will the position of the £1 be in 30 years when some are claiming their compensation?)
- (d) Paid locums for illness and holidays.

And the better to implement these, our Association should go ahead without delay and become a firmly knit trade union.—I am, etc.,

Dunannon, Co. Tyrone.

C. MCCLUSKEY.

A Quarter's Pay

SIR,—I have kept a careful record of the daily number of visits and consultations during the last quarter, and I find that the cheque (gross, before the deduction of superannuation) recompenses me by the amount of 3s. 7d. per visit or consultation, leaving nothing for telephone consultations, letters, certificates unaccompanied by visit or consultation, telephone charges for calls incurred on behalf of patients, or postage ditto. This 3s. 7d. rate is applicable also to minor operations performed in my consulting-room and to sewing up heads after accidents. I am interested to find that I have visited more patients than I have seen at my house.—I am, etc.,

Bristol.

H. K. V. SOLTAU.

Contact Between Hospital Bodies

SIR,—Sir Frederick Menzies calls attention (*Supplement*, Dec. 11, 1948, p. 220) to the "staggering" increases in hospital costs since 1939; he estimates the current annual cost of the available 582,000 beds at not less than £200 million, and suggests a survey to secure reductions without which "the enormous cost may have serious repercussions on the medical services other than hospital work." It may be questionable whether a survey would serve the purpose for the following reasons. Up to July 5 last the position, as may be seen from the *Hospitals*

Year Book, was due to the progressive upward trend of all commodity prices and wages. These are not amenable to reduction by a survey confined to hospitals. From July 5 last onwards the State Service has introduced new elements, but it is not yet possible to assess the cost of reshaping the management, administration, supply, and staffing of the hospitals under the new conditions. It is, however, safe to prophesy that the costs for 1948-9 will be well above the highest yet recorded.

The situation is undoubtedly serious and demands that any practicable step to examine all its implications should be taken without delay. Might not one such step be to secure a closer association between those responsible for policy (the Departments of Health) and those responsible for carrying it out (the regional hospital boards, boards of governors, and hospital management committees)? There has been plenty of communication, devolution, and directive downwards. Ought there not to be an adequate corresponding channel upwards through which the various statutory hospital bodies, and others directly connected with hospital affairs, could discuss their problems and submit considered views based on their day-to-day experience? Two-way contact of this kind, particularly if established in the early and formative stage, would enable the many problems (including costs and such economies as could safely be introduced without detriment to the Service) to be brought under continuous review and could not but be beneficial to the development of the Service in every way.—I am, etc.,

J. P. WETENHALL,

Editor of the *Hospitals Year Book*.

London, W.1.

Father Christmas

SIR,—I received the enclosed letter to-day from a patient who has recently come on to my N.H.S. list. He has never consulted me professionally. It is such a beautiful example of the new status of the G.P. in his patient's eyes that I feel its publication might cause some rueful amusement.

"Will you please let me have a note for the chemist to obtain the following:

2 bottles Compound Syrup of Cocillana—for my cold.
75 'Benerva' vitamin B 3 mg (Roche product) for lumbago.
100 'Veganin'.
100 'Aspirin'.
100 'Anodin'.
} for Mrs. A. and emergency.

I enclose stamped addressed envelope Thank you."

—I am, etc.,

Scariew, I.O.W.

PAUL C. CONRAN.

* See also "Heard at Headquarters."—ED., *B.M.J.*

Unnecessary Night Calls

SIR,—It must, I am sure, be the lot of most doctors that they are from time to time called out at night-time absolutely unnecessarily. I was called out of bed at 12.30 a.m. not long ago by a woman's husband, who stated that his wife was "in agony with her throat." I hurried round prepared for an emergency, only to find the woman sitting up in bed and actually smiling. There were no abnormal physical signs whatever, and I did not mince words about this triviality for which they had had the effrontery to bring me round, and for their utter thoughtlessness.

I find that people on the whole are, if anything, ultra-considerate in their anxiety not to disturb a doctor at night. For the recalcitrant few who behave as the people I have described above I consider that there should be some redress for the doctor besides his prerogative in removing them from his list. I suggest that the doctor be paid a special fee by the local executive council, recoverable by them from the patients concerned. In this way these abuses would be considerably reduced, if not entirely eliminated.—I am, etc.,

B. SWEETMAN.

London, S.W.10.

Directives

SIR,—You have appended a footnote to my letter on directives (*Supplement*, Jan. 1, p. 7). I wish to let you see the directive as sent out on Dec. 10. It reads:

"I am requested by Mr. J. P. Mallett, the secretary of the Local Hospital Management Committee, to draw your attention to the fact that patients requiring medical and surgical appliances through the hospital services should be referred with a letter to the consultant

surgeon of the week at the Royal Salop Infirmary, Shrewsbury, and should attend on Wednesdays.

"It has been the practice of some practitioners to issue E.C.10's to patients requiring medical and surgical appliances which are supplied through the hospital service, and I shall be pleased if you will refrain from using these forms in future."

Now, I think you will agree that the last paragraph in particular does not make it clear that articles such as those mentioned in your note can be ordered on E.C.10. In fact, I have received word privately from the Clerk to the Salop Executive Council and from the Senior Administrative Medical Officer, Midland Region, admitting that such things as trusses can be so ordered. The point is, no amending directive has to date been issued although I have asked that this might be done.

We are all paying through the nose for this so-called Health Service. The administrative side of it is clearly costing so much that last week it was rumoured in the Press that in reply to a request from the M.P.U. the Minister replied that he had no more money to increase the capitation fee. We have the right to expect an efficient administrative branch at the price, and members of it making blunders such as this directive and refusing, it seems, to admit their mistake by issuing an amending directive should in my opinion be replaced by a more intelligent bureaucrat.—I am, etc.,

Ludlow, Salop.

VICTOR N. FENTON.

Basic Salary Warning

SIR,—I think a warning should be given to our colleagues who contemplate resigning from the State medical scheme not to do so until their claim for basic salary has been disposed of. The Clerk of the London Executive Council informed me to-day that the fixed annual payment of £300 is not granted to those practitioners who resign. I have therefore worked the scheme for six months under an illusion and at a financial loss.—I am, etc.,

London, S.W.6.

N. J. CALDWELL.

Promising to Resign

SIR,—I am in entire agreement with Dr. R. C. McIntosh (*Supplement*, Jan. 1, p. 8). The doctor has doubtless calculated that in advising the profession to resign there are some who approve the terms of service, some who do not disapprove, and many others who, though disliking them, are not prepared to take definite action. To render his proposal effective it will be necessary that he should appoint an accredited secretary (and why not himself?) to whom all who think as he does should write in the following terms: "I, X.Y.Z., hereby promise to resign from the N.H.S. on July 5, 1949, provided that 8,000 general practitioners do likewise. I enclose cheque for £100." 8,000 resignations is the smallest number which can be counted upon to be effective. The £100 is returnable after July 5, but would be retained for medical charity in any event of "ratting."

I only regret I cannot be one of the 8,000, since, fearing this very state of affairs, I refused to join the Service.—I am, etc.,

Braintree, Essex.

A. M. ROBERTS

Dentists' High Expenses

SIR,—The difference in gross income allowed to medical and dental practitioners appears less "farical" than Dr. Gibson suggests when it is recalled that the Spens Committee found average dental expenses to be 52%, while in the higher income groups overhead expenses are often between 65% and 75% of gross receipts. There is also enormous initial and substantial recurring capital outlay, upon which a dentist is entitled to expect financial return.

All will agree that doctors carry far greater responsibility and have longer hours of duty (not work), but fewer perhaps appreciate the intense nervous strain involved in carrying out, often under water and by indirect vision in a very limited field upon a highly sensitive part of the body, operations which would entail great concentration even if carried out "on the bench." The intensity of this strain is revealed in the high incidence of nervous breakdowns, duodenal ulcers, etc., and by the very high death rate among dentists between the ages of 40 and 50.—I am, etc.,

Bognor Regis.

GORDON JEFFERY.

Prescribing in Rural Practice

SIR.—Under the N.H.S. the provision of medicines for patients living in country districts follows closely the arrangements made thirty years ago under the N.H.I., and little account seems to have been taken of the fact that transport in the country is now very much easier for the patient than it was in those days. To-day if my patient lives more than two miles from a chemist he has to come to my surgery to obtain his medicine. This may entail a journey for him of five miles or more. I would suggest that it be left to the discretion of the rural practitioner to decide in individual cases as to whether it is easier for the patient to obtain the medicines from the chemist than from the doctor. Such an arrangement would have other advantages too. A dispensing doctor can hardly be expected to provide a pharmaceutical service of the same range that a chemist provides. He may wish his patient to have some little-used drug which he himself has not stocked. A tedious delay is involved in the doctor's ordering it from a chemist and the patient's then obtaining it from his doctor. I suggest it could easily be made possible for such delay and inconvenience to be obviated altogether.

I would suggest that dispensing doctors be provided with prescription forms differing in some distinct manner from the present E.C.10. A different colour would be an obvious solution. The dispensing doctor would then, when conditions call for it, prescribe for his patient on this form, and the pricing bureau would know at once that it was issued from a dispensing doctor, and the doctor would be surcharged at the end of the quarter with all the prescriptions he had issued. As things stand at the moment there is a strong temptation for the dispensing doctor to avoid supplying any medicines to his patients that involve the tedious method at present required. No doubt this would involve an increase in administrative work, but surely the Minister would not shirk this. He would undoubtedly wish that, if the Service can be improved by harder work on the part of the doctors, then the doctors should work harder. The same surely should apply to the administrative side.—I am, etc.,

Wolston, Warwickshire

G. CAMPBELL.

Elderly G.P.s

SIR.—May I draw your attention to a manifold injustice which the older general practitioners are to suffer under the new Health Act? Those who were over 55 on July 5, 1948, do not qualify for pension until they have done ten years' service under the new Act, no matter how many years they may have put in in the underpaid service of the N.H.I. In the case of a doctor aged 61 before the new Act, who has completed twenty-nine years' service under the N.H.I. (apart from war service), there is no pension. If allowed to remain in the N.H.S. after the age of 65, he would have to be over 71 before completing ten years' service.

Surely, if the Minister is sincere in wishing all doctors to serve under his scheme, he should take practical steps to ensure the future of those now elderly practitioners who have given the greater part of their lives to the National Service in one form or another? With private practice largely destroyed, incomes reduced, living expenses increasing, what likelihood is there of saving enough to support old age?—I am, etc.,

Brighton

F. E. GORDON WATSON.

Supplementary Ophthalmic Service

SIR.—Your note in the *Supplement* of Jan. 8 (p. 13), entitled "Supplementary Ophthalmic Service," is a bit watered down from the circular letter to ophthalmic surgeons dated December, 1948. The latter with its veiled threats was a very unwise document, and I will not repeat the terms in which I described it in writing to our local representative on the Ophthalmic Committee. If a few men are sending in claims for large daily lists, it should have been a simple matter to warn them, or to place a ceiling on the number of cases to be paid for daily or monthly to any one individual. The rush of eye patients is phenomenal and they must be dealt with by somebody, and it is common knowledge that there are large waiting-lists in every centre. This is not the fault of the eye specialists, and our representative should keep on pointing out to Mr. Bevan that he has made a bad miscalculation instead of letting the idea

get abroad that the wicked eye specialists are making far more money than they are entitled to. What the country needs is more eye specialists, and any move now to lower fees will be a fatal blow at the recruiting.

All this talk about spending an average of half an hour with each patient is only eyewash. It isn't the minutes that will cure the patients if the skill isn't there or the examiner conscientious. I can quite understand an ophthalmic optician taking at least half an hour to do his examination, as he has never had enough training or knowledge to recognize an abnormality quickly, but it is just nonsense to say that every eye specialist must spend at least half an hour with every patient, especially when he can have all the actual clerical work done by somebody else.

Would he be subject to rebuke if he spent an hour making sure of an incipient glaucoma and then only quarter of an hour on each of two middle-aged presbyopes? All over the provinces there are responsible ophthalmic surgeons with busy hospital appointments who are trying to work off large waiting-lists of refraction cases in supplementary eye centres, and if they do see 20 to 25 cases in the days they can allot to this kind of work it is only done by the sweat of their brows and at the expense of what remains of their private practices. Moreover, I very much doubt if they gain much increase on their gross takings. If, as I fear, there is a scheme to lower the fees they would be justified in saying, "Not good enough," as they had to do in the bad old days of the N.O.T.B.; then the waiting-lists would be so lengthy that most of the sensible patients will save up enough for a prompt private consultation and the careless remainder will entrust themselves to opticians.

If this occurs Mr. Bevan's scheme will have failed irretrievably, and recruiting of enough young eye specialists will never materialize.

My advice to every ophthalmic surgeon is to write without delay to his regional representative and say that he will never agree to a reduction of the present fees, not alone because of his own circumstances but equally because of his hopes for the future.—I am, etc.,

Galton, Devon.

CECIL B. F. TRY.

Payment by Patients

SIR.—After six months' experience of the new Health Service we must agree that the major cause of dissent by both patient and doctor is finance. To the layman free treatment is off-hand treatment. I suggest a patient pays a nominal fee, say 1s., to consult his doctor and to prove his *bona fides*.

The trade unionist with his large stipend would be little affected, and there should be little repercussion on the mob vote. Our proctor's seat remains safe. The "vermin" need not approach us with diffidence, as is their present tendency, as pauper patients with no means of showing gratitude. It will deter the "something-for-nothing" brigade, and the doctor feels that his work is rewarded.—I am, etc.,

High Wycombe, Bucks.

G. E. CHURCH.

Basic Salary

SIR.—I would like to endorse the views of Dr. John A. Fraser (*Supplement*, Dec. 18, 1948, p. 232), who doubts the wisdom of the Negotiating Committee in opposing Mr. Bevan's proposal of basic salary for all practitioners joining the Service, which was amended later by him to basic salary for all practitioners who want it.

When the profession was asked to vote for or against basic salary the majority may have voted against basic salary because this question was at that time tied up with another more vital question regarding the ownership of goodwill. But when it became obvious that the B.M.A. could not persuade the Minister to allow practitioners to retain the ownership of their practices the majority of the practitioners must have felt that they had to assume the status of branch managers in a State-owned multiple store, and therefore it no longer mattered whether the remuneration was by salary or by capitation or both so long as it was adequate. This is obvious, without going to a third plebiscite, by the number of practitioners who voted against salary and have since applied for it and actually feel disconcerted owing to the refusal of their executive councils to make the award.

Moreover, for many practitioners who in the past have relied for most of their income on private practice built up after many years of service of a quality seldom to be found in any panel or State practice, and who now face great hardship, the basic salary was the only bright spot in the whole of the N.H.S. scheme. It is a great pity that the B.M.A. went to such lengths with the Minister to blot it out. It makes one wonder if it would not be better for the practitioners if the B.M.A. confined its activities to social and scientific proceedings, and left the representation of their financial interests in the hands of some other body better fitted for the task.—I am, etc.,

Nottingham.

G. CHAND.

POINTS FROM LETTERS

Cut in Dentists' Earnings

Dr. F. W. CHEESE (Stourbridge, Worcs) writes: . . . Mr. Bevan should have known the following facts, and if he did know them he should not have ignored them. Here are the facts: (1) A shortage of dentists has been known for many years. (2) That many dentists were called up for duty with the Services, resulting in the civilian population being left with a very depleted staff of dentists. (3) Most doctors have advised many of their patients to seek dental treatment and in many cases this advice was not acted on because of the expense. (4) For over five years the public have been promised free dental treatment when the new Health Act came into force. (5) Now the accumulated arrears of dental defects have come to harvest. Had the dentists been allowed to carry on without this threat to their earnings the vast arrears of work would very probably have been cleared off within two or three years. The rush of work would be over and dentists' work and incomes decline.

Act Now

Dr. J. McL. LEES (Walsall, Staffs) writes: Why are we bound to "Spend"? Let us demand a capitation fee (with only super-annuation deducted) which we consider adequate. If not granted, let us get out, and stay out, of the Health Service until our demands are met. . . . Professional ethics and our duty to patients have little if anything to do with our dealings with this Minister of Health. Let us give "Strike" Bevan the only argument he understands. Let us do it quickly. Enough of this awaiting reports—the *Journal* correspondence speaks for itself. Let us act now; it may soon be too late.

Employment of Assistants

Dr. W. B. HOWELL (Brenchley, Kent) writes: In his second letter (*Supplement*, Jan. 1, p. 8) Mr. Donald M. O'Connor suggests that I should read his first letter (*Supplement*, Nov. 13, 1948, p. 177) with more attention. I can still find little else in his letter but that he was disgruntled when he discovered that he could not carry an assistant employed by him on July 4 forward into the new Service and charge the expenses up to the Training of Assistants Scheme. If this was not the real point he wished to make in his original letter why introduce his first quarter's figures, as these were only relevant in so far that they indicated that he had been badly hit as the result of his being misled by paragraph 6 of the circular "Remuneration of General Practitioners"? The last sentence of this paragraph, that is, "Further details will be announced later," surely suggests that at the time of publication of the circular—April, 1948—the final details of the Training of Assistants Scheme had still to be decided upon, and that with so many more urgent problems awaiting negotiation these details would not have been settled in time to allow Mr. O'Connor to continue to employ his previous assistant on July 5 at public expense. . . .

* This correspondence is now closed.—ED., *B.M.J.*

B.M.A. LIBRARY

The following books have been added to the Library:

- Abderhalden, R.: Vitamine, Hormone, Fermente. Dritte Auflage. 1946.
- Anderson, H. H., Murayama, F., and Abreu, B. E.: Pharmacology and Experimental Therapeutics. 1947.
- Andia, E. D.: Fantasías del Pensamiento Médico. 1947.
- Anjo, C.: Luta Anti-venérea. 1948.
- Bachman, G. W., and Meriam, L.: The Issue of Compulsory Health Insurance. 1948.
- Ball, F. N.: National Insurance and Industrial Injuries. 1948.
- Basdeo, W. A.: Pharmacology, Therapeutics, and Prescription Writing. Fifth edition. 1947.
- Baxter, J. S.: Aids to Embryology. Fourth edition. 1943.
- Bergler, E.: The Battle of the Conscience. 1948.
- Bibby, C.: Sex education. Second edition. 1948.
- Brams, W. A.: Treatment of Heart Disease. 1948.
- Brocher, J. E. W.: Die Scheuermannsche Krankheit und Ihre Differentialdiagnose. 1946.
- Brown, E. L.: Nursing for the Future: a report prepared for the National Nursing Council. 1948.
- Brown, F. J.: Educational Sociology. 1947.
- Brues, C. T.: Insects and Human Welfare. Revised edition. 1947.
- Cameron, J. (Editor): Trial of Heinz Eck *et al.* (at the "Peileus" Trial). 1948.
- Clayden, E. C.: Practical Section Cutting and Staining. 1948.
- Comfort, A.: First-year Physiological Technique. 1948.
- Comper, E. L., and Banks, S. W.: Pictorial Handbook of Fracture Treatment. Second edition. 1947.
- Cook, D.: Ulcer: the primary cause of gastric and duodenal ulcer. 1946.
- Cooper, E. R. A.: Human Histology. Second edition. 1948.
- Cowdry, E. V.: Laboratory Technique in Biology and Medicine. Second edition. 1948.
- Crosse, V. M.: The Premature Baby. Second edition. 1949.
- Crowe, H. W.: Osteo-arthritis of the Hip-joint. 1948.
- Culpin, M.: Mental Abnormality: facts and theories. 1948.
- Davies, M. B.: Hygiene and Health Education: for training colleges. Fourth edition. 1948.
- Davson, H.: Physiology of the Eye. 1949.
- Dobbie, B. M.: Obstetrics and Gynaecology: a synoptic guide to Treatment. 1948.
- Doggart, J. H.: Ocular Signs in Slit-lamp Microscopy. 1949.
- Ford, E. B.: Genetics for Medical Students. Third edition. 1948.
- Gabriel, W. B.: Principles and Practice of Rectal Surgery. Fourth edition. 1948.
- Goyal, J. R.: Recent Advances in Therapeutics (Part 1 and II) Third edition. (Delhi.) 1948.
- Joint Commission on Education: College Curriculum in Hospital Administration. 1948.
- King, B. G., and Roser, H. M.: Anatomy and Physiology Laboratory Manual and Study Guide. Third edition. 1948.
- Kraetzer, A. F.: Procedure in Examination of the Lungs. Third edition. 1947.
- Lockhart, R. D.: Living Anatomy. 1948.
- McDonald, J. J., Chusid, J. G., and Lange, J.: Correlative Neuro-anatomy. Fourth edition. 1947.
- Miller, R. F. E.: Practical Photomicrography. 1948.
- P.E.P.: Population Policy in Great Britain: a report. 1948.
- Percival, G. H., and Toddie, E.: Dermatology for Nurses. 1947.
- Pistre, M.: Histoire Toulousaine du Meier d'Apothicaire. 1943.
- Poynter, F. N. L. (Editor): Selected Writings of William Clowes. 1544-1604. 1948.
- Reddy, D. V. S.: The Beginnings of Modern Medicine in Madras. 1947.
- Remlinger, P., and Bailly, J.: La Rage: études cliniques, expérimentales et immunologiques. 1947.
- Royal College of Obstetricians and Gynaecologists: Maternity in Great Britain. 1948.
- Royden, M.: Sex and Commonsense. 1947.
- Savage, Sir W.: Practical Public Health Problems. Second edition. 1949.
- Selling, L. S., and Ferraro, M. A. S.: The Psychology of Diet and Nutrition. 1947.
- Slaughter, F. G.: The New Science of Surgery. 1948.
- Soibelman, D.: Therapeutic and Industrial Uses of Music. 1948.
- Stitt, E. R., Clough, P. W., and Brnham, S. E.: Practical Bacteriology, Hematology, and Parasitology. Tenth edition. 1948.
- Stones, H. H.: Oral and Dental Diseases. 1948.
- Thomson, Sir St. C., and Neuss, V. E.: Diseases of the Nose and Throat. Fifth edition. 1948.
- Watkins, A. G.: Paediatrics for Nurses. 1947.
- Webster, F. A. M.: The Science of Athletics. Revised edition. 1948.
- Williams, H.: Men of Stress: three dynamic interpretations. 1948.
- Wolff, E.: Diseases of the Eye. Third edition. 1948.
- Women's Group on Public Welfare: The Neglected Child and his Family. 1948.
- Wuhrmann, F., and Wunderly, C.: Die Bluteiweisskörper des Menschen. 1947.

The Ministry of Health states that the number of hospital nurses and midwives working full time in England and Wales rose by nearly 3,000 between June and September, 1948. In June, 1947, there were 115,500; in June, 1948, 118,000; and in September, 1948, 121,000. This total includes those trained and in training. Part-time nursing and midwifery staffs in hospitals show a rise of 2,000 between June and September, 1948, and of 9,000 over the 15 months from June, 1947. Comparative figures are: June, 1947: 10,700; June, 1948: 17,400; September, 1948: 19,500. There has also been an increase on the domestic side as follows. *Full-time domestic staff*: June, 1947: 99,400; June, 1948: 99,700; September, 1948: 99,700. *Part-time domestic staff*: June, 1947: 18,100; June, 1948: 21,600; September, 1948: 23,100. This general increase in hospital staffing has made it possible to institute a 96-hour fortnight in more hospitals, as well as to reopen beds closed through lack of staff. The point has now been reached when every addition to hospital nursing and midwifery staff means the opening of more beds or the improvement of working hours and conditions—sometimes both.

H.M. Forces Appointments

Association Notices

REGULAR ARMY: EMERGENCY COMMISSIONS

ROYAL ARMY MEDICAL CORPS

War Substantive Major W. H. R. Lumsden has relinquished his commission and has been granted the honorary rank of Lieutenant-Colonel.

War Substantive Captain W. Fabisch has relinquished his commission and has been granted the honorary rank of Major. (Substituted for the notification in a *Supplement* to the *London Gazette* dated July 6, 1948.)

Captains G. Grant and P. Venables have relinquished their commissions and have been granted the honorary rank of Captain.

Captain R. M. Ingils has relinquished his commission on account of disability and has been granted the honorary rank of Captain.

War Substantive Captain J. D. McGregor has relinquished his commission on account of disability and has been granted the honorary rank of Major.

War Substantive Captains F. L. Potter, M.B.E., A. Gild, C. E. Hunter, S. Chatterjee, J. Sharkey, and W. C. D. Lovett have relinquished their commissions and have been granted the honorary rank of Major.

War Substantive Captain J. R. McGregor has relinquished his commission and has been granted the honorary rank of Major. (Substituted for the notification in a *Supplement* to the *London Gazette* dated Aug. 27, 1946.)

War Substantive Captains C. I. Humbert, B. G. Paul, D. Ungar, J. R. Harries, A. F. Crick, and P. Hogg have relinquished their commissions and have been granted the honorary rank of Captain.

Short Service Commission, Specialist.—Captain A. L. Wingfield has relinquished his commission and has been granted the honorary rank of Lieutenant-Colonel.

Lieutenants J. K. Baird, H. Baker, E. Barnett, F. A. Beale, T. L. Begg, J. Black, P. S. Brown, G. O. Clark, B. O. Clements, D. C. Cockburn, J. T. Crean, R. R. De-Mowbray, J. H. Fox, E. J. Gow, P. Hampson, D. G. Hardy, G. Hird, J. B. Howard, D. A. Jack, E. Jones, S. Kalinsky, J. B. Lawson, B. H. Lees, C. Levin, J. M. Loughran, G. I. Lumsden, C. D. R. Pengelly, R. L. Richards, J. B. Ritchie, M. J. Roper-Hall, B. Reubner, I. W. Sinclair, C. R. B. Stewart, R. G. Stewart, T. Symington, B. Towers, J. K. B. Waddington, R. J. S. Weir, P. M. C. Maik, A. D. Bangham, J. R. G. Bastable, K. R. Brookes, K. B. Chambers, J. I. Cohen, D. J. Crockett, P. J. Dwyer, J. B. Eades, D. J. Gardner, J. P. Graham, K. C. R. Halliday, R. H. Hansell, R. E. A. Hansen, J. M. Holmes, D. A. L. Jones, D. W. W. Jones, O. G. Jones, H. Keidan, I. A. Kellock, R. J. Klingglass, A. H. Levy, F. D. Lumb, H. Mackenzie, A. Maclelland, G. G. Maurice, K. R. Ogilvie, H. Rezler, A. R. Somner, W. A. L. Thompson, J. C. Whitlam, R. Wolfson, D. L. Woolf, and H. M. White to be Captains.

Lieutenant (War Substantive Captain) J. B. Stafford, from I.M.S., to be Lieutenant.

To be Lieutenants: A. C. Anderson, K. W. Blaikie, W. S. Bowman, W. W. Bryant, D. Cooper, D. McL. Cunningham, R. C. Davison, J. R. C. Fleit, B. Goodman, R. Hodgkinson, C. W. Hollingsworth, M. Hyman, W. Lees, R. Marshall, J. A. McCusker, B. V. McEvedy, J. E. Middleton, D. H. Miller, P. S. Moore, R. J. A. Nicol, D. J. Oakland, B. G. Pickles, P. Pratt, D. R. K. Reid, A. J. Russell, G. C. Ryan, J. D. Scott, P. W. Sergeant, B. A. Sheldermine, G. R. Tudhope, K. D. J. Vowles, N. MacG. D. Blyth, D. M. Cameron, J. A. L. Clark, P. J. Croxford, J. G. Dickson, D. E. P. Forbes, R. Gillott, R. I. MacP. Hepworth, J. A. G. Holt, H. A. Jones, K. M. Leighton, J. S. M. Low, C. C. Lutton, G. C. Manning, A. G. Milne, J. Newall, A. G. B. Poole, G. L. Ritchie, J. Savy, E. P. H. Short, D. W. C. Smith, B. J. Sproule, W. B. D. Storie, D. T. Sutherland, P. J. Walker, K. C. Watson, G. F. Watt, and E. W. Wright, T. Barker, A. J. Beale, J. D. Brackenridge, A. Bryce, E. J. Clegg, A. L. Cowan, J. M. A. Critchley, A. G. Davidson, W. W. Douglas, H. A. F. Dudley, E. J. Fairlie, J. Z. Garson, J. A. Gawthorpe, J. Gloster, E. W. Green, A. E. W. Gregson, R. D. Haigh, T. B. Hogarth, A. Hunter, A. H. Kitchin, A. G. McCallum, A. D. Macdonald, D. C. Morley, J. I. Murray Lawson, T. G. Osmond, F. J. Powell, R. H. B. Protheroe, D. M. Serr, J. R. Spears, S. Sternberg, W. M. Sutcliffe, I. W. Stoddart, K. H. Sykes, G. C. Turner, J. S. Washington, A. O. Wilson, B. Winocour, E. Hirsch, R. I. K. Blyth, N. L. Buckley, T. C. Dow, R. W. Doy, D. H. Forsdick, T. W. H. Forster, J. D. Fuller, J. D. Heighway, F. H. W. Johnson, D. E. Oakley, I. C. L. Patch, F. I. Powell, D. W. Purser, M. E. Y. York-Moore.

The notification regarding Lieutenant J. J. A. Reid in a *Supplement* to the *London Gazette* dated Oct. 8 has been cancelled.

The surname of Lieutenant A. Cledwyn-Davies is as now described and not as notified in a *Supplement* to the *London Gazette* dated Aug. 20.

WOMEN'S FORCES

EMPLOYED WITH THE R.A.M.C.

Captain A. G. Harrison has relinquished her commission and has been granted the honorary rank of Major.

Captains A. Faulkner and M. H. Swift have relinquished their commissions and have been granted the honorary rank of Captain. Hilary E. C. Miller to be Lieutenant.

AREAS OF ST. HELENS AND WARRINGTON DIVISIONS

Notice is hereby given by the Council to all concerned that the urban district of Newton-le-Willows has been transferred from the St. Helens Division to the Warrington Division.

CHARLES HILL,
Secretary.

Diary of Central Meetings

JANUARY

25 Tues. Organization Committee, 2 p.m.

27 Thurs. Colonies and Dependencies Committee, 2 p.m.

Branch and Division Meetings to be Held

ALDERSHOT AND BASINGSTOKE DIVISION.—At Rotherwick Village Hall, Sunday, Jan. 23, 3 p.m. Subject: "Remuneration under the N.H.S."

BATH, BRISTOL, AND SOMERSET BRANCH.—At Musgrove Park Hospital, Taunton, Saturday, Jan. 29, 8.30 p.m. Address by Mr. John Barron: "Plastic Surgery."

EAST SUFFOLK DIVISION.—At Physiotherapy Department (old Nurses Lecture Room), East Suffolk and Ipswich Hospital, Friday, Jan. 28, 8 p.m. Lecture-demonstration by Mr. Ronald Raven on "Cancer," illustrated by clinical cases and epidiascope.

HENDON DIVISION.—At Hendon Hall Hotel, Wednesday, Jan. 26, 8.30 p.m. Dr. E. F. Rabey: "Some Practical Suggestions on the Diagnosis and Treatment of Backache."

HERTFORDSHIRE BRANCH.—At Methodist Hall, Marlborough Road, St. Albans, Friday, Jan. 26, 2.30 p.m. Address by Dr. Charles Hill: "Current Problems."

MARYLEBONE DIVISION.—At Manson House, 26, Portland Place, London, W., Friday, Jan. 28, 8.15 p.m. Discussion: "Present Situation in the Medical Profession."

METROPOLITAN COUNTIES BRANCH.—In the Great Hall, B.M.A. House, Tavistock Square, London, W.C., Thursday, Jan. 27, 8 p.m. Address by Dr. Charles Hill: "Terms of Service."

NORTH NORTHUMBERLAND DIVISION.—At Blue Bell Hotel, Belford, Thursday, Jan. 27, 7.30 for 8 p.m. Annual dinner.

SOUTH-WEST ESSEX DIVISION.—At Clinic Hall, Thorpe Coombe Maternity Hospital, Wednesday, Jan. 26, 8.30 p.m. Mr. Charles Donald: "Swellings and Sinuses in Childhood." To be illustrated by lantern slides.

WANDSWORTH DIVISION.—At South London Hospital for Women and Children, South Side, Clapham Common, S.W., Sunday, Jan. 23, 10.30 a.m. Clinical meeting.

WESTMINSTER AND HOLBORN DIVISION.—Joint meeting with Chelsea and Fulham and Kensington and Hammersmith Divisions at Post-graduate Medical School of the Royal Cancer Hospital, 24, Onslow Gardens, Fulham, S.W., Wednesday, Jan. 26, 8.30 p.m. Dr. P. E. Thompson Hancock and Mr. R. C. B. Ledlie: "Cancer of the Stomach." Open to all medical practitioners in the area of the Divisions.

Meetings of Branches and Divisions.

CAERNARVONSHIRE AND ANGLESEY DIVISION

The Annual Meeting was held on Dec. 19, 1948, at Bangor. The following officers were elected for 1949: Chairman, Dr. G. Idwal Griffiths. Vice-chairman, Dr. E. H. Morris. Secretary, Dr. R. Rees Prytherch. To be members of Branch Council: Dr. J. H. Hughes, Dr. Maddock Jones, Dr. D. Glanville Evans, Dr. G. Mansell Williams. To be members of executive council of Division: Dr. J. H. Hughes, Dr. A. Maddock Jones, Dr. D. Glanville Evans, Dr. G. Mansell Williams, Dr. Leslie W. Jones. To be members of Local Medical War Committee: Dr. I. Mostyn Williams, Dr. D. Glanville Evans, Dr. G. Idwal Griffiths; together with present members: Dr. A. Maddock Jones, Dr. W. Hilton Parry, Dr. C. A. A. Lever, Dr. D. Page Thomas, Dr. W. Charles Evans, Dr. D. E. Parry Pritchard, Dr. I. Mostyn Williams was elected representative on the Welsh Committee and Dr. G. P. Williams representative on the Representative Body.

The following resolution was passed unanimously: "That the meeting expresses extreme disapproval of the present position of the general practitioner under the National Health Service, and urges that there should be an immediate increase in the capitation fee to 30s (minimum), and that the mileage grant should be made adequate; that payment should be made monthly to doctors; that telephone, postage, and other overhead expenses of running a practice should be taken over and paid for by the Government." That there should be a Welsh secretary resident in Wales was proposed and carried. The reconstitution of the Welsh Committee was agreed to. Memoranda from Winchester, West Sussex, Brighton, and Birkenhead and Wirral Divisions were all supported wholeheartedly. A proposal that there should be £150 basic car allowance in addition to present mileage was carried.

THE USE OF SEX HORMONES IN THERAPEUTICS*

BY

P. M. F. BISHOP, D.M.

Endocrinologist to Guy's Hospital, Chelsea Hospital for Women, and the Department of Obstetrics and Gynaecology,
British Postgraduate Medical School

Modern sex-hormone therapy is no more than fifteen years old, and, considering that progress was seriously retarded during the war, the rapidity with which this branch of therapeutics has expanded is remarkable. Few could have imagined that it would spread beyond the narrow confines of gynaecological endocrinology, and yet to-day sex hormones are beginning to play a prominent part in cancer treatment, general medicine, and such of its specialties as dermatology. It has therefore become the duty of every doctor to learn how to administer these substances

to lack of appreciation of its potency and the consequent tendency to use it in excessive doses.

Substitution Therapy in Gonadal Deficiency

The most logical use of sex hormones is to compensate for deficient gonadal secretion. To obtain the best results, however, it is well to distinguish between *congenital* and *acquired gonadal deficiency*. Ovarian agenesis and the failure of the testicles to develop or descend give rise to *objective signs*, such as infantile genitalia and scanty body-hair growth in both sexes, with amenorrhoea and lack of breast development in the female, and eunuchoidal lengthening of arms and legs and absence of beard and adolescent voice changes in the male. Embarrassment and introversion are understandable accompaniments of these serious physical defects in both sexes, but there is in addition a characteristic timidity which is especially noticeable in the eunuchoid youth and which, with androgen therapy, gives place to a more self-reliant, forceful, and aggressive personality. The aggressive properties of male hormone have been demonstrated in a fascinating study of the "peck order" in hens. Twelve hens from different broods when put together will quickly arrange themselves in a peck order, No. 1 hen pecking the rest and No. 12 being pecked by all. Administration of androgen to this last hen will, however, soon send her to the top of the peck order. Treatment of these mainly objective signs consists in intensive administration of sex hormones, preferably by pellet implantation. Breasts and the natural female curves may develop in the woman; beard and body-hair growth. Deepening of the voice, erections, and emissions may appear in the man, in addition to the awakening of male aggressiveness.

Acquired gonadal deficiency, on the other hand, leads to characteristic *subjective symptoms*, such as hot flushes, headaches, giddiness, lack of concentration, irritability, emotional instability, and easily induced fatigue, but to few or no objective signs. The severity of these symptoms varies from case to case. In most men and many women the climacteric is symptomless. At the worst the natural climacteric is a self-limiting condition readily controlled by judicious administration of the appropriate sex hormone. At the menopause the smallest daily dose of oestrogen which will appreciably diminish but not necessarily abolish the number and severity of the hot flushes should be determined by careful trial, and the aim should be to wean the patient as soon as possible from this dose. Overdosage leads, apart from the probability of annoying if not alarming uterine bleeding, to such symptoms as abdominal distension and headaches and not infrequently to return of the hot flushes.

Technique of Sex-hormone Administration

The sex-hormone compounds at present employed in this country, together with their routes of administration and dosage, are set out in the accompanying Table. The

Hormone	Route of Administration	Dosage		
		Low	Moderate	High
Estrogens:				
Natural:				
Oestrone	Oral	3,000-10,000 i.u.	—	—
Oestradiol benzoate	Injection	—	10,000-50,000 i.b.u.	—
"Oestrone sulphate"	Oral	0.625 mg.	1.25-5 mg.	—
Synthetic:				
Stilboestrol	Oral	0.1-0.5 mg.	1-3 mg.	5-15 mg.
Dienestrol	"	0.3-3 mg.	3-10 mg.	15-50 mg.
Hexoestrol	"	3-5 mg.	—	—
Ethinyl oestradiol	"	0.025-0.05 mg.	0.05-0.15 mg.	0.25 mg.
Progestogens:				
Progesterone	Injection	—	5-20 mg.	—
Ethisterone	Oral	—	20-50 mg.	—
Androgens:				
Testosterone propionate	Injection	—	10-25 mg.	50-100 mg.
Methyl testosterone	Oral	5-15 mg.	30-60 mg.	—

dose ranges are based not upon any universally agreed scale, for no such scale exists, but upon personal experience and opinion, except in the case of ethinyl oestradiol, which has only just been launched upon the British market and the figures for which are therefore taken from the American literature. Other routes of administration than by mouth and by injection are employed, but these will be specifically mentioned in discussing the conditions for which they are to be preferred. Nausea and other side-effects may accompany the use of any of the synthetic compounds, but fortunately the "toxicity" range usually lies well above the "low" and "moderate" therapeutic ranges, except perhaps in the case of stilboestrol, though even with this compound the high incidence of side-effects so often experienced is due

*A postgraduate lecture delivered at the Society of Apothecaries on Nov. 2, 1948.

Sudden deprivation of actively secreting gonads by castration in the adult of either sex, or by destruction of ovarian function with radium or deep x-ray therapy, at whatever age it is performed, may lead to a stormy climacteric, difficult to control and certain to be prolonged. In the male this may be characterized by frequent drenching hot flushes and physical weakness which may seriously interfere with work. Implants of four 100-mg. pellets of testosterone repeated every six months will fortunately control nearly every case. In women, however, the results of treatment of the artificial menopause are often less satisfactory, and the dose of oestrogen may need to be increased until there is likelihood of troublesome uterine haemorrhage unless the uterus has been extirpated with the ovaries. Not only do hot flushes occur, but severe headaches and intense depressions are in some cases such prominent and distressing features that every gynaecologist should be reluctant to deprive his patient completely, by whatever means, of functionally active ovarian tissue whatever her age may be.

Certain post-climacteric conditions seem, from their specific response to gonadal hormones, to be manifestations of sex-hormone deficiency. In women the troublesome itching of kraurosis vulvae and senile vaginitis will be promptly relieved by a short course of moderate doses of oestrogen. A somewhat rare condition of hyperkeratosis of the palms of the hands and soles of the feet (keratoderma of Haxthausen), with sore and bleeding fissures, is seen in the post-climacteric period and responds well to similar treatment. In elderly men the skin tends to become thin and atrophic, and this is sometimes associated with intense irritation, which may be relieved by androgen therapy.

Sex Hormones in Gynaecology

The female sex hormones control the events of the endometrial cycle which culminate in "menstruation," or uterine bleeding resulting from complete shedding within a period of three to five days of the superficial layers of an endometrium stimulated first to grow under the influence of oestrogen and subsequently to secrete under the influence of progesterone. Uterine bleeding may occur, however, in association with a variety of endometrial patterns, and is not so much a reflection of endometrial histology as of the changes in calibre of the endometrial vessels. These changes may be induced by a number of factors, and bleeding may be produced by non-specific drugs such as "prostigmin" (neostigmine). Oestrogens and progesterone, however, exercise a specific influence on uterine haemorrhage. Two oestrogenic patterns may be identified — the scanty and always painless bleeding which results from oestrogen withdrawal, and the prolonged, irregular, and usually excessive bleeding from a "metropathic" endometrium which occurs when oestrogen secretion or administration is long-continued and unopposed. Not only is oestrogen capable of inducing bleeding either by

withdrawal or by continued administration or secretion, but it may also arrest it or prevent it from occurring when the oestrogen level is raised or kept high. These somewhat paradoxical effects may be explained by Fig. 1. Progesterone on the other hand, can produce bleeding only from an endometrium which has previously been stimulated to grow or proliferate by oestrogen. Progesterone bleeding is characteristic of normal menstruation, and consists of complete shedding of the endometrium, or, as Fuller Albright describes it, a "medical curettage."

Probably the most dramatic result of the use of the sex hormones in gynaecology is the *haemostatic* effect produced by oestrogen in cases in which the bleeding has been prolonged and is alarmingly heavy. High doses given every four hours will arrest the haemorrhage in 24 to 36 hours. This treatment renders obsolete the scramble of a hurried curettage in an exsanguinated patient or the tragedy of a hysterectomy in a child with uncontrollable puberty bleeding. Eventual arrest of haemorrhage can also be achieved by opposing the action of oestrogen, and so lowering the bleeding level, by progesterone or androgen. Neither can be relied upon to stop the bleeding, however, in under four to five days, and they cannot be regarded therefore, as effective emergency measures. Furthermore progesterone in the process of performing a medical curettage will make the bleeding even heavier before it stops.

In a case of *metropathia* in which ovulation fails to take place the constant and unopposed oestrogen influence slowly builds up the typical hyperplastic, vascular, polypoid endometrium from which the flooding eventually takes place. The characteristic picture, therefore, is one of amenorrhoeic phases, variable in duration but seldom lasting less than five or six weeks, alternating with bouts of haemorrhage, which at times is heavy and may be prolonged. These metropathic floodings may be anticipated and prevented by giving progesterone to induce a medical curettage two to three weeks after cessation of the last bleeding episode and therefore before the haemorrhagic bout is due



FIG. 2.—Prevention of metropathic flooding by rhythmical induction of medical curettage by progesterone.

to begin. Subsequent progesterone-withdrawal bleeding may be induced at any convenient regular interval, such as every 28 days (Fig. 2).

Two other types of abnormal bleeding are commonly found—*intermenstrual bleeding* often associated with short cycles, and "menorrhagia," or excessive and sometimes prolonged bleeding occurring cyclically. Both are probably due to defective progesterone activity. Normally the appearance of progesterone in the second half of the cycle inactivates oestrogen, and the subsequent "menstrual" bleeding conforms to the characteristic progesterone pattern. Defective secretion of progesterone would therefore have two effects: (1) to fail to ensure the complete shedding which limits menstrual bleeding to four to five days, and (2) to permit active oestrogen to exert its characteristic influence on the bleeding pattern, leading to intermittent bleeding or heavy and relatively prolonged haemorrhage. One might therefore expect progesterone given in the premenstrual phase to prevent these types of functional bleeding from taking place. In practice, however, this is seldom the case, though the condition is often satisfactorily controlled by androgen given continuously in low doses for about two months. The intermenstrual bleeding may be treated by giving rather high doses of oestrogen daily

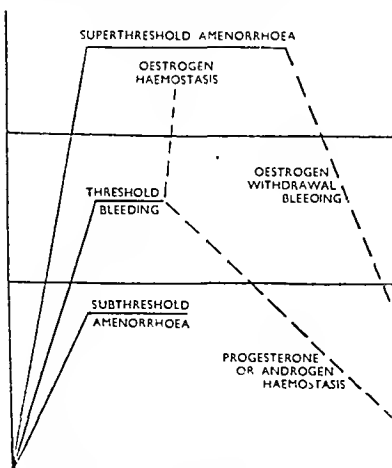


FIG. 1.—Oestrogen bleeding levels.

to the immediate premenstrual phase, though this often tends to produce a heavier "period."

"*Premenstrual tension*" is a syndrome of nervous tension, irritability, and depression, accompanied by a bloated feeling of abdominal distension and sometimes severe headaches and mastalgia. It is probably also due to defective progesterone production with incomplete inactivation of oestrogen. The symptoms are sometimes relieved by administration of ethisterone or low doses of androgens in the second half of the cycle.

Amenorrhoea usually results from ovarian deficiency, whether primary or secondary to failure of pituitary gonadotrophin secretion, and leads to sub-threshold oestrogen levels or to endometrial resistance or atrophy. Oestrogens are unlikely to restore normal ovarian activity or to overcome endometrial resistance. If given in fortnightly courses they may produce withdrawal bleedings which will raise false hopes in the patient. If given continuously they may, by inhibiting the pituitary control of ovarian activity, render the chances of spontaneous recovery less likely. *Amenorrhoea* is almost always compatible with blooming health, though it is frequently, but not always, associated with non-ovulation and consequent infertility. Treatment should therefore be confined to attempts to induce ovulation in those women who are anxious to become pregnant immediately; or to cases in which the *amenorrhoea* is accompanied by distressing minimal symptoms or is secondary to other causes, such as malnutrition, obesity, or chronic disease, in which case it is the other causes rather than the *amenorrhoea* which should be treated.

As for the treatment of *non-ovular infertility*, it is claimed that oestrogen followed by oestrogen and progesterone may stimulate the pituitary to release its gonadotrophins in the correct proportions to induce ovulation. Three or four courses of low to moderate doses of oestrogen given daily for three weeks, and ethisterone in addition during the third week, with a week's interval between each course, may occasionally be followed by one or two ovular cycles during which it might be possible for conception to take place.

Dysmenorrhoea is a condition of multiple aetiology, but one of the causes of spasmodic dysmenorrhoea may be powerful uterine contractions leading to ischaemia of the muscle. These contractions may be due to progesterone, and it has been asserted that spasmodic dysmenorrhoea occurs only in ovular cycles. Certainly it seems to be true that administration of progesterone increases the severity of the pain. In a condition in which results are notoriously difficult to assess it is not surprising that claims have been made for relief in a fair proportion of cases no matter which sex hormone or gonadotrophin is given. Androgens in high doses might be expected to suppress ovulation by pituitary inhibition and so render the subsequent bleeding painless, but it has been reported that equally successful results have been obtained with almost homoeopathic doses. Moderate doses of oestrogen will also suppress ovulation and result in a scanty withdrawal bleeding which is always painless. It would seem, therefore, that the best hope of relieving dysmenorrhoea by endocrine therapy is to suppress ovulation or produce an oestrogen-withdrawal bleeding, and there is no reason to believe that such treatment will have any effect on cycles subsequent to the ones in which it is given.

Sex Hormones in Pregnancy

Progesterone

Progesterone obviously plays an important part in the maintenance of pregnancy, especially in its early stages. Immediately embedding of the fertilized ovum begins.

chorionic gonadotrophin is secreted to prolong the life of the corpus luteum. Towards the end of the second month of pregnancy a "peak" excretion of very high concentrations of chorionic gonadotrophin can be observed—presumably ensuring the continued secretion of progesterone before the placenta itself takes over its elaboration. There has been some confusion concerning the functions of progesterone in pregnancy. Some years ago it was believed that it exerted a "sedative" effect on the uterine muscle and was essential, therefore, for the prevention of abortion, especially in the first third of pregnancy before the embryo was firmly embedded and the placenta fully formed. It is now known that progesterone induces contractions, at any rate in the non-pregnant uterus, which are forceful and of high amplitude, and it has for this reason been suggested that it should never be administered either prophylactically in cases of habitual abortion or therapeutically in threatened abortion. It would be understandable that, at a time when abortion is actually threatened, administration of a hormone which induces forceful uterine contractions, if indeed it does so in pregnancy, might be harmful.

The most important role of progesterone in pregnancy, however, is undoubtedly in relation to the development of the decidua and the formation of the placenta. Therefore a deficiency of the hormone, especially in early pregnancy, might lead to resorption of an embryo not yet securely embedded or adequately nourished. In such cases there would seem to be ample justification for progesterone therapy as early in pregnancy as possible, or indeed even before pregnancy is known to have taken place. Administration of ethisterone in the second half of each menstrual cycle, once pregnancy has been planned, with an immediate implantation of progesterone pellets once a period has been missed, should ensure the early prophylaxis which is required. Tendency to abortion, however, may be due to many and various factors, and this empirical use of progesterone without selecting the cases in which there is a progesterone deficiency will clearly result in many failures. Unfortunately, present methods of estimating pregnanediol do not always help in demonstrating such progesterone deficiency so early in pregnancy.

Oestrogens

It is the oestrogens rather than progesterone which are intimately concerned with the state of the uterine muscle. In the non-pregnant uterus they increase muscular tone and induce frequent contractions of low amplitude. In pregnancy they sensitize the muscle to the oxytocic effects of posterior pituitary extract. Since the concentration of oestrogens rises throughout pregnancy to a peak just before parturition one might well marvel that any pregnancy should reach term if the uterine muscle were to become increasingly sensitive to oxytocin. The fact is, however, that oestrogens are excreted in two forms, as "combined" or "conjugated" oestrogens (chiefly in the form of oestriol glycuronide), and as "free" or "unconjugated" oestrogens. Combined oestrogens have no effect on uterine muscle, whereas free oestrogens sensitize it to oxytocin. It is only immediately before parturition that free oestrogens appear in significant concentration. The conjugation of oestrogens is a characteristic step in their metabolism during pregnancy, and would apply equally to extraneously administered oestrogens as it does to the endogenous hormones.

In the light of these observations it becomes easier to rationalize some of the phenomena of oestrogen therapy in pregnancy. Oestrogens will be effective only when parturition has begun or the foetus is dead. They are therefore useless in the induction of premature labour, but may be helpful in the treatment of uterine inertia and in the evacuation of the uterus in missed abortion.

Sex Hormones and the Breasts

The very considerable species variation in hormonal control of the mammary glands makes it difficult to analyse the role of individual hormones in this complex mechanism. In some animals, such as cows and goats, oestrogens alone are capable of stimulating the various stages of breast development up to and including normal lactation, so that it may be possible with a stilboestrol implant to obtain copious quantities of milk from a virgin heifer or barren cow. In other species oestrogens are required for duct development, progesterone for subsequent acinar development, prolactin for lactation, and posterior pituitary hormone for expression of previously secreted milk.

In the human species breast development may be abnormally induced in the male (gynaecomastia) either by oestrogens or simply by testicular deficiency. Oestrogens may induce satisfactory mammary development in women with congenital gonadal deficiency, though attempts to increase the size of the breasts in women with normally developed but nevertheless small breasts usually lead to disappointing results. Furthermore, prolonged application of oestrogens to the breasts, conveniently given by injection, in such cases may increase the tendency to develop generalized nodularity or fibro-adenosis ("chronic mastitis"). Whatever part the oestrogens may play in the aetiology of this condition, the symptoms of pain and tenderness experienced, particularly in the premenstrual week, are usually considerably relieved by small doses of androgen.

Though it is generally agreed that oestrogens exert a direct effect on breast development both in the non-pregnant and in the pregnant woman, it is also clear that through their action on the pituitary they may lead to inhibition of mammary function. Thus in the goat or in the cow it is possible for a relatively moderate dose of oestrogen to stimulate and initiate lactation, while a larger dose will inhibit the pituitary and suppress lactation. This pituitary inhibition is utilized in the case of the parturient woman who for one reason or another is not going to feed her baby. Relatively large doses given for about ten days, and started if possible before lactation has actually begun, will suppress the formation of milk and the painful engorgement of the breasts which accompanies it in the non-nursing mother.

Sex Hormones and Cancer

Evidence continues to accumulate concerning the intimate relationship between the sex hormones and tumours of the breast and uterus and of the prostate. In mice, mammary cancer can be induced by oestrogen administration in the males of a strain in which the females are cancer-susceptible. Women with carcinoma of the breast are five times more likely to have had a delayed menopause than women without breast cancer. If a woman with carcinoma of the breast becomes pregnant the tumour may grow at an alarming rate. Fibromyomas of the uterus and other structures have been produced in guinea-pigs, but not in other species, by administration of oestrogen. Carcinoma of the cervix has been produced in mice by giving oestrogens, and it has been suggested that the relatively high incidence of cervical cancer in multiparae is due to the fact that they have been submitted to the prolonged effect of their own oestrogens during pregnancy. Carcinoma of the prostate never occurs in eunuchs or eunuchoids: acid phosphatase appears in prostatic tissue only after puberty, but can be made to appear before this age by androgen administration. In patients with prostatic cancer and bone metastases it may be present in high concentration.

Nevertheless, despite these and many other suggestive observations, it is quite remarkable how few reports have

appeared of cancer of these organs following administration of the ipse-sexual sex hormone in human patients, and it would seem to be true of the human species that, though the influence of endogenous sex hormones may be an important factor in the development of certain neoplasms administration of the ipse-sexual sex hormones does not lead to the development of such neoplasms.

On the other hand, administration of the contrasexual hormones may have profound effects on the progress of certain neoplasms, and in particular carcinoma of the prostate and breast. Oestrogens were first employed for this purpose in the treatment of carcinoma of the prostate. It had been observed that orchidectomy arrested the progress of the condition, and it was hoped that oestrogens might produce a "medical castration" by inhibiting the secretion of pituitary gonadotrophins, thereby leading to testicular atrophy. The arrest of the primary growth, the disappearance of the bone metastases, and the dramatic amelioration of the symptoms are now a familiar experience to anyone who has treated such cases with oestrogens.

More recently, isolated reports have appeared indicating that administration of androgens in high doses and over long periods leads to a regression of breast cancers, with relief of symptoms and disappearance of radiological evidence of bone metastases in the younger group—i.e., of patients under 60—whereas oestrogens are reported to produce similar results in the older age group. It should be emphasized that there is no evidence of cure in any of these cases, and that after a period of anything from a few months to as long as five years there is a recurrence of symptoms with renewed activity of the primary growth and reappearance of metastases.

The mechanism by which this amelioration is produced is quite unknown. It may well be due to inhibition of the gonadotrophic influence of the pituitary on the gonad, and in this connexion it is interesting to observe that similar results have been claimed for surgical castration both in the male with carcinoma of the prostate and in the female with cancer of the breast. Some intrepid surgeons have even gone to the length of suggesting partial extirpation of adrenal cortical tissue in order to deprive the patient as completely as possible of the ipse-sexual sex hormone. It has also been suggested that carcinoma of these secondary sex-tissues can flourish only in an environment of normal or unduly prolonged sex-hormone secretion, and that by flooding the system with the contrasexual sex hormone this normal sex hormone pattern is disturbed, with arrest of the progress of the malignant condition.

The Protein-anabolic Effect of Androgens

Of the multiple excretion products of adrenal cortical activity (54 have so far been identified) three main groups have been classified. The first, which is exemplified by deoxycortone, controls water and electrolyte metabolism, and lack of this factor is mainly responsible for the symptoms of Addison's disease. A second group, the glyconic corticoids or 11-oxysteroids, is responsible for the conversion of protein precursors to glycogen, and is referred to as the S-hormone ("sugar" hormone) by Fuller Albright. There is evidence of excessive secretion of this hormone in Cushing's syndrome, which is usually accompanied by excretion of high concentrations of 11-oxysteroids in the urine. Albright seeks to explain the osteoporosis so characteristic of this condition on the theory that the conversion of protein to glycogen is selective and denudes the protein matrix of the bone on which subsequent calcification normally occurs. Other tissues selectively affected by this protein deficiency in Cushing's syndrome are, according to Albright, the skin, which becomes thin and atrophic as seen

pically in the legs and distal portions of the arms, and a peripheral blood vessels, which rupture easily and count for the bruises, ecchymoses, and "petechial haemorrhages." The third group consists of substances identified in the urine as the neutral 17-ketosteroids, which include all the adrenal androgens. According to Albright these are the substances responsible for nitrogen retention, and he refers to the group as the N-hormone ("nitrogen" hormone). S-hormone and N-hormone are mutually antagonistic, in so far as the latter is protein-anabolic and the former "anti-anabolic." Thus the effects of excessive S-hormone production, which depletes protein storage and leads to muscle wasting and weakness (as seen typically in Cushing's syndrome in the atrophy of the muscles of the buttocks and thighs), are similar to those due to deficiency of N-hormone, as indicated by lowered 17-ketosteroid excretion. The conditions associated with lowered or absent 17-ketosteroid excretion are pan-hypopituitarism (true pituitary infantilism and Simmonds's disease), eunuchoidism, Addison's disease—especially in women, though in men testicular androgens account for some degree of 17-ketosteroid excretion—and myxoedema. In all these disorders therapeutic administration of androgens leads to beneficial effects, though to a varying degree. Perhaps the most remarkable changes are seen in Simmonds's disease, in either sex, where an implantation of four to six 100-mg. pellets of testosterone overcomes the characteristic muscular weakness and is followed by an appreciable gain in weight, with increased muscular development and a positive nitrogen balance. In eunuchoidism there is also an increase in weight and muscular strength. In Cushing's syndrome the administration of androgens has been reported to have cured the osteoporosis. The therapeutic applications of this concept of the protein-anabolic action of androgens are still largely in the experimental stage, but it seems to be true in a general way that where the 17-ketosteroid excretion is low there is a tendency to muscular atrophy and weakness, and where it is high there is nitrogen retention and increased muscular strength. For instance, the "infant Hercules" with a prepubertal adrenal cortical tumour is not only bulging with muscle but is also abnormally strong.

Conclusion

The object of this paper has been to provide a brief account of the modern trends in sex-hormone therapy, with an attempt to rationalize the principles involved. It has not been possible to do more than wipe the dust off the cover of this rapidly expanding loose-leaf volume in the encyclopaedia of modern therapeutics. No references to original work have been cited, for such writings have not been consciously referred to. In holding myself responsible, therefore, for the views herein expressed I must run the risk of perpetrating such errors, both of omission and commission, as commonly accompany the necessarily dogmatic oversimplification to which a postgraduate lecture lends itself.

The West of England Child Health Group was formed in March, 1948, to foster co-operation between doctors and others who are concerned in the various aspects of child health. At the first meeting Professor A. V. Neale and Professor R. H. Parry opened a discussion on "The Integration of the Preventive and Curative Aspects of Child Health." At subsequent meetings, which are held at monthly intervals, discussions have taken place on a wide range of subjects, including gastro-enteritis, thoracic surgery, and upper respiratory disease. During the present session, 1948-9, the group has held a discussion on orthodontics and a clinico-pathological conference on mongolism. Dr. William Hobson (professor-elect of social and industrial medicine, University of Sheffield) gave an address on "Social Medicine."

ALTERNATING ORTHOSTATIC HYPOTENSION AND HYPERTHYROIDISM OF PROBABLE HYPOPHYSIAL- HYPOTHALAMIC ORIGIN

BY

F. VEGA DIAZ, M.D.

(From the Cardiological Department, Madrid General Hospital)

No final conclusions can be drawn from the following report, since considerations based on a single case lack sufficient foundation and must always be hypothetical.

Case Report

The patient, a married woman aged 24, was sent for examination of her circulatory system. Her father died at the age of 57 from a liver disease, her mother is alive and well, aged 57, and three brothers are also alive and well. One brother died at the age of 9 months, from an unknown cause.

Personal History.—Birth and early development were normal. She had measles and whooping-cough in early childhood, without complications, and very frequent attacks of sore throat, and has always suffered from constipation, anorexia, and asthenia. Menarche was normal, at the age of 14, with a normal menstrual cycle. From the age of puberty onwards, and for several years, she has suffered from dizziness. Perspiration has always been scanty. Immediately after menarche she found that on getting up after lying down for some time she always had a sensation of mistiness and progressive loss of vision, and a feeling that she was going to faint; she had to take hold of something quickly and sit or lie down again. These phenomena sometimes progressed to actual fainting, and appeared at odd times totally unconnected with the taking of meals or fasting.

These symptoms persisted until soon after her marriage at 22 and improved immediately afterwards, though at this time she was very nervous, suffered from palpitations, became thinner, and developed a slight swelling in the neck. She became pregnant six months after marriage. At that time the dizziness had disappeared; but, simultaneously with pregnancy and when the attacks of dizziness were becoming less frequent, there appeared other phenomena of endocrine origin: loss of weight—progressive though not excessive and less marked than before—trembling, and bad temper (she always had a certain tendency to depressive neurosis). The slight goitre persisted, and there was some fever, with attacks of palpitation and paroxysmal tachycardia. Her usual pulse rate was 90-100, and she sweated at night.

This syndrome was considered to be due to focal sepsis in the tonsils, and in the third month of pregnancy they were removed. In spite of this the neurosis persisted and the paroxysms of tachycardia continued. At this time the slight thyroid enlargement was noted and the basal metabolism was found to be $+28$, and a month later -37 .

A corrected diagnosis of gestation hyperthyroidism was made, and treatment with methyl thiouracil was prescribed, but the patient did not notably improve, the B.M.R. remaining unaltered. She then had a normal confinement but did not nurse her baby. The slight hyperthyroidism continued. Treatment with methyl thiouracil, alternating with Lugol's solution, was now instituted and the signs and symptoms of hyperthyroidism disappeared. She put on weight, though not enough to compensate for the previous loss; the thyroid became normal in size and the attacks of tachycardia gradually disappeared. Surprisingly enough, however, just as she was recovering from the hyperthyroidism and was getting well again, she noticed a return of the postural dizziness—i.e., the orthostatic hypotension syndrome reappeared after having been latent, or having disappeared, during the phase of hyperthyroidism.

Clinical Examination.—The patient was of asthenic constitution, with dry skin, waxen pallor, and prominent superficial veins. The mouth was healthy, without dental sepsis. The lungs were normal. The heart was normal on palpation and percussion. Cardiac sounds were lively but normal, and the pulse

was soft, compressible, and of normal frequency and rhythm. Arterial pressure in the right arm, in sitting posture, was 90/50, pulse rate 80. Without being able to make her rest beforehand, we took her arterial pressure in a vertical posture, when the figures dropped slightly to 80/40, with pulse rate 84.

On finding such low pressures and confirming our clinical impression that her dizziness was due to postural hypotension we proceeded to examine her orthostatic reactions on a tilt-table. After ten minutes' rest in the horizontal position the B.P. was 90/50. On changing rapidly to the vertical the successive pressures were: immediately after the change, 95/60; and 30 seconds later 60/40. 60 seconds later still the pressure dropped to about 40, and auscultation revealed sounds only in the region of 45 and 35 without our being able to determine accurately the systolic and diastolic pressures—i.e., without pulse pressure. The patient now had a sudden sensation of weakness and dizziness and became very pale, but without any sweating and without any noticeable change in the pulse rate on auscultation. The phenomena became more pronounced until, a little before two minutes had passed, the patient fainted, and only some very soft sounds were audible around 30 mm.; but, in view of the alarming circumstances of the moment, we could not study the pulsation index on the oscillogram, which had previously dropped from 20 to 10 mm. The patient was placed supine slightly tilted in the Trendelenburg position, and was given rapid passive movements of the limbs with centripetal massage. She quickly recovered, her blood pressure rising progressively to 60/40, 80/40, 90/45, and 108/60—i.e., to a figure slightly above the initial one. Sino-carotid sensitiveness and eye-compression tests were made, and proved negative, there being not even a fall in pressure or bradycardia, or syncopal or presyncopal phenomena of a cerebral type.

Pre-carotid pressure (according to Engel's technique), applied to ascertain whether the case was one of elective derangement of the cerebral circulation, gave completely normal results. An atropine test (2 mg. given intravenously) did not prevent a certain amount of postural reaction; neither did it produce a sufficiently high tachycardia; but we must point out that the slight atropine tachycardia was enough to substitute a simple dizziness for the postural fainting, although the arterial pressures had dropped in the same way as happened without atropine: a compensating effect through increase in the minute-volume. Valsalva's and Fleck's tests produced syncope even at 45 degrees on the tilt-table.

Investigation revealed:—Abdomen: flaccid, no tender points; neurological examination quite normal; special senses, normal. The arm-to-tongue circulation time was 17 seconds (decholine) and the arm-lung time 8 seconds (ether). X-ray examination of the chest revealed a normal vertical heart, with normal outlines in all positions.

In the electrocardiogram the complexes were normal in all the leads and of the vertical heart type. Other curves in the vertical posture showed rather the phenomenon of a "hanging heart" and, furthermore, noteworthy alterations of the S-T intervals; in the first curve in the vertical position S-T2 was depressed, but there was still a positive T wave and the T3 wave became more negative. In the second curve, taken after 90 seconds, the T2 wave became negative and was preceded by a somewhat curved previous interval. Among the other data we also observed a shortening of the electrical systole and high and ample P2 waves that were not seen in the horizontal posture.

The blood picture was almost normal; there was slight macrocytic anaemia (average cell diameter 8.10μ), with normal leucocyte count and distribution. Total plasma proteins, 6.9%, with an albumin-globulin ratio of 1.03. Cholesterol, 120 mg. per 100 ml.

Test meal, normal. By duodenal drainage, bile was extracted in which a *Proteus* organism was cultivated; in the faeces, Type I *Bact. coli* was cultivated as well as the *Proteus*. Ophthalmic examination showed only a slight vascular invasion of the limbus (Dr. C. Costi). X-ray examination of the digestive system (Dr. E. Castillo) revealed an enteropathy of the small intestine with marked colonic atony; cholecystography revealed the gall-bladder, but it showed no emptying. Finally, the basal metabolic rate was normal: +6%.

Discussion

This syndrome corresponds exactly to that of orthostatic hypotension syncope. The differential diagnosis would have to exclude the other syncope that are more or less related to the vertical position, and especially the so-called vasodepressor syncope. The direct and invariable relation to the vertical position and the abrupt fall of blood pressure are sufficient for exact diagnosis. The absence of sweating and the fact that the orthostatic hypotension syncope has never been produced by other stimuli (emotion, trauma, etc.) differentiate them from neurogenic or psychogenic vasodepressor syncope; it is evident, therefore, that the present case is not the kind of vasodepressor syncope observed in the processes of infectious diseases, heart-shock, etc.

The negative result of pressure on the carotid sinuses (examined successively and conjointly) and on the eyeballs rules out the reflex and vagus factor. Atropine, though it slightly raised the heart rate (from 80 to 90) and prevented total orthostatic syncope, could not prevent a feeling of dizziness and loss of vision, which the patient remedied by moving her limbs as she was ordered—a manoeuvre that was less quickly effective in total syncope. This proves that the syncope was not of the orthostatic vasodepressor type of sino-carotid origin and that the vagus factor was secondary. Neither is it a case of reflex or arrhythmic cardiogenic syncope, since there are no electrocardiographic data of alterations of the intracardiac conduction of the electric stimulus, nor any extrasystoles or other signs leading one to suspect a cardio-irritative syncope (of paroxysmal tachycardia type). The electrocardiographic anomalies observed in this patient are very typical of orthostatic hypotension; they have been related to postural coronary insufficiency (Åkesson, 1936; Meesen, 1937) and to a heightening of the sympathetic tone (Nordenfelt, 1941, 1942), but they are not so marked that the attacks of dizziness affecting the patient can be ascribed to them nor can they be related to "coronary shock" (Bezold type).

The history and the neurological examination exclude all possibilities of a neurological lesion being responsible for the orthostatic hypotension (tabes, syringomyelia, etc.) Other processes that generally give rise to orthostatic hypotension (pituitary insufficiency, adrenal insufficiency, etc.) were not found here either. Therefore there can be no question of a secondary orthostatic hypotension.

By exclusion, a diagnosis of syncopeal disease due to chronic essential orthostatic hypotension (Pont, 1945) was made.

We may observe that during adolescence and puberty the patient developed a syndrome of postural hypotension, very rare at this age, since practically all the cases of orthostatic hypotension syndrome recorded were in persons over 50 years of age, and this is not the classical "orthostatic vasoneurosis of second childhood" described by Seckel.

When the patient was married, and particularly in the nuptial phase, her postural troubles disappeared at the same time as a slight hyperthyroidism syndrome set in. It is therefore evident that her hyperthyroidism, which is not of Basedow type, caused circulatory changes sufficient to lessen or even suppress the postural syndrome and to cause the subjective symptom of postural dizziness to disappear in spite of the persistence of hypotension from which the patient says she suffered throughout pregnancy.

It is evident, as Marañón (1947) and others have recently insisted, that the genetic basis of these types of hyperthyroidism must be sought, probably in an organic or humoral disturbance of the kind now called hypophyseal hypothalamic block. The nuptial-phase hyperthyroidism

ving to the emotional characteristics attributed to it, enters into this syndromic group for two reasons—its discrete character with mild hypermetabolism, the emotionalism, over, slight resistance to medical treatment, the increase in weight during treatment without entirely regaining the weight previously lost, and the absence of adenomatous pituitary all characterize it as hypophysis-hypothalamic, according to Marañón's latest revision.

On the other hand, it is well known—and I have dealt with this elsewhere—that the mechanism underlying the orthostatic hypotension syndrome may also be based on hypothalamic physiopathological factors. From time to time investigators have described successive hyperpressor and hypopressor centres of the hypothalamic region, culminating in the recent work of Hess (1946) with a relatively accurate location of such centres in experimental animals. Essential orthostatic hypotension in Pont's sense—i.e., including orthostatic hypotension secondary to other processes (endocrine, Addison's disease, Simmonds's disease) or diseases of the central nervous system (tabes dorsalis, etc.)—is the result of an associated series of factors causing sudden reduction of the heart minute-volume on assuming vertical posture.

In hyperthyroidism the peripheral vasomotor tone is really increased whether or not there is any degree of capillary dilatation (in this case, indicated by the fever and sweating). The regional pooling of blood is difficult owing to the increase in quantity and speed of the blood circulating through the tissues. Although pregnancy did not improve the digestive atony in this patient, the mesenteric accumulation (also accentuated by colitis) may have been reduced during the phase of hyperthyroidism. The hypotonia of the skeletal muscles may also have been counterbalanced by the increase of muscular activity caused by the hyperthyroidism which is observable in the muscular tremor of cases of hyperthyroidism. Finally, the faulty regulation of the cardiac output in orthostatic hypotension—i.e., the lack of cardiac adaptation to inflow reduction, lack of compensating tachycardia—is here overcome by the real increase of the minute-volume characteristic of hyperthyroidism, which in this case was further conditioned by the permanent tachycardia. We may consider that the hypothalamic disturbance which produces the hyperthyroidism is directly related to the hypothalamic disturbance which conditions the orthostatic hypotension and the digestive atony, and even that the tachycardia and the attacks of paroxysmal tachycardia were not of direct endocrine origin but were due to an irritating affection—possibly hormonal—of the sympathetic nuclei of the hypothalamus.

Summary

A clinical case is described in which a juvenile orthostatic hypotension syndrome with orthostatic syncope was followed by a slight nuptial hyperthyroidism accentuated during pregnancy, at which time the orthostatic hypotension disappeared only to reappear when the former was cured by antithyroid medication.

A hypothalamic origin is ascribed to both syndromes and the hyperthyroidism and the attacks of paroxysmal tachycardia are explained as a teleological mechanism of defence in the gestation period.

REFERENCES

- Akesson S (1936) *Uppsala Läk. Foren. Forh.* 41, 353
 Engel, G. L. (1945) *J. Mt. Sinai Hosp.* 12, 170
 Hess, L. (1946) *Confin. Neurol.* Basel 7, 35
 Marañón G. (1947) *Rev. esp. Enferm. Apar. dig.* 6, 1
 Jeessen, H. (1937) *Verhond. 10 Tag. Deut. Gesells. Kreisl.* 198
 Nordenfält O. (1941) *Acta med. scand. Suppl.* 119
 — (1942) *Ibid.* 13, 495
 Pont, M. (1945) *L'Hypotension Orthostatique* Paris

ORAL REACTIONS TO PENICILLIN

BY

W. G. CROSS, M.B., M.S., B.D.S.

Department of Periodontia, Institute of Dental Surgery,
 Eastman Dental Clinic

In the second half of 1946 several cases of reaction to penicillin used locally in the mouth had been reported and these, together with the occasionally unsuccessful results of penicillin therapy in oral infections, led to the investigations which gave rise to this paper, and which were carried out in the Dental Department, Guy's Hospital, in 1947, as the subject of the Ernest Hart Memorial Scholarship of the British Medical Association.

A review of the literature up to the end of 1947, when the investigations were concluded, reveals a limited number of cases of reaction to penicillin. Bedford (1946) describes two cases of black tongue occurring in patients treated with pastilles and lozenges for three days on the one hand and pastilles and spray on the other. The discoloration appeared on the fifth and fourth days and cleared in 13 and 12 days respectively. Thompson (1946) describes glossitis arising from penicillin lozenge therapy in three patients suffering respectively from tonsillitis, pharyngitis and aphthous ulceration. Different batches were used in all three cases.

Cameron (1946) reports two cases of stomatitis occurring after four to five days' treatment with 50 lozenges. Murphy (1946) describes a case of stomatitis occurring after two days' treatment. Bradlev (1946) inhaled penicillin spray—total dosage 800,000 units in first 10 days, then 1,000,000 units during the next five days. He developed soreness and dryness of lips and nostrils and a sore tender tongue.

Ellinger and Shattock (1946) report the case of a woman subject to attacks of nicotinamide deficiency in whom 15 penicillin lozenges, together with drops of a solution containing 500 units of penicillin per ml. pipetted on to the tongue for five days, brought about a slate colour. They consider that the discoloration was due to pigmentation of the filiform papillae, and suggest that the penicillin thus taken is swallowed and passes through the stomach in sufficient quantity to inhibit the growth of intestinal organisms responsible for the synthesis of nicotinamide, and that the oral reaction was largely one of nicotinamide deficiency. In this connexion a number of patients treated by me were given lozenges containing 500 units of penicillin and 2 or 6 mg. of nicotinamide, taken in the usual way, and about 20% of these patients developed a discoloured tongue.

Goldman (1946) describes a case of vesicular cheilitis in a patient treated thrice daily with a mouth-wash containing 500 units of sodium penicillin per ml. of saline. A patch test was positive for sodium penicillin and negative for calcium penicillin.

Wright and Rule (1946) report 19 reactions among 189 patients treated with penicillin lozenges. Of these six occurred among 38 patients on calcium penicillin lozenges and 13 among 151 patients on sodium penicillin lozenges. They consider the sodium salt to be less toxic.

Blyth (1947) describes a case of glossitis following the use of penicillin lozenges for four days that recovered in three days. Ackers (1947) reported reactions in 49 patients treated: four had discoloured tongues, which took three weeks to resolve, one had glossitis, and one was able to taste penicillin four days later.

Reactions to Penicillin

A total of 59 cases of oral reactions to penicillin have been studied in this investigation—36 from the literature, 12 reported in personal communications, and 11 observed personally. The two common conditions are discoloration of the tongue and stomatitis—in the latter condition glossitis being marked.

Discoloration of the tongue is the commoner condition. It occurs in at least 30% of patients taking penicillin continuously for oral conditions. It is often unnoticed by the patient, and is not accompanied by any symptoms of discomfort. Only one case was reported where discoloured tongue and stomatitis coexisted. Discoloration begins two to four days after starting treatment and wears off in five to 14 days. It consists of a pigmentation of the filiform papillae, and is most pronounced in the central furrow and towards the back; it may be yellowish brown, brownish green, greenish black, or black. It is absent at the sides and tip of the tongue.

—the normal fur having been lost in a patchy manner—with bright-red prominent fungiform papillae. The tip especially is affected.

Table I shows the cases reported to me and Table II the cases I saw personally. Among the latter those whose condition is indicated as "normal" were volunteers.

Some of these cases were treated with penicillin incorporated in chewing-gum—10,000 units per portion of gum. It was shown by McIntosh and Perryman (1946) that the gum would still be capable of liberating penicillin after as long as six hours, and this method of treatment was found of great use. Dosage was reduced to one portion of gum thrice daily, and this simplified treatment was highly effective in the acute stage of ulcerative gingivitis.

Cause of Penicillin Reactions

Suggestions on the causation of glossitis and discoloured tongue have been varied. The base of the commercial trochiscus penicillini, B.P., has been incriminated (Ingram,

TABLE I.—Cases Reported in Personal Communications

Case No.	Condition Treated	Reaction and Onset After Starting Treatment	Remarks
1	Pharyngitis	Cheilitis, glossitis, black tongue	Occurred on two occasions, using two different makes of lozenge
2	Not stated	Glossitis	
3	Haem. strep. sore throat	Erythema of palate, tongue, and pharynx after 3 days. Ageusia for 3 weeks	No cutaneous reaction to lozenge applied to skin of forearm
4	After extraction of incisors	Dark patches on tongue, absence of salivation, discomfort in deglutition after 3 weeks	Lozenges and pastilles
5	Inflammation of palate	Glossitis after a few days—red, swollen tongue with enlarged papillae	Powdered penicillin lozenges over upper denture
6	Coryza	Glossitis on 3rd day (20 lozenges for 2 days), tongue and fauces reddened; detachable brown fur. Two days later extensive stomatitis	Taken to prevent secondary infection from a cold. <i>M. albicans</i> present
7	"Gum condition"	Dark sepioid tongue on 5th day (lozenges for 3 days). Wore off in 4–5 days	
8	Pharyngitis	Black mould-like growth (onset not stated). Had only 3–6 lozenges in one day	This was repeated three times
9	Dry socket after extraction	Stomatitis after 9 days' treatment. Brownish-black tongue 10th day. Lozenges taken 11 days in all	
10	Pharyngitis	Black tongue. 40–50 lozenges taken in 3–4 days	
11	Infected socket	Brown tongue after 7 days. 35 lozenges in 10 days	
12	Ulcerative gingivitis (Vincent's)	Black tongue after 4–5 days. Cleared in 7 days	

TABLE II.—Cases Observed Personally

Case No.	Condition	Reaction and Onset After Starting Treatment	Micro-organisms
1	Infected socket	Brown tongue (4th day)	<i>Ps. pyocyanea</i> , Friedländer's bacillus
2	(1) Normal (standard 500 unit lozenge) (2) Normal (500 unit lozenge with 2 mg. nicotinamide) (3) Normal (crystalline penicillin, 500 units)	Greenish-black tongue (4th day) Brown tongue (3rd day, lasted 9 days) Brownish-green tongue (3rd day)	<i>M. albicans</i>
3	(1) Normal (500 units penicillin) (2) Normal (crystalline penicillin, 500 units)	Stomatitis; very sore tongue (6th day, lasted 5 days) Stomatitis (5th day, lasted 7 days)	
4	Normal	Glossitis (4th day)	
5	Infected socket	Brown tongue (4th day)	<i>Staph. albus</i> , <i>M. albicans</i>
6	Acute ulcerative gingivitis	Brown tongue (3rd day)	<i>Proteus vulgaris</i>
7	Acute ulcerative gingivitis	Greenish-black tongue (5th day)	
8	Pharyngitis	Nausea on 3rd day, glossitis on 5th day, lasted 7–10 days	
9	Pharyngitis	Brownish-green tongue (5th day)	
10	Extraction of 2I	Black tongue (3rd day); had 25 lozenges in 48 hours	<i>N. catarrhalis</i> . Anaerobically a coliform bacillus. No fungi or yeasts
11	Acute ulcerative gingivitis	Brown tongue	

Attempts were made without success to determine the nature of the pigment. Scrapings from discoloured tongues were examined microscopically. Dark pigment was observed in the epithelial cells of the filiform papillae, but owing to failure to get enough pigment into solution spectroscopic analysis was not possible. In no cases were chromogenic bacteria or fungi detected, although *Monilia albicans* was present in several.

Penicillin Stomatitis

In a typical case the patient, who has been treated for three to five days with topical penicillin for some oral or pharyngeal condition, complains of marked soreness of the tongue and at times of the whole mouth and pharynx, with extreme discomfort on taking hot fluids, spiced foods, and condiments, or on smoking, and occasionally ageusia and lack of salivation. The condition lasts six to ten days, but the loss of the sense of taste may last some weeks. Examination in the acute stage shows a swollen red tongue

(1947). Ellinger and Shattock (1946) suggested that the reactions may be due to nicotinamide deficiency. Penicillin administered as lozenges was swallowed, and inhibited the growth of intestinal organisms responsible for the synthesis of nicotinamide. In this connexion a number of the patients treated by me had two- or three-day course of penicillin lozenges containing 2 mg. of nicotinamide, and in many of those so treated discoloured tongues developed.

Other possibilities are: (1) the presence of penicillin insensitive organisms, with the absence of the normal flora and (2) individual sensitivity to one or more penicillins or impurities. The possibility of the lozenge base being responsible, either chemically or mechanically, was the subject of much investigation.

All penicillin used commercially is produced by a limited few companies; this penicillin is then marketed by a large number of firms. Clinical trials were made with lozenges produced by seven firms. The compositions of the base of

The lozenges were made known by the makers. The lozenges were made in accordance with the *British Pharmacopoeia* recommendations on penicillin—namely, that each lozenge should contain 500 units of calcium penicillin in a sucrose or sucrose and lactose base. In most cases gum tragacanth was present, about 3–8%, magnesium stearate 0.8–2%, and flavouring agents—e.g., vanillin, essence of lime—in small amounts. All these are substances used in common pharmaceutical practice, and it was felt unlikely that any of them would cause a toxic reaction. As a test of this, lozenges consisting of the base only (blanks) were given to a number of patients, including several who had had glossitis or discoloured tongue with the penicillin lozenges previously. Though the blanks were given for several days, in no case did they produce any toxic effects. { }

Finally, reactions have been reported when penicillin has been administered in other forms—e.g., inhalation of nebulized aqueous solutions (Mutch, 1947) and continuous intratracheal drip (Royston, 1947). In addition, both types of reaction were observed in patients treated with crystalline G lozenges and pastilles; these contained about 96% of penicillin G, 4% of the other penicillins, and no impurities.

In many cases of reaction to penicillin the mouth cavity, as tested by the salivary count, was either sterile or contained coliform organisms. In a number of cases, however, *Pseudomonas pyocyanea*, Friedländer's bacillus, *Proteus vulgaris*, and *M. albicans* were present. From the two tables it will be seen that the average reaction to penicillin began on the fourth day of treatment, but sometimes did not begin for seven or even nine days. In most cases treatment had been carried out for three or more days—i.e., beyond the point (48 hours) where the oral flora had changed completely to penicillin-insensitive organisms. Symptoms usually diminished in two days from the time of ceasing penicillin therapy, but persisted to a lesser degree for about a week, and occasionally longer.

Of the less common symptoms, lack of salivation, ageusia, and a capacity to taste penicillin after cessation of treatment are the most striking.

Summary and Conclusions

A review of the reported cases of oral reaction to penicillin used locally in the mouth is given, together with an account of similar cases among patients treated in the dental department at Guy's Hospital.

Neither nicotinamide deficiency nor the lozenge base is responsible for these oral reactions.

It is noticed that reactions do not occur until there has been a complete change in the character of the oral flora. This takes about 48 hours, and it seems reasonable to limit the use of penicillin for the treatment of oral infections to this length of time as a rule. To maintain an adequate and continuous concentration of penicillin in the mouth the use of this antibiotic in chewing-gum, 10,000 units per piece, thrice daily, is suggested.

I would like to thank Dr. C. Shuttleworth, assistant dental bacteriologist, for numerous salivary counts and helpful advice; the many dental students who so kindly co-operated in this investigation; and Mr. Gou, of the dispensary, for overcoming the technical difficulties inherent in the preparation of penicillin chewing-gum.

REFERENCES

- Ackers, H. (1947). *Brit. dent. J.*, 82, 201.
Bedford, P. D. (1946). *British Medical Journal*, 2, 63.
Blyth, P. J. (1947). *Brit. dent. J.*, 83, 58.
Bradley, E. J. (1946). *British Medical Journal*, 2, 760.
Cameron, I. G. (1946). *Ibid.*, 2, 638.
Ellinger, P., and Shattock, F. M. (1946). *Ibid.*, 2, 611.
Goldman, L. (1946). *Arch. Derm. Syph.*, 53, 133.
Ingram, G. I. C. (1947). *British Medical Journal*, 1, 31.
McInosh, C. F., and Perryman, P. W. (1946). *Pharm. J.*, 157, 354.
Murphy, P. G. (1946). *British Medical Journal*, 2, 638.
Mutch, N. (1947). *Ibid.*, 1, 503.
Royston, G. Riddell (1947). *Ibid.*, 2, 454.
Thompson, W. E. (1946). *Ibid.*, 2, 600.
Wright, R. B., and Rule, R. W. (1946). *J. Calif. St. dent. Ass.*, 22.

CARRIAGE OF PENICILLIN-RESISTANT STAPH. PYOGENES IN HEALTHY ADULTS

BY

T. D. M. MARTIN, M.R.C.S., L.R.C.P.

AND

J. E. M. WHITEHEAD, M.A., M.B., B.Chir.

(From the Department of Bacteriology, St. Thomas's Hospital Medical School)

The number of papers on this subject that have appeared in recent years indicates that there may be an increase in resistance to penicillin among strains of *Staph. pyogenes* isolated at different times from human infections during the course of penicillin treatment (Rammelkamp and Maxon, 1942; Anderson *et al.*, 1944; Bondi and Dietz, 1945; Gallardo, 1945; North *et al.*, 1946). On the other hand, there is also evidence that strains of *Staph. pyogenes* exist which are naturally resistant to penicillin, having been isolated before the institution of penicillin treatment and in many instances having been shown to possess the power of inactivating penicillin by the production of penicillinase (Kirby, 1944; Spink *et al.*, 1944a, 1944b; Bondi and Dietz, 1945; Gots, 1945; Gallardo, 1945; Harley *et al.*, 1946).

Further, it has been shown by Barber (1947a, 1947b) that the incidence of infection with penicillin-resistant strains may be increasing, since in one hospital the percentage rose from 14.1 in 1946 to 38 in 1947. There is thus evidence not only that some strains of *Staph. pyogenes* are resistant to penicillin and that some may become resistant in the course of treatment but also that the incidence of infections with such strains may be increasing.

The nose and skin of normal persons have been shown by many earlier workers to be reservoirs of considerable importance for the carriage of potentially pathogenic staphylococci (for studies and references to earlier work see the papers of Miles *et al.*, 1944; Williams, 1946).

Investigations of outbreaks of staphylococcal infections have shown that the nose, throat, and skin of persons in the patient's environment, or of the patient himself, harboured strains of the same phage or serological type as the infecting strain (Allison and Hobbs, 1947; Hobbs *et al.*, 1947).

So far as we are aware there has been no published work concerning the incidence of penicillin-resistant strains of *Staph. pyogenes* occurring in the nose and throat and on the skin of normal persons, although Moss *et al.* (1948), in an investigation in 1946, encountered one resistant strain and one partially resistant strain in the noses of 21 patients who were persistent nasal carriers of *Staph. pyogenes*.

In view of the evidence in support of the nose and skin as reservoirs of strains able to cause infection, it is obviously important to investigate the incidence of strains resistant to penicillin in these situations. Opportunity was taken, therefore, to examine the penicillin-resistance of all coagulase-positive strains of staphylococci isolated from the nose, throat, saliva, and six skin sites of 50 healthy individuals during the course of a different investigation.

Following the practice of earlier workers, we have applied the term *Staph. pyogenes* to all coagulase-positive staphylococci irrespective of pigmentation.

Isolation of Strains

The group, studied between April and November, 1947, consisted of 50 volunteer male medical students and laboratory workers. One-half of these were students not engaged

in clinical work and laboratory staff not primarily handling material likely to be infected with *Staph. pyogenes*. None of the volunteers was infected clinically.

Nine sites were swabbed in the following manner:

Throat.—A dry cotton-wool swab was rubbed over the tonsils and the posterior pharyngeal wall.

Nose.—A swab moistened with broth was passed into both anterior nares.

Saliva.—A dry swab was dipped into a pool of saliva allowed to collect between the gum and lower lip.

Skin.—This was sampled on the following six sites by rubbing a swab moistened with broth over an area the size of a penny with a circular motion 20 times: (1) *Face*: both malar prominences. (2) *Hand*: palmar surface of the right hand. (3) *Chest*: middle third of the sternum. (4) *Abdomen*: immediately above the umbilicus in the midline. (5) *Back*: over the lumbar vertebrae. (6) *Leg*: over the right patella.

All swabs were immediately inoculated into "lemco" broth and incubated aerobically overnight. The following day subcultures were made from the broth on to horse-blood-agar plates, which were then incubated overnight and examined the next day for colonies of staphylococci. Where there were any differences—e.g., in pigmentation, presence or absence of haemolysis, etc.—representative colonies of each variety were picked. The colonies thus picked off were subcultured on to segments of a lemco-agar plate and incubated overnight. Films were made the next day and stained by Gram's method, and strains which did not show the typical morphology of the staphylococcus were discarded. The plates were allowed to remain on the bench for three days to enable pigment production to be recorded, and the strains were then subcultured into agar "stabs" and stored at 4° C. A total of 340 strains were isolated.

All strains were then examined for the production of coagulase, using the tube technique as described by Gillespie (1943). This test was used as the sole criterion of potential pathogenicity, as earlier work has shown it to be the simplest and most reliable single test for pathogenicity among staphylococci. Of the 340 strains examined 83 (24.4%) were found to be coagulase-positive.

Carriage of *Staph. pyogenes*

The details of carriage of the 83 strains of *Staph. pyogenes* among the 50 individuals are shown in Table I.

TABLE I.—Carriage of *Staph. pyogenes* Among 50 Healthy Adults

Site of Carriage	No of Carriers	% of Whole Group	% of 31 Carriers
Nose	20	40	64.4
Throat	9	18	29.0
Saliva	2	4	6.4
Face	14	28	45.1
Hand	7	14	22.5
Chest	9	18	29.0
Abdomen .. .	7	14	22.5
Back	2	4	6.4
Leg	4	8	12.8
No. of carriers	31	62	
Nose or throat only	10	20	32.2
Skin only	7	14	22.5
Combined nose or throat or saliva and skin	14	28	45.1

On each of nine sites in five individuals there were isolated two different strains of *Staph. pyogenes* as judged by colonial appearance.

The findings shown are similar to those of Williams (1946), who surveyed a comparable group of 50 students by sampling the nose only, together with 11 skin sites, using somewhat similar cultural methods. There is, however, some disparity between our findings and those of Williams concerning the prevalent site of carriage in those

who are not simultaneous nasal and skin carriers. In our series, of the 17 persons from whom *Staph. pyogenes* was isolated from either skin or nasopharynx, but not from both, in 10 (58.8%) the organism was found in the nasopharynx only and in 7 (41.2%) on the skin only. Williams however, found among 19 such persons that only 3 (15.7%) were nasal carriers, while 16 (84.3%) were skin carriers.

The numbers examined in both series are small and the discrepancies are possibly due to the fact that Williams examined 11 skin sites but not the throat and saliva, whereas we studied six skin sites but also examined the throat and saliva.

Penicillin Resistance

The 83 coagulase-positive strains isolated in the above investigation were next examined for penicillin resistance using in the first instance the ditch-plate method with a concentration of 10 units of penicillin per ml. of agar in the ditch: 15 strains (18%) were found to be resistant by this method.

These strains were next retested by the serial dilution method in broth, using serial dilutions of penicillin in 0.5-ml. amounts of broth. The inoculum was one drop (0.02 ml.) of a 1 in 100 dilution of a 24-hour broth culture. Our results are shown in Table II.

TABLE II.—Degree of Penicillin Resistance

No. of Times More Resistant than the Oxford Staphylococcus	No. of Strains
128	4
64	1
32	6
16	3
8	1
Total	15

The 15 resistant strains were carried by six members of the group studied. One of the six subjects (REE) was found to be carrying on a number of sites two strains of *Staph. pyogenes* differing in their colonial appearance. One strain (R2), occurring on two sites, had a resistance 12 times that of the Oxford staphylococcus, and the other (R1), occurring on three sites, had a resistance 32 times greater than that of the Oxford strain. It is impossible without the help of methods of identification, such as serological or phage typing, to decide whether these two apparently different strains are in fact different or whether they represent mutants from a single parent strain.

Only one (LUM) of these six persons had ever had penicillin treatment; he once had some penicillin lozenges. Details of the carriage are shown in Table III.

TABLE III.—Carriage of the Penicillin-resistant Strains Isolated

Carrier	Sites								
	Nose	Throat	Saliva	Face	Hand	Chest	Abdomen	Back	Leg
SAY ..	R	—	—	R	—	—	—	—	—
LUM ..	S	—	—	S	S	R	R	—	—
PER ..	S	R	—	S	—	S	—	—	—
REE ..	R1, R2	R1, R2	—	R1	—	—	—	—	—
COR ..	—	—	—	R	—	—	R	R, S	S
BES ..	R	R	—	—	—	—	—	—	—
No of carriers ..	3	3		3		1	2	1	

The carrier rate of resistant strains among 50 healthy adults is 12%, that among 31 healthy carriers of *Staph. pyogenes* 19.4%.

R = Resistant strain
S = Sensitive strain of *Staph. pyogenes*.
R1 and R2 = Strains isolated from same individual with marked differences in degree of resistance.

Discussion

In the 50 healthy adult males investigated the rate and distribution of carriage of *Staph. pyogenes* were similar to those found by earlier workers in groups of healthy

adults. The foregoing observations are comparable to those reported by Williams (1946) in a group of the same number and of similar occupation.

Of the group of 50 persons, 6 (12%) were carriers somewhere on their persons of strains of *Staph. pyogenes* resistant to penicillin. This comprises nearly one in five, or 19.4%, of the 31 persons who were carriers.

These figures are disturbingly high, although not perhaps unexpected in view of the apparently increasing incidence of penicillin-resistant strains in human infections. We are, however, not in a position to assess whether there has been an increase in the carrier rate of resistant strains comparable to that found in the incidence of strains isolated from infections, for we have not been able to discover any published work in this connexion. Moss *et al.* (1948), who were endeavouring during 1946 to abolish nasal carriage of *Staph. pyogenes* by the intranasal administration of penicillin to 21 patients who were persistent nasal carriers, encountered one case which yielded a penicillin-resistant strain and one case which yielded a partially resistant strain during the course of treatment. Neither of these strains, however, was able to produce penicillinase.

We are able to confirm the findings of others (Kirby, 1944; Bondi and Dietz, 1945; Gots; 1945; Barber, 1947a, 1947b) that these naturally occurring resistant strains are able to inactivate penicillin.

Summary

Swabs from the nose, throat, saliva, and six skin sites of 50 healthy men showed a carrier rate of 62% for coagulase-positive staphylococci.

Examination of the 83 coagulase-positive strains isolated showed that 15 (18%) penicillin-resistant strains were being carried by six persons (12%).

Among the 31 carriers of coagulase-positive staphylococci the carrier rate for resistant strains was thus 19.4%.

The resistant strains were all able to inactivate penicillin.

The significance of the findings is discussed.

Our thanks are due to Professor R. Hare for his valuable advice and criticism, and to the various medical students and laboratory workers of St. Thomas's Hospital Medical School for their co-operation in this survey.

REFERENCES

- Allison, V. D., and Hobbs, Betty C. (1947). *British Medical Journal*, 2, 1.
 Anderson, D. G., Howard, L. G., and Rammelkamp, C. H. (1944). *Arch. Surg.*, 49, 245.
 Barber, M. (1947a). *J. Path. Bact.*, 59, 373.
 — (1947b). *British Medical Journal*, 2, 863.
 Bondi, A., junr., and Dietz, C. C. (1945). *Proc. Soc. exp. Biol. N.Y.*, 60, 55.
 Gallardo, E. (1945). *War. Med.*, 7, 100.
 Gillespie, E. H. (1943). *Bull. emerg. publ. Hlth Lab. Serv.*, 2, 19.
 Gots, J. S. (1945). *Proc. Soc. exp. Biol. N.Y.*, 60, 165.
 Harley, H. R. S., Baij, J. A., and Bowie, J. H. (1946). *British Medical Journal*, 1, 639.
 Hobbs, B. C., Carruthers, H. L., and Gough, J. (1947). *Lancet*, 2, 572.
 Kirby, W. M. M. (1944). *Science*, 99, 452.
 Miles, A. A., Williams, R. E. O., and Clayton-Cooper, B. (1944). *J. Path. Bact.*, 56, 513.
 Moss, B., Squire, J. R., and Topley, Elizabeth (1948). *Lancet*, 1, 320.
 North, E. A., Christie, R., and Rank, B. K. (1946). *Med. J. Aust.*, 2, 43.
 Rammelkamp, C. H., and Maxon, T. (1942). *Proc. Soc. exp. Biol. N.Y.*, 51, 386.
 Spink, W. W., Ferris, V., and Vivino, J. J. (1944a). *Ibid.*, 55, 207.
 — (1944b). *Ibid.*, 55, 210.
 Williams, R. E. O. (1946). *J. Path. Bact.*, 58, 259.

The Scientific Film Association has issued a useful pamphlet entitled "On Organizing Medical Film Programmes" (price 1s. from the Association, 34, Soho Square, London, W.1). Notes on such practical details as how to arrange the chairs, making sure that the fuses are readily accessible, providing a firm table for the projector, and choosing colour or monochrome films are included, and there is a short summary of the law in relation to showing films.

INFECTED HANDS TREATED WITH SYSTEMIC PENICILLIN

BY

GORDON A. BARCLAY, F.R.C.S.

Formerly Demonstrator of Minor Surgery,
 Out-patient Department, London Hospital

In an attempt to assess the value of systemic treatment penicillin was given as a routine to all out-patients attending the Infected Hands Clinic at the London Hospital from November, 1946, to January, 1948.

Method

Systemic Penicillin.—One intramuscular injection of penicillin, 200,000 units in aqueous solution (100,000 units per ml.), was given each day. The only variation in dosage was a reduction to 100,000 units in small children and a rise to 300,000 units for the first two or three days of a severe infection with systemic reaction.

Local Dressings.—Penicillin cream (500 units per gramme in an emulsifying wax and castor-oil base) was applied. Glycerin and magnesium sulphate paste was also used extensively in the presence of slough and during the course of systemic penicillin, local chemotherapy being of little value in the presence of necrotic tissue. Repeated saline or antiseptic baths were never used, but occasionally a hypertonic saline bath enabled one to remove a dry adherent dressing, drain, or scab under which pus was collecting. The drains were sterile ribbon gauze dipped in penicillin cream, which achieved the effect of local penicillin with the minimum of difficulty. Splints were never used except in cases of arthritis or tenosynovitis, because it was felt that the bulky dressing applied after incision, combined with a sling, gave adequate rest for the first 48 hours, and that after this time active movements were desirable. Dressings were done on an average every second day.

Physiotherapy.—No short-wave diathermy or dry heat was given. The great majority of patients did not attend the physiotherapy department. All cases with much sloughing of the pulp or osteomyelitis attended a class for finger exercises and occupational therapy.

Incision.—General anaesthesia—gas, oxygen, with occasionally "trilene"—was used, and in many cases an avascular field was ensured by a rubber tubing tourniquet round the base of the finger. Local nerve-block with procaine was employed occasionally. Ethyl chloride spray was not used.

The selection of alternate cases as controls being impracticable, the records of the previous six months are presented for comparison, as well as those of six months in 1944. The types of infection are dealt with below.

I. Paronychia

Surgery.—In early cases a unilateral incision was made in the angle of the nail fold. Usually the incision was bilateral, raising a dorsal flap and removing part or all of the nail according to the extent of the infection. A drain was left under the flap for 48 hours.

The results of treatment with penicillin are given in Table I.

Conservative Treatment.—For 12 out of 134 cases no incision was necessary, inflammation resolving with local heat and penicillin. The average length of history was 3.3 days (10 cases).

Operative Treatment.—Usually pus had already formed when the case was first seen. Incision was then necessary. A preliminary review of cases after 50 to 60 patients had

TABLE I.—*Paronychia*

Series	No of Cases	Systemic Penicillin No of Days Given	History in Days	I.H. Interval*			A.D. Interval†		
				No of Cases	Mean in Days	Standard Deviation	No of Cases	Mean in Days	Standard Deviation
I. 1944. Propamidine dressing	20	—	—	20	16.45	±16.52			
II. 1946. Local penicillin in most cases	49	—	—	49	12.57	±6.91			
III. 1946-7. Local penicillin in all cases	40	—	4.13	39	10.79	±5.08	39	15.25	±6.02
IV. 1946-7. Systemic penicillin	134	4.44	4.98	125	8.68	±3.86	122	12.72	±5.35

* Day of incision until formation of dry scab without discharge

† Day of admission until day of discharge with full epithelization and full movements

TABLE II.—*Terminal-pulp Infection*

Group	Period	No of Cases	Systemic Penicillin No of Days Given	History in Days	I.H. Interval			I.E. Interval†			A.D. Interval		
					No of Cases	Mean in Days	Standard Deviation	No of Cases	Mean in Days	Standard Deviation	No of Cases	Mean in Days	Standard Deviation
1	1944	15	—	—	15	21.1	±14.6*						
2	1946	20	—	—	20	13.5	±7.47*						
3	1947	83	6.56	4.27	83	11.57	±7.03	57	16.85	±8.71	81	17.43	±9.67
4a	1947 Under 30 years	51		3.70	51	10.1	±6.23				46	15.67	±8.83
4b	1947 30 years and over	40		5.89	34	13.22	±7.72				29	20.6	±11.1
5a	1947 History 4-7 days inclusive	38			39	13.2	±7.45				38	20.6	±10.4
5b	1947 History 3 days and less	26			27	9.62	±6.17				24	13.7	±7.25
6	1947 Delayed incision	22		3.0	22	8.09	±5.18*	16	14.88	±6.15*	19	14.41	±5.94*
7	1947 Diabetes	4		9.0	4	23.75	±15.34*	4	33.5	±15.34*	4	41.5	±15.25*
8	1947 Osteomyelitis	19		9.54	19	45.1	±16.98*	13	60.9	±23.3*	13	74.4	±26.2*
9a	1947 Osteomyelitis under 14 days' penicillin	10	8.21	10	10	53.8	±16.88*						
9b	1947 Osteomyelitis over 14 days' penicillin	9	20.1	9	9	35.3	±6.33*						

* Standard deviation for small series of cases

† Day of incision till full epithelization with separation of all crusts and scabs

been discharged showed little difference in the results in all but severe cases. It was therefore decided to omit systemic penicillin from the treatment of mild cases (Series III); these are compared with a larger group containing all cases treated with systemic penicillin, weighted by a larger proportion of severe cases (Series IV). Series III gave both longer incision-drying (I.H.) and admission-discharge (A.D.) intervals, which in the case of the I.H. interval would have occurred only 1 in 100 times, and in the case of the A.D. interval 1 in 33 times, through chance. Thus the milder cases, instead of showing shorter intervals as would be expected, gave slightly longer intervals. In comparing the "controls" with cases treated with systemic penicillin the difference is statistically significant for Series II, but though the difference is larger in Series I the greater variation gives a 1 in 25 possibility of the difference being due to chance.

II. Uncomplicated Terminal-pulp Infection

The results of the penicillin treatment of this series are given in Table II.

Surgery.—Hockey-stick or bilateral through-and-through incisions were made with division of all longitudinal fibrous septa in each case. The horseshoe or crocodile-mouth incision was not used, the functional end-result being poor.

Conservative Treatment.—In cases with a short history of pain (1-4 days) and only one or two nights' loss of sleep, and where on examination it was thought that pus had not yet formed, incision was delayed, systemic penicillin, kaolin poultices, and some analgesic being the only treatment. To these cases must be added a number in which there was some contraindication to immediate operation. Twenty-seven cases were treated in this way. Five of these resolved without pus formation and 22 had incision one or more days later (mean 1.64 days). The incision was often limited to part of the terminal pulp without division of all fibrous septa, as in many cases a well-marked localization had occurred within the terminal pulp and general swelling and tension of the pulp had subsided. As can be seen from Table II, all the intervals measured are shorter than in the main penicillin-treated group. The difference of 3.48 days

in the I.H. interval would have occurred only 1 in 100 times as a matter of chance; the significance of the other differences is less than this. The mean length of history in this group (No. 6) was only 3.0 days as compared with 4.27 for all cases (Group 3). This shorter history may be partly responsible for the quicker healing, but at least it seems clear that delayed incision did not delay healing and did not result in complications causing prolonged disability.

Operative Treatment.—Table II shows that penicillin-treated cases for 1947 had the shortest period of disability. The difference between the 1947 series and that of 1946 is not statistically significant, but the difference between 1944 and 1947 would occur only 1 in 100 times through chance.

Age.—Cases fell into two main groups, those under 30 and those 30 years and over. As can be seen from Table II, these two groups show a difference of 2.19 days in length of history; this is statistically significant. The difference in the I.H. interval (3.12 days) would occur only 1 in 20 times through chance and the A.D. interval (4.93 days) 1 in 15 times through chance.

Length of History.—Arranging cases into two groups—those with a history of three days or less and those with a history of four to seven days—there is an increase in disability in the latter group of 6.9 days in the A.D. interval, which is statistically significant. Those cases with more than seven days' history gave much longer periods of disability—23 days for the I.H. interval and 30 days for the A.D. interval. It seems clear that the younger age groups have a shorter history and a shorter period of disability, the shorter history being at least one if not the main factor in lessening the time of disability.

Final Movements and Functional Result.—In only one case was there limitation of movement on discharge; this was only 10 degrees limitation of flexion. Some loss of function due to paraesthesia or anaesthesia of the scar and destruction of the pulp in cases of gross sloughing was however, relatively common. Paraesthesia tended to disappear rapidly, especially after compensation.

Incidence of Complications.—No case of arthritis, osteomyelitis, or tenosynovitis arose during penicillin treatment except one possible case mentioned under osteomyelitis

III. Terminal-pulp Infection with Osteomyelitis of the Terminal Phalanx

Diagnosis.—Bony infection may be immediately demonstrable by radiography in late cases, or the diagnosis may be one of suspicion only, confirmed later by radiological evidence. The three factors of Bolton *et al.* (1947)—length of history, amount of tissue necrosis, and previous inadequate incision—are helpful in diagnosis. To these can be added age of patient and the typical bulbous appearance of the terminal phalanx.

Length of History.—In 78 uncomplicated cases with a mean of 4.27 days' history only three gave a history of eight days or more, while of 19 cases of osteomyelitis with a mean of 9.54 days' history only three gave a history under a week and five gave exactly a week's history. Thus a short history does not exclude bony infection, nor does a long history necessitate it.

Age of Patient.—As has been shown in uncomplicated cases, patients under 30 have shorter histories and a shorter disability. In cases of osteomyelitis only two out of 19 (10.5%) were under 30, while 59.5% were under 30 in the uncomplicated cases. In this series only those showing radiological signs of osteomyelitis are included: cases of suspected osteomyelitis never proved radiologically are excluded under uncomplicated cases.

Surgery.—This was identical with that of uncomplicated abscesses. Sequestrectomy was never performed until definite radiological evidence was at hand, unless a sequestrum was seen lying free at the primary operation for incision of the pulp.

Cases (see Table II) are divided into two groups: the first 10 cases (Group 9a) received penicillin for less than 14 days

(mean 8.2 days), the second group of 9 (Group 9b) received it for more than 14 days (mean 20.1 days). This change was due to the realization that a week of systemic penicillin was not controlling cases satisfactorily. Though the numbers are small the difference of 18.5 days in the I.H. interval is statistically significant and the two groups appear to be clinically of similar severity, with a mean history of 10 and 9 days and a mean age of 43 and 40 years respectively.

Progressive Osteitis.—This did not occur after the administration of systemic penicillin except in one case. This case is not included in the figures as it received much of its treatment at another hospital. The extension of the bony infection and involvement of the distal interphalangeal joint occurred a few days after cessation of the initial seven days' systemic penicillin; this should have been avoided if penicillin had been continued for a longer period.

Sequestrum Formation.—In Group 9a one large sequestrum was removed at primary operation and four other cases had small sequestra removed later. In Group 9b no sequestrectomy was necessary, minute pieces of dead bone being extruded in the dressings, while cases in which there was gross radiological disorganization of the terminal phalanx, with separation of the bone into two or more separate pieces, resolved without sequestrum formation, a somewhat deformed phalanx re-forming.

Tenosynovitis.—One probable case was seen in which the middle pulp space was also affected and bilateral incision of the terminal and middle pulp was necessary. Osteomyelitis of the terminal phalanx was present, but there was no radiological evidence of arthritis. Final movement at the terminal interphalangeal joint was only 25 degrees flexion: it is suggested that the diminished

TABLE III

	No. of Cases	Systemic Penicillin No. of Days Given	History No. of Days	I.H. Interval			A.D. Interval		
				No. of Cases	Mean in Days	Standard Deviation	No. of Cases	Mean in Days	Standard Deviation
terminal-pulp infection	83	6-56	4-27	83	11-57	±7-03	81	17-43	±9-67
almar subcutaneous infection of fingers	43	5-54	4-41	40	11-94	±7-19	41	15-02	±7-4
web-space infection	32	6-7	4-62	29	13-34	±8-16*	31	16-11	±8-03*
subaponeurotic infection	15	6-07	5-21	15	12-51	±6-81*	14	19-77	±8-8*
thenar-space infection	6	5-1		2	11		6	13-17	±5-34*
dorsal infections of fingers	34						34	17-44	

* Standard deviation for small series of cases

TABLE IV

Infection	Penicillin	Days of Incapacity							
		Incision Dry			Incision Closed Not Moist	Incision Epithelized		Incision Epithelized and Full Function	
		Barclay	Florey and Williams (1944)	Bolton <i>et al.</i> (1947)	Curr (1945)	Barclay	Florey and Williams (1944)	Barclay	Webster (1947)
Paronychia	{ None Local Systemic	16.5 10.8 8.7	15.5 7.7					15.3 12.7	14 17.1
Terminal pulp	{ None Local Systemic	21.1 13.5 11.6	20.7 10.8	17 17	18 23	16.9	29.7 21.7	17.4	15.4 18.9
Terminal pulp, with osteomyelitis terminal phalanx	{ None Local Systemic	a. 53.8 b. 35.3			37 36			74.4	
Web	{ None Local Systemic	13.3			16 13		34.2 18.8	16.4	
Palmar space	{ None Local Systemic				23 26				14 15.7
Thenar space	{ None Local Systemic	11						13.2	11 18.1

movement was due to some tendon damage with adhesion formation.

Final Result

Movements.—These returned to normal except in the case complicated by arthritis, the case mentioned above as probable tenosynovitis, one with 5 degrees limitation of flexion, and another with 20 degrees limitation. Thus, in general, partial destruction of the phalanx did not limit final movements.

Loss of Soft Tissue and Scarring.—Greater disability resulted from this cause, gross sloughing of soft tissues and multiple incision contributing. Under systemic penicillin treatment the absence of long-continued discharge and its resultant fibrosis and the reduction in the number of sequestrectomies improved the result, but there did not seem to be any regeneration of the soft tissues comparable with the reappearance of the bony phalanx.

IV. Palmar Subcutaneous Infections of the Proximal and Middle Phalanges

Four cases out of 40 subsided without incision. The periods of disability as shown in Table III do not differ significantly from those in uncomplicated terminal-pulp infections.

V. Dorsal Infections of the Fingers

Under this heading are included all dorsal infections except paronychia. Incision was necessary in only six cases, where it was limited to the release of pus under tension when still present after one or two days' treatment with systemic penicillin.

VI. Space Infections (Web, Subaponeurotic, and Thenar)

The numbers seen in each group were small. The results do not show much improvement on non-penicillin-treated cases in previous periods, with the following exceptions: no case suitable for conservative treatment was seen in the subaponeurotic group, but out of 32 web-space infections three resolved without incision, as did four out of six thenar-space infections.

VII. Acute Tenosynovitis

A single daily dose of 200,000 units of penicillin is not sufficient to abort or treat all cases of tenosynovitis (see Case 2); once tenosynovitis was diagnosed the patient was admitted to hospital for more frequent injections of penicillin. Immobilization of the affected finger by a plaster slab was carried out for one week.

Primary Tenosynovitis

Case 1.—This patient had a 24-hours history of a penetrating wound of the fifth finger. Examination revealed tenosynovitis of the fifth finger and ulnar bursitis. As an in-patient he was given systemic penicillin, and a small incision made along the ulnar border of the sheath at the base of the fifth finger released seropurulent fluid. The wound was sutured on the fifth day. Haemolytic streptococcus and *Bact. coli* were obtained from the puncture wound and haemolytic streptococcus from the sheath (*Bact. coli* was penicillin-resistant). The patient defaulted while being followed up as an out-patient, but when last seen he had full movement with the exception of 10 degrees limitation of flexion of the fifth finger and slight loss of gripping power.

Case 2.—Treated as an out-patient with systemic penicillin, 200,000 units daily, for a penetrating wound of the base of the third finger. Signs of tenosynovitis gradually appeared, but were not definite until the fourth day. The patient was admitted for intensive penicillin, and an incision was made to relieve tension in the proximal end of the sheath. Seropurulent fluid showing pus cells but sterile on culture was found. Final result: 5 degrees limitation of full flexion with slight loss of

power. The patient thought there might be slight loss of function, but compensation had not been decided.

Case 3.—Attended as out-patient, with a history of a splinter in the proximal pulp of the third finger. On examination some cellulitis of the proximal pulp was seen; this subsided after two days' treatment with penicillin. The patient defaulted after the second day, to return after one month with acute tenosynovitis of the third sheath. Systemic penicillin therapy as an in-patient and immobilization without incision resulted in cure with full function but 5 degrees limitation of full flexion.

Case 4.—Puncture wound of the base of the third finger with signs of tenosynovitis, resolved with in-patient systemic penicillin therapy. Final result: full function.

Secondary Tenosynovitis

An early case resolved completely, while one late case resulted in sloughing of the distal sheath and adhesions of the tendon to the overlying scar with negligible movement at the distal interphalangeal joint and 10 degrees limitation of flexion at the proximal joint. A third case is mentioned under "Osteomyelitis."

VIII. Acute Arthritis

From three cases seen it was realized that arthritis may occur before or after penicillin treatment without marked physical signs, and that even if arthritis does occur a useful joint should be obtained with only partial loss of movement provided the cartilage has not been too grossly damaged. In one case cartilage destruction must have been considerable, as half of the distal joint surface was sequestered, but limitation of extension was only 10 degrees and flexion 35 degrees.

General Considerations

Systemic penicillin treatment in the out-patient department has resulted in a big saving in bed space. This is shown by the following figures. General surgical admissions to the London Hospital were 11% higher in 1947 than in 1946, while beds available for septic cases rose from 21 to 28. The out-patient clinic for infected hands also expanded by 64%. However, 37 cases of infected hands were admitted during 14 months of systemic penicillin treatment in the out-patient department, as compared with 78 in the previous 14 months, a drop of 52%. Of the 37 cases, four or five were admitted unnecessarily according to present standards. The reduction was mainly due to a fall in uncomplicated but severe soft-tissue infections from 49 cases to 13 and of osteomyelitis from nine to three; and two of these three cases were diabetics admitted for stabilization.

The reduction in pain and tissue-swelling brought about by systemic penicillin improved drainage and allowed many patients to continue work uninterrupted except on the day of incision.

Apart from paronychia, penicillin-sensitive organisms were isolated in all cases except one of osteomyelitis yielding a relatively insensitive *Staph. pyogenes*. Of 94 positive swabs taken from cases of paronychia, 15 grew penicillin-resistant organisms—*Bact. coli* 6, *Proteus* 7; *Ps. pyocyanea*, *H. influenzae*, and a resistant *Staph. pyogenes* one each. These cases took nearly three days longer to heal than the main group, but this is not statistically significant. In seven cases penicillin-resistant organisms alone were isolated. Only three cases showed marked clinical resistance to treatment: two with cultures of *Proteus vulgaris* responded to propamidine cream; one chronic case which had previously received penicillin grew a resistant *Staph. pyogenes* but responded to sulphonamides. Penicillin-resistant organisms did not appear to be secondary invaders, as they were found both in early and in late cases.

Discussion

From an examination of Table IV it will be seen that there is no very startling difference between the non-penicillin- and the penicillin-treated series, but in general the comparison bears out the impression that penicillin shortens the disability, more especially if given systemically. though such a comparison between different papers is not very satisfactory.

Various papers read at the XXIIIrd Medico-Legal Congress in Paris (1946), for cases treated before the general use of penicillin, gave similar periods of disability, such as that of paronychia (13 days' treatment). It was also shown that with advancing age there was increased temporary and permanent incapacity, and that the longer the time before surgical treatment the longer was the period of temporary incapacity; this conclusion applied to infected hands in general and agreed with the results of terminal-pulp infection noted in this paper. However, Bolton *et al.* (1947) found no relation between length of history and disability, but reported increased disability with increased age.

Though the mean period of disability may show only slight diminution with penicillin treatment, it is interesting to see that Curr (1945) and the Medico-Legal Congress report spreading and gangrenous infections. It is in avoidance of these severe infections that systemic penicillin shows the most beneficial results. To prove that such infections are prevented by routine systemic penicillin would need very large numbers of cases. I have, however, seen infection extend along the finger in cases treated by apparently adequate incision but without penicillin, and especially in old and debilitated subjects. These infections have been easily controlled with penicillin in out-patients. The incidence of complications such as osteomyelitis, arthritis, and tenosynovitis is also decreased.

With practice it may be possible to select at first sight all cases that are complicated or appear likely to spread and become complicated, but unless this can be relied upon routine administration of penicillin should be carried out.

Various authors have mentioned conservative treatment, and Webster (1947) concluded that it was impossible to abort a terminal-pulp infection. Experience gained in this series, however, suggests that when the cases are first seen an attempt should be made to decide whether pus is present or not. If present, incision is indicated; if not present, systemic penicillin and local heat may abort or localize the infection. The common practice of applying heat until a finger is "ripe" must be condemned, as once pus has formed delay may result in further destruction of pulp tissues, and if pus has not formed resolution is possible with penicillin. In hospital practice few cases are seen early enough to abort, but in outside practice a larger number of suitable cases should be available.

The method is not advised without full surgical facilities and daily review of cases, for, while pain is often greatly relieved by one or two injections of penicillin, incision may still be necessary.

Summary and Conclusions

Systemic penicillin, 200,000 units in one daily dose, was given as a routine to cases of infected hands in an out-patient department. The results of 380 cases are analysed and compared with those of cases not so treated and with other published results.

This routine did not reduce the period of disability in a marked degree in uncomplicated cases, though there was some definite improvement.

It resulted in the resolution of some early cases without incision and did not increase the disability in cases which had been treated conservatively and which were subsequently incised.

It controlled systemic reaction and spread in severe uncomplicated cases.

It reduced the period of disability and probably the incidence of complicated cases.

It greatly improved the functional end-result in cases of arthritis and tenosynovitis.

It resulted in a considerable saving of in-patient beds, admission of infected hands being reduced by 52% in spite of a much larger out-patient clinic.

It was found in the case of terminal-pulp infection that with increasing age there was a longer history of pain, a longer period of disability, and a greater liability to osteomyelitis.

I wish to acknowledge my indebtedness to Mr. E. C. B. Butler for his encouragement and helpful criticism, to Dr. F. C. O. Valentine for his advice on the bacteriological aspects, and to the authors mentioned for their kind permission to quote their results.

REFERENCES

- Bolton, H., Catchpole, B. N., and Jepson, R. P. (1947). *Lancet*, 2, 608.
 Curr, J. F. (1945). *Edinb. med. J.*, 52, 469.
 Flörjé, M. E., and Williams, R. E. O. (1944). *Lancet*, 1, 73.
 Webster, A. L. (1947). *Ibid.*, 2, 610.
 XXIIIrd Medico-Legal Congress (1946). *Ann. Méd. lég.*, 26, 4.

CHRONIC URETHRAL OBSTRUCTION IN CHILDREN

BY

R. J. LAST, M.B., F.R.C.S.

Lecturer in Anatomy and Anatomical Curator, Royal College of Surgeons of England; Formerly O.C. Abyssinian Medical Unit, British Red Cross Society

Chronic obstruction of the urethra is so much more common in the adult than in the child that, except in very specialized urological practice, experience of the latter is usually very limited. The outlook of the general surgeon is thus inevitably coloured by his experience of adult pathology. Where long-continued obstruction exists in the adult, with production of advanced hydronephrosis, relief of the obstruction can usually do little more than arrest the hydronephrosis. In the child, however, reparative powers are so much more active that a very different picture presents itself. A gross hydronephrosis can recover to such an extent that subsequent pyelography will reveal no abnormality whatever. Furthermore, after as much as two years of overflow incontinence the bladder sphincters can regain their tone and preserve continence instantaneously, as was demonstrated in the majority of the 73 cases which form the basis of this article.

All the patients were Abyssinian boys aged from 8 to 16 who had suffered amputation of penis, scrotum, and testes several years previously, the result of intertribal raids and minor warfare. The boys almost invariably showed other evidence of the attacks they had withstood from their aggressors. Depressed scars of the scalp, missing fingers, and deep scars of the forearms were frequent. The mutilation is carried out by grasping the external genitalia, pulling out the mass of tissue, and slashing it through with the angled sword with which many of the Abyssinians are armed. One would expect that the immediate mortality from such injuries would be high, and this impression was confirmed by the accounts of native witnesses. Gross infection of the raw surface occurs, and this accounts for the extreme degree of scarring, which led ultimately to chronic urethral obstruction in the cases under review.

Amputation of penis and scrotum is a rare condition. In most industrial accidents of this nature the skin of the penis and sometimes of the scrotum is avulsed, but the penis itself is usually intact. Owens (1942), in an exhaustive review of the literature, found only 34 cases of denudation, in only 13 of which was the skin of the scrotum also destroyed. Delprat (1944) and Lyons (1945) each reported a case of traumatic avulsion of the penis; in the latter's case the scrotum was also lost. Each claimed that his case was unique in the literature. Rodrigues (1946) reports a case of amputation, but devotes his article almost exclusively to the forensic aspect. Gillies (1948) records three cases of penile loss—two traumatic and one the result of phagedaena—and McIndoe (1948) reports two further cases of traumatic amputation.

First Cases

In June, 1942, at Addis Ababa, two boys, aged 8 and 14, from the Empress Menin School for Orphans were sent by the school medical officer for advice and treatment for urinary incontinence, with the suggestion that there was "something wrong with the bladder sphincter." Each boy presented a similar picture. Mutilation had taken place some seven years previously, and each had been incontinent for about two years. There was complete absence of external genitalia, the former site of which was occupied by a projecting irregular mass of dense scar tissue. From a minute depressed orifice in the scar tissue a small but constant stream of urine trickled down one or other leg. In each case a tense firm bladder reached the umbilicus.

It was apparent that the boys suffered from overflow incontinence resulting from urethral stricture. It was impossible to introduce even the finest lacrimal probe into the opening in the scar tissue. A thread of fine silkworm-gut was used as a probe, and by a combination of rotary and to-and-fro movements it was with difficulty introduced through the stricture into the urethra. On its withdrawal no increased flow of urine resulted. Urine collected in a test-tube placed over the orifice showed no abnormality. "Perabrodil" intravenous pyelography was done. Superimposed circular shadows of three calices, each the size of a walnut on the film, testified to the presence of very advanced bilateral hydronephrosis in both cases. Excretion of the perabrodil was efficient; no other test of renal efficiency could be carried out under the conditions at that time existing in Addis Ababa.

Operation.—In the elder of the two boys the whole mass of scar tissue was removed under spinal analgesia. It was of the consistency of hard rubber, oval in shape, 4 by 2 in. (10 by 5 cm.) in extent, and over 1 in. (2.5 cm.) thick. It was difficult to identify normal urethral mucosa beneath the scar. A silkworm-gut thread introduced through the stricture was of great help in finding the urethra. The bladder emptied spontaneously in the act of transecting the urethra. The stump of penile urethra measured about 1 in. in length. It was split inferiorly, and a mucocutaneous continuous suture of fine catgut was introduced with an atraumatic needle. There was no tension on either skin or urethral mucosa. An indwelling catheter was left in position for four days. The boy was continent after the catheter was removed.

In the younger of the two boys precisely similar conditions obtained. In each case an irregular spiral fistulous track was found coursing through the scar tissue. There was no dilatation of the urethra between the triangular ligament and the scar.

Further Cases

The Empress of Ethiopia supports a school for orphans in Addis Ababa. Many of the boys there were in the same condition. From this source and from local doctors who sent me patients I saw 73 such cases before leaving Abyssinia in December, 1944. The ages of the boys varied from 8 to 16, and in all cases amputation had been done six to seven years before. Incontinence had been present for periods varying between a few months and two years or more. In most of the cases incontinence had begun about five years after the mutilation.

It is impossible to estimate the proportion of cases in which ultimate urinary incontinence results. The 73 cases here summarized were all seen because of overflow incontinence. It is certain that some cases never develop obstruction, for in several adults in whom the condition was seen casually the mutilation had taken place several decades previously and, in spite of complete lack of medical care at the time, there had never been any difficulty in micturition. Reports of such cases are rare in the literature.

The case reported by Lyons, even after plastic repair at the Mayo Clinic, required regular dilatation for some time afterwards, whereas in Delprat's case, in which an indwelling catheter was used and the perineal wound packed, with no plastic repair and considerable infection of the wound, no stricture resulted. In each of these cases the penis and urethra had been avulsed at the triangular ligament. Of the three cases reported by Gillies two apparently had some degree of post-operative obstruction. Certainly in none of my cases did incontinence appear until something like five years after the original mutilation.

In my series there was some variation in the degree of amputation of the external genitalia. That is to say, in some instances remnants of scrotal skin remained, but in only two or three cases was one testis preserved. In almost all the patients the volume of scar tissue was very great, due no doubt to the gross infection which must have followed the amputation. The length of penile urethra which remained was very variable.

In one case, for example, almost 2 in. (5 cm.) of urethra remained, and a dilated sac, ovoid in shape, contained over 1 oz. (28 mg.) of large faceted phosphatic calculi. In this case there was a minimum of scar tissue, and it was a simple matter to slit the dilated urethra and make a mucocutaneous suture 2 in. long. Six months later this large artificial meatus had contracted down to a length of $\frac{1}{2}$ in. (1.25 cm.), but the boy was still continent. In the majority of cases the length of penile urethra varied from $\frac{1}{2}$ to 1 in. and was not at all dilated between the scar and triangular ligament.

It was discovered by accident that the use of a post-operative indwelling catheter was unnecessary and inadvisable. Early in the series one of the boys removed his catheter on the day of the operation; four hours later he was still continent. It had been noticed, as expected, that the indwelling catheter in previous patients had caused some erosion and superficial suppuration of the suture line. Thereafter no indwelling catheter was ever used, and the boys were completely continent immediately after operation. Following micturition, which occurred only four or five times a day, swabbing the suture line and drying it with spirit resulted in rapid aseptic healing. It seemed a surprising thing that after two or more years of gross obstruction and overflow incontinence prolonged enough to cause hydronephrosis the bladder sphincters could regain their function instantaneously. Equally striking was the disappearance of the hydronephrosis, to be referred to later. In no case was there urinary infection.

Late Results

The immediate results were good in all cases operated on, complete continence being established at once. The later results were less satisfactory. In several of the earlier cases great contraction of the artificial meatus occurred, and dribbling of urine reappeared after about six months. Second operations, with a more generous slitting of the urethra posteriorly and a resultant longer line of mucocutaneous suture, were performed in these cases, and it became abundantly apparent that in all cases slitting of the remnant of penile urethra as far back as possible was very necessary in order to secure the longest possible line of mucocutaneous suture. Of equal importance was the minimizing of post-operative fibrous-tissue formation by the meticulous removal of all scar tissue at the operation and the securing of primary union by the avoidance of post-operative indwelling catheters and keeping the wound dry.

After these procedures were adopted late results appeared to be uniformly good. The period of follow-up was too short

many of the cases, however, and it is quite possible that the ultimate results are less satisfactory. Contraction of the artificial meatus certainly seemed to be a continuous process in all cases, but fortunately in most of the boys it appeared to have ceased before the orifice became pin-point and obstruction recurred. But as it required five years for obstruction to occur after the original mutilation perhaps at least this period should elapse before a plastic repair is pronounced successful.

In only one case has complete failure to be recorded. Here the stump of penile urethra projecting beyond the triangular ligament was very short. Slitting of the urethra was out of the question, and mucocutaneous suture transversely around the short stump of urethra was all that was possible. Continence was maintained for only six months, and thereafter weekly dilatation of this post-operative stricture was necessary to preserve continence. Several plastic procedures were considered in this case, but none was ever tried out.

Should an attempt have been made to lay open the membranous urethra, with a long suture line to a skin tube previously constructed for the purpose? Apart from the almost certain risk of damage to the external sphincter I felt that the chances of resultant stricture were very high, and should such a stricture have occurred its regular dilatation would have been more difficult and probably more painful than dilatation of the existing stricture at the triangular ligament. At that time I was not aware of the plastic repairs that were being performed by Gillies, McIndoe, and others, but in retrospect I still feel, in view of the contraction at the artificial meatus in all cases, that in my hands post-operative stricture would have occurred at the junction of urethral mucosa and skin tube.

Other Factors

Cosmetic Repair.—It was felt that the construction of an artificial penis was not called for in those patients (all except two or three) who had lost their testes, and efforts were directed exclusively to the cure of urethral obstruction by the production of an artificial meatus which would remain patent.

A problem which caused great anxiety was the question of what to do in the two or three cases in which one testis remained. In these cases, in which there was no penis at all and therefore no apparent means of sexual gratification, and having regard to the lack of inhibitions which normally characterized the life of these people, it was felt that castration would be a kindly act. Nevertheless, it was not done. In retrospect I thought that was a mistake until I read the articles by Gillies and McIndoe, and I am now glad that I allowed these boys to retain their solitary testes. A surgeon in Addis Ababa may at some future date be able to perform such operations as those authors describe and restore sexual function to these unfortunate individuals.

Recent Mutilation.—I saw only one case of recent mutilation, and that prior to the series of late cases reviewed here. In 1941, during intertribal fighting in Abyssinia, a boy aged about 3 years was brought to me. The whole of his external genitalia, including both testes, had been amputated a few hours before. Bleeding had been comparatively slight, the wound was a clean incised one, and skin retraction had left a raw area about 2 in. in diameter. In the centre of the wound the stumps of the three corpora presented. I was working in the field at the time and sent him back to hospital, but the parents refused treatment and took him away.

Recovery of Hydronephrosis.—Apart from the recent case referred to above, all the boys had dilated bladders with overflow incontinence, which had been present for periods of up to three years. In every case in which pre-operative intravenous pyelography was done (some fifteen or sixteen in all) hydronephrosis was evident. The dilated kidneys were palpable in the majority of the boys. These cases were seen during the war years, when supplies were

short and great economy in the use of perabrodil was necessary. Attempts to procure a child's cystoscope for post-operative retrograde pyelography failed. Consequently I can report only three post-operative intravenous pyelograms. In each of these three patients, whose pre-operative pyelograms had shown advanced hydronephrosis, the shadows of a slender pelvis and concave calices had replaced the three circular shadows of the original pyelograms. In no case was the kidney palpably enlarged after operation, and I had the impression that the three cures demonstrated by pyelography were typical of the other cases also.

Summary

After amputation of the external genitalia in boys, untreated at the time and always grossly infected, overflow incontinence due to cicatricial contraction does not appear earlier than about five years; in an uncertain proportion of cases it does not occur at all.

Overflow incontinence, present for as long as two years or more, is relieved immediately the obstruction is removed. The bladder sphincters regain their function instantaneously.

An artificial meatus continues to contract for many months (perhaps for several years) after operation. Indwelling catheters across the suture line are to be avoided at all costs.

In the absence of urinary infection gross hydronephrosis due to low obstruction is curable in children.

REFERENCES

- Delfral, G. D. (1944). *J. Amer. med. Ass.*, 125, 274
 Gillies, H. (1948). *Brit. J. plast. Surg.*, 1, 8.
 Lyons, B. H. (1945). *Canad. med. Ass. J.*, 52, 610
 McIndoe, A. (1948). *Brit. J. plast. Surg.*, 1, 29
 Owens, N. (1942). *Surgery*, 12, 88.
 Rodrigues, J. (1946). *Brasil-méd.*, 60, 264

NEPHROCALCINOSIS INFANTUM WITH HYPERCHLORAEMIC ACIDOSIS

By

H. J. BOUTOURLINE-YOUNG, M.D., M.R.C.P.
D.C.H.

Paediatric Registrar, St Mark's Hospital, London, W2

At the International Paediatric Conference held in London in 1933 Lightwood demonstrated post-mortem specimens from infants showing calcification within the renal collecting tubules. There was no abnormal extrarenal calcification or any sign of endocrine disease. In 1935 he described the clinical picture: failure to thrive, anorexia, vomiting, constipation, and pronounced hypotonia. A trace of albumin and a few leucocytes or epithelial cells were usually found in the urine. The previous suggestion of Putschar (1929) and of Thatcher (1931) that hypervitaminosis D might be the explanation of such a clinical picture with renal calcification was rejected. In a female infant with these clinical features Lightwood, MacLagan, and Williams (1936) demonstrated an acidosis which persisted for weeks.

Lightwood (1946) recorded a further case in an infant. The clinical features were similar to those he had previously described, and at necropsy the kidneys showed deposits of calcium both within and external to the renal collecting tubules.

Butler, Wilson, and Farber (1936) described persistent dehydration, hyperpnoea, hyperchloraemia, and diminished alkali reserve in four cases. Large deposits of calcium were observed post mortem both within and adjacent to some of the renal collecting tubules. Their patients were dehydrated in spite of a satisfactory fluid intake, and

Reviews

OCCUPATIONAL MEDICINE

Occupational Medicine and Industrial Hygiene. By Rutherford T. Johnstone, A.B., M.D. (Pp. 604; 117 illustrations, 7 in colour. £2 10s.) London: Henry Kimpton. 1948.

Many aspects of occupational medicine are considered in this book. It includes historical and medico-legal data as well as descriptions of clinical syndromes and special industrial processes. The author stresses the need for wider recognition of the importance of industrial medicine both among leaders of industry and members of the medical profession, and presents a scheme for teaching undergraduate and postgraduate students. He emphasizes the importance of occupational hygiene in the field of preventive medicine.

The book begins with a brief history of the development of occupational medicine as a special study. The author praises the early work of Ramazzini and his interest in the health of the worker, and pays tribute to all who have carried this work to its present stage. He then expounds clearly his views on the aims and scope of industrial medicine in the future. Chapters on pre-employment examination, job placement, and job analysis indicate how some of these aims may be achieved. Discussion on the problems of workmen's compensation and the medico-legal complexities are of limited interest to readers outside the U.S.A.

The next section of the book is mainly about the hydrocarbons and the toxic gases. He discusses the chemistry and gives details of the use of particular compounds in industry. The symptoms and signs of intoxication are perhaps less clearly described than the nature of the hazard and methods of its control, but throughout the book complete case records are reproduced when possible to illustrate the main features. A discussion on thioglycollic acid and the thioglycollates, and also on some of the latest "weedicides," illustrates the author's awareness of the daily appearance of new substances which may prove toxic and his wish to make all physicians similarly aware of new risks.

Johnstone gives a full account of the toxic hazards arising from metals in industry. In the chapter on beryllium he draws attention to an important new problem, and in the chapter on lead poisoning he presents the varying views on the storage of lead and its excretion. He quotes at length from several authorities and gives many references both on this aspect and on that of diagnosis. He personally has abandoned treatment of lead poisoning by the method of attempting to store lead in the bones during the acute stage of intoxication, with subsequent controlled "deleading," and prefers to concentrate solely on the incidental effects of lead. He describes his own method of treatment, and also gives a detailed account of the alternative programme. Clearly this controversy is not yet settled.

The final section is on the dusts. Many readers will disagree with some of the author's opinions. I wonder whether our knowledge of the effects of carbon dust is sufficient for him to say that "miners reveal a greater fibrosis than that of the non-exposed, but it is a non-disabling fibrosis unless the carbonaceous substance is combined with siliceous material." The type of pneumoconiosis found in South Wales coal-miners suggests that this is not so. There is an unbiased discussion on the value of aluminium dust therapy in silicosis, and useful chapters on tuberculosis in industry and on the inert dusts. Descriptions of special industrial processes are clear and particularly well illustrated. He outlines the principles of x-ray diffraction and dust-counting methods and describes in detail the method of administering oxygen under pressure.

Such statements as, "It is advisable to consult chest x-rays for they may reveal pathology of varying degrees," which occurs when discussing "laboratory findings" in persons exposed to dangerous amounts of gasoline, lack clarity. The reader detects at times a sense of indecision when Johnstone quotes at length from publications on a particular subject without indicating which idea he believes to be right. But these are minor criticisms of a book which contains much useful knowledge.

DONALD HUNTER.

RECENT CARDIOLOGY

Recent Advances in Cardiology. By Terence East, M.A., D.V., F.R.C.P., and Curtis Bain, M.C., D.M., F.R.C.P. Fourth edition. (Pp. 454; 27 plates and 98 text-figures. £1 6s.) London: J. and A. Churchill. 1948.

Nearly twenty years have elapsed since the first publication of *Recent Advances in Cardiology* by Drs. East and Bain. Comparison with the present edition shows how remarkable has been the transformation of cardiological knowledge in the two decades. Such rapid advances entail a risk that students will concern themselves with spectacular new developments when they are still unsure of fundamental principles. The authors must, of course, discuss new subjects, as the title of their book implies, but, building as they do on the earlier editions, they strike an admirable balance.

Those seeking an exposition of familiar problems such as cardiac dyspnoea or the arrhythmias will find them clearly presented, even though the style is staccato in places. More advanced students will find references to such subjects as the newer theories of the electrocardiogram, ventricular gradient, cardiac catheterization, and angiocardiology. So faithfully have the authors expounded these developments that they have had not only to add to the volume but to rearrange it completely. The revised chapter on congenital heart disease is perhaps as well balanced as others. The bibliographies deserve special mention, for they have become extensive and informative contributions showing the evolution of each branch of the subject. I recommend this work without reservation to all students of cardiology: the beginner and the more advanced student alike will find his needs met and his interest stimulated.

K. SHIRLEY SMITH

IRRESPIRABLE ATMOSPHERES

Breathing in Irrespirable Atmospheres, and, in Some Cases, also Under Water. By Sir Robert H. Davis, F.R.S.A. With foreword by Sir Leonard Hill, F.R.S., LL.D., M.B. (Pp. 386; fully illustrated. 25s.) London: The Saint Catherine Press.

This new book is intended primarily for lay readers, particularly for those who use the many types of breathing apparatus described. The author describes fully the problems of altitude flying, war and industrial gas poisoning, fire fighting, mine rescue, and resuscitation. In most sections he discusses severally the evolution of each problem and the development of the various types of apparatus to cope with it. The resultant mixture of history, physiology, technical problems, and description of apparatus is in the tradition of Sir Robert's previous book, *Deep Diving and Submarine Operations*, and, although not pleasing to a purist, will hold the interest of the reader. The physiology is simplified and therefore dogmatic.

This book is a remarkable record of achievement in many fields and contains much that is of interest to the specialist. There is no doubt that it will join its companion on the shelves of all those interested in respiratory problems.

K. W. DONALD.

THE RORSCHACH TEST

Principles and Practice of the Rorschach Personality Test. By W. Mons. (Pp. 164. 12s. 6d.) London: Faber and Faber.

Though the Rorschach test has become firmly established and is widely used in Britain, no really elementary textbook has been published until now, and the test remains largely in the hands of the expert. One unfortunate result of this is that its potentialities are not always realized as fully as they might be. The tester is seldom a clinician and so does not select his subjects, and the clinician does not know how to select those patients for whom the test can most appropriately be used. Both classes of reader will welcome this book. Dr. Mons gives an account of the theoretical basis and of the actual technique of the test, and provides the clinician with information about the indications for its use and about its limitations. He emphasizes the fact that this is an introduction only; he is writing for beginners, and does not take for granted in his readers any previous acquaintance with the test. He has

evolved his own technique of interpretation, and this he describes minutely and clearly. The reader will have little difficulty in following the instructions, and will find that most of his difficulties and questions have been answered. Although for so small a book it is remarkably comprehensive, it is by no means an exhaustive description of all the theories and techniques which have grown up round the Rorschach test, especially in recent years. It is rather an account of the views and practice of one exponent, evolved by him from an extensive acquaintance with the literature and wide personal experience. It is to be recommended as a most readable introduction to the subject.

ELIOT SLATER.

SHAKESPEARE'S SON-IN-LAW

The Shakespeare Circle. A Life of Dr. John Hall, Shakespeare's son-in-law, with glimpses of their intimate friends and relations. By C. Martin Mitchell. (Pp. 116; illustrated. 12s. 6d.) Birmingham: Cornish Brothers, Limited.

John Hall was born in Bedfordshire in 1575. He matriculated from Queens' College, Cambridge, at the age of fourteen, and is entered in the records as M.A. in 1597. He studied in France, but he did not take a medical degree and was generally known as Master John Hall. It is suggested that an ecclesiastical licence gave him his qualification and he settled in Stratford-on-Avon to practise medicine about the year 1600. He married Susanna, Shakespeare's daughter, in 1607, the year of the production of *The Life and Death of King Lear* and his *Three Daughters*, and in 1610 they moved into New Place to live with the poet. Susanna died in 1649, fourteen years after her husband. Her epitaph, its quality sufficient to prove that her father died before her, is well known:

"Witty above her sexe, but that's not all,
Wise to salvation was good Mistress Hall,
Something of Shakespeare was in that, but this
Wholly of him with whom she's now in blisse. . ."

John Hall became a very successful physician whose practice extended beyond Warwickshire. He refused a knighthood (does this make him unique among physicians?), preferring to pay £10 for his affront to that fount of commercial honour, James I. John Hall was a great man in Stratford and both in 1617 and in 1622 he refused nomination to the Town Council "because his work prevented his attendance." His ultimate acceptance of nomination in 1632 appears to have been a tactical move in his violent quarrel with the Corporation, for he was soon expelled for "sundry other misdemeanours and continual disorders." It is charitable, as his biographer suggests, to regard his acrimonious behaviour in these controversies as evidence of ill-health. He died suddenly in 1635, and in 1657 his friend and admirer, Dr. John Cook, of Warwick, published 200 of his case notes with the title *Select Observations on English Bodies or Cures both Emperically and Historically performed upon very eminent Persons in desperate Diseases*. . .

Mr. Martin Mitchell's book contains all (and more) that is known of John Hall and gives in addition much information about other relations and friends of William Shakespeare.

D. V. HUBBLE.

One has only to read the introduction to *Physical Treatment of Injuries of the Brain and Allied Nerve Disorders*, by Miss K. M. Hern, M.C.S.P. (Baillière, Tindall and Cox; 10s. 6d.) to see that the author is an enthusiast. The theme of physical treatment she advocates is active work—"activity with interest, variety, and achievement." She emphasizes the essential importance of rhythm, for the patient must do much more than slow deliberate concentrated movement with an affected limb; he must be able to exhibit co-ordination and rhythm. She describes the techniques of active re-education in detail, and they are well illustrated. She emphasizes the value of ball games, recommending three different sizes of ball and giving clear details of their use. In the chapter on apparatus she rightly points out that, though it is useful, its absence should be no deterrent to the physiotherapist, who should be able to adapt and improvise. She makes many suggestions for such improvisations. This book is thoroughly practical. The author does not lose sight of the little important things in life, and she reminds us that the spastic patient should be able to handle his own money and do up his own buttons. All who are interested in rehabilitation will study the book with profit.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Manual for Medical Records Librarians. By E. K. Huffman, R.R.L. 2nd ed. revised. (Pp. 371. \$4.50.) Chicago: Physicians' Record. 1948.

The author describes library organization, methods such as micro-filming and card-indexing, and includes a glossary of medical terms.

The Trial of Gogawa Sadaichi. Edited by C. Sleeman, B.A. (Pp. 245. 18s.) London: William Hodge. 1948.

Describes the trial of a group of Japanese war criminals.

Thomson-Walker's Genito-Urinary Surgery. Edited and revised by Kenneth Walker, M.A., M.B., B.Ch., F.R.C.S., T.J.C.S. 3rd ed. (Pp. 956. 60s.) London: Cassell. 1948.

Out-of-date material has been eliminated, and new work on the sulphonamides, antibiotics, and mandelic acid described.

Bacteriology. By F. W. Tanner and F. W. Tanner, Jr. 4th ed. (Pp. 625. 27s.) London: Chapman and Hall. 1948.

An introductory textbook for the student.

Comparative Physiology. By B. T. Scheer, Ph.D. (Pp. 563. 36s.) London: Chapman and Hall. 1948.

A textbook for the advanced student grounded in zoology.

Recent Advances in Respiratory Tuberculosis. By F. Haef, M.A., M.D., F.R.C.P., and N. L. Rusby, M.A., D.M., F.R.C.P. 4th ed. (Pp. 290. 21s.) London: J. and A. Churchill. 1948.

Besides bringing the book up to date the authors have included new chapters on the patient's environment and social circumstances.

Clinical Endocrinology. By L. Marin, M.D., F.R.C.P., and M. Hynes, M.D., M.R.C.P. (Pp. 222. 15s.) London: J. and A. Churchill. 1948.

A short textbook intended particularly for general practitioners and postgraduate students.

The Development of Modern Medicine. By R. H. Shryock. (Pp. 384. 21s.) London: Victor Gollancz. 1948.

The development of medicine is related to the intellectual background and social history of the times. First appeared in the U.S.A. in 1936.

Documenta Ophthalmologica. Edited by F. P. Fischer, A. J. Scheffer, and Arnold Sorsby. Vol. 2 (Pp. 461. No price.) The Hague: W. Junk. 1948.

Includes papers by various authors on the electroretinogram, siderosis retinæ, and experimental trachoma.

Dietetics. By A. Nimalasuriya, M.B., B.S., M.R.C.P. (Pp. 138. No price.) Colombo: The Times of Ceylon. 1948.

Intended for the school-teacher and intelligent parent.

Physiology of the Eye. By H. Davson, D.Sc. (Pp. 451. 32s.) London: J. and A. Churchill. 1949.

A textbook for the general medical student and prospective specialist in ophthalmology.

Science in Films. Edited by B. Lloyd, M.Sc., Ph.D. (Pp. 238. 15s.) London: Sampson Low, Marston. 1948.

Includes an article on the use of films in medicine and very extensive references.

Lumbalgien. By H. Debrunner. 2nd ed. (Pp. 121. 12.50 Swiss francs.) Berne: Huber. 1948.

A clinical account for the general practitioner

Psychiatry in General Practice. By M. W. Thorne, M.D., D.Sc. (Pp. 659. 40s.) London: W. B. Saunders. 1948.

A practical account of diagnosis and treatment, with case histories.

Treatise on Surgical Infections. By F. L. Meleney, M.D. (Pp. 713. 63s.) London: Geoffrey Cumberlege. 1948.

The author discusses sterilization and asepsis, the infection of surgical wounds, the body's defences, and treatment.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JANUARY 29 1949

CAUSE FOR DISSATISFACTION

That there is widespread dissatisfaction among the profession with the conditions of service under N.H.S. is plain from the correspondence in the *Journal*, resolutions passed by Divisions, and discussions in committees. The two chief points of grievance are overwork and under-pay—points that were stressed in the House of Commons on Jan. 21 when Sir Henry Morris-Jones opened a debate on the adjournment. "There is no doubt," he said, "that large numbers of medical men are extremely unhappy and very perturbed about their present position and the working of the Act." He considered that in the large industrial areas medical men had on the whole gained financially, but that the incomes of practitioners in residential, rural, and seaside resorts had fallen. He also drew attention to the fact that many specialists had suffered drastic reduction in income. He thought that the Act would survive the present troubles, but that the basis of remuneration should be reconsidered. Mr. Fred Messer, who is Chairman of the Central Health Services Council, said that as one who had day-to-day experience of the administration of the Service he had found complete co-operation from every section of the medical profession. He confirmed what Sir Henry said about the great hardship "being experienced by many general practitioners at present," adding later "clearly, everybody knows that the situation cannot remain as it is."

Mr. Messer considered that six months' experience was sufficient to show what major changes should be made in the Service. Overwork and under-payment were stressed by Mr. Ralph Assheton, who asked whether doctors might not be given more help in dealing with work that was strictly non-medical, such as filling in forms and certificates. Mr. John Edwards, Parliamentary Secretary to the Ministry of Health, said that about 40,000,000 people had placed their names on the lists of general practitioners and that out of about 21,000 practitioners 18,165 had entered the scheme. Out of 10,000 dentists in general practice 8,988 had come into the Service and had treated 2,200,000 patients, 1,200,000 being under treatment at present; more than 2,500,000 people had had their sight tested, and over 3,000,000 pairs of glasses had been supplied or were on order. These figures, he observed, gave some idea "of the magnitude of the whole operation," which had been completely underestimated. Mr. Edwards said that when everything had been taken into account the payments to general practitioners in the scheme from the appointed day to March 31 of this year would amount to £32,500,000; in addition, superannuation contributions from the Exchequer would amount to £1,600,000 extra. He believed that the overall sum available would secure that doctors were paid in accordance with the Spens recommendations. He agreed that some sections of the medical profession were now very much overworked:

I say to the House quite seriously that when the final payments for the period July 5 last to March 31, 1949, have been made we shall then be able to see whether the remuneration of general practitioners does, in fact, accord with the Spens recommendations. If it does not the arrangements will be reviewed to see what adjustments are necessary to give effect to those recommendations.

Mr. Edwards said it was impossible to agree that the private patient should be permitted to obtain drugs through the Service, and at the same time he said he did not know how, except through new administrative technique, they could separate the Briton from overseas from the foreign visitor. We are therefore faced with the curious anomaly that the British patient who wants to go privately to a doctor cannot obtain medicines and appliances through a Service which he finances as a taxpayer, while the foreign visitor, paying nothing towards the Service, can get all his benefits free of charge. This is an absurd position, especially when we recall that one of the reasons Mr. Bevan gave the Negotiating Committee in December, 1947, for reserving beds in State hospitals where patients could be treated with no ceiling on fees was that these might be occupied by wealthy foreign visitors wanting to take advantage of medical and surgical skill in this country.

A Special Representative Meeting, following a special meeting of the "Panel Conference," has been called for March 29, when no doubt the dissatisfaction with the present terms and conditions of service will be freely discussed. It is good to know that such prominent spokesmen as Mr. Messer have admitted in the House of Commons that there are grounds for this dissatisfaction and that matters cannot rest as they are. Many medical men who have written to the *Journal* have severely criticized the British Medical Association, holding it responsible for much that has been amiss. But, as Dr. Dain said at a meeting of the General Medical Services Committee the other week, the Association must proceed one step at a time on the basis of evidence. The first-fruits of this procedure were the increase of the Mileage Fund from £1,300,000 to £2,000,000—a figure representing, as Mr. Edwards pointed out in the House of Commons, three times the amount available under National Health Insurance. Many critics would seem to leave out of consideration the history of the negotiations that went on between the B.M.A. and the Ministry from the time of the Beveridge Report in 1942 to May, 1948. As Dr. R. W. Cockshut points out in a cogently written article in this week's *Supplement*, the B.M.A. never lost an opportunity of declaring its whole-hearted support for a comprehensive Service and the Representative Body made no attempt to alter its policy in favour of 100% service. That this policy represented the general wish may perhaps have been confirmed by the fact that fewer than 6,000 medical men and women contributed to the Fighting Fund opened by the B.M.A. early last year after the plebiscite of January, 1948. Mr. Messer has testified to the co-operation offered by the profession in the working of the new Service, which makes it all the more imperative that the present wrongs and injustices shall be remedied at the earliest possible moment. But a blunderbuss prescription will not serve the purpose of the profession. The collection of evidence is proceeding, and on the basis of this remedies will be sought and secured.

PENICILLIN AND THE INFECTED HAND

For some years before the introduction of the sulphonamides and penicillin the surgical treatment of the infected hand had been guided and dominated by the outstanding researches of Kanavel. The sulphonamides brought no striking improvement in results, and there were at first too sanguine hopes that surgical incision could be avoided or at any rate limited in extent, but with the advent of penicillin there was a fresh wave of enthusiasm and renewed interest in this important problem. During the last decade or more it has been gratifying to observe how an increasing sense of responsibility has guided surgeons in their treatment of infected hands. It was gradually appreciated that Kanavel's teaching could not bear fruit with the haphazard organization of the average hospital, nor could junior and inexperienced resident staff, however enthusiastic, be expected to produce more than mediocre results without expert supervision. The setting-up of special clinics for the treatment of infected hands was the natural outcome of this experience, and it is fortunate that the advent of the antibiotics should have coincided with improved organization in hospitals.

In assessing the merits of any new method of treatment the clinician must pay careful attention to the many factors which may influence his interpretation of the results. In the last few years a number of important papers have appeared on the subject of penicillin treatment of the infected hand, and results have improved remarkably, especially in the more serious cases. In acute suppurative tenosynovitis Florey and Williams¹ reported favourably on local penicillin treatment combined with the classical type of surgical incision. At a later date several workers found that the best results were obtained by minimal surgery and adequate systemic penicillin treatment.^{2,3} Frequent injections of penicillin in effective doses have permitted a limited form of surgery tantamount to simple decompression of the synovial sheath, and this has resulted in rapid healing and has accelerated functional recovery.

In less severe infections it has been more difficult to demonstrate the advantages of penicillin treatment, though most surgeons have been impressed by some of the results. Elsewhere in this issue Mr. G. A. Barclay reports a series of 357 cases treated at the infected hands clinic of the London Hospital; few would disagree with his conclusion that penicillin has improved the results of treatment in cases of complicated felon, and he makes but modest claims for the drug in the less severe cases. The results obtained are attributed to the use of systemic penicillin, but it would seem that Mr. Barclay has used local dressings of penicillin cream as a routine in all cases where there was no necrotic tissue. Many would question the value of a single daily intramuscular injection of 200,000 units of aqueous penicillin solution, though this somewhat empirical method appears

to be quite widely used in this country. Florey and Williams used with success local penicillin treatment alone in both mild and severe infections, and it seems possible that in Mr. Barclay's series the local penicillin cream may have been as efficacious as the systemic injections.

It is difficult to adjudicate on this subject, and, while it would be unjust to say that a single daily intramuscular injection of penicillin is of little value, it should be remembered that there is as yet no published work which demonstrates the relative merits of this technique and more orthodox methods of penicillin treatment. Bolton, Catchpole, and Jepson⁴ have reported a series of cases of pulp infections treated with penicillin powder locally and twice-daily intramuscular injections of 100,000 units. They noted no significant improvement in the uncomplicated cases, although, like Barclay, they thought this method valuable in cases complicated by bone infection provided treatment was continued for two weeks or more. Webster⁵ was not impressed by the results obtained in cases treated by the local application of penicillin combined with injections given by the "one-shot" method, and when the drug was administered in a delaying medium of beeswax and oil he did not find that bacteriostatic concentrations were maintained in the blood even when 250,000 units was given. The much more satisfactory blood concentrations attained by using procaine penicillin have recently been reported in the *Journal* by Jones and Shooter,⁶ who confirmed the original work of Herrell and his colleagues.⁷ It would be of great interest to study a series of cases of infections of the hand treated by this preparation, both alone and combined with local penicillin therapy. The doubtfully adequate systemic methods used to date have not produced uniformly convincing results, particularly in the case of simple felons, although they may have been of value in modifying or aborting cellulitis and in aiding the control of infections which involved the bone.

Preoccupation with the problems of penicillin treatment should not cause neglect of further fundamental principles in the treatment of hand infections. Pilcher and his colleagues⁸ have recently stressed the importance of immobilization, and while systemic penicillin treatment may permit some relaxation of this measure its value should not be forgotten. Pilcher has also emphasized the dangers of too early incision and has advocated delay until pus has certainly localized; this advice has not found wide support in the case of pulp infections but should at least be accepted as a reasonable warning against indiscriminate and untimely incision. The use of heat locally has tended to fall from fashion. Hand baths are positively harmful, but dry heat applied in the form of short-wave diathermy may be of some value. However, the benefits of the latter are sometimes fully offset by the disturbance of dressings and interruption of immobilization, while the physiotherapy department is probably better employed in restoring function to those patients who have had more severe infections with delayed healing.

In conclusion, it may be wise to repeat that certain aspects of systemic penicillin therapy still require illumination. This is not to deny the undoubted value of penicillin wisely and properly used, but the present need is for further

¹ *Lancet*, 1944, 1, 73.

² Cruickshank, C. N., and Harrison, S. H., *ibid.*, 1947, 2, 606.

³ Pilcher, R. S., quoted by Butler, E. C. B., in *Penicillin*, 1946, edited by Sir Alexander Fleming, p. 220. London.

⁴ *Lancet*, 1947, 2, 608.

⁵ *ibid.*, 1947, 2, 610.

⁶ *British Medical Journal*, 1948, 2, 933.

⁷ *Proc. Mayo Clin.*, 1947, 22, 567.

⁸ *Lancet*, 1948, 1, 777.

careful study of groups of cases treated with penicillin, particularly with the latest preparations, and it may well be that we shall then look askance at some of the methods of systemic therapy which are at present in vogue.

NEW RHEUMATISM CENTRES

The South Western Regional Hospital Board has approved a scheme for the treatment of rheumatic diseases drawn up by its Rheumatism Subcommittee. A main treatment and research centre of 400 beds, 200 being for research purposes, will be set up at Bath; there will be treatment centres of 20-40 beds at various places including Gloucester or Cheltenham and Taunton, and diagnostic centres with 10 beds at Bristol, Yeovil, and other places. Peripheral clinics will be established at a number of the country towns in the area. A director of the service is expected to be appointed shortly.

The Leeds Regional Hospital Board has submitted to the Minister of Health a similar scheme for a diagnostic, treatment, and research centre at Harrogate. It involves the purchase of three hotels, the extension and improvement of the Royal Bath Hospital, and the setting up of a school of physiotherapy. The development will cover five years. The first stage in the programme will be the reconditioning of the Royal Bath Hospital. The total number of beds to be provided is 900, where about 8,000 patients a year may be accommodated. The patients will be selected at clinics which already exist or are being developed in nine Yorkshire towns, and additional clinics are likely to be established in five others. The Royal Baths themselves, which are owned by the corporation and where 1,000 ambulant cases a day can be treated, will not be taken over. One of the three hotels, the Harlow Manor, will be equipped with laboratories and research facilities. It will be an annex to the Royal Bath Hospital and will have accommodation for 100 patients and staff. The school of physiotherapy will be developed in co-operation with Leeds University and the board of governors of the teaching hospital, and may be either a separate entity at Harrogate or part of the existing school at Leeds General Infirmary. The scheme is described in a brochure which was presented to Mr. Bevan when he visited Leeds on Dec. 8. Its importance is not enhanced by the lavishness with which it is set out. While paper is so difficult to obtain it seems an extravagance for anybody—even a regional hospital board—to present its ideas on 32 large art pages of which many are only half-filled and two entirely blank.

AETIOLOGY OF ERYTHEMA NODOSUM

The aetiology of erythema nodosum is still a matter of considerable debate, and a debate in which the various proponents urge their views with much vehemence and often with little regard for alternative theories. From the discussions, however, there are emerging certain fairly definite views. Perhaps the most important of these is that there is no single cause for erythema nodosum, but that it may result under the right conditions from a variety of infections. In different countries and at different age periods different infections are most common. In children in Scandinavia¹ it seems to be rare for erythema nodosum to occur except in association with a primary tuberculous infection. In this country, while primary tuberculosis is the precipitating factor in about 70% of children, it is relatively uncommon as a cause in adults, in whom infection

with a haemolytic streptococcus more often appears to be responsible.² In the San Joaquin Valley of California on the other hand, the "bumps," as it is known locally, nearly always results from infection with the *Coccidioides immitis*.

Favour and Sosman³ have recently reported their findings in 155 cases of erythema nodosum in Boston; 102 of the patients were adults. They found a marked seasonal incidence in the late winter and early spring, with a maximum incidence in January, and they confirm the well-known fact that in children the sexes are nearly equally affected (60% of the cases being girls), while the majority of adults affected are women (86%). In this series tuberculosis was uncommon as an antecedent infection, but 80% of the patients had an associated respiratory infection in the immediate past, and from half the patients whose throats were swabbed haemolytic streptococci were recovered. In 10 of 61 patients who had chest radiographs taken enlargement of the hilar shadow was found on one or both sides, but the authors were not prepared to regard this as evidence of tuberculosis in the absence of any signs of subsequent calcification. This, however, is probably not sound, since it is clear that not all cases of tuberculous adenitis heal by calcification. Neither did they accept the view that the radiological changes in the lungs in some cases might be due to sarcoidosis. Nevertheless, rare though erythema nodosum may be in this interesting disease, there is no doubt that it does sometimes occur.

In the majority of the adults, but in only one-third of the children, migratory polyarthritis was part of the clinical picture, and in some of the adults similar attacks of polyarthritis without erythema nodosum had occurred up to twenty years before. The belief that erythema nodosum is a manifestation of acute rheumatism dies hard in this country, yet despite the frequency of fleeting joint and limb pains Favour and Sosman could find no evidence that there is any close relationship between the two diseases. In fact they conclude quite categorically that erythema nodosum is not a form of rheumatic fever. At the present time acute rheumatism, acute nephritis, erythema nodosum, and Henoch-Schönlein purpura are all associated with the "post-streptococcal state." Favour and Sosman's paper stresses once again the great importance in the causation of many diseases of individual predisposition and constitution—the diathesis of our forebears—as compared with the infecting or precipitating factor.

TOWN PLANNING AND HEALTH

The planning of new towns and of developments of old towns is now going ahead in various parts of the country. The lay-out of new towns was discussed at the recent Public Health and Works Congress at Olympia, but little was said about health in relation to the planning; it seemed to be considered sufficient that a health centre should be provided and certain residences on housing estates allocated to doctors, nurses, and other health workers. At a discussion organized recently by the Planning Forum in London the subject of health and planning received more thorough consideration. Dr. R. S. E. Schilling pointed out the importance of the relation of industrial to residential areas. In large cities the long distances which people have to travel to and from their work are often the cause of more fatigue than the work itself and expose the worker to the risk of infection and of accident. If smoke, fumes, and noise could be reduced there is no reason why industrial and residential areas should not be brought more closely together and the distances travelled by the worker considerably shortened. More care should be taken to ensure that suitable work is available for that section of even

¹ Wallgren, A., *Lancet*, 1938, 1, 359.

² Perry, C. B., *British Medical Journal*, 1944, 2, 843.

³ Favour, C. B., and Sosman, M. C., *Arch. intern. Med.*, 1947, 80, 435.

community which is in some degree handicapped by age or disability and yet is capable of useful effort.

Housewives, the largest occupational group in the country and the least regarded, should be given conditions in which they can do their work without strain. Day nurseries and nursery schools are helpful, but better planning in the home and in the relation of the home to the neighbourhood is required. The floor space in the new houses which are now being built by local authorities is an improvement on pre-war standards, but houses still more spacious are needed for the comfort and happiness of parents and children. More space, of course, calls for improved heating, but this is a reform well overdue in house-building in this country. In a recent letter to *The Times* the chairman of the National Corporation for the Care of Old People mentioned that the planning of new towns offered an opportunity for the building of houses, flatlets, and residential clubs specially designed for old people. It is encouraging that the chairman of the Crawley Development Corporation in a subsequent letter in the same newspaper emphasized that those who plan new towns must undertake research into the social problems of old age if they intend to do their job properly.

It ought not to be too much to expect that the industries to be located in new towns should be as varied as local conditions will permit and that an optimum size for a factory be laid down. As Dr. Schilling pointed out, it is not enough to eliminate dirt, ugliness, and squalor from an industrial environment: human feelings must be considered. The very large factory employing many hundreds of people can be a lonely, barrack-like place. In the view of the Planning Forum a community of, say, 40,000 to 50,000, with an industrial population of 16,000, ought to have full responsibility for its own industrial health service, which should be closely integrated with the public health services. Specialists at regional level should be available for consultations and to see that adequate standards are maintained. Moreover, an industrial health service should be started as soon as large-scale building begins, in order that it may provide in the first instance for the health and safety of the builders themselves.

CIRRHOSIS AND COLITIS

The relationship between nutritional deficiency and certain forms of hepatic disease is now well established both in experimental animals and in man. It is therefore to be expected that cases of hepatic insufficiency might be found with unusual frequency in association with conditions such as ulcerative colitis which grossly interfere with alimentary function and hence with nutrition. Reports of such association have appeared from time to time,^{1,2} especially in recent years^{3,4} since attention has been drawn to the effects of nutrition on liver injury. In most of the published reports the attempt to relate the cirrhosis or other hepatic lesion to the coexisting colitis is most unconvincing. Each report is based on very few cases, only fifteen having been published to date in the British literature. Moreover, colitis is by no means a rare condition, and it is doubtful whether the figures recorded really indicate a higher incidence of hepatic damage in patients with colitis than might be expected to occur as a result of chance association alone. Thus Tumen and his colleagues⁵ found only five cases of cirrhosis in a series of 151 cases of colitis, an incidence of 3.3%, whereas

Tumen⁵ had himself previously found cirrhosis in 1 to 6% of cadavers at routine necropsies. Johnson's⁶ two cases of hepatic insufficiency revealed by liver function tests were found among 25 cases of colitis, an incidence of 8%, but no confirmation of actual cirrhosis was sought either by biopsy or by peritoneoscopy.

A curious and fallacious argument has been followed by both Johnson and Tumen. They point out that cirrhosis found in association with colitis differs in its age and sex incidence from ordinary cirrhosis, being commoner in women and occurring at a younger age. They therefore conclude that the colitis has been responsible for the development of the cirrhosis, a conclusion that completely overlooks the fact that since colitis has this same age and sex incidence any disease associated with it by chance will of necessity share these same characteristics.

There can be little doubt that gross hepatic cirrhosis recognizable clinically or at necropsy is not a frequent finding in cases of ulcerative colitis, despite the state of chronic malnutrition that is so conspicuous a feature of the condition. This once again emphasizes the fact that cirrhosis is not the result of simple starvation or of insufficient feeding but the consequence of a dietary imbalance, a conclusion also reached by Waterlow⁶ from his recent work on fatty cirrhosis in the West Indies. In the experimental animal cirrhotogenous diets do not lead to severe emaciation but to fat accumulation in the depots and the liver. As severe emaciation is rarely associated with a fatty liver the rarity of the association of cirrhosis with colitis becomes more understandable. Moreover, the persistence of severe fatty infiltration for at least several months is probably necessary before a nutritional cirrhosis is established, whereas colitis is a notoriously intermittent disease in which the slight liver lesions resulting from one relapse may completely disappear during the next remission.

TESTOSTERONE AS A TREATMENT FOR PREMATURITY

The effect of male hormone on the nitrogen metabolism of eunuchoids and castrates has been investigated by a number of workers, and a recent report of Shelton, Varden, and Mark¹ indicates that testosterone might be of therapeutic use in the management of premature infants. A series of 74 babies all under 2,000 grammes was divided into three groups: one a control, one in which the infants received 5 mg. of methyl testosterone daily by mouth, and a third in which the infants received 4 mg. of testosterone propionate intragluteally each day. The time taken to regain the birth weight and subsequently to reach a weight of 2,500 grammes was observed. All the babies receiving testosterone regained their birth weight quicker than the others, but in the group of babies which weighed 1,000 to 1,500 grammes at birth the time taken to reach 2,500 grammes did not differ greatly between those treated and the controls. In the group between the weights of 1,500 to 2,000 grammes, however, the babies receiving testosterone reached the weight of 2,500 grammes more quickly than the controls. No significant differences were observed between the results obtained with testosterone propionate and methyl testosterone. Four sets of premature twins provided the most fully controlled group in the series, one twin being used as a control and the other receiving testosterone. In every case the infant under specific therapy gained weight more rapidly than his twin.

The explanation of these observations would seem to lie in the fact that urinary nitrogen is diminished when

¹ Bargen, J. A., *Ann. Intern. Med.*, 1929, 3, 335.

² Comfort, M. W., Bargen, J. A., and Morlock, C. G., *Med. Clin. N. Amer.*, 1938, 22, 1089.

³ *Ann. Intern. Med.*, 1947, 28, 542.

⁴ J. Bonman Gray Sch. Med., 1947, 5, 155.

⁵ *Gastro-Enterology*, Vol. 3, 1946, W. B. Saunders Co., Philadelphia.

⁶ *Spec. Rep. med. Res. Coun., Lond.*, 1948, No. 263.

¹ J. clin. Endocrinol., 1947, 7, 703.

² *Ibid.*, 1942, 2, 715.

testosterone propionate and methyl testosterone are administered, and at the same time the nitrogen is not raised in the plasma or faeces. It is presumed, therefore, that the diminished nitrogen loss has some significance in relation to the anabolic functions of the body. These drugs also seem to produce a diminution in the urinary volume. The result of their administration is an increase in growth and muscle hypertrophy. Animal experiments indicate that this will take place only in cases where there is a deficiency of the male hormone and that over-saturation will not produce any further increase in the growth process. This view is borne out by the rapid acceleration of the growth process in premature infants during the early days of treatment and the noticeably diminishing effect of testosterone as the babies develop their normal physiological activities. Shelton and his colleagues, who do not of course suggest that the use of male hormone can in any way replace the accepted methods of treating premature infants, did not observe that testosterone caused any toxic reactions or interference with bone growth, and they refer to the work of Gordon and Fields,² who found no instance of premature closure of the epiphyses or of stunting of growth after treating pre-pubertal and adolescent boys for long periods.

ADAPTATIONS TO PHYSICAL TRAINING

It is a characteristic of living organisms that they react towards a disturbance or change of environment in a manner tending to neutralize the effect of the change upon the organism. The property is not definitive, however, partly because purely inorganic systems may display a slight degree of automatic compensation, but also because living organisms can sometimes be observed to react to a disturbance in a manner that, so far from preserving stability, may actually make matters worse. In spite of such exceptions, however, the self-stabilizing quality of living organisms is shown in many ways. A point of great importance is that the response to a disturbance may be, and often is, an amplified response. Two examples may make this clear. A beaker of water has a slight degree of temperature stability, in that the cooling effect of evaporation partly offsets the heating effect of a bunsen burner underneath. But this "response" is only partial. A constant-temperature animal, on the other hand, can secrete water on to its surface for evaporation to a degree which completely offsets the heating of the environment. The survival of a man in dry air at 37° C. depends exclusively on this response, for the basal metabolic rate cannot be lowered far, and indeed is actually higher in such surroundings than in air of somewhat lower temperature. The response to the environment is an amplified response. A hive of bees in their winter cluster responds to lowered environment temperature by an outburst of wing-flapping activity which does not merely lessen the disturbance but actually reverses the temperature change induced by the environment.

This ability of living organisms to make amplified responses carries with it the risk that a response may be over-amplified, and this has an obvious bearing in pathology. It is now 50 years since Welch¹ recognized the fact that pathological "responses" commonly have no survival value for the diseased organism and may even increase the likelihood of fatal termination. Pathological adaptations, which lack, as Welch wrote, "that co-ordinate and special fitness we are accustomed to find in physiological adaptations," may in fact range from "over-amplification"—due perhaps to partial disorganization of the response mechanism—to a

random and irrelevant "response" towards some new and unprecedented disturbing agent.

In a recent paper entitled "A Medical Theory of Gymnastics" Jokl² has emphasized the distinction that must be drawn, not between the adaptive responses of sick and healthy people, but between the response of an individual to a disease-provoking agent and his response to physiological stimuli. Apparently purposeful "adaptations to physical training," he writes, "take place irrespective of whether or not the organism is healthy." Such adaptations he classifies as "structural, dynamic, or integrative," and they are strictly responses to the training—that is, they improve the body's ability to cope with exercise and must not be expected to increase resistance to all disease or to have any influence upon immunological mechanisms.

PARA-AMINOSALICYLIC ACID IN TUBERCULOSIS

In 1940 the biochemist Bernheim¹ made the observation that the oxygen uptake of the tubercle bacillus was stimulated by the two simple substances benzoic acid and salicylic acid. This finding led Lehmann² to investigate a large series of related compounds in the hope of discovering a substance which had a bacteriostatic action against the tubercle bacillus. The most active was *p*-aminosalicylic acid, which in a 10⁻⁵ molar concentration in a medium containing virulent tubercle bacilli caused up to 75% inhibition of growth. Lehmann showed that *p*-aminosalicylic acid was not toxic, and was tolerated by rats when given in quantities which constituted 5% of the daily diet. He also tested its value clinically by applying it locally to tuberculous abscesses and by giving it by mouth to patients with raised temperatures; he observed that the temperature fell and that there was clinical improvement. In this country Davis³ has described the chemical properties of *p*-aminosalicylic acid and the specificity of its bacteriostatic action on the tubercle bacillus, and Martin and his colleagues⁴ have devised a simple method of making the substance and have confirmed Lehmann's opinion of its clinical value, especially in tuberculous empyema. Erdei and Snell⁵ have also reported encouraging results.

Results in small series of cases are sometimes misleading, and the evidence of the curative value of *p*-aminosalicylic acid has been placed on a firmer basis by the observations of Feldman, Karlson, and Hinshaw⁶ in guinea-pigs. They inoculated a group of males with a human type tubercle bacilli, and six weeks later all were seen to be sensitive to an intracutaneous injection of tuberculin. Seventeen animals were then treated with *p*-aminosalicylic acid, given as 4% of the diet, while twenty animals were kept as controls. Treatment lasted 119 days, and at the end of this period sixteen out of the twenty control animals had died. Of the seventeen treated animals only eight had died. Further, the lesions in the control animals which survived were severe, as they were in all but one of those which had died earlier. On the other hand, the lesions were severe in only three of the eight treated animals which died, and it was difficult to account for the death of the other five. Lehmann had said earlier that guinea-pigs tolerate aminosalicylic acid badly, but Feldman and his colleagues seem disinclined to believe this. However that may be, they state that their evidence shows that the power of *p*-aminosalicylic acid to influence favourably a tuberculous infection in guinea-pigs is unmistakable.

¹ *Science*, 1940, 92, 204.

² *Lancet*, 1946, 1, 15.

³ *Mon. Bull. Min. Hlth.*, 1948, 7, 109.

⁴ *Nature*, 1948, 161, 435.

⁵ *Lancet*, 1948, 1, 791.

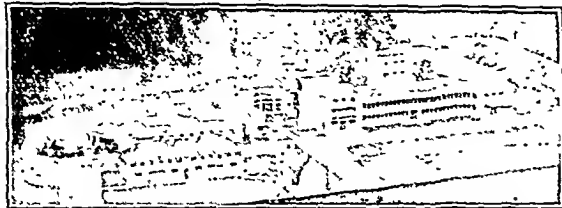
⁶ *Proc. Mayo Clin.*, 1947, 22, 473.

¹ *Adaptation in Pathological Processes* (re-edited with introduction by Flexner, S.), 1937, Baltimore.

² *Brit. J. Phys. Med.*, 1948, 2, 2.

FIRST L.C.C. HEALTH CENTRE WOODBERRY DOWN SCHEME

The London County Council this week approved plans submitted by its Health Committee for the building of the first of London's health centres and the first centre in the country to be approved by the Minister of Health. The centre is to be erected on the Council's estate at Woodberry Down, Stoke Newington. Under one roof will be brought ante- and post-natal clinics, a child welfare clinic, a school treatment centre, facilities for other local health services, and for general practitioner and dental services. It will be run in unison with the hospital and specialist services provided by the North-East



Model of L.C.C. Health Centre, Woodberry Down

Metropolitan Regional Hospital Board. Separate consulting- and waiting-rooms are proposed for six doctors. In addition to the ordinary consulting-room accommodation there will be a minor operation unit, similar to that in the out-patients' department of a hospital. Other accommodation will include rooms for specialists, a sterilizing-room, a doctor's laboratory, with a small drug store attached; and it is also proposed to have in attendance a laboratory technician who will be under the control of the pathological laboratory in the district. The doctors will be asked to form a rota for night duty, and there will be sleeping accommodation for the night-duty doctor. There will also be a common-room where the doctors and medical staff of the clinics will be able to forgather and maintain the link which is essential if clinics are to work with N.H.S. doctors in an integrated service.

It is also proposed to have an x-ray department for both general medical and dental examinations, and clerks, nursing attendants, and receptionists will be available for the doctors and dental surgeons working at the centre. It was stated by Mr. I. J. Hayward, the leader of the Council, at a Press conference on the subject, held before the Council's decision, that the doctors would be able to work separately, with an assistant, or in partnership. The partnership arrangement was preferred by the L.C.C. so that they could pool their resources. The patients would have the right to see which doctor they liked, except that in an emergency their own doctor might not be available. Doctors would also be free to make their own arrangements with their patients. Doctors and dental surgeons would be charged what an official of the Council described as an "uneconomic rent" for their accommodation at the centre.

Other features of the centre will be a remedial exercise and a child-guidance unit. A day nursery will be built separately from the centre but on the same site. Accommodation for opthalmic examination and treatment and an "orthoptic room" are planned.

The Health Committee of the London County Council considers that a neighbourhood unit for health centre purposes should embrace a population of about 20,000. Eventually 162 such centres will be available in the county. At present, however, only one centre is planned for each of the nine divisional areas. This arrangement is considered important because it fits into the school plan for London, and the divisions for health purposes coincide with those for educational purposes. Existing premises will be adapted for health centres in the divisions.

The cost of providing the comprehensive health centre at Woodberry Down is estimated at £187,275. This figure does not include the transfer value of the site or the cost of equipment. Mr. Hayward told the Press conference that his Health Committee believed that it would be the finest health centre in the world and might well be the prototype for others in London and elsewhere.

RECRUITMENT AND TRAINING OF MIDWIVES

WORKING PARTY'S REPORT

The working party, appointed by the Minister of Health, the Secretary of State for Scotland, and the Minister of Labour, in April, 1947, to inquire into the reasons for the shortage of midwives, including in its investigations the problems of recruitment, training, and wastage, published its report¹ on Jan. 28. Describing the midwife as "the practitioner of normal midwifery," the report urges that she should attend the mother and baby for at least a month after delivery. So that midwives should have some hand in shaping that part of the National Health Service with which they are concerned, it is recommended that a maternity services committee, composed of obstetricians, general practitioners, and midwives, should be set up in each hospital region.

It is suggested that there should be a common basic training for nurses and midwives, followed—in the case of midwives—by a year's specialist training with a revised and improved curriculum. Basic training should include at least a four weeks' period in obstetrics. Except for certain special posts there is no need for a midwife to be a State Registered Nurse; but until the new training can be adopted only State Registered Nurses should be trained as midwives. Existing holders of the S.C.M. qualification without a nursing qualification should be eligible for all midwifery appointments. Schools of midwifery, with finance and administration separate from the hospital system, should be set up. Pupil midwives should have student status, and there should be obligatory refresher courses for all practising midwives.

Ranks and Duties

All maternity units of 50 or more beds should be in the charge of an independent matron; units of 30 to 49 beds, a superintendent midwife with the rank of assistant matron; units of fewer than 30 beds, a departmental midwifery sister. The creation of a new rank of senior sister is recommended for those unwilling to give up contact with patients for advancement on the administrative side. On the district every local health authority should appoint as non-medical supervisor of midwives a certified midwife.

The report goes on to recommend that a survey should be made of the distribution of midwives, with inducement payments to attract them to understaffed areas. The number of cases a midwife should deal with should be reduced by 1953 to 55 a year in urban areas instead of 66.4, which was the 1944 average. Except for certain senior ranks the "straight duty" system should be adopted for institutional midwives, and for domiciliary midwives off-duty times and adequate reliefs should be ensured by grouping. Other recommendations include cars for domiciliary midwives; option to live out for institutional staff; and time off for travel and study. Houses should be provided for established midwives, and hostels for junior and pupil midwives.

Allowing for the changing age structure of the profession and the proposed reduction in the case load, recruitment in England and Wales must be increased from 1,790 (the annual average during 1944-7) to 2,100 newly qualified midwives a year by 1953. Special steps should be taken to attract recruits from the 30-45 age group, and part-time workers should be encouraged.

The working party considers that the limited means of analgesia at the midwife's disposal place her at a distinct disadvantage in the face of the growing public demand for relatively painless childbirth. It is suggested that the Medical Research Council should be asked to set up a committee to find a more effective method of analgesia for use by midwives. "Without the addition of this weapon to her armamentarium, the midwife cannot play her proper part in the health team. Furthermore, until this problem is solved the swing away from domiciliary confinement will continue."

¹Report of the Working Party on Midwives. H.M. Stationery Office. Price 2s. 6d., post free 2s. 9d.

Midwives and Doctors

The report includes a postscript on the status of the midwife: "When this report was actually in the press our attention was drawn to many complaints both from medical officers of health and midwives that general practitioners giving maternity service under Part IV of the National Health Service Act are tending to take over the whole of antenatal care as well as relegating midwives to the status of maternity nurses. In some cases midwives are not seeing patients until they go to deliver them. Furthermore, pupils are getting no opportunity to see antenatal care.

"This is entirely contrary to the development of the maternity services as outlined to us by representatives of the Health Department and as envisaged by us. . . . We recognize that it is right that a general practitioner should accept his full responsibility for his patient but not that he should exclude his partner, the midwife, whose function is, we should have thought, well-established and clearly recognized. Moreover, as already stated . . . we are convinced that it is not possible for the present number of doctors to take over complete responsibility for all maternity work in addition to their other commitments, even if this were desirable. As we have said, however, we do not consider it in the patient's interest for either party to monopolize the case. They should work as a team. We hope that prompt administrative action will be taken to stop this new and unwelcome trend which could wreck the structure of the midwifery services."

The working party argues that the assets and liabilities of doctor and midwife are complementary and that the arrangement under the new Health Service, with the two working in partnership, may prove to be a good one. It will be successful, however, only if both parties recognize their partnership. A review of the working of the maternity services in three to five years' time is recommended to ensure that this partnership is being maintained and that "there is no danger of the midwife being ousted from her proper place."

The report reveals that of the 74,219 women on the English Roll of Midwives at March 31, 1947, only 17,095 had notified their intention to practise in 1946. The working party find that many practising midwives are greatly overworked and, that the shortage is due to nurses taking the midwifery qualifications without intending to practise; to the unsatisfactory nature of the present course of training; to the high rate of examination failure; and to lack of promotion prospects.

Reports of Societies

CHELSEA CLINICAL SOCIETY

The fourth dinner meeting of the session was held on Jan. 11 at the South Kensington Hotel, S.W.7, with the president, Mr. Nils Eckhoff, in the chair. "Radioactive Isotopes in Treatment" had been chosen as the subject for a discussion which was conducted by Professor D. W. Smithers and Professor W. V. Mayneord, the latter demonstrating apparatus of a new and advanced type developed for the detection and estimation of radiation. The clear handling of the subject matter was the more appreciated by members in view of its novelty and its potentialities in diagnosis and treatment. A discussion followed in which Drs. Joekes, Jarman, Findlay, and Sir P. Manson Bahr joined, and the speakers replied.

Sir Thomas W. Phillips, Permanent Secretary of the Ministry of National Insurance, retired from the public service on Dec. 31. The Minister of National Insurance, with the approval of the Prime Minister, has appointed Sir Henry D. Hancock to succeed him, and Sir Geoffrey King to fill Sir Henry Hancock's place. Sir Thomas Phillips has been Permanent Secretary of the Ministry of National Insurance since its establishment in November, 1944, and was previously Permanent Secretary of the Ministry of Labour and National Service. Sir Henry Hancock, who is 53, has been Deputy Secretary of the Ministry of National Insurance since 1945, and was previously Deputy Secretary at the Ministry of Supply. Sir Geoffrey King has been in charge of the Industrial Injuries and Family Allowances Schemes in the Ministry of National Insurance since 1946.

Correspondence

Second Thoughts on Proguanil

SIR,—In the leading article under the above title (Jan. 15, p. 106) it was stated that complaints of loss of appetite, reduction of weight, and lack of energy had been received from some of those who had taken proguanil for considerable periods. Reference was made to an article by Schmidt, Hughes, and Smith,¹ who had reported similar signs in the rat, and to three papers published in a recent issue of the *British Journal of Pharmacology* which "have shown that there is almost certainly a pathological basis for these symptoms." The reviewer went on to say that loss of appetite is a matter of moment for Europeans stationed in tropical areas, and that for Africans it is most undesirable that they shall take for long periods a suppressive antimalarial which may reduce still further their already inadequate intake of food.

One of the outstanding advantages of proguanil is that owing to the extremely wide margin between its effective and toxic dosage it is particularly suitable for prophylaxis in general and for both prophylaxis and treatment among indigenous populations of malarious countries. A single-dose treatment of 300 mg. for the clinical attack and a single weekly dose of 300 mg. for prophylaxis have been widely adopted in India, Malaya, and parts of Africa for village dispensary practice and for use among labour forces and indigenous Government employees, with excellent results.

In an extensive series of field trials carried out in India under my direction in 1947 there was never any indication that the administration of proguanil had any adverse effect on the digestive system. Afridi,² who reviewed these trials, drew attention to the fact that many of the more intelligent patients remarked on the feeling of well-being following the taking of the drug. My own experience of a limited series of cases treated at Horton tends to confirm this observation. Large numbers of British troops have been taking 100 mg. of proguanil daily for the prophylaxis of malaria over extended periods, and no reports suggesting an adverse effect on the appetite have yet been forthcoming.

A study of the literature cited by your reviewer reveals the following points:

1. The experiments of Schmidt and his colleagues were confined to the mouse, rat, dog, and monkey. No loss of appetite was noted in monkeys receiving less than 20 mg. proguanil per kg. of body weight daily, which would correspond with a daily dose of 1,300 mg. in a man weighing 65 kg. The maximum prophylactic dosage of proguanil recommended for man is 100 mg. daily for non-immune persons and 300 mg. once weekly for indigenous populations of malarious countries. In summing up their results the authors stress the point that in all the purposes for which proguanil is used it exhibits a greater spread between effective and toxic doses than either chloroquin or mepacrine.

2. It is noteworthy that the investigations recorded in the other three papers cited^{3,4,5} were undertaken in a search for a drug which would inhibit the secretion of gastric juice in the treatment of chronic peptic ulcer. Proguanil was selected for trial because of its known low grade of toxicity. As noted by your reviewer, the desired effect was produced in man when 900 to 1,000 mg. was administered daily, but not with lesser amounts. This dosage is 9 or 10 times as great as the maximum recommended for malaria prophylaxis.

It would be most unfortunate if an impression were to be created, on such slender evidence, that the prophylactic use of proguanil is likely to have an adverse effect on the nutrition of any population to whom it is administered.—I am, etc.,

Epsom.

G. COVELL.

REFERENCES

- ¹ *J. Pharmacol.*, 1947, 80, 233.
- ² *Indian J. Malariol.*, 1947, 1, 347.
- ³ Burn, J. H., and Vane, J. R., *Brit. J. Pharmacol.*, 1948, 3, 346.
- ⁴ Vane, J. R., Walker, J. M., and Parry, C. B. W., *ibid.*, 1948, 3, 350.
- ⁵ Doll, R., and Schneider, R., *ibid.*, 1948, 3, 352.

SIR,—Having recently returned from a nine months' tour of East Africa, the Belgian Congo, and the Rhodesias I was particularly interested to read the articles (Jan. 15, pp. 88 and 91) and the leading article (p. 106) concerning proguanil. At this time (April to December, 1948) proguanil was coming into general clinical use in these territories (although Belgian doctors I encountered in the Congo seemed reluctant to try it), and I made a point of sounding the opinions of the many Government M.O.s, mine doctors, and private practitioners I met from Nairobi to Salisbury about it, while I myself relied for antimalarial protection upon the drug, which I took regularly during the whole of my trip in doses of 0.1 g. thrice weekly, and, although in numerous places where malaria is endemic I was frequently bitten by mosquitoes, I have up till now at any rate managed to avoid developing the disease.

I found that opinions differed widely about the drug, some doctors saying that they had abandoned its use entirely as being unreliable as a prophylactic and unsatisfactory therapeutically, while others contrariwise were its enthusiastic protagonists; this accords with previous experience of the varying susceptibility of the various strains as well as varieties of plasmodia in different areas. I was struck, however, by the frequency with which both protagonists and opponents of proguanil commented on the symptoms of gastro-intestinal disturbances following its exhibition on an empty stomach, and I myself very soon found that to take the drug before meals almost invariably produced nausea and an extremely unpleasant epigastric pain, which, however, never appeared when I took it after food.—I am, etc.

London, S.W.10

MICHAEL BOSTOCK

Infective Ear Disease

SIR,—Mr. T. A. Clarke's letter (Jan. 15, p. 111) on the treatment of chronic suppurative otitis media calls for some comment. If the object of ear toilet is to remove from the external canal any debris and discharge that may act as a nidus of infection and interfere with drainage from the middle ear, such treatment is most likely to be effective if carried out as often as the discharge reaccumulates. It is probable that the chronic running ear, which is the bane of so many E.N.T. out-patient departments, would in many cases respond to the intensive daily treatment which it is usually only possible to give in institutional practice. As Mr. Clarke points out, good results with conservative methods can only be expected in uncomplicated cases. Otoscopic appearances, however, may sometimes be misleading. An antero-inferior perforation, though suggestive of simple tubal infection, may coexist with extensive mastoiditis. X rays, which Mr. Clarke decries, may prove of the greatest value in revealing or excluding latent disease in the cellular type of mastoid.

It is difficult to see what benefit can arise from "largely filling the meatus" with powder, following ear toilet. This practice, though often adopted, results in a hard plug which interferes with the free drainage which it is the object of treatment to promote, and may cause irritation to the meatal wall. Neither penicillin nor sulphathiazole has any bactericidal action against the organisms commonly responsible for chronic otitis media. It should be a *sine qua non* of any preparation used locally in middle-ear disease not only that it exerts an action against the organisms concerned but also that it will promote drainage and healing and is capable of reaching the infected area. Drops containing urea 20% as an organic solvent and ephedrine 1% in solution with an effective bactericide may be massaged into the middle ear after meatal toilet, and in many cases where the eustachian tube is patent will be tasted in the throat.

I have recently undertaken bacteriological tests on a series of cases of chronic ear disease with a view to determining what bactericide would be most satisfactory for routine use. It was found that 90% of swabs grew *Ps. pyocyanea*, often associated with *Proteus vulgaris* and various diphtheroids. Strains of *Ps. pyocyanea* were therefore isolated in pure culture, and many substances, including those commonly used in the treatment of aural sepsis, were tested for their power to inhibit the growth of this notoriously resistant organism. By far the most effective bactericide, as demonstrated by serial dilution and by diffusion on agar, was found to be tinct. "merthiolate" (1 in 1,000). This preparation was shown by similar methods to be active against *Proteus vulgaris*. Of other substances tested only acetic

acid 1% exerted a comparable action against *Ps. pyocyanea* on agar. It was, however, noted that mild silver proteinate (10%), which inhibited growth in dilution but diffused poorly on the agar plate, could be rendered considerably more effective by the addition of a wetting agent such as "drefit" (or one of the higher sulphonated alcohols) to lower the surface tension.—I am, etc.,

Woolwich.

D. C. SEUTE.

SIR.—I have been most interested to read Mr. Colin M. Johnston's report (Dec. 18, 1948, p. 1049) on infective ear disease in factory employees. Conditions affecting the external ear have interested me for some time past, and all too seldom have comprehensive investigations into these painful and time-wasting conditions been reported. For too long a time has interest, both lay and professional, been lacking in attaining an understanding of the aetiology, pathology, and treatment of external ear diseases. I find myself in full agreement with the author, and am glad to see that he stresses more than once the constant care and patience that are required by both patient and doctor if a reasonable hope of cure is entertained.

An important point, but often forgotten, is to remove pus and debris from the meatus, and indeed, if this is practised often and thoroughly enough, a cure can be had without resort to any further medicaments: this applies particularly in the mild chronic cases. He also mentions the importance of cleaning out the recess between the inferior wall of the meatus and the tympanic membrane, for it is here that infective debris can hide and be a constant source of trouble.

A far more alert consciousness of these simple ear affections is required, and it is encouraging to see that the attempt to stimulate this consciousness has already begun.—I am, etc.,

Halifax, Nova Scotia.

GEOFFREY FRENCH.

Approach to the Frontal Lobe

SIR.—Most readers will by now be acquainted with a surgical incision into the brain to alter the mental state of a psychotic patient. This technique (leucotomy or lobotomy) and its results have been discussed in medical journals, and some of its aspects have been communicated to the general public by the daily press and wireless.

While research workers and clinicians are still struggling to disentangle the results produced by present methods for leucotomy, a new access for the destruction of frontal lobe tissue is being recommended by Freeman in the U.S.A. A spike is introduced through the orbit, and by piercing the orbital roof of the frontal bone it causes injury to the orbital surface of the frontal lobe among other structures. While this procedure adds another "dark approach" to the frontal lobe, more serious consequences, such as a possible opening of a large frontal sinus, which can lead to meningitis, uncontrollable haemorrhage, and pushing bone fragments of the thin orbital roof into the brain, have to be faced.

What predictable results can be achieved with this method? Present knowledge of the frontal lobe does not as yet permit of advice being given to the neurosurgeon as to whether he should destroy dorsal or orbital portions of the frontal lobe or their connexions. As long as there is not a rational basis for the "older methods" the new approach can certainly not be defended as being better, and the possible complications make its usefulness highly questionable.

It is, however, a matter of some urgency that the indications for a leucotomy operation should be clearly defined by a united effort of research and clinical observation. Otherwise psychiatry, so much in need of methods of curing, will look back with regret on the period of "leucotomizing," possible only as the frontal lobe is a "silent area" to some extent and does not object to surgical incision by obvious motor or sensory defects.—I am etc.,

Oxford.

P. GLEES.

Psychiatry and Broadcasting

SIR.—It appears that the public, having had a surfeit of psychological films, are now to be treated in like manner by the radio. While the entertainment value of these broadcasts may be high, there are other considerations which are equally important. For example, in one programme the history of a delusion was traced, although inadequately, and it was implied

that over-sensitivity in childhood was conducive to the development of a chronic psychotic state with a hopeless prognosis. What it failed to stress was that the chronic psychotics of all types hardly number one per thousand of the population, and that the case described is relatively scarce in a mental hospital. This omission produced considerable anxiety among my out-patients, many of whose original fears of insanity were reinforced.

Again, in a recent broadcast concerning prefrontal leucotomy accuracy was sacrificed for a good script. No mention was made of W. E. Le Gros Clark's views¹ that the progressive enlargement of the frontal lobes in the phylogenetic scale is by no means as conspicuous as that of the parietal or temporal lobes. Psychotherapists are familiar with some patients' insistence on surgical intervention, and as long as these requests were confined to the abdomen a reasoned approach could convince the patient that the problem was psychogenic and that the mind required treatment. This explanation is now countered with a request for a brain operation, and it is difficult to persuade the patient in the face of B.B.C. "propaganda" that many psychiatrists consider that the only redeeming feature about prefrontal leucotomy is that it confines itself to the "silent area."

Inaccurate and misleading statements on medical matters often appear in the lay press, but with this important difference: the prestige of the writer's name is withheld. I am not suggesting that anonymity would be a solution, but wish to point out that there is a different procedure for the radio, without any apparent reason. The problem is a very important one, and merits the attention of responsible medical opinion.—I am, etc.,

M. SIM.

Walsall

REFERENCES

¹ *Lancet*, 1948, 1, 353.

Plasma-cell Mastitis

SIR,—It is interesting to note that Mr. John M. Jackson's letter (Jan. 8, p. 71) on "comedomastitis" is followed a week later by an article by Dr. Max Cutler on "plasma-cell mastitis" (Jan. 15, p. 94). From the macroscopic description it seems possible that Mr. Jackson's cases were examples of plasma-cell mastitis. It seems that plasma-cell mastitis is not such an uncommon condition, and more cases will be found if the lesion is kept in mind. The discovery of five cases in 1,500 consecutive breast examinations by Parsons and his colleagues¹ supports this view.

My purpose in writing to you, however, is not to add to the cases recorded in the literature but to suggest that the names given to the condition so far have been unfortunate. We have, as you note in your annotation (Jan. 15, p. 108), been cursed since König's time by the term "chronic mastitis" and we would gladly be done with it if we could find a term generally acceptable. I would suggest with Atkins² that fibro-adenosis is as good as any.

The use of the inflammatory suffix may be more justified in the plasma-cell lesion, for it is probably a tissue reaction to lipid substances extravasated from the ducts, and is, in some ways, comparable to traumatic fat necrosis. It may even be a virus disease. On the other hand, until the aetiology is definitely known it seems unnecessary to give it a name which makes a preconceived idea of its cause unavoidable. The plasma cell is not even a pathognomonic feature, as it is also found in fat necrosis. I would suggest that the term mastopathy means as much as mastitis in our present state of knowledge and commits us not at all. Incidentally, the tendency to refer to "comedocarcinoma" and "comedomastitis" might well be turned to the older and more scientific terminology of Robert Muir, "intraduct carcinoma" and, on the same analogy, "intraduct mastitis."—I am, etc.,

Glasgow.

ARCHIBALD L. GOODALL.

REFERENCES

¹ *Arch. Surg.*, 1944, 49, 86.² *Lancet*, 1947, 1, 253.

Spinal Analgesia with Cinchocaine Hydrochloride

SIR,—Your correspondent, Dr. N. Beattie, in his letter on spinal analgesia and caesarean section (Jan. 15, p. 114), is in error in using the word "percaïne." After a number of fatal accidents nearly ten years ago in which "percaïne" had been

confused with procaine, the makers renamed the drug "nupercaine." Mr. Beattie aggravates the matter by referring once to percaïne, once to nupercaine, and once to "percaïne (or nupercaine)," as though they were different drugs.

There have been several recent injection errors; a fatal case was reported in the lay press but a few days ago. To prevent more of these accidents we must be strictly exact in our terminology, especially when contributing to a medical journal which is read by people of all grades of experience.—I am, etc.,

Newcastle-upon-Tyne.

M. H. ARMSTRONG DAVISON.

Treatment of Abortus Fever

SIR,—May I dissociate myself from the views expressed by my ex-house-physician, Dr. R. O. Parnis (Dec. 18, 1948, p. 1082)? It is true that sulphadiazine often brings down the temperature in undulant fever and seems to abort the pyrexial wave, but comparison of a series of 100 cases treated by sulphadiazine with a similar series of untreated controls did not show any significant difference as regards the total duration of the fever.

Undulant fever is so erratic in its behaviour that it is foolish, to attempt to draw any conclusions from a small number of cases. An unfortunately extensive experience has moderated my early impulsiveness to rush into print and has made me somewhat sceptical of the "cures" which are reported from time to time. I still keep an open mind and live in the hope that a really specific remedy will be found at last, but I am not convinced that sulphadiazine alone or in combination with transfusion or streptomycin is the answer.

Another point I would like to draw attention to is that experiments *in vitro* are not always applicable *in vivo*. The main difficulty is not to find a substance which will kill the brucella, but to get at the micro-organism. The possibility that the brucella may find a refuge within the body cells has already been hinted at—in any case it seems to entrench itself impreguably in the spleen and in the bone marrow.—I am, etc.,

Valletta, Malta.

J. E. DEBONO.

Belladonna Liniment Causing Mydriasis

SIR,—I think it desirable to draw the attention of the profession to the need for giving a warning about the danger to the eyes when liniments containing belladonna are prescribed. Textbooks that I have consulted fail to give this. For the lack of it the drug may inadvertently affect the eyes of either the patient or the applier of the liniment. The following case, therefore, seems to me of general interest.

A female patient of 55 was sent to me by her doctor because the right pupil was dilated. I found it inactive to light; it did not contract with prolonged convergence. The left pupil was active both directly and consensually. The patient was right-handed. She said that she had been applying a liniment to her husband, who was subject to rheumatism. She denied that she had applied any drops or other medicament to her eye. The doctor wrote on inquiry that he had prescribed a liniment containing aconite, belladonna, and chloroform. The circumstantial evidence seems to warrant the conclusion that some belladonna from the liniment had been conveyed to the eye by the right hand. Unilateral mydriasis had resulted. Fortunately the tension as tested by the fingers was not raised.

—I am, etc.,

London, W.1.

HUMPHREY N. FAME.

Antihistamine Drugs and Erythroblastosis

SIR,—Valuable advances in the treatment of infants suffering from haemolytic disease of the newborn have been made since the discovery of the Rhesus group of antigens and its significance in these cases. The case mortality has been greatly lowered, but there is still no certain means of preventing the disease, although various measures to achieve this have been advocated from time to time.

The recent work on the possible value of the antihistamines in the treatment of various diseases, to which you refer in your leading article entitled "Allergy, Rheumatic Fever, and Nephritis" (Jan. 1, p. 21), has prompted us to plan an investigation into the possibility of preventing haemolytic disease of the foetus and newborn (erythroblastosis foetalis) by the administration of antihistamine substances during pregnancy to women who appear likely on general or serological grounds to give birth to affected infants.

It may be that the clinical and pathological manifestations of haemolytic disease of the foetus and newborn are initiated by the release of histamine, heparin, and possibly other as yet unidentified substances following the antigen-antibody reaction between the various Rhesus-factor group-specific substances and their several antibody globulins. The precise origin and intimate mode of release of histamine is not known with certainty even in many conditions for which there is substantial evidence that it is concerned.

If the antihistamines do not prove of value in this connexion, this may possibly shed some light on the pathogenesis of haemolytic disease of the foetus and newborn. Antihistamines may also have a place in the management of haemolytic transfusion reactions, and this is being investigated at this depot as and when opportunity presents.

Although antihistamines produce side reactions such as drowsiness in some individuals, they are not so far as is known toxic substances and are unlikely to harm the mother or foetus. It is hoped to present the results of the investigation now in progress as soon as a sufficiently large series has been collected to make a statistically satisfactory assessment possible, but there is nothing to be lost by their use on a purely empirical basis, preferably in close collaboration with an experienced blood group serologist or the nearest regional blood transfusion officer.—I am, etc.,

South London Blood Supply Depot,
Sutton, Surrey.

R. H. TRINICK.

Diagnosis of Tuberculous Meningitis

SIR,—With reference to Dr. J. T. Lewis's letter (Dec. 11, 1948, p. 1036) regarding the sugar and chloride levels found in tuberculous meningitis, I have been asked to send you the findings of the subcommittee of pathologists engaged in the Ministry of Health scheme which was begun in the autumn of 1947.

Reports received in April, 1948, showed that, of 223 cases in which the chloride content of the first specimen of cerebrospinal fluid was estimated, 34 (15%) gave a figure of 700 mg. of NaCl per 100 ml. or more and 88 (39%) a level of more than 650 mg.; of the 88 only 3 were unconfirmed by film or culture, and 2 of these are dead. As regards prognosis, cases have been reported in which the original chloride was less than 600 mg. but which after streptomycin treatment were clinically well and with fluids normal in all respects. The subcommittee therefore considers that estimation of chloride content is useless in the diagnosis and prognosis of tuberculous meningitis and that treatment may be unjustifiably delayed if reliance is placed on the test.

In 137 cases in which the sugar content of the first sample was estimated the figure was never more than 50 mg. per 100 ml. As Dr. Lewis insists, this test is of much greater value than the chloride estimation.—I am, etc.,

London, E.1.

F. C. O. VALENTINE.

Cardiac Arrest

SIR,—I read with great interest the memorandum by Mr. G. P. Charlewood (Dec. 11, 1948, p. 1023) on a modified technique of cardiac massage in cardiac arrest. I had occasion to use a similar procedure some six months ago. As in Mr. Charlewood's case I found Hamilton Bailey's manoeuvre unsuccessful, but, as soon as I got my fingers inside the pericardium and was able to massage the heart directly, the beats began again. The case history was as follows.

The patient was an old man, 82 years of age, admitted with an acute or chronic large-bowel obstruction due to a constricting carcinoma of the pelvi-rectal junction. His abdomen was distended, and he was very toxic. It was proposed to perform a transverse colostomy using local anaesthetic and "pentothal" narcosis. The anaesthetist had just injected the initial dose of pentothal, when he became worried about the patient's condition and found the heart had stopped. He called for cardiac massage.

An upper midline incision was rapidly performed, and a bare right hand thrust into the abdomen and an endeavour made to perform cardiac massage by compressing the heart rhythmically against the anterior chest wall, without result. Therefore, with a pair of Mayo scissors, an opening was made in the diaphragmatic pericardium and the thumb and two fingers of the right hand thrust through. The ventricles were gripped firmly and rhythmically squeezed. Very soon one or two faint flutters were felt, and then vigorous rapid beats recommenced. A rapid transverse colostomy was performed and the abdomen closed, but the heart rate became

more rapid and feeble and finally ceased altogether half an hour after it had begun to beat again. This I imagine was due to the age and toxicity of the patient.

I can see no contraindication for this manoeuvre of incising the diaphragmatic pericardium. It is rapidly and easily performed with Mayo scissors, and it would appear to be unnecessary to repair the incision, as the upper surface of the left lobe of the liver, by adhering to the diaphragm, will close the linear hole. It seems to be the only method of massaging the heart directly and effectively.—I am, etc.,

London, E.C.1.

ERIC M. NANSON.

Intussusception Due to Carcinoma of Colon

SIR,—In view of the correspondence which followed the publication of Mr. R. A. C. Owen's account (Oct. 30, 1948, p. 786) of two cases of intussusception due to carcinoma of the colon, the following case report may be of interest.

The patient was a man aged 72. He had a three months' history of increasing constipation alternating with diarrhoea. He had some abdominal pain, but no vomiting. There was sudden relief from the abdominal pain on the day before admission. On admission his temperature was 99.6° F. (37.5° C.) and his pulse was 100. He was a pale, well-preserved old man. His tongue was dry, brown, and furred, and the fecal oris was present. His abdomen was very tense, with generalized distension, tympanitis, and borborygmi. There was no demonstrable free fluid and no viscera were palpable.

On rectal examination a soft lump could be felt free in the lumen of the bowel. It was not friable, and there was no bleeding. Proctoscopy showed the lump to be oedematous and ulcerated. A diagnosis was made of complete intestinal obstruction due to polypoid tumour of the rectum, and intussusception was suspected.

At operation the peritoneal cavity was found to contain gas and fluid faeces. There was an intussusception of the pelvic colon into the rectum, with dilatation of the proximal colon and perforation of the caecum. Decompression of the large bowel by ileocaecostomy was carried out and the intussusception was easily reduced. A small dimple at the apex (the site of ulceration) was left, and near the apex could be felt a small firm lump. The pelvic colon was mobilized and the affected gut resected (Paul's operation).

The tumour was a small, rounded, sessile papillomatous mass, 2.54 cm. in diameter. There was no apparent involvement of the adjacent wall or glands. The pathologist reported that it was a tubular, polygonal-celled carcinoma. The patient was discharged in good condition 72 days after admission. Abdominal wounds were healed; there was a slight ooze from the caecostomy site.

I have to thank Dr. C. D. Coyle, Medical Superintendent of the Archway Group of Hospitals, for permission to publish details of this case.

—I am, etc.,

London, N.19.

W. C. TURNER.

Prescription of Barbiturates

SIR,—The letter by Dr. A. I. Suchett-Kaye on barbiturate poisoning (Dec. 11, 1948, p. 1035) and the one on prescription of barbiturates by Dr. T. Pearce Williams (p. 1036) are instructive. It is obviously dangerous to hand such strong narcotic drugs to people without having full control over the quantity taken by them in one dose. This danger existed since the introduction of barbiturates into therapy. In order to minimize the danger of poisoning—not infrequent already many years ago—the teaching of pharmacology at the University of Budapest, where I was a student before the first world war, contained the wise suggestion for the addition of pulvis ipecacuanhae to every dose of barbiturate prescribed, in a small enough dose not to cause vomiting in the normal individual. It was pointed out that an overdose of barbiturate will, thus prescribed, also contain an overdose of ipecacuanha, which will produce vomiting. I believe that this information will be of interest to all who took part in the correspondence and to all those who are interested in this subject.—I am, etc.,

Johannesburg, S. Africa.

NATHAN FENN.

Marxist Genetics

SIR,—It is easy for Dr. Geoffrey Bourne (Jan. 1, p. 28) to say that my remarks (Dec. 11, 1948, p. 1038) were beside the point, as he makes his own decision about what my point was. I was very careful to make it clear that my concern was with the propagandist way in which Dr. Darlington misrepresented the work of Lysenko, which he was supposed to be reviewing. Every sentence in my letter was relevant to this.

Several other readers—anti- as well as pro-Lysenko—have written on the same issue. I did not deny that Lysenko considers philosophy, science, and politics to be interrelated. The whole point of this correspondence, until Dr. Bourne tried to change it, was the question of Dr. Darlington's review, not primarily Lysenko. And no one has answered to the point for Dr. Darlington.—I am, etc.,

London, S.E.24.

H. M. ROSE.

SIR,—I have followed your correspondence since Dr. C. D. Darlington's review (Nov. 13, 1948, p. 862) of *Soviet Biology* with great interest. I think the criticisms made of that review are fully justified. Some of your correspondents, however, have chosen to indulge in yet other vituperations. Fortunately ample material is available to answer them.

Dr. John C. C. Langford (Dec. 11, p. 1038) would like to know if the opposition to Lysenko was "prearranged" or not. It certainly was not. Those who opposed various aspects of Lysenko's views have been doing so for the past 10–15 years; their criticisms were sincere and forthright, and were based on the writings and works of those concerned. They evidently had no fear of Dr. Darlington's "liquidation." The full text of the contributions of Zembrak, Polyakov, Zavadovsky, Roubin, and Schmalhausen are contained in a translation for the Engels Society. Summaries of the rest will be found in *Plant Breeding Abstracts* (1948, 18, No. 2,000). The force of Zavadovsky's argument may be gathered from the following:

"As a Darwinist I agree with T. D. Lysenko, and the other comrades who have taken part in the discussion, as to their general statements on the enormous decisive significance of conditions of environment and its influences in the processes of forming the breed and the kind. And yet there are still a large number of problems of supreme significance on which I do not agree with T. D. Lysenko. . . .

"As I have already remarked, I affirm that his report and the discussion of it are leading our public to a one-sided conception of the situation and distribution of forces in Soviet biology. We scientists are explorers not only in the question of the concrete application of our experience and knowledge in order to investigate the geological womb and other riches of our socialist land. We are explorers also with regard to the correct orientation as to the distribution of forces in our science. And here I think Comrade Lysenko is making a serious mistake by taking the line of there being only two fronts or two trends in biological science, which have as their aim the solution of the problem of Darwinism."

Professor Zavadovsky goes on to elaborate his point of view in great detail. Professor Polyakov deprecates the tendency to label Soviet scientists as "Morganist" or with similar titles because they fail to agree with Lysenko. But quotations are entirely inadequate. Read the material in full, and one will doubt the integrity or sincerity of Lysenko's critics. Dr. Langford's notion effects nothing but to ridicule those who do not agree with Lysenko. I hope he will realize the pettiness of his suggestion.

One further point: Dr. Geoffrey Bourne's implication (Jan. 1, p. 28) that the application of dialectical materialism to science is necessarily bad is simply untrue. It is best answered by example. Based on dialectical materialism is Lysenko's theory of phasic development; this came from his work on vernalization and may well lead to further methods for hurrying plants through various stages of their development. B. A. Roubin, director of the Bach Biochemical Institute, records work in which it is shown that some enzymes in plants change their activity optima in correspondence with changing phases of development, thus adding experimental support to the phasic theory. Professor C. H. Waddington (*New Statesman and Nation*, Jan. 1, 1949, p. 6) admits that "his (Lysenko's) phasic theory, and the even more explicitly dialectical theory of another Russian, Krenke, on the cyclical alternation of senescence and rejuvenescence in plants, are certainly far from negligible contributions to the theory of organic development." Krenke's theory already finds practical application in a method of judging the optimum time at which to harvest sugar-beet based on leaf shape (Ashby, E., *Scientist in Russia*, Pelican Books, 1947). It seems to me that a dialectical approach to biological problems is more in accord with biological data than a mechanistic or idealistic one.—I am, etc.,

Cambridge.

PETER A. JEWELL.

Calcified Cyst of Spleen

SIR,—I read with interest Mr. J. H. Donovan's article (Dec. 25, 1948, p. 1106) on calcified cyst of the spleen, and also a further communication by Dr. A. Elkeles (Jan. 8, p. 74). In your *Journal* of March 4, 1933 (p. 367), I myself reported in full (together with a plate) a case of calcified cyst of the spleen, reaching the same conclusions as Mr. Donovan and Dr. Elkeles. Following the publication of my article I had several letters written to me concerning similar cases, and I consider the condition is probably not quite so rare as has been suggested by the present writers.—I am, etc.,

Manchester.

F. H. SCOTSON.

Achlorhydria Following Gastro-enteritis

SIR,—The prevailing gastro-enteritis (not attributable to any particular food or drink) is very often followed by an achlorhydria. The symptoms are vague pains, very often below the sternum and along the left side of the abdomen, loss of appetite, and general loss of well-being. In an elderly person it may simulate gastric or duodenal carcinoma.

A typical case was a man of 57 admitted for suspected carcinoma of stomach, his chief complaint being anorexia. Barium meal on two occasions failed to show signs of neoplasm. A fractional test-meal revealed the presence of histamine-fast achlorhydria. The occult-blood test was negative; haemoglobin, 105%. His symptoms could be traced back to an attack of gastro-enteritis some weeks earlier. A second patient was an 8-year-old girl. She complained of pains in the stomach at night; her appetite was poor, and she was losing weight; she had had gastro-enteritis two to three weeks earlier.

The symptoms may go on for many weeks. They are cured by acid, hydrochlor. dil. given before meals (with an appetizer like gentian). I have met many such cases in the past.—I am, etc.,

Billinghurst, Sussex.

JOSEPH VINE.

Perforated Duodenal Ulcer in a Boy

SIR,—I feel the following case deserves publication on account of the youth of the patient.

A boy, aged 14, collapsed in school at midday on Dec. 9, 1948, and was admitted to hospital forthwith. He complained of severe abdominal pain, was very shocked, and had to be treated for same with heat and morphine. His abdomen was rigid from peritonitis due to perforation of an anterior duodenal ulcer of fairly long standing. Under thiopentone with gas, oxygen, and ether, operation was performed by me at 4 p.m., and the perforation was closed with difficulty. The abdomen was cleaned out by sucker and closed without drainage. Next morning a Rylo's tube was passed and drip-fed intravenous dextrose and saline was set going, both for two days only. He threatened to be chesty and had penicillin by injection for three days. The patient gave no further trouble and was discharged on Jan. 3, 1949.

This case is remarkable on account of the extreme youth of the patient and the fact that he was symptom-free, although his ulcer was not recent.—I am, etc.,

Huntley, Aberdeenshire.

PETER W. PHILIP.

Carcinoma of the Male Breast

SIR,—I have been interested in reading Sir Cecil Wakeley's article on carcinoma of the breast and its treatment (Oct. 2, 1948, p. 631). One small point in the article has troubled me, and I should be glad if you were to clarify it for me. In speaking on mammary carcinoma in the male Sir Cecil says, "The prognosis of carcinoma in the male breast is very poor; the small undeveloped breast allows early lymphatic spread before the condition is diagnosed."

I am unable to understand this. I had thought that were an organ "small and undeveloped" its lymphatic drainage would be poorer, actually and potentially, especially since the male breast, unlike its sister, is at no time normally subjected to alternating periods of growth and atrophy. Similarly the male breast is much less vascular than the female breast. Sir Cecil writes, "In girls and young women the vascularity of the breast is very pronounced, and if carcinoma develops, the prognosis is hopeless." Furthermore, Sir Cecil himself suggests a different aetiology for the male condition, and this is most feasible,

as the male breast is not subjected as a rule to the slings and arrows of hormonal interplay, balance, and imbalance in a degree comparable with that in the female breast.

Is it not then, Sir, more logical to suppose that carcinoma of the male breast is an entity distinct from female mammary carcinoma, of possibly different aetiology, and displaying a tendency to earlier metastasis than its feminine counterpart?—I am, etc.,

Thursday Island.

W. T. GIBBS.

Epilepsy and Foetal Behaviour

SIR,—Professor F. J. Nattrass's Lumleian Lectures (Jan. 1, p. 1, and Jan. 8, p. 43), together with your leading article entitled "Epilepsy" (Jan. 8, p. 61), prompt me to ask the following question: Is it altogether absurd to suggest that in the epileptic fit there is a reversion to the foetal level of nervous functioning, an idea that was first put forward 30 years ago by L. Pierce Clark in America? Apart from Hughlings Jackson's theory that the phenomena which follow a fit reflect a reversal of nervous evolution, there are three points which might support such a possibility. They are: (1) That during a fit behaviour becomes "total," in the sense that the whole of the skeletal musculature is thrown into action simultaneously. According to the Coghill school of physiology the "total" response represents the most primitive pattern of behaviour. (2) That the movements in the idiopathic fit are of two types—viz., tonic and clonic. These seem to compare with the "sustained" and "jerky" movements described by Sir Joseph Barcroft as occurring in the sheep foetus. (3) That the movements in the fit are spastic in type, as they appear to be in the foetus.—I am, etc.,

Brentwood, Essex.

THOMAS D. POWER.

Purpura Complicating Pregnancy

SIR,—Dr. I. Klass (Jan. 8, p. 73) disagrees with some of the conclusions which I reach in my paper "Purpura Haemorrhagica as a Complication of Pregnancy" (Dec. 11, 1948, p. 1020), but in both my paper and that of Drs. Burnett and Klass stress is laid on the fact that the mortality of purpura complicating pregnancy has been overstated and that recovery does occur, as in the cases which we have respectively recorded.

I agree that some of the earlier cases reported were not of true purpura, as Dr. Klass has shown in his paper, but only 22 cases are included in this analysis, and it is impossible to say how many of the remaining 46 cases reported up to that time suffered from true purpura. It is unreasonable, therefore, to assume that purpura is not a fatal condition on the basis of an analysis of less than one-third of the reported cases. Certain of the cases not included in his analysis, for instance that of Puech referred to in my paper, strongly suggest that death has resulted from a true purpura leading to prolonged late post-partum haemorrhage.

In the case reported by Drs. Burnett and Klass the platelet count at the onset of symptoms was very low (15,000 per c.mm.), but this rose after 35 weeks to 163,000. At delivery a figure of 76,000 was noted, but the placental blood showed 121,000 platelets, and when recovery was complete the figure given is 174,000. It seems, therefore, that even in health the platelet count in this patient tended to be low, and that on the basis of the figures given she had attained a large measure of recovery before delivery. The case in fact was a relatively transient one comparable to, although more severe than, my own, and it is to this and not to any essential harmfulness of the condition that the absence of bleeding from the uterus and from the perineal tear is due.

Dr. Klass considers the treatment has little influence on the condition and that there is nothing in the literature to form any basis for dogmatic principles of treatment. This opinion is based on his analysis, as we have seen, of only a small proportion of the recorded cases, and particularly upon the experience of his own case, where, as I have pointed out above, the platelet count was five times higher at delivery than at the onset of symptoms and about half the highest level ever recorded in this patient. Purpura must be regarded as a disease potentially dangerous. While in the immediate control of haemorrhage after delivery efficient uterine contraction remains the most important factor, this should be followed by adequate clotting

to give prolonged haemostasis, and where there is any question about this, as there must be in cases which show purpuric eruptions and thrombocytopaenia during pregnancy, it is unfair to expect a patient to neglect any measure which can ensure her safety.—I am, etc.,

INVERNESS.

J. A. CHALMERS.

Overdose of Surface Analgesics

SIR,—Mr. C. A. Jackson's article on amethocaine hydrochloride (Jan. 15, p. 99) directs attention to the dangers associated with amethocaine surface analgesia for bronchoscopy, but it would be of interest to know precisely how many patients die yearly as a result of the surface application of analgesic drugs; it is probable that all the effective ones are equally dangerous. Two points require emphasis. One is that overdose is presumably determined not by the total amount of the drug absorbed over a period but by the concentration in the brain at any given moment. When this concentration reaches the appropriate level signs of overdose will occur. The second point is that prompt treatment should save the patient; treatment of the severe case consists in controlling the convulsions in order to permit of oxygenation.

The alarming convulsions due to severe overdose with an analgesic drug do not appear to differ from those seen in other convulsions. In a case treated by the writer following the instillation of 10% cocaine hydrochloride for urethral instrumentation the convulsions were so severe that it required great force to hold the arm in order to give thiopentone intravenously. Meanwhile attempts were made to insufflate oxygen under pressure, and as soon as the thiopentone was given the convulsions ceased and normal colour was restored. There were no after effects.

Great caution is certainly necessary in using local analgesic drugs for bronchoscopy in asthmatics. In a bad chronic asthmatic subject I applied 10% cocaine hydrochloride, spraying the pharynx and larynx with about 2 ml. and spraying about 1 ml. into the trachea by passing the tube of the spray between the cords. The patient immediately complained of breathlessness and became excited. Thiopentone was given at once, 0.3 g. being injected slowly, and oxygen was given under pressure. The surgeon proceeded with the bronchoscopy, but a further 0.2 g. of thiopentone was necessary to control coughing. There were no more signs of cocaineism. The surgeon aspirated much mucus and noted that the bronchi were red and injected. Recovery after the bronchoscopy was prolonged, and it was necessary to give oxygen under pressure for more than half an hour in order to avoid cyanosis; mucus kept welling up from the trachea, due probably to bronchial spasm caused by the thiopentone. No analeptic was given, and the cough reflex finally returned and the patient was sent back to the ward. There was no more difficulty.

—I am, etc.,

Luton.

D. WILSON

Meeting of Medical Association of South Africa

SIR,—The Medical Association of South Africa will hold its 37th annual Congress in Capetown during the week Sept. 19–24, 1949, and the Organizing Committee extends a warm welcome to any members of the British Medical Association or any other medical practitioner who may wish to attend.

A visit to South Africa at this time will afford an opportunity to be present at the meetings of Congress, with discussions not only in the many scientific departments of medicine but also in matters of medical policy, particularly the development of national health schemes and hospital legislation, which so vitally affect the future of the medical profession in Great Britain and the Dominions. There is an urgent demand for interchange of views and experiences by informed representatives and for the framing of basic principles for future action to the advantage of the citizens of the Empire and for the protection of the legitimate interests of the medical profession. Furthermore, the scenic attractions of the subcontinent should make the journey worth while to those who extend their stay, as well as the opportunity to observe the rapid development of the country and to obtain some understanding of the difficult social problems—not unaffected by world turbulence, particularly in the East—which the Union must endeavour to solve.

The journey to South Africa by sea is a fair-weather voyage. The mailships from Southampton take 14 days to cover the 6,000 miles. More economic transport takes a few days longer. By air to Capetown from London is about three days, unfolding an infinitely varied geographical panorama of this vast continent.

It is emphasized that accommodation in Capetown is limited, and prospective visitors to Congress are advised to apply to the Hon. Secretary, 37th S.A. Medical Congress, P.O. Box 643, Capetown, at their earliest convenience for hotel reservations and any other information.—I am, etc.,

T. LINDSAY SANDES,
President of Congress.

Capetown.

Master Minds

SIR,—My attention has been drawn to a letter under the above title from Mr. Fred Messer, M.P. (Jan. 15, p. 115). Challenging the accuracy of a *Hendon and Finchley Times* report of his speech at a Golders Green meeting of the North-west Branch of the Socialist Medical Association, Mr. Messer suggests that certain remarks attributed to him were in fact made by other speakers.

I have inspected the notes taken by our reporter. They contain a clear record of the remarks in question, with no room for confusion with other speakers. In point of fact, our reporter was too busy that night to remain at the meeting for long after Mr. Messer's own speech.

It is a point of interest that Mr. Messer, in his original letter to the Middlesex Local Medical Committee, did not question the accuracy of our record as such, but relied upon the age-old explanation in political circles—that a passage in his address "had been torn from the context."

Regarding Mr. Messer's closing paragraph, I would point out that nowhere in our report did the word "politics" occur.—I am, etc.,

BARRETT NEWBERY,
Editor, *Hendon and Finchley Times*.

POINTS FROM LETTERS

Clouding of Surgeons' Spectacles

Dr. C. EDWARDS (Bournemouth) writes: In reference to the correspondence on this subject, why do surgeons not wear their spectacles outside their masks? Many years ago whilst in active surgical practice I got Mr. Crighton, of Winchester, to make me a pair of less strength (0.5 sph.) than my reading glasses—i.e., for middle-length reading—tilted down and with rather longer curl wire sides so that the frame lay near the tip of the nose. Result, perfect.

Antihistamine Drug Treatment of Acute Nephritis

Dr. WALTER BROADBENT (Henfield, Sussex) writes: This seems to be a very important advance in the treatment of a disease which often causes irreparable damage. In the past I used to give antistreptococcal serum, 10 ml. by the mouth every night apart from food, to children with acute nephritis. This did materially shorten the attacks, but not so effectively as "anthisan" evidently does.

Whooping-cough and Measles

Dr. F. ROTHENBURGH (Widnes) writes: Referring to Dr. C. L. Malhotra's note (Jan. 15, p. 116) on whooping-cough and measles, I wish to point out that measles may start with severe pertussiform cough or may be followed by a similar attack. This pertussiform cough has of course nothing to do with a real pertussis infection and is due to an enlargement of the intrathoracic glands, particularly the tracheo-bronchial and paratracheal ones.

House Numbering

Dr. P. T. T. MACDONALD (Bristol) writes: I have not, to my surprise, seen in the *British Medical Journal* any complaint respecting the matter of house numbering in urban areas. In my own district, which I believe is not exceptional, the state of matters is almost beyond belief and seems to indicate the absence of any civic responsibility for whether a house is numbered or not, and, if numbered, whether the numbers are easily legible from the roadway or not. This condition of affairs is a constant source of irritation and loss of time in the day and night work of our profession—nurses as well as doctors being hampered by it. . . . To remedy this nuisance the application of such a standard of numbering as is demanded of motorists for their cars should not be too difficult a matter. At any rate I am airing my grievance in the hope of fellow sufferers doing likewise and of inducing responsible authorities to do something about it.

Obituary

C. F. GOOD, C.B., M.R.C.S., L.R.C.P.

The death of Dr. Christopher Frank Good on Jan. 16, at the age of 56, removes from the medical staff of the Ministry of Health one of its most outstanding figures. He was a man with a fund of common sense, sterling qualities, and a broad outlook, a man who can ill be spared at the present time. He had a remarkable faculty for grasping the essentials of any problem.

Good was one of a large family, four of whom entered the medical profession. Born in London, he received his medical training at the London Hospital. His record during the first world war was characteristic. Against advice and while in his fourth year he joined a Red Cross unit as a dresser and served abroad for about a year. Returning to England he enlisted as a combatant and obtained a commission in the Buffs. He saw service in France, received a severe gunshot wound of the chest in 1917, and was subsequently demobilized in 1918. It was a delight to listen to him recounting his experiences during this period. Returning to the London Hospital he qualified M.R.C.S., L.R.C.P. in 1919 and then held a series of house appointments there. After a short period during which he was associated with the Ministry of Pensions he settled in a busy private practice in Battersea and in 1931 was appointed to the regional medical staff of the Ministry of Health. Here his administrative abilities were quickly recognized and for a period he was seconded to the headquarters staff for certain special investigations.

The prospect of war in 1938 made it necessary for the Ministry to engage in a survey of hospital accommodation in the country and to make plans for enlarging this accommodation where necessary, adapting it for wartime needs, and generally providing for an integrated hospital service which would stand the stress of total war. Good was appointed as hospital officer in charge of this work for the North East Civil Defence Region, and from his labours there emerged an organization which worked smoothly and was invariably able to meet the many demands put upon it. The value of this work and the sound foundations on which it was based can perhaps be fully appreciated only by the hospitals, medical officers of health, and others with whom he came in contact. When in 1940 it became necessary to fill a vacancy as principal regional medical officer in the North East Region, Good was given this appointment, and though his experience in public health was at that time limited his period of office proved an outstanding success.

Towards the end of the war Good returned to Whitehall, where he helped in the preparation of the hospital survey reports and particularly the one associated with the North East Region. This was also a time when preparatory work was being done on the Health Service, and very soon he became closely associated with that part of the scheme in which his great interest lay—general practice. In 1945 he was appointed principal medical officer in charge of the medical section of the Ministry dealing with general practitioner services and insurance, which post he held until his death. The high regard in which he was held and the reputation he had already established made it possible for him to wield great influence where the general practitioner services were concerned. The Insurance Regional Medical Service, of which he was also in charge, was revived in 1945, and much of his time during the past two years was taken up in starting again the referee functions of this service and in adapting it to meet the needs of the Ministry of National Insurance. Good was ever mindful of the welfare of members of the regional medical staff. All his colleagues held him in the highest esteem and his passing will be to them in particular a great loss. In recognition of his outstanding service with the Ministry he was awarded the C.B. in 1948.

Whilst in Leeds Good underwent a serious operation, after which he was well aware that the possibility of complete recovery was remote. Subsequent developments confirmed this unfavourable view, and although periods of treatment in hospital were remarkably successful in arresting the disease, he fully realized that the inevitable outcome was only a matter of time.

His courage in facing this prospect was a source of admiration to all who knew him, and required a pluck and philosophy which it is given to few mortals to possess. He will long be remembered by those who were privileged to work with him for his vivid personality, humanity, sparkling conversation, and dauntless courage. He leaves a widow to whom the sincere sympathy of all who worked with him is extended.

H. S. SULLIVAN, M.D.

Dr. Harry Stack Sullivan, who died in Paris on Jan. 14, was a distinguished American psychiatrist, chairman of the Council of Fellows of the Washington School of Psychiatry, editor of *Psychiatry*, and author of much valuable work, especially in his earlier days, on schizophrenia and later on the subject of interpersonal relationships. Dr. Sullivan was born in 1892, and graduated at Chicago in 1917. When America came into the recent war, Dr. Sullivan acted as consulting psychiatrist to the Office of Selective Service in the United States. He advised on the general mechanism for psychiatric and psychological sifting of those called up for the Army. He had been active in many fields despite the fact that he had suffered from several cardiac attacks. His death was the result of yet one more cardiac accident.

Dr. Sullivan, who was in London last summer for the International Congress on Mental Health, and who worked extremely hard previously on the International Preparatory Commission which he himself had originated, moved on to further work as psychiatric consultant in the American zone of Germany and lectured in various parts of Europe before returning to Washington. He flew over at the beginning of this month to Amsterdam, where for a week he worked hard on the Advisory Committee of the World Federation for Mental Health and at meetings of its Executive Board. He had gone on to Paris to help in a conference with Unesco before returning home. His death will be greatly regretted by many people in Europe as well as by his relatives and professional colleagues in the United States.

MR. SIBERT FORREST ANTROBUS COWELL, who was secretary of the Royal College of Surgeons of England for many years, died at St. Albans on Jan. 13 at the age of 85. Mr. Cowell, who was the son of Dr. Thomas William Cowell, went to Westminster School in 1876 and became a Queen's scholar three years later. He graduated in 1886 from University College, Oxford, after gaining a third-class in Classical Moderations and a fourth-class in "Greats." He became assistant secretary of the College in 1888, and succeeded Edward Trimmer as secretary in 1901. His whole life was devoted to the College from the time of his first appointment until his retirement under the age limit in 1934.

Universities and Colleges

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The following lectures will be delivered at the College (Lincoln's Inn Fields, London, W.C.), at 5 p.m. on each day: Feb. 2, Hunterian Lecture by Professor Terence Cawthorne, "Some Observations on the Pathology and Surgical Treatment of Labyrinthine Vertigo of Non-infective Origin"; Feb. 7, Hunterian Lecture by Professor R. W. Raven, "The Properties and Surgical Problems of Malignant Melanoma"; Feb. 9, Moynihan Lecture by Sir Henry Cohen, "Hypoglycaemia and Hyperinsulinism"; Feb. 10, Hunterian Lecture by Professor Michael Oldfield, "Advances in Hare-lip and Cleft Palate Surgery, following the Treatment of 500 Patients"; Feb. 14, Hunterian Oration by Mr. H. S. Souttar, "John Hunter—The Observer"; Feb. 17, Hunterian Lecture by Professor J. G. Bonnin, "Diastasis of the Tibio-fibular Syndesmosis"; Feb. 21, Hunterian Lecture by Professor D. F. Ellison Nash, "The Development of Micturition Control"; Feb. 23, Hunterian Lecture by Professor W. S. Lewin, "Acute Subdural and Extradural Haematoma in Closed Head Injuries"; Feb. 24, Hunterian Lecture by Professor Robert Roaf, "The Treatment of Residual Disability following Injuries of the Peripheral Nerves of the Upper Extremity"; Feb. 28, Hunterian Lecture by Professor R. A. Russell Taylor, "The Aetiology, Pathology, Diagnosis, and Treatment of Acute Pancreatitis: a Review of 110 Cases." The lectures are open to those attending courses in the College and also to all other medical practitioners, dental surgeons, and advanced students.

Medical Notes in Parliament

DEBATE ON N.H.S.

A debate on anomalies arising out of the National Health Service Act was opened on Jan. 21 by Sir HENRY MORRIS-JONES. He regretted that Mr. Bevan was absent and said that that was the first opportunity which the House had had of discussing matters arising under the regulations of an Act intimately touching every household. That Mr. Bevan was not present to deal with these matters was rather an affront to the House. It was right that the Ministry should be negotiating with the British Medical Association and other interested bodies, but the House was entitled to know what was going on. Sir Henry pointed out that the cost of the Health Service was £30,000,000 over the estimate. Responsible authorities said it might go to £100,000,000 above the estimate in the next year or two. He thought the Act would survive its teething troubles, but the House should inquire where redress could be secured within the regulations without initiating further Acts of Parliament.

Large numbers of medical men were unhappy about the position and the working of the Act. Their work had increased in all areas. Medical men in large industrial areas had gained somewhat, in some areas by as much as 25 to 30%. In all other areas, residential, rural, and seaside resorts, remuneration had gone down, in some respects so seriously as to affect the morale and working power of the general practitioner. He quoted a letter from a firm of medical men in a seaside resort who had 4,000 patients on their panel at 16s. a head. This gave a gross income of £3,200 a year. Practice expenses for the current year amounted to £1,950, leaving £416 for each of the three partners before deduction of tax. Consultations and visits averaged 90 per day for the last six months. The net pay per attendance, after practice expenses were deducted, was 9d. This did not include consultations by telephone, estimated at 20 per day. The senior partner in the firm wrote that "the Health Service in this area is being soured at the point of contact between patient and doctor." Sir Henry was glad that the Minister had made a fairly substantial concession in rural areas. A man in a rural area with a panel of 1,000 was often harder worked than a man in an industrial area with a panel of 4,000. Many doctors in rural areas were threatened at present with financial ruin; they could not meet their commitments. The whole basis of remuneration should be reconsidered. If they could not get good service under this head the whole Act failed. Much was to be said for payment per attendance, with power for the State to make a grant in aid. A commission in New Zealand had recently reported in favour of the suggestion. In any State scheme there was bound to be a greater demand on the Service, although people in Britain had, on the whole, behaved very well.

Basic Salary

The basic salary arrangement was really not working at all. Liverpool had granted it, but other large cities in Lancashire had not. Llandudno had granted it, but Colwyn Bay refused it. In the County of Caernarvon the basic salary was paid, but in Derbyshire only three out of 32 doctors who applied for it had been granted the basic salary. Parliament had intended the basic salary to be paid. Distribution of medical men was worse than it ever had been, because medical men and women were "frozen" in their areas and could not leave them. If medical men in a seaside resort found that their incomes were reduced, or did not want to spend their lives attending nervous and elderly people, they could not go elsewhere. Maldistribution, of which Mr. Bevan had made so much in his speeches to the House, was intensified at present. At Deganwy, between Llandudno and Colwyn Bay, the people had been refused a medical man by the executive council, although there had been one practising there for seventy years. Why should the people have to go two miles away, where many had to wait all day to see a practitioner? In many cases young medical men were not allowed to start in new areas. When they made an inquiry they were told they would not be allowed to settle there unless they had accommodation. Having secured it, they were still not sure they would be allowed to settle there. The purpose of the Act was thus being frustrated.

Turning to the facilities given to foreign visitors to have free treatment under the Act, Sir Henry asked why a temporary visitor should be allowed to get treatment and equipment for nothing. A wealthy Belgian could come to this country and get medical treatment, but there was no reciprocity. Sir Henry did not suggest that members of the Commonwealth should be excluded from these facilities. The question of specialists needed reviewing. Many specialists found their incomes had

been drastically reduced. An orthopaedic surgeon in the provinces had told Sir Henry that he had made thousands a year but that his income had been reduced to £1,200 a year as an allowance from the State for his hospital work. He was considering seriously whether he could carry on in his profession. In some directions, said Sir Henry, economies could be effected. In some London hospitals administrative blocks were being built up at great expense, whereas nothing was being done about the actual equipment. Money was being spent on building blocks for administrative purposes but not for the doctors and nurses. The Minister must get the hearty co-operation of the general practitioners in working the Act. If that was secured, the measure had a wonderful future. But if the doctors were put in a state of financial anxiety and worry their interest in their work would go and the health of the people would suffer.

Complete Co-operation

Mr. MESSER said that in day-to-day experience of the administration of this Service he found complete co-operation from every section of the medical profession. He agreed with Sir Henry Morris-Jones that the Service stood or fell on the co-operation of the medical profession. Out of a mass of contradictions and anomalies a pattern had to be formed. As a supporter of the Service, Mr. Messer agreed that great hardship was being experienced by many general practitioners. The attention of the executive council of which he was a member had been drawn to instances where doctors' incomes had been reduced from a range of £2,000 to £1,500 a year. That executive council entrusted to a medical committee—that was, to the doctors themselves—the distribution of the basic salary. When asked whether a basic salary was desired the medical committee had said that it was not. Mr. Messer suggested that the negotiations which preceded the Act and reached a compromise were responsible for much of the existing difficulties. The situation could not remain where it was. To say more about what was proceeding at the moment would be to divulge confidences.

It was not a weakness of the Service that much more treatment was being given. This indicated what the country had previously lacked. In joining the administration of voluntary hospitals and municipal hospitals they had to avoid the fragmentation of the former and the over-centralization of the latter. It was necessary to set up an administrative machine with the inevitable danger that the number of staff required might be exaggerated. That, too, would have to be investigated, but he argued that they should give the scheme a longer trial than six months. That time was insufficient to decide what major changes should be made. There were not enough specialists. They should organize the Service so that the specialist would have the maximum amount of time in the place where he was most required.

Many Anomalies

Mr. LINSTED remarked that the Act of 1946 attempted to go too far and too fast. Many anomalies could have been avoided if the advance had been by evolution rather than by revolution. The Service was on the rails and moving, but it was creaking and groaning. Mr. Bevan would have to come to the House to ask for more money. That would be the occasion for a full debate. The dental situation had got completely out of hand. Secrecy still surrounded the remuneration of specialists, although a limited number of people had seen the Spens Report. There had been long delay in the payment of chemists' accounts. He asked when the amending Bill would be produced. The matter of medical partnerships could not be settled till this Bill was produced. As soon as possible the Ministry, in its dealings with the hospitals, should indicate its long-term policy over capital projects. If hospitals were put off from year to year, not knowing when a project was to be sanctioned, they were in a difficult position. He hoped it would be possible to work the capital side of hospital finances on the same lines as university finances, at least for quinquennial periods. He knew of institutions which claimed to be homes and not hospitals. They did not know whether they should have been taken over on the appointed day. Section 9 (8) of the Act gave the Minister power to make regulations for determining such cases by arbitration. Had the Minister yet made arbitration regulations? How many applications for arbitration had been made and with what results? Staffs of such institutions should be given another date by which to choose whether to carry on under the old conditions or to accept the new National Health Service conditions.

Mr. Linstead referred to the difficulty in which hospital management committees were put through the activities of nursing agencies. Owing to the shortage of nurses, qualified

nurses were joining the agencies and getting paid, in some cases, twice as much as they would receive under "Rushcliffe." A newly qualified nurse walked out of her hospital, joined an agency, and stayed as a full-time resident nurse at the hospital at twice the negotiated salary for perhaps a year. That made difficulty for the hospital and a strain among nurses.

Improvement in Health

Dr. HADEN GUEST said an enormous saving had begun to accrue in improvement in the health of the people. It was correct that the remuneration of practitioners in large industrial areas had increased. That included the greater part of the practitioners of the country. That applied to areas round London which were not commonly regarded as industrial, such as Mitcham. A solution would be found to the problem of doctors near the retiring age who had settled in places such as Worthing and were in serious difficulties through the abolition of fee-paying practices. It would be a complicated solution, a problem for the local organizations, and the same treatment would not be applied in all areas. In rural areas fees could not be calculated on the amount of time given to patients; they must be averaged out. He did not think the Exchequer would lose a large sum by the free medical treatment of foreigners temporarily resident. As chairman of the Medical Priority Committee he knew there were not enough specialists. An increase of 50% was needed to staff the hospitals properly. There was a deficiency of specialists in the eastern counties, in many other places, and in the armed Forces. In view of the shortage of nurses he suggested that the Government should put out the people who ran nursing agencies and bring these nurses into a nursing service.

Mr. ASSHETON said there were bound to be great difficulties when the scheme was first put into operation, but a number could have been avoided. He asked whether the medical profession did not find itself much overworked and with insufficient time to give to serious illness. Did the people who needed them most get the beds in the hospitals? Was there any possibility of avoiding great delays in getting hospital accommodation? Queues at surgeries had grown enormously. Was it not possible to give doctors more help in dealing with work which was not strictly medical? On Dec. 16 Mr. Bevan had said he had received statements of hospitals' probable expenditure for the current year but that none had yet been approved. Was that still the situation? There was a feeling that a large number of doctors were worse off in remuneration than they were before and that doctors were worse off than any other class of professional men or women in the scheme. The remuneration of dentists would have to be discussed on a later occasion.

Government Reply

Replying to the debate, Mr. JOHN EDWARDS said the Parliamentary Secretary was expected to deal with administrative reviews made on a motion for the adjournment of the House. The National Health Service had been welcomed by all classes to an extent beyond expectations. About 40,000,000 persons had placed their names on doctors' lists. The percentage of the population in the scheme would be 95 to 98. He was talking of England and Wales, not of Scotland, and was certain the proportion would be at least 95%. Out of an estimated total of about 21,000 general practitioners, 18,165 had come into the scheme. These doctors had already prescribed 75,000,000 medicines or appliances since the Service began. Out of 10,000 dentists in general practice 8,988 had entered the Service and had treated 2,200,000 patients, with 1,200,000 under treatment. It seemed that the peak in the demand for dentists' services had passed, but the demand ran at the rate of 130,000 a week. More than 2,500,000 people had had their sight tested under the supplementary ophthalmic service, and over 3,000,000 pairs of glasses were on order. The pent-up demand for such things was much greater than the Ministry had foreseen. As the rush was beginning to subside, the Ministry of Health was taking steps to review every side of the Service.

Remuneration

Remuneration was among the matters which the Ministry was considering. He reminded the House that the arrangements which had been made had in many cases not been those which the Ministry thought, in the first place, to be right. The arrangement by which the bulk of the fee was to be paid in the form of so much per person on the doctor's list had been made at the request of the profession. Taking everything into account, payments to doctors under the G.P. part of the scheme, from the appointed day to March 31, 1949, were estimated at £32,500,000. In additional Exchequer superannuation contributions were £11,600,000 extra. That overall amount would ensure that doctors would be remunerated in accordance

The richest natural vitamin - protein - mineral supplement **Bemax**

The nutritional factors of Bemax are well demonstrated in the table of assay figures shown below—

VITAMINS (per oz.)

B ₁ - - -	0.45 mg.
riboflavine -	0.3 mg.
nicotinic acid -	1.7 mg.
pyridoxine -	0.45 mg.
E - - -	8.0 mg.

PROTEIN, MINERALS etc.

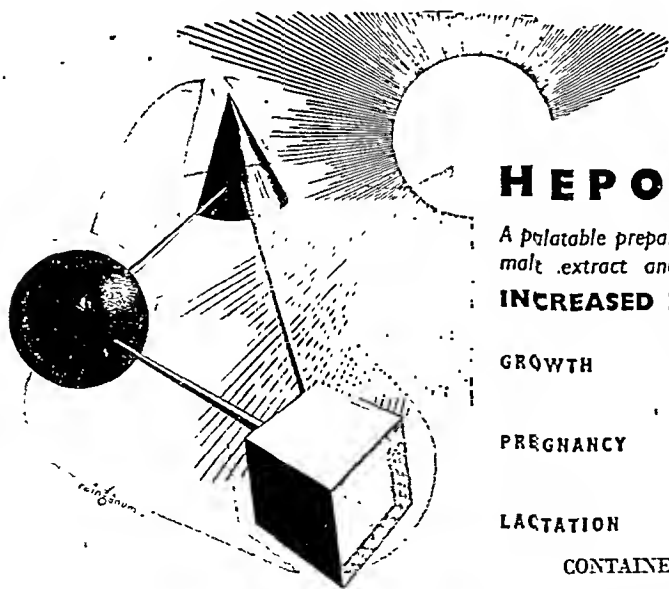
protein (first class— sec*) - - -	30%
carbohydrate -	39%
fat - - -	8.5%
mineral salts -	4.5%
moisture - - -	5%
fibre - - -	2%

• ESSENTIAL AMINO ACIDS

	fresh weight basis	16% N basis
arginine ..	2.5%	8.3%
histidine ..	0.9%	3.0%
lysine ..	1.8%	6.0%
tryptophane ..	0.3%	1.0%
phenylalanine ..	0.9%	3.0%
cystine ..	0.3%	1.0%
methionine ..	0.5%	1.6%
threonine ..	1.2%	4.0%
leucine ..	2.1%	7.0%
isoleucine ..	1.3%	4.3%
valine ..	1.6%	5.3%

This advertisement, including the analyses, is copyright.

Vitamins Limited
Upper Mall, London, W.6.



HEPOVITE

A palatable preparation of enzyme hydrolysed liver with malt extract and vitamin supplements designed for

INCREASED PHYSIOLOGICAL DEMANDS FOR PROTEIN

GROWTH

Each ounce (30 grm.) of Hepovite provides

PREGNANCY

PROTEIN DERIVATIVES 15 grm.
CARBOHYDRATE - - 11.4 grm.

LACTATION

together with members of the vitamin B complex and added vitamins A and D.

CONTAINERS OF 5 oz. (approx. 140 grm.)

Made in England by
EVANS MEDICAL SUPPLIES LTD
Liverpool and London

EVANS

PLAIN TALKS ON INFANT FEEDING



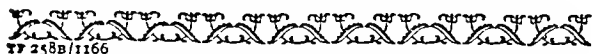
Taken for Granted

When the mother is unable to feed her child from the breast, is it not too easily taken for granted, by her busy and often hard-driven advisers, that cow's milk, in one form or another, is a satisfactory substitute — cow's milk of course with modification? The point to emphasise here is the modification. The young human stomach cannot cope with the quantity or the toughness of the casein in cow's milk. Simply to dry the cow's milk and add vitamins is not enough. The constituents of cow's milk must be scientifically broken down and reconstituted so that the percentages of components are as near as possible to the percentages found in the mother's milk. Not only this, but the components must be reconstituted in a state so refined that the infant can assimilate them easily. Trufood has approximately the same quantities of fat, carbohydrate and protein as human milk. But the greater part of the insoluble casein in cow's milk which causes the child most trouble in digestion, has been removed. This is why we are able to say that Humanised Trufood is the nearest to human milk — and also why, when they realise the difference, so many doctors recommend it.

In later advertisements we propose to explain other reasons, and we venture to hope that doctors and others concerned with infant feeding will do us the honour of re-examining this important matter. Literature giving detailed information can be obtained by writing to Trufood Ltd. (Dept. B M.36), Bebington, Wirral, Cheshire.

Issued by the Makers of Trufood —

NEAREST TO MOTHER'S MILK



*'when everything
seems to go wrong...'*

People today, harassed and run down, find themselves unable to contend with all the small irritations and minor mishaps of life.

Livogen is invaluable in all cases of nervous depression, reduced vitality and general debility. It restores vitality rationally, by supplementing the normal resources of the body. It is a balanced composition of liquid extract of liver B.P., extract of yeast, vitamin B₁ and nicotinic acid. Bottles of 4 and 16 fluid ounces are available as well as bottles of 80 fluid ounces for dispensing. Literature is available to medical men on request.

LIVOGEN

Trade Mark

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1
TEL: CLERKENWELL 3000 GRAMS: TETRADOME TELEX LONDON
Lgn/E/85a

To supplement nature...

the
natural
œstrogen



The use of 'PROGYNON' in gynecology ensures:

... Freedom from toxic effects

... A true physiological action and no other

... The restoration of the sense of well-being
normally dependent on ovarian sufficiency

'PROGYNON B OLEOSUM'

1 mg. and 5 mg.
œstradiol benzoate
in 1 c.c. ampoules


British Schering
LIMITED

167-169 GREAT PORTLAND STREET · LONDON · W.1

302/H

with the Spens recommendations. Distribution had been uneven partly from administrative difficulties and partly because of a certain amount of inflation in doctors' lists. He hoped that they would have eliminated this element of inflation and have got down to firm figures so that final payments could be made at the end of March, 1949, with all necessary adjustments. He recognized that the position of the rural doctor was difficult. Under the National Health Insurance scheme mileage allowances had helped the rural doctor to meet the extra costs of travel and so on. He was also able, if so minded, to charge higher fees to private patients in rural areas. Some time ago the Ministry had agreed with the profession that it would increase the mileage payments to £1,300,000 to cover ineffective time spent in travelling by rural doctors. It was clear that amount would not suffice. The Government therefore had agreed to provide a further £500,000 a year and to divert £200,000 from the inducement money in the Bill, giving a total mileage fund of £2,000,000 a year for Great Britain.

At this stage the full effect of maternity fees had not shown itself in doctors' remuneration. When final payments were made for the period from July 5, 1948, to March 31, 1949, if the remuneration of general practitioners did not accord with the Spens recommendations the arrangements would be reviewed to see what adjustments were needed to give effect to those recommendations. In the matter of basic salary the Minister had done precisely what the profession had wanted him to do. If anything was wrong, the doctors should go to their own Association rather than tell the Ministry that they had begun to change their minds. Although he had no detailed information about the number of basic salaries granted by local executive councils, the Ministry some time ago had a figure of 1,000 cases in which it had been granted. The Ministry had advised executive councils to give consideration to applications for a basic salary where there was reasonable justification. The Ministry had instanced a doctor starting a new practice or working a small practice; a doctor who on account of ill-health or of age was unable to do as much as he would otherwise do; and doctors whose incomes had dropped substantially as a result of the new Service. The difficulties were inherent in the system which the Ministry had adopted at the request of the profession.

Distribution of Doctors

On the difficulties about the distribution of doctors Mr. Edwards said the Central Medical Practices Committee had indicated that they would sympathetically consider an application from a doctor to live and practise at Deganwy, but that no application had been received. It was wrong to say nothing had been done about the maldistribution of doctors. Since the appointed day 530 general practitioners had died or resigned from the medical list and 532 new doctors had been admitted to the list. Of the 530 vacancies, 230 were filled by a partner, an assistant, or a person who seemed the logical successor. In 238 cases no successor was thought to be necessary because the outgoing doctor had only a small list. In 62 cases the vacancy had been advertised and a selection had been made from applicants. Normally it took from two and a half to three months to fill a vacancy. If a vacancy was advertised it was open to anyone to apply. He said that so far Chester and Hastings were the only areas which had been closed completely. In some places small parts of districts had been closed. The Medical Practices Committee would soon be able to give a better indication of the under-doctored areas. They were studying reports from all the executive councils. He knew of no way of separating foreign visitors except by introducing an elaborate new administrative technique. He could not tell when the Amending Bill would be introduced.

Time did not permit him to elaborate on the capital side of hospital finance, but apportionment on transfer regulations had been made on May 1, 1948 (S.I. No. 888). A panel of arbitrators had been set up by the Lord Chancellor under Mr. Christie, K.C. There were six requests to go to arbitration, five received about the appointed day and one in the week preceding this debate. The five were carrying on as before, pending the arbitration. The Ministry had difficulties in deciding the right course to take with the sixth case. It had settled a number of legal points and hoped to refer the first case to the panel in the following week. Mr. Edwards agreed that the problem of the co-operative nursing agencies required careful consideration. It was bound up with the discussions going on in the Whitley Council concerning nurses' remuneration. Estimates of hospital expenditure had not been approved but did not apply till the beginning of April. The Ministry must have time to co-ordinate this business. He knew there were long delays in securing hospital beds. They were still dreadfully short of nurses. It ought to be the rule throughout the country that beds were allocated in accordance with medical need.

There should be no way in which the genuinely medically urgent case could be by-passed by less urgent cases in a private pay-block or anywhere else.

There was no doubt that some sections of the medical profession were much overworked. He wished it were possible to give them some help. Plan as they might, and much as they might rely on the regional boards and management committees, in the end the scheme would succeed or fail in accordance with the degree to which the Ministry obtained the skill and devotion of those who worked it. He looked forward to improving the scheme, in which there were, no doubt, still a number of anomalies.

Cottage Hospitals

Mr. H. SUTCLIFFE on Jan. 18 opened a debate on the taking over by the State under the National Health Service Act of hospitals which had been privately endowed by the generosity of an individual. He said that Dr. Kershaw, of Royton, who died in 1909, had left the residue of his estate to trustees to be applied to the founding, establishment, and maintenance of a general hospital or infirmary in the township of Royton on land owned by him. The hospital was to be free and open to all applicants. The first world war delayed the building of the hospital, but it was ready for opening by 1930. The Charity Commissioners had approved the scheme according to the terms of Dr. Kershaw's will. The hospital cost £20,000 to build, leaving an endowment fund of £67,000, which had now reached £71,000 because of interest and one or two other legacies. Not a penny had been collected through the rates or in any other way and there had never been a flag day. The endowment fund was sufficient to fulfil all the purposes of the hospital, which was a self-contained unit of 19 beds where patients could receive treatment at as low a cost as 5s. a week in some cases. A weekly payment of 10s. had been usual. People came to it from surrounding districts as well as from Royton. The Charity Commissioners had vested control in a committee of nine which was thoroughly representative. The Commissioners had added that a minister of religion or a person professing Socialist opinions was not eligible to be a member of the committee. That provision was in strict compliance with Dr. Kershaw's will. The committee had expected that the hospital would be disclaimed under Clause 6 (3) of the National Health Service Act, but on Sept. 24, 1947, it had received a letter from the Minister stating that Mr. Bevan was of opinion that the hospital was transferable. The committee applied to be disclaimed, but heard nothing until March 11, 1948, when a letter arrived which stated that the Minister had decided not to disclaim the hospital.

Mr. Sutcliffe understood that in the Manchester area sixteen hospitals had been disclaimed and he thought that Royton should have been. He contrasted the position under the Education (Miscellaneous Provisions) Act, 1948, whereby the assent of the Charity Commissioners was needed before the Minister took over any endowment which had been in existence less than fifty years. He asked for reconsideration of the position of these hospitals and suggested that the Minister had an opportunity to alter procedure by regulation. He also asked what was the future of the Royton hospital, which was fully equipped and had a fine operating theatre. Only half a dozen patients were now in it, whereas before the Act came into force the beds were nearly always full and there was often a waiting-list. People needing operations were being sent elsewhere because the operating theatre at that hospital was no longer used. He hoped that the Royton hospital would not suffer the same fate as the Yorkshire Home for Incurables at Harrogate, where there were seventy beds and an endowment fund of £100,000. The committee of that hospital had been cajoled into coming in under the scheme by the threat that they would find it difficult to get nurses if they remained outside. Instead of that institution continuing as a hospital it was used as the finance department of the local hospital board. Instead of people being admitted from a long waiting-list the whole building had become offices. Action of that kind made people apprehensive of the future. He hoped that the Minister would at least say that the Royton hospital would continue to be used to full capacity as a hospital.

Mr. JOHN EDWARDS, Parliamentary Secretary to the Ministry of Health, said it was true that the hospital service of the country had been largely built up by private benefactions, and at the time of the passing of the Act everyone knew that large numbers of voluntary hospitals would be taken over and that provision must be made for what would happen to their endowments. This particular hospital did not differ from hundreds of other privately endowed voluntary hospitals which were taken over on the appointed day. The hospital had been administered under a scheme for which the Charity Commissioners were responsible and the Commissioners did not in

any way oppose the transfer. The question the Minister had to decide under the Act was whether the hospital was required for the new Service. With regard to the delay in considering the application that the hospital should be disclaimed, Mr. Edwards said the Ministry did not take each request as it was received but waited until all the requests were in hand and until they had consulted the regional hospital boards. It appeared to the Ministry that the hospital ought to be transferred because it was needed in the new Service, and the regional hospital board expressed the same view. Of the sixteen hospitals which had been disclaimed in the Manchester region not one could be compared with the Royton hospital, because they were either run by religious bodies or were institutions which the Ministry did not want. If it were said that this hospital was needed by the people of Royton the Minister of Health was responsible for providing the health services in Royton and had there a well-equipped cottage hospital which was essentially part of that provision.

The Royton hospital would not serve the neighbourhood less efficiently within the new Service. It was likely to become of greater service than if it remained a solitary isolated institution. He assured the people of Royton that this was their hospital and that it was still essential for them to take an interest in it. The general intentions of Dr. Kershaw would be maintained, and the management committee were under an obligation to have regard to the past purposes of the hospital in determining its future use. The hospital management committee or the regional board was not entitled to divert it to other uses unless it was absolutely clear that the services needed by the neighbourhood would be provided in other ways. The hospital would be used as a cottage hospital as in the past. If Dr. Kershaw had intended that there should be no racial, religious, or political discrimination, that intention should be fulfilled. There was no likelihood of such discrimination in a hospital for which the regional board was responsible to the Minister, who in turn was responsible to the House. Without speculating about the long-distant future, the present intention was to use the hospital as a cottage hospital.

Service in the Forces

Answering questions on Jan. 18, Mr. ISAACS said there would this year be four registrations for National Service: on Feb. 26, May 21, Sept. 3, and Dec. 3. After registration, medical examinations would spread over the following three months. The age of call-up would remain at a little above 18 years and 3 months. If young men at school wished to be called up early to their period of service with the beginning of courses at the universities in the autumn of any year, their request would be granted.

Agenized Flour

Sir ERNEST GRAHAM-LITTLE asked whether Mr. Strachey knew that the use of agene for bleaching flour provided for human consumption had been prohibited in the U.S.A. in accordance with the advice tendered by the Food and Drug Administration, and what steps he was taking to prevent the use of agene in this country.

Mr. STRACHEY replied on Jan. 20 that the use of nitrogen trichloride was to be discontinued in the U.S.A. on Aug. 1. A small scientific committee under the chairmanship of Sir Wilson Jameson, Chief Medical Officer of the Ministry of Health, had been set up and was reviewing the results of experimental work on flour improvers now in progress in the United Kingdom and the data submitted in evidence at Washington.

Chelsea Hospital for Women.—Commander NOBLE asked on Jan. 20 whether the Minister of Health was aware that the secretary of the Chelsea Hospital for Women had been dismissed by the new board of governors of this joint hospital after twenty-six years' hospital service, eleven as secretary of this hospital, and with only eight years to do for pension. Mr. BEVAN understood that the new board of governors decided, as they were entitled to do, to appoint a new secretary for their hospitals. He added that the officer could apply for the other posts. The National Health Service Act provided for compensation of transferred officers who suffered loss attributable to the passing of the Act.

Emergency Dentistry.—Mr. BEVAN told Mr. PROCTOR on Jan. 20 that a simplified procedure was being devised to assist dentists to deal expeditiously with emergency cases. The dental organizations had also been asked to arrange with dentists in the National Health Service to reserve a short period daily to deal with emergency cases.

From Feb. 1 Rampton and Moss Side State Institutions will be known respectively as: Rampton Hospital for Mental Defectives, Retford, Notts; and Moss Side Hospital for Mental Defectives, Maghull, near Liverpool.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Jan. 8.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	43	2	25	7	4	60	3	18	2	1
Deaths ..	—	—	1	—	—	—	2	1	—	—
Diphtheria ..	126	9	41	8	5	216	23	68	19	5
Deaths ..	2	—	—	—	—	3	1	—	—	—
Dysentery ..	81	21	26	1	5	114	17	17	1	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute ..	—	—	—	—	—	2	—	1	—	—
Deaths ..	—	—	—	—	—	—	1	—	—	—
Erysipelas ..	—	—	28	9	4	—	—	49	12	3
Deaths ..	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years ..	—	—	—	39	—	—	—	—	23	—
Deaths ..	54	5	5	2	6	48	5	5	6	1
Measles* ..	13,185	318	61	55	143	3,746	226	1,344	231	1
Deaths† ..	—	—	—	1	—	—	2	—	2	—
Ophthalmia neonatorum ..	50	5	5	2	1	56	3	13	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	2	—	—	—	—	8	—	1 (B)	—	—
Deaths ..	1	—	—	—	—	1	—	—	—	—
Pneumonia, influenza. Deaths (from influenza)‡ ..	1,181	55	18	8	9	975	70	5	5	1
Deaths ..	47	6	5	2	—	23	5	1	1	—
Pneumonia, primary ..	435	75	447	48	13	501	60	329	37	1
Deaths ..	—	—	—	—	—	—	—	—	—	—
Polio-encephalitis, acute ..	1	—	—	—	—	6	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	19	2	2	—	—	52	5	6	—	—
Deaths§ ..	2	—	—	—	—	4	—	—	—	—
Puerperal fever ..	—	—	9	—	—	—	3	10	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| ..	73	3	4	1	—	108	7	16	—	—
Deaths ..	—	—	—	—	—	—	1	—	—	—
Relapsing fever ..	—	—	—	—	2	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Scarlet fever ..	1,022	53	230	113	40	1,525	104	307	21	4
Deaths† ..	—	—	1	—	—	—	—	—	—	—
Smallpox ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Typhoid fever ..	4	—	—	—	—	3	—	1	3	—
Deaths ..	—	—	—	—	—	—	—	—	1	—
Typhus fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	2,306	168	141	63	39	2,057	163	64	61	3
Deaths ..	12	—	2	1	1	6	—	—	1	—
Deaths (0-1 year) Infant mortality rate (per 1,000 live births) ..	424	50	68	31	24	435	47	55	33	1
Deaths (excluding stillbirths) Annual death rate (per 1,000 persons living) ..	6,698	999	988	256	19.5	5,257	845	701	211	14
Live births Annual rate per 1,000 persons living ..	8,066	1,314	1,061	444	24.3	8,357	1,268	1,125	377	28
Stillbirths Rate per 1,000 total births (including stillborn) ..	207	35	25	—	—	225	34	28	—	—
			23	—	—		24	—	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Food Poisoning at Bnston

On Jan. 20 there was an outbreak of food poisoning at the Carlton Road School, Boston, Lincs. This consists of an infants and a seniors department, and children from Witham Green School attend the dinner centre at Carlton Road.

Children affected had eaten a midday meal which had been prepared by the civic restaurant. At first it appeared that about 50 children had been taken ill, with vomiting as the main symptom. One child when first seen at school was lying across her desk, had had a sharp attack of vomiting, and had a pulse rate about 100. After admission to hospital she stated that she began to vomit because she had seen the other children vomit, but in fact she had had dinner at home.

No anxiety was felt for any of the 7 cases suffering from food poisoning and admitted to hospital. Diarrhoea was not a marked feature, two children only having diarrhoea after admission. An average pulse rate was about 100 to 110 and of poor quality. One child was febrile—101° F.—but was subsequently noted to be suffering from bronchial catarrh. The children progressed very satisfactorily, and on Jan. 22 none of them was complaining. There was no evidence of prostration or collapse.

Specimens of bilious vomit were taken at school, together with a specimen of gravy and three fishcakes left over from the midday meal.

The meal in question consisted of fishcakes, vegetables, and fruit pie. The type of outbreak and the short interval between the meal and onset of symptoms suggested that the cause was pre-formed toxin. Altogether 66 cases were referred for treatment, two of these being adults, one a member of the teaching staff and the other a helper at the centre. Recovery appears to have been rapid in every case. Laboratory investigations are not yet complete, though a large growth of staphylococci was obtained from the fishcakes.

Vital Statistics for 1948

The Registrar-General's weekly return for the week ended Jan. 15 records that the total number of deaths registered in England and Wales during 1948 was 470,282—the lowest number for eighteen years despite an increase of some 3½ millions in the population at risk. This represents a record low death rate of 10.8 per 1,000 total population, an improvement of 1.2 over that for 1947; the previous lowest rate was 11.4 in 1945 and 1930. There were 26,635 deaths of children under one year of age in 1948, giving a rate of 34 per 1,000 related live births. This is the first time the annual rate has fallen below 40, the previous lowest being 41 in the previous year. The rate for the December quarter of 1948 was 35, the lowest for any fourth quarter. Stillbirths numbered only 18,415, giving a rate of 23.1 per 1,000 live and still births. This is the lowest rate ever recorded for any year, the previous lowest being 24.1 in 1947. The rate for the December quarter was 22.9, being also the lowest for any fourth quarter.

The number of live births registered in England and Wales was 777,648, a reduction of 109,172 from the peak of 886,820 in 1947, but still substantially above pre-war levels—for example, 621,204 in 1938. In the following table the numbers and corresponding rates of live births, stillbirths, deaths, and deaths of children under one year of age registered during the fourth quarter and the year 1948 are compared with those for the fourth quarters and the years 1947, 1946, and 1938:

	Live Births		Stillbirths		Deaths (including Non-civilians)		Deaths of Infants Under 1 Year	
	No.	Per 1,000 Total Population	No.	Per 1,000 Total Live and Stillbirths	No.	Per 1,000 Total Population	No.	Per 1,000 Live Births
4th quarter, 1948	179,680	16.4	4,206	22.9	125,557	11.5	6,473	35
" " 1947	193,586	17.8	4,665	23.5	120,765	11.4	7,952	38
" " 1946	221,815	20.6	6,115	26.8	127,546	11.4	9,147	43
" " 1938	143,756	13.8	5,831	39	119,366	11.5	7,504	49
Year, 1948	777,648	17.9	18,415	23.1	470,282	10.8	26,635	34
" " 1947	886,820	20.6	21,916	24.1	517,615	12	36,849	41
" " 1946	819,894	19.2	22,915	27.2	492,090	11.5	33,541	43
" " 1938	621,204	15.1	24,729	38.3	478,996	11.6	32,724	53

Discussion of Table

In England and Wales increases were recorded in the notifications of measles 2,064, whooping-cough 291, acute pneumonia

131, and dysentery 28. There were decreases in the incidence of scarlet fever 103 and diphtheria 16.

For the second consecutive week an increase of over 2,000 has been recorded in the notifications of measles; the largest rises during the weeks were Yorkshire West Riding 772, Lancashire 242, Gloucestershire 224, and Nottinghamshire 95. A small rise in the incidence of whooping-cough occurred in most areas; the largest increase was in Yorkshire West Riding 58. The decline in the incidence of scarlet fever was slightly greater in the northern section of the country than in the southern. The largest changes in the notifications of diphtheria were decreases in London 9 and Yorkshire West Riding 8, and an increase of 9 in the south-eastern counties.

An outbreak of dysentery affecting 16 persons was notified from Cheshire, New Wirral U.D. Other large returns of dysentery were Lancashire 20 (Oldham C.B. 11, Liverpool C.B. 7) and London 21 (Poplar 9, St. Pancras 9). The largest returns of acute poliomyelitis were Yorkshire West Riding 3, Surrey 3, Lancashire 2, and London 2; no administrative area reported multiple cases.

In Scotland the number of notifications increased for acute primary pneumonia 74, whooping-cough 91, measles 20, and diphtheria 15. There were decreases in the incidence of scarlet fever 15 and dysentery 13. The rise in the incidence of pneumonia was common to all areas. Notifications of diphtheria in Glasgow rose from 9 to 24.

In Eire there was a decrease of 26 in the notifications of measles. This was due to the experience of Laoighis, Athy No. 2 R.D., where an outbreak in the preceding week resulted in 32 notifications, but no case was reported during the week under review.

In Northern Ireland the apparent large increase of 91 in the notifications of measles was due to the fact that this disease has been made notifiable in all areas for the first time.

Week Ending January 15

Notifications of infectious diseases in England and Wales during the week included: scarlet fever 989, whooping-cough 2,825, diphtheria 92, measles 10,922, acute pneumonia 1,184, cerebrospinal fever 28, acute poliomyelitis 34, dysentery 70, paratyphoid 4, and typhoid 5. In the great towns 40 deaths were attributed to influenza.

Medical News

Medical Films

The first two films of a series depicting gynaecological operations have recently been completed. They were photographed by Mr. Stanley Schofield at the Middlesex Hospital, the surgeon being Mr. F. W. Roques. The films, which are in colour, are intended for showing at the end of a lecture to students, and there is no spoken commentary but a number of explanatory subtitles. The full title of the first film, which runs for 18 minutes, is "Subtotal Hysterectomy for Multiple Fibromyomata in a Nullipara aged 43 Years". All the stages of the operation are clearly shown, from the placing of the patient on the operating table to the dispatching of the specimen to the pathological laboratory. The second film is entitled "An Operation for Procidencia." It also runs for 18 minutes; the operative technique is based on that described in Berkeley and Bonney's textbook on gynaecological surgery. Information about the distribution of these films can be obtained from their producer, Stanley Schofield, F.R.P.S., 4, Norwood Drive, North Harrow, Middlesex.

Sir Henry Dale on Research

Sir Henry Dale, O.M., F.R.S., recommended doing research part-time when he addressed the Royal Medical Society of Edinburgh on Jan. 21. Coming regularly into living contact with patients helped the part-time research worker to keep his feet on the ground, he said, and might give him a definite advantage over the man who gave all his time to research. It had its moment of exhilaration, but the characteristic of research work was drudgery. There was nothing more discouraging than to see after months, or even years, of toil a beautiful hypothesis slain by an ugly fact. The whole-time research worker had the constant fear that the fount of ideas would dry up as his youth declined, that he would have nothing to show for years of work. Under such conditions many a man had looked with envy on his colleague whose research was a side-line.

French Award

The French Government has conferred the Médaille de la Reconnaissance Française on the following: Mr. Albert Davis, Mr. Gavin Livingstone, Mr. T. M. Tyrrell, Mr. A. D. Wright, and Mr. H. W. S. Wright.

Pharmaceutical Society

The Pharmaceutical Society has appointed Mr. F. W. Adams, deputy secretary, to be secretary with Mr. H. N. Linstead, M.P., to enable the latter to carry on with his public work. Mr. Adams will also be Registrar in succession to Mr. Linstead.

Harveian Society of London

The Buckston Browne Prize for 1948 has been awarded to Dr. V. C. Medvei, M.R.C.P., for his essay on "The Mental and Physical Effects of Pain."

Prospective Parliamentary Candidate

Dr. William James O'Donovan has been adopted as prospective Conservative candidate for Fulham West. He was M.P. for Mile End from 1931 to 1935. Fulham West is at present represented by Dr. Edith Summerskill.

British Schools Exploring Society

Applications are invited for the posts of an honorary physician and an honorary surgeon for the Northern Norway Expedition leaving on Aug. 3 and returning about Sept. 14. The entire cost to each member will be £110 plus about £10 10s. for personal equipment. Applicants should apply as soon as possible to the honorary secretary, White Barn, Old Oxted, Surrey, if possible suggesting a day they could come to London for an interview.

Leverhulme Research Fellowships

Applications are invited for Fellowships and Grants in aid of research, which are intended for senior workers who are prevented by routine duties or pressure of other work from carrying out research. They are limited to British-born subjects normally resident in the United Kingdom, but in exceptional circumstances the trustees may waive the condition as to residence. The trustees are also prepared to consider applications from groups of workers engaged upon co-operative programmes of research, particularly from those engaged upon long-distance programmes or in institutions in which the normal facilities for research have been curtailed by the war. The duration of the awards will not normally extend over more than two years or less than three months, and the amount will depend on the nature of the research and the circumstances of the applicant. Forms of application may be obtained from the secretary, Dr. L. Haden Guest, M.C., M.P., Leverhulme Research Fellowships, 7, Bedford Row, London, W.C.1. Applications must be received by March 1; awards will be announced in July and will date from Sept. 1.

Willis

Dr. William Henry Lewis, of Llansantffraid, who was High Sheriff of Montgomeryshire in 1935, left £25,562. Mr. Percival Pasley Cole, late surgeon to the Dreadnought Hospital, Greenwich, left £16,104. Dr. Robert Nimmons, of Pelton, Durham, left £12,115; Dr. Herbert Charles Mooney, of Dublin, £6,832; and Dr. Noel William Berry, of Alverstoke, Hants, £26,664.

COMING EVENTS**Association of Clinical Pathologists**

A scientific meeting of the Association of Clinical Pathologists will be held at Westminster Hospital, London, S.W., on Thursday, Jan. 27 and will be continued to-day (Friday, Jan. 28) and to-morrow (Saturday, Jan. 29) at 9.30 a.m.

Contraceptive Technique

A lecture and demonstration (on living models) on contraceptive technique will be given by Dr. Marie C. Stopes and Dr. Beddow Bayly at the Mothers' Clinic, 108, Whitfield Street, Tottenham Court Road, London, W., on Thursday, Feb. 3, at 2.30 p.m. Tickets must be obtained in advance, as space is limited.

British Tuberculosis Association

A meeting of the British Tuberculosis Association will be held at the Hospital for Sick Children, Great Ormond Street, London, W.C., on Saturday, Feb. 5, at 10 a.m. Members are reminded that the annual conference of the association will be held at Trinity College, Cambridge, on April 6, 7, and 8.

Banting Memorial Lecture

As briefly announced in this column in the *Journal* of Jan. 22, Professor John Beattie, Bernhard Baron Research Professor at the Royal College of Surgeons of England, will deliver the Banting Memorial Lecture on "Metabolic Disintegrations" at the University of Toronto on Monday, Feb. 14. The lecture is being delivered at the invitation of the Dean of the Medical Faculty of the University.

Scientific Treatment of Delinquency

A course of six lectures on "Difficult and Delinquent Personalities: The Freudian Approach" will be given by Miss Barbara Low at the Institute of Scientific Treatment of Delinquency, 8, Bourdon Street, Davies Street, London, W., on Tuesdays, Feb. 22, March 8, 15, 22, and 29, and April 5, at 6 p.m. The fee for the course, which has been specially arranged for teachers, parents, and welfare workers, is 7s. 6d. Enrolment forms may be obtained from the Education Secretary of the Institute at the address above.

Refresher Course for G.P.s

The Edinburgh Postgraduate Board for Medicine is arranging a 14 days' refresher course for general practitioners, starting on May 9. The course will include instruction suitable for general practitioners in aspects of medicine, surgery, and the ancillary services. Emphasis will be laid on advances in therapeutics. Twenty hours are devoted to lecture-demonstrations and 50 hours to clinical demonstrations and ward visits. Fee for graduates not claiming expenses from Government sources: 10 guineas. Application should be made to the Director of Studies, Edinburgh Postgraduate Board for Medicine, University New Buildings, Edinburgh.

SOCIETIES AND LECTURES**Monday**

UNIVERSITY COLLEGE LONDON.—At Physiology Theatre, Gower Street, London, W.C., Jan. 31, 4.45 p.m. "The Ultracentrifuge and Electrophoresis Apparatus in Protein Research," by Dr. P. Johnson, Ph.D.

Tuesday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Feb. 1, 5 p.m. "Lupus Erythematosus," by Dr. W. N. Goldsmith.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 1, 11 a.m. "Lymphogranuloma Inguinale and Granuloma Venereum," by Dr. W. N. Mascal.

UNIVERSITY COLLEGE LONDON.—At Physiology Theatre, Gower Street, London, W.C., Feb. 1, 5.15 p.m. "Digestion and Metabolism," by Dr. E. A. Underwood.

Wednesday

EDINBURGH CLINICAL CLUB.—At Edinburgh Royal Infirmary (Ward 8), Feb. 2, 4 p.m. "Peripheral Vascular Disturbances," by Professor J. R. Learmonth.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 2, 11 a.m. "Condylomata Acuminata," by Dr. A. H. Harkness.

ROYAL MICROSCOPICAL SOCIETY.—At B.M.A. House, Tavistock Square, London, W.C.—Feb. 2, 6 p.m. Biological Section meeting. "Some Biological Aspects of Experimental Schistosomiasis," by Mr. O. D. Standen, M.Sc.

SOCIETY OF CHEMICAL INDUSTRY: FOOD GROUP.—At Portsmouth Municipal College, Feb. 2, 7 p.m. Joint meeting with Portsmouth and District Chemical Society. "Food Science in Evolution." Address by Dr. L. H. Lampitt.

SOCIETY OF PUBLIC ANALYSTS.—In Hall of Royal Society of Tropical Medicine and Hygiene, 26, Portland Place, London, W., Feb. 2, 7 p.m. Papers to be presented and discussed.

UNIVERSITY COLLEGE LONDON.—At Anatomy Theatre, Gower Street, London, W.C., Feb. 2, 5 p.m. "Speech and Society," by Mr. David Abercrombie.

Thursday

FACULTY OF HOMOEOPATHY.—At Royal London Homoeopathic Hospital, Great Ormond Street, London, W.C., Feb. 3, 5 p.m. "Homoeopathy and the Psychosomatic Approach." Address by Dr. F. H. Bodman.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Feb. 3, 5 p.m. "Drug Eruption," by G. B. Mitchell-Heggs.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 3, 11 a.m. "Residual (non-gonococcal) Urethritis (Post-gonorrhoeal)," by Dr. A. H. Harkness.

LONDON JEWISH HOSPITAL MEDICAL SOCIETY.—At London Jewish Hospital, Stepney Green, E., Feb. 3, 3 p.m. Clinical demonstration.

ROYAL PHOTOGRAPHIC SOCIETY: MEDICAL GROUP.—16, Prince's Gate, London, S.W., Feb. 3, 7 p.m. "Forensic Photography," by Detective Inspector P. G. Law.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—At Large Lecture Theatre, Feb. 3, 4.30 p.m. Lecture-demonstration: "Psychiatry."

Friday

LONDON CHEST HOSPITAL, Victoria Park, E.—Feb. 4, 5 p.m. "Differential Diagnosis of Carcinoma of the Lung," by Dr. E. H. Hudson.

ROYAL MEDICAL SOCIETY, 7, Melbourne Place, Edinburgh, Feb. 4, 8 p.m. "The Surgery of Cholelithiasis and the Complications of Operative Treatment," by Mr. Rodney Maingot.

UNIVERSITY COLLEGE LONDON: DEPARTMENT OF PHARMACOLOGY.—At Physiology Theatre, Gower Street, London, W.C., Feb. 4, 5.15 p.m. "Natural and Synthetic Analgesics," by Dr. G. Bergel, Ph.D.

For Relief of Sacro-iliac Pain prescribe SPENCER

Shewn here is a Spencer Sacro-iliac Support and Breast Support designed especially for this patient. A pelvic binder of non-elastic webbing (see inset) encircles the pelvis inside the support to exercise the degree of control required.

The reason why Spencer Supports are therapeutically effective is: Each Spencer Support is individually designed, cut and made at our Banbury Manufactory—after a description of the patient's body and posture has been recorded and detailed measurements taken. The doctor's instructions are carefully followed.

This assures the doctor that each patient will receive the proper design to aid his treatment; that the support will fit with precision and comfort.

SPENCER (BANBURY) LTD.

Consultant Manufacturers of

Surgical and Orthopaedic Supports
SPENCER HOUSE BANBURY OXFORDSHIRE

BEWARE OF IMITATIONS. Spencer (Banbury) Ltd., regret the necessity of issuing warning to beware of copies and imitations. Look for the SPENCER LABEL stitched in the Spencer Support and ensure that it is a genuine Spencer Support and not a so-called copy. Spencer Copyright designs are original and distinctive and for more than 20 years have been recognised by the Medical Profession as a symbol of effective control for Abdomen, Back and Breasts.

Suppliers to Hospitals throughout the Kingdom
under the National Health Service Acts of 1946

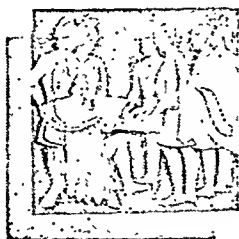
Trained Fitters available throughout the Kingdom

Copyright: Reproduction in whole or in part is prohibited except with the written permission of S. (B.) Ltd.

B.M.J. 1/94

MULTIS TERRIBILIS CAVETO MULTOS (AUSONIUS)

Those that are a cause of fear to many should themselves avoid crowds. In Rome, do as the Romans do. But in modern times crowds are as difficult to avoid as the virus of the common cold. 'Endrine' nasal compound provides a simple method of treating coryza and catarrh. It contains ephedrine which shrinks the engorged mucosa, whilst the oily base brings soothing relief to the inflamed membranes. Free breathing becomes possible and coryza infection is prevented.



ENDRINE Nasal Compound

Formula: ephedrine 0.75% w/w; menthol 0.5% w/w; camphor 0.5% w/w; eucalyptol 0.5% w/w; oleum ricini 0.35% w/w; light liq. paraffin q.s. to 100.

JOHN WYETH & BROTHER LIMITED
Clifton House, Euston Road, London, N.W.1
BEPLEX - ALUDRON - PETROLAGAR - PLASTULES

Wyeth

"DICODID" (KNOLL) brand DIHYDROCODEINONE THE MODERN ANTITUSSIVE

A centrally-acting depressant of severe irritant cough, well tolerated and non-constipating.

A reliable Pre-operative and Post-operative respiratory sedative, superior to Codeine.

LITERATURE AND SAMPLES ON REQUEST

SAVORY AND MOORE LTD.
WELBECK STREET, LONDON, W.1

BRONCHIAL ASTHMA

The effect upon the bronchial musculature is among the selective mechanisms of action of the drug, Cardophylin. It appears that the seat

of its bronchial anti-spasmodic action is peripheral and due to direct depression of bronchial smooth muscle.

Cardophylin

THEOPHYLLINE-ETHYLENEDIAMINE

INDICATIONS :—BRONCHIAL ASTHMA • PAROXYSMAL NOCTURNAL DYSPNOEA • DISEASES OF THE CARDIO-VASCULAR SYSTEM • OEDEMA

In tablets for oral use, ampoules and suppositories.

LITERATURE AND SAMPLES ON REQUEST

Manufactured by WHIFFEN & SONS, LTD.

Home Sales Distribution by **BRITISH CHEMICALS AND BIOLOGICALS, Ltd.**
(Benger's-Genatosan Division), Loughborough,
to whom all orders and enquiries should be sent.

Ortho-Gynol

VAGINAL JELLY

for effective conception control



EFFECTIVE... by Huhner test and clinical studies; rapid spreading and low surface-tension ensure instantaneous action of the spermicide.

TOLERABLE... by biopsy and clinical observation after prolonged use. Entirely free from toxic or irritant materials.

BUFFERED... The spermicidal action is independent of the acidity—which is therefore buffered at pH.4.5. Regular use tends to assist maintenance of the healthy vaginal flora.

STABLE..... In any climatic extremes.

An elegant scientific preparation affording the logical prescription when contraception is indicated. For use alone by means of measured-dose applicator or in conjunction with the Ortho Vaginal Diaphragm.



Active ingredients:
Ricinoleic acid 0.75% w.w., boric acid 3.0% w.w. and oxyquinoline sulphate 0.025% w.w.

ORTHO

PHARMACEUTICAL LIMITED

★ Samples and literature on request

HIGH WYCOMBE

BUCKS

Makers of Gynaecic Pharmaceuticals

APPOINTMENTS

L. Bacharach, M.A., F.R.I.C., has been appointed to the staff of Public Relations Director, Glaxo Laboratories, Ltd. W. F. J. hbertson, Ph.D., F.R.I.C., will succeed him as Head of the rition Unit, Research Division, of Glaxo Laboratories, Ltd

HLER, J. H., M.D., F.R.C.S. Ed., M.R.C.P. Ed., Medical Officer in Charge, Graham's Homes, Kalimpong, India

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

klason.—On Jan. 12, 1949, at the General Lying-in Hospital, Lambeth, to arbarr (née Thomas), M.B., Ch.B., wife of J. R. Dickinson, F.R.C.S., a daughter.

gaid.—On Jan. 12, 1949, at Liverpool Maternity Hospital, to Aileen Mary e Barry), M.B., Ch.B., wife of John Duvid, M.B., Ch.B., a daughter e.—On Jan. 4, 1949, to Olive, wife of Dr. H. C. Price, of 13, Church Vale, London, N., a son—Stephen Nicholas.

chard.—On Jan. 17, 1949, in London, to Joan (née Wehber), wife of John obo Finchard, M.C., M.R.C.P., a son.

rdern.—On Jan. 13, 1949, at 31st British General Hospital, British Troops in Austria, to Theodosia (née Rogers), wife of Major John Redfern, R.A.M.C., a son.

nlter.—On Jan. 15, 1949, at the Brimhead Nursing Home, Lincoln, to Daphne (née Pullen-Thompson), wife of Geoffrey A. Bagot Walters, F.R.C.S. Ed., a daughter.

MARRIAGES

wtree—Samson.—On Jan. 15, 1949, in London, Harold Maurice Bawtree, A.M.I.E.E., to Helen Samson, M.B., Ch.B., D.Obst.R.C.O.G.

rt—Alexander.—On Jan. 15, 1949, at Granthester, Martin Brett, F.R.C.S., to Mrs. Joan Alexander.

rycock—Worth.—On Jan. 1, 1949, at the Garrison Church, Hargreave, British oona Island, Handley T. Laycock, M.B., F.R.C.S., to Winifred Gladys Worth, Colonial Nursing Service

DEATHS

alley.—On Jan. 16, 1949, at Victoria Falls Hospital, Victoria, B.C., Kenneth Norman Gerson Bailey, M.B., B.S.

happao.—On Jan. 14, 1949, Edward Seymour Chapmao, M.D., F.R.C.S. Ed., of Scarborough

ielden.—On Jan. 23, 1949, Edward Fielden, M.B., B.S., of Bracknell, Berkshire, aged 77.

orster.—On Jan. 16, 1949, Arthur Graham Foljambe Forster, M.D. Ed., of Calderwood, Montpellier Parade, Cheltenham, aged 79

rrer.—On Jan. 15, 1949, at Stanway, Fleet, Hants, John Edward Frere, M.B., B.Ch.

rdan.—On Jan. 16, 1949, Christopher Fraok Good, C.B., M.R.C.S., L.R.C.P., Principal Medical Officer at the Ministry of Health in charge of the insurance medical service.

rdan.—On Jan. 19, 1949, at R.A.F. Hospital, Wroughton, Wiltshire, John Herbert Jordan, M.C., M.B., late Major, R.A.M.C.

or.—On Jan. 16, 1949, at The Hollies Pine Grove, East Grinstead, Alfred Reginald Kay, M.R.C.S., L.R.C.P., aged 79

Idewall.—On Jan. 14, 1949, at Tunbridge Wells, Col'n Francis Frederick McDowall, M.D., late Medical Superintendent, Titchurst House, Titchurst, Sussex.

itchell.—On Jan. 11, 1949, Edward Mitchell, L.R.C.P.S. & S.I. and L.M., The Howdens, Windon, Bucks

iedie.—On Jan. 6, 1949, at Denham, Chandlersford, Arthur Mudie, L.R.C.P.S. Ed., aged 60

rmshy.—On Jan. 1, 1949, William Edwin Ormsby, O.B.E., M.B., B.Ch., Surgeon Captain R.N., retired, of Ardenne Highlands, Salisbury, Southern Rhodesia late of Paignton, Devon

ntina.—On Jan. 11, 1949, John Hunter Park Paton, M.D. Ed., of Castlemead, St. Andrews

teed.—On Jan. 11, 1949, at 343, London Road, St. Leonards-on-Sea, Sussex, Thomas Reed, M.R.C.S., L.R.C.P.

teid.—On Jan. 8, 1949, at Forth, Lanark, John Reid, M.D. Glas

tyles.—On Jan. 14, 1949, at Hoylake, Cheshire, Charles Sydney Yates, O.B.E., M.B., Ch.B. Ed., D.P.H., Colonel, late R.A.M.C., of 30, The Drive, Amersham, Bucks, aged 65

heppard.—On Jan. 6, 1949, at Whitefield, Barnston Road, Heswall, Cheshire, Percy Gordon Sheppard, L.M.S.S.A.

lorty.—On Jan. 16, 1949, at 4, The Manor House, London, N.W., Percy Arthur Siores, M.D., aged 79

wan.—On Jan. 15, 1949, at Eastbourne, William Travers Swan, C.B., M.B., B.Ch., Major-General, A.M.S. retired, aged 87

Thomas.—On Jan. 21, 1949, at Parke, Whitland, Carm, Rowland Lewis Thomas, L.M.S.S.A., D.P.H.

Wells.—On Jan. 17, 1949, at Pendeco, Stratford-on-Avon, Philip Hewer Wells, M.C., M.R.C.P., aged 56

Williamson.—On Jan. 11, 1949, at Bonally, Murtle, Aberdeenshire, George Williamson, M.B., C.M., F.R.C.P. Ed.

Wilton.—On Jan. 21, 1949, at Hove, Louise Farnam Wilson, M.D.

Wyle.—On Jan. 17, 1949, Alexander Wyle, M.B., C.M., of Seaford Road, Southbourne, Bournemouth

Wyle.—On Jan. 17, 1949, Alexander Wyle, M.B., C.M., of Seaford Road, Southbourne, Bournemouth

Wyle.—On Jan. 17, 1949, Alexander Wyle, M.B., C.M., of Seaford Road, Southbourne, Bournemouth

Wyle.—On Jan. 17, 1949, Alexander Wyle, M.B., C.M., of Seaford Road, Southbourne, Bournemouth

Wyle.—On Jan. 17, 1949, Alexander Wyle, M.B., C.M., of Seaford Road, Southbourne, Bournemouth

Wyle.—On Jan. 17, 1949, Alexander Wyle, M.B., C.M., of Seaford Road, Southbourne, Bournemouth

Wyle.—On Jan. 17, 1949, Alexander Wyle, M.B., C.M., of Seaford Road, Southbourne, Bournemouth

Wyle.—On Jan. 17, 1949, Alexander Wyle, M.B., C.M., of Seaford Road, Southbourne, Bournemouth

Wyle.—On Jan. 17, 1949, Alexander Wyle, M.B., C.M., of Seaford Road, Southbourne, Bournemouth

Wyle.—On Jan. 17, 1949, Alexander Wyle, M.B., C.M., of Seaford Road, Southbourne, Bournemouth

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Graduated Exercise in Pulmonary Tuberculosis

Q.—What is the present view of the part played by graduated exercise in the treatment of pulmonary tuberculosis—is it actively beneficial in promoting the healing of a lung lesion, or is it to be regarded in the more passive sense as a gradual relaxation of the conditions of complete rest as the patient's clinical condition improves?

A.—Graduated exercise under careful control is beneficial in both the ways mentioned by the questioner. It increases physical fitness and bridges the gap between the rest cure and a return to normal activity. Controlled exercise can also be used to test the activity of a doubtful lesion; this is particularly valuable in the case of minimal, symptomless lesions discovered by routine radiography. As the ultimate healing of tuberculosis takes many years, it is obviously impossible to keep the patient at complete rest until this is achieved. A course of graduated exercises is prescribed only after an adequate period of rest has controlled the toxæmia and rendered the disease non-progressive. Many years ago Kingston Fowler remarked that treatment by rest alone tended to convert sick workers into healthy loafers. A course of graduated exercise avoids this danger and is a valuable adjunct to the rehabilitation of many tuberculous patients.

Breathing Exercises in Pulmonary Tuberculosis

Q.—Are gentle respiratory exercises of benefit in cases of pulmonary tuberculosis in which only a small area of infection remains in the lungs? Would exercises to correct posture be advisable in a patient who has been in bed for over a year and who has slight infiltrations remaining in the upper lobe of the left lung?

A.—As rest is the basis of the treatment of pulmonary tuberculosis, respiratory exercises should not be used in this condition. Postural correction exercises are employed with great benefit after a thoracoplasty and might be indicated in the case here described, but all forms of breathing exercises designed to increase lung movement should be avoided.

Liver Extracts

Q.—I notice in American literature that liver extract is measured in units per ml. Can you define the unit?

A.—The United States Pharmacopoeia Anti-Anaemia Preparations Advisory Board assesses liver extracts and awards the various commercial preparations a "unit value per ml." As, to date, the only method of assessing liver extracts is by clinical test on classical cases of Addisonian anaemia in relapse, "unit" cannot be a precise term, as patients may vary in their response to potent extracts. Further, "a satisfactory response" has to be defined. Formulae for judging a "satisfactory response" are discussed by Della Vida and Dyke (*Lancet*, 1942, 2, 275), who stress the importance of assessing the gain in red cells in addition to the reticulocyte response.

The American (U.S.P.) "unit" represents the minimal amount of the therapeutic agent which, when given daily in an uncomplicated case of pernicious anaemia, has produced a "satisfactory" or average reticulocyte response and subsequent relief of anaemia and symptoms. The Canadian unit is defined as one-seventh of the weekly dose of extract required to produce a satisfactory response. Emery and Hurran (*British Medical Journal*, 1945, 1, 75) prefer an arbitrary "unit" system to the labelling of extracts as "derived from so much raw liver" or "equivalent to so much oral liver"; they also suggest a "purification index." At present, however, no method exists for the comparison of British-made extracts by a "unit" system; the U.S.P. "unit" can be criticized in that it is based on figures submitted to an advisory board by manufacturers.

The Association of Psychiatric Social Workers publishes an interesting journal on the work done by its members entitled *The British Journal of Psychiatric Work*. It is obtainable at 3s. 6d. (postage 4d.) from that Association, 1, Park Crescent, London, W.1. The second issue, which has recently been published, contains articles on such topics as "Child Guidance in the Nursery School," "The Preparation of Parents for Treatment in a Child Guidance Clinic," and an investigation into the psychology of pregnancy and lactation.

and the "unit" has no reference to a standard preparation. Further, because of recognized difficulties in securing numerous clinical tests, the "unit" perforce indicates only the particular amount of material which has been approved, and this is not always the minimum amount. Therefore U.S.P. "units" of different preparations are not necessarily strictly comparable in potency.

Cold Permanent Waving

Q.—It would be interesting to know the latest opinion on the safety of the "cold" permanent wave outfits now on sale. Have any further investigations been made since the article by Cotter, and with what results?

A.—Further investigations have been carried out since the article by Dr. Lawrence Cotter (*J. Amer. med. Ass.*, 1946, 131, 502). It is true that many people have obtained good results with the so-called "cold perm" method. Many have never had any injury to their hair, scalp, or health. On the other hand, the writer has seen several patients who had had the "cold perm" process given to their hair by skilled assistants, in establishments of high repute, yet had suffered damage to both their hair and scalp; also, in some cases, to the neck and face. Apparently the occasional ill effects are due to the employment of solutions of thioglycolic acid in too high a concentration or for too long. In this country it has been consistently maintained that this acid should not be used, but hydrogen sulphite only, as the reducing agent. The method was first discovered in Britain, but could not be tried out during the war. The Americans went ahead and popularized the process. All writers agree that the operators are the chief sufferers, their fingers, nails, and general health being sometimes affected, as described by Cotter. For further details of the process, and the precautions to be taken, the articles by Goldman *et al.* (*J. Amer. med. Ass.*, 1948, 137, 354) and by McNally and Scull (*Arch. Derm. Syph., Chicago*, 1948, 57, 275) should be consulted.

Schick Test in Young Children

Q.—After two or more injections, young children often resent the Schick test. Is there any need to test the second forearm with the Schick control in children under 5, and, if so, why?

A.—The Schick test is used for two main purposes: (a) to test susceptibility to diphtheria, and (b) to test the efficiency of artificial immunization. In either case non-specific reactions or pseudo-reactions with the Schick control material rarely occur in children under 5 years of age, and therefore the control test may ordinarily be omitted in this age group. However, Bousfield *et al.* (*Med. Off.*, 1948, 80, 145) in their trials with Holt's P.T.A.P. have found that there is a tendency for some young children (under 2 years of age) to give pseudo-reactions with the post-moculation Schick test. It would therefore seem advisable to use the control test on a sample of children whenever the efficiency of any new diphtheria prophylactic is being investigated.

Repeated Stillbirths

Q.—A 43-year-old woman is 30 weeks advanced in her seventh pregnancy. The first two were normal, but the next four ended in stillbirths. Wassermann and Kahn reactions were repeatedly negative; labour was always easy, and there was no albuminuria, hypertension, or glycosuria. The smallest baby weighed over 5 lb. (2,268 g.), though two of the stillbirths were premature. The present pregnancy appears to be normal: Wassermann reaction still negative, blood pressure and uric acid normal. The patient's blood is Rh-positive, Group A. What further investigations should be carried out, and what treatment is indicated?

A.—The history suggests that the foetuses died before rather than during labour, and it would be helpful to know whether there is evidence to support this, and whether post-mortem examinations were carried out to exclude malformation and other obvious causes of death. Other possibilities to exclude are ABO group iso-immunization and "occult" diabetes. A glucose-tolerance test would be worth while. If the cause of the stillbirths still remains obscure, it is too late in this pregnancy for empirical medical treatment, and the chief hope lies in terminating the pregnancy prematurely. This should be done about the 37th week, provided the foetus is then of

reasonable size. Possible methods, depending on the circumstances at the time, are surgical induction of labour or caesarean section under local analgesia.

Testosterone in Progressive Muscular Atrophy

Q.—It has been suggested that a case of progressive muscular atrophy might be treated with methyl testosterone. Have you any information regarding this or any other treatment?

A.—Progressive muscular atrophy arises from degeneration of cells in the spinal cord. The muscular atrophy depends entirely on the nervous degeneration, so that any direct effect that methyl testosterone might have on the muscle would be of no avail. It is most unlikely upon *a priori* grounds that this form of treatment would affect muscular disease. Methyl testosterone was suggested for this condition because of its anabolic action in eunuchoidism and hypopituitarism, producing a retention of nitrogen with positive balance and an increase in muscular development and strength. It would have no effect on the fundamental lesion in progressive muscular atrophy, or on the progress of the condition.

Quinine in Breast Milk

Q.—If a nursing mother living in a malarious country takes 2 gr. of quinine sulphate or bisulphate daily for several months, can this have any harmful effect on the infant? In the case I have in mind the child, who is now grown up, seems to be mentally retarded, and I wonder if there can be any connexion between this and the quinine taken by the mother.

A.—Quinine and its degradation products are excreted in breast milk only in very small amounts. Quinine has a toxic action on certain nerve cells connected with hearing, and possibly on the ganglion cells of the retina. Such an action is always acute in character, leading to deafness or toxic amblyopia. There is no evidence that the drug has any action in causing dullness or retardation, and in the present instance the amount of quinine absorbed by the child must have been infinitesimal. Incidentally, the dose of 2 gr. (0.13 g.) of quinine salts daily taken by the mother is totally inadequate for any purpose whatsoever. A daily dose of 5 gr. (0.32 g.) is the minimum which can be considered to act as a malaria suppressive, and even this is followed by many failures.

NOTES AND COMMENTS

Bleeding Gums.—Mr. C. N. JEFFRIES, L.D.S. (Birmingham), writes: With reference to your answer to the question about bleeding gums ("Any Questions?" Jan. 1, p. 41) I must confess I was disappointed with the information given. It is, of course, impossible in the short space available to give a comprehensive reply, but I would like to suggest the following points for inclusion to any medical man who is interested in this problem: (1) For healthy persons bleeding gums are very common, perhaps 90% of all patients from the age of 15 upwards. (2) The treatment is primarily the responsibility of the dental surgeon. (3) The aetiology is very well given in Fish's *Surgical Pathology of the Mouth* (1948, chap. 12). (4) Bleeding gums is the first stage in the process commonly known as "pyorrhoea." As such it needs early recognition and skilled care and attention. (5) Treatment consists in making the mouth susceptible to oral hygiene by scaling the teeth, extracting unsavable carious teeth, filling other carious teeth, etc. (6) Follow-up treatment consists in teaching the patient adequate methods of oral hygiene, the prime aim being to give the gums sufficient friction every day to cause them to be covered with an adequate layer of keratinized epithelium.

The teaching and institution of oral hygiene is a long, tedious, and arduous process, taking sometimes many months. Surgical treatment of the teeth and gums is sometimes needed before the mouth is properly prepared for oral hygiene. The blood dyscrasias and vitamin deficiencies mentioned in your answer hardly apply to the healthy person.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atiology, Western, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Brimedads, Western, London*. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, EUSTON 2111. TELEGRAMS: *Mediseca, Western, London*. B.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JANUARY 29 1949

THE SECRETARY REPORTS

THE APPLICATION OF SPENS

It is now possible to map out some events immediately ahead. Most of the reports on general-practitioner remuneration in the selected areas have now come in. The Remuneration Subcommittee of the General Medical Services Committee will meet on Feb. 4 to consider these reports together with all other available information, and to draft a report to be made to the General Medical Services Committee at a special meeting on Feb. 9. Upon this committee falls the responsibility of making recommendations to a special conference of Local Medical Committees to be held on March 3. A Special Representative Meeting to consider remuneration in the new Service will be held on March 29. On the following day, March 30, another Special Representative Meeting will be held to consider a report from the Council on the constitution of the Association. This second meeting is in response to a request made at the Annual Representative Meeting last year.

General Practitioner Remuneration

To understand the relationship of the General Practitioner Spens to remuneration it is necessary to recall where that committee stood on the subject of betterment. The Spens Committee reported in terms of net incomes and pre-war money values. It also recommended that in translating its recommendations into terms of post-war money, regard should be had not only to estimates of the change in the value of money but to the increases which have in fact taken place since 1939 in incomes in other professions. The Government laid down though the representatives of the profession did not accept the figure of 20% as the betterment figure in relation to the net capitation fee. It laid down too, a figure of 55% in relation to the expenses portion of the capitation fee. Combining these two figures, a betterment factor of 34% of the gross capitation fee was applied.

In answering the question whether the Spens recommendations are being applied to-day, one must use a betterment factor of some kind. For example, it might prove that the Spens recommendations are being applied to particular ranges of income on the assumption of a 20% betterment factor. But if the betterment factor applied is too small, and a more appropriate figure is, say, 50%, then the Spens recommendations might no longer be observed in relation to that range. To put it in another way, the betterment factor must be a satisfactory one before the question whether Spens is being applied can be faithfully answered. This separates the betterment factor from other issues as one to be examined separately. Indeed it is desirable to settle the betterment issue in advance of any attempt to decide whether Spens is being applied. This is the error in which the issues are being taken. The size of the mileage fund was taken first as a matter of urgency. By the time these words appear representations of consultants and general practitioners will have been made to the Ministry (on Jan. 26) to raise the betterment issue as a distinct question concerning both general practitioners and specialists alike. The outcome of these representations should be known before the Conference of Local Medical Committees and the Special Representative Meeting decide their policy and the action to be taken.

Betterment

The raw material for the betterment discussion includes the expert's report on middle-class incomes, an account of which

was published in this column a week ago. When this same expert first examined the problem at our request in 1946 he compared the year 1945 with 1938. Taking 1938 as 100, he expressed the view that the corresponding figure for the middle-class budget in 1945 was 145-150. He has now re-examined the position as between 1948 and 1938 and still taking 1938 as 100, he now gives the figure as 185. Put briefly, when the right figure was, say, 150 the Government laid down a figure of 120. To-day the right figure is 185.

The Three Main Issues

It was clear from the discussion at the special meeting of the General Medical Services Committee on Jan. 19 that in the general view there were three main issues on general practitioner remuneration. They are betterment, the burden of work, and the small list. On the question of the burden of work the majority view was that it was extremely heavy, some doubting whether it was possible for the practitioner with the full list to sustain the burden without impairing his health or his efficiency. On the other hand one well-known practitioner gave it as his experience in his own practice that there had been no substantial increase of work. It was plain that the two questions of the burden of work and the size of the permitted maximum were really different aspects of the same question. We cannot sustain the argument that the burden of work is so great as to make it impossible to look after 4,000 persons without in effect inviting a reduction of the permitted maximum. This issue must be faced.

The problem of securing sufficient income for the practitioner with a list of average size or less is of no less importance. How could it be obtained? It might be obtained by making a fixed annual payment in respect of expenses to every general practitioner working in the Service, regardless of the number of persons on his list. This has some obvious disadvantages, not the least of which is that it might be regarded as the basic salary in another form. But if deliberately regarded as an expenses allowance it might escape this stigma. Another is the method of a higher capitation fee for, say, the first 1,000 persons on the list.

Terms of Service for Consultants

In response to a request from Sir Lionel Whitby, chairman of the Joint Committee for Consultants, Sir William Douglas, the Permanent Secretary of the Ministry of Health has clarified the position as to the procedure to follow the confidential discussions now proceeding. In these discussions the Joint Committee is not committing consultants and specialists but informing the Ministry what in their view is likely to be acceptable or more acceptable to the profession. These discussions completed, the Ministry proposes to issue a paper revised in the light of the discussions on which a sounding of the profession's views can be obtained. The Ministry's paper will be published and submitted to the constituent bodies of the Joint Committee for their observations. To allow time for this the present interim arrangements will need to be continued for a further three months.

The Secretary addressed meetings of the profession on current problems in B.M.A. House on Jan. 27 and at St. Albans on Jan. 28. He will address similar meetings at Leeds on Feb. 1, at West Bromwich on Feb. 10, at Luton on Feb. 11, at Grimsby on Feb. 15, at Cardiff on Feb. 23, at Bournemouth on March 1, at Lancaster (Annual Dinner) on March 5, and at Winchester on March 31.

National Health Service

NEGOTIATIONS WITH THE MINISTRY CONDITIONS OF SERVICE

The B.M.A. is continuing to press the Ministry of Health about terms and conditions of service in the National Health Service, and the Ministry has recently made the following decisions:

Training Grants for Assistants

Local medical committees are now dealing with applications from practitioners for permission to employ trainee assistants. In view of the limited number of trainee assistants who will be available each year it has been suggested that further guidance should be issued to local medical committees to assist them in dealing with applications. As a result of discussions which have taken place with the Ministry, the General Medical Services Committee will be considering a draft circular on this matter this week, and the terms of the circular will be published in the *Journal* as soon as possible.

Maternity Medical Services

Forms E.C.24 and 24A.—The Ministry has agreed that, provided a practitioner carries out the statutory examinations, failing to do them within the period defined for reasons outside his control would not involve a loss of fees. The Ministry has undertaken to make the position clear to executive councils.

The Ministry agrees that executive councils should provide itemized accounts showing the names of patients in respect of whom maternity fees are paid. While there is no evidence to suggest that this is not being generally done, it is suggested that any practitioner who requires this itemized information and is so far been unable to obtain it should take the matter up first with his local executive council, referring to the Ministry's general agreement set out above.

Forms of Application for Maternity Benefit.—The Ministry of National Insurance has agreed that requests by doctors for copies of these forms will be met by local offices of the Ministry.

Consultations on Regulations and Instructions Relating to General Medical Services

The Ministry has accepted the general principle that the Association should be consulted on points of major principle involving regulations.

Prescribing and Dispensing

The Ministry has agreed to set up a small medical committee representative of the Ministry and the Association to examine the schedule of appliances which may be prescribed by general practitioners.

Missing Information on Forms E.C.1

The Ministry has agreed that information missing from Forms E.C.1 should be obtained from the patient rather than from the doctor.

The Ministry is now considering the following points and the B.M.A. is awaiting a reply:

Miscarriages

The Association strongly holds the view that miscarriages and other obstetric emergencies should not form part of the normal terms of service of a general practitioner and that a special fee should be admissible for such emergencies.

Telephone Charges

The Association has urged that all telephone calls, other than local, in connexion with the admission of patients to hospital, etc., should be reversed, or the practitioner reimbursed in some other way.

Specialization

The Association has represented that a number of specialist services often undertaken by general practitioners should come outside the terms of service and that a special fee should be admissible. It is urging that some such arrangements as existed

under the National Health Insurance should be continued in the new Service.

The Ministry has not conceded the following points put forward by the Association:

(1) That there should be special payment for general practitioners called out to render emergency treatment for haemorrhage following dental extractions.

(2) That overseas visitors should not be entitled without payment to the benefits of the National Health Service.

(3) That all official communications sent by general practitioners to executive councils, etc., should be franked.

The General Medical Services Committee will shortly consider what further action should be taken on these points.

CONFERENCE OF REPRESENTATIVES OF SCOTTISH LOCAL MEDICAL COMMITTEES

With the authority of the General Medical Services Committee a Conference of Representatives of Scottish Local Medical Committees will be held in Edinburgh on Feb. 10 under the chairmanship of Dr. W. M. Knox (Glasgow). The object of the Conference is to consider (1) the constitution and method of appointment of permanent local medical committees in Scotland and the desirability of preparing a model scheme; (2) the method of central representation of Scottish local medical committees; (3) any other relevant questions.

The Conference will be composed of (a) Representatives from Scottish local medical committees appointed as follows:

5 from Glasgow Local Medical Committee,
4 from Edinburgh Local Medical Committee,
4 from Lanarkshire Local Medical Committee,
2 from the remaining local medical committees; with provision for a deputy in each case.

(b) Members of the General Medical Services Subcommittee (Scotland), who will not be entitled to vote unless they are attending the Conference as representatives or acting deputy representatives of a local medical committee. The Chairman of the General Medical Services Committee hopes to be present.

NEGOTIATING MACHINERY

Now that the Negotiating Committee has gone out of existence, discussions with the Ministry are being undertaken

(a) on behalf of consultants and specialists by the newly formed Joint Committee of Representatives of the Royal Colleges, the Royal Scottish Corporations, and the Consultants and Specialists Committee of the British Medical Association;

(b) on behalf of general practitioners by the General Medical Service Committee;

(c) on behalf of public health medical officers by the Public Health Committee of the British Medical Association in collaboration with the Society of Medical Officers of Health.

In the field of ophthalmology discussions which have been conducted over a long period by the Joint Committee of the Faculty of Ophthalmologists and the Ophthalmic Group Committee of the Association are being continued by that Committee.

CENTRAL HEALTH SERVICES COUNCIL COMMITTEE ON HEALTH CENTRES

The Central Health Services Council has appointed a committee, which held its first meeting on Jan. 18, to consider and make recommendations on the lines along which health centres should be developed under Section 21 of the National Health Service Act. The members are: Mr. F. Messer, M.P. (chairman); Mr. F. J. Ballard; Dr. G. O. Barber; Dr. A. Beauchamp; Dr. D. Cameron; Sir Ernest Rock Carling; Sir W. Allen Daley; Dr. L. Findlay; Capt. S. H. Hampson; Miss M. E. Hollingworth, S.R.N.; Mr. R. H. Henriksen, M.P.S.; Dr. R. D. Lawrence; Professor J. M. Mackintosh; Professor R. H. Parry; Dr. A. Talbot Rogers; Miss Blanche Shenton, S.R.N.; Mrs. Dorothy Thurtle. Secretary: Miss E. G. Long, of the Ministry of Health.

PROPOSALS FOR REMUNERATION OF WHOLE-TIME PUBLIC HEALTH MEDICAL OFFICERS

In the following proposals the salary scales—which were originally formulated in terms of 1939 values—include a "betterment" factor of 20%, as in the Ministry's proposals relating to general practitioners' remuneration. This percentage has not yet been accepted and is subject to further negotiations.

I. *Medical Officers in Departments.*—(a) These are officers who, although without responsibility for the work of other medical officers, have had at the time of appointment at least three years' experience in the practice of their profession after obtaining a registrable qualification. (b) Salary: £960 per annum, rising to £1,680 by annual increments of £60.

II. *Senior Medical Officers.*—(a) These are medical officers not being Medical Officers of Health who are in charge of services or departments (for example, port health, school health, mental health, maternity and child welfare, or any other similar service or combination thereof), and who are engaged solely or mainly on such duties. (b) Salary:

Population Not Exceeding	Minimum	Annual Increments	Maximum
100,000	£ 1,680	£ 120	£ 2,160
200,000	1,800	"	2,280
300,000	1,920	"	2,400
Exceeding 750,000 ..	2,040	"	2,520

(c) Where a medical officer in Section I is in charge of a service(s) or department(s) but is not solely or mainly engaged on such duties, he should be remunerated on the scale of Section I with an addition of £100 per annum. Such an arrangement would obtain in a local authority with a population so small as not to justify the appointment of a medical officer solely or mainly engaged on the duties of a senior medical officer.

III. *Deputy Medical Officers of Health.*—(a) These are medical officers employed primarily as administrative Deputy Medical Officers of Health. (b) A medical officer appointed in this grade shall receive a salary scale not less than the appropriate salary scale for a Senior Medical Officer in Section II plus £100.

IV. *Acting Deputy Medical Officers of Health.*—In areas where no Deputy Medical Officer of Health as defined in Section III is necessary, a Senior or Departmental Medical Officer appointed to act as and when necessary as deputy in the absence of the Medical Officer of Health shall receive an addition to his scale salary of not less than £100 per annum.

V. *Medical Officers of Health.*—(a) Salary: For Medical Officers of Health of all classes of local authority:

Population Not Exceeding	Minimum	Annual Increments	Maximum
100,000	£ 1,920	£ 120	£ 2,400
200,000	2,160	"	2,640
300,000	2,400	"	2,880
500,000	2,640	"	3,120
750,000	2,880	"	3,360
Exceeding 750,000 ..	3,120	"	3,600

(b) The salary of a practitioner appointed as a part-time Medical Officer of Health shall be $\frac{x}{11}$ of the appropriate salary, according to population for a whole-time Medical Officer of Health, plus $\frac{1}{4}$ of $\frac{x}{11}$ or $\frac{1}{4}$ of $\frac{11-x}{11}$ whichever is the less, where x represents the number of half-days per week, or their equivalent, devoted to the appointment.

VI. *Combined Appointments—Medical Officers of Health.*—(a) Where a medical officer acts as Medical Officer of Health to more than one authority he shall receive a salary scale not less than £120 above the appropriate salary scale in Section V (a) indicated by the total population of the combined districts for which he is Medical Officer of Health. (b) Paragraph (b) of Section V shall apply where a combined appointment is part-time. (c) In Scotland, where a County Medical Officer of Health is also School Medical Officer for the County

and for one or more large burghs, the population of which is not included in the population of the administrative county, he shall receive a salary scale not less than the appropriate salary scale in Section V (a) above indicated by the total population of the administrative county and large burgh(s).

VII. *Divisional or Area Medical Officers.*—These are medical officers appointed by local health authorities for divisional administration of the health services (including the school medical service). They fall into two classes: (a) *Divisional Medical Officers acting also as County District Medical Officers of Health:* The salary scale shall be the appropriate scale in Section V according to population of the division or area, or population of the county district(s) for which he is acting as Medical Officer of Health, whichever is the greater. (b) *Divisional Medical Officers not also acting as County District Medical Officers of Health:* The salary scale shall be the appropriate scale in Section II above, according to population of the division or area.

VIII. *Specialists.*—Where a whole-time medical officer in any of the above sections is employed partly by a regional hospital board and partly by a local authority his total remuneration shall be the whole-time remuneration recognized by the regional hospital board for the type of work undertaken for them, or the salary scale appropriate to his position in the local authority, whichever is the higher.

IX. *Special Awards.*—A proportion of medical officers of outstanding professional eminence in the public health service should receive as a special award payment in excess of the remuneration provided for in the scales.

X. *General Conditions.*—Many general conditions of service are also the subject of proposals.

MR. MESSER ASKED TO RESIGN

The following resolution was passed by the Middlesex Local Medical Committee at a recent meeting:

That Mr. Messer be asked to resign from the important positions held by him on the Central Health Services Council and the North-western Metropolitan Regional Hospital Board on the grounds of his unsuitability to continue in these posts, and that this resolution be sent to the General Medical Services Committee.

PAYMENT FOR TEMPORARY RESIDENTS

The Ministry of Health states that the distribution scheme which governs payments to general practitioners for temporary residents—anaesthetics and emergency treatment—will appear very shortly. The Ministry intends the model scheme to be available in time for executive councils to make their own schemes by the end of March.

WELSH COMMITTEE

The Welsh Committee has met and considered the views of the Branches and Divisions in Wales on the proposed new constitution of the Welsh Committee. The committee will forward a report and recommendation to Council.

MEDICAL PRACTICES ADVISORY BUREAU A BRANCH IN MANCHESTER

Mr. S. Beedle, A.C.I.L., for many years manager of the Northern Branch of the British Medical Bureau, has been appointed officer in charge of the Manchester Regional Office of the British Medical Association. He will also act as Branch Manager of the Medical Practices Advisory Bureau and will maintain an Appointments Information Service to advise doctors seeking openings in the various fields of medical practice, and to introduce partners, assistants, and locums.

Any member of the profession in the North of England is invited to utilize the services of the Manchester Regional Office, and inquiries should be addressed to the Medical Director, Medical Practices Advisory Bureau, 33, Cross Street, Manchester (Telephone: Blackfriars 3925). The service is free of charge to members of the Association; to other medical practitioners charges will be made to recover expenses, and an announcement appears in the advertisement columns on page iii of cover.

REFLECTIONS ON N.H.S.

BY

R. W. COCKSHUT, M.B., Ch.B.

When the Willink White Paper was debated by the Representative Body a great fight developed on the proposals to put the Service under the control of the Minister and to make it available for 100% of the population. Several of us opposed these two things, but it proved impossible to get the support of the G.P.s, while the specialists at that time seemed scarcely interested. Looking back, I am not certain that we were right in opposing. The State and modern medicine were bound to come together. The only alternative to Ministry control was an *ad hoc* body. We have seen in the last three years how impossible it has been effectively to criticize these bodies, and it may be that a Minister, subject to the daily fire of the House of Commons, is preferable. As to the 100%, Dr. Dain never received an answer to his frequent requests for a workable alternative.

But, whatever the rights of the matter, one thing is certain. By agreeing to this course the R.B. took decisions of momentous consequences that even now do not seem to be realized. It is essential to grasp this in order to understand what happened afterwards. From that moment the fight became one not against a State health service but to secure the maximum safeguards to professional freedom within a limited field, and from that moment also the B.M.A. never lost an opportunity of declaring its whole-hearted support for a comprehensive service. There were those who felt then that all was lost, but who on reflection decided that if the Association could secure certain things all might yet be well.

A Threat to Freedom of Medicine

The participation of the State as proposed represented, represents, and always will represent a threat to the freedom of medicine. Was it possible to make arrangements so that we should remain free to defend medicine? This was the maximum aim. It is quite impossible to make arrangements at any given time, in such a matter as this, which will ensure perpetual safety. It is possible to arrange that in the continuing contest, over the years, we are not handicapped out of the race. Given an air field and no favour we looked to secure a state of affairs in which, by reason of our demonstrated and continuing strength, we could continue to defend ourselves with success.

There is now a widespread sense of irritation and disillusionment in the profession. Some feel that they have been almost betrayed, at best ill-led. I write this brief account in order that the profession may understand the thoughts which passed through the minds of some of us and in the hope that it may agree that a victory was won within the limited field defined by the R.B. when it agreed to a comprehensive 100% service. If the profession disagreed with this policy, why was no attempt ever made to change it? According to our constitution it was always possible to bring a resolution before the R.B. to reverse it. The fact remained that we declared ourselves wholeheartedly in favour of a national health service. Critics who did not subscribe to this are within their rights, but should not criticize the B.M.A. for adhering to the policy laid down by its democratic machinery and never challenged. The acceptance of the 100% issue made it certain that doctors in some private-practice areas would be driven out of business and forced to move. This "redistribution of doctors by the natural force of a universal capitation fee" became one of the B.M.A.'s strong arguments against direction.

The coming of Labour into office faced us with the prospect of a whole-time salary in local government employ. Mr. Bevan was made aware of the strength of our case, and his proposals surprised everybody and disappointed his friends by departing widely from Labour Party policy. Instead of putting the hospitals and G.P.s under the local authorities, the latter were banished from both these fields. Private practice was not prohibited and private beds in hospital were allowed. To be fair, it must be said that it was to these facts that Mr. Bevan referred when he so frequently talked about the concessions he

had made to the doctors. Mr. Bevan had also seen that free choice in a salaried service was impossible, and therefore he preferred part payment by capitation fee. There were other favourable items.

When it became known that Mr. Bevan might suggest taking over the voluntary hospitals the B.M.A. was advised that there would be a violent public reaction to such an act of confiscation. Plans were made to join the B.M.A. in this reaction and to give maximum support to the voluntary hospital associations in their expected fight.

The plan was published. Within a week it was clear that the owners of the voluntary hospitals were not prepared to make any fuss at all, and the organizations representing the specialists had no criticism to make of the general proposal. The position was lost without a struggle. There was no hope of the G.P.s defending the voluntary hospitals if those most closely concerned were not prepared to move a finger, and from that moment all was over so far as that point was concerned. From that moment, too, the financial position of the hospitals as a whole deteriorated so rapidly that by the appointed day they would have found it impossible to carry on.

There is no need to elaborate the reasons for our opposition. They were sound. The Bill, in its proposed form, clearly left it to Mr. Bevan to decide just when freedom should die. The profession decided by plebiscite that it disliked the thing so much that it did not want to hear the terms and conditions of service, and decided not to negotiate. The deadlock was broken by the Royal Colleges' intervention and an offer from Mr. Bevan to examine the whole thing again, not excluding the possibility of amending legislation. The invitation was accepted. The profession was restless and suspicious during the following twelve months of argument with the Ministry, but the Negotiating Committee during that time convinced themselves that their early impressions were correct and that here indeed were proposals which meant death to free medicine.

The time came when we met the Minister and listened to his insults and bad temper for the best part of two days. He gave us exactly nothing and he stood exactly where he was. He aimed to appeal to the profession direct and undermine the B.M.A.

The Second Plebiscite

The reaction of the B.M.A. section of the Negotiating Committee was immediate. A brilliant campaign resulted in the overwhelming vote of the second plebiscite. Mr. Bevan did everything in his power to inflame medical opinion, and went to the unprecedented length of having a House of Commons debate largely to insult the B.M.A. This is no place to discuss politics, but I shall always ask this question, "Why did Mr. Bevan try so hard to get an overwhelming vote against the Act?" At any rate, from now on the whole question was projected against a background of high politics which we had to do our best to assess from day to day, determined not to play anybody's political game.

We now had our majority. What were we to do with it? Opinions differed, but in my view it was here that Council made its critical error. It decided that it was up to the Minister to act, and that no move must come from us. Surely now was the time to state our demands. They were reasonable and no Government could have ignored them. We had reached a point where action would have been decisive; the initiative was ours. We did nothing, and allowed it to pass back to Mr. Bevan. (Curiously, in all the criticism there has been, this most valid point appears to have been missed.)

The outstanding fact of this plebiscite was the vote of the specialists. This was the first indication we had that the specialists *as a whole* were interested. What did they want? We never knew. Their individual spokesmen had views, but they were all different. What did the total result mean? At a guess it expressed: (1) understanding of the issues involved; (2) knowledge which filtered through of the *manner* of the Ministry; (3) opposition to any sort of comprehensive service; (4) middle-class reaction to three years of Socialism and "tinker's cuss."

At once arose a possibility of bringing the Government to a crisis, but, whatever happened, we had to avoid any action that might appear to align us with any political party. Most impor-

tant of all, we had to be careful to keep on the right side of the shadowy line of unconstitutional action.

The following considerations are briefly those which enjoyed attention.

Political Considerations

During the Parliamentary debate at the time of the second plebiscite it became clear that on the question of buying and selling we had no official support in the Opposition. The profession had nothing to hope for on this issue from the Conservatives. The Government would plainly not give way over this whatever the consequences. What might those consequences be? Conceivably the worst that could happen from the Government's point of view would be a wholesale abstention from the Service following the Government's refusal to compromise on any point. In such a situation a first-class political crisis would arise, for not only would the National Health Act become a dead letter on the appointed day but the Insurance Act would also be in danger.

Such a crisis might be resolved in two ways: (1) by a general election—and it may be taken as certain that the Government would have preferred a general election to defeat of the Act on the buying and selling issue. Candidates of all parties would have had no hesitation in pledging themselves to end the buying and selling of practices, and so, whatever the result, a new House of Commons would arrive at Westminster wholly pledged on this matter. (2) The more likely course would not be a general election. Those who advocated a fight to a finish on buying and selling (the question of just what the diehards were prepared to fight on is discussed later) surely overlooked the unlimited powers of Parliament in our constitution. There is no appeal to any supreme court on any constitutional issue. Parliament's powers are theoretically unlimited. Politically, then, to enter into such a fight on the question of buying and selling practices, or to take any responsibility in leading such a fight, began to assume foridding proportions. Was there any possibility of compromise? It was an urgent duty to examine this question.

Our position on the question was also conditioned by the fact that an Act of Parliament was on the Statute Book which made the sale of goodwill in a national health service illegal. It was clearly the intention of every political party and of every possible Government to have such a service and to abolish buying and selling inside it.

Such a position could be righted only by the repeal of these provisions—a course which no party was prepared to take. I am thankful the B.M.A. did not attempt to lead the profession to defeat on this issue.

Goodwill Re-examined

Mr. Bevan cannot destroy a doctor's goodwill. His proposal was to prevent the doctor from selling it. What is the essential of ownership? Surely the power to decide the destination of the property. It appeared, then, that if we obtained substantial concessions on other points, if we could obtain the right to dispose of our goodwill, in view of all the circumstances it would be unwise to fight a battle on the issue of buying and selling.

Disposing of goodwill meant choosing assistants, partners, and successors. Here was a way out of this apparently impossible situation.

Meanwhile the Government announced through various spokesmen that they stood firm all along the line and the Service would start on July 5. If the Government continued to take this stand the Council was unhesitating in its decision to continue the fight. The deadlock continued. It must be remembered that concentration on detail obscured in some doctors' minds the basis of the B.M.A.'s opposition to the Government. The B.M.A. was not opposed to the Act as a whole, but to the institution under it of a full-salaried service. Retention of ownership of practices was looked upon as a safeguard against this. A satisfactory alternative safeguard—and this had to be statutory—would clearly diminish the importance of the buying and selling issue. When, therefore, Mr. Bevan in the House of Commons in April, 1948, promised on behalf of the Government to introduce legislation to make it impossible to institute a salaried service under the present Act, and retreated from his

proposal for a universal basic salary, the position changed radically.

Here was a triumph for the B.M.A. Looking back at the Minister's cocksureness, at the astounding debate, at the insults and bullying, it was truly remarkable. The fact of the Minister's defeat was important, but the offer was not enough. Boldly and rightly, the B.M.A. went to meet him. Questions were put to him, answers were received, further questions were put, and the final picture appeared. What was to be done?

The R.B. later censured Council for having an immediate plebiscite. My view is that that decision to bold an immediate plebiscite was one of the wisest the Council took. Between publication of the Minister's offer and the last day for sending in the plebiscite form was an interval of four weeks, surely long enough for a well-informed doctor to weigh the matter.

Be that as it may, the ultimate result was that the R.B. accepted Council's recommendations, and the doctors entered the Service. What had been achieved? Victory or defeat? Should we who for those five years were in the thick of it hang our heads, or are we entitled to the gratitude of the profession? Has medicine been saved or is it inevitably dead?

The answer will be found only by going back to the beginning and considering what faced us when Mr. Bevan arrived and what faces us now, by adding up the gains and losses and, without heat or prejudice, striking a balance.

Our Gains

Years ago close examination of the position of general practice in a State scheme led us to put first and foremost the principle of free choice. If this could be established there flowed from it payment by results, and competition ensuring independence. This priceless thing was conceded by the Minister in his original draft, but so long as he retained the power to bring in salaried service by regulation it was of little value. I therefore put, as far exceeding everything else, the promise of amending legislation on this matter in a class by itself. This was one of the things we won by the second plebiscite, and it was the one way in which free choice could be safeguarded and turned from a faint hope into a hard fact.

Let us tabulate the other gains:

1. Mr. Bevan started by consulting the T.U.C. He ended by giving way to the B.M.A.
2. There is no local-authority control of hospitals or of general practice.
3. Private practice exists and there is no division of the profession into private and public doctors.
4. G.P.s are in full and free competition (inside a State service!).
5. Health centres are to be experimental in the nature of things, and there is no chance of doctors being crammed into health centres before the merits of these have been assessed.
6. We practise in our own premises and cannot at any time be forced into a health centre.
7. Universal basic salary has gone and with it the threatened control of certification and the divided loyalty of the doctors.
8. The legal committee (on which Mr. Bevan appointed our legal advisers) has examined the whole question of partnership. Its findings are to become law, and doubtless will mutilate Sections 34 and 35, which we hated so much.
9. We have the power to choose our own partners and assistants and so to control the destination of our goodwill.
10. We have the absolute right to set up in any part of the country which has not been declared a closed area by the Medical Practices Committee.
11. The doctors on the Medical Practices Committee have been nominated by the B.M.A.
12. Legal representation before the appeal tribunal.
13. Freedom of speech and criticism as a declared right (unique in any State service).
14. Oversight of and consultation on all regulations in the draft stage.
15. The right of any practitioner to attend any woman in her confinement if both desire it, and in practice we have got rid of the provision in the Act giving the Minister the power to nominate qualifications for midwifery.

"We have not got the right to appeal to the courts, but in practically every other matter we have succeeded in getting rid

by agreement of the difficulties which confronted us or by modifying them in such a way that they will be practically non-existent." These were the wise words of Dr. Dain on Friday, May 28, 1948, to the S.R.M., and there is no one more qualified to express an opinion.

But these are all means by which we sought to ensure the freedom of medicine, and I have never had any doubt what that means. It means treating your patient without interference—clinical freedom—and after six months of the Act I have not seen one complaint on this head.

Direction

With regard to negative direction the B.M.A.'s attitude has always been that there must be a fair distribution of doctors, and it has pleaded that the natural force of a universal capitation fee would itself solve this problem in the most efficient way. Indeed, we had offered that if at the end of two years we proved to be wrong we would accept some form of control of distribution.

At the time of writing there is great disillusion here, and from all over the country are coming reports that no more doctors are wanted. If the profession now departs from its principles on this matter and looks only to its own selfish interest it will be exceedingly difficult to move at all, and we shall be faced with the sad prospect of telling the Minister that no more doctors are required after crying out for years that it was impossible even to start the Service without another 10,000. If, on the other hand, we stick to our beliefs—and this means, and has always meant, that somebody will come along and start next door—movement and changing of practices will be actually easier than before, since the amount of doctoring required, and thus the demand for assistants, partners, etc., is bound to be greater and there will be no capital financial difficulty.

Let us now deal with the most formidable argument used by the "Noes" during the last plebiscite—namely, that the Minister's promise was not to be trusted and that since the Government could at any time bring a salaried service by legislation we were no better off. The promise of legislation was a Government pledge, and we have not reached a state of affairs in this country when such a pledge should be doubted. We were bound to proceed on the assumption that it would be honoured, and Sir William Douglas's letter inviting the B.M.A. to begin immediate conversations on the framing of the Act quieted such fears. As to the second point, any Government can always bring in any Bill it chooses, and those who argued thus merely stated, in a roundabout way, that they didn't want any service of any kind whatever.

A Summing-up

We shall see if our trust is misplaced, but if it is we have our remedy. The most useful way of summing up would be to give a personal reaction to the problem of how to answer the last plebiscite questions. As we stood, and assuming that promises were kept, on July 5 one could go to one's surgery and carry on individual practice, in full and open competition, choosing and being chosen by one's own patients, depending entirely on their good will, without any interference with treatment or opinion, without a basic salary, a free contractor, free to choose a partner or assistants, and *in practice* able to choose a successor, with no financial difficulty between doctor and patient (a godsend in all but a few areas), but unable to sell one's practice. In other words, we had won a position which at one time looked impossible. Was I prepared to fight or to take any responsibility for advising the profession to fight on the buying and selling issue? Any who have read so far will have no doubt about the answer to that, for here was the crux, and at this stage it was quite clear that to do so would be to put all our gains into the balance. A fight against the Government would have been all-in—winner take all—and a defeated profession would have had to take whatever was coming. To risk all these splendid gains on such a doubtful issue surely never could have been advised by anyone with a sense of responsibility.

For myself, I had to make a very hard decision, but it was a clear duty to speak out. It has been costly and there was a very easy alternative, but I have never regretted it.

It was also our duty to estimate the fighting qualities of the profession and its financial stamina for the long-drawn-out battles with (possibly) successive Governments. It was only

after coming to a decision on the lines already indicated that I allowed the size of the Fighting Fund to intrude. After all, £66 million is a lot of money, and I have no longer any hard feelings on this matter.*

It was instructive to look back—to the last general election. The R.B. was sitting when the results were announced. If anyone had prophesied then what we should achieve it would have seemed quite outside what was possible. Passing on, if Mr. Bevan during the famous two days in December, 1947, had treated the Negotiating Committee with courtesy and respect and offered the two concessions on salaried service and basic salary alone, there would have been no conflict. Indeed, with decent treatment Mr. Bevan could have had us in *from the first*, with half the concessions he was ultimately forced to give. He managed the business with maximum ineptitude, and so arranged matters that each fresh concession whetted our appetite for more. We owe a great debt to Mr. Bevan's methods.

There is still no certainty about what the diehards wanted to fight for. The time has come when somebody should say quite clearly whether appeal to the courts and buying and selling were issues in which the R.B. should have led the great rebellion, and those who claim that the profession has been let down should be more explicit and let us know just what should have been done. The strong lead with the last plebiscite, which one hears so much about, would in effect have been a clear call to fight. May we now hear the grounds on which that strong clear lead should have been sounded? And any answer which in other words means opposition to the State meddling in medicine won't do, because the B.M.A. has been fighting for twenty years to get the State to do just this, and had three years ago agreed to a comprehensive 100% service administered by the Ministry of Health.

The tale is told, but all is yet in the balance. Let the doctor see to it that negative direction does not spread to the whole country—it is in their hands—and that the Service is made to work with good will; let them not go about proclaiming that medicine is dead or they will soon attend the funeral, and let them not proclaim that Mr. Bevan has beaten the B.M.A. He will be delighted and surprised to hear it, and very willing to believe it. All we set out to achieve was a fair chance to defend free medicine in a State service. Anything which weakens our ability to do this is a great disservice.

It will be noted that there is no mention of terms of service—for the very good reason that the Negotiating Committee was pledged to the contrary. The rate of pay was imposed. It has proved totally inadequate. Large numbers of doctors are ruined or at best financially embarrassed. It is asking a great deal to expect a calm and balanced view in these circumstances; but let the profession take heart. The £66 million no longer weighs against us. We are stronger than ever before. We only need a lead, and the financial side will be remedied very quickly.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar

Non-County Borough Councils.—Dartford, Radcliffe (limited to future appointments), Wallsend.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

*Two small incidents made a great impression on me at the time I started a talk to a Division with the words, "The B.M.A. has always been in favour of a comprehensive service." A friend of mine shouted, "It's a lie!" On another occasion I asked a very strong diehard how much he had contributed to the Independence Fund. He replied that he would not trust the B.M.A. with a brass farthing.

Dangerous Drugs Acts: Withdrawal of Authority

The Home Office announces that Dr. George Mackie Gibb (Aberdeen) is no longer authorized to be in possession of or to prescribe those drugs to which the Dangerous Drugs Regulations apply.

GENERAL MEDICAL SERVICES COMMITTEE

A special meeting of the General Medical Services Committee was summoned on Jan. 19 on the request of the Lancashire Local Medical Committee "to discuss and act on the question of remuneration." Dr. A. Campbell, chairman of the Lancashire committee, said that it was felt in his county that the urgency of this matter was insufficiently appreciated at Headquarters. He complained that the various matters connected with remuneration were being dealt with piecemeal instead of being consolidated in the demand for a higher capitation fee on the ground of greatly increased work. He mentioned that in Lancashire in November, 1947, before the Service started the number of N.H.I. prescriptions issued was 351,756, with 963,237 persons on the lists. In November, 1948, the number on the lists was 1,948,280, and the number of prescriptions 846,431, an increase of over 20% after allowing for the approximate doubling of the numbers on the lists. There was no special incidence of illness in Lancashire during the month in question.

Dr. S. Wand, chairman of the committee, described the line on which the Executive Committee and the Remuneration Subcommittee had been proceeding. They had been anxious not to go to the Ministry without full information, and it had been difficult to obtain figures for prescriptions, practitioners' incomes, and increased work. The position of the rural practitioner seemed to be the most urgent, and here the committee had concentrated on obtaining additional money for mileage. The next question was the betterment factor, on which negotiations were now proceeding. The next was the number of practitioners in the Service in excess of the estimated figure of 17,900, and the bearing of this upon an increase in the central pool. Then came the question of how far the Spens recommendations were being implemented, and also the amount of extra work by practitioners, on which last point a pilot inquiry had been made.

The Secretary (Dr. Charles Hill) furnished the committee with some up-to-date figures on the application of Spens in a number of areas. Not only had the overall figures for a given area been ascertained but an endeavour had been made to find out the effect on individual incomes. Thus in one Lancashire town with 18 practitioners the prospective annual income of each had been taken, regard being paid to the ages of the practitioners concerned.

In discussion many members gave their own experience and that of their areas concerning the financial position of practitioners and increase of work. Dr. W. Jope, chairman of the conference, said that it was evident from the Lancashire representations that some members did not appreciate what the Executive and the Remuneration Subcommittee had been doing. No charge of "complacency" could be levelled. He himself as a member of these committees had travelled from Scotland at least once a week on the average during the last three months. The only possible way to achieve any result was to take the question item by item as had been done. For the rural practitioners something substantial had already been achieved. The inquiry was now being actively pursued as to whether Spens was being implemented in the various income ranges, and the betterment factor was the subject of current negotiation.

A question arose whether the Spens Committee had envisaged an increase of work in the Service. Dr. J. A. Brown, Dr. W. M. Knox, Dr. O. C. Carter, and Dr. S. A. Winstanley, who were members of the Spens Committee, said that it had done so and quoted from the report in proof thereof. Dr. Knox said that the Committee had foreseen an inevitable increase of work and had recommended remuneration on such a scale as would enable practitioners to do their work properly, with time for leisure and refresher courses.

Chairman of Council's Views

The Chairman of Council (Dr. Dain) spoke strongly against the policy of going "bull-headed" for a higher capitation fee in the way Lancashire had suggested. The various problems, each of which required its own special approach, should be taken one by one. The information which must precede action was not available all at once. Many general statements were made by practitioners, but it was difficult to obtain precise figures from them. Incidentally, although they had always stood for a uniform capitation fee, he thought that question might be looked at again. It might be possible to vary the capitation

fee, with perhaps an increased rate for the first thousand patients, or the fee might be increased with growth in experience and postgraduate attainment. The betterment factor must go up or down with cost of living. Ultimately the size of this factor would depend on the decision of the Whitley Council backed by arbitration.

After a long discussion, during which cases of special difficulty were mentioned, as, for example, those of practitioners in seaside towns, the chairman asked the committee to come to a decision.

The committee then approved the action taken so far by the Remuneration Subcommittee, and also a proposal to make representations to the Ministry immediately on the betterment factor to be applied to that part of a doctor's income from the Service which is estimated to be net income. As a matter of urgency the Remuneration Subcommittee was instructed to prepare, in the light of the discussion at that meeting and of information now being obtained, a draft memorandum for presentation to the Ministry, to be considered at a special meeting of the committee on Feb. 9, after which a statement would be issued to local medical committees preparatory to a special conference.

A Special Conference

It was further agreed that a special conference of representatives of local medical committees should be held on March 3.

Dr. E. A. Gregg (Chairman of the Representative Body) said that the Council of the Association, impressed by representations from the Divisions, had decided to call a Special Representative Meeting in March, but before that meeting it was desirable to have available the views of the special conference, and it had agreed to suggest to the present committee that such a conference should be called. The Council looked to the committee, as it had always looked to its predecessor, for guidance and information. There was no attempt on the part of the Council to dictate or to interfere with the committee's autonomy.

CONSULTANTS AND SPECIALISTS

A meeting of the Central Consultants and Specialists Committee was held at B.M.A. House on Jan. 20, with Mr. R. L. Newell presiding.

It was reported that the Joint Committee with the Royal Colleges had now been appointed with the following, slightly revised, terms of reference:

(a) to represent consultants and specialists in the impending negotiations with the Government on matters arising out of the National Health Service Acts and the report of the Spens Committee on the Remuneration of Consultants and Specialists;

(b) to prepare and to submit for the consideration of its constituent bodies a scheme, including terms of reference, for the future work of the committee.

Sir Lionel Whitby, chairman of the Joint Committee, reported on the work so far accomplished. The committee was discussing a document containing proposals from the Ministry concerning terms and conditions of service of hospital staffs, but, in the words of the Minister himself, it was intended only as a basis of discussion with and comment by the Joint Committee, who had no mandate to commit the profession, but only to say what they themselves thought the profession might accept. The committee was not negotiating; at this stage it was advising the Ministry on the terms and conditions of service which might prove acceptable to consultants and specialists. There had been no disagreement on the Joint Committee, which was working most harmoniously. The Secretary (Dr. Charles Hill) added that what would emerge from the discussions would be a Ministry document which would be fully discussed by regional committees and individual consultants and specialists before the stage of negotiation was reached and there would be complete freedom to criticize it.

Resolutions were before the committee, one from the Sheffield Regional Committee and the other from a Bradford meeting of consultants, objecting to the minority position of the elected representatives of consultants on the Joint Committee and the over-large proportion of Royal College representation.

Mr. Newell replied that the Joint Committee was working most harmoniously and urged the committee to await the result

of the present discussions before suggesting any alterations in its detailed composition.

It was urged that the terms of reference of the Joint Committee should be amended to admit of the representation of views of general-practitioner specialists, and this was passed to the Joint Committee for its consideration. The chairman pointed out that a liaison with the General Medical Services Committee on this question had been established, and there was no fear at the moment that the general-practitioner specialist view would not be represented.

Co-option to the Committee

The applications of several associations representing branches of specialists for representation on the committee came forward. The chairman pointed out that the committee had power to co-opt three members, and had already co-opted one (Mr. C. E. Kindersley), but he thought it would be wrong to have associations as such represented, and this view was sustained by the committee itself, on a show of hands, by a large majority.

Certain proposals were made for the co-option of two other members, and in particular it was pointed out that it was desirable to include a whole-time tuberculosis officer; but it was decided to defer the matter until the next meeting in order to allow of suitable nominations.

Terms and Conditions of Service

The Executive Committee brought forward a report containing as many as 19 recommendations on various matters which had been referred to it for consideration or had been taken up on its own initiative. The first recommendation, that it should not be incumbent upon a specialist in contract for full-time services to undertake domiciliary visits without payment, and that he should have the option to revert to a part-time basis, with the right to engage in domiciliary visits, was after discussion referred back for further consideration; and a recommendation that consultants requested to undertake a domiciliary consultation at night should receive a higher rate of remuneration was lost.

The committee, after an explanation by the Secretary, agreed that the following five points should be represented to the Ministry concerning superannuation:

(1) That the option given to general practitioners to remain outside the N.H.S. superannuation scheme and receive the Government's 8% contribution towards the maintenance of approved life insurance policies be extended to specialists in contract with regional boards and boards of governors.

(2) That the option of transferred officers to decide whether to retain the rights of alternative superannuation schemes be extended until the final terms of service for hospital medical staff are published.

(3) That specialists practising in partnership be entitled to have their superannuation contributions and benefits adjusted in accordance with their partnership agreement.

(4) That where the services of a specialist are retained beyond the age of 65 he should be entitled to continue to make contributions and receive additional benefits.

(5) That specialists who on retirement are not entitled to any superannuation under the superannuation regulations should receive the Government's 8% contribution in addition to the return of their own contributions with interest.

It was agreed to make representations that specialists in the public service should be granted leave with pay and expenses for the purpose of attending professional meetings. It was pointed out, however, that "professional meetings" must be interpreted as scientific meetings. Conceivably professional meetings might include meetings called to protest against matters arising in the Service, and it could hardly be expected that the employing authority should subsidize attendance at such meetings.

After an amendment designed to secure a different wording had been lost, the committee agreed to advise regional committees to request consultants and specialists not to enter into permanent contracts until the terms and conditions of service had been approved by the Central Committee.

Other matters before the committee concerned the provisions to be secured in the amending Bill. Various resolutions from regional committees were also considered. A communication was read from the Ministry of Health on the constitution of regional hospital boards and the considerations which the Minister would have in mind in filling vacancies.

HEARD AT HEADQUARTERS

Scottish Appointments Service

The Ministry of Labour's Appointments Service in Scotland keeps registers of doctors and of suitable appointments open to them so that it can help doctors seeking appointments other than those in general practice; these are covered by the Edinburgh office of the Association's own Medical Practices Advisory Bureau. The Appointments Service has two offices—one at 5, Rothesay Terrace, Edinburgh, the other at 450, Sauchiehall Street, Glasgow. Information can be given about appointments with hospital boards, boards of management, local authorities, and so on. The department consults the Scottish Committee of the B.M.A. on all matters concerning remuneration, and co-operates with the Department of Health for Scotland. It also has the assistance of a medical member of its own staff as technical adviser. If in future the B.M.A.'s Advisory Bureau decides to cover any group of appointments dealt with under this scheme, the Appointments Office will hand over that part of the scheme to the Bureau.

90th Birthday

The friends of Dr. C. O. Hawthorne will be delighted to hear that he has attained his 90th birthday. He is a Gold Medallist and Vice-President of the Association, and still takes a keen interest in B.M.A. affairs. He is living at Hove, in Sussex, and often dispatches to his friends characteristic letters which reveal those gifts—still unimpaired—of humour and wise judgment that used to delight those who sat under his chairmanship of the R.B. and Central Ethical Committee. His many friends in all branches of the profession will salute him, and hope that he may be spared as long as he could wish.

New Medical Film

A new film entitled "Angina Pectoris" will be shown by the St. Pancras Division when it holds an "At Home" at B.M.A. House on Friday, Feb. 4, at 8.30 p.m. Members of neighbouring Divisions and any other members of the Metropolitan Counties Branch are invited. The occasion will mark the starting of the B.M.A. film library, and the chairman of the Film Committee will welcome members. The film was photographed by the Harvard Film Service of Harvard University and has not previously been shown in Britain. Dr. G. E. S. Wand, cardiologist at the Middlesex Hospital, will open discussion after the film.

Hazards of Rural Practice

A school-mistress living in the depths of Northumberland writes to express her gratitude at the way the doctors in her district travel around the farms, often on horseback, some times through storm and snow. When the weather is about to break, horses and sheep sometimes race down the roads from the fells and may be difficult to get past, besides being an alarming obstacle. She ends on a warning note: "The teaching profession has been so slow to recognize the difficulties of the rural head master or mistress that many small schools have had to close for want of staff, and when I leave here this school is scheduled for closure." We must see to it that the Government does not allow a similar fate to overtake medical practice in rural areas.

Mobilization

Up in North Yorkshire the Joseph Rowntree Village Trust has proposed to introduce a development of rural health services in the form of a mobile unit—a trailer towed by a motor vehicle. The object of the mobile service is to convey as nearly as possible to the homes of the villagers facilities for a maternity and child welfare service which would compare favourably with those provided in the modern urban health centre. The trailer has a floor space of 140 sq. ft., with apartments for doctor and nurse, and screened dressing space for patients. A memorandum on the subject has been received by the committee of the Association which is looking into the question of health centres, and the committee has suggested that the unit be made available for the use of local general

practitioners. On the other hand, a proposal for mobile laboratories does not appear to have found the same favour. It may be remembered that at the last Annual Representative Meeting a recommendation was made that pathologists should be enabled to travel to outlying mortuaries with fully equipped motorized laboratories, but this was referred back for further consideration, and now the committee which brought it forward has modified the proposal by adding that whenever practicable the cadaver should be brought to the pathologist for examination rather than the pathologist to the cadaver.

Questions Answered

Delivery of Medicines

Q.—Is the distribution of bottles of medicine, etc. part of a State doctor's obligation under the Act? Once the medicine is dispensed and put ready for collection from the doctor's surgery, I have always understood that the fetching of it is up to the patient or his relatives to arrange.

A.—The Ministry of Health states: We do not think that the new scheme puts any greater obligation on the doctor than there was under the old scheme—in other words, we do not think there is any legal liability for a doctor to deliver medicines to a patient. His liability extends to supplying the medicines at his surgery, though it may be convenient also for him to deliver when making a visit. We do know that a good many doctors have helped their patients by making special arrangements for the delivery or collection of medicines, and we should be sorry to see any such arrangements discontinued.

Development Charges

Q.—If a medical practitioner buys a house which previously was used only for residential purposes and makes it into a combined residence and surgery for National Health Service patients (making no structural alteration), is he liable to pay development tax on it? Since N.H.S. practices are not allowed to be sold, it appears that using the house for professional purposes should not raise the commercial value of the property.

A.—The Association's solicitors have expressed the opinion that the use of part of such premises as a surgery is a change of user and is "development" for the purposes of the Town and Country Planning Act 1947, and that consequently the permission of the local planning authority will be required under the Act. A development charge becomes payable only when the rise in the value of the land is consequent upon the development of such land itself. In this case, in view of the provisions of Section 35 of the National Health Service Act, the solicitors consider that there can be no increase in the value of the property in consequence of the use of part of the premises as a surgery, and therefore they do not expect that a development charge will be payable. The solicitors add: "This is a question for the determination of the Central Land Board. If, contrary to our opinion, the Board decides that a development charge is payable, it is impossible to forecast the amount, but we cannot conceive that under the circumstances the amount would be large."

Advance Payment of Compensation

Q.—I have recently received an advance payment of compensation claimed by me on the grounds of hardship. Should I expect a further payment as final settlement when the value of my share is assessed for compensation purposes, or will this further payment be deferred until death or retirement?

A.—At present it is possible to pay only a proportion of the sum due in compensation to any practitioner. If the advance payment already made has been sufficient to relieve the hardship which formed the grounds for claiming early payment, there is no obligation on the Minister to pay the balance of compensation due until retirement or death. If, however, a practitioner still suffers hardship when the final assessment reveals the total amount due to him, he may submit a further claim at any time.

Correspondence

The Rural Doctor under the Act

SIR.—I would like first of all to emphasize that the anxieties and uncertainties which now beset the country practitioner are not artifacts of medical politics but are very real and harassing. Indeed, the country doctor would seem to be the only one to be denied the "social security" which it is the object of the two great Acts to ensure for all. At the outset, too, I would like to stress the fundamental need for a simpler and "straighter" system of appropriation and supply than the present one, where various "pools" and "funds" take the place of ordinary estimates and payments. The ordinary capitation fee, for instance, now gets tangled with mileage grants and disbursements for "fixed annual payments," so that it has differing values in different counties. It should be a fixed sum per patient which every practitioner should receive nationally without any deduction for any other appropriation.

In urging this I am aware of the difficulty that arises from the fact that many of the population "at risk" do not choose a doctor and so do not appear on any doctor's list. As against these, a "pool" of unspent money naturally tends to form. But I do not agree that the allocation of this money need be an insuperable problem. The money could be claimed from the Treasury, and there are several ways in which it could be disbursed without affecting the value of the capitation fee. Or if the Treasury sanctioned a really adequate capitation fee for each patient actually on a doctor's list would it matter if the unallocated money went back to the Treasury?

In the same way it surely can only be an actuarial problem to fix a nationally uniform value for each "unit of mileage"—that is to say, for each mile of "ordinary" mileage and each mile of "special" mileage. Every doctor everywhere should receive this sum for each "unit of mileage" on his lists. If the total amount so paid out should be less than the estimate, the surplus should go back to the Treasury as a refund, and if more (after due care in checking lists) the deficit should be met by the Treasury. Clearly, too, "fixed annual payments" once approved should be met in full by an appropriation from the Treasury.

To come now to the specific case of the rural doctor. I have formed the opinion that the following arrangements would go a very long way to meet the needs of both the "truly rural" doctor and also the doctor in a small town or large village with a country practice around. They are: (1) a really adequate capitation fee with or without a fixed annual payment; (2) a really adequate mileage grant; (3) a grant to meet heavy telephone expenses; (4) a grant towards the upkeep of branch surgeries; and (5), where a doctor has to dispense, a grant towards the employment of a dispenser. Over and above these, in the case of the out-and-out rural practices in sparsely populated, isolated, and topographically arduous localities there should be "difficult district grants" replacing the present ill-named and ill-defined "Inducement Grants."

To comment now on these:

(1) **Capitation Fee.**—The present capitation fee of, at best, 18s. per patient is, of course, manifestly inadequate for any doctor anywhere, and miserably so for the country doctor with a small list. For the latter I think a graduated system of capitation would be advantageous as well as a fair arrangement all round. It would divert badly needed money into country practices from swollen lists in the towns.

My idea of a minimum adequate scale of capitation payment would be: 28s. per patient for the first 1,000 on list; 26s. for the next 1,000; then 24s. and 22s. for the last two thousands.

Alternatively, too, the capitation fee could be graduated on an actuarial basis in relation to the risks run. So a standard fixed capitation fee might be doubled for children under 10 years of age, and doubled also for patients aged 60 and over. It is, of course, these age groups that produce the heaviest demands upon the general practitioner. Parents are always and naturally anxious about ill children, and it is during the first ten years of its life that the average child runs the gauntlet of the common exanthemata. The dependence of the ageing and aged upon their doctors needs no comment.

As regards "fixed annual payments" or "basic salaries," I see little use for these in their present prostituted and attenuated guise—and I write after reading Dr. Gray's thoughtful and lucid defence of them at a recent meeting in London (*Supplement*, Dec. 4, 1948, p. 203). From the beginning I have myself advocated the "universal basic salary," not under that unfortunate name of "salary" but as a "retainer" to cover the practitioner's general obligations to the Service as distinct from his individual contracts with individual patients under the capitation fee proper.

It seems to me that the only solution to this problem as it now stands is to revert to "universal" fixed annual payments, or else have none at all. Certainly such payments should be met by an *ad hoc* appropriation from the Treasury and not be mixed up in any way with "capitation."

(2) *Mileage Grants*.—Adequate mileage grants would go a very long way towards solving the country doctor's financial problem, and the new trend of the B.M.A.'s policy seems to be to delete the "inducement" grants and make up for them in mileage. There is a very great deal to be said for this. "Inducement" is something abstract and difficult to assess. A mile is something accurately measurable for which there can be an equally definite and measurable monetary equivalent. The aggregate number of units of mileage, "ordinary" and "special," will in a general way give an accurate impression of the difficulties and costs of an average country practice. But, to be adequate, mileage must not be narrowly confined to the computation of the costs of running a car in terms of petrol and general wear and tear. It must also take account of the time spent in travelling, which is a very definite limit to the earning capacity of the doctor, as well as often "a weariness to the flesh."

In computing mileage costs regard should also be paid to the conditions governing the replacement of cars at present. Usually the doctor has now to pay more than the new price for a well-used "off covenant" car. It would be a great help to the rural doctor if the Minister could aid him to get a priority for acquiring a new car when necessary. This would also help to reduce the enormous repair bills which have to be paid by some of us who perforce must drive old cars over bad roads—another factor that needs to be taken into account in computing mileage.

(3) *Telephone Expenses*.—These, in my own case, can mount up to £70 or £80 in a year, a very formidable sum. The Secretary to the B.M.A. has made the useful suggestion that trunk calls to hospitals, etc., should be charged forward. But this leaves unsubsidized the large sum spent annually on local professional calls. The difficulty, of course, is to disentangle the purely professional from the purely social and personal calls without keeping an irksome record of all "calls out." It should be feasible, however, to contrive some formula for "grants in aid" for these "local" calls—which may often cost a shilling each or even more.

(4) *Branch Surgeries*.—Where branch surgeries are occupied and approved to be necessary, a grant should be forthcoming to cover the cost. This cost is often considerable, and may include not only rent but the remuneration of a caretaker, phone, heating, lighting, and rates (if the doctor owns the premises, as he often does).

(5) *Dispensing*.—Where the doctor still has to dispense, due regard should be paid to the fact financially. Taking my own case, at my main headquarters in the Pembrokeshire hills there is no chemist nearer than 9 miles (12 to 14 miles in other directions), and it would often cost patients 20s. to 25s. to hire a car to get urgent medicines if I did not dispense myself. In these cases, over and above the drug allowance or drug tariff there should be a grant to enable the doctor to employ a dispenser so as to release himself for purely medical duties. It seems to be my recollection that early on in the House the Minister mentioned this as one of the things he had in mind for country doctors to relieve them of their dispensing and of much of their clerical work. I have been unable, however (and so has the Editor of the *Journal*), to trace the report of this.

When all is said and done, however, there will remain a small residue of rural practices that will present features insoluble, as it were, in the foregoing solvents. Most of these will be characterized by such features as:

(1) A negligible urban or village population to supply the "streakiness" of "easy walking calls" to the daily bacon.

(2) Isolation.

(3) A sparse and widely scattered population with many "inaccessible" houses and farms (i.e., inaccessible by car).

(4) Rigorous and even, dangerous climatic and topographical conditions in winter (I have myself twice in nearly a quarter of a century been very near indeed to losing my life in a blizzard, and in extreme frost at night).

(5) Lack of social amenities, and difficult living conditions (e.g., a 15-mile run each way to the nearest town to get one's car repaired or to visit the cinema).

These exceptional country practices should, I think, be approached in something of the light of the experience and traditions of the Scottish Highlands and Islands Scheme. There should be "difficult district grants" for doctors practising in such localities.

And, lastly, now as to the allocation of such grants: Personally, I distrust both the competence and the goodwill of some local executive councils in deciding matters such as these. Besides, town-bred members of such bodies often have no first-hand acquaintance with conditions in their hinterlands. Neither are the recommendations of local medical committees invariably detached and judicial when members are neighbours in competition. The local bodies must always be to the Minister a valuable source of local information and a check upon any misrepresentations. But there should always be available to the Minister in these cases (or to his Medical Practices Committee) a report of a first-hand "survey" of the conditions of practice. For instance, the Minister might call upon one of his divisional medical officers to visit and report; and that official might well be accompanied by a nominee of the British Medical Association. With them the doctor concerned could discuss his difficulties and explain his methods of working his practice. There is, I think, a great deal to be said for such a personal contact with the doctor and the locality—especially if the "visitation" happens to take place during a heavy snowfall, floods, or frost.—I am, etc.,

Clynderwen, Pemb.

E. ROLAND WILLIAMS.

Sliding Scale of Capitation Fees

SIR,—In "The Secretary Reports" in the *Supplement* of Jan. 15 (p. 21) we find a discussion of the merits and defects of the graduated capitation fee. That there are merits is apparent; the defects are minor matters.

Prior to July 5, 1948, most of the talk at the B.M.A. Branch meetings was concerned with the preservation of freedom, doctor-patient relationship, the high ethics, but not one word was said about £ s. d., of which we now read so much. There was too much of ethics and too little of economics, and because of faulty guidance and dissension evident from the results of the final unnecessary plebiscite we find ourselves in a sorry mess. It is of our own making and we are the people who can redeem our own mistakes; we need not sit back awaiting the pleasure of the Minister of Health; the matter is in our hands.

While we await the increase in the capitation fee, let us see if this can be more equitably distributed so that all share in accordance with the responsibility undertaken and the work entailed in meeting this responsibility. Let us compare the urban and the rural doctors.

Only in industrial areas can a doctor acquire a list of 4,000, and indeed many have lists exceeding this number. In the country a doctor may attain 2,000 or even 2,500, but if he has any conscience he cannot exceed this number; he cannot possibly attend satisfactorily to patients beyond this number. In the town the patients are more accessible, many in single streets where the work is almost door-to-door. Under these circumstances a doctor may attend, but not look after properly, 4,000, and for doing so he gets adequate reward under even the existing capitation fee. In the country patients are scattered far and wide; time is expended in travelling; sometimes more hours are spent per day in motoring than in doctoring, but this is not the fault of the country doctor. Under conditions of private practice he was rewarded for time spent by larger fees from outlying patients; the larger fee was a deterrent which is now non-existent. The country doctor has no, or inadequate or inaccessible, hospital facilities; he cannot push off a patient by giving him or her a note to S.O.P.D.

or M.O.P.D.; he has to stand on his own feet to a large extent unaided; he has learned to do so over years of relative isolation from aids. The country doctor faces heavy telephone bills because the nearest hospital is 50 miles away: the town doctor spends a penny ringing up the receiving ward asking for admission of his patient who has a bellyache; the country doctor hesitates to push every abdominal case into hospital because to do so entails a journey of many miles for his patient, perhaps a needless journey: the country doctor learns to diagnose his cases before he sends them to hospital, and by doing so over a period of many years he acquires the "art" of medicine and avoids becoming a medical sorting clerk.

The car of the country doctor wears out in a third of the time of that of his town colleague. He has to replace it, and it costs just the same to buy, to license, to insure, and much more to maintain. The country doctor gives up part of his house for professional rooms: he has no privacy, little leisure, and little facilities for recreation. His family grow up and have to be sent away from home to attend higher school and university; the town doctor has these in many cases on his doorstep.

Surely there can be no comparison between the work done in a rural practice and that done in the town per capita. The country doctor may have to travel long distances at night in all kinds of weather; during the winter months his best tools are frequently a spade, a tow-rope, and some old sacking.

The extra work which the country doctor does may be mainly manual work and withstanding of physical hardship, but I feel that, although he may have chosen to work in the country rather than in the town, he should not be punished for having done so. The only just way in which the country doctor can be compensated for the smallness of his list and consequent quarterly cheque is by provision of a graduated capitation fee, not applicable to country doctors alone, because there is no clear dividing line between urban and rural areas, but by a general scale applicable to all practices. Naturally the country doctor must have an adequate mileage allowance, but there must be no question of clarity such as the basic salary, whereby a doctor is awarded this at the expense of his colleagues. There should be no fund for "special circumstances"; there must be a scheme which is fair to all.

I suggest that the capitation fee for the first 1,000 should be 35s., for the second thousand 30s., and for all over this number 20s. Were this provided (and these figures are only by way of illustration) the urban doctor with 3,000 to 4,000 would have an adequate income while the 1,000 to 2,000 of the country doctor would provide for his needs; additional adjustment would come from the Mileage Fund, and so we should have a more equitable distribution of payment for work done.

I am well aware that opposition to this graduated payment comes from the men with maximum lists; they fail to see why they should make themselves responsible for a large number at a lower all-round capitation fee than does the man with the small list. Let them remember that it is in the rural areas that the small lists are found, that the country doctor is doing a job of work under more arduous conditions than obtain in the towns, and lastly let them consider the high ethics of the medical profession, of which we have heard so much in the past. If they are sincere in their consideration of such ethics they will agree to provision being made for the doctor with the small list, the young doctor working his passage, or the old doctor who, through failing health after long service, feels it incumbent on him to reduce his numbers. The rural practitioners are not asking for charity; they are asking for a square deal at the expense of no colleague.—I am, etc.,

Anstruther, Fife.

M. D. S. ARMOUR.

B.M.A. Committee on Trade Unionism

SIR.—The Tunbridge Wells Division of the Kent Branch of the B.M.A. decided that it would be advantageous to maintain the Groups of the old Local Independence Committee, and we in Edenbridge have adopted this suggestion. It is the ever-strengthening conviction of a continuously increasing number of practitioners that our only method of approach in the matter of negotiation and presentation of our case should be through a legal collective bargaining machinery such as a trade union with wider powers than the B.M.A. now possesses within the

framework of its charter. We were informed that this question of trade unionism was raised on June 16, 1948, at the Cambridge Annual Meeting, and our Group notes with great dissatisfaction that the Committee did not meet again until Nov. 9 and Dec. 15.

We would ask through your columns whether the rest of our colleagues feel so complacent and happy in their dealings and negotiations with the Minister of Health that they are willing to leave this important matter to trickle along so slowly. It is understood that the Committee set up were asked:

(a) To investigate the possibility of forming a medical guild within the framework of the B.M.A. or with such unofficial approval as could be given within the limitations of the charter.

(b) To publish to us the upshot of these cogitations.

(c) To tell us what constructive steps have been taken to form a guild or trade union.

So far we have had no concrete reply either negative or affirmative.

I would ask you to publish this letter in the hope that it may stimulate other men and perhaps other Groups to voice their displeasure and lack of confidence in this Committee of the B.M.A. and perhaps spur it on to fresh and productive activities.—I am, etc.,

Edenbridge, Kent.

J. JEFFERSON COULTHARD.

* * The report of the Committee to the Council of the Association has been prepared and is awaiting final approval by the Committee on Feb. 2. A report by the Council will be placed before a Special Representative Meeting in March.—Ed., B.M.J.

Future Aims

SIR.—Many members of our once self-respecting and respected profession, now doubtless galled by the yoke of servitude to which we have submitted, are concerning themselves about the reorganization of the B.M.A., the recent Winchester Memorandum being a noteworthy example. It is my belief, Sir, that before giving our attention to reorganization we should all of us be clear as to what are to be the aims of the B.M.A.—whether reorganized or not. I do not know what were the original objects of the B.M.A. when it was founded—and I suspect most medical men are in like case.

I venture to give below what I consider to be worthy and desirable objectives for our Association in the rather appalling degradation to which we have allowed ourselves to be reduced:

(1) To endeavour to bring about the restoration to the individual of those responsibilities and liberties of which he has been deprived by ill-advised actions of the State.

(2) To endeavour to prevent further State action tending to the diminution of individual responsibility and liberty.

(3) To endeavour to restore to the medical profession the freedom, dignity, and capacity for service of which it has been deprived by the National Health Service Act.

(4) To endeavour to educate the public as to the supreme value of the individual responsibilities and liberties which they have so lightly abandoned and daily continue to lose.

I think it useless to attempt the isolated restoration of our own freedom and dignity—freedom being, I believe, like peace, "one and indivisible"—and it is perhaps worse than useless if we shall use what little power we now have to advantage ourselves in petty parochial quarrels with our present (or future) Ministry of Health dictator over finances and terms of service. If that is to be all our aim it matters little if the B.M.A. remains in its present state of ineptitude.

We, Sir, who might have stemmed the tide of State tyranny and given our fellow citizens time to think again before accepting their increasingly degrading condition of being State dependants—we, who had victory within our grasp—have given up without a fight. The gods, Sir, seldom give to man the chance to fight again a battle upon which he has once, in cowardice, turned his back. That battle is lost. It is not for ourselves we must fight now: it is for the next generation. We who had not the courage to refuse acceptance of a scheme in which not one in three of us believed—we who have sold our faith for "thirty pieces of silver"—we, I think, can only preserve some little of our self-respect by making the scheme work, and work well, despite all its evils and difficulties. Those of us who have accepted service under the scheme must be loyal to it—though

loyalty to any belief has not hitherto distinguished us as an organized body.

I believe we should now concern ourselves mainly with two matters:

(1) Intensive propaganda in papers and periodicals and in flaring posters on hoardings and in every doctor's surgery to make the general populace despise and hate their growing status of dependency and lack of individual responsibility; to make them despise "security" and thirst again for freedom and opportunity; to teach them to despise the Service however efficient we can make it.

(2) To preach to our successors—the present medical students—a scale of values different from those we hold and which have let us do this evil thing.

We, who dared not "hold the pass," cannot speak to them: our authority is gone. But we have money—the B.M.A. has, I believe, large funds. Let us hire and pay generously such men as poets, philosophers, artists, travellers, mountaineers, to preach to our successors that there are nobler and greater values than the monetary ones for which we have sold our own and our fellow citizens' freedom. Let us try to train a generation of rebels to redress the evil we have done.

They have had no part in this shame. They have not committed their loyalties to this evil scheme. They can wreck it—as it should be wrecked—and set themselves free, and in doing that perhaps restore also to their fellow men some small part of their lost and shattered freedom.—I am, etc.,

Stafford

JOHN FREW.

POINTS FROM LETTERS

Proceedings of Council: Correction

Air Commodore J. KYLE (London, W.1) writes: I wish to invite your attention to the statement against my name in the Proceedings of Council reported in the *Supplement* of Jan. 22 (p. 33) to the effect that "so far as their terms of reference were concerned, a permanent Commission with pension was *not visualized*." The two points I made were that: (i) The new title of W.R.A.F. did not designate a separate service or corps with women's units, but those women enlisted or commissioned on a substitution basis, as applicable. (ii) Women doctors would be commissioned under exactly the same terms as their male colleagues except in two main, and one lesser, respect—i.e. (a) Women doctors would be commissioned into the W.R.A.F. as all other women, and (b) The commission, at the moment, would still be on a short-service basis only, as the question of permanent commissions and pensions had not yet been *finalized*; (c)—the lesser point—Rank titles, except in the first rank of Flying Officer, would be those at present in use in the W.A.A.F. I suggest that, as permanent commissions are *visualized*, but not so far *finalized*, owing to continuing discussion on scales of pension, the word is incorrect, and that you will as a minimum substitute the words "was not finalized" for the reported statement "was not visualized."

Association Notices

PROPOSED ALTERATION IN DENBIGH AND FLINT DIVISION

Notice is hereby given by the Council of a proposal to form two Divisions in the place of the present Denbigh and Flint Division as follows:

The East Denbigh and Flint Division: the area of the present Denbigh and Flint Division to the east of the Clwydian Range.

The West Denbigh and Flint Division: that part of the present Denbigh and Flint Division which lies to the west of the Clwydian Range, with the addition of Colwyn Bay, Old Colwyn, and Rhos-on-Sea.

Any member affected by this proposal and objecting thereto should write to the Secretary of the Association not later than Feb. 26, 1949.

CHARLES HILL,
Secretary.

SPECIAL REPRESENTATIVE MEETING

Notice is hereby given that on the requisition of the Council, and of a number of Constituencies exceeding 20 as prescribed by Bylaw 46 (1), a Special Representative Meeting of the British Medical Association will be held in the Great Hall, B.M.A. House, London, W.C.1, on Tuesday, March 29, 1949, at 10 a.m. The business of the meeting is to consider the question of remuneration to general practitioners under the National Health Service Acts.

CHARLES HILL,
Secretary.

By order of the Chairman of
the Representative Body.

SPECIAL REPRESENTATIVE MEETING

Notice is hereby given that on the requisition of the Council a Special Representative Meeting of the British Medical Association will be held in the Great Hall, B.M.A. House, London, W.C.1, on Wednesday, March 30, 1949, at 10 a.m. The business of the meeting is to consider a report and recommendations from the Council on the constitution of the Association.

CHARLES HILL,
Secretary.

By order of the Chairman of
the Representative Body.

Diary of Central Meetings

FEBRUARY

- 2 Wed. Subcommittee on Revision of Rates of Pay and Allowances 10.30 a.m.
- 2 Wed. Committee re constitutional position of Association, 2 p.m.
- 3 Thurs. Proprietary Medicines Committee, 2 p.m.
- 9 Wed. Health Education Subcommittee, 10.30 a.m.
- 10 Thurs. Journal Committee, 11 a.m.
- 14 Mon. Armed Forces Committee, 12 p.m.
- 15 Tues. War Memorial Committee, 11.30 a.m.
- 24 Thurs. Occupational Health Committee, 2 p.m.
- 24 Thurs. Committee on Psychiatry and the Law, 2 p.m.

MARCH

- 11 Fri. Public Health Committee, 2 p.m.

Branch and Division Meetings to be Held

HASTINGS DIVISION.—At Royal East Sussex Hospital, Tuesday, Feb. 1, 8.30 p.m. Mr. Lionel E. C. Norbury: "Cancer of the Rectum." To be illustrated by specimens and lantern slides.

LEWISHAM DIVISION.—At Lewisham Hospital, 390, High Street, London, S.E., Friday, Feb. 4, 8.30 p.m. Dr. D. Stafford Clark: "The More Interesting Aspects of Modern Psychological Medicine."

NORTH EAST SUFFOLK DIVISION.—At Lowestoft and North Suffolk Hospital, Sunday, Jan. 30, 3 p.m. Meeting open to all medical practitioners.

NUNEATON AND TAMWORTH DIVISION.—At Red Lion Hotel, Atherton, Tuesday, Feb. 1, 8.30 p.m. Dr. J. R. Owen: "Common Obstetric Difficulties."

RICHMOND DIVISION.—At Royal Hospital, Richmond, Tuesday, Feb. 1, 9 p.m. Agenda: (1) Lecture by Dr. Thomas F. Main: "Present Trends in the Treatment of Neurosis." (2) To consider resolution: "As the cost of living for medical practitioners has increased by at least 100% since 1938, that the profession should not agree to a betterment factor of less than 50%."

ST. PANCRAS DIVISION.—At B.M.A. House, Tavistock Square, London, W.C., Friday, Feb. 4, 8.30 p.m. "At Home" to members of neighbouring Divisions. Film: "Angina Pectoris," by Dr. Joseph E. F. Riseman. Dr. George E. S. Ward will open a discussion following the film.

Meetings of Branches and Divisions

BRIGHTON DIVISION

The Division held their annual ball at Hove on Dec. 17, 1948. The proceeds amounted to the sum of £233 12s. 11d., and a cheque for this amount has been sent to the Royal Medical Benevolent Fund.

TUBERCULOSIS AT THE CROSSROADS*

BY

C. O. STALLYBRASS, M.D., D.P.H.

Formerly Lecturer in Public Health Administration, University of Liverpool

Tuberculosis was described by Bunyan as "Captain of the men of Death." Perhaps the most important fact about tuberculosis is that it no longer holds that pre-eminent title. But it is still the main killer of youth in its prime, and causes in this country nearly one-third of the deaths between the ages of 15 and 39 and a total of 24,000 per annum at all ages. As a cause of death phthisis has been declining throughout the period since deaths were first registered and classified in 1838—i.e., nine years before the appointment of Dr. Duncan as first medical officer of health in Liverpool (Ransome, 1915). The decline has been remarkably continuous and steady since that date, though fluctuations are noticed at times, epidemics of influenza (e.g., 1890) and the two world wars being occasional causes of temporary rises. Generally when these events had passed the decline continued as before. What, then, has been the major cause of its decline? It is chastening to take the long view in this matter.

Tuberculosis mortality, like infantile mortality, has always been regarded as one of the best indices of the sanitary well-being of a community. The causes of the great reduction of infantile mortality are complex, and it is not easy to give each factor its appropriate weight. May not the causation of the fall of tuberculosis mortality be likewise complex? Certainly to regard this mortality rate as a sensitive sanitary index is a clear indication that we consider the reasons for its fall to be complex.

In 1847 the English mortality from phthisis was 3,189 per million, and the female mortality was higher than the male; nearly a century later the standardized death rate was 528 per million—i.e., one-sixth of what it was in 1847—and the female mortality was 53% of that of the males.

Tuberculosis Mortality in Infancy

The ages at death also show some striking differences. In 1860 18% of the deaths from tuberculosis in Liverpool were at ages under 5 years; and in 1880 the proportion was 32%; in 1946 the proportion was 6.5%, or only about one-fifth of the 1880 figure. It is, however, reasonable to ask whether all the infantile deaths ascribed to tuberculosis in 1880 were in reality so caused. One may question the significance of diagnoses such as *tabes mesenterica*, and be in doubt whether that title did not include deaths from prematurity, marasmus, enteritis, etc. If we consider deaths from tuberculous meningitis we find that equally important changes have been taking place, more especially in infancy and childhood. I have obtained from the Registrar-General, and have taken out from the Liverpool records, the deaths at ages under 1, 1 to 5, 5 to 10, and so on up to 25 years of age, since 1915. One of the difficulties in investigating tuberculosis records is to be sure that one is dealing with comparable statistics, and it is for that reason that the

figures go back to only 1915; before then differences both of nomenclature and of tabulation would gravely complicate comparisons. What is shown, however, is remarkable. In Liverpool the crude mortality during the first year of life in 1947 was only 9% of that recorded in 1915; in the next four years of life it was 18%, from 5 to 10 years 26%, from 10 to 15 years 40%, and at higher ages the reduction is smaller. But the total phthisis mortality has only been halved in these twenty-eight years. Similar, though not so pronounced, reductions in the deaths of infants ascribed to tuberculous meningitis have occurred in England and Wales. The higher the total tuberculosis mortality the greater the proportionate reduction in the meningeal fraction of that total. In the middle of last century many deaths of infants were ascribed to acute hydrocephalus or to cephalitis, the word meningitis seldom being used.

What is the significance of this rapid reduction in tuberculo-meningitic mortality? Tuberculous meningitis ensues when a tuberculoma in the brain or meninx infects the water-bath in which the brain lies; the tuberculoma in this case is the result of a blood-borne infection arising, as a rule, in a primary infection. It would appear, then, that this very rapid reduction in meningeal deaths results from a quite considerable reduction in infection of infants with the human bacillus, or at least of massive infection. That this rapid rate of reduction follows upon the passing of the National Insurance Act, 1911, and the inception of sanatorium benefit and the setting up of tuberculosis departments generally may be no coincidence. In Denmark in 1945 only 28 deaths from tuberculous meningitis took place, of which four were in Copenhagen. This observation may be a valuable clue in the tuberculosis labyrinth. One thing is sure: it bears little or no relation to the improvement of milk supplies or the pasteurization of milk. The case for these as preventive of tuberculous peritonitis and of bone and joint disease needs no further comment; it has been adequately presented by Wilson (1942) and is conclusive. Every case of tuberculous meningitis in childhood should be regarded as a pointer to a dangerous open case of respiratory tuberculosis in the immediate *entourage* of the sick infant; this case should at once be sought and the appropriate action taken when found.

In comparison with a guinea-pig, man is resistant to attack by the tubercle bacillus. He cannot presumably be infected by a single bacillus as can the cavy. Every overt case of tuberculosis is an example of a breakdown of resistance. Repeated massive doses of infection, especially in infancy, provide one of the methods by which that resistance is overcome. Any measures which tend to reduce or prevent such massive infections will be preventive of tuberculosis—the disease that kills and maims. I have used the tuberculo-meningitic mortality as a possible index of a reduction in massive infection; other evidence will appear later. But, regarding the continuous decline in phthisis mortality for over a century, even with the greatest regard

*A paper read at the North-Western Branch of the Society of Medical Officers of Health on Nov. 12, 1948.

for the sanitary achievements of Duncan and his successors we cannot think of sanitation as the major factor in the reduction.

Social and Economic Factors in Tuberculosis Causation

We must accordingly seek for a cause for the reduction in some more general factor of social amelioration which would affect the resistance of the mass of the population; for the general occurrence of infection within the first twenty years of life—at least of *urban* life—is widely recognized. This belief is based primarily on the findings of Naegeli (1900) in Zurich and of Burkhardt (1906) in Dresden. Naegeli found evidence of tuberculosis in 17% of necropsy examinations in those under 18 years of age; but in those over 18 years old the proportion was 93%. Burkhardt found the proportions in the same two age groups to be 38% and 91% respectively. When the use of the cutaneous tuberculin reaction was applied by von Pirquet (1911) to children in Vienna in 1909 he found that in the age group 13-14 years no less than 91% of the children reacted positively. These results relate to urban populations. The Prophit Survey (1948), applying the Mantoux reaction to student nurses from Wales and Ireland upon entry into hospital, found 26% negative reactions as against 18% negative amongst English nurses. In England there was only a small difference between the percentages of negative reactors among nurses of urban (18%) and rural (20%) provenance, but in Wales and Ireland the proportions were 19% and 35% respectively. It is evident that in recent years in the rural parts of the British Isles, more especially Wales and Ireland, infection with tuberculosis has by no means been universal, even if we take into consideration that a proportion of the negative reactions may once have been weakly positive and have subsequently reverted. Among London medical students only 14% were *negative*; in students in some universities in the United States the proportion is reversed and only 10-15% were *positive*.

Some economists have used the price of wheat as an index of nutrition, and a close correlation was found in some countries, notably Germany, between this figure and that of the phthisis mortality; but Sir Arthur Newsholme pointed out that in France and Ireland there was no such parallelism. This is not surprising, for money is constantly changing its value in relation to goods.

When for the price of wheat we substitute the "real value of wages"—i.e., what you can get with the money you earn—as was done by Ewart in 1923, there is revealed a remarkably close inverse correlation during the period 1851 to 1915 in England and Wales. Malnutrition and famine have again and again been shown to be productive of a rise in tuberculosis mortality. The 1914-18 war appeared to indicate fat shortage as productive of a rise in deaths from phthisis; the rise was earliest and greatest in blockaded Germany, later and smaller in Great Britain, where U-boat warfare limited imports, and latest and least in the United States, where the shortage was least felt. Shortage of fat-soluble vitamins was present in greater or lesser degree, but Danish and Swedish experiences negative a shortage of vitamin A as the main factors in the increase. There was also a shortage of first-class proteins according to Faber (1938), and he regarded this as the more important. It is not practicable to pin the effects of malnutrition to the deficiency of one ingredient of the diet. The part played by fatigue in the liability to develop clinical tuberculosis in wartime must not be overlooked (M.R.C., 1942).

During the 1939-45 war the rise in deaths from tuberculous meningitis and in young adults in this country pointed to factors other than nutrition being operative, and the

increased exposure to infection in air-raid shelters or elsewhere appears to have been a major cause. This rise reinforces the belief that a high proportional rate of mortality from meningitis indicates a high degree of massive infection in infancy and childhood.

The real value of wages gives a measure of the capacity of the average citizen to acquire goods, but it does not indicate how this capacity is distributed among the population or on what goods it is expended. The Registrar-General's figures show the heaviest incidence of tuberculosis to be upon the lowest-paid workers—i.e., social Class V—whose tuberculosis mortality is double that of the professional Class I.

Numerous coefficients have been calculated (see especially Hart and Wright, 1939) which show a significant high association of tuberculosis mortality on the one hand and poverty, pauperism, substandard housing, and overcrowding on the other. Hart and Wright applied the method of partial correlation,* which endeavours to weight the several possible factors taken into consideration. The significance of overcrowding appeared to be increasing. There can be no doubt that poverty is closely associated with tuberculosis, and that tuberculosis also causes poverty. Poverty is accompanied by malnutrition, bad housing, and overcrowding, the last tending to produce close personal contact with open cases. In view of the great overcrowding in so many of our great cities we cannot expect any automatic reduction in tuberculosis in the near future. As McGonigle observed, better housing without a rise in real wages may, owing to raised rents, lead to deterioration in nutrition.

The steady rise in the real value of wages seems to have been a major cause of the reduction of tuberculosis mortality, but this rise was checked at the turn of the century and reversed during the 1914-18 war (Hart and Wright, chart 4), and appears to have been reversed in and after the 1939-45 war. Thus the index of real earnings, which was 127 in 1875, had risen to 244 in 1939 and has fluctuated since then. A fall in this index also occurred in the 1914-18 war, reaching 176 in 1913 and falling to 146 in 1916; it rose, however, to 205 in 1920. The economic effects of the recent war have, however, been more serious than in the previous war, and we cannot anticipate any such quick recovery. If this rise in the real value of wages has indeed been the cause of the decline of tuberculosis during the nineteenth century it is urgent that we take stock of the position in which we now stand. At the present time there is a world shortage of foodstuffs accompanied by a high world level of prices of transportable foods. To expect an early resumption of the increase in the real value of wages in this country—though possibly not in the United States—would be tantamount to being blind to the most salient economic feature of the times in which we live. If we translate increased real value of wages into terms of better nutrition and housing, involving greater resistance and less exposure to infection in the home, are these really the sole causes of the reduction of mortality in the past?

*Coefficients of correlation (i, v, and vi are from Pearl, 1940):

- | | | |
|---|---------|----------------|
| (i) Tuberculosis mortality in <i>arrondissements</i> of Paris, 1911-17, and the proportion of the population so poor as to be not assessed to house tax | .. .. . | +0.977 ± 0.004 |
| (ii) Total pauperism and phthisis in England and Wales, 1866-1903 (Newsholme) | .. .. . | +0.89 |
| (iii) Mortality for respiratory tuberculosis and substandard conditions of housing in 76 county boroughs (Hart and Wright, 1939), 1931, 1931-3: | | |
| Males 15-24 | .. .. . | +0.568 |
| (iv) Ditto: Females 15-24 | .. .. . | +0.663 |
| (v) Tuberculosis mortality and overcrowding (more than 3 persons per room) in Vienna, 1897 | .. .. . | +0.892 ± 0.047 |
| (vi) Ditto: (more than 2 persons per room) in London, 1908-12 | .. .. . | +0.774 ± 0.075 |

Segregation of Infective Cases

Sir Arthur Newsholme (1908, 1923) gave evidence that there was a close parallelism, especially in later years, between the proportion of deaths from phthisis taking place in hospitals and other residential institutions and the general tuberculosis mortality rate. In 1869-70, when the death rate in England and Wales from respiratory tuberculosis was 24.4 per 10,000 population, only 8.3% of the deaths from all causes occurred in public institutions. "In the year 1920, 36.2% of the total male and 26.5% of the total female deaths from phthisis in England and Wales occurred in hospitals, commonly after prolonged, and often repeated, stay of the patients in these hospitals." Newsholme's figures were severely criticized by Alice Lee (1915) on the ground that his measures of segregation were badly chosen. Power (1908) had earlier cast doubts on the validity of Newsholme's conclusions as applied to the nineteenth century.

I have been able to investigate the matter further, so far as it relates to deaths from tuberculosis (mainly phthisis) in the hospitals and institutions of the city of Liverpool during the period 1860 to 1946, by taking samples at five-yearly intervals, as shown in the following table:

Year	Percentage of Deaths from Tuberculosis in Residential Institutions	Mortality from Tuberculosis per 1,000
1860	13.7	4.4
1865	17.2	5.3
1870	14.1	4.1
1875	17.4	3.5
1880	14.4	3.7
1885	21.7	2.9
1890	20.9	2.7
1895	27.6	2.8
1900	37.2	2.5
1905	44.2	2.0
1910	50.5	2.0
1915	35.8	2.0
1920	42.7	1.7
1925	51.0	1.5
1930	51.1	1.4
1935	60.0	1.1
1940	55.1	0.9
1946	57.2	0.9

From these figures we obtain a coefficient of correlation of -0.94 ± 0.017 , which indicates a very high degree of inverse association. It is subject to the criticism that the array of figures is too small for accuracy, but *a priori* it appears probable that the increasing removal of cases of open tuberculosis to hospital has had considerable influence on the reduction of tuberculosis in this country and elsewhere, especially during the present century. One may well think that this factor has played an increasing part in that reduction since the introduction of sanatorium benefit in 1911. The prohibition of indiscriminate expectation may also have helped in reducing infection.

At this point we must face present realities. At the end of 1946 in this country, despite the addition of 2,440 to the number of "tuberculosis beds" provided, there was a waiting-list of 7,025 tuberculous patients (Ministry of Health, 1946). This position arises from a shortage of nurses, especially of sanatorium nurses, and not of beds. In sanatoria the occurrence of a case of tuberculosis among the nursing staff is, in my experience, exceptionally rare. The mortality from tuberculosis among nurses is no higher than that of the general female population of the same ages, but the morbidity would seem to be higher. Any active campaign against tuberculosis, whether preventive or curative, is at present in this country absolutely dependent upon adequate provision of hospital beds. If we investigate anti-tuberculosis programmes in either Scandinavia or the United States there appear to be waiting beds rather than waiting-lists.

The former standard of one sanatorium bed per tuberculosis death per year is certainly out of date. The actual provision in England and Wales is 1.3 beds per death (in Liverpool 1.5), but in Germany it is 2.2 (0.7 in Berlin) and in Canada 2.5; coming to Scandinavia, in Stockholm it is 2.5, in Copenhagen 2.8, and in Oslo 3.0. It is necessary to make the best possible use of available beds, both for the cure of the individual patient and, with emphasis, for the achievement of the best preventive result.

Tuberculosis Among Nurses

I do not think any responsible person in charge of a hospital admitting patients suffering from tuberculosis can be happy about present conditions, under which Mantoux-negative nurses, medical students, and others come into contact with infectious cases. To find that such a person is tuberculin-negative and presents no x-ray evidence of a prior infection seems to require some attempt at least to increase specific resistance, even if complete immunity is out of the question. How far the Bacille Calmette-Guérin (B.C.G.) or the vole bacillus can meet the case I will discuss later. This is a matter of serious importance if we are to continue to nurse infectious, often advanced, cases of tuberculosis away from the home, for it appears highly desirable to increase the proportion of sputum-positive cases so isolated.

One of the factors causing inadequacy of the beds available for the treatment of tuberculosis is the increase in the average length of stay in sanatoria, which now often amounts to twelve months or more. This arises partly from the commendable wish of sanatoria physicians to do the best for their patients and partly from the increasing armamentarium, both medical and surgical, available for treatment. Earlier diagnosis by mass radiography or otherwise has, of course, an opposite effect if the early case can be admitted at once, but often this cannot be done. It is deplorable that such patients have to wait for admission while the most favourable moments for curative treatment are slipping away and while they are possibly becoming sputum-positive, to the danger of their families. In 1938 as many as 65% of patients admitted to sanatoria in England and Wales were classified as intermediate or advanced cases.

Alterations in Ages at Death

There is another aspect of the epidemiology of tuberculosis which should be emphasized—namely, the marked differences between the resistance of races that have for long been exposed to tuberculosis and those that have not. Calmette (1923) presented the evidence fully and I have summarized it (Stallybrass, 1931). There can be no question of the reality of these racial differences in resistance to tuberculosis. Cobbett (1925) expanded Calmette's law of tuberculosis into the following: "Peoples are more resistant to the attack of the infectious diseases of their own countries and districts than to that of foreign diseases with which neither they nor their ancestors have been accustomed to come in contact." Among pygmies brought into this country from Africa the disease is rapidly fatal and epidemic in incidence; among Jews who have lived for centuries in towns, often in ghettos, the resistance is high. This clinical difference in the course of the disease is accompanied by a considerable variation in the age at death. Drolet (1930) has published a diagram contrasting the distribution of male tuberculosis deaths per 1,000 among negroes and Jews respectively age by age in 1926-8 in New York City. Both races lived under closely similar housing conditions. This diagram emphasizes two points: (a) the mortality in the first four years of life was about 60% higher among negroes than among Jews; and (b) the peak age at death is about 25 years among negroes and about 45 years among Jews.

difference in modal age at death of about 20 years. Such differences of age at death may be regarded as due to the survival of the fittest following Darwinian selection over a long period.

In Liverpool in the past 90 years there has been a marked reduction in the *deaths* attributed to tuberculosis in the first five years of life. Bearing in mind what was previously said in relation to meningitis and tabes mesenterica, the proportion of infant deaths to the total mortality has markedly fallen. In 1860 it was 15.8% and in 1935 0.8%, but it showed a rise in 1942 to 2.6%, mainly attributable to meningitis. Similar but smaller fluctuations occurred in all ages up to 5 years.

Again in Liverpool, the peak age at death was 20-25 years in 1860-70; that period included the Lancashire cotton famine. It rapidly rose to 30-40 years by 1875, and has so remained with the single exception of 1943—following the air raids—when it fell back to 25-30. There has in fact been a considerable shift towards older ages, even up to 90. In Copenhagen and Stockholm there has been a shift towards younger ages in the *death rates* by ages.

The changes in the Liverpool figures closely simulate Drolet's racial differences. But it is hardly credible that Darwinian selection could have affected these changes in a mere 80 years: social and economic changes seem to provide a more probable explanation.

Differential Sex Mortalities

In 1838, when deaths were first registered, the female tuberculosis death rate was higher than the male. The rates crossed in 1860, and by 1925 the males constituted 60.2% of the total. With the increasing entry of women into industry the *proportion* of female deaths has somewhat increased. In 1901-10 (Newsholme, 1923) there was in urban districts a peak age at 45 for men and at 35 for women, the male rate at those peak ages being 166 per 100,000 in excess of the female rate. In rural areas both sexes had a peak mortality at 25 years and the male excess was slight. The differences in the peak death rates between the sexes had been considerably reduced by 1938-9, being equal to a male excess of 25 per 100,000, but the male peak age had further advanced from 45 to 55 years.

These age and sex differences and changes are closely related to occupational causes. Before the industrial age women worked in the home and were exposed to infection from cases never isolated. Exposure to industrial conditions, especially silica dust, introduced a more chronic form of tuberculosis affecting men; lately the increase in the number of women in industry has increased their exposure to infection, and this was especially true in wartime; at the same time advances in the hygiene of the dangerous trades have tended to reduce the male excess. It would be of interest to know at the next census just what part of the male excess is attributable to the excess tuberculosis mortalities of these dangerous trades. Alcoholism plays a part in the excess male mortalities, but less so than in the past.

Results of Tuberculin-testing

One of the great advances in recent years in our knowledge of the epidemiology of tuberculosis arises from the increasing use of tuberculin for testing that sensitization of individuals which is caused by infection with the tubercle bacillus, whether natural or artificial. The refinements of the Mantoux test with its increasing test dosage of tuberculin have improved the sensitiveness of the method and rendered it superior to the von Pirquet test, which may be negative when the Mantoux test is positive. For this purpose old tuberculin, which contains two proteins of differing

antigenic properties, is commonly used, but in the United States and Denmark P.P.D. (purified protein derivative) is in general use. In either case it is a test of allergic sensitization and not of resistance—much less immunity—but the parallelism between allergy and resistance appears to be sufficient to permit the measurement of the allergy as a rough test of the degree of resistance. It is unfortunate that owing to variations in the strength of the tuberculin used for testing—noticeably in Norway—the results of tuberculin-testing in one country are often not strictly comparable with those in another.

From the extended use of the Mantoux test it is now known that effective infection with *Mycobacterium* is not so widespread, especially in rural populations, as appeared to be the case early in the twentieth century, *pace* Naegeli, Burkhardt, and von Pirquet; later studies of Schuermann (1929) showed pulmonary lesions in only 1.7% of necropsies of those under 30 years of age and 11% of those between the ages of 30 and 45. Many negative tuberculin reactions are found among primitive communities (Topley, 1933), a high proportion of positives among most civilized communities, and a lower percentage of positives in the United States and Scandinavia, especially among those who, from rural location or economic shelter, have probably escaped contact with the bacillus. In Stockholm, states Heaf (1947), at 7-8 years only 8% were reactors and at 13-14 years only 26%. In Stavanger only 22.4% were positive at 10-20 years. In Denmark nation-wide figures show that two-thirds of the population are negative at 14 years; at 20-23 years the proportion is one-third (Holm, 1946). But in Scandinavia, where the use of B.C.G. is rapidly extending, the aim is to raise the proportion of positive reactors artificially. It is considered almost antisocial not to be tuberculin-positive.

The results of x-ray examinations largely confirm the results of the tuberculin tests. Holm states that a great part of those undergoing natural conversion show very prompt x-ray changes. Nevertheless the results of the Prophit Survey (1948) revealed that radiologically visible changes were seldom found when a recent primary lesion had caused a Mantoux-conversion from negative to positive—namely, 7.6% among nurses and 8.5% for London medical students. Malmros and Hedvall (1938) reported 13.9% of the naturally Mantoux-converted showing primary lesions. The Prophit Survey further states that the morbidity following primary infection was proportional to the degree of tuberculin sensitivity noted on natural Mantoux-conversion.

It should be the ultimate objective in tuberculosis control finally to eliminate these *natural* Mantoux-conversions. The Prophit Survey considers that "at the present stage of tuberculosis epidemiology it would be vain to hope to suppress all sources of infection and protect every person from even small infections. Nevertheless, no rational theory of prevention can be based on the theory that stray small infections produce a beneficial immunity. An entirely uncontrolled immunizing process responsible for many thousands of deaths can have no scientific support. Public health measures should therefore be directed to reducing exposure to a minimum. . . . Certainly even if occasional infection cannot at present be prevented much heavy repeated exposure is largely avoidable. The Prophit results have confirmed the importance of repeated exposure as one of the factors in the development of tuberculosis."

Obviously such a view excludes any belief that exposure to natural infection by bovine bacilli can serve any valuable purpose. The figures (Prophit Survey, 1948) relating to the marked decline in tuberculosis mortality in the United States at a time when bovine tuberculosis in cattle has been almost eliminated and pasteurization has become general show that the virtual elimination of infection of

bovine bacilli in man has not served to retard the concomitant fall in respiratory tuberculosis mortality.

But such a view will not be applicable to the use of avirulent tubercle bacilli for artificially increasing resistance to tuberculosis, of which the Bacille Calmette-Guérin is the only strain that has undergone prolonged test; still less would it apply to the vole bacillus, now under trial. Indeed, the Prophit Survey Report says: "Serious consideration should be given to the possibility of undertaking in this country [my italics] investigations into the vaccination of tuberculin-negative young adults, such as hospital workers, entering conditions of particular exposure." The same action is equally indicated in relation to any tuberculin-negative contacts of open cases of tuberculosis.

The Prophit Survey has also thrown light upon the vexed question whether tuberculosis in young adults represents infection, reactivation, or reinfection. The application of Mantoux-testing and radiography enables the first to be largely eliminated so far as the tuberculin-negative are concerned. Formerly much importance was attached to reactivation of old foci, but the proportion of cases of reactivation is possibly smaller than formerly believed. Reliable observations show it to be probable that reactivation of a calcified focus seldom occurs, as the bacilli contained therein are dead, though Blacklock (1947) was able to isolate bovine bacilli from calcified glands. This outlook stresses the importance of the prevention of massive and/or repeated infection.

Control of Contacts

In the prevention of infectious disease the control and immunization of contacts often play the most important part. The greatest attention has been given to the examination and observation of contacts of tuberculosis, but of control in the epidemiological sense there has been little in this country. In France and elsewhere the "œuvre de Grancher" consists in the removal of the infants of tuberculous parents—especially mothers—for an indefinite period. This can be regarded as a counsel of despair: the removal of the patient would appear to be the better plan if no other solution were possible. In Scandinavia the newborn infants of tuberculous parents are vaccinated at birth with B.C.G. and segregated for ten weeks or thereabouts because of the comparatively slow development of immunity in the infant: they are then returned to their homes. Heaf (1947) states that no vaccinated infant in any of the Scandinavian countries has so far succumbed to tuberculous meningitis or miliary tuberculosis. Contrast with this the figures relating to Black Notley Sanatorium, where the tuberculous mother is confined under the most favourable circumstances and is instructed in the prevention of infection of her child. Despite these precautions, of 11 children who were in contact with sputum-positive mothers four contracted tuberculosis and two died—i.e., 36% morbidity and 18% mortality.

There can be no question whatever about the importance of familial contact with tuberculosis. Deeny (1947) showed that in a town in Northern Ireland one-third of all the deaths from tuberculosis occurred in houses where there had been two or more such deaths. Opie and McPhedran's (1926) figures contrasting the rapid development of Mantoux-positive reactions in the child contacts of tuberculous patients in comparison with non-contacts fully demonstrate the importance of infection in the home. Stewart *et al.* (1937) obtained figures of the actual morbidity of contacts in rural areas of Tennessee. They showed that the incidence of subsequent cases in a tuberculous household was 2.06% in the year of onset, 1.33 in the first year following contact with the index case, 1.15 in the second, and lesser figures in the succeeding years.

We may conclude that in the causation of tuberculosis there is an uneasy balance between an increasing resistance—not to infection, but to morbidity and mortality, such resistance being partly racial or genetic, partly nutritional, the latter being closely related to the increase in the real value of wages during the nineteenth century—and massive and/or repeated infection, especially at susceptible ages, as in infancy, and later in adolescence and young adult life. Such massive infection has been greatly reduced throughout the past 80 years, and, speaking generally, increasingly so during the present century. The reduction of exposure in infancy results in an accumulation of susceptible tuberculin-negative adolescents and may cause a relative increase in tuberculosis in young adults because the risks of repeated exposure are much greater in the tuberculin-negative. This susceptibility can be overcome to a considerable extent by the production of artificial resistance. Silicosis, and possibly other adverse industrial conditions, may account for greater and later male mortalities compared with those of females.

Vaccination Against Tuberculosis

B.C.G. is a living avirulent strain of the bovine bacillus which, after 230 successive cultures over a period of 13 years, was employed in 1922 for the vaccination of children born in tuberculous families. It gives a "normal" tuberculin, but has never been recorded as having returned to virulence or produced a general infection in any of the more than 3,000,000 children said to have been vaccinated with it in the past 26 years. Nevertheless the Pasteur Institute has not yet accorded it the status of "virus fixe." All the cultures now used for inoculation are derived from this strain. The Lübeck tragedy was caused by the admixture of virulent bacilli with the B.C.G., and those responsible were convicted of gross carelessness. It is for this reason that B.C.G. should be produced in a laboratory entirely dissociated from other bacteriological work.

Recently by the kindness of Drs. Bøe and Krohn I was enabled to see the Nasjonalforeningens B.C.G. Laboratorium in Bergen, where all the B.C.G. used in Norway is freshly prepared every week; the vaccine should be used within ten days of production, as it is apt to weaken owing to the death of the bacilli. It should therefore be kept in a refrigerator or ice-box. Two strengths are produced, clearly distinguishable by sight, one being obviously turbid and forty times as strong as the other. The stronger one is used only for transcutaneous inoculations. The more dilute emulsion is clear, and is employed for intradermal inoculation. Myren (1948) states that on a certain occasion the stronger emulsion was accidentally used for intradermal inoculation of 66 persons; localized ulceration was the only untoward effect, and the immunity produced appeared to be more durable than ordinarily. However used, it is important, as Holm (1946) points out, that the virulence of the B.C.G. strain should be kept at a proper level, and the bacteriologist at the B.C.G. Laboratory should be kept informed of the results of every inoculation.

The intradermal method has been more generally used, 0.1 ml. of vaccine being injected. It has the advantage that the dosage is more certain; it has the disadvantage that if through poor technique the injection is given subcutaneously a small localized abscess with enlargement of neighbouring lymph glands will ensue. Bacilli from such an abscess are, however, avirulent when cultured. Even so injected the discomfort is minimal and not incommodious.

The transcutaneous or multipuncture method does not suffer from this disadvantage. Birkhaug (1944) gives theoretical grounds for the belief that the skin itself is an antibody-producing organ. Birkhaug's original instrument

released forty needle-points automatically; its use has been given up in Bergen, and five or fewer applications of a holder fitted with eight gramophone needles are substituted. The skin is first cleaned with ether, the thick emulsion vaccine is then spread from a syringe with a needle, and the multipunctures are made. Statistical material is still being collected to evaluate this process. In Bergen, of 10,568 inoculated some 7,894 were controlled after two months; of these, 7,472 (94%) were Mantoux-positive. This result is in no way inferior to those of the intradermal method (personal communication). The objection that Birkhaug's instrument was difficult to sterilize has thus been overcome.

It is a strict rule that all persons must be Mantoux-tested before inoculation, and only those who do not react to 100 tuberculin units (Holm, 1946) should be inoculated. In a few cases men have been inoculated by accident during the allergic state without any untoward result—i.e., there is no negative phase, though an accelerated reaction may occur (Koch's phenomenon). The normal response is that at the end of three weeks raised papules appear at each puncture point. In six weeks a positive Mantoux reaction is usually obtained. In infants this may take ten weeks or even more. For infants 16 punctures, for women and children 24 punctures, and for men 40 punctures are given (Birkhaug, 1944). The use of B.C.G. involves not only the application of the vaccine in the appropriate way but also, if statistical fallacies are to be avoided, subsequent protection from virulent infection until sensitivity is demonstrated.

Results of Vaccination

So much for the methods; what are the results? Space does not permit a full description of even the better-documented experiences relative to but a small fraction of the 7,000,000 persons who have, according to Myers (1948), been vaccinated with B.C.G.; the majority of these have received the vaccine orally. The matter has been discussed by Holm (1946), Aronson and Palmer (1946), Wilson (1947), Heaf (1947), Levine (1947), Malmros (1948), Wallgren (1948a, 1948b), Rosenthal *et al.* (1948), and Aronson (1948). An Empire Conference in London, international conferences in Washington and Paris, and annual conferences in Scandinavia have taken place. The examples below—mainly from Scandinavia, where B.C.G. inoculation is practised on a national scale—are recorded for their apparent success. Given singly, they might not carry conviction to the critical mind; taken collectively, even the hypercritical cannot fail to reach the conclusion that in the varied circumstances the use of B.C.G. has been not merely harmless but endowed with marked protective properties.

1. In the Swedish district of Örebro (Malmros, 1948), in a population of 230,000 there have since 1942 been 22,413 vaccinated with B.C.G.—i.e., 8,040 newborn, 7,836 children over 1 year, and 6,537 adults. During the period 1942–7 only one vaccinated person has been regarded as tuberculous: a nurse, twice vaccinated, developed pleural effusion; there was no definite evidence of tuberculosis. This example does not provide a contemporary control.

2. The island of Bornholm, in Denmark. The comparison here is before and after a period of intensive testing and inoculation since 1945, by which time 10,337 young persons—i.e., 23.3% of the population—were vaccinated (Olsen, 1947; Malmros, 1948). A marked fall in the incidence of tuberculosis resulted at just the ages—namely, 7–35—at which vaccination took place. Notifications fell from 134 in 1935–40 to 82 in 1941–6. The proportion vaccinated is now 27%; 98% of those found tuberculin-negative and offered B.C.G. accepted.

3. Hyge's report on an outbreak in the Aurehoej State School in Denmark (Holm, 1946) has the force of a laboratory experiment, but was excluded by Wilson from his survey of the subject. The school had had Mantoux-testing followed by

voluntary B.C.G. vaccination, the last tuberculin-testing being in December, 1942. The 368 girls were then in three classes: (a) naturally Mantoux-positive, (b) Mantoux-negative who had had B.C.G., and (c) Mantoux-negative who had not received it. Then in January and February, 1943, an influenza-like outbreak occurred, mainly affecting the unvaccinated Mantoux-negative. Suspicion of tuberculosis was aroused by the occurrence of a case of erythema nodosum. It was found that the source of infection was a teacher who had taught in an ill-ventilated classroom while suffering from a supposed "cold," though gastric lavage later revealed tubercle bacilli. Taking the 305 scholars in her class or classroom, the following results were found:

(A) 105 naturally positive. Four cases of genuine pulmonary tuberculosis. Morbidity, 3.8% \pm 1.95.

(B) 106 negative reactors given B.C.G. Two cases of genuine pulmonary tuberculosis. Morbidity, 1.9% \pm 2.6.

(C) 94 negative reactors. December, 1942. Seventy rapidly inverted to positive reactors. Of these 70 inverters 41 showed x-ray changes and 37 had tubercle bacilli; 55 had initial symptoms, 10 had pleurisy (3–11 months after infection), and 1 had peritonitis. Taking those with symptoms and x-ray changes, the morbidity was 43.6% \pm 10.6.

Among the 63 girls not using this classroom there was no illness, and none of the 11 Mantoux-negative reactors in this group became ill. These figures also bear out the belief, held in Scandinavia, that persons who have undergone Mantoux conversion after B.C.G. vaccination, if they do develop signs of tuberculosis, usually have a short illness of two or three months and can then leave hospital and have no relapse. Comparisons between A or B on the one hand and C on the other are statistically significant.

4. Heimbeck's figures (per 1,000 observation years) relative to the incidence and mortality of nurses at Oslo (Wallgren, 1948b):

	Morbidity	Mortality
B.C.G.-vaccinated	24.1	2.1
Non-vaccinated	141.2	14.6

5. Rosenthal's experience (Rosenthal *et al.*, 1948) with newborn children born in Chicago during ten years. The mothers were interviewed in the hospital and the children vaccinated before they left the hospital. Contrary to what is done in Scandinavia, no isolation of the child before or after vaccination was carried out.

	Non-Contact		Contact	
	Vaccinated	Control	Vaccinated	Control
Person-years and proved ..	5,627	6,032	517	284
Tuberculosis rate ..	1.95	6.46	3.86	17.60
Hospitalized ..	0.17	2.48	1.98	17.60
Deaths ..	1	7	0	4
Death rate ..	0.17	1.16	0	14.0
Deaths from other causes ..	27	22	3	2

Wilson (1947), after a lengthy review of the present position in regard to B.C.G., concluded that, whilst a presumptive case for the value of B.C.G. has been established the documentary evidence is insufficient to estimate the degree of protection it affords, and he makes certain other criticisms which, in the opinion of Malmros and Wallgren, disregard much of the Scandinavian evidence quoted above.

In September, 1946, a conference on B.C.G. vaccination was held in the offices of the Tuberculosis Control Division of the United States Public Health Service in Washington D.C. The deliberations of the distinguished leaders in tuberculosis from the United States and elsewhere concluded from the studies presented to the conference that B.C.G. vaccination confers increased resistance to tuberculosis for the limited period covered in those studies, and that medical literature reveals no proved cases of progressive disease as a result of B.C.G. vaccination, which can

be done without causing severe local reaction. In these studies B.C.G. converted a large percentage of non-reactors into reactors. The need for revaccination and the time interval between vaccination required further study. It was recommended that a single laboratory be established to produce vaccine for the whole country for use in research programmes prepared by the conference, but that it should not be produced commercially.

In America, with an economic outlook that is favourable in comparison with that of Europe and a falling tuberculosis mortality, an expectant outlook to B.C.G. may be permissible. In Scandinavia the question of the value of B.C.G. is now regarded as a *chose jugée*; it has definitely been adopted there on a national scale. In Norway B.C.G. vaccination is compulsory for certain grades of the population—e.g., the eighth-grade scholars. At the meeting of the Northern Tuberculosis Physicians in Oslo in July last the prevailing opinion was that all children ought to be vaccinated from infancy and that it should be repeated in childhood. It is difficult to become a nurse in Scandinavia without being Mantoux-positive or becoming so.

In this country the position is such that we cannot afford not to have available every resource in the combat against tuberculosis; we cannot possibly be complacent in our attitude towards its prevention. The control of contacts is gravely hampered: I have in mind a family of four children, successively infected from a tuberculous mother and all admitted to hospital, whose illnesses, according to Scandinavian experience, could have been prevented. With the shortage of nurses and of hospital beds at least those Mantoux-negative nurses who wish it should receive the degree of protection that B.C.G. affords. As a minimum programme B.C.G. should be prepared at a separate central laboratory, say in London, as is done in each of the three Scandinavian countries. It does not seem to be necessary to wait another five or ten years, by which time experiments may answer some of the remaining questions concerning B.C.G. vaccination, before it becomes available for more general use under conditions of control such as exist in Scandinavia.

Wells (1947) has vaccinated 121 persons with the vole bacillus, and has not observed anything but localized disease or any enlargement of lymph glands. He states that sensitivity to tuberculin following vaccination with the vole organism is greater and occurs earlier than that following B.C.G. Animal inoculation by itself will secure a fixed level of virulence. Tytler stated that its safety "appears unquestionable, but can hardly be greater than that which practice has proved for B.C.G." (See also Wells, 1946.)

If adequate control of contacts is to be carried out in this country the staff engaged in the purely preventive side of tuberculosis control must be augmented. If from largely being observers they are to be engaged in actively producing immunity their numbers should be at least doubled. In Scandinavia the proportion of tuberculosis officers, measured either by population or by number of cases, is everywhere considerably higher than in Great Britain. When the people are ready to accept vaccination we should be ready to give it. We need a "new look" in tuberculosis control.

Summary

The great decline in tuberculosis mortality that occurred in the later two-thirds of the nineteenth century was caused mainly by improvement in socio-economic factors of which the rise in the real value of wages is the best gauge. This rise in value resulted from the increasing productivity of machines; it facilitated better nutrition and housing, and in the home it involved a lessened exposure of women, and more especially children, to infective cases. For a period bad conditions in industry weighted the conditions against men, silicosis

causing a high mortality in later male life; the male deaths now considerably exceed the female.

In 1911 a factor previously unimportant followed sanatorium benefit, which provided accommodation for the segregation of earlier cases and became increasingly effective. Previously the deaths in Poor Law hospitals took place there largely as a result of destitution. Despite the pause in the rise in the real value of wages—becoming an actual decline in each of the two wars—the tuberculosis death rate continued to fall—markedly so in tuberculous meningitis in infancy and childhood. It is assumed that this was mainly due to the segregation of infective cases, though improved treatment was not without result. Largely owing to the shortage of nurses, this factor was inadequate during and after the last war and can no longer be relied on. In Scotland tuberculosis mortality is increasing, largely among young adults.

Family contacts of known cases form at least one-third of cases of tuberculosis, and the infection of nurses is a serious defect in our present system. Vaccination with B.C.G. (or the vole bacillus) appears to meet present pressing needs, especially as a preventive for the two classes just mentioned. Twenty-five years' experience of B.C.G. has shown it to be harmless; it is universally adopted in Scandinavia, where its use—compulsory in Norway—has led to a marked decline in incidence and mortality among those receiving it. It is recommended by the World Health Organization that it should be provided free; it should be produced centrally and be used, in the first instance, for the prevention of tuberculosis among known contacts of cases.

REFERENCES

- Aronson, J. D. (1948). *Amer. Rev. Tuberc.*, 57, 96.
 — and Palmer, C. E. (1946). *Pub. Hlth Rep. Wash.*, 61, 802.
 Birkhaug, K. (1944). *Acta med. scand.*, 117, 274.
 Blacklock, J. W. S. (1947). *British Medical Journal*, 1, 707.
 Burkhardt, A. (1906). *Z. Hyg.*, 53, 139.
 Calmette, A. (1923). *Tubercle Bacillus Infection and Tuberculosis*. Translated by Soper and Smith. Baltimore.
 Cobbett, L. (1924-5). *Tubercle, Lond.*, 6, 577.
 Deeny, J. (1947). *J. med. Ass., Eire*, 21, 82.
 Drolet, G. J. (1930). *J. prevent. Med.*, 4, 115.
 Ewart, R. G. (1923). *Proc. R. Soc. Med.*, 16, 1.
 Faber, K. (1938). *Acta tuberc. scand.*, 12, 287.
 Greenwood, M. (1935). *Epidemics and Crowd Diseases*. London.
 Hart, P. D'A., and Wright, G. P. (1939). *Tuberculosis and Social Conditions in England*. N.A.P.T., London.
 Heaf, F. (1947). *Mon. Bull. Min. Hlth*, 6, 184.
 Holm, J. (1946). *Pub. Hlth Rep., Wash.*, 61, 1298.
 — (1948). *Amer. Rev. Tuberc.*, 57, 106.
 Lee, Alice (1915). *Biometrika*, 10, 530.
 Levine, M. I. (1947). *Amer. J. Publ. Hlth*, 37, 1089.
 Malmros, H. (1948). *British Medical Journal*, 1, 1129.
 — Hedvall, E. (1938). *Studien über die Entstehung und Entwicklung der Lungentuberculose*. Leipzig.
 Medical Research Council (1942). *Spec. Rep. Ser. med. Res. Coun.*, Lond., No. 246. Repts of Comm. on Tuberculosis in Wartime. H.M.S.O., London.
 Ministry of Health (1946). *On the State of the Public Health During Six Years of War*. H.M.S.O., London.
 Myers, J. A. (1948). *Amer. Rev. Tuberc.*, 57, 107.
 Myren, J. (1948). *Tidsskr. norske Lægeforen.*, 68, 103.
 Naegeli, O. (1900). *Virchow's Arch.*, 160, 426.
 Newsholme, A. (1905). *The Prevention of Tuberculosis*. London.
 — (1923). *Elements of Vital Statistics*. 2nd ed. London.
 Opie, E. L., and McPhedran, F. M. (1926). *Amer. Rev. Tuberc.*, 14, 347.
 Pearl, Raymond (1940). *Medical Biometry and Statistics*. Philadelphia.
 Power, W. H. (1908). "On Sanatoria for Consumption." Suppt. to Rep. to Med. Off. to L.G.B. 1905-6.
 Prophit Survey, Royal College of Physicians (1948). *Tuberculosis in Young Adults*. London.
 Ransome, A. (1915). *A Campaign against Consumption*. Cambridge.
 Rosenthal, S. R., Leslie, E. I., and Loewinson, S. (1948). *J. Amer. med. Ass.*, 136, 73.
 Schuermann, P. (1929). *Ver. Dtsch. pathol. Gesellsch.*, 24, 179.
 Stallybrass, C. O. (1931). *The Principles of Epidemiology*. London.
 — Also unpublished "Observations concerning Tuberculous Meningitis."
 Stewart, H. C., et al. (1937). *Amer. J. Hyg.*, 28, 527.
 Topley, W. W. C. (1933). *An Outline of Immunology*. London.
 Von Pirquet, C. E. (1911). *Arch. intern. Med.*, 7, 259, 383.
 Wallgren, A. J. (1948a). *Lancet*, 1, 237.
 — (1948b). *British Medical Journal*, 1, 1126.
 Wells, A. O. (1946). *Spec. Rep. Ser. med. Res. Coun.*, No. 259. H.M.S.O., London.
 — (1947). *Tuberculosis in the Commonwealth*, p. 154. N.A.P.T., London.
 Wilson, G. S. (1942). *Pasteurization of Milk*. London.
 — (1947). *British Medical Journal*, 2, 855.

AN ANALYSIS OF 200 CASES OF ANKYLOSING SPONDYLITIS

BY

N. R. W. SIMPSON, M.B., B.S., D.Phys.Med.
Supernumerary Medical Registrar, Royal National Hospital for
Rheumatic Diseases, Bath

AND

C. J. STEVENSON, M.B., M.R.C.P.
Surgeon Lieutenant, R.N.

In this paper is presented an analysis of 200 cases of ankylosing spondylitis, together with a review of some current ideas on the disease. No attempt is made to cover all its aspects, since the historical and other features have been adequately described by others, notably by Buckley (1945). Data were obtained from the hospital notes of cases admitted to the Royal National Hospital for Rheumatic Diseases, Bath, during the period 1938-48. These do not represent the total number of cases admitted during this period. The records for a number of years were lost as a result of enemy action, and in many other cases the notes were found to be inadequate. Apart from this no selection of cases was made, and the figure was limited to 200 for statistical purposes. All were proved cases of ankylosing spondylitis from both a clinical and a radiological standpoint.

Results of Investigation

Sex Incidence.—There were 158 (79%) males and 42 (21%) females. This percentage of women is higher than has been recorded by other workers, with the exception of Swaim (1939), Gilbert Scott (1942), and Fletcher (1944).

Age of Onset.—The incidence is shown in Table I. In no case did the onset occur before the age of 10 years and in only three cases was it before 15. The results are in conformity with those found by Buckley (1935) and other observers, except that a rather larger number of cases occurred between the ages of 15 and 20.

TABLE I.—Age of Onset

Age	No. of Cases	Percentage
10-20 years	42	21
20-30 "	80	40
30-40 "	45	22.5
40-50 "	21	10.5
50-60 "	11	5.5

In one case the age of onset was not recorded.

Initial Diagnosis.—Only 102 (51%) of the cases were admitted to this hospital with a correct diagnosis already made. This lends further weight to the suggestion of Gilbert Scott (1942) that x-ray examination of the sacro-iliac joints should be a routine investigation in all cases of persistent low-back pain.

Associated Factors

Sepsis.—There was a history or evidence of focal sepsis in 22 cases. This did not include dental caries without abscess formation. The sites of focal sepsis were catholice in distribution, and only three were confined to the pelvis. This is of interest in view of the suggestion made by Buckley (1945) of the importance of infection from the pelvis in this disease.

Trauma.—Thirty (15%) patients gave a history of trauma, which they associated in some way with the onset of symptoms. This trauma varied in severity and anatomical distribution, and the assessment of its significance has proved impossible.

Exposure to Excessive Fatigue and Shock.—Thirteen (6.5%) cases gave a history of this, but taking into consideration the war years and occupational hazards this was not regarded as extraordinary or significant.

Childbirth.—Five of the 42 women patients stated that their symptoms dated from the birth of a child. Others were unaffected by childbirth. A follow-up of this finding might be profitable in view of the pelvic trauma and the physiological changes in the sacro-iliac joints at parturition.

Family History.—In only two cases was there a family history of ankylosing spondylitis. In three cases there was a family history of gout, and 31 revealed a family history of acute or chronic rheumatism.

Past History.—There appeared to be no significant relation between any previous illness and the condition. In only 18 cases was there a history of fibrositis or other rheumatic condition, and in certain of these cases the nature of the complaint seemed vague and of no statistical value.

Occupations.—These were classified as: (1) occupations involving physical effort—heavy 41 (20.5%), medium 92 (46%), or light 32 (16%), and (2) sedentary occupations 30 (15%). In five cases it was not recorded. In this series occupation appears to have little relation to the aetiology of the disease.

Iritis.—In 12 (6%) cases iritis was found. Campbell (1947) and Fritz (1937) report a higher incidence.

Subcutaneous Nodules.—In no case, in spite of a diligent search, were nodules found. In view of their incidence in rheumatoid arthritis this is significant.

Chest Expansion.—In five patients this was more than 3 in. (7.5 cm.), in 20 it was between 2 and 3 in. (5 and 7.5 cm.), in 22 between 1½ and 2 in. (3.75 and 5 cm.), in 27 between 1 and 1½ in. (2.5 and 3.75 cm.), and in 52 less than 1 in. In 74 cases it was not recorded. The vital capacity was estimated in 15 cases with the following results: 5,000-4,000 ml., 1; 4,000-3,000 ml., 2; 3,000-2,000 ml., 5; and below 2,000 ml., 7. In the majority of cases great improvement was noted before discharge. This supports the value of institutional treatment with adequate physiotherapy, especially breathing and postural exercises, and the use of a plaster bed in the acute stage.

Loss of Weight.—Initially 108 (54%) patients were found to have lost weight, in 26 (13%) there was no loss, and in 66 (33%) this point was not recorded.

Type of Onset.—In 62 (31%) cases the onset was acute and of such severity that the patient was confined to bed; in 114 (57%) it was insidious, usually over years; and in 24 (12%) the type of onset was not recorded.

Initial Symptoms.—These consist of pain and/or stiffness: the site in order of frequency is shown in Table II.

TABLE II.—Initial Symptoms

Site	No. of Cases	Percentage
Low back	75	37.5
Low back and other sites	33	16.5
Hips	23	11.5
Low back and hips	20	10.0
Knees	15	7.5
Sciatic pain	12	6.0
Feet and ankles	6	3.0
Cervical spine	5	2.5
Dorsal and cervical spine	4	2.0
Dorsal spine	3	1.5
Hips and knees	1	0.5
Cervical and knees	1	0.5
Shoulders	1	0.5
Unrecorded	1	0.5

Corrected Suspension Stability and Sedimentation Rate.—Abnormal readings at some stage were found in 182 (91%) The grossly abnormal readings were seen when the disease process appeared to be most extensive and most active

It is our impression that nearly all cases of ankylosing spondylitis will show an abnormal corrected suspension stability and erythrocyte sedimentation rate during the active phase of the disease. The figures obtained in many cases were very abnormal, even more so than those we usually see in rheumatoid arthritis.

Haematocrit.—In 154 (77%) there was a low haematocrit reading. This is in conformity with the view that cases of ankylosing spondylitis show a secondary anaemia during the active phase. Red cell counts supported this in the great majority of cases. White cell counts showed little gross abnormality, but Arneth counts revealed a shift to the left in 20 out of 24 recorded cases.

Blood Proteins.—Plasma protein estimations in five cases showed little gross abnormality except an occasional high total protein figure and a consistently high value for fibrinogen. Albumin, globulin, and the A./G. ratio were always within normal limits. This is in conformity with a larger series done recently in this centre. These results are in contradistinction to the findings in rheumatoid arthritis, in which abnormal plasma proteins were found in approximately 50% of cases (Simpson and Hall Brooks, 1948).

Plasma Uric Acid and Blood Uric Acid.—These were estimated in 178 (89%) cases and were normal in all except four cases in which the figure was slightly raised, but the plasma uric acid was never above 7.5 mg. per 100 ml.

Wassermann and Kahn Tests.—At least one of these tests was done in all cases, and without exception the result was negative.

Alkaline and Acid Phosphatase.—In only 27 cases were these results recorded and in only four were the readings raised—in two the acid phosphatase was 7 and 6.6 units, and in the other two the alkaline phosphatase readings were 15 and 11.5 units (King method). This is in conformity with the opinions expressed by Desmarais (1948), and is of interest in view of the findings of McWhirter (1945) and others.

Muscle Biopsies.—This investigation was carried out in 18 cases and none showed the changes found in rheumatoid arthritis. Muscle biopsies performed in this hospital on cases other than in this series also showed no abnormality as seen in rheumatoid arthritis (Desmarais, Gibson, and Kersley, 1948).

Aurotherapy.—Thirty-six patients had been given courses of gold—20 showed no subjective or objective improvement, in nine there was some subjective improvement, and in seven the results were not recorded.

X-ray Therapy.—It is our custom to give a series of six applications, each of 225 r, in a period of two to three weeks to each affected part. Of 99 cases receiving such treatment 68 showed improvement. This consisted chiefly in relief of pain and stiffness. We find it difficult to say whether the disease process was ever arrested, but we are at present engaged on a follow-up of patients from this point of view and hope to publish the results in the near future. Fourteen cases were not improved from the point of view of pain or any other symptoms. In 17 cases the result was not recorded. We consider that the result of deep x-ray therapy, especially the relief of pain, justifies this form of treatment in all cases, and that it should be initiated as soon as possible.

Radiographic Findings

For the sake of convenience we divided our results into four types (Table III). In type 1 bony ankylosis had occurred, in type 2 gross changes but no ankylosis were found, type 3 showed osteoporosis or other minimal changes alone, and in type 4 there was no abnormality.

TABLE III.—Analysis of X-ray Findings

	Total	Type 1	Type 2	Type 3	Type 4
Sacro-iliac joints ..	173	155	18	0	0
Lumbar ..	167	138	7	16	6
Dorsal ..	120	75	10	23	12
Cervical ..	88	65	7	4	12
Hips ..	141	28	46	27	40
Shoulders ..	12	0	2	9	1
Knees ..	14	4	2	5	1
Hands ..	32	0	2	11	19
Feet ..	4	0	0	3	1
Ankles ..	1	0	0	1	0
Symphysis pubis and ischium ..	21 showed "wooliness"				

Discussion

Certain workers, notably in the U.S.A., favour the concept that the disease is a variant of rheumatoid arthritis (Boland and Present, 1945; Lennon and Chalmers, 1948). From a study of this series of cases we regard it as a separate entity. Our reasons for so doing are: (1) in no case has a subcutaneous rheumatic nodule been found; (2) muscle biopsies have never shown the changes associated with rheumatoid arthritis; (3) plasma protein values are not similar to those seen in rheumatoid arthritis; (4) the high incidence in males, the beneficial effect of deep x-ray therapy, and the ineffectiveness of chrysotherapy are unlike the findings in rheumatoid arthritis; (5) the x-ray appearances as seen in the spine, hands, and other joints are unlike those normally seen in typical rheumatoid arthritis; and (6) permanent deformities typical of rheumatoid arthritis were not present in the hands or feet in any case in this series.

In 75 (37.5%) cases the initial symptom was pain and/or stiffness in the low back. In 53 (26.5%) other cases symptoms were referable to the low back and other sites concurrently. Initial peripheral joint involvement (elbows, wrists, hands, knees, ankles, feet) accounted for 21 (10.5%) cases. In 12 (6%) peripheral joint involvement occurred initially in combination with involvement of other joints. This is of interest in view of the findings of peripheral joint involvement by Boland (1946) and Boland and Shebesta (1946), whose figures vary between 18 and 30%.

An analysis of our x-ray results shows agreement with the views expressed by other authorities, especially Steven (1947). It will be noted that bony ankylosis had occurred in 155 of the 173 cases in which x-ray films of the sacro-iliac joints were available. This shows that in the majority of our cases we were dealing with the advanced stage of the disease, but earlier x-ray films were available of a certain number of these cases before ankylosis had occurred. We are agreed that the earliest changes seen radiologically are osteoporosis of the affected bones (sacrum and ilium) and a subarticular zone of osteosclerosis. We are not clear which of these changes is primary or whether they occur simultaneously.

The next most frequent site to be involved is the lumbar spine. There was no case in this series in which we found involvement of the lumbar spine without involvement of the sacro-iliac joints. In one case, in the early stages, unilateral involvement of the sacro-iliac joints was seen; later films revealed bilateral changes. We are impressed with the frequency with which the articulation between D12 and L1 is involved. This probably is secondary to the considerable stress at this joint.

The radiological changes at other sites generally corresponded with the severity of the disease and the location of the symptoms. In only two of the 32 cases in which the hands were x-rayed was there evidence of extensive changes. These consisted of translucent areas in the shafts of the metacarpals and phalanges (unlike the erosions seen

in rheumatoid arthritis), together with a generalized osteoporosis. In 11 cases osteoporosis alone was seen, and in 19 nothing abnormal was detected. The osteoporotic and other changes were associated with a severe and widespread phase of the disease, but in no case did we see changes characteristic of rheumatoid arthritis.

The biochemical and haematological data are self-explanatory and agree with the findings of other workers.

Summary

Two hundred cases of ankylosing spondylitis are reviewed. Sex incidence, age of onset, associated factors, accuracy of original diagnosis, occupation, and family and past histories are enumerated.

The original symptoms and type of onset are described, as are the biochemical and haematological findings.

The nature of the disease process is discussed, especially in its relation to rheumatoid arthritis, and we conclude that it is a separate entity.

The analysis of the x-ray findings is discussed.

We would like to thank Dr. H. J. Gibson, Dr. G. D. Kersley, and Mr. J. Bastow for their help and encouragement in preparing this paper, and Dr. Steven for his help with the radiological details.

REFERENCES

- Boland, E. W. (1946). *Calif. Med.*, 65, 285.
 — and Present, A. J. (1945). *J. Amer. med. Ass.*, 129, 843.
 — and Siebesta, E. M. (1946). *Radiology*, 47, 551.
 Buckley, C. W. (1935). *Reports on Chronic Rheumatic Diseases*, 1, 77.
 — (1945). *Ann. rheum. Dis.*, 5, 49.
 Campbell, A. M. G. (1947). *Lancet*, 1, 406.
 Desmarais, M. H. L. (1943). *Ann. rheum. Dis.*, 7, 105.
 — Gibson, H. J., and Kersley, G. D. (1948). *Ibid.*, 7, 132.
 Fletcher, E. (1944). *Lancet*, 1, 754.
 Fritz, H. (1937). *Ther. d. Gegenw.*, 78, 457.
 Lennon, W., and Chalmers, I. S. (1948). *Lancet*, 1, 12.
 McWhirter, R. (1945). *Brit. J. Radiol.*, 18, 302.
 Scott, S. G. (1942). *Adolescent Spondylitis*. London.
 Simpson, N. R. W., and Brooks, D. Hall (1948). *Proc. R. Soc. Med.*, 41, 609.
 Steven, G. D. (1947). *Ann. rheum. Dis.*, 6, 1.
 Swaim, I. T. (1939). *J. Bone Jt Surg.*, 21, 983.

SIGNIFICANCE OF CLUBBING OF THE FINGERS

BY

W. P. U. JACKSON, M.D., M.R.C.P., D.C.H.
 Assistant Physician, Selly Oak Hospital, Birmingham

Perhaps we are rather too apt to regard clubbed fingers as dire omens. Lovibond (1938) stated: "The discovery of clubbed fingers is condemning to the patient . . . long known to be associated with grave disease." Familial clubbing, however, without clinical significance, in which the inheritance is of Mendelian dominant type, is well recognized (Horsfall, 1936; Seaton, 1938; Mendlowitz, 1942; Davis, 1946), although Witherspoon (1936) found only 14 families reported in the literature. Mendlowitz gave an exhaustive list of conditions associated with clubbing, at the same time pertinently remarking that "mere coincidence in isolated cases is not sufficient evidence of a causal relationship." Among associated conditions of less serious import he included simple deformities of the chest wall and uncomplicated emphysema and bronchitis, although these associations were rare. He even quoted "idiopathic," apparently non-familial, cases in quite healthy people (Campbell *et al.*, 1938; Beeher, 1941).

In the course of a few months several people were seen whose fingers and toes were clubbed but who suffered from no ominous disease. Brief examples follow.

Cases without Ominous Disease

Case 1: Chest Deformity (? Congenital).—A soldier aged 33 was admitted to hospital with tonsillitis. His fingers and toes were markedly clubbed. He was sure that they had always been that shape, but knew of no similar ones in the family. He had no history, symptoms, or signs of lung or heart disease, and all investigations were negative. He also had a deformity of the chest wall on the right side involving ribs 6, 7, and 8, which were concave in the anterior axillary line, producing a considerable hollow. This had also been present all his life.

Case 2: Familial.—A sergeant-major was admitted to hospital for investigation of his headache (migrainous). He had gross clubbing of the fingers and toes, and also an apparently congenital varus deformity of the fifth toes. There was no history referable to chest complaints; full investigations were negative, and had been so previously at another hospital. He knew he had had clubbing for at least 20 years, and said that his son, aged 2, had had exactly similarly shaped fingers and toes since birth. Another interesting fact was that three of his sisters were said to have died from pneumonia. There was no tuberculous disease in the family.

Case 3: Familial.—A man aged 41 was admitted for investigation of his dyspepsia. He had no history of chest disease, but his fingers and toes were clubbed. His two children, aged 5 and 2, were normal in this respect, but his mother's digits were also clubbed. He had no brothers or sisters.

Case 4: No Apparent Associated Condition.—A middle-aged man came to the out-patient department with a fractured finger. All his fingers were clubbed and, he thought, had always been so shaped. He had no history or symptoms of medical disease, investigations were negative, no congenital abnormalities were discovered, and there was no family history of clubbing.

Case 5: Emphysema.—A man aged 62 was admitted for investigation of his sciatic pain. For many years he had had some winter cough and shortness of breath. He had clubbed fingers and toes and fairly marked emphysema, but no disease of the chest beyond this could be discovered after full investigation.

Case 6: ? No Associated Condition.—An airman aged 21 was admitted with mild febrile laryngitis and bronchitis. He rapidly recovered, but continued to complain of a cough, which was quite dry, some shortness of breath, and vague chest pains. There were no abnormal signs whatsoever except for clubbing of the fingers, which had been present at the beginning of his mild illness. Full investigations were negative.

Case 7: Chronic Bronchitis.—An airman aged 36 complained of a chronic cough all the year round since he was 10 when he had had pneumonia. He had some white sputum in the mornings and some dyspnoea on exertion. Examination revealed nothing at all beyond gross clubbing of the fingers and toes. Bronchography was normal.

Case 8: Past Chest Disease.—An airman aged 30 gave a history of pneumonia at the right base at the age of 5. When 17 he had been in a sanatorium for six months with tuberculosis of the right lung, which had been pronounced cured, and the patient had remained tubercle-free since. He had had rather doubtful attacks of "bronchopneumonia" (? site) since this and frequent bronchitis with greenish sputum but no blood. On examination he was undersized—5 ft. 6 in. (1.68 m.) in height—and looked much younger than his 30 years. He had clubbed fingers and some flattening of the right suprascapular region only. X-ray films of the chest and bronchography were perfectly normal.

Comment.—Certain points arise. In Case 1 the clubbing might be the result of the congenital chest deformity; but might it not be an associated congenital abnormality?—especially as Case 2 also showed a congenital skeletal deformity which could only be an associated condition. Could there be any relation between the familial clubbing in Case 2 and the sisters' pneumonia? Case 8 was interesting in that the clubbing was presumably related to past chest disease, had not subsided with healing of the lungs and was associated with infantilism. Case 6 had been

diagnosed as having bronchiectasis, had been down-graded to 3, and his discharge from the R.A.F. had been recommended at another hospital. We found no evidence in support of this diagnosis and did not act on the recommendation. Case 7 was also incorrectly labelled "bronchiectasis." This seems to be the important point arising from these cases—namely, that a chronic cough and clubbed fingers are not sufficient for a diagnosis of bronchiectasis, with its consequent gloomy prognosis, although it is apparently not rare for this combination to be so evaluated without exclusive investigation having been made.

Cases with Unusual Features

Other cases showing clubbing that were seen in the same period seem worthy of note because of unusual features

Case 9: Rheumatic Heart Disease.—A boy aged 8 was admitted with chorea. Two years previously he had had the same malady. There were perfectly typical physical signs of well-established aortic incompetence and mitral stenosis, but there was no suggestion of congenital heart disease in his history or on physical or radiological examination. His fingers and toes were markedly clubbed. There were no signs of heart failure. His parents had not noticed the unusual shape of his fingers until it was pointed out to them. There was no family history of clubbing.

Case 10: Cardiac Failure.—A man aged 53 was admitted to hospital in a state of congestive heart failure, with bilateral hydrothorax. His history of shortness of breath went back six months. There was no history of cough or of previous chest trouble. He showed early but definite clubbing of the fingers. The cause of the heart failure was doubtful; there was no evidence of valvular disease and the blood pressure was not raised, although the apex thrust was beyond the nipple line. After aspiration of the chest and routine treatment an x-ray film of the lungs was entirely clear except for rather heavy root markings.

Comment.—Chronic congestive heart failure with mitral stenosis is an established cause of clubbing and was described by Thorburn in 1893, but clubbing in other types of failure without congenital lesions, and clubbing associated with rheumatic heart disease without failure, must be rare. Could the hydrothoraces in Case 10 be the salient factor in its development?

Case 11: Primary Lung Cancer.—A sailor aged 46 was admitted with the symptoms and signs of a space-occupying lesion in the left post-Rolandic area of the brain. Otherwise he had no complaints or physical signs except for clubbing of his fingers. An x-ray film of the chest showed a small faint round shadow in about the centre of the left lower lobe. At necropsy this shadow was found to have been caused by a primary carcinoma no bigger than 1 in. (2.5 cm.) in diameter. There were secondaries in the brain, but the lungs were otherwise normal. That so small a lesion should have produced clubbing is yet a further argument against the operation of a mechanical pulmonary factor in the production of this condition. Similar cases have been previously reported (Mendlowitz, 1942).

Case 12: Infective Hepatitis.—A boy aged 8 was admitted with typical mild infective hepatitis. His liver was palpable and he was moderately jaundiced. His fingers were normal on admission but showed marked clubbing after a fortnight. Unfortunately I do not know what happened to him later. Although hepatitis is a recognized uncommon cause of clubbing, such rapidity of development is rare in conditions other than empyema and lung abscess.

Summary

Some cases of clubbed fingers with certain unusual features are briefly reported. It is particularly stressed that clubbing by itself may be of little significance, and when combined with a chronic cough is not sufficient to justify a diagnosis of bronchiectasis, although measures should certainly be taken to exclude this possibility.

It is realized that only one of these cases came to necropsy for final confirmation; but, clinically and from a practical standpoint, there was no doubt about the correctness of the interpretations.

REFERENCES

- Becher, E. (1941). *Dtsch. Arch. klin. Med.*, 187, 177.
Campbell, D. C., Sacasa, C. F., and Camp, J. D. (1938). *Proc. Mayo Clin.*, 13, 708.
Davis, E. (1946). *British Medical Journal*, 1, 128.
Horsfall, F. L. (1936). *Canad. med. Ass. J.*, 34, 145.
Lovibond, J. L. (1938). *Lancet*, 1, 363.
Mendlowitz, M. (1942). *Medicine*, 21, 269.
Seaton, D. R. (1938). *British Medical Journal*, 1, 614.
Thorburn, W. (1893). *Ibid.*, 1, 1155.
Witherspoon, J. T. (1936). *Arch. intern. Med.*, 57, 18.

A CASE OF CONGENITAL TUBERCULOSIS

BY

J. W. JORDAN, M.D., M.R.C.P.

Assistant Medical Officer, Archway Group of Hospitals

AND

H. SPENCER, M.D., F.R.C.S.

Assistant Pathologist, Central Histological Laboratory Archway Hospital

In previous reviews of the literature of congenital tuberculosis (Beitzke, 1935; Hughesdon, 1946), only eight cases of which appear to have been reported in this country up to 1946, the difficulty of proving the congenital origin of the disease has always been stressed. This difficulty is usually all the greater because important evidence is often lost through the destruction of the placenta at the time of birth. Proof of many of the cases reported has therefore had to rest on circumstantial evidence and on the exclusion of possible extrauterine causes of infection. Dorothy Price (1948) has laid down three requirements for establishment of the congenital origin of the tuberculous infection; they are, (1) proof of tuberculous infection in the mother, (2) demonstration of tuberculous infection in the child, and (3) exclusion of the possibility of infection of the child after birth.

It has been customary to group cases of congenital tuberculosis into two main types—those in which infection reaches the foetus via the umbilical vein, and those in which it arises from infected amniotic fluid. This second mode of infection usually occurs through ingestion of such fluid by the foetus, in which case the primary seat of the disease is in the intestinal tract, resulting in enlargement of the mesenteric glands and later of the glands of the porta hepatis. It has also been maintained that infection from amniotic fluid may be caused by aspiration of the fluid into the air passages. The view that the foetal lung is normally capable of respiratory movement, so that amniotic fluid may enter the alveoli, as maintained by Snyder and Rosenfeld (1937), has been contested by Whitehead *et al.* (1942), who showed that in guinea-pigs this did not occur. They observed that, so long as anoxia conditions were avoided, thorotrast injected into the amniotic fluid was not aspirated into the lungs. Thus the view that congenital tuberculosis may have its origin in aspiration of infected fluid, except possibly during parturition, must at least be open to doubt.

Hughesdon (1946), in a review of 35 cases described between 1935 and 1945, states that the average duration of extrauterine life was 36.5 days in those cases in which it was stated. A few of the patients lived for a considerably longer period. In every case the tuberculous lesions found at necropsy were commensurate with an infection of much longer standing than the duration of extrauterine life.

Almost all such cases showed at necropsy a military blood-stream spread of the disease irrespective of the mode of origin of the infection.

In their clinical course most of the cases of the ingestion type of infection have shown a certain similarity; at birth the child appeared to be normal and for a time gained weight, but later loss of weight, diarrhoea, and sometimes jaundice appeared, and death rapidly ensued in a few days. The case reported below followed such a course. Both the infant and the mother died within a short time of each other, and in both cases a post-mortem examination was carried out.

Case Record

A woman aged 31 was discovered on routine antenatal examination in October, 1947, to be suffering from pulmonary tuberculosis. She was admitted to Grove Park Hospital on Oct. 25, and subsequently was transferred to Lewisham Hospital, where there is a special unit for tuberculous patients in the obstetric department. She was delivered on May 2, 1948. Labour was spontaneous and lasted 15½ hours, but was accompanied by a severe post-partum haemorrhage of about 3 pints (1.7 litres). The placenta was expressed but was incomplete, the small remaining portion being removed from the uterus four hours after completion of the second stage. No other abnormality of the placenta was observed. The infant was immediately isolated from the mother, who on the day following delivery developed a pyrexia ranging between 99.6 and 102° F. (37.55 and 38.9° C.). The mother died about three weeks later.

The infant was a full-term male child, apparently quite healthy. Its weight at birth was 8 lb. 14 oz. (4 kg.). Progress was satisfactory, and on the seventeenth day he was transferred to a nursery, routine medical examination at this time revealing no abnormality. On the twenty-second day it was observed that he was taking his feeds poorly and was lethargic, and the temperature had risen to 101.6° F. (38.7° C.). The abdomen was distended and there was a mild degree of jaundice. On the twenty-sixth day he was transferred to hospital, where on examination the temperature was found to be slightly raised, the abdomen distended, and the spleen greatly enlarged, extending downwards into the left iliac fossa. The liver was also somewhat enlarged, and the sclerae and skin were slightly jaundiced. The infant was not dehydrated. A blood count at the time showed red cells 3,300,000 per c.mm.; haemoglobin, 64% (Haldane), white cells, 11,100 per c.mm. (56% polymorphonuclear leucocytes, 36% lymphocytes, and 8% monocytes); there were also a small number of primitive red cells. The blood Wassermann reaction was negative.

While in hospital the difficulty of getting the child to take his feeds persisted, the jaundice became deeper, and the stools were relaxed and offensive. Four days after admission—that is, thirty days after birth—he died.

All the staff who came into contact with the infant, both in the hospital in which he was born and in the nursery to which he was subsequently removed, were later examined radiologically for tuberculosis, with negative results.

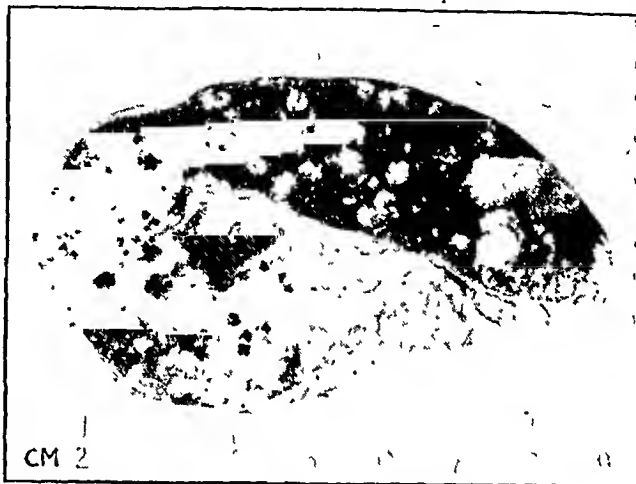
Pathological Reports

Post-mortem Examination of the Mother.—*Generally disseminated tuberculosis, tuberculous peritonitis and salpingitis; chronic pulmonary tuberculosis*—Cavities (up to 2 cm. in diameter) with adjacent fibrocaseous nodules in upper lobes of both lungs. Numerous military granulomatous tubercles in lungs. Dense fibrous adhesions at left apex, obliterating left pleural cavity. No macroscopic tuberculous infection in hilar lymphatic glands. Bilateral chronic fibrocaseous tuberculous salpingitis: caseous material in lumina of fibrotic Fallopian tubes. Subinvolution of uterus, compatible in size with a four-months pregnancy; slight purulent endometritis with fibrin and blood clot still attached to the shrunken placental site. Slightly serous caseogranulomatous tuberculous peritonitis, with adhesions between the loops of intestine. Granulomatous tubercles in posterior abdominal lymphatic glands. Military granulomatous tubercles in spleen, kidneys, and liver. Slight subendocardial fatty change in ventricular walls of heart. Slight congestion of surface of brain. No abnormalities in

stomach and intestines and endocrine system. Physiological activity of breasts. A slightly wasted, well-developed woman.

The chief findings included chronic bilateral pulmonary tuberculosis and cavitation with superadded terminal military tuberculosis. In addition there was a chronic bilateral tuberculous salpingitis, which had almost certainly been present during at least the latter few months of the last pregnancy, and a more recent generalized hyperplastic tuberculous peritonitis.

Post-mortem Examination of the Infant (Dr. A. B. Bratton).—*Generally disseminated tuberculosis; caseous tuberculosis of lymphatic glands in hilum of liver*:—A wasted, well-developed infant showing slight jaundice of sclerae. Mass (2.5 cm. in diameter) of caseous lymphatic glands in hilum of liver; small caseous, coeliac, para-aortic, and lumbar glands; caseous glands (up to 1.5 by 0.7 cm.) at bifurcation of trachea and in hilum of both lungs. Very numerous caseous nodules varying from pin's head to 1.6 cm. diameter in enlarged spleen (7.5 by 5 by 4.5 cm.) (see Fig.). Caseous tubercles up to 0.2 cm. diameter



Photograph of the child's spleen, showing the large caseous area and enlarged lymphatic glands in the hilum.

and submiliary granulomatous tubercles scattered through liver. A few submiliary granulomatous tubercles in and cloudy swelling of kidney. Two caseous foci (largest 0.4 cm. in diameter) in lower lobe of right lung and one in lower lobe of left; a few military granulomatous tubercles and an occasional area of caseating bronchopneumonia in rest of lungs. Cloudy swelling of myocardium. Oedema of pancreas. No abnormality in adrenals, stomach, intestines, bladder, prostate, or testes. Oedema and congestion of brain.

The lesions in the spleen and lung contained masses of acid-fast and alcohol-fast bacilli in Ziehl-Neelsen stained sections. Many of the lesions were advanced and appeared to be at least a month old. No primary focus was found in any of the usual sites. The most severe lesions were in the glands in the hilum of the liver; these had caused jaundice by pressure on the bile ducts.

Comment

We consider this case to be one of congenital tuberculosis for the following reasons: (1) The clinical course of the child's extrauterine life was similar to that of other cases recorded. (2) Post-mortem examination showed tuberculous lesions commensurate in size and distribution with intrauterine infection. Whether these were due to blood-borne infection through the umbilical vein or to ingestion of infected amniotic fluid is uncertain, but infection was more likely to have been through the former route, as the glands in the porta hepatis were those most enlarged. (3) Post-mortem examination of the mother subsequently revealed active genital tuberculous lesions, which were certainly present during the latter part of the intrauterine life of the child. (4) Immediate removal of the child from contact with the mother and failure to find any subsequent source of tuberculous infection among members of the

staff attending the child make it almost certain that the mother was the source of infection.

We wish to thank Dr. C. D. Coyle, medical superintendent, Archway Group of Hospitals; Mr. Alistair Gunn, consulting obstetrician, and Dr. Simmons, senior physician, Lewisham Hospital; and Dr. A. B. Bratton, senior pathologist, Archway Group Histological Laboratory, for the use of their records of the cases. We also wish to thank Dr. S. M. Tracey, assistant M.O.H. of St. Pancras, for x-raying the staff of the nursery, and Dr. A. L. Jacobs, senior physician, Archway Group of Hospitals, for his helpful criticism.

REFERENCES

- Beitzke, H. (1935). *Ergebn. ges. TuberkForsch.*, 7, 1.
 Hughesdon, M. R. (1946). *Arch. Dis. Childh.*, 21, 107.
 Price, Dorothy S. (1948). *Tuberculosis in Childhood*, 2nd ed. Bristol.
 Snyder, F. F., and Rosenfeld, M. (1937). *Proc. Soc. exp. Biol., N.Y.*, 36, 45.
 Whitehead, W. H., Windle, W. F., and Becker, R. F. (1942). *Anat. Rec.*, 83, 255.

THE MEAT RATION AND BLOOD LEVELS INVESTIGATION OF INDIAN SOLDIERS IN PERSIA AND IRAQ, 1944

BY

GEOFFREY F. TAYLOR, M.A., M.B., B.Ch.
Colonel, I.M.S. Ret.

P. N. CHUTTANI, M.D. Punjab

AND

SHIV KUMAR, M.B., B.S. Punjab, M.Sc.

The striking contrast between the vegetarians and the meat-eaters of the Indian soldier population at Shaiba Iraq in the incidence, severity, and type of anaemia suffered (Taylor and Chhuttani, 1945) promoted an investigation into the blood levels of the apparently healthy men on full duty.

The garrison had about 17,000 meat-eaters and 1,188 vegetarians. Two units (S and B), each with a strength of over 500 men and well over 50 vegetarians, were chosen because among the vegetarians in unit S the incidence of nutritional macrocytic anaemia was high whereas unit B was the only major unit without a single case of anaemia for at least a year previous to the time of the investigation. The material was not selected, any two meat-eating and vegetarian soldiers being sent each day by unit authorities from among those who were doing full duties.

Blood was taken in oxalated flasks from the vein first thing in the morning, before breakfast, and sternal puncture was performed at the same time. In addition to a full clinical examination, including search for signs of malnutrition, stools were examined for helminthic and protozoal infection in all cases. The haematological investigations were carried out in the field laboratory attached to the hospital by the workers who had done the anaemia cases; they were not aware of the clinical features or the dietary habits. Cytological nomenclature and the haematological technique of the earlier investigation were adhered to (after Napier and Das Gupta, 1942). The erythrocyte sedimentation rate was estimated by Wintrobe's tubes before spinning them for corpuscular volume estimation.

Forty meat-eaters and forty-two vegetarians from unit S were examined during August–November, 1944. The inquiry had to be suspended when twelve unit B men from each batch had been examined; the data yielded by this unit were thus referred to for one significant feature only. Men from unit S had been in Shaiba for one and a half years and the majority were from United Provinces of India.

The meat-eaters and the vegetarians were served from the same kitchens. The vegetarians had never taken meat

or eggs in their whole life. We often visited unit S camp to acquaint ourselves with the living, eating, and working conditions of the two dietetic groups; these were found to be alike in all respects except that the vegetarians on account of their social customs did not consume the weekly ration of 20 oz. (570 g.) of fresh mutton. The unit was carrying out pioneer duties of a heavy nature entailing a 44-hour week.

The daily rations were: 18 oz. (510 g.) of atta (wheat flour) or rice, 2½ oz. (70 g.) of dal (pulses), 3¼ oz. (92 g.) of ghee (clarified butter or vegetable oil), ¼ oz. (19 g.) of condiments, 2 oz. (57 g.) of onions, 2 oz. of potatoes, 4 oz. (114 g.) of fresh vegetables, 2 oz. of unsweetened tinned milk, and 6 oz. (170 g.) of fresh mutton with bone for five days in the week. Leafy vegetables were issued for only a few months of the year. In lieu of fresh meat vegetarians were allowed 4½ oz. (128 g.) of tinned milk three days a week and ¼ oz. (21 g.) of ghee and 3 oz. (85 g.) of atta or rice for two days a week, but none of the vegetarians of unit S had received these. No one had supplemented his rations from canteen or elsewhere. The meat ration of 6 oz. of fresh mutton with bone for five days a week amounted to 4 oz. without bone; this was checked in local carcasses. The total daily intake was over 3,000 calories and over 80 g. of vegetable protein.

Haematological and Clinical Features

Peripheral Blood

The various averages obtained are shown in Table I. The average means of red cells and haemoglobin were significantly higher among meat-eaters than among vegetarians (5,550,000 and 4,670,000; 15.44 and 14.32 g.).

TABLE I.—Haematological Averages of Meat-eaters and Vegetarians

	Meat-eaters (40)			Vegetarians (42)		
	Range	Mean	S.D.	Range	Mean	S.D.
Red cells (millions' c.m.m.)	4.46–6.85	5.55	0.55	1.9–6.6	4.67	0.9
Haemoglobin (g./100 ml.)	11.1–19.6	15.44	1.4	7–17	14.32	1.71
M.C.H.C. %	21.7–35.5	28.25	2.32	23.6–33.7	28.54	1.71
M.C.V. (c.µ)	80–114	96.33	8	80–153	109.48	13.4
E.S.R. (Wintrobe)	1–20	4.43	4.24	1–37	10.64	9.15
Total W.B.C.	3,000–9,000	6,022	1,643	3,000–9,000	5,600	1,524.2
Neutrophils %	30–72	60.4	10.38	39–74	58.25	9.35
Lymphocytes %	20–62	31.7	10.52	15–55	35.63	10.34
Mononuclears %	1–8	4.64	1.76	1–9	3.86	2.35
Eosinophils %	0–8	2.64	1.76	0–12	2.04	2.59
Basophils %	0–4	0.54	0.91	0–1	0.25	0.44

* For the leucocyte count only 33 meat-eaters and 28 vegetarians were observed.

The range and the distribution around the average mean (the standard deviation), especially of red cell counts, were quite abnormal among vegetarians. Whereas there was only one instance among meat-eaters of a red cell count below 4,500,000, there were seventeen among vegetarians. Eight of the latter had red cell counts of 4,000,000 and below, two showing marked anaemia with red counts of under 2 and under 3 millions per c.m.m.; all the eight had an M.C.V. above 110 c.µ. Though the average haemoglobin value for meat-eaters was significantly higher than for vegetarians, the difference was not so marked as with the red cell counts. (The explanation of this selective effect on red cell levels in vegetarians lies in the macrocytic type of blood picture exhibited. In haemopoietic-principle (or principles) deficiency anaemia the red cells suffer more than haemoglobin, but in iron-deficiency anaemia it is the haemoglobin which drops relatively more than red cells.) There were five vegetarians and one meat-eater with a haemoglobin value of less than 13 g. Average mean corpuscular haemoglobin concentration (M.C.H.C.) values were low in both groups, being less than one-third in 29%, but there was no significant difference between the two

interrupting their continuity with the bladder, as a first stage. After the lapse of about three weeks the ureters are divided a short distance below the site of the implant and the upper end is tucked into the colon through a small incision in its wall. The object is to allow the ureter to get over the stage of oedema and constriction due to its inclusion in the wall of the bowel and also to obtain a new blood supply from adhesions before it is subjected to the risk of infection from faecal contamination.

The method seemed so sound and reasonable that I decided to try it. My first case was in 1946, and I have now done six cases in all, with no operative mortality. The number of cases is of course very small, but they are all that I have seen in the interval, and I believe the operation can be performed with a good chance of success by any general surgeon.

The Operation

It may not be out of place to give a description of the operation. I have used a right paramedian incision extending a little above the umbilicus. The bladder is first examined and the question of operability decided; then the left ureter is found on the posterior abdominal wall and isolated for a few inches. A convenient part of the lower colon is chosen and an incision made through the peritoneal and muscle coats down to the mucous membrane.

The size of the ureter varies considerably in these cases, but usually an incision about $1\frac{1}{2}$ in. (3.75 cm.) in length and slight separation of the divided muscle coats are sufficient to make a comfortable bed for it. It is very important that the area should be properly peritonized. A similar procedure is then carried out on the right side and the abdomen closed.

There may be anuria or a very diminished quantity of urine for 48 hours following the operation, but after that the flow is normal. In most cases the patient will have been on urinary antiseptics before operation, and these should be continued when the flow is restored.

In all my cases there has been considerable trouble after this stage from abdominal distension and tympanites, which may last up to a week or ten days before the bowel regains normal function. A most important benefit of the operation is that this phase is passed before the ureter is opened into the bowel.

The second stage is best done three weeks later, and for the last of these weeks the patient is given a course of sulphasuxidine or some similar drug. At the second operation the abdomen is opened through the same incision, which is now carried down to the pubes.

Again I am accustomed to do the left side first. The peritoneum is divided over the ureter so as to expose it just below the implant and is cleanly divided about $\frac{1}{2}$ in. (1.25 cm.) below this. A small incision is made into the lumen of the colon as close as possible below the implant and the upper divided end of the ureter passed into the bowel, which is then sutured round it. A little sulphanilamide powder is rubbed into the area and the peritoneum is closed over it. The right side is treated in a similar fashion.

If the bladder is considered to be removable the cystectomy is then carried out. This is largely extraperitoneal, although it is usually better to include the peritoneum over the site of the tumour. The pelvic peritoneum is reconstituted and the space below drained through a separate suprapubic stab wound. The abdominal incision is then closed. There is remarkably little upset following this stage, considerably less than after the first one. Although there is some discomfort from the urinary incontinence, this seldom lasts more than a few days.

Case Histories

Case 1.—A man aged 38 had papilloma of the bladder treated by diathermy in 1942. Cystoscopy was done at intervals, and the bladder was clear until 1944, when he was found to have multiple papillomata. He continued to have attacks of haematuria until 1946, when I first heard of the present operation. On July 17, 1946, the first stage—implantation of ureters—was performed. The second stage, including cystectomy, was carried out on Aug. 14. Although the bladder was an almost solid mass of papillomata the pathological report was: "Histological appearances are still those of an active papilloma and not of outspoken carcinoma." When last seen, in April, 1948, he complained of some pain in the left renal area. The blood urea was normal, and nothing was found except tenderness in the left loin posteriorly.

Case 2.—A man aged 48 had had haematuria for two months. On Oct. 30, 1946, cystoscopy showed carcinoma above the right ureter. The first-stage operation was done on Nov. 4. A mass on the right side of the bladder was fixed to the pelvic wall—doubtful operability. On Nov. 25 the second stage, including cystectomy, was carried out. The growth was adherent to the pelvic bone and had to be scraped off it. The pathological report was: "Anaplastic carcinoma, mainly of squamous type, infiltrating the muscle." This man did very well so far as the transplantation was concerned, but two months after the operation he complained of severe pain in the right hip. A radiograph taken on March 2, 1947, showed destruction of the right acetabulum and internal dislocation of the femur. He died a few weeks later from local recurrence of growth. There were no renal symptoms.

Case 3.—A man aged 60 had had haematuria, dysuria, and frequency for two weeks. Cystoscopy showed carcinoma of the bladder—several tumours. At the first-stage operation on Feb. 5, 1947, the bladder was considered removable. The second stage and cystectomy were carried out on March 3. The pathological report was: "Anaplastic squamous carcinoma involving the muscle of the bladder. The three apparently separate masses have the same structure." He remained quite well for 14 months after the operation and then developed spinal secondaries. He had no renal trouble up to the time of his death.

Case 4.—A man aged 45 had had attacks of dysuria and frequency for three years. On Dec. 12, 1945, cystoscopy showed a good deal of cystitis, a neoplasm to the left of the trigone, and what I thought looked like tubercles scattered over the bladder. Although I was not aware of it at the time, these were really the vesicles of cystitis cystica. He had been in a sanatorium for some months after a spontaneous pneumothorax in 1933. No tubercle bacilli were found in the urine and the pyelogram was normal except for some dilatation of the ureters. At the first-stage operation on Jan. 13, 1947, there was thickening of the bladder wall over the site of the tumour, but operation was considered to be possible. The second stage and cystectomy were carried out on Feb. 2. The pathological report was: "This bladder exhibits cystitis cystica and also carcinoma." In this case, as in the previous one, there were multiple growths. When seen in November, 1948, he was perfectly well and free from symptoms.

Case 5.—A woman aged 63 had a recent history of haematuria and dysuria. On April 25, 1947, cystoscopy showed a large papilloma of the bladder at the right base and several seedling growths round it. A fragment of the growth was sectioned by diathermy, and the report stated: "Fragments suggest papilloma. I see no histological proof of malignancy." There was a good deal of reaction after the diathermy, and when cystoscopy was carried out on May 12 I decided to leave her for another month. At that time I was very suspicious of malignancy, and a further portion, removed by diathermy, was sent for section. The pathological report stated: "The appearances are deemed consistent with a malignant papilloma." At the first-stage operation on Aug. 11, 1947, the bladder seemed quite operable. The second stage and cystectomy were done on Sept. 1. The pathological report was: "The tumour is a well-differentiated transitional-cell carcinoma. The adjacent mucosa shows an active chronic cystitis with early changes of cystitis cystica." In November, 1948, her doctor reported that she was very well and had no complaints.

Case 6.—A woman aged 56 was seen on March 4, 1948. She had a history of carcinoma of the cervix treated with radium three years before. For the past year she had had severe intractable cystitis with haematuria at times. When cystoscoped as an out-patient there was so much pus that the bladder wall could not be seen. She was admitted to hospital, and after a week's treatment was cystoscoped again. There was a large ulcer of the bladder base, which appeared malignant. As her general condition was good and she was getting so much trouble from the cystitis I decided to do an exploratory operation and see if there was any chance of a radical removal. At the first-stage operation on May 18, 1948, a dense mass of scar tissue was seen round the cervix, including both ovaries, and adherent to the rectum behind and the bladder base in front. At the second stage, on June 8, cystectomy and hysterectomy were performed. The operation was very difficult; the only pleasant feature was not having to worry about the lower ureters in doing the complete hysterectomy. Repair of the lower peritoneum was also difficult after such a wide excision, and was no doubt responsible for the unusual degree of abdominal discomfort and distension which the patient had after the second stage. The pathological report stated: "Cervix: large white mass in cervical wall consists of dense and partially hyalinized fibrous tissue. Both ovaries replaced by a compact mass of dense fibrous tissue. Bladder: the transitional epithelium is somewhat heaped up in places but there is no evidence of invasion. The subepithelial tissue is oedematous and there is a considerable amount of round-celled infiltration of the plasma-cell type, the result of chronic irritation." Although no malignant cells were found I think this was at least a precancerous condition. In November, 1948, she was quite well except for attacks of very severe constipation.

Summary

Six cases with malignant or pre-malignant conditions of the bladder are described. In all the cases transplantation of the ureters was carried out by the method of implanting the ureters in continuity, as a first stage, followed by cystectomy. There was no operative mortality.

Medical Memoranda

Cancrum Oris Among African Natives

The classical description of cancrum oris as given by Christian (1938) is that of a rapidly progressive gangrenous stomatitis in a child already debilitated by another disease, usually one of the exanthemata. Varying treatments are advised, but the prognosis is regarded as hopeless, though Thomson and Findlay (1933) state that occasional recovery does take place. Tidy (1939) states that death is almost invariable. All authorities seem agreed that the probable cause is a combination of organisms similar to that found in Vincent's angina—i.e., spirochaetes and fusiform bacilli. The fact is stressed by all writers that cancrum oris is essentially a rare disease, though I have been unable to find any actual incidence figures.

Observations in Africa.—During the years spent as student, house-surgeon, and general practitioner I did not encounter a single case of cancrum oris in Britain, despite the fact that the whole of this period was spent in a highly industrialized area where the children were often poorly nourished and often lived in unhygienic conditions. In contrast, in less than three years in the Serenje district of North Rhodesia we have come across no fewer than five cases. In the years 1945–7 cancrum oris patients constituted 0.7% of admissions. In no case has there been a previous history of a specific illness. It would seem, therefore, that the main aetiological factors responsible for this comparatively high incidence are the bad diet of the African native and his unhygienic mode of life. It is also worthy of note that the probable causal organisms of cancrum oris are similar to those which are almost invariably found in tropical ulcer, a disease that is always present among the people of this district. Of the five cases seen three were fatal. Of the two who recovered one was treated by extensive resection of the gangrenous area, followed by plastic repair; the other was

treated with penicillin, and this case is detailed below. In no instance did the clinical appearance or progress of the disease differ from the usual description.

Penicillin Therapy.—As favourable results were obtained by penicillin therapy in cases of Vincent's angina it seemed natural to hope that similar results might follow the use of penicillin in cases of cancrum oris. The rarity of the disease, however, seems to have made it difficult to procure reliable information. Fish (1946) was unable to quote any cases. However, a very detailed case history has since been published by Shrand (1947). The case history below is published in the hope that it may add to the volume of information regarding the treatment of one of the most terrible of all children's diseases. It is regretted that circumstances made it impossible to produce more than a purely clinical case history.

CASE HISTORY

A female MuLala child aged about 2 years was admitted to Chitambo Hospital from an outlying dispensary on Oct. 3, 1947. On clinical examination a typical early cancrum oris was seen. The angle of the lip was ulcerated and further investigation showed the ulcer extending back on to the gum in the right canine fossa. There was a well-marked area of brawny induration of the right cheek, extending back to the anterior border of the masseter muscle. Temperature 100.4° F. (38° C.). No history of previous illness could be elicited from the parents.

The following day a brother of the above, a male MuLala child of about 4 years, was admitted with a very advanced cancrum oris. The lips, nose, and most of the right cheek had disappeared and been replaced by a single large sloughing ulcer. Temperature 98.4° F. (36.9° C.). This patient was obviously moribund, and died within twenty-four hours of admission. The virulence of the disease process may be judged from the statement of the parents that the first sign of disease in the boy had occurred only five days previously and in the girl three days previously.

In the case of the female child palliative treatment was adopted. The ulcer was swabbed four-hourly with a strong solution of potassium permanganate, and an attempt was made to maintain the child's resistance by feeding it on thin gruel. Despite these measures the ulceration continued to progress. On Oct. 10 a supply of penicillin became available and treatment with it was instituted, 10,000 units in aqueous solution being administered intramuscularly every three hours. The swabbing with potassium permanganate was continued. After the third injection treatment was interrupted for twelve hours owing to objection from the parents for superstitious reasons. Injections were then resumed, and were continued until 500,000 units had been given.

Results were apparent after twenty-four hours. The brawny induration of the cheek began to soften and the line of demarcation became much less apparent to palpation. After thirty-six hours the sloughs of the ulcerated area began to separate, leaving a granulating surface. After three days of treatment all signs of infiltration of the surrounding tissues had vanished and the ulcer presented a clean and obviously healing surface. Recovery was uninterrupted, and the child was discharged on Oct. 27.

COMMENT

The above case history is interesting in that it records two cases in one family at the same time. There may have been a common source of infection, but it is more probable that the male child, with a highly virulent disease, infected the other. This may indicate a degree of infectivity that does not seem to have been stressed in the literature. This case also indicates that cancrum oris should join the group of conditions classed as highly responsive to penicillin therapy. It was astonishing to see a condition so notoriously fatal, and which had already killed one member of the family, respond so rapidly to penicillin, supported only by the simplest of local measures.

DONALD MACKAY, M.B., Ch.B.Glas.
Medical Officer, Chitambo Mission Hospital,
N. Rhodesia.

REFERENCES

- Christian, H. A. (1938). In *Oder's Principles and Practice of Medicine*, 13th ed. p. 563. Appleton-Century Co., London.
Fish, E. W. (1946). In *Fleming's Penicillin*, p. 328. Butterworth and Co., London.
Shrand, H. (1947). *Clin. Proc.*, 6, 197.
Thomson, J., and Findlay, L. (1933). *Clinical Study and Treatment of Stomatitis*. 5th ed. p. 107. Oliver and Boyd, London.
Tidy, H. L. (1939). *Synopsis of Medicine*, 7th ed., p. 388. Wright, Bristol.

On St. Thomas's Day, Dec. 21, Major-General R. J. Blackham, A.M.S.(ret.), and Dr. Arthur Westerman were re-elected members of the Court of Common Council, Corporation of London. General Blackham was for many years the only representative of the medical profession on the Common Council until 1941, when he was joined by Dr. Westerman, the medical officer of the Charterhouse.

Reviews

MEDICAL EMERGENCIES

Emergencies in Medical Practice. Edited by C. Allan Birch, M.D., F.R.C.P. Compiled by 18 Contributors. (Pp. 468; 113 illustrations, 8 in full colour. 25s.) Edinburgh: E. and S. Livingstone. 1948.

What constitutes an emergency is, as Dr. Birch says in his preface, a matter of opinion, and the word has received an unusually liberal interpretation in this book. It might be contended, for instance, that polycythaemia and amenorrhoea could seldom merit this description, and many of the most useful sections of this work are open to the same ungenerous criticism.

Dr. Birch has recruited eighteen contributors who have together compressed much recondite information into a small compass. Among the more conventional sections, the editor's own description of the management of abdominal catastrophes and Dr. Avery Jones's account of gastro-duodenal haemorrhage are noteworthy. Dr. Rae Gilchrist contributes an excellent discussion of cardiovascular emergencies—perhaps the most commonly encountered in practice. Dr. Murgatroyd's section on emergencies in tropical medicine is particularly useful, for these are often fulminating and often unfamiliar to the practitioner in temperate climes. Descriptions of medical emergencies at sea and in the air are welcome additions to a book of this kind; there are directions for emergency baptism, for broadcasting for relatives of the dangerously ill, and for obtaining supplies of antivenene. The final chapter gives an account of the common practical procedures, the reader having been instructed in an earlier one in the treatment of mishaps resulting from them. In short, there are to be found here answers to the many problems which arise suddenly and unexpectedly in the daily practice of medicine, and only a commendable modesty can have prohibited Dr. Cheetham from including this work itself in his list in Chapter I of the essential contents of the practitioner's emergency bag. The book is excellently produced, and by present-day standards is cheap at the price of 25s.

R. BODLEY SCOTT.

TEXTBOOK OF ENDOCRINOLOGY

Lehrbuch der Inneren Sekretion. By F. Verzár. (Pp. 610; 80 illustrations. 52 Swiss francs.) Liestal, Switzerland: Verlag Ars Medici Lüdín A.G. 1948.

Most recent books on endocrinology have come from America and have inevitably reflected the enormous amount of work on hormones which has been carried out in the U.S.A. during the past twenty years or so. Professor Verzár's new textbook of endocrinology brings, for a change, a Continental point of view. His position in Switzerland has allowed him to select and bring to our notice work which is apt to be missed in Britain, particularly work that was published during the war.

Professor Verzár has chosen the usual method of treating each gland individually, and in separate chapters he describes the general anatomy and histology of the gland, the results of its removal, the methods of isolating its hormones, and their chemistry. He then discusses how the production of the hormone is regulated and the interrelations with the other glands. He describes in some detail the methods of bio-assay. Finally he considers clinical conditions of over- and under-function. Throughout he emphasizes the biochemical rather than the morphological aspect of the subject.

In the introduction he explains that he has tried to select what appear to be the most important findings up to 1945-6 rather than to confuse the reader with a maze of contradictory reports of varying significance. The attempt is successful, and any alterations in emphasis that might be suggested now are an indication only of the speed with which new information on the subject is becoming available. He gives prominence to Mansfeld's claims to have isolated thyroid hormones which stimulate red blood cell formation and which oppose the action of thyroxine, and describes Bomskov's much disputed work on the thymus in a chapter on this gland which, while longer than usual, is certainly justified.

Professor Verzár is widely known for his work on the relation of the adrenal cortex to phosphorylation processes. In his

review of the function of the cortex he favours the belief that there are not separate types of cortical hormone independently controlling water and electrolyte metabolism or carbohydrate metabolism, but that all cortical functions can be carried out by one hormone. Taken as a whole, the book is an excellent summary of the general position in endocrinology. The chapters on the endocrine functions of the gonads are, however, rather unsatisfactory and incomplete, partly perhaps because the author has deliberately omitted any discussion of the gynaecological aspects. It is unfortunate, too, that the illustrations in an otherwise well-produced book should be so few and of rather poor quality.

P. L. KROHN

EXAMINING THE LUNGS

Procedure in Examination of the Lungs, with Especial Reference to the Diagnosis of Tuberculosis. By Arthur F. Kraetzer, M.D. Third edition, revised and with a preface by Jacob Segal, M.D., F.A.C.P., F.C.C.P. Oxford Medical Publications. (Pp. 150; illustrated. 18s.) New York and London: Oxford University Press. 1947.

The intention of this book is to provide for the student a detailed account of physical examination of the lungs "with especial reference to the diagnosis of tuberculosis." After an adequate account of the techniques of inspection, palpation, percussion, and auscultation and of the findings in the normal chest, the author discusses the interpretation of abnormal findings. Each individual variation from normal, such for instance as diminished breath sounds or rales, is tabulated in relation to other symptoms and signs in an attempt to provide a sort of key by reference to which the diagnosis may be reached. In so far as this provides a reasonable scheme for the interpretation of unequivocal signs it may perhaps be useful, even though its validity as an indication of the actual mode of thought of the experienced physician may well be doubted. It is in the emphasis which is placed throughout the book on physical examination as a means of early diagnosis of pulmonary tuberculosis that a curiously old-fashioned and unrealistic impression is given.

Experienced physicians have recognized for many years that minimal tuberculous lesions of the lung often give rise to no physical signs by which their presence can be detected and that radiography is the surest means of detecting them. This truth forms the basis of all modern schemes of tuberculosis case finding; but the unfortunate medical student who took this book as his guide would obtain the impression that unless he could diagnose by physical signs the presence of small tuberculous lesions in the lungs his technique, his mental processes or both would be at fault. The author's attitude towards radiology may be exemplified by two excerpts. On p. 83 he recounts a case of non-tuberculous pneumonia erroneously diagnosed as first as tuberculous, the error eventually being shown by the unexpected clearing of radiographic shadows. In commenting on this he remarks, "The patient should never have been sent for x-ray examination, with its attendant exposure and risk of spreading the disease." On p. 106 he states that pleural and pulmonary rales may be distinguished "by the history, by the symptoms, by the presence or absence of clubbing of the fingers, by the patient's general health, and alas! [sic] by the x ray."

The literary style is presumably intended to be stimulating and to hold the interest of the student, but to the reviewer it seemed a curious mixture of pretentious verbosity with, in places, an almost distressing jocularity. The barbarous solecism (which is unfortunately becoming more and more frequent) of using the word "pathology" as synonymous with "disease" or "lesion" recurs—e.g. (p. 47), "Normal breath-sounds do not rule out pathology by any means."

That physical signs play an essential part in the diagnosis of pulmonary disease, and that the instruction of students in the methods of eliciting them and in their interpretation is of great importance, no one will wish to deny. Physical and radiographic examinations are complementary, each having its proper sphere. Most physicians would agree that there is a grave danger that the manifest superiority of radiography over physical examination in the diagnosis of minimal tuberculous lesions may lead to the neglect of physical examination in its proper sphere. It is to be expected, however, that an attempt to stimulate the student's interest in physical examination of the chest by refusing to

acknowledge its limitations, as in this book, will defeat its own object. There was a well-known domestic cleansing preparation which advertised itself by announcing that it would not wash clothes. The student's interest in the art of eliciting and interpreting physical signs in the chest might well be stimulated rather similarly by the unequivocal statement that physical signs will not enable a diagnosis of early pulmonary tuberculosis to be made, but have a very great value in many other maladies, including some in which they give information which no other method can give.

The book is a reprint, with limited revision and the addition of a short appendix, of one published first in 1930. Its account of the actual technique of examination of the chest and its instructions to the student on the method of acquiring facility in it are sound and helpful; but even at the date of its first publication it probably presented an unbalanced view of the proper place of physical examination in the diagnosis of pulmonary tuberculosis. It certainly cannot be recommended now.

J. G. SCADDING.

THE NEGLECTED CHILD AT HOME

The Neglected Child and his Family. A study made in 1946-7 of the Problem of the Child neglected in his own Home, together with certain recommendations made by a Subcommittee of the Women's Group on Public Welfare (in association with the National Council of Social Service). Introduction by J. B. Priestley. (Pp. 140. 5s.) London: Oxford University Press (Geoffrey Cumberlege). 1948.

This report of a subcommittee of the Women's Group on Public Welfare considers the neglected child in his own home—that is, before he comes to the stage covered by the Curtis Report. Mr. J. B. Priestley in his foreword commends it as an admirable study of a complex problem, but he notes that no mention is made of those children who, although surrounded by all the luxuries, are left so emotionally insecure that they grow up to be antisocial and provide a major problem in criminology.

The report points out that definite physical cruelty is diminishing but that neglect is perhaps increasing and is due more to fecklessness than to crime. As has been said, stupidity is the sin that is always punished and never forgiven. This involves not only physical neglect but mental neglect and even cruelty, which is not regarded sufficiently seriously unless the child shows definite signs of specific mental illness—as he does only relatively rarely. The sequence behind the cases studied is most often one of mismanagement—poverty, malnutrition, ill-health, apathy. Obviously prison is no remedy for child neglect, though often demanded by the public, and fines are not much better. Removal of the child from the home is the easiest solution but by no means usually the best. It should be possible to put parents on probation and make them enter into recognizances for good behaviour, but they ought to have the right to legal representation when the case comes before the court. Local authorities should promote all cases in the courts, but they should all establish children's care committees with suitable officers and staff. They should establish boarding accommodation in the form of schools, homes, and hostels for children who must at least temporarily be removed from their families.

All secondary-school girls should be taught child welfare, and home-craft and parent-craft should be disseminated by every means—press, broadcasting, cinema, and home visiting. The general public should be instructed in normal child development. More facilities should be devised for preserving the health of mothers of young children, and there should be an extension of child-guidance and general psychiatric services, including the provision of expert psychiatric advice at maternity and child-welfare centres. Rehabilitation centres affording rest breaks and holiday homes to mothers are desirable, when, if possible, their children can accompany them. The provision of home helps, day nurseries, nursery schools, and even of household equipment should be increased. Family case work and experiments such as the Brentwood Recuperation Centre in Lancashire should be extended.

This is a most informative and valuable report and should be studied by all interested in children.

R. G. GORDON.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Poetry of a Peripatetic. By Galen. (Pp. 19. 3s.) Romford: Wilson and Whitworth. 1948.

Verses on many topics by a medical man.

Demonstrations of Physical Signs in Clinical Surgery. Part III. By H. Bailey, F.R.C.S., F.A.C.S., F.I.C.S., F.R.S.E.d. 11th ed. (Pp. 304. 8s. 6d.) Bristol: John Wright. 1948.

In this part the author considers the abdomen and the genito-urinary system.

Enturesis or Bed-Wetting. By R. J. Batty, M.D., B.Sc. D.P.H. 2nd ed. (Pp. 103. 9s. 6d.) London: Staples Press. 1948.

The author has incorporated new material in this edition, especially on the psychological aspect.

Notes on Infant Feeding. By G. B. Fleming, B.A., M.D., F.R.C.P., F.R.F.P.S., and S. Graham, M.D., F.R.C.P.Ed., F.R.F.P.S. 3rd ed. (Pp. 66. 3s.) Edinburgh: E. and S. Livingstone. 1948.

An introductory manual intended primarily for medical students.

The Natural Development of the Child. By A. H. Bowley. Ph.D. 3rd ed. (Pp. 190. 8s. 6d.) Edinburgh: E. and S. Livingstone. 1948.

A guide for parents and teachers. The chapter on adolescence has been enlarged in this edition.

Obstetrics and Gynaecology. By B. M. Willmott Dobbie, M.A., M.B., F.R.C.S., D.M.R.E. (Pp. 358. 20s.) London: H. K. Lewis. 1948.

A short practical account intended specially for the novice in general practice.

The Pharmaceutical Pocket Book. Published by the Pharmaceutical Society of Great Britain. 15th ed. (Pp. 427. 12s. 6d.) London: Pharmaceutical Press. 1948.

An introduction to the practice of pharmacy and a reference book for pharmacists.

Zur Theorie des Typhus Abdominalis. By R. Rössle. (Pp. 26 M.2.) Berlin: Akademie. 1948.

The author elaborates his theory of the part played by allergy in typhoid.

Some Victorian Portraits and Others. By Hilda Martindale C.B.E. (Pp. 106. 10s. 6d.) London: George Allen and Unwin. 1948.

Biographical studies of prominent social workers and reformers. Civil Servants, and others.

Modern Methods of Mental Treatment. By J. W. Fisher. M.R.C.S., L.R.C.P., D.P.H., D.P.M. (Pp. 100. 6s.) London: Staples Press. 1948.

A short guide for nurses.

Mycoses and Practical Mycology. By N. Gohar, M.R.C.S., L.R.C.P. (Pp. 234. 25s.) London: Baillière, Tindall and Cox. 1948.

An introductory handbook for prospective dermatologists and students of tropical medicine.

Zur Hygiene der Arbeit. By F. Vering. (Pp. 38. No price.) Vienna: Wilhelm Maudrich. 1948.

An essay on industrial hygiene.

Behold the Axe. By F. Hernaman. (Pp. 288. 9s. 6d.) London: Staples Press. 1948.

A historical novel about an attack of the Crusaders on Constantinople.

Traitement Chirurgical de L'Otospongiose. By M. Sourdis. (Pp. 253. 750 francs.) Paris: Masson. 1948.

A detailed illustrated manual for surgeons.

The Search for Health. By D. Stark Murray, B.Sc., M.B., Ch.B. (Pp. 158. 2s. 6d.) London: Watts. 1948.

An exposition for the layman of the causes and treatment of disease.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY FEBRUARY 5 1949

CO-ORDINATION OF THE TUBERCULOSIS SERVICES

The continuous fall in tuberculosis mortality in England and Wales, broken only by the war periods, gives grounds for reasonable hope that the disease can be reduced to insignificance. The causes of this decline are complex and obscure, but all will agree with Dr. C. O. Stallybrass, whose survey of the present position appears as the opening paper in this issue, that the most important is improvement in living conditions, and that this socio-economic factor has been assisted by modern methods of treatment and by the segregation of infectious cases in sanatoria made possible by the National Health Insurance Act of 1911. Knowledge of the pathogenesis of tuberculosis has advanced, and there are now grounds for believing that vaccination with a controlled dose of live tubercle bacilli of attenuated virulence, B.C.G., safely establishes a healed primary focus which will confer a considerable degree of protection against subsequent invasion by virulent organisms. At the same time some eminent authorities doubt the strict validity of the evidence, and the problem must still be looked at with scientific caution. There is now a better understanding of the part played by nutrition and environment in maintaining native and acquired resistance to the disease, and the influence of heredity and race is being reviewed in the light of recent research. Advances in radiology have made it easier to discover early pulmonary lesions, so that it is not uncommon to find a small focus of active disease in an apparently healthy person. In treatment a new era is dawning with the use of antibiotics and chemotherapeutic agents which, as further investigations are made, will change the approach to the problem of controlling the lesion.

Yet in spite of these encouraging signs, which should be more than enough to support an optimistic attitude, there is a feeling among tuberculosis workers that all is not well. In a recent letter to this *Journal* (Dec. 25, 1948, p. 1118) Dr. Lissant Cox has picturesquely described the uneasy path that lies ahead through difficulties which he considers mainly due to the break-up of the old administrative machine—a machine which, in general, worked well and produced results. There is little doubt that he is right when he says that at present the chief danger lies in forgetting the essential unity of prevention, treatment, and care work and in failing to view the patient in the setting of his family and his home environment. The treatment of those suffering from tuberculosis must of course be one of the main concerns of tuberculosis workers; but the protection of the healthy is of equal importance, and much time and

energy have to be put into preventive work if it is to be effective. Nobody can read Dr. Stallybrass's survey without being impressed by the urgent importance of preventing the spread of infection, particularly among young children; the incidence of tuberculous meningitis in infants is a sensitive index of the amount of infection in any community. The systematic search for the infectious case must never be relaxed, however strongly the limelight plays on new methods of treatment. It is therefore somewhat disconcerting to learn that Dr. A. S. Hall (Jan. 8, p. 71) considers there is a danger of tuberculosis officers being lured from diagnostic and preventive work by the more exciting practice of active treatment.

The reorganization of the tuberculosis services under the National Health Service Act has tended to emphasize the clinical side of the work of the chest clinic to the detriment of its other necessary activities. Infection with tubercle bacilli has not only a profound effect on all body tissues wherever the major lesion may be, but it has such social significance that its successful treatment depends on detailed knowledge of the clinical and family history and of the conditions in which the patient lives and works. An essential aid to treatment is an efficient rehabilitation service to assist the patient to overcome both the disablement and the stigma that are so unfortunately and unnecessarily associated with it. Awareness of the importance of tuberculosis to the public health has now led to the assembly of a formidable array of authorities, officials, clinicians, and auxiliaries, all concerned in its prevention and treatment. Health authorities and care committees, regional boards and management committees, medical officers of health and tuberculosis and health visitors, tuberculosis physicians (in dispensaries, mass radiology units, and sanatoria) and hospital almoners—these are all working towards the one desired end, are all aware of the necessity for helping each other, but are hampered by a certain vagueness in the procedure for co-ordination.

Tuberculosis mortality rates have fallen, but the incidence is still rising; and the number of adult cases on the dispensary registers in 1946 was 50% more than in 1938. No doubt this is partly due to more intensive search for early cases, but the situation does not warrant the transfer of the tuberculosis officer's place of work from the dispensary to the sanatorium, for this would be immediately damaging to public health. The sanatorium treatment of patients is better left to those who have made such work a full-time vocation and have had many years of experience. As Dr. Hall writes, "It is on the field of prevention that the battle against tuberculosis will be won." May it not be that the present dilemma that has prompted the query "Whither Tuberculosis?" has arisen because of neglect of the wise counsel of Sir Robert Philip, who centred the campaign against tuberculosis in the dispensary and made it a unit for combating the disease in all its forms? The present tendency to regard the various manifestations of tuberculosis as separate entities, each the concern of a particular clinical department, will destroy the ability of the tuberculosis service to attack the problem from all sides. Tuberculosis is a specialty that is associated with many branches of medicine and surgery, and if our hopes of eradicating the disease are to be realized it is clear that

one administrative authority must, with the agreement of all concerned, co-ordinate the work of those who are engaged in prevention, diagnosis, treatment, and rehabilitation.

GROUP PSYCHOTHERAPY

A number of articles¹⁻³ on group therapy during the last few years and, more recently, books⁴⁻⁶ on this subject have suggested to many medical men that an important new development is taking place in psychological medicine. Certainly group therapy is being increasingly used in psychiatric hospitals and out-patient clinics, and in many of the latter more patients are now being given psychotherapeutic help by this than by individual methods. In a broad sense group therapy may be said to be as old as humanity. Man has always sought the company of his fellows in times of emotional stress, and the commonest way of ensuring that the young person's psychological development will be healthy is to put him into suitable social groups. The term "group therapy," or "group psychotherapy," however, is used for procedures in which help is given to individuals with psychological difficulties through the medium of groups created for this purpose.

Many forces have contributed to this. Most prominent, perhaps, has been the fact that the spread of psychoanalytic thought has created a demand for psychotherapy which has grown out of all proportion to the supply of trained therapists. Practically every trained psychotherapist gets far more requests for his services than he can deal with. The position appears even more disturbing if the psychotherapeutic needs of society are surveyed, for the incidence of neurosis⁷ appears to be such that not enough psychotherapists could be trained to give individual treatment to all who require it. A procedure by which several persons can be treated together is therefore of the greatest value. Apart from this external pressure on the psychotherapists there has also been an internal impetus during recent years towards the therapeutic use of groups. This impetus arises as the logical sequence to those advances in the psychology of character and personality whereby, paradoxically, much of the individuality of the person is shown to be derived not so much from such self-contained forces in the form of instincts as from the history of his relations with others. A striking feature of these developments is the way in which the various types of worker—psycho-analysts, psychiatrists, and psychologists—have been moving in the same direction. Among the psycho-analysts this trend may be observed in an ever greater emphasis on the nature of the "here-and-now" feelings in the doctor-patient relationship—the so-called transference situation—with a theoretical counterpart in a turning towards the importance of the earliest relationships between the child and

his parents, as contrasted with the former more exclusive reliance on instinct theories. From the other workers the remarkable contributions, both in theory and in practice, of Moreno,⁸ Lewin,⁹ and Burrow¹⁰ have emphasized the significance for the individual at all times of the forces in his social field. These developments in psychology may well be part of a much deeper *Zeitgeist* in which, according to social philosophers, our Western mass-society is groping towards a replacement of the ideal of the self-sufficient man by one which takes into account man's deep needs "to belong." It is certainly noteworthy that, whatever the contributing forces, in almost every civilized country during the last few decades more and more emphasis is being placed on the contention that man is a social being and that his individuality as a person is meaningful only in terms of his relations with others. There is a risk that this tendency may be carried too far and that the pressure of the group may hinder the exceptional man from expressing himself in art, philosophy, and science: it is to the exceptional man that civilization owes its highest achievements, men who usually stand aside from what Ibsen called "the damned compact majority."

As would be expected from its complex origin, many methods of group treatment have been described. At one end of an imaginary scale could be the mass-suggestion and inspirational approaches exemplified in Couéism and in the Alcoholics Anonymous movement. There might then be a region containing methods with a greater appeal to reason and which accordingly make much more use of explanations of emotional conflicts by the therapist, with or without subsequent free discussion—in which all the unreasonable forces usually involved are apt to play a prominent part. At the other end of the scale would be the methods of what might be termed the sadder and wiser group. This group, following the psycho-analysts, believes that deep emotional conflicts are not resolved unless their unconscious dynamics are revealed in actual human relationships. The work of Bion,¹¹ Rickman,¹² and Foulkes¹ in this country, and of Slavson and his co-workers⁵ in America, illustrates this point of view. Current work in group therapy is mainly concerned with exploring new methods, with the selection of patients, and with the most appropriate compositions of groups. Slavson and his co-workers⁵ seem to be in favour of more specific groupings of cases than are British workers, but apart from this it is interesting to note the broad similarity between the group methods founded on psycho-analytic principles yet developed independently in America and in this country. The more analytic the method the more is the group allowed to develop spontaneously. The idea of six to nine adults meeting to take part in a free discussion with the aim of relieving their psychological difficulties may readily recall some religious movements of recent years. The therapeutic group, however, is sharply differentiated from these by the presence of the therapist, whose function from the start is to interpret what is happening. By seeing their unconscious motives in action in the ways they feel towards each other as well as towards the therapist, the group members gradually gain insight into their difficulties and hence freedom from the tyranny of the war within their minds. The demands on the therapist and patients

¹ Wilson, A. T. M., Doyle, M., Kelnar, J., *Lancet*, 1947, 1, 735

² Jones, S. M., *Brit J Med Psychol*, 1948, 21, 104.

³ Chance, E., *Ment Hlth, Lond.*, 1948, 8, 98.

⁴ Klamman, J. W., *Group Psychotherapy—Theory and Practice*, 1946. New York.

⁵ Slavson, S. R., *The Practice of Group Therapy*, 1947. New York.

⁶ Foulkes, S., *Group Analytic Therapy*, 1948. London.

⁷ Russell Fraser, "The Incidence of Neurosis Among Factory Workers," Industrial Health Research Board Report, No 90. 1947. London: H.M.S.O.

⁸ *Sociometry*, 1945, 8, Nos 3 and 4.

⁹ *Human Relations*, 1947, 1, 1.

¹⁰ *The Social Basis of Consciousness*, 1927. London.

¹¹ *Human Relations*, 1947, 1, 314, 415; 1948, 2, 1.

¹² *Lancet*, 1943, 2, 675.

leads to the production in increased quantities of platelets, leucocytes, and reticulocytes, but in the familial outbreaks referred to one or more of these features was frequently absent. In the majority of cases about which the existing information is adequate it was rare for reticulocytes to exceed 1% for the first week or 10 days from the onset of the crisis, even though after recovery a constant reticulocytosis of 10-15% was a feature of these cases. Josephs⁵ in his studies on haemolytic anaemias suggested that in addition to the haemolytic process there might be some hypoplasia of the marrow, and Dameshek³ thought that the spleen might produce a hormone inhibiting the maturation or delivery of cells to the circulation.

A recent article by Owren⁶ throws much light on the subject. He describes "haemolytic" crises occurring in six individuals, four of whom were members of one family and became ill within a few days of one another. Owren's studies show that in five out of the six cases reticulocytes were absent during the first 10 days, and that a sudden rise occurred between the tenth and twelfth days. Leucopenia, thrombocytopenia, and a decrease in serum bilirubin and urinary urobilin were also noted during the early days of the crisis. During recovery the first event was the development of a leucocytosis, followed by an increase in platelets and finally a reticulocytosis. By good chance one of the patients was fully examined both clinically and haematologically eight days before a crisis developed, and an interesting feature of Owren's paper is the series of seven photomicrographs of this patient's marrow throughout his illness. Before the crisis the marrow shows the typical erythropoietic activity seen in this disease, but red cell precursors are almost completely absent in films taken on the fourth and sixth days of the illness; by the ninth day commencing regeneration of proerythroblasts has begun to be obvious, and within a few days the marrow shows tremendously active normoblastic erythropoiesis. Owren also confirms the observation made by Dacie and Mollison,⁷ who showed that the life span of the erythrocytes in congenital haemolytic anaemia is greatly reduced, being less than 14 days, compared with a normal period of 120 days. Owren confirms this finding and draws the conclusion that if marrow aplasia occurs, even without increased blood destruction, the red cell count will be halved in a week. This is precisely the finding in the case already referred to.

The latest word on the subject comes from Dameshek and Bloom.⁸ They report on seven cases (of which three have already been recorded in the literature⁹), the last of the series having been most fully studied. They confirm the absence of reticulocytes at the height of the crisis and find in the marrow a nucleated red cell population consisting almost entirely of the most primitive cells—namely, pronormoblasts and basophilic normoblasts. As this "maturation arrest" passes off increasing numbers of later normoblasts are seen and reticulocytes begin to appear in the peripheral blood about the ninth day from the onset of the crisis. There is some evidence from this case and others that there is increased faecal excretion of urobilinogen during the crisis, indicating increased haemolysis. Dameshek and Bloom consider that the various features of the haemolytic crisis might be explained by an extreme degree of hypersplenism, causing simultaneously both excessive

haemolysis and a maturation arrest of the nucleated red cells and thus leading to the extremely rapid development of anaemia. It is clear that much interesting work remains to be done in this condition; in any future investigation, in addition to blood and marrow studies, the measurement of urobilinogen excretion is likely to be of critical value in assessing the true importance of haemolysis in the so-called haemolytic crisis.

HYPERSENSITIVITY TO UVEAL PIGMENT

One of the unsolved problems of ophthalmology is the aetiology of sympathetic ophthalmia, though diligent attempts to find the answer have been made for over a hundred years. Stimulus was given to the search when Elschnig,¹ of Prague, propounded his theory of anaphylaxis, a direct outcome of which was the intracutaneous test for hypersensitivity to uveal pigment. Experimenting with this test in 1934 Friedenwald² found that two weeks after injection of the pigment into the skin of a hypersensitive individual the histological findings in the skin—phagocytosis of the injected pigment, lymphocytic infiltration, epithelioid and giant-cell systems—were closely similar to the histological picture of sympathetic ophthalmia in the eye. Woods³ had been working along the same lines for some years before this, and he and McPherson⁴ have recently published the results of some further experiments carried out at the Wilmer Ophthalmological Institute of the Johns Hopkins Hospital. In the interpretation of the tests they chiefly rely on the histological findings in the excised skin.

The pigment solution which they use is derived from the uvea of fresh ox eyes. An injection of 0.1 ml. of the solution is made into the forearm, and in due course the area of the skin is excised and prepared for histological examination. Control studies were also made. The test was considered to be positive when it was found that all the pigment had been ingested by phagocytes and when the skin had been infiltrated by lymphocytes, epithelioids, and giant cells. In some positive cases even nodule formation was observed.

Patients with three different types of eye disease were tested. In the first group were 30 cases of alleged sympathetic ophthalmia, the majority of which were confirmed by histological examination of the excised eye. Of these cases 60% gave straight positive reactions; the remainder were doubtful or weakly positive. In the type of eye injury usually considered most likely to produce sympathetic ophthalmia—namely, that involving the ciliary region of the globe—one of the greatest difficulties for the ophthalmologist is to know how long he can safely wait before deciding to remove the exciting eye. In this country the accepted period is about 21 days. McPherson and Woods concluded from their observations that in the majority of cases in this group the test was positive within the first month. The second group of patients consisted of 139 cases of intraocular operations or injuries involving the uveal tract: there was the usual variation which such cases show in the time and extent of recovery. None of these patients subsequently developed sympathetic ophthalmia, but the pigment-injection tests showed that of those who lost an eye as a result of the injury or operation, or had a stormy recovery with post-operative uveitis, 14% gave a strongly positive reaction. In 13% the results were doubtful and in 66% entirely negative. The third group consisted of 43

¹ Murray-Lyon, R. M., *British Medical Journal*, 1935, 1, 50.

² Scott, A. M., *Lancet*, 1935, 2, 572.

³ Dameshek, W., *New Engl. J. Med.*, 1941, 224, 52.

⁴ Horne, J. L., Lederer, H., Kirkpatrick, H. J. R., and Leys, D. G., *Lancet*, 1945, 2, 33.

⁵ Bull. Johns Hopk. Hosp., 1938, 62, 25.

⁶ Blood, 1948, 3, 231.

⁷ *Lancet*, 1943, 1, 550.

⁸ Blood, 1948, 3, 1381.

¹ v. Graefes Arch. Ophthalm., 1910, 75, 459

² Amer. J. Ophthalm., 1934, 17, 1008.

³ J. Amer. med. Ass., 1921, 77, 1317.

⁴ Amer. J. Ophthalm., 1948, 31, 25.

cases of endogenous uveal disease. None of these gave positive reactions.

Woods and McPherson believe that the mechanism of these positive tests can be quite simply explained. It has been shown that uveal pigment possesses organ-specific and lacks species-specific immunological properties. When pigment hypersensitivity occurs after an ocular injury the uveal pigment is absorbed from the eye; the cells of the body react to the pigment, and a generalized hypersensitivity ensues. In certain cases, however, absorption of pigment results in a local hypersensitive reaction in the eye with the histological findings characteristic of sympathetic ophthalmia. In those cases in which the result of the test is positive but sympathetic ophthalmia does not occur the mechanism of sensitization is the same, but the process stops when further absorption of pigment from the eye ceases, and no local hypersensitive reaction takes place. The eye is then affected only by a non-specific endophthalmitis. Woods and McPherson suggest one or two possible theories to account for sympathetic ophthalmia, but the problem still remains, and the current theory that the cause may be some obscure infective process activated under certain conditions cannot be discarded. The ophthalmologist may, however, gain some moral support in a doubtful case from a positive intracutaneous hypersensitivity test when deciding upon such a grave step as enucleation.

HEAT AND BLOOD FLOW

It has been a generally accepted axiom that one of the effects of heat is to increase the circulation in that part of the body to which it is applied. Some doubt about the accuracy of this concept has arisen as the result of recent work in the U.S.A. Kemp and his colleagues¹ at the University of Iowa heated the hind limbs of anaesthetized dogs with short-wave diathermy and measured the rate of flow in the femoral artery and vein by means of a bubble

w-meter. They used a thermocouple to measure changes in the deep temperature, and they found that short-wave diathermy producing a definite rise in muscle temperature failed to increase the blood flow in either artery or vein. In fact they state, "In many experiments a significant decrease in the volume of blood flow was observed." The anaesthetic was not found to be responsible for this result, and a decrease of blood flow, on the application of short-wave diathermy also followed if the limb had been previously denervated. On the other hand, heating by means of microwaves according to the technique worked out by Krusen and his colleagues² was found to result in an increased blood flow. Kemp and his colleagues make it clear that their findings refer only to the circulation in the main artery and vein and not to the collateral circulation. In addition their results might have been affected by the anaesthesia, the use of heparin as an anticoagulant, and the sectioning and cannulation of blood vessels. In discussing the contradictory results of heating with short-wave diathermy and with microwaves they suggest that these thermogenic agents may have other effects besides heating. Possibly short-wave diathermy causes an increase in peripheral vascular resistance due to increased sensitivity of the contractile elements in the blood vessels. Thus the beneficial effects of this form of treatment may be due to a decreased rather than an increased circulation. It is also possible that the findings in the anaesthetized dog may not be comparable to those in spastic states of the vasomotor and skeletal systems.

The effect of diathermy on the blood flow in the forearms of normal men has been studied by C. S. Wise,³ of the Harvard Medical School. He measured the blood flow by means of a plethysmograph and used both condenser field and induction cable application of diathermy: with both methods he obtained evidence of increased blood flow in the limb. He concluded that this was the result of the thermal effects of the short waves and not of any specific effect on the blood vessels. Wise was aware of the contrary results obtained by Kemp and his colleagues, and to account for the difference he suggests that the flow in the femoral artery may not be an accurate indication of the flow in the limb as a whole, and also that the flow in peripheral vessels may be increased while that in the central vessels may be decreased. These two papers are of great interest. While the authors of both agree that deep heat is a valuable therapeutic agent they are not agreed on the mechanism by which its effects are obtained. Work such as this will lead to a more exact knowledge of the physiological and therapeutic effects of physical agents.

BONE GRAFTS

During the years after the war much valuable experience has been gained in military and other hospitals as the result of the large numbers of bone-graft operations done to secure union in difficult fractures. A follow-up study on 358 cases has recently been carried out by Bishop, Stauffer, and Swenson¹ in order to determine the indications for the use of the various types of bone grafts. The injuries for which treatment was required were mainly severe gunshot wounds of the extremities, and full-thickness skin grafting was necessary in 21.2% of these cases before bone replacement could be attempted. Union was judged on the clinical and radiological findings. Inlay grafting, which was used at first, was steadily replaced by massive dual onlay grafting, since this was found to be more effective. The procedure was to strip the periosteum off the bone ends in order to provide a continuous sheet; the fibrous tissue between the bone ends was then removed, and the latter were freshened. The marrow cavity was cleaned out with a curette in order to promote endosteal bone formation. The gap between the bone ends was packed with cancellous bone from either the upper tibia or the iliac crest, and massive dual onlay grafts were fixed rigidly in position by machine-type screws, which were considered essential in order to allow early joint motion at the sixth week. Where additional strength was required, plates and screws were used, but never as a substitute for bone grafts.

Of the patients in this series 10.9% had inlay grafts, 40.2% had onlay grafts, and 48.9% had grafts of the dual onlay type. In 318 cases the grafts were followed to union, the average time being 20 weeks. The slowest to heal were inlay grafts, averaging 27 weeks; onlay grafts required on an average 20 weeks, and the dual onlay variety only 19 weeks. Factors causing delay in union were decalcification of bone ends, sclerosis of the major fracture fragments, large bone defects which had to be bridged, infection, poor apposition, fracture of the graft, and poor fixation of the grafts in defects near a joint. Some failures also occurred with short grafts. It is claimed that adequate fixation of the grafts with screws will allow movements at the adjacent joints at an early date and will thereby diminish the time required for rehabilitation. In general the authors regard dual onlay grafting as the method of choice, being indicated particularly when decalcification or sclerosis is present, when the bridging of a gap is necessary, and for use near a joint. Rigid fixation of the graft is essential.

¹ *Arch. Phys. Med.*, 1948, 29, 12.

² *Proc. Mayo Clin.*, 1947, 22, 209.

³ *Arch. Phys. Med.*, 1948, 29, 17.

THE JOHNS HOPKINS SCHOOL OF SURGERY

HUNTERIAN LECTURE BY DR. JOHN M. FINNEY, JUN.

The Hunterian Lecture, delivered before the Hunterian Society at the Mansion House, London, on Jan. 17, was by Dr. John M. Finney, jun., of Johns Hopkins Hospital, Baltimore, whose subject was the founding and influence of the Johns Hopkins School of Surgery, and especially the work of William Stewart Halsted (1852-1922), the first professor of surgery there. Dr. Finney recalled that 22 years ago his father delivered a Hunterian Lecture at the Mansion House, when his subject was the influence of John Hunter on early American surgery. On this occasion he proposed to speak of Halsted and his pupils, who might be said to occupy the same position as Hunter and his trainees 150 years ago. The foundation of Johns Hopkins practically coincided with the understanding of the bacterial origin of infection and disease and the development of Listerian methods of control.

Halsted was born in New York and trained in the College of Physicians and Surgeons there, graduating in 1877. In 1878-80 he spent two years in Europe and brought back with him many new ideas gained in Continental clinics. He was chosen to organize the services in the newly founded New York Hospital. He was a bold and original surgeon, an inspiring teacher, an omnivorous reader, an extraordinarily hard worker, accepting responsibility as a surgeon for six widely separated hospitals, and at the same time maintaining a "quiz" of 60 or more students at his house. Among other things he was a pioneer in the method of "refusion" of blood. He also carried out one of the earliest operations in America for gallstones; this was performed on his mother in 1882, when he incised the gall-bladder and extracted seven stones. He was a fearless experimenter, and one of his experiments led to personal tragedy. In 1884 he was investigating the use of cocaine solutions in the eye to produce anaesthesia of the conjunctiva and cornea. He and two of his assistants experimented upon each other and found that pain impulses could be abolished—the first demonstration of nerve-block anaesthesia. Several of the students in the "quiz" were gradually included in these innocent experiments, but the unfortunate outcome was the creation of a group of cocaine addicts, amongst them Dr. Halsted, and Halsted alone seemed to have returned again to a useful though much altered life. After great efforts he freed himself so far as cocaine was concerned, though there seemed to be evidence, said Dr. Finney, of some dependence on small but not increasing doses of morphine during the rest of his life.

He emerged from these trials a greatly changed man. He had been a restless and tireless worker, spending himself in endless operations, teaching day and night, controlling services in several hospitals; but after this interval he began to live a much more thoughtful and leisurely life, with time for reflection and contemplation, and no doubt in the end his work was far more fruitful than it could have been had he proceeded at his previous pace. In 1886, knowing of his struggle, Dr. W. H. Welch invited Halsted to work in his laboratory at Baltimore. Halsted devoted himself to operative procedures and the treatment of wounds, making careful microscopical studies of wounds, paying attention particularly to exact approximation of surfaces and the avoidance of dead spaces, and studying also the organization of blood clot.

Professor on Probation

Although his personal battle against drug addiction had not been quite won when the Johns Hopkins Hospital was opened in 1889, Halsted was chosen for the chair of surgery, for a time on a probationary basis. Within three years he was recognized as surgeon-in-chief of the hospital, and this for him personally was as great a triumph of will power and fortitude as of surgical ability and skill in investigation. Dr. Finney gave an amusing account of the laconic interview with Halsted at which his father was informed that he had been selected as surgical assistant, also of the elder Finney's reactions on going from Massachusetts General Hospital, which was rich in tradition, to the Johns Hopkins, which had no tradition at all but was looking very eagerly into the future.

Halsted was not a very skilful operator, lacking dexterity in the use of his hands, but he made up for it by his intellectual grasp of the principles of surgery and his meticulous care for detail. In his treatment of the staff he was an individualist, insisting on each man carrying out his own investigations with as little assistance as possible. He encouraged his assistants to go into the laboratory as well as into the ward. Shortly after the opening of the hospital he made a striking contribution to surgical technique. In the winter of 1889-90 the nurse in charge of his operating room complained that the solutions of mercuric chloride produced a dermatitis on her arms and hands. Halsted gave the matter consideration and got a rubber company in New York to supply a special rubber glove, so introducing in this article, though at first only for the protection of the skin, into the operating theatre. The circumstance had a second result: the nurse for whose protection the glove was devised became Mrs. Halsted.

Dr. Finney said that for 23 years his family lived only a block away from the Halsted home in Baltimore, and he could remember seeing again and again Dr. and Mrs. Halsted, he the picture of sartorial perfection, setting out in some state in their carriage. There was an indefinable something about Halsted which set him apart from ordinary people. In all the 33 years in which he was closely associated with the lecturer's father the latter was never completely at ease in his presence, nor did they ever reach any common ground of mutual understanding and real friendship. There was always a stiffness about Halsted which prevented any real cordiality, and that was true of Halsted's relations with all the members of the medical faculty, with the exception of Welch. Polite respect was the rule; personal intimacy was non-existent. Halsted rarely awarded praise—an exception was his praise of Harvey Cushing—and he could be severe in his censure and in the penalties which he imposed. Dr. Finney told other stories of Halsted's peculiarities. All his suits were made in London and ordered several at a time. His personal linen was not only purchased in Paris but sent back to be laundered there. He picked out the hide from which his shoes must be made. His open fires, of which he was inordinately fond, were fed by white oak specially shipped from the Carolina mountains. Was it any wonder that his operative technique was similarly fastidious, that he should spend two hours on the repair of an inguinal hernia, three hours on a thyroidectomy, six hours on an operation on the breast?

But his influence as the maker of a school was far-reaching, and of the 17 men who served as resident surgeons under Halsted 11 attained professorial rank in some medical school, and the same was true of many of his other assistants. It could be said that, thanks to Halsted's influence, there developed a new school of surgery which spread over the country as men trained in it went out to take responsible posts elsewhere. Halsted's own contributions, especially to the radical treatment of cancer of the breast, were classics, but greater than anything he himself did in surgery was his influence on others, on his pupils, and on those whom they in their turn taught.

In some brief discussion following the lecture Mr. Dickson Wright said that it was encouraging that a man of Halsted's angular and difficult temperament should have been able to found such a school. It was clear that a great teacher need not necessarily be an extrovert. Mr. Mortimer Woolf was reminded of Halsted's likeness to John Hunter, though Halsted, of course, had the benefit of scientific methods and institutions. Sir Gordon Gordon-Taylor added a few words of appreciation.

The Northern Ireland Ministry of Health has issued a booklet entitled *The Future Mental Health Service of Northern Ireland* (H.M.S.O., 1s. 6d.) explaining the provisions of the Mental Health Act, 1948. It gives a broad picture of the details required of the authorities concerned in its administration. Mr. William Grant, Minister of Health, explains in a foreword that the passing of this Act is only the beginning: "I should like to assure the people of Northern Ireland, if any assurance is necessary, that both the Northern Ireland Hospitals Authority and my Ministry intend to press forward energetically with the expansion of the Mental Health Service authorized by the Act."

Reports of Societies

AETIOLOGY OF DENTAL CARIES

At a meeting of the Section of Odontology of the Royal Society of Medicine on Jan. 24 there was a discussion on the aetiology of dental caries. Dr. SHELDON FRIEL was in the chair.

Mr. G. J. PARFITT spoke of this as a debatable question. Was the important factor the physical properties of the food or the structure of the teeth? Was only one factor concerned or were there many? The study was complicated by the varied manifestations of caries, differences in the speed of the process, the fact that all the members of some families were free while in other families there seemed to be a general susceptibility, the higher incidence among town dwellers, the special liability to caries of persons working in certain occupations, and the appearance or increase of caries among primitive peoples on coming in contact with civilization. All this suggested that a diversity of factors were concerned.

If diet was accepted as having an effect on incidence, was this a nutritional effect or was it due to the contact of certain food substances with the teeth? A correlation between caries and variations in the contents of the saliva had been shown by some workers; others had suggested that there was little correlation. The chemical and physical properties of the saliva seemed to have some effect, but did not explain susceptibility or immunity. One curious circumstance was that during the war the children of the Channel Islands who remained at home suffered from caries only to about half the extent of those who were evacuated to England and lived on English food; the latter had caries to about the same extent as English children. It had been shown that supplementary foods for expectant and nursing mothers might prevent caries in the offspring, but no extravagant claims could be made. Experiments in Oslo showed that with antenatal care of the mother and care during the pre-eruptive stage (the first year) of the child's existence there was less caries or more delay in the appearance of caries than among children who had received only post-eruptive care. Ingestion of fluorine in drinking-water during tooth formation was thought to diminish the likelihood of caries, but there was no effect after the teeth had formed. Ingestion of calcium phosphate or vitamin D was declared to have some effect on the teeth after eruption. Some workers had reported an arrest of dental caries and an almost complete suppression of caries incidence in children on a controlled diabetic diet. Some considered that ample ingestion of protein was essential to give protection against caries. An adequate supply of vitamin C was at one time thought to reduce caries by 50%, but further trials did not support that view.

Effect of Carbohydrates

In considering the local environment the question of food left to stagnate in the teeth was an important one. The site, number, and size of the stagnant areas, the influence of mastication, and the arrangement and occlusion of the teeth had to be taken into account. With highly refined foods the scouring effect was missing, and mastication was less vigorous. Methods of preparing food which induced stickiness and a liability for particles to remain about the teeth were contributory. A considerable degree of acidity could exist in the mouth and etch or soften the enamel. But although caries commonly occurred in the areas of stagnation, not all stagnation areas became carious. Sugars had been considered bad for the teeth, and the idea that refined carbohydrates were connected with the production of dental caries had many points in its favour. Bakers and confectioners exposed to refined carbohydrate dust were said to show a high incidence. When consumption of refined carbohydrates was reduced, as in wartime, the caries incidence also was reduced. Refined carbohydrate was an accessory cause which could not be ignored.

As for the bacteriology of dental caries, a vast number of different bacteria were commonly present in the mouth, and many organisms in pure culture produced acid by fermenting carbohydrates. Observations showed that the presence of the lactobacillus was correlated with the carious process, though other organisms took part. Finally, Mr. Parfitt touched upon

the new idea of proteolysis. The fact that the carious process affected the enamel slowly and the dentine more rapidly had been taken to indicate that the process was proteolytic in nature. Amid this crowd of hypotheses he would suggest only that the initial attack on the enamel surface was the all-important matter in the consideration of dental caries.

Professor H. H. STONES said that with present knowledge the theory that the initial stage was brought about by the production of acid still held the field. Why did certain types of persons and certain animals get dental caries and others not? Caries increased among the Eskimo when they came into contact with civilization, but that applied particularly to children and not to those of mature age. He thought that alterations in diet were significant. It was noteworthy that caries was now increasing in Norway, along with increased sugar consumption. He asked whether Mr. Parfitt considered that the small white patches seen on the enamel were a sign of commencing caries.

Dr. A. B. MACGREGOR asked what the "refinement" of carbohydrate meant. It did not mean that there was less carbohydrate. As for sugar, ancient man had caries before sugar was discovered.

Mr. PARFITT replied that white patches on the enamel especially if there was a little roughening or alteration of the surface, generally indicated the beginning of caries. The refinement of carbohydrates meant usually the removal of protein, and with this went a lot of fibre and considerable alteration of substance. Fine carbohydrate was supposed to be much more acid than when mixed with protein, fat, and certain vitamins.

CHEMOTHERAPY OF TUBERCULOSIS

A meeting of the Fine Chemicals Group of the Society of Chemical Industry was held at King's College, London, on Jan. 18 for a discussion on the chemotherapy of tuberculosis. Sir JACK DRUMMOND presided.

Dr. JAMES WALKER said the tubercle bacillus was acid-fast and one of its characteristics appeared to be a relatively high content of lipid material, though there was no evidence of a continuous lipid membrane around the bacillus, a theory which was fairly widespread. A number of metabolic products had been isolated, and one of these, mycolic acid ($C_{60}H_{112}O_4$), was the compound chiefly responsible for acid fastness. But while some of the metabolic products of the tubercle bacillus had been demonstrated, it was not known yet by what metabolic pathways they were produced. The growth of the tubercle bacillus was relatively slow. It was a common experience for recently isolated strains to require to be cultured several times before growing well in the test tube.

Tuberculosis was unlike any of the other bacterial infection with which chemotherapy had to deal. When small number of staphylococci or streptococci were introduced into the body they were dealt with by the phagocytes, and the host was unaware of the incident; the tubercle bacillus could live and even multiply within the phagocytes. With tuberculosis, again the direct method of investigation by going straight to the experimental animal had the disadvantage that the disease had a long course.

Koch reported many years ago that gold cyanide inhibited the bacillus *in vitro* in a concentration of 1:2,000,000, but it had no effect *in vivo*. Not until many years later was this explained by the fact that gold-protein compounds did form in the body. The best-known gold compound was sanocrysin which was introduced in 1924 and was received everywhere with uncritical enthusiasm. Gold had now almost disappeared from the current literature of tuberculosis. Since 1935 the advent of the sulphonamides had redirected the therapy of bacterial diseases generally. The speaker gave a brief review of the work done on the various compounds, concluding with a reference to antibiotics and especially streptomycin.

Clinical Aspect

Dr. P. M. D'ARCY HART said that it was important to discover some order in the use of substances offered for combating tuberculosis. Only a minority of such substances have been found to have any effect on experimental animals, but some which had low or no activity in the test-tube might

be active in the body. The guinea-pig was usually employed for the study of tuberculosis; its disadvantage was that for screening purposes it required a relatively large amount of the drug. The mouse had been used experimentally, but it was generally more resistant to tuberculosis than the guinea-pig. The advantages and disadvantages of extreme susceptibility on the one hand and considerable natural resistance on the other in testing drugs in tuberculosis were being studied. It seemed that the use of guinea-pigs, laborious as the process was, was still the most fruitful method.

He went on to speak of the groups of substances which had been tested recently on experimental tuberculosis in animals or clinical tuberculosis in man with positive results. The first group consisted of the sulphonamides and sulphone compounds. Then came fatty acids, then aromatic compounds, followed by certain miscellaneous organic compounds, and finally the antibiotics. The list included purely synthetic substances, such as sulphones, on the one hand, which had been created in the laboratory, and on the other hand products which so far had not been synthesized and existed only in nature. Only about half a dozen substances had been found to have positive results in clinical tuberculosis in man. Of the sulphonamide group, promizole and sulphethone were the two most popular at the moment. Another compound fairly widely used was para-amino-salicylic acid. Among the miscellaneous organic compounds was calciferol. The antibiotics included conspicuously streptomycin. He also put in the list of antibiotics cepheanthine, described by certain Japanese workers as almost miraculous in its activity, but, according to a recent report from America, having no activity in the guinea-pig.

For the benefit of an audience mainly non-medical Dr. Hart gave a brief account of tuberculosis and its manifestations, and then examined in turn the various compounds which promised positive results in human tuberculosis. Several hundred sulphone compounds had been tested in the laboratory and a number in man. The clinical results indicated some regressive effect, but he thought it was fair to say that no definite place had been found for these drugs when used alone. The use of the sulphones with streptomycin might be more promising.

Clinical trials with para-amino-salicylic acid had been in progress in Sweden, and there had been a few sporadic investigations in this country. At the moment it would be unwise to come to a conclusion about the value of this drug in tuberculosis. With calciferol dramatic and consistent improvements had taken place in the therapy of lupus vulgaris. The effectiveness of this therapy was discovered simultaneously in France and in this country during the war. It was not clear how calciferol worked; possibly it worked on the host and not on the bacterium.

Streptomycin

The discovery of streptomycin, Dr. D'Arcy Hart continued, was of historical importance because of its low toxicity, which permitted its use in effective doses in animals and man. Streptomycin was water-soluble and yet apparently would pass readily into the cell. It was effective, at least temporarily, in a small proportion of the acute forms of tuberculosis, such as tuberculous meningitis and acute miliary tuberculosis, which had hitherto proved almost invariably fatal. It had a limited effectiveness in renal tuberculosis, but appeared to be of little value in the more chronic forms of lung disease.

Concerning the toxicity of the other agents, promizole might produce after a long period thyroid enlargement and sexual changes. Para-amino-salicylic acid had little systemic toxicity, though the large quantities which had to be taken complicated its use. Streptomycin, though of low toxicity, had the disadvantage that resistant strains of bacilli emerged during prolonged treatment. Attempts to prevent the appearance of such strains had been made by combining streptomycin with other agents, but no conclusive results were as yet forthcoming. The difficulty in assessing the clinical usefulness of drugs in tuberculosis lay in the large doses in which they had to be used in man as compared with experimental animals, the protean manifestations of the disease, its chronicity, and its tendency to natural recovery. Chemotherapy was only one approach to the problem. The older methods of treatment and social prevention had a great part to play. It looked as if the

weapons required for the conquest of tuberculosis were as varied as the pathological manifestations themselves.

In the course of some discussion Sir JACK DRUMMOND said that it appeared that the limiting factor in studies on potentially valuable compounds was the absence of a thoroughly satisfactory screening test less laborious and time-consuming than the guinea-pig test. He had been interested to hear of trials in Sweden on para-amino-salicylic acid, and he asked whether the Medical Research Council intended to make similar tests under adequate control. Dr. HART said that that was being done, and it was also under consideration whether a combination of para-amino-salicylic acid and streptomycin might be of service in preventing the emergence of resistant strains.

Several contributions to the discussion were made by biochemists, one of whom said that there was little doubt that the lipid complex of the organism had extraordinary chemical and physico-chemical properties, with the capacity to inhibit activity over a very wide range of antibiotic substances. The tubercle bacillus would stand 40% sulphuric acid for an hour and 10% for twenty-four hours without being killed. Evidently there was some significant mechanism which prevented quite small ions from getting to the cell.

Another speaker, Dr. O'CONNOR, said that the greatest advances in therapy would come only from much closer co-operation between organic chemists, biologists, and medical men. The organic chemist was often working in the dark owing to his non-appreciation of the biological problems involved. In America organic chemists had made a slight modification of streptomycin, and according to American reports the toxicity of the modified product had been further lowered. Another approach which organic chemists might make to the problem was in devising adjuvants which might be administered to enhance the activity of the principal drug. With para-amino-salicylic acid, clinical trials had shown that within as short a time as three or four days the patient's general condition improved considerably; it looked as if the toxins in his body were to some extent neutralized, so that possibly the natural body resistance was then enabled to cope with the virulent bacteria.

CAUDAL ANALGESIA

At a meeting of the Edinburgh Obstetrical Society on Jan. 12, with the president, Dr. E. CHALMERS FAHMY, in the chair, papers were presented by Dr. A. F. ANDERSON and Dr. J. D. BOURKE.

Dr. Anderson, discussing caudal analgesia, described the anatomical features of the sacral canal. He reviewed the pharmacological effects of local anaesthetic injected extradurally in this region and discussed the interference with such effects resulting from abnormalities of development of the sacrum, of which he showed a number of radiographs. He then recorded his personal introduction to this subject, and indicated how he had concluded that in this country the method should be restricted to hospital practice, and that the constant attention necessary for success with a continuous technique was so exacting as to make it applicable to very few patients indeed. He had therefore decided to restrict his investigations to the use of a single dose using procaine to determine the quantity of anaesthetic necessary to secure the desired effect and then giving a second injection through the indwelling needle of a similar quantity of amethocaine hydrochloride solution with a view to prolonging the effects of the procaine. With this technique he had found it possible to obtain relief of pain lasting from three to five hours. The factor most vital to success was the timing of the injection to allow of delivery occurring within this range. Dr. Anderson described the technique of the caudal injection, and subsequently discussed indications and contraindications. Of the former, he thought the need to relieve pain in premature labour was the most important. He thought the method should be in the hands of an obstetrician or of a specialist anaesthetist with very wide experience of practical obstetrics. He recorded the results of 67 cases personally treated.

Anaesthesia for Caesarean Section

Dr. Bourke discussed the difficulties facing the anaesthetist in choosing an anaesthetic for caesarean section. Many caesarean sections were in patients who were already suffering

from serious disorders peculiar to pregnancy or to parturition, from pre-eclampsia, starvation, and acidosis; from grave ante-partum haemorrhage; or from diabetes, tuberculosis, or other incidental disease. Many were emergencies, where reasonable pre-operative preparation could not be attempted. Many patients were suffering from a degree of gastric dilatation and were liable to vomit large quantities of material suddenly. Sedative pre-medication, which might prejudice the foetus, must be eschewed. Finally, the presence of a large tumour within the abdomen and the insistence of some operators upon a steep Trendelenburg position interfered with diaphragmatic respiration. Spinal analgesia had a sinister reputation, possible reasons for which Dr. Bourke examined in detail. Nevertheless it had certain advantages, and there was a place for it, especially when supplemented by light general narcosis. Inhalational anaesthetics were undoubtedly the most frequently employed. A possible objection was that most general anaesthetics depressed the activity of the uterine muscle. This risk could be minimized by the use of cyclopropane at a very light plane along with curare, which provided necessary relaxation and minimized the total dose of the agent used, so reducing its toxic effect. It appeared that significant quantities of curare did not cross the placental barrier, but not more than 10 mg. should be given. In the series of cases which Dr. Bourke now recorded the results for the babies had been quite favourable, most breathing well at once and all crying within eight minutes. Local infiltration analgesia was indicated in those cases where there was gross foetal distress, when no form of anaesthesia which might affect the foetus, however remotely, should be employed. Caution was required in applying this method to obese patients, who might require such a large infiltration that toxic effects might appear, while wound healing was sometimes poor. The inhibition of sulphonamides by procaine solution had also to be remembered.

These papers were discussed by Dr. JOHN GILLIES, Dr. D. S. MIDDLETON, Dr. W. F. T. HAULTAIN, Dr. R. DE SOLDENHOFF, Dr. SUZANNE PATERSON, Dr. CAROLINE ELLIOTT, Dr. W. I. C. MORRIS, Dr. ALISON RITCHIE, Dr. F. G. GIBBS, and the president.

HARVEIAN SOCIETY OF LONDON

The annual general meeting of the Harveian Society of London was held at Manson House, 26, Portland Place, W.1, on Jan. 19. The Buckston Browne Prize for 1948 was presented to Dr. V. C. Medvei by the president, Mr. E. G. Muir. The honorary treasurer, Sir Cecil Wakeley, made his financial statement and announced that the society had benefited to the extent of £7,250 by a bequest of the late Sir Norman Gray Hill. The president then read his address, "A History of Surgery." New Year greetings were conveyed to the meeting from Professor Sven Johansson, of Sweden, a foreign corresponding member of the society. The officers for 1949 were elected, Dr. Desmond MacManus being inducted as president.

The London County Council has recently published the *Statistical Abstract for London, 1937-1946* (with 1947 figures where available).

Information contained in this volume is entirely statistical, and subjects range from infant mortality to liquor licensing, and from horse-racing to the number of meals served in civic restaurants. Among the items of medical interest relating to the year 1946 are the following: The estimated population in the administrative county of London was 3,109,240, which was over three-quarters of a million more than in 1941. The birth rate was 21.2 and the crude death rate 12.6. The infant mortality rate was 38 per 1,000 live births. "Violence" was given as the cause of death of 141 infants under one year of age. There were 1,622 children attending special schools for physically handicapped children, and 1,823 children attending special schools for educationally subnormal children. The number of voluntary hospital beds was 17,424, and L.C.C. hospital beds, excluding those in mental hospitals, numbered 33,762. There were 620 admissions to hospital for diphtheria; this compares with 6,094 in 1938. There were 379 suicides, compared with 594 in 1938. The total number of patients certified under the Lunacy Acts was 20,604, and there were in addition 2,171 voluntary patients in the mental hospitals. There were 11,651 certified mental defectives. Traffic accidents caused 691 deaths, compared with 1,458 (the highest total ever reached) in 1933. The report reveals that 18,688 civilians were killed in air raids in the administrative county of London during the war.

Correspondence

Haemolytic Disease of the Newborn

SIR,—I should like to express my appreciation of the valuable contribution to the knowledge of haemolytic disease of the newborn made by Dr. P. L. Mollison and Miss Marie Cutbush (Jan. 22, p. 123). This paper demonstrates once more that routine serological tests during pregnancy are absolutely essential, and in addition shows the importance, if the newborn child is likely to be affected with haemolytic disease, of close co-operation between the obstetrician and the paediatrician so that the haemoglobin and bilirubin values of cord blood can be estimated directly the child is born and the appropriate treatment undertaken.

I have always maintained that haemolytic disease of the newborn is a disease of the foetus and not one that "comes on" after birth, even although some of its manifestations become more obvious shortly after that event. I could never, however, explain to my own satisfaction the sudden onset of a severe haemolytic anaemia some days after birth in an apparently normal baby, nor does the explanation now put forward by Dr. Mollison and Miss Cutbush completely satisfy me. According to them, estimation of the cord haemoglobin shows that these infants are actually anaemic at birth and that "in fact the haemolytic process is maximal at birth." I wonder if their observations refer to babies suffering from hydrops foetalis and anaemia and not to those who have haemolytic anaemia of the newborn. I raise this point because in the cases to which they refer death occurred within 24 hours of birth, whereas the infants of whom I am thinking appear normal for a few days after birth and then suddenly develop an intense anaemia which can usually be cured by simple transfusion with Rh-negative blood.

The authors also suggest that "the incidence of kernicterus is closely related to the haemolytic process," but, if this be so, why is there only a trace of jaundice and never kernicterus in this type of haemolytic anaemia of the newborn and in the acute haemolytic anaemia of older children? They quote me as suggesting an opposite view—namely, that there is "an inverse relationship between the degree of blood destruction and the development of kernicterus"—but I have never made that suggestion. What I have said is that I have never found "any parallelism between on the one hand the degree of the haemolysis and on the other the severity of the jaundice and the presence of kernicterus." Dr. Baar and I believe that we have shown that the jaundice in haemolytic disease of the newborn is due to liver damage and that the kernicterus is a sequel of such liver damage and therefore not "closely related" to the haemolytic process.

We believe that the changes in the brain occur during foetal life and not, as the writer of your leading article suggests, after birth, but that in those children who are born unjaundiced the actual staining may not take place until jaundice develops after birth. We have seen kernicterus in a child who died 18 hours after birth, a considerably shorter time than the 2 to 5 days mentioned in the paper.

There is one other point in the paper on which I wish to comment. This is the statement that "it is surprising that so much stress has been laid on blood destruction as a cause of the anaemia to the complete exclusion of any consideration of changes in the amount of production." Actually in our earliest papers on this subject my colleagues and I stressed the fact that this disease was a disease which not only produced haemolysis but also one which affected the erythropoietic centres, and that the purpose of blood transfusion was to tide these centres over their "aregenerative" phase and thus enable them to recover. It was for this reason that we originally spoke of the disease as "erythronoclastic" rather than "haemolytic," thus indicating that the whole erythron was affected. We still hold this view, only now we should add to it that, although erythronoclastosis is the commonest manifestation of the disease, the antibodies also affect the liver and sometimes indirectly the brain, kernicterus being in our view a hepatic encephalopathy.

These criticisms are not intended in any way to underrate the great value of this paper, for which once more I thank the authors.—I am, etc.,

Birmingham.

LEONARD G. PARSONS.

Early Diagnosis of Tuberculosis

SIR,—As a general practitioner I have been particularly interested in the correspondence which followed the publication of Dr. Peter Stradling's paper, "The Practitioner's Part in the Anti-tuberculosis Scheme" (Nov. 6, 1948, p. 832). The purpose of this letter is to draw attention to the usefulness in general practice of testing for tuberculin sensitivity, a simple procedure that can be regarded as complementary to radiography of the chest, and no less important, though its scope and significance are different.

Primary tuberculous infection in children is easy to overlook, because it often appears in such an apparently innocent guise as a brief self-limiting febrile illness, slow recuperation after whooping-cough, or vague ill health without localizing symptoms or signs. It is in such cases that tuberculin skin tests can be so informative and helpful in selecting patients for further investigation in hospital. The tests are quick and easy to perform, and have the additional merit, important in general practice, of being almost entirely painless. My own procedure as a rule is to carry out a jelly test first; then, if that is negative and further precision seems necessary, to do an ordinary intradermal Mantoux test with a 1 in 1,000 dilution. It is important to bear in mind that the result of either of these tests is never more than a pointer.

During the last six months I have tested 19 children on a suspicion of tuberculosis. Among these, 3 out of 18 jelly tests and 2 out of 9 Mantoux tests have been positive. Some illustrative cases are described briefly below.

(1) A girl aged 11. Night sweats for several months. Tired and irritable recently. Mantoux (1:1,000) positive. Radiograph of chest shows a large root shadow.

(2) A girl aged 9. For 10 days P.U.O. up to 103° F. (39.4° C.), characterized by tachycardia out of proportion to degree of fever, but otherwise by remarkably little constitutional disturbance. Tuberculin jelly test positive. Radiograph of chest shows well-marked primary complex.

(3) A boy aged 3. Measles and whooping-cough last summer. Fluctuating enlargement of cervical glands on both sides recently. Tonsils unhealthy. Tuberculin jelly test positive. Radiograph of chest normal. Diagnosis probably tuberculous tonsillitis and adenitis with superimposed secondary infection.

(4) A girl aged 10. Tired for a year. Faint in the morning. Overgrown weedy child with marked lumbar lordosis. Tuberculin jelly test positive. Radiograph of chest normal, and E.S.R. 10 mm. Positive test probably a legacy of a past infection and irrelevant to present condition.

(5) A boy aged 3. Poor recovery from whooping-cough, with failure to regain weight; and persistent cough. Bad home conditions. On examination, coarse crepitations over both lower lobes. Jelly test and Mantoux (1:1,000) both negative. Radiograph of chest showed increased markings at both bases. Full recovery at convalescent home.

(6) A girl aged 4. Poor recovery from whooping-cough with repeated coughs and colds. Home very damp. Fragile and pale, but no localizing signs. Jelly test and Mantoux (1:1,000) both negative. Further investigation not considered necessary at this stage. Child kept under observation and improved on symptomatic treatment.

Even this small series of cases gives some idea of the value of the procedure.—I am, etc.,

Oxford.

G. A. BALLANCE

Diagnosis of Tuberculous Meningitis

SIR,—Dr. J. T. Lewis (Dec. 11, 1948, p. 1036) advocates the recognition of lowered cerebrospinal-fluid glucose as an early diagnostic sign in tuberculous meningitis.

A simple clinical test based on this fact has been in use in the hospitals in this area for over 14 years. The reagent employed is a 25% solution of Fehling's A and B. Equal quantities of the reagent and cerebrospinal fluid are taken, boiled, and mixed. A clear cerebrospinal fluid which fails to reduce the Fehling's solution is almost pathognomonic of tuberculous meningitis. The only other conditions in which it occurs are rarely in lymphocytic choriomeningitis and in extremely rare torula infection of the nervous system.

This test and its significance were taught me as a student by Dr. Emrys Harries, lecturer in infectious diseases in the Welsh National School of Medicine, and I have used it on numerous occasions and proved its reliability.

—I am, etc.,

Whitchurch, Glam.

P. T. BRAY.

Amethocaine Hydrochloride

SIR,—Mr. C. A. Jackson's excellent article on amethocaine hydrochloride (Jan. 15, p. 99) serves as a reminder of the lethal potentialities of this otherwise admirable anaesthetic agent. In the thoracic unit of Frenchay Park Hospital prior to bronchoscopy the average premedication is pentobarbital (oral) 1½ gr. (0.1 g.) at 45 minutes, and "omnupon" ¼ gr. (11 mg.) and atropine 1/100 gr. (0.65 mg.) at 30 minutes.

The use of atropine would appear to be desirable, as it is difficult successfully to anaesthetize a mucous membrane which is liberally washed with saliva. In such cases a much larger dose of amethocaine might be necessary. Excess secretion in the bronchial tree renders diagnostic bronchoscopy considerably more difficult, and furthermore, as Langton Hower¹ states, "the passage of tracheal tubes under light general anaesthesia only can give rise to reflex disturbances of the respiratory and circulatory mechanisms." These reflexes, though subdued by topical analgesia to the cords, may still give rise to cardiac arrhythmias and even possibly to cardiac arrest. On the assumption that the reflexes are of vagal origin it would again seem desirable to use atropine as a premedicant.

I usually endeavour to complete the topical analgesia for bronchoscopy with 80 mg. of amethocaine in 2% solution—i.e., 4 ml. of this solution without adrenaline. The operative technique is much the same as used by Mr. Jackson. We do now, however, completely omit the 65 mg. lozenge of amethocaine, as we have found that either the tablet is not dissolved in an atropinized mouth, or else, if it is dissolved, a very inadequate degree of analgesia is produced which cannot be compared with the analgesia we can secure with the same dose—i.e., 3½ ml. of 2% amethocaine—applied deliberately. During the period of use of this lozenge of amethocaine the house-surgeons reported about eight cases of very mild overdosage of amethocaine in about 550 cases, but since abandoning the use of these tablets we have not seen any comparable number of reactions in an admittedly small number of cases.

As regards the use of sprays, it is sometimes of value to direct five vigorous "bursts" of the agent into a graduated vessel, thus measuring the amount projected with each burst. It is sometimes as much as ½ ml. with some sprays, and free use of sprays will therefore readily result in an overdose.—I am, etc.,

Bristol.

REFERENCE

¹ *Recent Advances in Anaesthesia and Analgesia*, 1944, p. 109. London

T. N. P. WILTON

SIR,—Mr. C. A. Jackson in his interesting paper on amethocaine hydrochloride (Jan. 15, p. 99) makes the following statement: "Application by means of a laryngeal spray should be avoided, as it may easily lead to overdosage." This statement should certainly be qualified, because the amount of solution delivered by a laryngeal spray can be measured, and the use of such a spray is to many the simplest method of anaesthetizing the pharynx and larynx.

The following procedure may be used to calibrate a de Vilbiss atomizer sufficiently accurately for practical purposes. An atomizer with a fine nozzle is chosen. Some of the solution to be used is placed in the spray. The number of complete compressions of the bulb necessary to atomize a measured amount of the solution can be found by directing the spray into a calibrated container. When this is known, it is possible in practice to count the compressions used while spraying the pharynx and larynx and thus to know what quantity of solution has been delivered. Two sources of error can arise. First, the bulb may not be fully compressed: this would lead only to less being delivered than estimated. Secondly, the amount delivered by the nozzle might vary over a period of time: this is easily checked.

From the above facts it may be seen that the use of a laryngeal spray need not lead to a risk of overdosage.—I am, etc.,

Bedford

N. WYNN-WILLIAMS.

SIR,—The article on severe toxic effects from amethocaine by Mr. C. A. Jackson (Jan. 15, p. 99) reminds me that I saw, a similar case in 1938, in which convulsions followed the (traumatic) introduction of a bougie, 10 ml. of 2% amethocaine having been injected into the urethra. The convulsions were controlled by thiopentone; artificial respiration (by inflation with oxygen) had to be continued for 45 minutes before active respiration returned.

For bronchoscopy I prefer cocaine solution (10 or 15%) to amethocaine, and I believe that the danger of reaction is negligible provided that the drug is restricted to the air passages and be not swallowed or injected into the tissues. I think it likely that this applies to amethocaine also. Mr. Jackson's cases seem to bear this out: in the second it is stated that 2 ml. were thought to have been swallowed; in the first it is not stated whether the tracheal injection was made per glottidem or by external puncture. In the latter case it is comparatively easy to be misled as to the site of the needle, for air will be obtained on aspiration if the needle be ill-fitting, an injection into the tissues resulting. In the former case, solution falling on the walls of the upper part of the larynx may be brought up by a cough and swallowed. For this reason I always try to ensure that the solution be deposited well below the larynx: if per glottidem by a long catheter, if by external puncture by inserting the needle through the first or second ring of the trachea; injection at a higher point is made even more hazardous because the mucous membrane is separated from the cricothyroid membrane by areolar tissue, which increases the likelihood of injection into the tissues.—I am, etc.,

Newcastle-upon-Tyne.

M. H. ARMSTRONG DAVISON.

SIR,—I was interested to read Mr. C. A. Jackson's article (Jan. 15, p. 99) on the above subject. I wish to record two recent experiences using amethocaine as a local anaesthetic in a cachectic patient.

The patient, an elderly woman with ascites following advanced malignant disease, required tapping at frequent intervals to relieve distension and discomfort. On the first two occasions, when amethocaine (4 ml. of a 2% solution) was used to augment a whiff of trilene, the patient became faint and giddy, and finally unconscious with a convulsive seizure. Consciousness returned after about five minutes. These seizures happened while the cannula was *in situ* and after the effect of the trilene had passed. Subsequent tapings using trilene only have been uneventful. It was only after the second time that I became suspicious and decided to use trilene only.

This case confirms Mr. Jackson's advice not to use amethocaine in a cachectic patient.—I am, etc.,

Lydbrook, Glos

M. McMINN.

SIR,—Mr. C. A. Jackson in his article on the severe toxic effects of amethocaine hydrochloride (Jan. 15, p. 99) quotes me as having had two deaths from the use of this drug in gastroscopy. His reference is to the *Proceedings of the Royal Society of Medicine*, 1939, 32, 538.

The reference is perfectly correct, but nowhere in the paper do I state that I had any deaths from the use of "decicaine" (amethocaine hydrochloride) in gastroscopy. I reported two deaths during the preparation for gastroscopy, one as having occurred in Minneapolis, the other in this country. I myself, over 2,000 instrumentations, have had no fatalities with the use of this anaesthetic.

Later in his paper Mr. Jackson mentions that the addition of adrenaline reduces the toxicity of amethocaine hydrochloride by one-fifth. I should be very interested to know his authority for this, as the only experimental work that I have been able to trace goes to show that the toxicity of amethocaine and adrenaline when injected intravenously together is much in excess of either separately. For this reason I always advocate the use of 2% amethocaine hydrochloride solution alone.—I am, etc.,

London, W.1.

P. E. THOMPSON HANCOCK.

SIR,—The two cases reported by Mr. C. A. Jackson (Jan. 15, p. 99) of toxic reactions following the administration of amethocaine hydrochloride prompt me to record experiences with this drug in children. For the last ten years 2% amethocaine hydrochloride (no adrenaline) has been used as a local

analgesic for bronchography without toxic effects. Immediately after the insertion of a special needle through the cricothyroid membrane into the trachea the drug was slowly injected through the needle, the quantity, *one minim per year of age*, being carefully measured out and rarely exceeded. When the bronchial tree on both sides was to be outlined the dose of amethocaine hydrochloride was repeated between the filling of the first and the second sides. This second dose usually followed 10 to 20 minutes after the first, when the analgesic effect was wearing off. In about 1,000 bronchograms no ill effects that could be attributed to the drug have been observed.

These observations support Mr. Jackson's final remarks that overdosage or faulty technique is more often the cause of death than individual idiosyncrasy. Although adrenaline was not used in combination in our series, it is probably an extra precaution which should be taken in future.—I am, etc.,

London, W.C.1.

C. ELAINE FIELD.

Treatment of Anuria

SIR,—I was interested to read Drs. D. A. K. Black and S. W. Stanbury's article on the treatment of anuria (Dec. 25, 1948, p. 1101). Their description of a case of anuria caused by incompatible blood transfusion prompts me to record briefly the following case in which anuria occurred during the course of blackwater fever and in which urinary flow was apparently established by intravenous glucose and plasma.

A British N.C.O., aged 31, was admitted to a military hospital in West Africa for subtertian malaria. Next day, whilst on quinine, he complained of abdominal discomfort, appeared shocked, and passed port-wine coloured urine. For the next five days his condition was satisfactory, and the urinary output was in proportion to the fluid intake. Anuria gradually started on the sixth day, and the total urinary output in 24 hours for the subsequent few days was as follows:

Day of Illness	Urinary Output
6th	3 oz. (85 ml.)
7th	1½ oz. (35 ml.)
8th	Nil
9th	6 oz. (114 ml.)
10th	7½ oz. (220 ml.)
11th	13½ oz. (380 ml.)
12th	39 oz. (1.2 litres)

During the sixth and seventh day of illness the patient showed signs of uraemia—viz., mental confusion, drowsiness, restlessness, muscular twitchings, and incessant vomiting. Blood pressure was 110/50, and blood urea 280 mg. per 100 ml. Attempts to establish urinary flow by alkalization and hypertonic sodium sulphate solution failed. On the eighth day he became comatose, with Cheyne-Stokes breathing, and the so-called uraemic "frost" was visible on the skin. Urinary output was nil, and his blood urea rose to 300 mg. per 100 ml. His blood pressure remained unchanged. Blood count showed R.B.C.s 1.48 million per c.mm. and haemoglobin 38%. At this stage 20 ml. of 25% glucose solution was given intravenously, and an hour later he passed 2½ oz. (78 ml.) of urine which was neutral in reaction and contained protein ++, urobilinogen +, bile pigments +, and urea 0.5 mg. Deposit showed epithelial, endothelial, and pus cells. No casts were seen. Encouraged by this result I decided to put him on glucose and plasma, and the following treatment was given:

Day of Illness	Total Glucose Solution (20–50 ml. at a time—every 3 to 4 hours)	Plasma
8th	100 ml. (60 ml. of 25% and 40 ml. of 50%)	2 pints (1.12 litres)
9th	220 ml. of 50%	2 " "
10th	220 ml. of 50%	2 " "
11th	190 ml. of 50%	2 " "

During the whole of the uraemic phase nothing was given by mouth and no intestinal lavage was attempted. Once the urinary flow was established the patient made an uneventful recovery, and apart from antimalarial therapy and haematinics no other treatment was given. Subsequent renal function tests were within normal limits.

On a physiological basis anuria can occur as a result of either one or more of the following factors: (a) renal circulatory failure; (b) renal excretory failure; and (c) renal secretory failure. I agree with Black and Stanbury that in lower-nephron-nephrosis anuria both the circulatory and the tubular factors enter into its pathogenesis. They wisely point out that in this type of anuria it is never possible to exclude the

possibility of spontaneous urinary flow; yet it would appear from my case that hypertonic glucose and plasma, either singly or together, did influence the establishment of the urinary flow at a very critical stage of illness, perhaps by affecting the renal circulation and nutrition and thus restoring its excretory and/or secretory function.

It is unscientific to draw any conclusions from one case, but as the combination of 50% glucose and plasma did appear to influence the course of the case at a very critical stage when other measures had failed I would recommend the above treatment in cases of anuria due to "renal anoxia" to elucidate its therapeutic value.—I am, etc.,

London, S.E.18.

S. KARANT.

Allergy, Rheumatic Fever, and Nephritis

SIR.—The excellent summary of recent experimental research reported in the leading article "Allergy, Rheumatic Fever, and Nephritis" (Jan. 1, p. 21) seemingly strengthens the allergic aetiological hypothesis. Clinical facts deny the restriction of the antigen to the haemolytic streptococcus or its products. Even the late Professor Lichtwitz,¹ who largely influenced the revival of the allergic hypothesis, denied this specificity in the initial sensitizing infection (the pathfinder), or in recurrent excitant infections (detonating), whether of the acute or chronic type (septic foci which vary in degree but not in kind). The relationship of the sera of rheumatic patients to streptococci is non-specific.² May I suggest that such has an analogue in the proteus-rickettsial relationship?

Too many exceptions destroy the validity of any theory which ought to arise out of and be suggested by the facts. While the current knowledge of the concept of allergy is in itself hazy, there are many dark places in this particular application: in bacterial allergy there is a definite period of sensitization; multiplicity of antigens (already noted) is not characteristic of induced allergy; while the clinical allergies may be a sequel to infections or are aggravated by mild infections, they disappear during acute infections.³ Rantz and his colleagues⁴ confirmed the original observation of Swift that even during the latent period between the clinical onset of rheumatic fever and the excitant infection the rheumatic process is at work, as shown by the E.C.G., E.S.R., and leucocyte count. I have noted that finger-tip tenderness, an invaluable sign of rheumatic infection,⁵ is present within a few hours of the onset of an excitant nasopharyngitis, itself resulting from contagion, so that the excitant mechanism, whether infectious or physical, such as chill, damp, or draughts, may be the same. Lichtwitz has argued that the almost instantaneous onset after physical excitants excluded the implication of micro-organisms. There is of course an analogue of epidemic coryza, a virus infection, and physical excitants.

As with the well-proven relationship of erythema nodosum or phlyctenular conjunctivitis to, say, tuberculosis, allergy would have been invoked, were the precise agent not known, to explain the coincidence of herpes simplex with excitant infections such as coryza, pneumococcal pneumonia, or malaria, with drugs such as organic arsenic, sulphonamides, or parenteral liver therapy, and with the normal alterations of the physiological cycle, as in recurrent menstrual herpes, which may be familial.⁶ All these phenomena have their analogues in the natural history of rheumatic diseases—the relationship to adventitious infection (acute or chronic, "septic focus" type), to drugs, or to physical excitants, the predominance of women of the child-bearing age in the incidence of rheumatoid arthritis, and the effects of puberty on the rheumatic infection of childhood.

A virus aetiological hypothesis is suggested by the facts, although against it is the view that the primary histopathological lesion is in the intercellular ground substance; but this seems a moot point.⁷ However, an allergic theory based solely on the haemolytic streptococcus is unsustainable.—I am, etc.,

A. D. McDWYER.

Dublin.

REFERENCES

- ¹ *Pathology and Therapy of Rheumatic Fever*, 1944, pp. 24 and 32. London.
- ² Wallis, A. D., *Amer. J. med. Sci.*, 1946, 212, 713.
- ³ Cecil's *Textbook of Medicine*, 1943, pp. 469, 480, 486, 492. Philadelphia.
- ⁴ *Arch. Intern. Med.*, 1947, 79, 401.
- ⁵ *British Medical Journal*, 1947, 1, 310; 1948, 2, 768.
- ⁶ Van Rooyen, C. E., et al., *ibid.*, 1941, 2, 298.
- ⁷ Fischer, A. G. T., *Lancet*, 1937, 1, 1162.

Exo-erythrocytic Forms of Malaria Parasite

SIR.—We fully appreciate the fundamental discovery of the pre-erythrocytic stage of the parasite of human malaria by Drs. H. E. Shortt and P. C. C. Garnham, Sir Gordon Covell, and Mr. P. G. Shute (*B.M.J.*, 1948, 1, 547). This discovery closes the gap between the anophelic cycle and the human

cycle of the parasite's life. Shortt and Garnham's recent findings (*B.M.J.*, 1948, 1, 192) of the persistence of an exo-erythrocytic cycle in *P. cynomolgi* even several months after the infection has started has strengthened the opinion, prevailing among malarialogists for some years now, that persistence of the infection during the interval between the attacks of fever as well as the origin of relapses and the resistance to drugs in latent malaria are phenomena connected with the existence of exo-erythrocytic forms.

We cannot agree with the assumptions of this theory. We cannot accept the view that the perseverance of the infection is, as most observers believe, necessarily dependent upon the parallel persistence of plasmodial exo-erythrocytic forms. On the contrary, relapses are observed in individuals with latent malaria within an hour or two after strong emotion, shock, bomb explosion, cold baths, severe haemorrhage, surgical operations, etc., and this fact necessarily implies the existence of a developing endo-erythrocytic focus of parasites somewhere in the body of the individual. We are forced to assume that the endo-erythrocytic parasites have continued their focal life without ever passing into the general circulation.

Again, in individuals suffering from latent malaria, or rather focal malaria, a single injection of adrenaline intravenously is followed by the rapid emission into the peripheral circulation of endo-erythrocytic parasites in various stages of development. Such parasites are obviously originating from an endo-erythrocytic cycle and not from an exo-erythrocytic cycle. In the infection of fowls (*P. gallinaceum*) induced with infected blood a latent period follows the septicaemic phase, though sometimes this latent period is broken by minor relapses. In such hosts the exo-erythrocytic forms usually disappear towards the end of the second month. At the same time the infection is still active in the internal organs, particularly in the spleen and liver, with the presence of small numbers of endo-erythrocytic parasites and fresh granular pigment, probably originating locally, giving proof of the continuance of the schizogonic endo-erythrocytic cycle (D'Alessandro, Oddo, and Smiraglia).

In human vivax malaria induced by infected blood recurrences can occur, although less frequently as compared with infection with sporozoites. Analogously, according to Hawkins, Perry, and Thurston, a relapse may be provoked by splenectomy in monkeys with latent *P. cynomolgi* infection, but this occurs both when infection is induced by blood or by sporozoites.

Again, from the standpoint both of physiology and of pathology there is abundant evidence of the existence of a "focal" phase of the infection—that is, the existence of persistent moribund foci which maintain infection and disease long after the septicaemic phase has passed. Such foci, where endo-erythrocytic parasites can go on developing, are found in the splenic reservoirs of red blood corpuscles described by Barcroft and Binet, and are under the control of the spleno-contractile action of adrenaline. In the blood reservoirs, which are practically devoid of plasma, endo-erythrocytic parasites continue reproducing, protected by their position outside of the normal circulation from the action of antibodies and chemical substances. These facts explain the failure of attempts to eradicate the disease by means of chemical substances introduced into the circulation, because they never reach the parasites in the reservoirs of red blood corpuscles.

The above is only a short summary of the views expressed in my book, *Nuove Vedute sulla Malaria* (Rome, 1946), and by J. Radvan in *La Splenocontraction en Thérapeutique* (Bucharest, 1945)—I am, etc.,

Centro Siciliano di Malarologia, Palermo.

MAURIZIO ASCOLI.

Infective Ear Disease

SIR.—I am indebted to Mr. T. A. Clarke (Jan. 15, p. 111) for his criticism of the methods of treatment of chronic suppurative otitis media in factory employees. I am in agreement with the principles on which he bases his method of treatment for the simple type of tubal infection or tympanic sepsis—namely, prevention of stagnation of the discharge and the reduction of the bacterial flora by dehydration and antibiotics. The choice of method used in the investigation reported in my paper was dictated by its applicability to the conditions of the factory surgery and because the results from its use were already

known by otologists. The results obtained in the factory surgery could thus be compared with those obtained elsewhere. It is not considered that other treatments are less efficient, and an assessment of treatment methods was not attempted.

As stated in the paper, the object of this part of the investigation was to determine the value of the factory clinics in treating ear diseases in the associated population. It would be helpful if one could compare the results of treatment obtained in the factory investigation with those obtained by the method Mr. Clarke advocates, if only because the latter requires less time spent on treatment. Tables I and II (taken from my full report to the M.R.C.) will, I trust, supply the additional information Mr. Clarke asks for.

TABLE I.—*Chronic Suppurative Otitis Media According to Position of Perforation*

	"Recurrent" Cases			"Continual" Cases		
	Central	Marginal	Superior	Central	Marginal	Superior
No. of ears seen ..	122	0	12	128	22	30
Percentage distribution	134 = 42.6%			180 = 57.6%		
Percentage distribution	91%	—	9%	71%	12%	17%
Average age at onset of first attack	13	—	16	17	14	18
No. of ears treated ..	102	—	11	111	20	21
No. of ears cured ..	83	—	9	60	7	14
Percentage cured ..	82%	—	82%	54%	35%	52%
No. of ears quiescent	5	—	—	9	3	2
Percentage quiescent	5%	—	—	8%	15%	7%
No. of ears failed ..	—	—	—	6	4	6
Percentage failed ..	—	—	—	5%	20%	22%

Table I shows that out of 19 ears rendered quiescent by treatment 14 had central perforations and only two had attic perforations.

TABLE II.—*Chronic Suppurative Otitis Media—Effect of Granulation Tissue on Results of Treatment*

	"Recurrent"		"Continual"	
	With Granulations	Without Granulations	With Granulations	Without Granulations
No. of ears seen ..	26	108	64	116
No. of ears treated ..	23	89	53	105
No. of ears cured ..	16	76	23	58
Percentage cured ..	70%	85%	43%	55%
No. of ears quiescent	2	3	2	12
Percentage quiescent	9%	3%	4%	11%
No. of ears failed and % failed	—	—	8 = 15%	8 = 7%

Table II shows that four ears, with granulation tissue present at the start of treatment, became quiescent. The perforation was central in the membrana tensa in three, the granulations arising from the tympanic membrane or meatal wall, and marginal in one, the granulations arising from the tympanic annulus. Before daily treatment was discontinued and the ear classified as quiescent the granulations had become healed by epithelization for several weeks. No case of obvious cholesteatoma was classified as quiescent.

With the present shortage of hospital facilities some grading of the severity of the cases is essential. It is due neither to over-tolerance nor dilatory decision, but to hard necessity, that cases of minimal infection are regarded as less urgently in need of surgical intervention than cases with profuse otorrhoea persisting despite conservative treatment. To advise operation for every case of quiescent ear disease is not possible in all treatment centres. Furthermore, it is unnecessary. Out of six quiescent ears treated in this investigation two had become dry six to eighteen months later (Table X of report). These results are corroborated by the examination of any series of cases of soundly healed middle-ear disease. A few will be found to have suffered an extensive destruction of the ossicles or the tympanic annulus from osteitis. The infection has obviously been overcome by natural resistance, possibly aided by conservative treatment.

Nevertheless it is agreed that persistent activity in a quiescent ear should be given the respect it deserves, and surgical intervention, which may in some cases be on the lines advocated by Mr. Clarke, will eventually have to be considered.—I am, etc.,

Birmingham.

COLIN M. JOHNSTON.

SIR,—In his letter on infective ear disease (Jan. 15, p. 111) Mr. T. A. Clarke raises doubts as to whether regular daily treatment of chronic middle-ear suppuration is necessary. Also, in discussing Mr. Colin M. Johnston's advocacy (Dec. 18, 1948, p. 1049) of syringing the ear, he states that he knows "of no method more calculated to perpetuate infection: the easiest way to set up middle-ear discharge in a case with dry perforation is to syringe the ear."

No sensible person would syringe the ear with a dry perforation. The discussion surely centres round the treatment of active chronic middle-ear suppuration, and the subject is best approached by considering the fundamentals. Whatever method is used in treating the ear, so as to give the body's natural processes for overcoming the established infection the best chance of success it must be directed towards thorough cleansing of the ear to remove the usual foul discharge in which it lies bathed and to keep the ear as dry as possible. To achieve these ends we have the two principal schools, the advocates of the dry and the wet methods. The dry method consists essentially in thorough mopping of the ear, followed by removal of as much discharge as possible from the middle ear through the perforation by suction, then the insufflation of whatever powder the surgeon happens to favour. This form of treatment must of necessity be carried out by the otologist himself.

The wet method consists of thorough cleansing by washing out the ear with a drying agent; formaldehyde in the strength of 1 dr. (3.5 ml.) of 20% solution to a pint (568 ml.) of warm water has this effect. The meatus is then mopped dry. The latter method has the advantage that it can be carried out as a routine by a nurse with some training in ear work, and this is of immense practical importance in a large out-patient department. As regards the application of silver nitrate, this can be gratifyingly successful in cases where the granulations are purely superficial, but can have no lasting effect when they are indicative of deeper-seated bone disease.

To revert, then, to the question of frequency of treatment by either method, the rate of accumulation of discharge from a suppurating middle ear is usually such that any treatment applied less frequently than once daily must leave the ear bathed in pus for most of the time. If Mr. Clarke has been able to obtain good results from "treatment . . . perhaps once, perhaps repeated at weekly intervals three or four times," he must find the work of his out-patient department greatly relieved. My own experience has been disappointing in that I have not seen cases resolve under the dry method of treatment which had failed to do so after an adequate trial of the wet. In the light of the claims appearing from time to time for exceptional results from the dry method I have found on attendance at clinics where it is practised that there are as many cases of chronic suppuration attending as anywhere else. In addition, "free insufflation of powder largely filling the meatus," as Mr. Clarke describes, often leads to caking of the powder into a mass which may be hard to remove and must in some cases lead to damming up of discharge.

On the whole, then, I have found no advantage in results obtained by the dry method to offset the disadvantage that it requires the personal attention of the specialist, and that attention I hold to be necessary daily.—I am, etc.,

Glasgow

ALEX. R. HARPER

SIR,—Mr. T. A. Clarke (Jan. 15, p. 111) questions the truth of the statement made in your leading article (Dec. 18, 1948, p. 1068), "It seems certain that regular daily treatment is the best method of cleaning up infected ears," and then proceeds to a very curious defence of his own views. His first plea is that "the evidence must be considered," but this is immediately followed by the dogmatic and unsupported statement that he knows of no method—referring to daily syringing or dry mopping and drops—more calculated to perpetuate infection.

This seems a very extravagant answer to the work of Banham, who by the method of daily dry cleaning and light dusting with 2% iodine in boric acid powder obtained a dry ear in 82.5% of 200 cases of chronic suppurative otitis media occurring in R.A.F. personnel; and to the work of Mr. Colin M. Johnston (Dec. 18, 1948, p. 1049), who obtained 81.2% dry ears in a series of 316 cases by daily

syringing followed by spirit drops or a simple powder. Perpetuation in these cases was remarkable by its absence, and so far it would appear that the only evidence open to scientific consideration has been produced in support of the daily cleansing method.

Mr. Clarke submits that a result as good could have been obtained with far less treatment, but, whether or not figures are available in support of his contention, legitimate criticism can still be levelled at the treatment he advocates. First, if it is agreed that it is desirable to be able to assess the progress of treatment not only by the volume of the discharge from the meatus but by comparative inspections of the anatomy of the tympanic membrane and cavity, then it must be said that silver salts are most unsuitable local applications, as they discolour the whole picture and make qualitative observations very difficult if not impossible.

Secondly, Mr. Clarke states that his treatment (very careful tilting of the meatus, application of 20% silver nitrate, and the filling of the meatus with pulv. P.S.U.—sulphathiazole 10 parts, urea 1 part, penicillin 2,000 units per gramme—at weekly intervals), applied "perhaps once," will yield results equal to those obtained by Johnston. What one would like to know is whether criterion of cure is based on the middle ear being found dry after a dredging operation to remove all the powder, or on the fact that the powder has remained *in situ* and not been washed away by discharge. If the first is the case, how often does a syringe have to be employed to get the middle ear clean? And if the second, how long is the powder allowed to remain, with its obvious disadvantages of completely preventing subsequent inspection of the middle ear and of interfering with the hearing?

Thirdly, he states that such treatment—i.e., filling the meatus with sulphathiazole and penicillin powder—is only with extreme rarity followed by skin reactions. To which one would ask, General or local reaction? Because it is not uncommon in hospital practice to find patients with a desquamating otitis externa, generally involving the drum, who have had penicillin in their meatus, either in drops or in a powder, prior to their visit.

Finally, to provide more of the evidence which Mr. Clarke regards as so essential before daily cleansing routines are adopted, results are given of treatment in the first hundred consecutive cases treated in the chronic ear clinic of St. Thomas's Hospital during 1948. The treatment consisted of meticulous dry mopping after suction of the middle ear with a Siegle's speculum, followed by light insufflation with 2% iodine in boric acid powder. The treatment was carried out daily wherever possible, a minimum of four attendances a week being the rule. The criterion of immediate cure was an absolutely dry middle ear. The results were as follows:

Number of patients treated	..	..	100
Number of immediate cures	..	..	73
Average length of treatment	..	..	12.4 days

Cases are not treated for long periods. Two weeks' adequate conservative treatment will suffice in the great majority of cases to make an accurate diagnosis, to cure those cases capable of cure by conservative treatment, and to convince the patient that all reasonable non-operative measures have been given a trial before operation is advised. Thus all cases referred for conservative treatment are reviewed at the end of two weeks' treatment, and in only a very small number is further conservative treatment advised.

I have to thank the staff of the E.N.T. Department of St. Thomas's Hospital for their permission to use the figures from that hospital

—I am, etc.,
London, S.E.1.

S. R. MAWSON.

REFERENCE

J. Laryng., 1944, 59, 117.

SIR,—The able letter from Mr. T. A. Clarke on this subject (Jan. 15, p. 111) raises points of the utmost importance to all otologists. Several papers read at the Royal Society of Medicine by Service members after the war gave remarkably good results from daily treatment of chronic otorrhoea. No doubt the treatment was carried out under the watchful eye of the otologist and not left to half-trained assistants. The conclusion is, I think, that daily treatment is a sound method of treatment

only if efficiently carried out. As Mr. Clarke says, indiscriminate syringing is a positive danger.

It is a curious thing that treatment by zinc ionization is hardly ever done or even mentioned in aural departments. Conceived by Professor Leduc, of Nantes, and introduced to this country by Mr. Friel, zinc ionization is to my mind the greatest advance in the treatment of chronic otorrhoea during the past twenty-five years. Of course it is limited to certain cases. Ionization of an "attic" suppuration with a pinhole perforation is simply waste of time, but where there is an adequate perforation enabling the middle ear to be washed out with an attic cannula the results are often dramatic. The "toilet" of the ear and the ionization of course have to be done very thoroughly by the otologist and not just left to the electrotherapy department. Many cases, even those of many years' duration, clear up with one ionization. The saving of time in these cases is obvious. The neglect of this method of treatment is to be deplored and has been a matter of much regret to me. It is carried out with success in the L.C.C. clinics.—I am, etc.,

Guildford.

T. B. JOHNSON.

Treatment of Simple Ganglion

SIR,—It is most interesting to hear that Mr. G. H. Colt (Jan. 15, p. 113) and Mr. J. H. Kirkham (Jan. 15, p. 113) find, as I do, that the best treatment of a simple ganglion is simple pressure. I should like to thank Mr. John Hosford (Jan. 15, p. 112) for his kindly criticism of my letter (Jan. 1, p. 32), but I do not "rupture" the ganglion by pressure, but replace the jelly into the tendon sheath. On many occasions I have actually demonstrated to onlookers the jelly passing into the tendon sheath, and then moved the jelly about in the sheath.

I have, of course, followed up my cases and have found that the great majority do not recur. I am sorry Mr. Hosford has not had quite such good luck, and suggest as a reason that I probably see more "acute" or "traumatic" ones. One not infrequently sees them within a day or two of their occurring, and often within a week or two, and I think we shall agree that recent cases are more easily cured by pressure than old-standing ones in which the jelly has become harder.

I am aware that the modern teaching in the textbooks is that the majority of ganglia arise from joints, but I am afraid that I do not believe this. Mr. Hosford says in his letter that "the ganglion will be seen to arise from the capsule of a joint." Does he believe that a ganglion is formed by "mucoid" degeneration of the capsule of the joint or of a fibroma of the capsule? In the older textbooks it used to be taught that a ganglion was formed by mucoid degeneration of a tumour of a tendon sheath. I have never believed this, for I have seen hundreds of ganglia, but I have never seen one of these hypothetical tumours before degeneration has occurred.

The theory that a ganglion arises from the capsule of a joint is rather difficult to believe. Does a ganglion actually arise from the synovial membrane of a joint? One has seen many cysts containing synovial fluid arising from joints and many cysts containing jelly arising from tendon sheaths, but never has one seen cysts containing jelly arising from joints or cysts containing synovial fluid arising from tendon sheaths.

It is well known that small pockets and projections of the tendon sheath occur in some cases, which require some skill and patience in dissection, but has anyone ever proved that these pockets actually are continuous with the synovial membrane of the joint? Has anyone put a probe into the joint before the scalpel has got anywhere near? Has anyone demonstrated by the injection of a radio-opaque fluid that a ganglion does communicate with a joint? To-day a skilled orthopaedic colleague kindly allowed me to be present when he was dissecting out a ganglion over the wrist. At first sight it did appear as if there was a small hole in the base of the ganglion, but no probe could be passed into the joint and we agreed that in this particular case no communication existed.

We will all agree that many ganglia arise from tendon sheaths and have no connexion with joints—e.g., the pea-like bodies so commonly seen on palmar tendons. I have never seen a direct connexion between a ganglion and a joint, but I am willing to be convinced if someone will open up a ganglion and demonstrate a probe passing into the joint before the capsule of the joint is dissected. My opinion is that the textbooks are wrong: that the great majority of, if not all, ganglia are

pressure was applied over the shoulder in an effort to push the arm forward within reach. When hope had almost been given up, the shoulder flopped forward with a snap, and then the arm was drawn down with difficulty. The head was then delivered by suprapubic pressure and a very gently applied Mauriceau-Smellie-Veit grip. The baby, though badly shocked, revived after a few minutes following the administration of lobeline and O_2/CO_2 mixture. Subsequent x-ray examination of the child's shoulder showed a fracture about the middle of the clavicle, which fortunately united satisfactorily.

Questioning the patient afterwards revealed that since the birth of her last child some ten years previously a simple colporrhaphy had been performed for prolapse, and when this failed to cure the condition a Fothergill operation with radical amputation of the cervix had then been done. Unfortunately, and for obvious reasons, this history was not obtained before delivery. Examination on the tenth day showed almost complete absence of the vaginal portion of the cervix, it being replaced by a small hole on the anterior wall of a rather narrow vault.

I hope that this will serve to show how easily one can be caught out by this unpleasant complication and to warn against too hasty amputation of the cervix in women of childbearing age.—I am, etc.

Acharacle, Argyll.

ROBERT S. C. FERGUSON.

Cervical Stenosis after Forceps Delivery

SIR,—Mr. Walter Calvert's memorandum on dystocia after amputation of the cervix (Jan. 8, p. 58) interested me because I have recently dealt with a similar case following previous forceps delivery.

The patient was aged 41 and had had three labours, the last of which ended in forceps extraction six years previously. Each of the babies weighed between seven and eight pounds. When seen by me in April, 1948, the patient was twenty weeks pregnant, and routine examination disclosed gross scarring of the upper vagina, the cervix being unrecognizable. There had been threats of abortion at the 12th and 15th weeks. It was hoped that this scar tissue would relax at labour, but she was booked to have her confinement in King Edward VII Hospital, Windsor, the possibility of delivery by caesarean section having been considered. Spontaneous labour started at term on Sept. 3, and when I was called I found her to be bearing down strongly and what at first appeared to be the foetal head distending the perineum. On closer examination this was found to be the thinned lower uterine segment covering the head, and no os was visible or palpable.

Lower-segment caesarean section was at once performed and a living child extracted. Again no suggestion of a cervical canal could be identified from above, but since she had menstruated, conceived, and had had two threats of abortion during the pregnancy was decided to wait and see whether lochia could be passed. On Sept. 7, three and a half days after operation, the patient had passed no lochia at all, and the centre of the lower uterine segment was therefore incised and a catheter stitched in. About 2 oz. (57 ml.) of thin, non-offensive, blood-stained fluid issued from the uterus. On Oct. 25 the patient attended the post-natal clinic. There was slight blood-stained discharge from the uterus, the latter being of normal size, and per speculum a very small aperture was seen at the upper end of the vagina.

It would appear that the previous forceps delivery had resulted in severe laceration, if not avulsion of the cervix, with resultant stenosis.

—I am, etc.,

Windsor, Berks.

F. H. FINLAISON.

Neonatal Asphyxia

SIR,—Dr. W. N. Leak (Dec. 18, 1948, p. 1079) remarks, "I would only add that experience with caesarean babies is not quite applicable to normal births. For some reason caesarean babies are much more liable than others to die rather quickly and inexplicably."

My experience in general practice has also been that babies born from caesarean section do not breathe as spontaneously or as quickly as those delivered through the birth canal, and, furthermore, I believe that caesarean sections performed on patients in labour produce better-breathing infants than those cases where the operation is performed before labour has set in. These phenomena can be satisfactorily explained if we accept the actuality of foetal respiratory movements. Evidence to this effect has come from three sources: clinical observation, the presence of the contents of amniotic fluid in the lungs of infants at necropsy, and the presence of amniotic fluid itself in foetal lungs as demonstrated by the injection of contrast materials into the amniotic sac.

An experiment performed by myself last year confirmed Davis and Potter's observations. The possibility that anaesthesia and/or operative interference may account for the presence of contrast material in the lungs was completely eliminated in my experiment by the demonstration of its presence in the lungs of the intact foetus before hysterotomy. If, therefore, we accept the aspiration of amniotic contents by the foetus as a fact, we may account for the above phenomena of the caesarean baby. Two theories, a chemical and a mechanical one, suggest themselves to the writer. During the normal process of labour the placental circulation is disturbed, with a resultant condition of asphyxia, which sensitizes the foetal respiratory centre and prepares it for the onset of extrauterine respiration. Secondly, the process of labour, by squeezing the liquor amnii out of the foetal lung, prepares it for the extrauterine substitution of air for fluid.

The caesarean baby is denied both these beneficial effects of normal labour. Its lungs at delivery are still full, or partially full, of fluid, and its respiratory centre has not been sensitized: very often this infant is truly "drowned," and unless adequate measures are promptly taken it will succumb—hence the comparatively high death rate and incidence of respiration pneumonia in infants delivered by caesarean section.

The lesson then is that in all caesarean sections it should be a routine procedure to do intratracheal catheterization as soon as the infant is delivered.—I am, etc.,

Benoni, South Africa.

E. JOOSTE.

REFERENCE

¹ Davis, M. E., and Potter, E. L., *J. Amer. med. Ass.*, 1946, 131, 1194

Classical Caesarean Section

SIR,—I would like to confirm the opinion expressed by Mr. Percy Malpas (Jan. 22, p. 156) that the lower-segment operation cannot always replace the classical operation.

Recently I had two similar cases, when the classical operation was a blessing and not an abomination. Both were elderly primigravidae, and each had a fibroid (the size of a foetal head) in the anterior wall of the lower segment. To do a lower-segment operation in these cases would have necessitated cutting through the fibroid. Such a procedure would undoubtedly have increased the risk of operative haemorrhage, post-partum infection, pulmonary embolus, etc. I was very glad to be able to turn around and do a classical section with no difficulty and much less risk.

—I am, etc.,

Sheffield.

TIM BOLANO

Death at Birth

SIR,—The annotation entitled "Death at Birth" (Jan. 8, p. 64) stresses the need for more accurate information and certification of the causes of neonatal death. It seems important to draw attention to the fact that practitioners are often discouraged from the scientific approach to the problem and use of terminology taught them as students because of the legal problems involved.

In the terminology of the Medical Research Council's classification of disease, two of the most frequent causes of neonatal death are (751) intracranial injury at birth, and (753) asphyxia during or after birth, yet if either of these is stated on a death certificate it is refused by the local registrar of deaths and an inquest frequently ordered by the coroner. In my experience several scientifically minded practitioners and resident medical officers have performed post mortems on infants born under normal conditions in maternity homes, and, on certifying the cause of death as intracranial haemorrhage due to tentorial tear or other type of trauma, have found themselves in the coroner's court. They can hardly be blamed if on future occasions, in order to save parents further distress or themselves frequent attendance in the court, they retreat willingly to the vague but safer use of the terms "atelectasis" or "prematurity."

In this country many large teaching maternity departments can produce annual statistics compiled by their obstetric and paediatric registrars in which an attempt is made to state an accurate diagnosis. There is often a marked discrepancy between these statistics for neonatal deaths and those given in the annual reports of the medical officer of health for the particular area involved, particularly as regards the use of the term "prematurity" as a primary cause of death.

If any encouragement is to be given to greater accuracy of certification or the more frequent performance of post-mortem examinations on the newly born, it is essential that these legal difficulties should be overcome as soon as possible.—I am, etc.,
BRYL D. CORNER.

Bristol.

REFERENCE

¹ Spec. Rep. Ser. med. Res. Coun. Lond., 1944, No. 218. U.M.S.O.

Millilitres Correct

SIR,—Dr. J. M. Hamill (Jan. 8, p. 72) revives and reinforces suggestions that have been put forward and made official in more than one edition of the *British Pharmacopoeia*. The B.P. 1932 suggested, too, the use of the word "mil" as a short designation for millilitre. That these suggestions have met with little response among those who use and make drugs indicates the strength of habit and shows how few read and act upon the recommendations made in succeeding prefaces to the B.P.

Thinking, perhaps, to get round it in another way, the B.P. 1948 has discarded the word mil and adopted the abbreviation ml. for millilitre. This seems rather a pity and somewhat defecitist, for mil is a good word and can be both an abbreviation and a word in its own right. Mil is short, to the point, indicative of the word from which it springs, and, printed or spoken, not to be confused with any other measure (which is more than can be said for millilitre). From a typographical point of view, the abbreviation ml. is undesirable, for it will often intrude an ugly and distracting point into running matter without saving type-space and, by encouraging the spoken use of millilitre, will invite typists and compositors to spell the word in full rather than use the abbreviation where that has been intended by the author or editor.

May I put in a plea for "mil," and hope that the next edition of the B.P. will revert to its use, having noted that since 1949 physicians, manufacturers, and pharmacists have come to adopt it?—I am, etc.,

Liverpool.

N. A. HERDMAN.

The End of Compulsory Vaccination

SIR,—The end of "compulsory" vaccination as of July 5, 1948, marked a red-letter day in England singularly well timed in its proximity to July 4 and to the bi-centennial birth date of Edward Jenner, who was born on May 17, 1749. This end to compulsory vaccination in England has intensified my desire to contribute a letter to the *British Medical Journal* as further suggestion for more careful discrimination in the process of vaccination.

Professor Major Greenwood (July 3, 1948, p. 23) has shown how the zeal of propagandism may overcome scientific facts, an example of which has recently been demonstrated in New York, where only twelve cases of smallpox were reported in a population of 5,000,000 people vaccinated within two weeks of the appearance of the first case. Coincidentally there were approximately 2,500,000 people daily in the city who must not have been vaccinated and in which group no case of smallpox developed. (It is estimated that the daily population of New York City is 7,500,000.) The incidence, therefore, of smallpox was much lower in the non-vaccinated group than in the vaccinated group. It is of interest to note that in the twelve reported cases of smallpox ten were convalescing from some acute infectious disease and an eleventh patient was pregnant. Experimental studies have shown that "where an animal is recovering from an acute stage of a disease, the absorption of an additional amount of antigen introduced through further injection may precipitate a new state of the disease and be responsible for aggravations."

At this most opportune time I would like to make a few random observations to promote some thought upon vaccination. In the outbreak of smallpox in New York City it has been stated that many people who became ill with one of a variety of illnesses several days after they were vaccinated called the health department to find out if the vaccination was responsible. Since in New York City there are 1,000 people ill daily, and since practically everyone in New York City was vaccinated, it was inevitable that some of these people would become ill and die. Vaccination does not stop the normal course of events, and vaccination should not be blamed for cerebral deaths, haemorrhages, etc.

These claims or "discredits" can best be answered by quoting Hans Zinzer, who states, "It is advisable to examine the reports of cases observed during epidemics, when doctors are expecting them and are more likely to scrutinize all obscure conditions with the disease in mind." Hans Zinzer was neither beard nor remembered in New York City because his admonitions were drowned out by worthless statistics and medical tradition, whereas efforts were made to excuse post-vaccinal reactions on the basis of people dying daily in New York City of normal causes.

I wish, therefore, to offer one single suggestion upon this red-letter day—namely, that we do not vaccinate when there is present a possible acute infectious disease. As you may have already surmised, the media of your distant channels has caused much more native littoral reverberation than have my own local efforts, and it is for this reason that I am desirous of writing to your *Journal*.—I am, etc.,

Newark, New Jersey.

EMANUEL ROSEN.

A Clinic under the N.H.S.

SIR,—Those of your readers who are interested in the development of the new Health Service may find food for thought in the following example of how it affects clinic work. The *I.S.T.D. (Institute for the Scientific Treatment of Delinquency)* was established 16 years ago as a unique experiment. It was supported by voluntary contributions and the directors and the medical staff gave their time free. Although handicapped by lack of money and staff, it nevertheless succeeded in treating a considerable number of patients, carrying out scientific research, arranging lecture courses, and so established an international reputation for this pioneer work.

The psychiatric treatment of criminals and psychopaths is as yet in its infancy. Patients whose main trouble is their inability to fit in with accepted social codes are not likely to fit in with accepted methods of psychotherapy, to attend regularly, to tell the truth, and to co-operate. Convinced that if a patient is unable to fit himself to a therapy the therapy must fit itself to the patient, I have worked out a method of seeing these criminal patients at my private consulting-room whenever they find themselves in an emergency, helping them in their practical difficulties, giving them if necessary food or money, establishing personal contact, and doing psychotherapy whenever the patient is ready for it. With this very unconventional method I find it is possible to get results in a number of otherwise intractable cases.

The old I.S.T.D. gave me every latitude and encouragement to experiment. Since July 5, however, its clinic has been nationalized, and I have been informed that all treatment must be carried out on the premises of the clinic in my allotted time; also that not only would I not be paid for the time I spent with my old I.S.T.D. patients if I continued to see them in private because they could not attend in clinic time, but that they would be struck off the clinic list. On the other hand I would be paid only for the time actually spent in the clinic building, even though, most of the time, there were not enough patients to keep me busy. The Government, so I was informed, is paying us for time, not for skill, and as far as I know I was the only psychiatrist who objected to getting paid for sitting unoccupied in the clinic premises.

As I had been intimately connected with the I.S.T.D. for 16 years I tried to accommodate myself to what I regarded as a stupid situation made worse by the attitude of the clerical staff, who soon developed the Civil Service manner. But when the appointment clerk refused to allow me to see three more patients in my allotted time, informing me that it was she who fixed my appointments and decided whom I was going to see and for how long, I had no alternative to immediate resignation.

Already the Ministry has spent money freely on salaries and clerical assistance and is likely to spend more in the near future. The clinic is likely to get a bigger and up-to-date building, a larger medical and a still larger clerical staff. No doubt the Government will soon have a "showplace" run with "efficiency"; the doctors who are accommodating enough to fit in will get easy money and easy work; patients who are not too ill to fit in will get treatment. Nevertheless, the scientific standing of the clinic will decline, both because there is no scope for elasticity and research and because conditions are not likely to attract the best doctors.

Spirella

INDIVIDUAL & SURGICAL
CORSETRY SERVICE



THE Spirella System of Corsetry operates as follows. First, the Spirella Corsetiere adjusts the patented Modelling Garment (picture No. 2). Then measurements are taken over the supported figure, from which measurements the finished garments are individually made (picture No. 3). The finished Spirella gives control in an upward and backward direction in harmony with muscular action. Illustrations are from un-retouched photographs.

For name and address of nearest Corsetiere see the Spirella full page advertisement in the local Telephone Directory

The SPIRELLA COMPANY OF GREAT BRITAIN LIMITED
WITCHWORTH, HERTS., and SPIRELLA HOUSE OXFORD CIRCUS, LONDON, W.1
Contractors to the Ministries of Health and Pensions under the National Health Service Act 1916 (Con'G n 8c14)

ADEO IN TENERIS

ONSUESCERE

ULTUM EST

(VIRGIL)



Of the greatest importance is training in our tender years—but once a lesson becomes a habit it is not easily forgotten

Often the physician will have the task of stressing the importance of regular bowel movement and the prescription of 'PETROLAGAR' will greatly assist in establishing this 'habit-time' safely and pleasantly.

Exceptionally palatable, 'PETROLAGAR' emulsion mixes intimately with the bowel contents thereby stimulating natural peristalsis without the irritating effect of cathartics.

PETROLAGAR

A 2% emulsion of white petroleum oil with flavouring

Wyeth

JOHN WYETH & BROTHER LIMITED
Clifton House, Euston Road, London, N.W.1

ALUDRON - BEPLEX - ENDRINE - PLASTULES

A new approach to the relief of pain

TETRAETHYLAMMONIUM salts were found in 1945 to block the transmission of nerve impulses through the autonomic ganglia, and they have been employed diagnostically in selecting patients for sympathectomy suffering from peripheral vascular disease.

Tetraethylammonium Bromide may be used therapeutically to give relief from pain in peripheral vascular disorders, causalgia and post-herpetic neuralgia.

Injection of T.E.A.B.-Boots Supplied as a 10 per cent. solution for intravenous or intramuscular injection :—Boxes of 12 x 1 c.c. and 12 x 5 c.c. ampoules.

Tetraethylammonium Bromide-Boots

Literature and further information on request to the Medical Department

BOOTS PURE DRUG CO. LTD, NOTTINGHAM



S.29

Obituary

R. L. DODDS, M.Ch., F.R.C.S., F.R.C.O.G.

Mr. Robert Leslie Dodds died suddenly on Jan. 26 at the early age of 50. He was born in Dundee in 1898, the son of the Rev. R. W. Dodds, and received his education in Belfast, first at the Methodist College and later at Queen's University. He graduated with honours in 1920, and after holding various appointments, including that of demonstrator in anatomy, proceeded to take the F.R.C.S. in 1927 and the M.Ch. of his own university in the same year. Further resident experience followed in London, this time confined to the specialty he had chosen, and very soon he was appointed to the staff of the City of London Maternity Hospital, the Samaritan Hospital, and the French Hospital. Here Dodds was given scope to develop those abilities which had been evident early in his career. He rapidly reached the front rank as a skilful operator, and his advice on obstetric problems was widely sought.

When the London County Council took over the old Guardians' hospitals in 1934 Dodds was asked to help in the reorganization of their maternity services. Their present efficiency is largely a result of the work he did at that time and which he continued subsequently as consultant at St. James's Hospital. He was in addition obstetric consultant to the Ilford and Edmonton borough councils and to the Bearsted Memorial Hospital.

He had served in the 1914-18 war as a surgeon lieutenant in the R.N.V.R., and was on active service in destroyers. During the recent war he was a major in the R.A.M.C. for 18 months, being employed appropriately enough as surgeon to a troopship for part of that time. Towards the end of 1944 he had to relinquish his commission on the grounds of ill health.

Dodds had a natural charm which endeared him to all with whom he associated and combined with his innate modesty to make association with him a delight. His many friends and patients will mourn his passing and extend their sympathy to his widow, who assisted him so devotedly during his long illness.

Mr. R. Christie Brown writes: Leslie Dodds was my friend for 20 years and was one of the kindest and most generous of men. I have known few people who had his ability to endear themselves to so many. His most attractive quality was his humanity, and this, coupled with a wisdom which few possess, made him one of the best friends a man could have. His sense of humour and Irish wit were irresistible and also served his colleagues in very good stead, particularly in committee work. I have known many difficult situations saved by his ready wit. He was a universal donor, and in the days before blood banks this, and the fact that one could always count on his help in an emergency, must have cost him a lot physically. I recall two outstanding occasions on which Dodds came to my help by giving his blood to my patients, one of whom was the wife of a colleague whom I visited with Dodds. She was so ill with a ruptured ectopic gestation that we operated upon her in her own home. Dodds not only assisted me with the operation but gave the patient a transfusion of his own blood. I was a young man then, comparatively unaccustomed to dealing with such critical situations, and I have always felt grateful to him for the help so freely and unostentatiously given. The tragedy of his premature and sudden death is to me heightened by the feeling that we have lost not only a good friend and colleague but also someone who had the qualities of the humanitarian, with a regard for people as individuals, understanding and charity for their weaknesses, and tolerance for even the arrogant and the stupid. In the present state of the world such qualities tend to be at a discount, and the loss of any one of their champions is indeed tragic, but particularly so when the loss is also that of a personal friend.

W. E. FOGGIE, D.S.O., M.D., F.R.C.P.Ed.

Dr. William Edward Foggie, who died in Dundee on Jan. 13 at the age of 79, had been closely associated with the Dundee Royal Infirmary for fifty years. He was born in Dundee, and as a boy attended the High School there. On leaving school he went to Edinburgh University and entered the Faculty of Arts, taking the M.A. in 1889. Thereafter he studied medicine and graduated M.B., C.M. in 1893. He was then one of the only two resident medical officers in Dundee Royal Infirmary for a time. He settled in practice in his native town, and in 1899 was appointed to the staff of the Infirmary as assistant physician. In 1907 Dr. Foggie was promoted visiting physician for diseases of the skin, and held this appointment for twelve years, which included, however, a long absence on military service. When he came back from France he returned to the medical side of the Infirmary, and from 1922 till 1932, the year of his retirement, he was senior visiting physician. Dr. Foggie continued to act as physician to the Royal Victoria Hospital and the Sidlaw Sanatorium. He was also for many years a teaching member of the staff of St. Andrews University, holding a lectureship first in dermatology and afterwards in clinical medicine.

In the 1914-18 war Dr. Foggie served with distinction. He was mobilized as a Territorial in 1914, and in 1915 went to France in command of the 3rd Highland Field Ambulance in the 51st (Highland) Division. He served throughout in France and Belgium till demobilization in 1919. In 1918, when he held the rank of lieutenant-colonel, he was awarded the D.S.O. He became a member of the Royal College of Physicians of Edinburgh in 1922, and in 1926 was elected to the fellowship. He will be remembered by an older generation as a member of the Association of Physicians, on the executive of which he served for three years. He had been a member of the B.M.A. since 1894, and was president of the Dundee Branch in 1933-4. His health began to fail gradually over a year ago, but he was able to get about until some two months before his death.

Dr. Foggie was held in high regard by his colleagues for his clinical acumen, wise counsel, and unflinching good humour. He was an excellent teacher of medical students, who recognized in him a good physician and a good friend.

Dr. PHILIP HEWER WELLS died at the age of 56 on Jan. 17 at Stratford-on-Avon after a long illness. The third son of Arthur Lethbridge Wells, who was senior surgeon to the Central London Ophthalmic Hospital, he was related on his mother's side to a long line of medical men, several of whom were intimately connected with St. Bartholomew's Hospital. Dr. Wells qualified there in 1915. He was awarded the Brackenbury Scholarship, the Kirkes Scholarship and Medal, and the Willett Medal, and he was elected president of the Abernethian Society. After acting as house-physician to Lord Horder he joined the R.A.M.C. and was appointed medical officer to the 2nd Battalion Coldstream Guards, a regiment of which he remained immensely proud. Within eighteen months he was awarded the M.C. and bar, and later served a short period in Russia. Returning to civil life he acted as house-physician at the Radcliffe Infirmary, took the M.R.C.P., and went into general practice with his uncle, Mr. Earnshaw Hewer, F.R.C.S., in Stratford-on-Avon. Here he spent the whole of his working life. On the outbreak of war in 1939 he was appointed as medical specialist to the 10th British General Hospital and went to France. After the evacuation he held a number of appointments until in 1943, while acting as consulting physician to the South-Eastern Command, his health broke down and he was later invalided out with the rank of lieutenant-colonel. On his return to Stratford-on-Avon, with great courage he continued to work as long as this was physically possible. Dr. Wells was a man of great physical strength, a fine athlete, and an excellent player of ball games, in which he delighted. But with all his qualifications he will be best remembered for his forceful personality, his spontaneous generosity, and his uncompromising defence of what he considered to be the right. He leaves a widow, two sons, and two daughters.

H.G. writes: Now that Philip Wells has left us, it seems fitting to recall the great man with whom I worked rather than the shadow of his former self that his illness had made him during the last year of his life. I was privileged to become his junior partner nearly twenty years ago, and soon learned to realize his outstanding personality and the magnificent mental and physical capacities with which he had been endowed. He

had the highest integrity and expected the same standards from his colleagues and from all with whom he came in contact. Like all strong men, he had that capacity for gentleness which showed itself during his rare excursions into surgery, but mostly in his dealing with children, who all loved him, and whose care was his especial pleasure. Among many recollections are his guidance and encouragement in difficult midwifery; the effortless accuracy of his maschie shots; the terrific force of his first service; and the roars of laughter which his mimicry evoked. When he left in 1939 to rejoin the Army there was something missing from among us which, alas, never returned in full, as he was a sick man when we saw him again. What we missed the Army gained. Many of those who served with him have spoken of him with great affection and will, I know, share our sense of loss. His life was all too short, but his memory will gladden the hearts of many of us for as long as we live.

Dr. GRAHAME RIGBY RAWLINGS, who died on Nov. 23, 1948, at the age of 37, was anaesthetist to the Dorset County Hospital. He took his Conjoint qualification in 1935, graduated M.B., B.Chir. at Cambridge, and took the D.A. in 1937. He was casualty officer and house-physician at St. Thomas's Hospital, and then became senior resident anaesthetist there. In 1938 he went to Calcutta, where he was an anaesthetist on the honorary staff of the Presidency General Hospital. During his years in India he was an energetic and successful practitioner of anaesthesia and of general medicine, and was soon acknowledged as one of the leading anaesthetists in the country. He had a fertile and inventive mind and great mechanical ingenuity, and did much work on the development of apparatus and appliances. He left India in 1948 to devote his full time to anaesthesia in this country. His early death is a great loss to the profession.—R. F. W.

Dr. EDWARD KEITH MULINDER died in New Zealand on Dec. 9, 1948, at the age of 40. Dr. Mulinder was born in New Zealand, and was educated there, graduating M.B., Ch.B. in 1933. He came to England in 1935 for further study and experience. From 1936 onwards he was employed in L.C.C. mental hospitals at Friern and Tooting Bec. He had taken the D.P.M. in 1938, and he joined the R.A.M.C. as a specialist, serving as area psychiatrist in various parts of England. On the opening of the Second Front, Major Mulinder went to Normandy with the advanced section of the 32nd British Psychiatric Hospital which landed on D+18. Following the battles of Caen and the Falaise Gap he wrote an article which was published in this *Journal*. Mulinder served in psychiatric hospitals in N.W. Europe till after the end of the war and, on returning to England, at Banstead Hospital, Surrey. He was demobilized in 1946 and returned to New Zealand to take up an appointment in the Mental Hospitals Department. Until recently Dr. Mulinder was medical officer at Kingscat Hospital, Papakura, where he was held in high esteem by both the staff and the patients. His early death is a great loss to the profession. Dr. Mulinder is survived by his widow and four young daughters, all of whom were born in England.

Dr. WILLIAM JOHN YOUNG, who died on Dec. 28, 1948, at the age of 79, was one of the best-known practitioners in Cambridgeshire. He qualified first as a chemist after serving an apprenticeship, and then took the L.R.C.P., M.R.C.S. in 1900 after studying medicine at Liverpool University. As a student Young won the Torr Gold Medal and the Senior Lyonnes Scholarship for Anatomy. He became a demonstrator at the new medical school, and he also assisted Professor A. M. Atterson in preparing the dissections for the illustration of Cunningham's *Textbook of Anatomy*. He settled at Harston, Cambridgeshire, soon after qualifying, and he remained in practice there until 1945. A man of great energy of mind and body, in the early days he found horses too slow and took to the bicycle, often covering over thirty miles a day. Because of the bad roads, Young was often to be seen in winter riding across field paths and side-walks. Outspoken, a hater of humbug, yet tender in the presence of great trouble, he endeared himself to his patients, and he never refused an emergency call. Midwifery was one of Young's special interests. He safely delivered over 2,000 babies and counted it a blessing that he never lost a mother in labour. In the 1914-18 war Young was visiting patients as early as 7.30 a.m., and at 10 a.m. he began a day's work presiding over medical boards, returning home in time to pay evening visits and conduct his surgery. Always an enthusiastic member of the local medical society, he was frequently heard reading papers or in discussions. He represented the Cambridge and Huntingdon Branch at the annual meeting held at Aberdeen in 1914 and at three London meetings. He was honorary secretary of the Division in 1924-5 and president in

1927-8. Dr. Young's recreations included village cricket, tennis, swimming, reading, and he was particularly interested in French and in the Greek classics. For over fifty years he read daily a part of the Bible, and he imposed upon himself a rigid self-discipline. The esteem of all his friends was demonstrated on the occasion of his seventy-fifth birthday and his official retirement. A presentation was made to him by over 1,000 friends and patients from the twenty-two villages he served. His own words seem a fitting conclusion: "In my wildest dreams I never thought of anything of this kind. During my forty-four years here I have made some attempt to live up to the high traditions of medical service and follow them as far as I could. To find myself in these circumstances is rather an overwhelming triumph." His life was a triumph—he loved his profession and no one asked his help in vain. His gentle nature and indomitable spirit made him a living example to others.—C. W.

Dr. WILLIAM HENRY PASSMORE died on Dec. 31, at the age of 76, in Carshalton, where he had practised for over forty-five years. Passmore had been a man of great energy, with many activities outside his general practice. His surgical ability was great, and was recognized by his fellow practitioners over a wide area. He was a general-practitioner surgeon of the best type, knowing his limitations, but an expert in dealing with abdominal emergencies and with fractures. Under his influence the Carshalton War Memorial Hospital, to which he gave so many years of voluntary service, had a deservedly high reputation. In his younger days he had passed the primary examination for the F.R.C.S. and had been prosecutor at the College, and with a natural surgical aptitude he developed a fine technique. He had been resident obstetric officer at Charing Cross Hospital, where he qualified in 1899, and retained his interest in midwifery. His acknowledged skill in this subject led to his appointment as consulting gynaecologist to the Carshalton U.D.C. In the 1914-18 war his energy was such that he became surgeon to the two large Red Cross hospitals at Morden Hall and Morden Grange at a time when his young partner had left for service in France. Passmore managed it all by doing two hours' work at the hospitals before breakfast. In 1919 he was one of the founders of the Sutton and District Medical Society, which has continued with great success, and he was its first treasurer. It was mainly due to Passmore's energy in raising money that the War Memorial Hospital, Carshalton, was opened and finished completely free of debt. Passmore was to many of his patients not merely a doctor but one who became their wise counsellor and a lifelong friend. Those who knew him well will, above all, think of him as a lovable personality who gave his energies to the benefit of his neighbours, and will ever hold him in their memories with affection. He is survived by his widow, who was of exceptional help to him in his professional work, and by his son and daughter.—T. H. W.

Dr. ALBERT ERNEST HODGSON died at his home in Maghull, near Liverpool, on Jan. 2 at the age of 68. Apart from the interruptions of two world wars the whole of his professional life was spent in the treatment of infectious disease. Dr. Hodgson was born in Redcar. His medical education was at Cambridge and Edinburgh, and he graduated M.B., Ch.B. in 1903. In 1911 he proceeded M.D., and was commended for his thesis on the treatment of diphtheria. He took his D.P.H. at Cambridge in 1906, and in that year was appointed R.M.O. at the City Hospital East (Mill Lane), Liverpool, where he had his first extensive experience of diphtheria and other infectious diseases. This period was broken by his specialist service in the R.A.M.C. from 1914-19 in India and at Salonika and Malta. On his return to England he was appointed officer in charge of the North-West Area bacteriological laboratory and cerebro-spinal centre at Kinnel Park. It was here that he met his wife-to-be, Norah Lelean, sister of Professor Lelean, who held an administrative nursing post there. This was an ideal marriage, though there were no children. His wife's death, about ten years ago after a period of illness, was a very great blow to Dr. Hodgson. In March, 1919, he was appointed principal medical officer at Fazakerley Hospital, Liverpool, serving under Claude Rundle, whose methods of bed-isolation and cubicle nursing he eagerly followed. At this time Rundle and he drew attention to the need for larger doses of antitoxin owing to increased gravity of diphtheria, which ten years later were shown to be due to particular strains of the diphtheria bacillus. In 1934 Hodgson succeeded Rundle as medical superintendent. He was keenly interested in the treatment of anthrax, in which he had great success, having a consecutive series of 100 cases without a death. He wrote a number of articles on this subject, and his work was widely appreciated, especially by those in the hides and tannery industries. Dr. Hodgson was a vice-president of the Liverpool Medical Institution and was also lecturer on infectious diseases in Liverpool University. He

retired in August, 1946. Hodgson was of a gentle and affectionate disposition and was universally popular with patients and their relatives, with the hospital staff, and with the profession. One sister survives him.

Dr. WILLIAM JOHN LEACH, of Beaulieu, Inverness-shire, died suddenly on Jan. 9 at the early age of 48. After graduating M.B., Ch.B. at the University of Aberdeen in 1924, and holding an appointment as house-surgeon in the Sick Children's Hospital there, he returned home to take over the practice of his father, Dr. John Leach, in Beaulieu. The "young doctor" soon endeared himself to the patients in his practice, which covered an extensive country area and included a large proportion of work under the Highlands and Islands Medical Service. His visits necessitated many arduous journeys to the hills and glens, and required no little physical endurance as well as skill and ingenuity in the home management of isolated cases. In the busy life of a country doctor he found time to keep up to date with medical literature, and was an enthusiastic attendant at clinical meetings. A keen member of the British Medical Association since 1928, Dr. Leach was president of the Northern Counties of Scotland Branch from 1939 to 1946; he represented the Inverness Division at annual representative meetings in 1938 and 1943, and was a member of the Insurance Acts Committee and of the Scottish Subcommittee of the Insurance Acts Committee for several years. Dr. Leach, who was greatly interested in many forms of sport, was a good horseman and was also commodore of the Beaulieu Firth Yacht Club. A genial companion, a man of generous impulse and ever anxious to help in the furtherance of any good object in his community, Dr. Leach was held in high esteem by a wide circle of friends in the Beaulieu district, and his death will be felt as a deep loss by them. He is survived by his widow and daughter, to whom the sympathy of his colleagues will be extended.

Dr. VALENTINE HENRY BLAKE died suddenly on Jan. 10, at the age of 67, at his home in Great Yarmouth. He was the elder of the two sons of the late Dr. Henry Blake of that town; the younger brother is Major-General H. H. Blake, late A.M.S. Valentine Blake was educated at Yarmouth and at Bedford. He gained an entrance scholarship at St. George's Hospital, London, and graduated as M.B., B.S. in 1905. He was house-surgeon at St. George's, and afterwards at the Cancer Hospital, Fulham Road. He then joined his father in practice in their home town. He was honorary surgeon to the Great Yarmouth Hospital from 1909 to 1946, and all his work was characterized by single-minded devotion to his duty and his patients. On retiring, he was appointed honorary consulting surgeon. In 1947 Dr. Blake had to retire completely from practice because of a dissecting aneurysm and, coronary thrombosis which together caused his untimely death. During the first world war he served in the R.A.M.C. in Egypt and in France, and was mentioned in dispatches. He had been a certifying surgeon under the Factories Acts and Trinity House medical officer for the Yarmouth district. In 1933-4 he was president of the Norwich Medico-Chirurgical Society and in 1942-4 of the Norfolk Branch of the B.M.A. In all these varied activities Blake displayed the qualities of earnestness, keenness, and intelligence which he had shown in his student career. Nothing was too much trouble for him, particularly during the grim days of air raids. In earlier days he was prominent as a swimmer and a motor-cyclist, at both of which sports he won trophies. In later years he was a proficient shot and fisherman. Dr. Blake married, in 1926, Enid, daughter of Dr. Hedley Bartlett, of Saffron Walden, who survives him with their two sons and one daughter; the elder son proposes to enter his father's profession.

Dr. EDWIN LEONARD LEES, of Clifton, Bristol, died on Jan. 10 at the age of 85. He was born at St. Andrews, and his father was a surgeon in the I.M.S. who died of typhoid fever at the early age of 36. His medical education was at Edinburgh and Bristol. He graduated M.B., C.M. at Edinburgh in 1885, and proceeded M.D. in 1890. He came south to Bristol in 1884, and on qualifying went into general practice as an assistant to Dr. Coleman. For sixty-one years, until his retirement in 1945, he was in charge of a large general practice, the arduous duties of which he carried out with entire unselfishness and devotion. Dr. Lees was a man of strong personality who took the greatest interest in his patients, to whom he was not only a doctor but a guide and friend. In addition to his general practice he had a particular interest in the diseases of children. He held in succession the appointments of house-surgeon, registrar, and physician on the staff of the Royal Hospital for Sick Children and Women in Bristol, being appointed consultant physician on his retirement. There are many who will regret the loss of

a friend and counsellor and who will deeply sympathize with his widow and the six children who survive him.

Dr. HUGH HOWIE BORLAND, who was 91, died on Jan. 12 after a long illness. He graduated M.B., C.M. at Glasgow in 1896, and took the Cambridge D.P.H. in 1899. After holding resident appointments at the Western Infirmary, Glasgow, and at the Maternity Hospital, he went into general practice in the Dennistoun district of Glasgow, and became one of the clinical tutors at the Royal Infirmary. In the first world war he acted as medical officer at Duke Street prison. The fact that Dr. Borland was elected Deacon of the Incorporation of Barbers testifies to the respect in which he was held by his fellow citizens. He was an elder of St. John's Church, Renfield, and in other ways showed his interest in religious work. He was a man of high personal character, a kind friend, and a loyal colleague.—T. K. M.

Dr. PERCY ARTHUR STOREY died at his home in London on Jan. 16 at the age of 79. Dr. Storey was educated at Brighton College and University College, London, and qualified M.R.C.S., L.R.C.P. in 1894. In 1918 he graduated M.D. of the University of Durham. Always a general practitioner, he practised in St. Marylebone for fifty-four years until his retirement about two years ago. His work there was interrupted only when he served in the R.A.M.C. in the 1914-18 war. During the recent war he worked with the Marylebone A.R.P. services. He was a member of the Harveian Society of London and of the Chelsea Clinical Society. A Fellow of the Zoological Society of London, he took a great interest in animals, and he had a particularly fine collection of butterflies.

Dr. LOUISE WHITMAN FARNAM WILSON died at Hove on Jan. 21. She received her medical education and graduated M.D. at the University of Yale in 1920. She then started work in the mission field in China at the Hunnan-Yale Medical College. She got great satisfaction from that work, and in the course of it met her English husband. Returning with him to this country she spent the next two years studying for the L.R.C.P. and M.R.C.S., which she took in 1936. Dr. Wilson then undertook temporary work in general practice in London. Shortly afterwards she helped in some research work with Dr. Leonard Colebrook. At the outbreak of war she settled down in rural general practice in Sussex. In recent years she bore with great patience and fortitude a long and trying illness. Louise Wilson had the freshness of outlook of the American combined with a determined desire to get to the bottom of any subject which interested her. In the most gentle manner she would enunciate the boldest ideas, but she was tolerant of criticism and in fact eager for it. The crowded congregation at the memorial service at Keymer Church on Jan. 29 showed well the devotion of her old patients, many of whom had come long distances in order to be present.

Professor R. J. Willan writes: The sudden death of Mr. Stanley Raw (*Journal*, Jan. 22, p. 158) caused widespread regret in Sunderland and in the North of England, where he had an extensive and successful surgical practice. Until recently Mr. Raw was senior surgeon to the Royal Infirmary, Sunderland, and to the Sunderland Municipal Hospital. To both hospitals he rendered yeoman service, both clinically and administratively. A man of sound clinical judgment, an operator of outstanding merit, he was also an acceptable lecturer and teacher. He was an ideal chief of a clinic, for he took a great personal interest in his juniors, whom he so ably guided and encouraged in their work. He had a large practice associated with the Workmen's Compensation Act, particularly among the Durham coal-miners. There was a remarkable mutual understanding and respect between him and his collier patients, and Raw's opinion was seldom challenged, and if challenged was seldom held to be in the wrong. He was a fellow of the Association of Surgeons of Great Britain and Ireland. He took a prominent part in the amalgamation of the Northumberland and Durham Medical Society with the Newcastle Clinical Society, which then became the present Newcastle-upon-Tyne and Northern Counties Medical Society. In due course he became president of the new society, and his scholarly presidential address, "Handing on the Torch," is still remembered with pleasure. Apart from his professional eminence, his life included many interests. He loved climbing, travelling the oceans, sailing small boats, and was a golfer with a low handicap. He was very happily married, and his wife shared his many interests. A man of commanding stature and great physical strength, he had climbed the mountains of many

countries. Recently, during a South Atlantic pleasure cruise, he visited the island of Tristan da Cunha, where he had the unusual experience of climbing the 7,640-ft. mountain of the island, a feat that, through lack of opportunity and lack of dependable weather conditions, cannot often have been performed by a visitor. His generosity was proverbial among his friends, and probably no one in need ever asked his help in vain. He had a keen sense of humour, was exceptionally well read, had a fund of good stories, and could be relied upon as a witty after-dinner speaker. So there has passed a man of outstanding character, a man full of humanity, and a great gentleman whom it was an honour to have known. Mrs. Raw can be assured of the sincere sympathy of his many friends in her irreparable loss.

Dr. R. W. Lee writes: I was grieved beyond measure to read of the death of Dr. William Susman (*Journal*, Jan. 8, p. 76), and should like to pay tribute to him as I knew him many years ago. We served together in the same infantry company in France in 1917 and 1918 as very junior officers. Inevitably he was known as "Susie," and it was always a treat to hear his platoon singing a popular song relating to a certain "Sister Susie" as they followed him on a march. With his rich Canadian slang, no doubt toned down in later years, a gaiety that persisted at all times, and courage of a high order, he was a much-loved figure. A handy man with his favourite weapon, the Lewis gun, he achieved fame as a gunman, Wild West type, by a fluke in which he smashed the company commander's walking-stick with a revolver at twenty paces. The owner's wrath and the marksman's joy were roughly equal. In one typical exploit he disobeyed strict orders when, alone and unarmed, he explored an unhealthy no-man's-land on a dark, wet night in search of a reconnaissance patrol that had been given up as lost. By another fluke contact was made, and he led them home rejoicing on a route laid down by a ball of string. It is in particular gratitude for that action, involving very great risk, that I wish to record some appreciation of Susman as a very gallant officer.

Medico-Legal

PENSION AFTER HUSBAND'S SUICIDE

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

he law concerning war pensions establishes a strong presumption in favour of the applicant that the condition of disability (or death) is the result of service. In a disputed case the Minister of Pensions has to prove the negative, often a very difficult task.

In *Duff v. Minister of Pensions*, a recent Scottish case,¹ a Glasgow tram driver who had been concerned in a fatal accident had a nervous disturbance and gave up his job. Next month he was called up for military service but deferred for six months. When this period had elapsed he was drafted into the infantry, and two weeks later his body was found in the sea. There was no doubt that he had committed suicide. His widow claimed a pension, but her application was refused and her appeal to the tribunal rejected. She then appealed to the Court of Session, and won.

Lord Thomson, the Lord Justice Clerk, observed that the pensions tribunal had held it proved that the deceased had committed suicide because he was depressed when he enlisted, that the depression was a continuation of a pre-Service psychotic illness from which he had never recovered. The tribunal had also held that his very brief Army life had been happy. His Lordship's brother judges and he could not help feeling that there was involved in that cryptic finding the idea that there was need only to establish that the deceased's Army life had been such as would not upset a normal man. The court did not think that this was the proper test. The test must be an individual test, and the tribunal must ask itself what was the effect of Service conditions on this particular man. There was no evidence to enable the court to affirm that Service conditions had not played a part in aggravating the man's depression and so precipitating the tragedy. The court therefore allowed the appeal and the widow gained her pension.

¹ *Scotsman*, Dec. 11, 1948 (do)

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on Dec. 16, 1948, the following degrees were conferred:

D.M.—A. E. Mourant.
B.M.—H. E. Reiss, D. F. Mullins, M. H. Hall, *Mrs. Joan W. Kipling, *Janet E. McKinstry.

* In absentia.

UNIVERSITY OF CAMBRIDGE

The medical committee of the Board of Governors of the United Cambridge Hospitals has elected Claude Howard Whittle, M.D., F.R.C.P., a member of the Faculty Board of Medicine for the two years ending Dec. 31, 1950.

The following degrees were conferred in Congregation on Jan. 21:

M.A.—Joan Mary Boissard, M.R.C.S., L.R.C.P., University Assistant Director of the Public Health Laboratory, and James Wilson Millen, M.D., University Lecturer in Anatomy.

M.B., B.Ch.—*G. C. Myddelton, G. R. Hervey, *R. D. Allen, *C. B. McKerrrow, *J. G. O. W. Yerburgh, *G. P. Blanshard, *Alexis Brook, *D. R. Harrocks, *A. R. H. Hicks, *P. H. Lord, *F. R. Ryle, *K. H. L. Scougall, *J. B. Howells, *J. C. Wardill, *J. L. Millard, *R. A. Rowan, E. W. Heining, *J. A. Ballint, *T. M. Robinson, *C. D. Thompson, *N. P. L. Wildy, *R. B. Wright, L. Linder, *H. E. Flint, *R. S. Smith, *T. J. D. Walker, *A. L. Wells, *K. W. Leech, *J. V. Earle, *J. D. Llywelyn-Jones, *T. B. Boulton, *R. D. Cundall, *P. G. R. Dench, *G. A. D. Levy, *G. M. Jones, T. H. H. Wade, *J. R. Edsall, *June Bean, *Daphne E. Lewin.

* By proxy.

UNIVERSITY OF GLASGOW

At a Graduation Ceremony held on Jan. 15, the following medical degrees were conferred:

M.D.—G. C. Arneil, K. C. Huiehin, A. W. Lees, G. Leslie, J. S. Stevenson.

M.B., Ch.B.—A. H. Alexander, C. I. S. Bartlett, Mary P. S. Borland, Lucy McL. C. Boyd, Mary B. S. Calder, A. Carnochan, Mary E. Calto, Agnes A. Coughtrie, R. McL. Douglas, W. I. L. Fraser, G. L. Gibson, D. A. Haldane, Mary M. Hamilton, A. C. Howie, A. N. Hunter, B. Joels, *Elizabeth M. S. Kilpatrick (Mrs. Wotherspoon), Anne K. Kirkland, D. A. Knox, R. R. Lang, D. McC. Macgregor, J. MacKay, A. M. Mechie, A. P. Millar, A. R. Morrison, J. Morton, J. J. Mullen, P. R. Probert, J. D. Read, H. A. Roemmele, L. Rose, Christina C. Stevenson, I. O. Stewart, J. Stewart, J. A. M. Stewart, R. E. Stewart, W. S. Stoddart, P. Stuart, H. W. Thomas, D. B. Turnbull, J. M. Uku, J. Wright.

* In absentia.

UNIVERSITY OF MANCHESTER

William Ian Clinch Morris, M.B., Ch.B., F.R.C.S.Ed., M.R.C.O.G., has been appointed whole-time Professor of Obstetrics and Gynaecology and Director of the Department, in succession to the late Professor Daniel Dougal.

UNIVERSITY OF WALES

The following candidates for the degrees of M.B., B.Ch. at the Welsh National School of Medicine have satisfied the examiners at the examinations indicated.

HYGIENE.—Lilian J. Cunningham, H. B. Jenkins, Nano J. Morgan, D. St. J. D. Rees.

OBSTETRICS AND GYNAECOLOGY.—Marjorie J. Adams, Mary P. E. Alban, F. W. Beswick, M. L. Cattell, R. B. Davies, Elizabeth B. Dew, D. C. Dymond, L. Elton, A. R. Evans, K. Gammon, P. H. Griffiths, E. I. Gwynne, G. E. Heard, J. I. Hopkins, June D. James, H. B. Jenkins, Ruth E. Lewis, M. G. Lloyd, Nano J. Morgan, Rhona E. Morgan, B. Phillips, H. M. N. Rees, J. A. E. Richards, R. M. Richards, *D. C. Saunders, J. A. Stanton, D. G. H. Thomas, E. Thomas, J. D. Thomas, J. G. H. Thomas, S. Thomas.

SURGERY.—Mary P. E. Alban, *F. W. Beswick, M. L. Cattell, Elizabeth B. Dew, L. Elton, E. H. Evans, K. Gammon, P. H. Griffiths, G. E. Heard, June D. James, T. D. Jones, Ruth E. Lewis, M. G. Lloyd, Rhona E. Morgan, B. Phillips, J. A. E. Richards, R. M. Richards, *D. C. Saunders, C. P. Seager, J. A. Stanton, Brenda M. Thomas, E. Thomas, J. G. H. Thomas.

* With distinction.

The following candidates at the Welsh National School of Medicine have satisfied the examiners at the examination indicated:

DIPLOMA IN PUBLIC HEALTH.—I. A. Bolz, J. W. Bowen, R. Glenn, F. J. Hallinan, F. C. R. Harvey, *R. A. N. Hitchens, Amelia Rowles, G. F. J. Thomas.

* With distinction.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

At a meeting of the College held on Jan. 27, with the president, Lord Moran, in the chair, Sir W. Dalrymple-Champneys was elected to represent the College at the Health Congress of the Royal Sanitary Institute, to be held at Brighton from May 23 to 27, and Professor A. A. Moncrieff was re-elected representative on the Colonial Medical Advisory Committee.

Membership

The following candidates, having satisfied the Censors' Board, were elected Members:

D. M. Abelson, M.B., L. E. Arundell, M.B., J. Badenoch, B.M., R. G. Benians, M.B., E. R. Bickerstaff, M.D., J. D. Blainey, M.B., J. P. P. Bradshaw, M.B., B. C. Brown, M.D., P. E. Brown, M.B., Flight Lieutenant, R. A. F. M. S., Alice M. Bush, M.B., R. J. Calvert, M.B., K. M. Chalmers, M.B., J. B. Cochran, M.B., J. S. Crowther, M.B., D. Davies, M.B., J. F. Delafresnaye, M.D., E. M. C.

Medical Notes in Parliament

Last N.H.I. Payment

On Jan. 27 Mr. BESWICK asked the Minister of Health when he expected to make a final payment under the former National Insurance Scheme to medical practitioners in Middlesex.

Mr. BEVAN answered that executive councils had been notified of the amounts available for the final payments to doctors in respect of medical benefit under the National Health Insurance Acts and had been asked to make the necessary payments to doctors as soon as possible.

Cost of N.H.S.

Sir THOMAS MOORE asked on Jan. 27 for the latest estimate for the current annual cost of the National Health Service, as divided amongst the main branches, together with the administration costs; and also for figures indicating the estimated income from contributors.

Mr. BEVAN replied that a supplementary estimate of the cost of the National Health Service for the period July 5, 1948, to March 31, 1949, divided among the main branches would shortly be laid before the House. The amount available from National Insurance contributions towards the cost of this Service was estimated to be £24,000,000 for the same period.

Teaching Hospitals in Scotland

Miss HERBISON asked on Jan. 25 which hospitals had been added to the list of teaching hospitals in Scotland since June, 1946.

Mr. WOODBURN replied that the bulk of medical teaching in Scotland was carried on in a few large general hospitals in the four centres Aberdeen, Dundee, Edinburgh, and Glasgow. The main teaching hospitals remained as in June, 1946. There was, however, an increasing use of other hospitals for teaching purposes both in the four centres and outside. In the interests of the hospital service as well as teaching, he was anxious to encourage this extension. Medical education committees to advise the regional hospital boards on this and other aspects of the provision of facilities for clinical teaching were about to begin work in each region.

Salaries of Medical Officers of Health

Mr. KEENAN on Jan. 27 asked Mr. Bevan what steps he proposed to take to help or assist local authorities to secure and retain the services of medical officers now that the salaries paid and offered were considered insufficient since the operation of the Health Service Act of July last.

Mr. BEVAN declared that, while expressing no view on the adequacy of these salaries, he was ready to join with the local authorities in establishing a Medical Whitley Council on which they could be discussed.

Antrycide

Mr. HALE asked on Jan. 26 for a statement on the use of "antrycide" in Africa.

Mr. CREECH JONES answered that field trials conducted throughout 1948 in Kenya, Uganda, and the Sudan showed that a single treatment with the new drug cured the two most important trypanosome diseases in cattle, *T. congolense* and *T. vivax*. It had also proved effective against trypanosome diseases which affected camels, horses, dogs, and pigs. In addition to its curative properties, antrycide afforded protection against trypanosome diseases. Trials were continuing to establish the duration of the period of protection. Limited supplies of the drug had been made available to Government veterinary departments in Africa. It was in use in Kenya, Uganda, and Nigeria (as well as in the Sudan). The effectiveness of the drug, particularly its prophylactic properties, would, it was hoped, improve the prospect of increased meat production in areas of Africa hitherto closed to domestic animals or precarious for them. He was examining the veterinary, agricultural, administrative, and other aspects of the development of animal husbandry in Africa made possible by the discovery of the drug. Initially it would be used to afford protection on stock routes and during seasonal migrations, but as supplies became more plentiful it was proposed to use it in combination with other methods of control to expand the present cattle-rearing areas. He was not in a position at this stage to estimate its ultimate effect on meat production in Africa.

Female Circumcision

Mr. HECTOR McNEIL said on Jan. 26 that he had no precise information about the prevalence of female circumcision in the Sudan. He was assured that legislation passed in 1926 and the subsequent propaganda had checked this repulsive and harmful practice. Progress, however, in the face of such a long-established tradition was regrettably, if necessarily, slow.

INFECTIOUS DISEASES AND VITAL STATISTICS

No. 2

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Jan. 15.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	28	1	30	3	1	47	3	13	2	—
Deaths	—	—	—	—	—	2	—	—	—	—
Diphtheria	92	11	34	6	5	203	21	59	19	9
Deaths	—	—	—	—	—	5	1	1	—	—
Dysentery	70	27	37	—	7	96	4	37	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	2	—	—	—	1	1	—	2	—	—
Deaths	—	—	—	—	—	—	1	—	—	—
Erysipelas	—	—	37	7	2	—	—	55	12	7
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	42	3	11	32	1	49	5	15	28	2
Deaths	—	—	—	3	—	—	—	—	6	—
Measles*	10,922	320	108	57	151	3,304	240	899	137	16
Deaths†	—	—	—	1	—	—	—	—	—	—
Ophthalmia neonatorum	48	8	9	—	—	39	5	13	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	4	1	—	—	—	4	—	1 (B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal ..	1,184	65	12	8	14	787	67	5	10	8
Deaths (from influenza)‡ ..	40	8	8	1	1	13	1	4	2	2
Pneumonia, primary	365	53	458	43	11	468	50	253	38	9
Deaths	—	—	—	16	—	—	—	9	—	—
Polio-encephalitis, acute	3	—	—	—	—	2	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-myelitis, acute	34	4	1	—	—	47	3	6	2	—
Deaths§	2	—	—	—	—	5	1	—	—	—
Puerperal fever	—	—	5	—	—	—	3	11	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| .. ..	88	6	7	—	1	102	5	13	—	2
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	989	67	273	100	44	1,754	109	377	24	49
Deaths†	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	5	—	1	3	—	2	—	1	4	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,825	172	304	67	61	2,343	160	46	49	7
Deaths	6	1	1	—	—	6	1	—	—	—
Deaths (0-1 year)	365	46	75	24	13	415	55	66	27	12
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	6,215	956	869	239	155	5,248	850	617	198	124
Annual death rate (per 1,000 persons living)	—	—	17.5	14.8	—	—	—	12.8	12.4	—
Live births	7,636	1,224	972	422	220	8,510	1,397	920	412	285
Annual rate per 1,000 persons living	—	—	19.6	26.2	—	—	—	18.5	25.8	—
Stillbirths	179	20	44	—	—	252	29	25	—	—
Rate per 1,000 total births (including stillborn)	—	—	43	—	—	—	—	26	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Influenza

There has been no important epidemiological change since week. Deaths from influenza in the great towns in the ended Jan. 22 numbered 45, as against 40 in the previous week. These are very low figures for this time of year. There have been a few more reports of small outbreaks of a disease which appears on clinical grounds to be true epidemic influenza mild type. At least one of these could be directly associated with an importation from the Continent. No large outbreaks have been reported.

Examination of specimens of virus obtained from abroad and cases in this country is proceeding, but final results are not yet available. From preliminary tests, however, it appears that the virus responsible may be the variant of virus A which appeared in this country at the beginning of 1947. If this is so, there may be good reason to hope that some measure of unity still lingers in the population of England and Wales and that a serious epidemic is unlikely.

read in Europe.—According to reports reaching the World Health Organization up to Jan. 18, Albania, Ireland, and Portugal have had only a few mild cases. Cases of influenza noted in mid-December in Bulgaria have been characterized by their remarkably mild but prolonged character and mainly affected very young children and the aged.

Jan. 14 almost the whole territory of France had been involved in an epidemic which affected about 20% of the population. Although generally of a mild type, the disease has caused a certain number of serious, and even fatal, cases, particularly among very young children and old people.

Cases have been sporadic and of a mild character in Greece and Poland. In Switzerland thirteen cantons have been affected, particularly Tessin, Geneva, Schaffhouse, and Basle city.

Identification of Viruses.—Virus A was identified in 50% of specimens taken from patients in the Lyons region. A virus also isolated which does not appear to belong to either type A or type B, and work on the identification of this virus is proceeding at the Pasteur Institute in Paris. More recent information suggests that the prevalent French strain corresponds with the virus isolated in Holland, and this is probably identical with the Italian strain.

Influenza virus A has been identified in the southern part of England by Professor J. Mulder, of the University of Leiden. The subtype is not clear, and is probably not PR8, but seems likely to be closely related to the 1947 A strains which caused large epidemics in Sweden and small epidemics in Holland, England, and America.

Discussion of Table

In England and Wales there were decreases in the notifications of measles 2,263, diphtheria 34, and scarlet fever 33, with an increase in the notifications of whooping-cough 519.

The largest declines in the notifications of measles were in Lancashire 681, Yorkshire West Riding 668, Nottinghamshire 1, and Essex 94; in contrast to this general decline, increases were recorded in Staffordshire 73 and Yorkshire East Riding 68. Notifications of diphtheria gave the lowest weekly total ever recorded and were 8 below the previous record low level. The centres of diphtheria during the week were Lancashire 20, Durham 13, London 11, Warwickshire 9, and Cheshire 8; the remaining 31 notifications were distributed over sixteen counties. Increases in the incidence of whooping-cough were recorded in Lancashire 121, Staffordshire 64, Warwickshire 55, Leicestershire 46, and Middlesex 40.

The largest returns for dysentery were from London 27 (St. Pancras 17 and Lancashire 17 (Liverpool C.B. 6 and Oldham C.B. 5)). Notifications of acute poliomyelitis increased by 15, and multiple cases were recorded in Kent 5; Middlesex 5 (Harrow D. 2); London 4 (Southwark 2); Lincolnshire 3; Wiltshire 2; Buckinghamshire 2; Essex 2; and Lancashire 2 (Manchester 3, 2).

In Scotland there was an increase in the notifications of whooping-cough 163, measles 47, scarlet fever 43, acute primary pneumonia 41, and dysentery 11.

In Eire there was a decrease of 13 in the notifications of ricket fever.

In Northern Ireland the chief feature of the returns was an increase of 22 in the notifications of whooping-cough. Notifications of measles increased by 32 in Tyrone county, while in the remainder of the country a decrease of 24 was reported.

Week Ending January 22

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,311, whooping-cough 42, diphtheria 131, measles 10,254, acute pneumonia 1,050, cerebrospinal fever 24, acute poliomyelitis 26, dysentery 104, ratyphoid 1, and typhoid 3.

Medical News

A 110th Anniversary

A dinner to celebrate the 110th anniversary of the *Medical Press* was held in London on Jan. 26. It was presided over by Sir Cecil Wakeley, the present editor, and was attended by about 60 guests, including Lord Moran, Lord Horder, Sir Edward Mellanby, Sir Wilson Jameson, and the editors of the *British Medical Journal* and the *Lancet*, and many others identified to a greater or less degree with medical journalism. A portrait dated about 1819 of Arthur Jacob, the founder and first editor of the *Dublin Medical Press*—the original title—and a number of personal relics relating to him and to the second editor, his son, Archibald Jacob, were exhibited. Lord Moran, in proposing the health of the journal, said that one of the remarkable features of the early issues of the *Medical Press* was its insistence upon freedom. Sir Cecil Wakeley, in reply, said the *Medical Press* differed from many other medical journals in various respects—for one thing, its editors had always been men in clinical practice—but like its contemporaries it had stood throughout its history for freedom of expression of opinion.

Dr. H. Guy Dain, proposing the toast of "Medical Journalism," said that one of the things of which the medical profession could be most proud was that it did not seek any "closed shop" for its information. Any new development or discovery was immediately published to the whole world, and nobody attempted to make any profit out of it for himself. The medical journals of Great Britain stood comparison with those of any other country. If they were, on the whole, cautious and conservative, that was a fault on the right side. Sir Heneage Ogilvie, editor of the *Practitioner*, responding, observed that the medical journals, serving the most highly educated, critical, and diverse public—the public of doctors—had maintained a high standard. Mr. R. F. West, a member of the firm of Baillière, Tindall and Cox, the publishers of the *Medical Press*, read from Arthur Jacob's initial editorial in the first issue in 1839: "A free press is the most powerful means in existence to elicit truth, to encourage honesty, to drive out folly, and to resist oppression."

Swiney Prize

The Swiney Prize for medical jurisprudence for 1949 has been awarded, on the recommendation of a joint committee of the Royal Society of Arts and the Royal College of Physicians of London, to Professor John Glaister, for his work *Medical Jurisprudence and Toxicology*. This is the second occasion on which Professor Glaister has received the Swiney Prize, it having been awarded jointly to him and Professor J. C. Brash in 1939 for their book *Medico-Legal Aspects of the Ruxton Case*. The prize, which consists of a £100 silver cup and money to the same amount, is awarded on every fifth anniversary of the testator's death. It is offered alternately for medical and general jurisprudence.

Fellowships and Scholarships in Dentistry

The Nuffield Foundation announces in the advertisement pages of this week's *Journal* that it is prepared to award a number of fellowships and scholarships in dentistry. Full particulars can be obtained from the secretary of the Foundation, 12 and 13, Mecklenburgh Square, London, W.C.1. The closing date for applications for fellowships is March 1 and for scholarships June 30.

National Institute for the Deaf

The annual report for 1948 of the National Institute for the Deaf describes some of the more important activities of the Institute over the past year. A co-ordinated scheme for approaching local authorities under the National Assistance Act has been prepared for the guidance of welfare societies for the deaf, and a new scheme for the emergency training of lip-reading teachers has been launched. The report also records that the incorporation of the Institute has been completed.

Central Council of Physical Recreation

The Central Council of Physical Recreation has started a new quarterly journal called *Physical Recreation*. It will give news of sports, games, and athletics, and information about holidays and meetings. The journal costs 1s. and is obtainable from the C.C.P.R., at 6, Bedford Square, London, W.C.1.

Wills

Dr. Samuel Walton Wheaton, a former medical officer of the Ministry of Health and assessor to the Miners' Welfare Committee, left £52,569. Dr. William Austin Robb, pathologist to the Royal Devon and Exeter Hospital, left £25,045. Dr. Percy Glyn Savours, Williams, of Exmouth, left £26,686; and Dr. Christopher Richard Kempster, of Great Portland Street, W.1, £6,846.

COMING EVENTS

Symposium on Parasitic Infections

The New York Academy of Medicine will hold a symposium on the biology, metabolism, immunity, diagnosis, and treatment of the more common human parasitic infections on March 15 and 16. Information may be obtained from the Secretary of the Academy, 2 East 103 Street, New York, 29.

Pathology Congress: Date Changed

The date of the 5th International Congress of Comparative Pathology at Istanbul has been changed to April 22-29. Delegates and members who intend to take part should notify Professor N. R. Belger, Taksin, Siraserviler 75/3, Istanbul, Turkey, or the honorary secretary, British National Committee, immediately. A boat will leave Marseilles on April 15 and arrive at Istanbul on April 21. On the return journey a boat departs on April 29 and arrives at Marseilles on May 4. Members who wish to travel by air will leave London on April 19, arriving at Istanbul on April 20. They will reach London after the Congress on May 1. Full particulars of itineraries and hotel accommodation can be obtained from Messrs. Thos. Cook and Son, Ltd., Berkeley Street, London, W.1. As accommodation in Istanbul is limited, early booking is advisable.

SOCIETIES AND LECTURES

Monday

LONDON UNIVERSITY.—At Institute of Psychiatry, Maudsley Hospital, Denmark Hill, London, S.E., Feb. 7, 4.30 p.m. "*The Transmission of Nervous Activity*," by Dr. G. L. Brown
LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, London, W.C., Feb. 7, 4.45 p.m. "*The Ultracentrifuge and Electrophoresis Apparatus in Protein Research*," by Dr. P. Johnson, Ph.D.

Tuesday

CHELSEA CLINICAL SOCIETY.—At South Kensington Hotel, 47, Queen's Gate Terrace, London, S.W., Feb. 8, 7 for 7.30 p.m. Discussion: "*Insidious Onset of Grave Disease*." To be opened by Dr. Desmond MacManus
INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Feb. 8, 5 p.m. "*Histopathology of the Skin*," by Dr. I. Muende
INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 8, 11 a.m. "*Bacterial (Non-gonococcal) and Spirochaetal Urethritis*," by Dr. A. H. Harkness.
LONDON UNIVERSITY.—At London School of Hygiene and Tropical Medicine, Keppel Street, W.C., Feb. 8, 5.15 p.m. "*Virus Research and the Virus Problem*," by Dr. Pierre Léprie (Institut Pasteur, Paris)
LONDON UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, London, W.C., Feb. 8, 5.15 p.m. "*The Integration of the Bodily Functions*," by Dr. E. A. Underwood.

Wednesday

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 9, 11 a.m. "*Abacterial Urethritis-cervicitis and Inclusion Blennorrhoea*," by Dr. A. H. Harkness.
ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW, 242, St. Vincent Street, Glasgow.—Feb. 9, 5 p.m. "*Researches into Intrathoracic Tuberculosis in Childhood*," James Watson Prize Lecture by Dr. J. H. Hutchison.
ROYAL SANITARY INSTITUTE.—At 90, Buckingham Palace Road, London, S.W., Feb. 9, 2.30 p.m. Discussion: "*The Purification and Control of Swimming-bath Water*," to be opened by Mr. R. C. Hoath, Ph.D., and Dr. G. J. Laws.

Thursday

EDINBURGH ROYAL INFIRMARY.—Feb. 10, 5 p.m. "*Diet and Dental Health*" Honorary Gillespie Lecture by Dr. A. P. Meiklejohn.
LUTHERIAN SOCIETY.—At Grosvenor House, Park Lane, London, W., Feb. 10. Annual dinner.
INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London W.C.—Feb. 10, 5 p.m. "*Physio- and Electro-therapy*," by Dr. R. T. Brain
INSTITUTE OF LARYNGOLOGY AND OTOTOLOGY, 330-2, Gray's Inn Road, London, W.C.—Feb. 10, 11.15 a.m. "*The Physical Principles of Audiometers and Hearing-aids, I*," by Dr. T. S. Littler.
INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 10, 11 a.m. "*Reiter's Syndrome*," by Dr. A. H. Harkness.
LONDON UNIVERSITY.—At Large Lecture Theatre, St. George's Hospital Medical School, Hyde Park Corner, London, S.W., Feb. 10, 4.30 p.m. Lecture-demonstration: "*Neurology*."
LONDON UNIVERSITY.—At Westminster Medical School, Horseferry Road, London, S.W., Feb. 10, 5 p.m. "*Surgical Aspects of Menstruation*" Special University Lecture by Sir Hugh Cairns.
ROYAL INSTITUTE OF PUBLIC HEALTH AND HYGIENE.—At College of Art and Technology, The Newarke, Leicester. Feb. 10, 7.30 p.m. "*The Catarrhal Child*," by Dr. J. Browning Alexander.

Friday

ROYAL MEDICAL SOCIETY, 7, Melbourne Place, Edinburgh.—Feb. 11 8 p.m. "*National Intelligence*," by Mr. J. H. Brown.
WEST KENT MEDICO-CHIRURGICAL SOCIETY.—At Miller Hospital, Greenwich High Road, London, S.E., Feb. 11, 8.30 p.m. "*The Prostatic Patient*," by Mr. J. Gabe.
LONDON CHEST HOSPITAL, Victoria Park, E.—Feb. 11, 5 p.m. "*Pathology of Pneumoconiosis*," by Dr. K. F. W. Hinson.
LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, London, W.C., Feb. 11, 5.15 p.m. "*Parasympathomimetic and Parasympatholytic Drugs*," by Dr. F. Bergel, Ph.D.

Saturday

PHYSICAL SOCIETY: COLOUR GROUP.—At B.M.A. House, Tavistock Square, London, W.C., Feb. 12, 2.30 p.m. 44th Science Meeting of the Group, jointly with British Psychological Society Discussion: "*Techniques and Methods of Interpretation of Experiments in Colour as Carried Out by Physicists, Physiologists, and Psychologists*." To be introduced by Mr. R. C. Oldfield, M.A. Drs. R. W. Piekford Ph.D., W. S. Stiles, D.Sc., L. C. Thompson Ph.D., and W. D. Wright, D.Sc.
BIOCHEMICAL SOCIETY.—At Westminster Hospital Medical School, 17, Horseferry Road, London, S.W., Feb. 12, 11 a.m. 273rd meeting. Symposium: "*Biochemical Aspects of Genetics*."

APPOINTMENTS

EVANS, T. P., M.R.C.S., L.R.C.P., D.P.H., Divisional School Medical Officer, Amersham and Chesham Divisional Education Executive Bucks.
HARVEY, F. C. R., M.D., D.P.H., Medical Officer of Health for District No 9 (including Aberavenny Borough and Rural areas), Welsh Board of Health (Not Dr. F. C. B. Harvey as previously announced)
NEWNAM, C. T., M.R.C.S., L.R.C.P., D.O.M.S., Assistant Medical Officer, Paddington, British Railways, Western Region.
RAD, R. A., M.B., Ch.B., D.P.H., Assistant Administrative Medical Officer, Scottish North Regional Hospital Board.
SILVERTON, M. I., M.R.C.S., L.R.C.P., D.P.H., Medical Officer of Health, Baile Rural District and Borough of Rye, Sussex (Corrected announcement)

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Christie.—On Jan. 24, 1949, at Radcliffe Infirmary, Oxford, to Hilary and Alastair Christie, a son.
Hall.—On Jan. 25, 1949, to Mairi (née Parkin), wife of Dr. Derek Hall of Dover, a daughter.
Ogilvie.—On Jan. 7, 1949, to Joan (née Arnott), wife of Dr. A. C. Ogilvie, a daughter—Carol Anne.

MARRIAGES

Fisher—Clive.—On Jan. 22, 1949, at St. Mary's, Bryanston Square, London, W. Alfred George Timbrell Fisher, M.C., F.R.C.S., F.A.C.S., of 59 Montrau Square, London, W., to Edith Frances Clive, of Birlingham Manor, near Pershore, Worcestershire.
Goodman—Sabel.—On Dec. 16, 1948, Cyril J. Goodman to Ruth Sabel, M.B. Ch.B., Tideways, Creeksea, near Burnham-on-Crouch, Essex.

DEATHS

Beachcroft.—On Jan. 24, 1949, at Beresford, South Hayling, Hants, Francis Seward Beachcroft, M.R.C.S., L.R.C.P., aged 80.
Burland.—On Jan. 12, 1949, Hugh Howie Burland, M.B., Ch.B., D.P.H., of Dennistoun, Glasgow, aged 91.
Burlton.—On Jan. 22, 1949, at Petersfield, Arthur Hyde Burlton, L.R.C.P.S. Ed., Lieutenant-Colonel R.A.M.C., retired, aged 95.
Connal.—On Jan. 26, 1949, at 626 King Street, Aberdeen, Andrew Connal, O.B.E., M.D., D.P.H., D.T.M.&H. medical officer to the Aberdeen Training Centre formerly Director of the Medical Research Institute Lagos, Nigeria.
Dodds.—On Jan. 26, 1949, at Middlesex Hospital, London, W., Robert Leslie Dodds, F.R.C.S., F.R.C.O.G., aged 50.
Erskine.—On Jan. 21, 1949, at a Harrogate nursing home, Alexander McConnel Erskine, M.D., D.P.H., of Goolie, Yorks.
Fenn.—On Jan. 23, 1949, at Conchillas, Greenway Lane, Bath, Albert Gershon Fenn, M.B., Ch.B.
Jones.—On Jan. 24, 1949, at sea, Crawford Maxwell Jones, M.B., Ch.B., Colonial Medical Service.
Kelly.—On Jan. 29, 1949, at 36 St. Mary's Mansions, London, W., Thomas Bernard Kelly, D.S.O., F.R.C.S. Ed., Colonel I.M.S., retired.
Martin.—On Jan. 26, 1949, Charles de Carteret Martin, M.D., of Manor Cottage, Yateley Hants, Colonel, late I.M.S.
Mullinder.—On Dec. 9, 1948, in New Zealand, Edward Keith Mullinder, M.B., Ch.B., D.P.M.
Richards.—On Jan. 22, 1949, at Island of Grenada, B.W.I., Hugh Augustine Richards, M.R.C.S., L.R.C.P., D.A., of Epsom, Consulting Anaesthetist to King's College Hospital.
Rumsey.—On Jan. 24, 1949, Cecil Frank Rumsey, M.R.C.S., L.R.C.P., of Ipswich formerly of Cambridge.
Spurrell.—On Jan. 26, 1949, at "Fro Wen," Carmarthen, Charles Spurrell, F.R.C.S., aged 82.
Thomas.—On Jan. 22, 1949, at Winterton, Norfolk, David Cyril Thomas, M.R.C.S., L.R.C.P., aged 49.
Twigg.—On Jan. 23, 1949, at Hartington, Buxton, Derbyshire, Donald Sargenson Twigg, M.R.C.S., L.R.C.P.
Willans.—On Jan. 27, 1949, at West Newton House, King's Lynn, Norfolk, Sir Frederic Jeune Willans, K.C.V.O., M.R.C.S., L.R.C.P., Surgeon Apothecary to H.M. the King's Household at Sandringham.



AN ORAL TREATMENT FOR FILARIASIS

'Banocide,' a new organic compound free from metallic elements, is markedly active against filariae, particularly *Wuchereria bancrofti* and *Onchocerca volvulus*, when administered orally. It is particularly effective in dealing with microfilariae, and, even in moderate dosage, causes their rapid disappearance from the blood stream. As shown by animal experiments, the toxicity of the compound is low. Its stability is unaffected in hot climates. 'Banocide' is issued as compressed products of 50 mgm. in containers of 20, 100, 1000 and 5000.

★ **'BANOCIDE'**

DIETHYLCARBAMAZINE (1-Diethylcarbamyl-4-methyl-pyrazole-5-sulfoxide)



BURROUGHS WELLCOME & CO. (The Wellcome Foundation Ltd.) LONDON

ASSOCIATED HOUSES: NEW YORK MONTREAL SYDNEY CAPE TOWN — BOMBAY SHANGHAI BUENOS AIRES CAIRO

RHEUMATISM

and allied disorders

Where salicylate therapy is indicated, toxic symptoms, such as haemorrhage, urticaria and capillary permeability, may be avoided by the simultaneous administration of menaphthone and ascorbic acid.

"EKAMMON"

is the product of choice

In tablet form is an easily administered and scientifically balanced combination of acetylsalicylic acid (0.33 gm.), ascorbic acid (20 mgm.) and menaphthone (0.33 mgm.).

Full details concerning "EKAMMON" in the treatment of acute and chronic rheumatism, with extensive bibliography, available on request

**WARD. BLENKINSOP
& CO. LTD.**

6, HENRIETTA PLACE, LONDON, W.1

Telephone:
Langham 3185

Telegrams:
D ochem, Wesdo, London



'ESTIGYN'

ETHINYL OESTRADIOL B.D.H.

The high potency oestrogen, derived from natural sources, and active orally.

NEW STRENGTH TABLET OF 0.01 mg. NOW AVAILABLE

Tablets of 0.01 mg. ($\frac{1}{100}$ grain)
and 0.05 mg. ($\frac{1}{200}$ grain) in bottles
of 25 and 100 tablets.

(Each 0.05 mg. tablet is scored to
facilitate giving doses of 0.025 mg.)

Literature and samples available on request.

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1

SH-T-704

trade mark **'ANTHISAN'** brand mepyramine maleate

— a powerful antihistaminic of low toxicity for symptomatic relief and for the control of allergic conditions and anaphylactic reactions.

— a highly effective local antipruritic agent.

Supplied in tablet and elixir form for oral administration and in a water-soluble cream base for topical application.



manufactured by

MAY & BAKER LTD

distributors

PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD. DAGENHAM



BARCLEY
SURGICAL
CORSETRY

*Individually
Designed*

SURGICAL
SUPPORTS

for

Post Operative Wear
Visceroptosis
Deformity
Maternity
Herniae

TRAINED CORSETTIERS
IN ALL AREAS

BARCLEY CORSETS LTD
WELWYN GARDEN CITY
HERTFORDSHIRE

INTRODUCING A SAFE AND EFFECTIVE SEDATIVE
AND HYPNOTIC FOR REPEATED ADMINISTRATION

from the Laboratory of

T. & H. SMITH LTD.

TABELLÆ SEDATIVÆ

R. Tab. Sedativ. (Smith)

These Tablets present a new combination, providing the well-tried sedative and hypnotic property of Phenobarbitone enhanced by analgesic and antispasmodic action of Codeine.

INDICATIONS: Insomnia, neuralgia, cardiac neurosis, angina, bronchial and cardiac asthma, painful cough, whooping cough, causalgia, dysmenorrhoea, epilepsy, hysteria, migraine, mental disease, chorea, pruritus, in many other conditions where a reliable combination of hypnotic and analgesic is required.

EACH TABLET CONTAINS PHENOBARBITONE $\frac{1}{2}$ GRAIN, CODEINE PHOSPHATE $\frac{1}{4}$ GRAIN, WHICH GUARANTEES A RATE DOSAGE AND CONVENIENCE OF ADMINISTRATION.

MAY BE DISPENSED ONLY ON PHYSICIAN'S PRESCRIPTION

Physician's Sample free on receipt of signed order.



AND LONDON
GLASGOW

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Diphtheria Immunization

Q.—From what age is T.A.F. the better immunizing agent?

A.—When the Schick test is performed on older children or on adults a skin response to the control inactivated material occurs in a proportion of cases, causing the so-called pseudo-reaction. This indicates that the individual has become sensitized to some protein fraction in the diphtheria toxoid, and the injection of a full dose of toxoid into such a person will usually be followed by a severe local and sometimes a systemic reaction. This sensitivity to diphtheria toxoid may also be elicited by a small subcutaneous injection of diluted toxoid—the so-called Moloney test. It is therefore advisable that the Schick and the Moloney tests be carried out in adults before any diphtheria prophylactic is given. Among children the proportion of pseudo-reactors is likely to be small, and a preliminary test for susceptibility is not usually carried out; but because T.A.F. is less likely to cause reaction than A.P.T. its use is recommended for school-children of 8 years and upwards who are receiving a booster dose after primary immunization in infancy. This booster dose is effective in a remarkably small dosage, and 0.2 ml. of T.A.F. should be enough to stimulate a good antibody response.

Indications for Nikethamide

Q.—Could you tell me the indications for nikethamide? Apart from its use in shock therapy and in certain poisonings, has it any place in the treatment of acute heart failure, especially in the elderly with chronic bronchitis, of chronic myocarditis, or of coronary sclerosis?

A.—Nikethamide, or pyridine- β -carboxylic acid diethylamide, acts mainly on the central nervous system, increasing the rate and depth of respiration and producing peripheral vasoconstriction. The analeptic action is useful in combating acute respiratory depression from anaesthetics, alcohol, hypnotics, and toxic gases. The drug is of no value in shock unless this is primarily associated with respiratory depression, nor is there any evidence in man that it consistently produces a rise in blood pressure or promotes increased coronary flow. Nikethamide has been used as a cardiac stimulant, though with doubtful effect in most cases. The relief of respiratory distress that it may produce in some cases of cardiac disease results from its effect on the respiratory system. There is no justification for the use of nikethamide in chronic myocarditis, coronary disease, or angina. It may, however, be of some value in the treatment of acute circulatory failure in pneumonia or chronic bronchitis because of its action on peripheral vascular tone. It is unlikely to be of use in acute heart failure due primarily to a cardiac defect.

Cleft Lip

Q.—What age is most suitable for a repair operation for cleft lip? The case I have in mind is not accompanied by any other defect such as cleft palate.

A.—The question of age is not so important as the clinical condition, but as a general rule, provided the child is 10 lb. (4,536 g.) and is steadily gaining in weight, and its haemoglobin is 80%, the operation should not be deferred. Generally speaking, this means about the fifth or sixth week.

Nematodes and Pulmonary Lesions

Q.—Could bronchiectasis or bronchitis be associated with the presence of nematodes in a chronic case of infestation?

A.—It is only during their relatively brief migration as larvae that certain nematodes cause pulmonary lesions in the human host. The larval forms burrowing in the intestinal wall are

carried by the blood stream and are distributed in the lung capillaries, usually at the periphery, producing marked consolidation of the alveoli rather than bronchitis or bronchiectasis. The larvae then migrate to the bronchioles and from there to the trachea and larynx, but there is no evidence that they cause any great pathological changes during this part of their migration. The changes in the bronchi are thus probably insignificant in comparison with those in the lung. The trauma produced might result in symptoms which persist long after the larvae have left the lung and developed into adults in the gut. This is not usual, however, and in roundworm (*Ascaris*) infections the association of adult worms in the gut, as evidenced by the presence of eggs in the faeces, with pulmonary symptoms is usually ascribed to reinfection.

Skin Eruption Associated with Menstruation

Q.—Since her first confinement five years ago a woman aged 28 has suffered from an erythematopopular eruption on both temples, starting seven days before each period, reaching its maximum during the period, and fading during the next seven days. It is absent only during pregnancy. Progesterone, "benodryl," and non-specific desensitization have failed to cure it. What are the aetiology, treatment, and prognosis?

A.—The information given about the character of the lesions and the menstrual history is inadequate. The lesions are probably in the nature of acne frontalis or possibly an ordinary acne or rosacea. Any pelvic abnormality or infection should be excluded; it is presumed that the patient does not take any drugs over this period for pain or other symptoms. Locally, ung. hydrarg. ammon. aquosum, or a 2% sulphur and salicylic acid ointment, or fractional doses of unfiltered x rays, should help. Any internal treatment must rest upon a better appraisal of the background.

Winter Resorts for Respiratory Infections

Q.—Can you help me to advise a patient suffering from chronic fibroid tuberculosis of the lungs about a health resort in Southern England where he can spend the winter months? Also, are the Canary Islands or Scilly Isles suitable?

A.—A patient suffering from chronic fibroid tuberculosis often derives benefit from wintering at one of the health resorts along the south coast of England, particularly if it is sheltered from high winds and is not too hilly. There are a number of resorts that fulfil these conditions, and the particular one chosen usually depends on the temperament of the patient. The Canary Islands have a suitable and pleasant winter climate, but difficulties may arise in obtaining residence for a patient with active tuberculosis. The Scilly Isles usually have periods of high winds during the winter months, which can cause some discomfort to a patient suffering from chronic respiratory infection.

Subacute Combined Degeneration

Q.—It is well known that the signs of subacute combined degeneration of the cord (S.C.D.) may be present before the blood changes of pernicious anaemia occur; also that the accompanying disorder of gastric secretion usually begins with achlorhydria and only later proceeds to deficient secretion of pepsin and intrinsic factor. (a) Is it possible to suffer from S.C.D. in the absence of achlorhydria? (b) Could the absence of intrinsic factor in such a case be demonstrated by Castle's method? (c) Is morrow puncture of help in a case of S.C.D. with a normal peripheral blood?

A.—(a) Histamine-fast achlorhydria is such a constant feature of S.C.D. that on the few occasions when free HCl in the gastric juice has been reported the diagnosis may be open to question. A case of macrocytic anaemia associated with neurological signs and symptoms, together with the finding of free HCl on gastric analysis, was reported by Harvey and Murphy (*Arch. intern. Med.*, 1933, 6, 1393), but the patient had duodenal and upper intestinal diverticula. Other cases may be of sprue or examples of the nutritional macrocytic anaemia group associated with neuritis. These cannot be regarded as S.C.D. in the usually accepted sense.

(b) The writer is unaware of the demonstration of intrinsic factor in any such case. As it is unknown whether the hypo-

thetical "S.C.D. factor" is distinct from the anaemia factor, the question of expecting the latter to be demonstrable would depend on whether or not one believes in a separate "neuropoietic factor."

(c) While in untreated cases of S.C.D. with slight anaemia the bone marrow may contain megaloblasts, more often at this stage the marrow picture is rather equivocal. One would not expect any pathological change in the marrow of a patient with a strictly "normal blood picture."

Stilboestrol and Testicular Swelling

Q.—A man of 75, with multiple deposits of prostatic carcinoma in bones, has been treated with very large doses of stilboestrol. The deposits are disappearing, but the only testicle has become acutely tender and a little swollen. Is this due to the treatment?

A.—The biological effect of stilboestrol is to produce involution of the testes and physiological castration. This is usually manifested by a shrinkage of the testicles and a disappearance of libido. It is therefore most unlikely that the swelling and tenderness of the testicle are due to stilboestrol therapy. It may be an infective epididymo-orchitis.

Persistent Symptoms after Brucella Infection

Q.—What is the best treatment for a case of chronic Malta fever of seven years' duration? The symptoms now present are recurrent "neuritic" pains in the limbs and extreme lassitude; the only sign is an intermittent evening rise of temperature to 99°–100° F. (37.2°–37.8° C.).

A.—Seven years is an unusual time for "Malta fever" to last, although at least one case has been reported where the infection remained active for eight years. It would thus be wise to exclude all other causes of fever before accepting the present symptoms as due to the brucella infection. Residual infections of the gall-bladder and prostate with *Brucella melitensis* may be responsible for an unduly prolonged course, and these organs should be re-examined with this in mind. Cholecystectomy may be indicated. Brucellin—a suspension of the nucleoprotein of the organism—has been used with some success (I. P. Huddleston, *Brucella Infections in Animals and Man*, New York, Commonwealth Fund, 1944). Recently there have been encouraging reports of the simultaneous administration of streptomycin and sulphadiazine.

Spasmodic Cramps

—I am 77 and have had rheumatoid arthritis in the hands for four years. Following an attack of pneumonia a year ago, the rheumatic condition flared up, and since then have been confined to bed with attacks of severe cramp in the knees and wrists lasting four or five seconds. The cramp comes on with the first movement of the limbs on awaking from sleep about 1 a.m., and recurs five or six times. The knees are painful on movement and on pressure, making walking impossible. The swelling of the knees has gone down considerably but the cramp persists. I had a course of gold injections two years ago. My erythrocyte sedimentation rate is 4 mm. in 1 hour and leucocyte count 10,000 per c.mm. What treatment would you suggest for the cramp, and what causes it?

A.—The data in this case are insufficient for a definite opinion to be formed. The erythrocyte sedimentation rate of 4 mm. in 1 hour does not suggest a rheumatic condition but that the arthritis may be of a different nature, though the association of a type of myositis with joint symptoms is now recognized. Cramp of the kind described may be due to a calcium deficiency, and the calcium metabolism should be investigated, especially the calcium-phosphorus ratio in the blood and urine. A complete clinical examination is called for, including the nervous system. If any line of treatment which this might indicate proves unsuccessful a course of calcium with vitamin D by injection daily for a week or two, and by mouth as well for a long period, should be tried, and in addition 10 gr. (0.65 g.) of calcium aspirin given at bedtime and repeated once in the night.

NOTES AND COMMENTS

Home-cured Tobacco.—The Rev. HUGH CUTHBERTSON, president of the National Amateur Tobacco Growers' Association, writes: Your reply on the subject of amblyopia and home-cured tobacco ("Any Questions?" Jan. 22 p. 163) vindicates the position I have always taken on the importance of a fermentative process. This is recommended in the literature of the National Amateur Tobacco Growers' Association, as also the removal or crushing of the mid-rib. Plans were made last year to provide facilities for bulk fermentation under professional guidance, but had to be abandoned for the time being owing to the intervention of Customs and Excise. This does not mean that small-scale methods such as can be carried out in the home are not adequate or that there is any justification in the wording of your article for the misleading headlines in the national Press on the "danger" of home-grown. Some months ago a charge of high nicotine content in home-grown leaf was made in the Press, but my challenge to produce evidence was never met. You will realize, as we do, that some interests are prejudiced against the reputation of garden grown, indeed of any European, leaf. In point of fact, most imported tobacco sold in this country does not, I believe, go through any process of fermentation except such as naturally occurs in bond. We would like further information on this, and also whether the data you give on amblyopia on the Continent refer only to smoking or include the chewing of tobacco. A leaflet is now in the printer's hands on the subject of fermentation of amateur tobacco, a copy of which we should be pleased to send to correspondents with any other information they require. The association would give what co-operation and assistance it can in research on the subject.

Lobeline and Asphyxia.—Dr. HECTOR MACLEAN (Lockerbie, Dumfriesshire) writes: In "Any Questions?" (Dec. 11, 1948, p. 1047) on the subject of lobeline in asphyxia your expert states that the real need is for oxygen. Now if the infant can be made to breathe vigorously for a few minutes, and only if, it will get all the oxygen it can be doing with. If you give lobeline by intrapulmonary injection, a few valuable seconds are saved while the lobeline gets to the respiratory centre. I once came on a hill-farmer, one of whose lambs had choked on a bottle of milk. The lamb's mucous membranes were black; it was obviously gasping its last, and there and then respirations ceased. The heart beat became feeble and the lamb was to be abandoned. I blew up its lungs with my mouth in the time-honoured fashion, and the heart beat improved, but respirations did not occur. So I gave 1 ml. of lobeline intrapulmonarily, and in "two shakes" the lamb was panting vigorously. It made an uninterrupted recovery and eventually sold for a good price. On another occasion, during "pentothal" anaesthesia we got an alarming spasm of the glottis, and by the time the syringe was loaded up the patient was almost "finis." A few seconds after intrapulmonary injection the patient was breathing furiously, and pulse and colour were rapidly restored.

Pressure-cooker as Sterilizer.—Mr. G. H. DONALD, B.Sc., of Good Housekeeping Institute, writes: I would like to correct a wrong impression imparted in the answer given on this subject ("Any Questions?" Jan. 15, p. 121). We have tested most of the pressure cookers on the market and in all cases the air is expelled before the raising of the pressure. In fact, with pressure pans the steady stream of steam is the indication to the housewife that the gauge must be closed down for the raising of the pressure. On the other hand it is quite possible—and is often done—to start the cooking in water that is already boiling. It seems to me, too, that the dressings to be sterilized could be placed in an enamel bowl. In the latter case the steam would come into contact with them without moistening them with the water itself.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitology, Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.) TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads, Westcent, London*.

MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra, Westcent, London*.

B.M.A. SCOTTISH OFFICE: 7, Drumshugg Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY FEBRUARY 5 1949

REMUNERATION: THE PRESENT POSITION *

ADDRESS BY DR. CHARLES HILL TO METROPOLITAN COUNTIES BRANCH

A meeting of the Metropolitan Counties Branch was held on an. 27 for an address by Dr. Charles Hill, Secretary of the Association. Mr. A. M. A. Moore presided over an audience which filled the Great Hall of B.M.A. House.

Dr. Hill began by saying that certain issues in the field of terms of service, particularly the issue of remuneration, dominated the scene to-day. Although he proposed to deal principally with the general practitioner position, he might say at the outset that in the consultant sphere meetings were taking place between the Joint Committee for Consultants under Sir Lionel Whitby's chairmanship and the Ministry of Health. The Ministry in what for the moment was a confidential document had given its interpretation of the Spens specialist report on remuneration, and the Joint Committee was at the moment not negotiating but advising the Ministry on such changes in the proposals as seemed desirable if they were to be acceptable to the profession. When the document was published, as was shortly to be expected, it would be examined by the profession through its various organizations, and the profession, in the consultant and specialist field in this instance, would express its views.

This procedure rendered inevitable the extension of the provisional terms, at present due to terminate on March 31, for a further three months. When the terms were finally agreed they would be retrospective to July 5 of last year. It was expected that the Government's statement of terms would be published in a few weeks' time.

Although the two Spens Reports laid down ranges of remuneration only for general practitioners and consultants, these documents would have their relevance in the public health negotiations. Difficulties had been raised by the associations of local authorities to the opening of negotiations on the Whitley machinery, and the B.M.A. had informed the Ministry that unless such negotiations were opened by the end of February there would be published in the *British Medical Journal* only those advertisements which conformed with the Association's own proposals. It was confidently hoped that the stimulus as applied through the Ministry to the associations of local authorities would result in a speedy opening of negotiations.

General Practice and the Spens Report

Turning to the field of general practice, Dr. Hill reminded the meeting that the Spens Report had been accepted both by the representatives of general practitioners and the Ministry as the basis for future remuneration. He outlined its main recommendations, and concentrated for the purpose of argument on the recommendation that half the profession in general practice between the ages of 40 and 50 should be receiving a net income of £1,300 a year (pre-war money basis) or over, and that 10% should receive a net income of at least £2,000.

In converting 1939 money values into post-war money values, Spens stated that regard should be paid to two factors—one

the changed value of money, and the other such increases in remuneration as had been secured by other professions. He would deal with the subject of betterment later on in his address. At the outset of the Service it was impossible to determine what would be the spread of income between different groups in the profession, but it was possible to attempt to estimate the total sum of money which would be necessary to give effect to the Spens recommendations in the aggregate, leaving the proof of whether Spens had been actually applied to be determined in the light of experience after three or six months.

It was agreed between the Government actuary and the actuary acting for the Association that the Spens recommendations in fact meant that in the aggregate general practitioners before the war were under-remunerated to the extent of £3 million. The aggregate pre-war general practitioner income was calculated by Professor Bradford Hill in preparing the Association evidence for the Spens Committee as £28 million gross. To that sum £3 million was added in order to make good the deficiency stated by Spens to exist, and a further £1 million was added in view of the increase of population since that time. To this total of £32 million had then to be applied a figure for betterment. The Government figure, laid down at the end of 1946, was 20% in respect of net remuneration—that is, remuneration after deduction of practice expenses. The betterment factor laid down by the Government as applicable to practice expenses was 55%. The combination of these two figures, the 20% applying to two-thirds of the total remuneration, in relation to the capitation fee as a whole worked out at 34%, or £10.5 million, bringing the total to £42.5 million.

This was the sum calculated on the assumption that the whole population of this country used the Service. It was agreed, as a matter of guesswork, that at the outset it should be assumed that 95% proposed to use the Service, thus bringing down the figure just stated to about £40.5 million. To this had to be added sums in respect of fees for maternity services—probably £2 million—the sum set aside for the Inducement Fund—at that time £400,000—and a sum representing the Government's contribution to superannuation. Roughly, that would bring the amount to £45 million as the aggregate remuneration for general practitioners according to the Spens recommendations, and on the basis of £28 million as representing the pre-war income.

The Application of Spens

The next step was to find out whether this aggregate sum was being applied, and accordingly, despite the limitations necessarily imposed on a survey taken early in the Service, an attempt had been made to answer that question. Earlier in his address he had taken the figure of £1,300 as representing the net income, on a pre-war basis, for 50% of general practitioners between the ages of 40 and 50. That figure, on the basis of the above calculations, should now be £2,613 gross. In the second example—the 10% who should receive a net income of at least £2,000—the new figure should not be less than £4,020 gross.

It was too early to make a country-wide survey, but a survey had been made in Lancashire, Halifax, Bath, Nottingham.

*This report of a meeting addressed by the Secretary, Dr. Charles Hill, replaces this week the usual commentary that appears under "The Secretary Reports."

Nottinghamshire, and Norfolk. The calculations were based on taking the cheque paid to the individual practitioner for the first quarter, adjusting for the four unpaid days July 1 to 4 (there was some reason to expect that the final payments under National Health Insurance would be made in about a fortnight's time), and multiplying the sum by four. Certain additions had to be made to this figure—the 5% representing the proportion of the central "kitty" kept for further contingencies, and the 9% of the gross remuneration representing contributions for superannuation. To this 14% there remained to be added a figure representing sums received on account of appointments of one kind and another, maternity services, notification of infectious diseases, fees for immunization and vaccination, etc. A conservative estimate might be 6%, bringing the total figure to 20%, being moneys not represented in the quarterly cheque.

In the surveys which had been made, taking the basis that 50% of general practitioners of the given age group should be receiving £2,613 or more, in only one area was the percentage less than this (43%), and in the other areas it was higher than 50%. Again, according to the estimate, 10% should be receiving incomes of not less than £4,020, and the percentage in the areas surveyed varied between 0 and a percentage higher than 10. These surveys had been made before steps had been taken to insist on the 4,000 permitted maximum for the single-handed principal—an important qualification.

In general the position appeared to be that, *on the assumption of a betterment of 20%*, Spens was for the most part being satisfied in the middle and upper ranges of income. It must be known exactly what the facts were before the size of the problem existing could be judged, and certainly a problem did exist. The first thing to bear in mind was that, even though there might be an overall satisfaction of Spens, there were still individuals and groups in the profession who were suffering considerable hardship at the present time (Applause). While in general terms Spens was being applied in the upper income groups, it was on the margin of application, and in certain areas well below the margin, in some of the lower income groups.

The Problem of Betterment

Dr. Hill went on to point out that if the 20% figure for betterment was too small the whole of these calculations became invalid and would have to be done again on a new assumption. The first problem was that of betterment, not the problem of the overall application of Spens. At the end of 1946 the Government decided on a figure of 20% for net remuneration. A promise was secured that this could be raised under the Whitley machinery as soon as that was established. It was expected that this would be immediately after the appointed day. For the delay the profession was in part responsible, because it had had misgivings concerning certain features of Whitley, notably what seemed to be the possibility that medical remuneration might be subject to review along with that of other groups in the Service; and latterly there had been delay because local authorities had discovered that Spens ranges as applied to public health medical officers would mean similar ranges applied to town clerks, borough surveyors, and the like.

When the Government laid down the figure of 20%, the expert advice was that the cost-of-living figure for the professional classes in 1945 was 145, but the position to-day, judged by the same expert, was that the figure for 1948 was 185. Therefore, unless there was an increase in betterment, in fact there had been a diminution in real value of the income since the figure was first proffered by the Government. It was of paramount importance that the betterment figure should be raised now to something comparable with the real cost-of-living figure of 185. When the right betterment figure had been secured it would be time to recalculate current incomes and to decide whether Spens was really being applied.

Increased Burden of Work

Spens or no Spens, the next problem was the increased burden of work now falling on the profession (Applause). He was not referring now to abuses, but to the overall result of making a free service available to the whole community. If it were true

that the burden of work had greatly increased, could they adhere to the position, while complaining of this increase of work, that a practitioner could satisfactorily look after 4,000 persons on his list? If they deliberately put forward the consideration of an excessive burden of work it automatically raised the issue of the maximum list.

There was one advantage in the Spens method despite its mathematical difficulties. Spens said that the practitioner who had the maximum on his list should have a certain level of income; it did not say that he should have 4,000 or 5,000 on his list, and if there was a reduction in the permitted maximum it followed that there would need to be a corresponding increase in the capitation fee to achieve the Spens level of income. But there was one snag about that. Spens said that the percentage of the profession getting the maximum should be in the region of 10%. If the lowered maximum raised the percentage of the profession enjoying the maximum remuneration level, obviously there was another situation to be considered. But the application of an adequate figure for betterment might well remove this difficulty.

The biggest problem at the moment was that of the practitioner with the average or less-than-average list. Practitioners with lists of moderate size were finding themselves not only hard-hit financially but fully occupied professionally because of the burden of work. Some men had small lists because they deliberately kept them small, preferring to have a small number of patients and to give them increased medical care; possibly some practitioners failed to attract a sufficient number of patients to themselves; others might have small lists because of a superabundance of practitioners in their particular area; and then again there were practitioners in rural areas where, because of sparsity of population and time involved in travelling, there could be no large lists. Rural practitioners had lately received a substantial improvement in their mileage allowance. Indeed, the Association had had one letter of thanks about it—(Laughter)—though the grateful writer added that the concession was not nearly large enough. The Mileage Fund had been increased by rather more than 50%. This had an importance for the urban practitioner because any suggestion that general practitioner remuneration and mileage were two parts of the same fund, and that any increase of mileage payment would have to come out of general remuneration, had been broken down.

Again, there was the problem of the area where the number of doctors was too high. The profession had claimed that the capitation fee system would so influence the distribution of doctors as to make direction and control unnecessary. Nevertheless, this was a poor consolation to a man whose roots were embedded in an area and who found that more doctors were there than could possibly have lists of sufficient size. Somehow or other it must be secured that it was possible for practitioners decently and properly to live with lists of the order of 1,500–2,000. It might be possible to pay to all practitioners an expenses amount designed to meet the situation whereby the practitioner with the smaller list had inevitably a larger ratio of expenses. Another method would be a substantially higher capitation fee for the first 1,000 or 1,500, the average capitation fee for those with the maximum list remaining unaffected. They had condemned the tapering capitation fee, but the problem of remuneration in the light of new experience must be regarded with an open mind.

To sum up, an adequate betterment factor, together with certain other considerations, including the number of doctors in the Service, should result in a larger total sum being made available and a higher average capitation fee; a lower maximum on lists, with the resultant proportionately higher capitation fee, should be considered; by one means or another substantially higher incomes must be secured for those of average and less-than-average lists. These things secured, the Inducement Fund and fixed annual payment arrangements could assume insignificant proportions.

The Amending Bill

Passing from problems of remuneration, Dr. Hill went on to speak of the amending Bill. In May, 1948, the Minister, under some persuasion, promised such a Bill in which certain things

would be dealt with, as, for example, that it would be made impossible for any Minister to introduce a whole-time salaried service by regulation, that a legal commission would be set up for the purpose of dealing with that section of the Act which had to do with partnerships, and there were certain other proposed changes. He also promised that the Association should see the amending Bill before it was introduced. The Association, for its part, had a number of changes to suggest, as, for example, that it should be made possible for a doctor attending his patient privately to prescribe for that patient publicly (Applause). It had been suggested in one quarter that the Association itself should provide resources for a patient to take up this matter in the courts and sue the Minister on his right to have his pharmaceutical and other service out of the public provision. But the words of the Act (Sect. 38 (2)) were very plain: "to enable any person receiving general medical services to obtain . . . drugs and medicines and prescribed appliances if ordered by the medical practitioner rendering those services," and the definition of "general medical services" was "services under the Act." But they were going to press for such an amendment as would make it legal and proper for the patient treated privately to obtain his drugs and appliances within the Service.

Another amendment would concern foreign visitors—the *Argentinian visiting Wales, the American visiting London*—and their supposed right, as apparently obtained at present, to come within the definition (Sect. 1 (1)) of "the people of England and Wales." Yet another point to be secured was a modification of the position so as to obtain for the staffs of non-teaching hospitals the same position in relation to medical membership of hospital management committees as was enjoyed by members of teaching hospital staffs; another involved a grant-in-aid for patients occupying private beds. A number of such changes were being sought in connexion with the less controversial of the terms of service. He had nine points on his list which were being pressed upon the Ministry; but the governing issue was to ensure that the work was of such an amount as could be reasonably and efficiently undertaken, with a remuneration which represented a proper and decent reward for the services rendered (Applause).

A Plea for Unity

"I know it is not easy," Dr. Hill said in conclusion, "for those who do not participate in central discussions and representations to appreciate what is being undertaken on their behalf. I urge the profession, glorious though it might be to indulge in highly coloured and emotional rhetoric on this subject, to believe that those who are handling these problems at the centre are doing their utmost in immensely difficult circumstances. One does not expect the profession, when any concession is won, to make any profound or widespread expression of appreciation, and, on the whole, I think they are wise, because it might put wrong ideas into the heads of those who are undertaking the negotiations. But it is only right that there should be a proper appreciation of the work done on behalf of the profession. We cannot claim that it does not justify criticism, but I do hope that the profession will realize that the one paramount need at the present time is sustained unity in its ranks. Let us criticize and curse each other—and, of course, curses can be most appropriately directed to this establishment—but let us not forget that in a crisis the profession did stand together, and I hope that whatever divisions and discontents there may be we shall hold together still, for it may not be so very long before a further exercise in cohesive action will be needed" (Applause).

Questions Answered

The first question from the audience was, "Why does not the B.M.A. demand a capitation fee of 30s. and back the demand with a threat of resignation within three months? Why be tied to Spens?"

Dr. Hill replied that Spens had been accepted, and it was in the interests of the profession to continue to accept it with an appropriate betterment factor applied. The Government was tied to Spens. With a proper betterment factor and adjust-

ments to meet the problems of the small-list practitioner the question of remuneration could be solved. It was well to remember that Spens laid down levels of remuneration to be observed however many doctors entered general practice. Even though maximum lists were reduced, Spens remained untouched. Should they demand a capitation fee of 30s.? It might be that the various additions and adjustments would bring the capitation fee up to something in that region. But they could not bluntly state a figure for which they could not produce arguments and then expect the profession to withdraw on the basis of that figure. Dr. Hill reminded the gathering that there were many men in thickly populated urban areas whose incomes were in a satisfactory condition as a result of this Service.

Asked whether any increase obtained would be retrospective to July 5, 1948, Dr. Hill said he could not answer that, but there was a strong case for a retrospective arrangement of that kind.

Asked whether there would be a quarterly or annual review of the betterment factor, Dr. Hill said they would reserve their rights to raise and submit to arbitration the cost-of-living position in relation to betterment at any time in the future. Nevertheless, he hoped some stability would be secured for a reasonable period by means of the betterment factor.

Points from replies to other questions were as follows:

Representations were being made to the Ministry concerning the position and emoluments of practitioners of the registrar class.

Why was a means test required in the allocation of basic salary? It was required in order that the higher rate of remuneration—for that was what basic salary meant in the case of those with lists of less than 2,300—should be paid only where it was justified. It was felt that a man who demanded this higher rate of remuneration from the local pool should prove justification.

Why not abandon the capitation fee in favour of payment for service rendered? The Government might well be brought to agree to a fee for each item of service, but it would insist on a statement in advance of its commitments, and that would mean a limited pool for distribution. Once there was such a pool it would be open to occasional abuses, and "one bad boy in the profession can arouse resentment out of all proportion to his badness."

The surveys did not apply to London, because areas had to be chosen where the problem of duplication of entrants on executive council lists was small. But final conclusions could only be drawn from a country-wide survey.

Asked what means could be taken to prevent abuses causing the practitioner unnecessary work, Dr. Hill said that a good deal of the increased volume of work was naturally to be expected as a result of the extension of the Service. This included the composite family consultation. If the practitioner was properly paid for the job and had sufficient time to do it, it was not altogether an unhealthy thing for him to be brought into contact with those who were not so ill or even those who were completely well. The essence of the answer was satisfactory terms of service.

The meeting closed with the moving, by Dr. R. W. Cockshut, of a vote of thanks to Dr. Hill, which was enthusiastically carried.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-County Borough Councils.—Dartford, Radcliffe (limited to future appointments), WallSEND.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

Dangerous Drugs Acts: Withdrawal of Authority

The Home Office announces that Dr. John Millar Matthew (Cheltenham) is no longer authorized to be in possession of or to prescribe those drugs to which the Dangerous Drugs Regulations apply.

National Health Service

STANDING ADVISORY COMMITTEES

A Statutory Order made by the Minister of Health and coming into effect on Feb. 1 constitutes the following nine Standing Advisory Committees which will advise the Minister and the Central Health Services Council on those parts of the National Health Service which come within their fields: Medical; Dental; Pharmaceutical; Ophthalmic; Nursing; Maternity and Midwifery; Tuberculosis; Mental Health; Cancer and Radiotherapy.

The names of the members of the Medical Advisory Committee are printed below, with their terms of office. The names of the members of the other Advisory Committees will be published in a future issue of the *Supplement*.

(a) *Members Appointed by the Minister after Consultation with the Central Health Services Council.*—Dr. Janet Aitken, physician (until March 31, 1950); Professor William George Barnard, pathologist, member of St. Thomas's Hospital Board of Governors (until March 31, 1950); Mr. Aleck William Bourne, obstetrician and gynaecologist (until March 31, 1950); Dr. James Alexander Brown, general practitioner, member of Birmingham Regional Hospital Board (until March 31, 1952); Sir Ernest Rock Carling, surgeon (until March 31, 1952); Professor Sir Henry Cohen, physician, member of Liverpool Regional Hospital Board and Board of Governors (until March 31, 1952); Dr. Harry Guy Dain, Chairman of Council of the British Medical Association (while Chairman of Council of the British Medical Association); Sir W. Allen Daley, Chairman of the Council of the Society of Medical Officers of Health (while Chairman of the Council of the Society of Medical Officers of Health); Sir William Gilliatt, President of the Royal College of Obstetricians and Gynaecologists (while President of the Royal College of Obstetricians and Gynaecologists); Dr. Edward Andrew Gregg, general practitioner, member of County of London Executive Council (until March 31, 1951); Dr. Wilfred Vivian Howells, general practitioner, member of Swansea Executive Council (until March 31, 1950); Dr. Horace Joules, physician and medical director, member of N.W. Metropolitan Regional Hospital Board and of Hammersmith, etc., Board of Governors (until March 31, 1951); Professor Aubrey Julian Lewis, psychiatrist, member of Bethlem and Maudsley Hospital Board of Governors (until March 31, 1952); Dr. William Gordon Masefield, psychiatrist, member of S.E. Metropolitan Regional Hospital Board and of Bethlem and Maudsley Board of Governors (until March 31, 1951); Lord Moran, President of the Royal College of Physicians of London (while President of the Royal College of Physicians); Dr. William Norman Pickles, general practitioner, member of Yorkshire North Riding Executive Council (until March 31, 1951); Professor Sir Harry Platt, orthopaedic surgeon, member of Manchester Regional Hospital Board and Board of Governors (until March 31, 1951); Professor James Calvert Spence, paediatrician, member of Newcastle Board of Governors (until March 31, 1952); Dr. Clement Willoughby Walker, general practitioner, member of Cambridge Executive Council (until March 31, 1950); Lord Webb-Johnson, President of the Royal College of Surgeons of England (while President of the Royal College of Surgeons).

(b) *Members Appointed by the Minister after Consultation with Representative Organizations.*—Dr. Walter Russell Brain, physician and neurologist, member of London Hospital and National Hospitals Boards of Governors (until March 31, 1953); Mr. Somerville Hastings, M.P., surgeon, member of North-East Metropolitan R.H.B. and Boards of Governors of Hammersmith and Middlesex Hospitals (until March 31, 1951); Mr. Robert Leech Newell, surgeon, member of Manchester R.H.B. and Board of Governors (until March 31, 1952); Dr. Wyndham Parker, County Medical Officer of Health, Worcestershire (until March 31, 1951); Dr. James Ralston Kennedy Paterson, radiologist (until March 31, 1953); Dr. William Gilchrist Patterson, Senior Administrative Medical Officer, Newcastle R.H.B. (until March 31, 1952). Secretary: Mr. D. Emery (Tel.: Whitehall 4300, Extension 172).

NORTHERN IRELAND GUILD

The Northern Ireland General Medical Practitioners' Guild has issued a questionnaire to every general practitioner in Northern Ireland inviting answers to a number of points in connexion with remuneration and terms and conditions of service. The primary object of the Guild is to secure satisfactory terms and conditions of service for general practitioners, working in conjunction with or through the Northern Ireland Branch of the B.M.A. and the Negotiating Committee set up to discuss terms and conditions of service with the Government.

In the questionnaire practitioners are invited *inter alia* to say whether or not they are in favour of: increased capitation fee; increased mileage allowance; immediate payment of compensation; sliding scale of remuneration; lower ceiling (combined with increased capitation fee); a fully salaried medical service; immediate limitation of the number of general practitioners in Northern Ireland taking part in the new Health Service; free locum during illness; payment of maternity fees for nursing-home cases; continuation of the right of the general practitioner to attend his patients in cottage and district hospitals; better pensions for doctors' widows; that the Guild become the autonomous General Practitioners' Branch of the B.M.A.; mass withdrawal of service from the Health Scheme, if required; the necessary alteration being made so that benefits of a trade union could be made available to the members of our profession.

RESTRICTIVE COVENANTS

The Ministry of Health suggests that executive councils, when sending Forms E.C. 16 to applicants for vacancies, should ask applicants whether they are subject to any "disabling condition" such as an agreement with a practitioner which might preclude them from undertaking general practice in the area where they are applying for admission to the medical list. If there is such a condition, the Medical Practices Committee should be informed when the applications and supporting particulars are sent to it.

N.H.I. FINAL SETTLEMENT

The Central Practitioners Fund (England) for the period Jan. 1 to July 4, 1948, has been determined at £7,770,801. The Minister has accepted the recommendations made by the Medical Distribution Committee on the proportions in which this sum should be distributed among the areas of the former Insurance Committees. Payments should have been made by Jan. 31.

HEARD AT HEADQUARTERS

Worried Alderman

A correspondent draws our attention to the remarks of Alderman J. A. Mason reported in the *Worthing Herald* of Jan. 22. The doctors "are not doing so badly," said the alderman. "A doctor on the present basis is to receive from £500 to £5,000 per annum, and in addition he will have his private practice, which is very considerable in some cases." But where are all these private patients? Mr. John Edwards, Parliamentary Secretary to the Ministry of Health, speaking in Parliament on the same day said that about 95-98% of the population are in the scheme. We can only conclude that private practice has become as difficult to discern as the alderman's line of reasoning, and we cannot guess where he learnt that doctors "are not doing so badly"—a view apparently not shared higher up. Mr. Messer, chairman of the Central Health Services Council, in the same Parliamentary debate said that "great hardship is being experienced by many general practitioners at present . . . clearly everybody knows that the situation cannot remain as it is." Mr. Mason was moving a resolution that his council should suggest to the Minister that the present scale of payments be reviewed at the earliest possible date. It was defeated by 3 votes to 2, with 12 of our faithful administrators abstaining.

Mr. J. C. Gilbert Retires

Mr. J. C. Gilbert, Clerk of the London Executive Council, has retired on reaching the age limit of 65 years, and his many friends will wish that he may long be spared to enjoy his retirement. He was appointed to the staff of the London Insurance Committee in 1913, having previously served in the Education Department of Kent County Council. In 1926 he was made Deputy Clerk of the Insurance Committee, and six years later he became Clerk. This long experience, combined with a remarkable memory for precedents, was of great value to his colleagues, and his charm of manner and the clarity with which he expressed himself evoked their admiration. He has been honoured twice—he holds the Coronation Medal and is an Officer of the Order of the British Empire.

Questions Answered

Government's 8% Contribution

Q.—In the Supplement of Dec. 25, 1948 (p. 235), you state "the Government's contribution is part of the practitioner's income for the purposes of the Spens calculation [of salary]." A doctor over 65 pays no superannuation. Does the Government credit him with 8%? Is this payable to the practitioner in any form—say on retirement?

A.—A doctor who is over 65 years of age on entering the N.H.S. cannot participate in the superannuation scheme and is not liable to have contributions deducted from his remuneration. He will not therefore receive the benefit of the Government's contribution of 8%. The normal retiring age is 65, but a practitioner on an executive council list may apply at any time between the ages of 60 and 65 for an extension of pensionable age up to but not beyond the age of 70. The question of the return of the Government's contribution of 8% in these circumstances is now being examined by the Superannuation Committee.

Eligibility for Compensation

Q.—Is there any difference between not joining the new Health Service before July 5 and resigning after qualifying for compensation on July 5? Why is the medical profession not now in a much stronger bargaining position than before qualifying for compensation in July?

A.—A practitioner whose name was included on the list of a local executive council on or before July 5 becomes eligible for compensation in respect of the loss of the right to sell the goodwill of his practice. The regulations enable a practitioner to claim immediate payment of compensation on retirement from the public Service. Thus any practitioner on retirement is now certain of his compensation, and to that extent the medical profession is in a stronger bargaining position than it was before July 5.

Injections Ordered by Specialist

Q.—A registered patient goes privately to a consultant for asthma, and is given material which has to be injected weekly for at least 30 weeks. Is any charge to be made for the injecting, or is this provided free under the N.H.S.?

A.—The patient's general medical practitioner would be expected to give the injections as part of his terms of service under the Act and is debarred from charging any fee to the patient concerned.

Locums

Q.—What is the position of locumtenents in the new N.H.S.?

A.—Any medical practitioner may engage the services of a locumtenent under the National Health Service. The locumtenent enters into private arrangements with the principal employing him, and details of remuneration and contract, etc., are settled direct between the two. Vacancies for locums are still advertised in the medical press, and the Medical Practices Advisory Bureau maintains lists of locums available and practitioners requiring locums.

Correspondence

Graduated Capitation Fee

SIR.—I was extremely interested to read the Secretary's remarks regarding a graduated capitation fee in the Supplement of Jan. 15 (p. 21), and I would suggest that a plan such as this is an important part of any demand for increased capitation fee.

If it is true, as I think it is, that an essential part of the hardships now being experienced are falling on those with small or medium-sized lists, and if, as I suspect, Spens is being implemented (apart from an adequate betterment factor) for those with lists standing at or about 4,000, are we really in a position to demand a flat increase in the capitation fee? If we ask for 30s. this gives 4,000-list men £6,000 a year. Is this a reasonable demand? I suggest there are two important considerations:

(a) That remuneration should correspond as far as possible with work done; and here it is not only quantity but quality that must be rewarded.

(b) The tradition of the family doctor should be encouraged, and the standard of medicine in general practice should be kept as high as possible.

There are four main functions at present carried out by G.P.s.

(1) Certification of fitness or unfitness for work, and acting as a signpost to out-patient departments.

(2) Proper examination and diagnosis of the sick, helped when necessary by the consultant services, while still maintaining responsibility for the patient as a whole.

(3) Treatment of such cases as can be dealt with at home or surgery. This may necessitate daily visits, regular injections, minor surgical procedures (circumcisions, plasters, etc.), and anaesthetics.

(4) Acting as family friend and health adviser (feeding difficulties to geriatrics).

Now, the larger a man's list is the more he must tend to perform function (1) to the exclusion of the others, whereas I maintain that the type of doctor we should aim at producing, and should encourage in his work, is the one who performs the three latter functions. In this connexion the letter of Dr. Reginald Deane (Supplement, Jan. 1, p. 5) will repay close study. His figure for an optimum list for a fully occupied doctor is 1,500, and I agree that this is a reasonable estimate. I am well aware that many men deal with far more than this number and do it efficiently, but "dealing" with a patient and doctoring are two very different things. I am confident that in any but the most congested areas a list of 2,500 is far more than a man can doctor properly. The figure might be reached with reorganized surgery premises and really efficient and adequate help, but should not be exceeded.

If, then, we grant that a man with 2,500 on his list who is doing his job well is doing a very full day's work, we must agree that he should have at least a comparable income to the man with 4,000 patients with out-patient departments and clinics of every description on his doorstep.

It is vitally important, also, that the "new entry" should be encouraged to go in for good doctoring—to the great advantage of the patients, the hospitals, which will have less work, and the honour and standing of the medical profession in this country. It is beyond dispute that in diagnosis a careful history is of the greatest importance. This cannot be obtained in a few minutes in an overcrowded surgery, and so, if work is to be done well, time is essential, and this means fewer patients: no amount of "efficiency" on the part of the G.P. can make up for this.

As a practical measure I consider that the graduated capitation fee, so arranged that lists between 1,000 and 2,500 are encouraged, is the best answer in the present circumstances. Other points I would urge include:

(i) Adequate mileage payments.

(ii) Payment for special services—i.e., minor operations, anaesthetics, etc.

(iii) The right to order expendable items of equipment (needles, syringes, dressings, etc.) and drugs required for emergencies or personal administration on form E.C.10.

Present allowances of 2s. 6d. per 100 patients are ridiculously inadequate and again penalize the man with a small list, who

does more treatment and therefore uses more apparatus than the man with a full list.—I am, etc.,

Liverpool.

C. W. WARNER.

A Fighting Association

SIR.—Mr. Winston Churchill once warned us (I am unable to quote exactly from memory) against building a society where initiative, thrift, and industry went unrewarded and only officials met with respect. I am no ardent Tory, yet I feel that this pronouncement is very pertinent to present-day life.

The N.H.S. has changed the face of medicine. Many doctors are finding their initiative, thrift, and industry unrewarded, and they are exhausted butting their heads against the brick wall of officialdom. Week after week one reads letters in the *B.M.J.*, angry letters uncovering injustices and anomalies, until one is brought to a frame of mind wherein the N.H.S. assumes the proportions of a national calamity. This is undoubtedly an aberration. There is of course much that is good in the N.H.S. I dare say that the next generation of doctors will work amicably and successfully under the Ministry. In fact, while bearing in mind that adjustment to a new situation must take time, there is no real reason why *this* generation should not find an amicable working arrangement.

An arrangement will not be brought into being, however, by *B.M.J.* letter-writing. It is all very well for us to sublimate our irate energy with pen and paper, but no advance is achieved. Protests and plans appear with monotonous regularity; indignation and dismay fill the correspondence columns; colleagues face hardship and distress; but the B.M.A. with its cargo of Negotiating Committees sails on like a stately Spanish galleon, aloof amid the grapeshot and the fire.

The seemingly complacent attitude of the B.M.A. and the slow-moving (if constitutional) machinery of its negotiations are annoying doctors intensely. I do the Negotiating Committees an injustice; they are undoubtedly energetic and well-intentioned. But why, when we ask for action and leadership, are we fobbed off with editorials? The Secretary's Report in the *Supplement* of Jan. 15 (p. 21) (just received) shows that something effectual has been done in obtaining a larger Milcage Fund. But I still feel we are using a toy spade in place of the necessary steam-shovel.

There is a great indignation in the profession which could surely be canalized to convert our conditions of work and remuneration into something befitting a noble profession. The G.P. as he surveys his surgery queue still groans. The specialist bitterly compares his salary with that of the dentist and optician. And the advertisement columns still offer £200 or £150 "with full residential emoluments" to us of the younger set who are deemed unworthy of a labourer's wage.

There is a call for something big and forceful to be done, and quickly. One agrees whole-heartedly with letters like those of Drs. H. M. Stanley Turner (*Supplement*, Jan. 15, p. 25) and R. E. M. Coke Harvey (p. 28) which plead for effective action. Before all initiative drains away, why not adopt the plan to cease all certification if just demands are not met by a certain date? Or even Dr. R. W. Cockshut's course (Jan. 8, p. 16) of threatened mass resignation?

The profession needs unity above all else. Let us strive for fair conditions for all doctors, no matter in what type of employment. And may I offer a plea that younger doctors, returning to hospital jobs after serving in H.M. Forces and perhaps with family commitments, be not forgotten? They are facing lean years. A weak B.M.A. will leave the profession joyless and servile. With a fighting Association of unified doctors this can be, even yet, a great period in the history of British medicine.—I am, etc.,

Warrington

J. K. W. MORRICE.

Lack of Support for Negotiators

SIR—I feel that Dr. J. J. Kennedy's comments (*Supplement*, Jan. 22, p. 38) on my letter in the *Supplement* of Jan. 8 (p. 16) require an answer. It is obvious that Dr. Kennedy missed the whole point of my letter, which was to publicize the fact that it was the rural practitioners who pressed for an early Branch meeting, not myself. I did not organize the meeting on a Saturday afternoon through choice, but because that was the only day that Dr. Grey Turner could manage.

Moreover, I wonder whether Dr. Kennedy realizes to what conclusion his letter must logically lead if the facts he reports in it are true? Should the B.M.A. cease to concern itself at all with the pleas of any section of doctors because the latter are far too busy to help themselves?

I would like to assure Dr. Kennedy that I am very much aware of the present troubles and difficulties of all sections of the medical profession. No Branch secretary is allowed to remain in ignorance of these facts very long. At the same time I am convinced that if the medical profession, and particularly the rural practitioners, have a case then they must fight hard. Few officials can do anything without solid support.—I am, etc.,

G. M. WODDIS,

Hon. Secretary,
Nottingham Branch, B.M.A.

Ultimatum

SIR,—I have noted with ever-increasing interest the large volume of dissatisfaction now prevailing in our profession against the N.H.S. or some part thereof. The hardships of our rural brethren are patent for all to see, and even those such as I who have not lost financially by the Act are nevertheless chafing under the yoke of this dictatorial oligarchy who now govern us.

The point I should like to stress is just this—that the time cannot be long delayed now when the Ministry will be forced by circumstances to call in the help of the medical, dental, and nursing services to find a means of escape from the financial impasse which is hanging over the Government like the sword of Damocles. The time is surely ripe now to tabulate in advance all our grievances in readiness for the day when Bevan must and will approach us hat in hand and presumably also with a disarming smile. On that day we must, through our accredited representatives, present our case as an ultimatum, thereby employing the only language which he appears to comprehend.

I feel bound also to mention one point which has been raised by the better-class laity in this area—namely, the outrage of compulsory payment of contributions to this health and pensions scheme against their free will, and particularly where they have no intention of availing themselves of the very doubtful benefits conferred by it. This anomaly is most apparent where we in the medical profession are concerned, and I personally consider that the compulsory stamping of a card by a professional person is little short of an insult and must be stopped at the earliest possible moment.—I am, etc.,

Kirkcaldy, Fife.

C. I. IRVINE-JONES.

Better Conditions or Resign

SIR,—We have worked the N.H.S. now for over six months, and have seen it fail to attain its objects to an even greater extent than most of us feared. It was to increase the efficiency of medical treatment over the country. We can see even in ourselves the standard of our work rapidly deteriorating, we have to give so much time to the non-essentials. It was to make it easier for a young doctor to start in practice. Now unless he happens to be one of a fortunate few it is impossible for him to start unless his available capital is sufficient to enable him to pay his way for some years until his N.H.S. income is large enough to meet his yearly expenses. It was to encourage group practice. Now we see partnerships being terminated all over the country because regulations make it economically advantageous to do so. It was to give doctors financial and professional security and freedom. Now few of us can hope to end the year without increased overdrafts, and we see our freedom more and more curbed by slow degrees.

It is time our leaders realized the urgency of our position, or, if they will not, that we elect new ones. They will be elected not to negotiate with the Minister but to go to him with at least 10,000 (one might even hope with 15,000) resignations in one hand, and in the other our reasoned and equitable conditions for a satisfactory service, professionally and economically secure for the profession and satisfactory for the public. In their approach to the Minister they will adopt his form of negotiation—*Ipse dixit*. With the profession united behind them the Minister would be powerless.—I am, etc.,

Ewell, Surrey.

J. V. COPE.

Spens and Superannuation

SIR.—Statements made in the *Supplement* of Dec. 25, 1948 (p. 235), under "The Secretary Reports" call for question and comment. In the early negotiation days we were told that the superannuation scheme was generous. If the Secretary's statement is now accurate then of course there is no generosity. On the contrary, it means that there is a compulsory deduction from actual earnings under "Spens" to provide both sources of contribution. Put in another way, it means that 6% net is deducted from the doctor's cheque and in addition the 8% net is actually being withheld by the Treasury from the real Spens award. If the Secretary's interpretation is accurate, which I doubt, then there should be amendment of procedure in certain circumstances to ensure uniformity of implementation of Spens.

(1) Doctors over 65 who do not contribute should receive back the 8% which is apparently being withheld.

(2) In the case of death, retirement, or dismissal within 10 years (in some cases 5 years only) there is a return of the practitioner's contributions with compound interest and minus tax, but no refund of the Government's 8% withholdings.

(3) The option. The existence of an anomaly is shown by the fact that those practitioners exercising the option under superannuation do not pay their 6% and actually receive the 8%, and of course pay income tax on both.

Obviously there are inconsistencies and anomalies. If the Secretary is correct there is at any rate no generosity on the part of the Government in establishing the superannuation scheme. Instead it compulsorily deducts and withholds parts of our earnings, acts as banker, and uses our money to provide the benefits under the scheme which we are compelled to join if we take service within the Act.—I am, etc.,

Walsall, Staffs.

A. B. DAVIES.

** The statement in Para. (2) above overlooks certain circumstances in which the contributor with less than 10 years' service may receive benefits equivalent to or greater than the amount of his own contributions and the Government's contributions. For example:

(a) In the event of retirement after five years' service owing to permanent ill-health a short-service gratuity will be payable equal to the average remuneration.

(b) An injury pension may be granted at the discretion of the Minister in the event of permanent incapacity through accident or injury in the discharge of duty and which is specifically attributable to the nature of the duties. There is no qualifying period for this benefit, which takes the form of an annual allowance not exceeding two-thirds of the average remuneration.

(c) A death gratuity is payable provided five years' service has been completed. The gratuity in the case of a general practitioner is a sum equal to the greatest of

- (i) 4½% of the net remuneration for the total average of service, or
- (ii) the practitioner's contributions with interest, or
- (iii) the average remuneration during the last three years' service.

It is true that in cases where no benefit or transfer value is payable the practitioner's contributions are refunded with compound interest of 2½%, while the Minister's contributions are not refunded.—Ed., *B.M.J.*

Salaries of Opticians and G.P.s

SIR.—Mr. G. H. Giles is to be congratulated on the ingenuity of his last letter (*Supplement*, Jan. 8, p. 19), but I fear he is defending an untenable position. No one has decried the optician as he suggests, but everyone has a right, and even a duty, to protest against a waste of public money. The general practitioner has even more cause, for the Minister is reported to have given as one reason for not increasing the capitation fee the fact that the National Health Service is already costing too much.

On Jan. 8 Mr. Giles stated that the optician works a 10-12-hour day because on top of six hours' work on refractions he still has other tasks to perform. But on Nov. 27, 1948 (p. 196), he said that in a 6-hour day he could see only six patients because of these other tasks. Really he cannot have it both ways. If he refracts for six hours (present claim) he can see at least 12 patients and receive for refractions only at least £2,250 per annum. If he does all his work in six hours (claim of

Nov. 27) he is very much under-employed, but nevertheless receives £1,125 per annum for refractions only.

Mr. Giles claims that his working expenses are considerably higher than those of the G.P. Does he really believe this? In his list he gives a qualified assistant's salary, but as the effect of this would be to double the work done and pay received, we will not consider it further. He considers as absolutely essential his secretary-receptionist to answer the phone, etc. But who does he imagine answers a midwife's phone? Not her secretary surely? The mechanic and the workshop expenses he mentions will be for dispensing and repair work—matters which I have completely left out of the figures given for remuneration and which Mr. Stenhouse Stewart (Dec. 18, p. 231) left out of his figure of £150. His rent and rates need be no higher than the doctor's; after all, a shop-front in the centre of the town is hardly a necessity for a professional man. His expenses on lighting will probably be about the same. Those on the telephone will certainly be less, for he will never know those hour-long sessions at the phone trying to secure a hospital bed. There is one expense, and one only, which does not have its counterpart for the G.P.—namely, advertising—and it is, hard to see why this should be paid for out of public funds.

Mr. Giles gives among the time-consuming trivialities of his life the making out of reports to doctors. Since the inception of the National Health Service I must have issued hundreds of forms O.S.C.1, but in only one case have I received a report from an optician.

We must all applaud Mr. Giles's remarks on the desirability of having enough time to give one's patients an adequate examination. It is a strange comment on the muddle-headedness of the present Government that all work in the National Health Service has to be hurried with the sole exception of that done by the optician. But perhaps we are wrong—perhaps the refracting power of the cornea and lens is the most important attribute of the body, and physicians, surgeons, and ophthalmologists only exist so as to provide an adequate background for the refractionist's all-important work.—I am, etc.,

Silver End, Essex

J. W. NICHOLAS.

Questions for a Plebiscite

SIR.—We are asked to support the B.M.A. and its Negotiating Committee in their efforts to obtain reasonable remuneration for us from the Ministry. But what is the figure of the capitation fee they are asking for? Has the amount been accepted by the profession as a whole? Surely they should have a definite mandate from all practitioners employed under the N.H.S. which states the fee acceptable by them. From letters appearing regularly in the *B.M.J.* the capitation fee considered just seems to be from 30s. to 40s. per head. Is this the fee being negotiated for?

The Spens Report seems to be used in argument by both sides and no one appears to be quite sure what the fee at the present day should be according to that report. So why not end the argument by taking another plebiscite, the first question on it being: "What is the minimum capitation fee you will accept?"

Practitioners have had six months' experience in working the N.H.S. and have received two cheques, so they can now give a reply from practical experience; but before answering this question the practitioner should consider very carefully, as the future of the profession of medicine depends largely on what terms we get now. Our salary must be adequate and sufficient to enable us to educate our children as well as we have been and for us to enjoy some of the amenities of life. How else can we ensure that the future entrants to the profession will equal the type of previous generations?

I maintain that payment by capitation fee is not the ideal method of payment—too much temptation to degeneration into Dyak or Red Indian witch doctors—but as it has been accepted we must make the best of a bad system. Coupled with the capitation fee is the question of maximum number on list. This is Question 2 in the plebiscite.

And now we come to superannuation. The general practitioners are key men in the National Health Service, which is a main cog in the social security scheme, and yet they are left to face retirement on a pension which is absolutely inadequate. A doctor now aged about 55 years can put in 10 years of service under the new scheme and so

qualify for a pension when 65. If he has a panel of 1,500, which is as many as the majority of country doctors will have, and for that matter as many as town men too, he will get a pension of £126 per annum, and when he dies his widow will get £42 per annum. If he applies to the local executive council for permission to work until he is 70 years old, and if this is granted, his pension will be £189 per annum and that for his widow £63 per annum.

His income during these working years will be about £1,200 per annum, of which at least half will be swallowed up by practice expenses, leaving him no chance to save for his old age but very great possibility of having to dip into savings in order to carry on. He gets no credit for his years of service under the old National Health Insurance in the computation of a pension. Surely those past years of service in a national scheme under which he was grossly underpaid should be taken into consideration, as I suggested in the scheme I published in the *Supplement* of March 15, 1941, p. 29.

This is our third question: "Do you insist that the years of service under the N.H.I. be credited when computing superannuation?" Judging from the Minister's replies in the House to Sir Ernest Graham-Little (*Journal*, Dec. 11, 1948, p. 1042; Dec. 25, 1948, p. 1126) we cannot count on achieving very much unless the B.M.A. has a definite mandate from a united profession and is empowered to take drastic action if the Minister does not accede to their just requests without evasion, equivocation, or mental reservation of any kind. The B.M.A. must have our united support in the form of a mass resignation to be used if full demands are not met.

Hence Question 4: "Will you agree to sign a form of resignation to be used by the B.M.A. if negotiations break down, subject to the proviso that if less than 66% to 75% resignations were not received by the B.M.A. they would not be used?"

But surely at least 75% of the medical profession has the guts to put up a determined fight for the last chance to prevent a learned and honourable profession from sliding down the scale to become a third-rate occupation. A trade union would put up a fight for its workers, so surely the B.M.A. will not fail through lack of courage and force.

Let me again set out the questions on the plebiscite: (1) What is the minimum capitation fee you will accept? (2) What do you consider maximum number of persons for one practitioner's list? (3) Do you insist that your years of service under the N.H.I. be credited in computing superannuation? (4) Do you agree to sign a form of resignation to be used by the B.M.A. if these demands are not met absolutely, provided the B.M.A. receives a mass resignation from 60% to 75% of practitioners?

These matters are serious and urgent. We drifted along for years with an inadequate capitation fee under the N.H.I., but then we could subsidize that from our private practice. Now we must sink or swim on what we receive from the N.H.S.—I am, etc.,

Wetherby, Yorks

S. T. PYBUS

Another Plebiscite

SIR—From the correspondence columns of the *Supplement* it would appear that an ever-increasing percentage of doctors, both general practitioners and consultants, are wholly dissatisfied with conditions of service under the National Health Service. May I suggest that the present plight is largely due to the hasty and ill-timed second plebiscite, which was thrust at the eleventh hour upon a confused profession by the British Medical Association?

Now that we have all had time adequately to reflect upon our folly, and to assess what service under the present Act really means, is it not now opportune to present a third plebiscite upon the following general lines.

(1) Are you satisfied with conditions of service under the National Health Act?

(2) If not, would you be prepared to withdraw from the Service on a given date, provided a majority vote is obtained?

I personally feel little doubt about the doctors' answer, which would arm us for future negotiations with a bigger stick than the one our present masters are so fond of waving at all sundry.—I am, etc.,

London

A. C. BOYLE

Dictatorial Action

SIR—The experience of Dr. E. S. A. Ashe with the Cheshire Executive Council (*Supplement*, Jan. 15, p. 27) is mild compared with my experience of the London Executive Council. On Dec. 28 last the London Executive Council wrote to me saying that I had acted irregularly in accepting cards for a colleague who practises at my premises. I was not invited to

the meeting nor informed that I was to be discussed, and hence had no opportunity of hearing and of refuting such accusations. I was invited to express an opinion on their conclusion that "I had acted in a somewhat irregular manner."

This letter was treated with the contempt which it merited. To-day (Jan. 14) I received a second letter asking me to reply without further delay. If this is not dictatorial I should like to know what is. It took the same council more than three months to reply to my letter asking for the basic salary.

I resigned from the scheme on Dec. 31, 1948, and such a demand to one who is not in the scheme augurs badly for the treatment of those doctors who are trying to work the scheme. I'm glad I resigned.—I am, etc.,

London, S.W.6

N. J. CALDWELL

Refusal of Basic Salary

SIR,—Dr. E. S. A. Ashe's letter (*Supplement*, Jan. 15, p. 27) is quite misleading. Every practitioner in Cheshire who claimed a basic salary received a questionnaire from the Local Medical Committee. Wherever the questionnaire was not returned the Local Medical Committee was unable to recommend to the Executive Council that the claim to the basic salary had been established.—I am, etc.,

J. B. BENNETT,

Hon. Secretary,
Chester Local Medical Committee

Appealing for Basic Salary

SIR,—Dr. E. Granger's experience (*Supplement*, Jan. 15, p. 24) with his Local Medical Committee is typical. I received a refusal in precisely the same words. As my pittance is less than my mortgages, I have been scraping by through advances on the current quarters while waiting like a miserably threadbare Micawber for "something to turn up." This advance has suddenly been refused me in the same dictatorial manner. A further application under the regulations has received still less attention, the committee refusing even to consider it. Not only are we to be financially ruined by statute but shamed and insulted by county medical soviets.

Where do we go from here? Surely the answer is obvious. Immediate action or Carey Street is our only alternative now. The time for interminable sterile negotiation is past. The British Medical Association is our association, pledged in its foundation to carry out the will of its members. The unanimous will of its members to-day is for a strong lead. Upon my soul I cannot see much signs of it. Give us that lead, at once, now to-day! And we, the profession, will follow that lead through hell and high water. Put out to every member now this question: "Are you prepared to resign unless immediate satisfaction is obtained from the Ministry?"—and see what the result will be. You will then have a potent weapon for, at the very least, independent arbitration.

We are governed by a band of ex-professional strikers. There is no other procedure which they understand. I have taken it on myself personally to warn the Minister and have begged him to see the red light. He will not do so until that red light is blazingly active. I ask our Association to answer. What are you waiting for?—I am, etc.,

Loughton, Essex.

G. B. KIRKLAND

New Method of Remuneration

SIR—I offer the following suggestions for working out an equitable basis of remuneration for general practitioners:

(1) A committee be set up to determine the maximum number of patients a doctor of the age group 40–54 can attend to adequately in any particular area. The country should be divided into classified areas, as the maximum number of patients that can be attended to will be dependent on the density of population. The age group 40–54 has been chosen as this includes the group of doctors in their prime of health and also mature in experience of practice. This group also has the highest percentage of maximum income in accordance with the Spens Report.

(2) The remuneration should be so assessed that in any of these areas maximum lists should receive equally the higher rates of income recommended by the Spens Committee. It is doubtful whether the Mileage Fund can be used effectively for

this purpose. What I propose is that if in an area the committee finds that the maximum list should be 1,500, compared with a maximum list of another area of 3,000, then the capitation fee in that area should be double that of the latter area. The Mileage Fund can then be used for its proper purpose of reimbursing practitioners for the actual expense incurred attending to distant patients.

(3) An increased capitation fee for the first 20% of the maximum list in any area, and then an equal capitation fee for the remaining 80% of the list.

(4) If it is not possible to limit lists in any area to the maximum list as advised by the committee, then doctors in that area be permitted to accept patients above the maximum list, but at a reduced capitation fee.—I am, etc.,

London, S.W.18.

D. BILLIG.

Equitable Compensation

SIR,—Now that an amendment to the N.H.S. Act is to be introduced in Parliament an opportunity will be provided to have the regulations regarding the apportionment of compensation altered so as to give a more equitable distribution. Under present regulations a doctor whose practice is worth one year's purchase receives the same as a doctor whose practice is worth two or more years' purchase. Could a small committee be appointed by the B.M.A. now, when another opportunity will be available to look into the matter, which, if not put right, will have disastrous results for those who are relying on their capital for retirement?—I am, etc.,

Liverpool,

JAMES WELLWOOD.

Chiropodist's Services

SIR,—I should like to heartily endorse all those letters in your columns relating to the gross inadequacy of the present remuneration of general practitioners, and I agree that drastic action is imperative now. In this town the average attendance per patient per year is at least ten, and this divided into the capitation fee works out at under 2s. per visit.

A chiropodist called on me the other day and told me that her charges were 3s. one foot, 5s. two feet, and 7s. 6d. a visit. We have reached a low state indeed when a chiropodist's services are worth three times as much as those of a doctor.—I am, etc.,

Harrogate.

J. C. WARD.

Fees for Anaesthetics

SIR,—I have seen no mention made of the cut-price salary which the G.P. is being offered for performing specialist duties at a hospital, and I should be glad to know if the Negotiating Committee intends to take any action in the matter. Interim contracts are being offered with a salary of £100 per annum for one session per week instead of the full £200, and it is my contention that if a G.P. performs specialist duties he should be paid at specialist rates. For example, an anaesthetist may give four anaesthetics at a session, which means that he is paid the princely sum of 10s. 6d. per case, and such cases may include a cholecystectomy, an appendicectomy, etc. Yet for a short gas anaesthetic for a dentist to extract one tooth he is paid 10s., and for one general anaesthetic to a fellow practitioner to apply forceps he receives £1 15s.

Even the full salary of four guineas per session seems cut price enough, and one can only hope that every G.P. who is offered a half-price interim contract of two guineas per session will refuse it, and that there will be no Quislings among us short-sighted enough to accept such outrageous cut prices, since it is only by loyalty to each other that we can ever expect to gain better terms of service for all.—I am, etc.,

Epsfield Green, Surrey.

W. E. R. BRANCH.

Shop-walkers

SIR,—The figures for my income are: Average income for the two years before the Service started (accountant's figures)—£728 per year. Number on list, October, 1948—1,141. Amount of cheque: £181 17s. 5d., plus £71 14s. 9d. (basic salary), less £9 17s. 9d. (superannuation)—total, £243 14s. 5d.

I started a new banking account on July 5 which did not contain half the living costs of the family and self but included out of the expenses of practice, and after paying above cheque in I was still overdrawn about £12 plus. At the moment I am

nearly £400 overdrawn. Would Aneurin Bevan be a G.P. working under such conditions and for such long hours? We are doing our best to give our best and to make this scheme work, and if it fails—as surely it will if these conditions are not altered drastically and quickly—then Bevan's will be the ignominious glory for its failure, and if this happens it will cost the next election. I am not politically minded, but I do know that 1 plus 1 makes 2, and when we are led to believe that $\frac{1}{2}$ plus $\frac{1}{2}$ equals 1, and that 2s. 6d. per 100 patients covers the cost of dressings, etc., per year, then it is high time that the Negotiating Committee had someone who can think logically and clearly to negotiate with, and they should take steps to secure this.

The greater tragedy of it all is that within one generation or less the family doctor will be no more. Instead there will be a "shop-walker" directing the patients to different departments. The patient's illness will be his own responsibility; to see that he gets the treatment and carries it out will be his own responsibility; it will be up to him to report progress, etc. Responsibilities for which doctors now assume the burden will soon be thrust on the patients themselves—to their detriment.

We as doctors did not work for the money in it before July 5, but we knew that we could make both ends meet and that we could look forward to giving our kiddies a decent education, and maintain a decent standard of living. Indeed, to most practitioners the £ s. d. side has always been the most loathsome side of our work. We have always worked hard without thought to overtime and hours of work, and without any thought as to whether any one patient would pay us a bean or not, and we have struggled along without complaint.

So far we carry on just the same, giving the best we can under the increased burden of more work, which does not worry us so much, but the other burdens on our shoulders—and they are very heavy ones—the burden of financial insecurity, the burden of loss of freedom in many branches of doctoring, the burden of impending directorship and dictatorship from above, the burden of being told what we can prescribe and what we cannot, the burden of being told which consultant we must have, etc., etc., are just about killing, and contrary to any conception of freedom which we previously had.

Fortunately it is such a sad state of affairs that I do not think that it can or will last very long, as it is all so contrary to the British way of life and also to human nature. No government can alter the latter, nor will they be able to destroy the best that is in us. But the tragedy is that they may in time be able to breed and educate, or perhaps only educate, a generation that see only their point of view. Hitler nearly did, but presumably he is dead now. Let this country not repeat his mistake. The value of this service to the community is too great for us to allow any one political party to ruin it. Let us see to it that it becomes the best possible service, staffed by "willing horses" eager to pull their weight and able to breathe fresh air.—I am, etc.,

Caernarvonshire.

G.P.

Representation of Tuberculosis Workers

SIR,—The letter from Dr. William D. Gray (*Supplement*, Jan. 1, p. 8) criticizes the Joint Tuberculosis Council for (a) postponing any decision with regard to regional representation on its Council for a period of six months, (b) refusing representation to the newly founded Liverpool Regional Tuberculosis Society, and (c) having an unrepresentative constitution.

A copy of the Council's Constitution is enclosed, and it will be noted that all existing clinical tuberculosis associations and societies are represented, the only exceptions being those associations having limited constitutions—e.g., areas of membership limited by local authority boundaries. The Council's interests are wide and are not limited to terms and conditions of service; in fact the latter in the past have comprised only a small fraction of the Council's work. It is not necessary to detail the subjects considered by the Council, as these are faithfully reported in your *Journal* from time to time. It will be noticed in the Constitution that Rule 5 restricts the size of the Council. A large deliberating body would be unwieldy and would make it impossible to conduct business in the limited time available for meetings.

To avoid delay, Liverpool members of the North-west Tuberculosis Society should put their views forward to that

body, whose representatives could then bring them before the Joint Tuberculosis Council. This is the constitutional and most rapid and effective way of proceeding.

It was foreseen that regional groupings would probably result in the formation of new clinical societies and that these societies would seek membership of the Council. There is ample time for the new societies to show their worth before any question of displacement of the old and tried clinical associations in favour of the new bodies is considered.

It is appreciated that the Joint Tuberculosis Council is not primarily constituted to consider terms and conditions of service. The only reason that the Council is taking an active part in work of this nature at the present time is the absence of representation of tuberculosis workers on the Central Consultant and Specialists Committee and the lack of an alternative avenue of approach other than through the Tuberculosis Group of the Society of Medical Officers of Health. This latter body is better constituted to deal with such matters as terms of service, but joint action is taking place at the moment to ensure full support for the representations to be made.—We are, etc.,

D. P. SUTHERLAND,
Chairman, Joint Tuberculosis Council.

N. J. ENGLAND,
Hon. Sec., Joint Tuberculosis Council.

New Tourist Attraction

SIR,—May I suggest that in order to encourage foreign visitors to come to Britain, bringing with them much-needed dollars, the B.M.A. should circularize travel agencies, British, American, and Continental, to point out one of the almost incredible advantages of a visit to this country? Foreigners can have, at the expense of the British taxpayer and at no charge to themselves, new false teeth, blood counts, radiological examinations; they can have their prostates removed, their children delivered, and free spectacles; and, not being private patients, free medicine as well. Foreigners will hardly believe this, but owing to the wonderful service the British doctors now give, it is perfectly true.

It is, unfortunately, also true that if an Englishman living here requires a non-urgent operation, such as removal of a cartilage from his knee, he has to wait about sixteen months before he can have it done. But foreigners should come here none the less, get their out-patient appointments now, and come back next year and have their operations and spectacles and their false teeth. It seems rather unfair that if they have indigestion they will have to pay for their extra milk and eggs. This latter point had better be left out of the advertisement.—I am, etc.,

Cambridge

E. V. BEVAN.

Abolish Evening Surgeries

SIR,—Abolition of evening surgeries is one of the demands that should be made by the medical profession. The doctor is looked on as being tireless and expected to be at everyone's beck and call day and night. The position is worsened to-day by the increased clerical work due to forms, prescriptions, certificates, etc. A morning and afternoon surgery fairly close to each other would enable doctors to do out-patient work before and after their surgery hours, and give them their evenings to get ahead with clerical work, study, home life, etc. Why should men whose education is so costly and who have had to devote such a lot of time to their medical curriculum be treated like this?—long and tiring hours doing skilled and responsible work, increased work, rising costs all the time, and a reduced income.

If a patient is ill enough to need to see a doctor, he should surely be given time off to see the doctor during his morning or afternoon surgery. Besides this, it will be more beneficial to the patient, as his evening will then be free.—I am, etc.,

Dr. J. A. Sykes

J. A. H. SYKES.

SIR,—I trust you will insert a few lines from me agreeing in every way with Dr. Victor M. Seifert (*Supplement*, Jan. 15, p. 24) of London, re evening surgeries. What a wicked waste

of time for doctor, chemist, and patient! Dr. Seifert is a luckier man than I am because in this district there is no local cinema and the only recreation left to a person in this area is a visit to the surgery in the evening.

However, he will be pleased to learn that I have given up this useless form of amusement and spend the time in visiting the really sick people. I have a morning surgery every day, and it is a solid mass of human beings "shoulder to shoulder." If I had an evening surgery I'm afraid that midnight would not see me in bed.

A few days ago an old man of 82 informed me that he used to enjoy the evening surgery and a chat with friends, but now he has to get up early and go to the morning surgery for his "bottle." Shops, banks, and other professions close down at a normal hour, and why should doctors be so foolish as to invite a lot of people to a room at night and encourage them to go sick? It is about time we had sense.—I am, etc.,

Biggin Hill, Kent.

J. J. ROHAN

Abolish Assistantships

SIR,—A few months ago I was released from the R.A.M.C. after serving 5½ years mainly in hospitals at home and abroad. Now I am an assistant to a G.P. with a large practice with a view to partnership.

During my short service in G.P. I have come to the conclusion that an experienced assistant can carry a very heavy load. Here in the course of six months I have carried on the practice for at least 11 weeks single-handed, and during the remainder of the time I have had scarcely any leisure at all in which to read or lead a normal home life. I have no doubt that there are other assistants in a similar plight. Not only this, but there are at least four other doctors treating patients in the district. The other day I found that another doctor from about four miles away was treating the children whilst I was called in to treat one of the parents.

Our practice extends into and beyond a village eight miles away in which there are two doctors. Surely something is wrong with a system like this. In addition to this on several occasions patients of other visiting doctors have come to me either in emergency or, as I had the other day, because it was too bad a day to go to ———, a village four miles away. The whole thing seems to be ridiculous.

May I make the following suggestion for consideration? The old G.P.'s enormous practice should be ended; G.P.'s lists should be reduced to under 3,000; abolish forthwith assistantship and partnership; let doctors, young or older, practise as doctors and not as assistants or partners; procure all information possible about under-doctored areas—many assistants could furnish this; all doctors should be paid by local executive councils and not by individuals; minimum adequate salaries should be paid to single and married men according to years of qualification.

I feel that many assistants are being exploited under this trainee scheme, which should be abolished. Special courses for young G.P.'s could be arranged as courses were arranged in the Services. After all, a newly qualified doctor is a doctor, and would do very good service when posted to any area.

If the country were properly divided into areas the public would have better service. G.P.'s will hang on to enormous practices until the bitter end, working themselves, their assistants, and their partners to death, all for the sake of £ s. d. So let's have fairness all round. Put all doctors, young and old, on a level footing: the young will learn by experience and special courses of instruction, and there are plenty of good consultants available when necessary.

The N.H.S. could be a success if all doctors were treated as doctors and paid as such, and not as assistants or partners.—I am, etc.,

ASSISTANT.

Organization of Council

SIR,—I have read with great interest your report of the Proceedings of Council (*Supplement*, Jan. 22, p. 33) and am prompted to reply to Dr. Carter's consideration that the Winchester memorandum was ill-informed when it stated that the Council was out of touch with the rank and file of the profession.

The Winchester Division, as you know, is now in possession of a great deal of information from Divisions all over the British Isles on the organization of the B.M.A. in general and of Council in particular. I can assure you that very few of these contain any comments suggesting that Winchester was ill-informed, on the contrary, we have been surprised at the vehemence with which a number of Divisions have approved of our remarks and, as our revised memorandum shows, have been prepared to go even further in reform than we originally proposed.

If, as we believe, Dr Carter, as chairman of the Bournemouth Division, has so far not allowed his Division to discuss our memorandum, we have reason to doubt whether he is well-informed even of the opinions of his own members on the question of organization, and we certainly cannot believe that he has the authority under such conditions to criticize the opinion of a Division so strongly backed by others.

Dr Pridham's remarks in putting his committee's report to Council show that the subject has been considered in a broad and realistic fashion, and we strongly support the view that it is impossible for members of Council to be well known to the rank and file of the profession if only one-third are directly elected by members in the Divisions and Branches at home, and it would seem that the remarks by Dr Carter can only serve to confirm our opinion—I am, etc.,

Winchester

RONALD GIBSON

B.M.S. Committee: Correction

SIR,—Paragraph 5 of your report of the special meeting of the G.M.S. Committee (*Supplement*, Jan 29, p. 49) does not give the full point of the question as asked by me or of the answers. My question was, "Did the Spens Committee visualize an increase of work equal to that which we are in fact experiencing?" During the answers the chairman (Dr Wand) emphasized the point of the question. Three out of the four replies showed that our present work was much in excess of that foreseen by the Spens Committee as a basis for their report. Dr Carter's reply to the question was to the effect that the Spens Committee's standard of income should be available to the doctor for a normal day's work, leaving him time for recreation, etc. He added these words: "which few, if any, general practitioners seem to enjoy these days." Most of the committee felt that the replies strengthened the argument that while in certain groups the actual Spens figure might be obtained with the present capitation fee it would only be possible by gross overwork, and that therefore Spens was not properly implemented—I am, etc.,

Bristol

WALTER WOOLLEY

POINTS FROM LETTERS

A Doctor's Lot

Dr P. F. O'SHEA writes: "About five weeks ago the local policeman, a robust, healthy specimen of manhood, swarmed into my surgery and demanded a bottle of cod liver oil for his cough. At length I explained to him that cod liver oil was not essential to his cough, and, further, I offered to supply him with a bottle of medicine that would do him more good. Indignantly he left the surgery. Saturday last I received a notification from the Glamorgan Executive Council stating that the said policeman and his wife and two children had transferred 'to another doctor in the E.C. area'."

Doubt in Prescribing

Dr P. R. SAVILE (London, E.17) writes: "It is about time that we had some definite guidance as to appliances and drugs allowable under the general medical service. The responsibility should not be left to the individual doctor to decide, for example, whether a sanitary pad is equivalent to a maternity pad. According to a London Executive Council letter in November, 1949, sanitary towels were not supplyable. In spite of this patients continue to come over to us stating that their maternity nurses have sent them, informing them that they are entitled to maternity pads. Thus it is left to our individual interpretation of the problem as to whether a maternity pad is a different species from a sanitary pad. In order to push the Act through, Mr. Bevan promised the patient everything for nothing—'You don't have to pay for anything now.' It is about time that he informed the public that that was a slight exaggeration and told them what they couldn't have, not letting the wretched G.P. hold the baby and refuse to allow the patient all that the kind Minister of Health promised."

Association Notices

PROPOSED ALTERATION IN DENBIGH AND FLINT DIVISION

Notice is hereby given by the Council of a proposal to form two Divisions in the place of the present Denbigh and Flint Division as follows:

The East Denbigh and Flint Division the area of the present Denbigh and Flint Division to the east of the Clwydian Range.

The West Denbigh and Flint Division that part of the present Denbigh and Flint Division which lies to the west of the Clwydian Range, with the addition of Colwyn Bay, Old Colwyn, and Rhos-on-Sea.

Any member affected by this proposal and objecting thereto should write to the Secretary of the Association not later than Feb. 26, 1949.

CHARLES HILL,
Secretary

PRIZES FOR MEDICAL STUDENTS

The Council of the British Medical Association is prepared to consider the award in 1949 of prizes to medical students for essays submitted in open competition. The subject of the essays for 1949 shall be "The Value of Observation in the Training of the Medical Student." The purpose of these prizes is the promotion of systematic observation among medical students. In awarding the prizes due regard will be given to evidence of personal observation. No study or essay that has previously been published in the medical press or elsewhere will be considered eligible for a prize.

The following prizes are offered:

National Prizes—six, each of the value of £25.

Regional Prizes—as detailed below based on the four Regions of the British Medical Students Association.

London Region, 6 prizes (1 of the value of £15, 5 of the value of £7).

Midland Region, 3 prizes (1 of the value of £15, 2 of the value of £7).

Northern Region, 3 prizes (1 of the value of £15, 2 of the value of £7).

Scottish Region, 5 prizes (1 of the value of £15, 4 of the value of £7).

Any medical student who is a registered member of a medical school in Great Britain or Northern Ireland at the time of submission of the essay is eligible to compete for the prizes. The winners of the National Prizes will be ineligible for the award of a Regional Prize. If any question arises in reference to the eligibility of a candidate or the admissibility of his essay, the decision of the Council shall be final. Should the Council of the Association decide that no essay entered is of sufficient merit, no awards shall be made.

Each essay must be typewritten or written legibly in the English language, and must be unsigned and accompanied by a detachable sheet giving the name of the candidate, his medical school, and his B.M.S.A. Region. Essays must be forwarded so as to reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, not later than March 31, 1949.

PRIZES FOR NURSES

The Council of the British Medical Association is prepared to consider the award in 1949 of three prizes each of the value of 20 guineas for the best essay and three prizes each of the value of 10 guineas for the second best essay submitted in open competition by each of the following categories of nurses: (i) Pupil nurses; (ii) State registered nurses working in a hospital; (iii) State-registered nurses not working in a hospital—i.e., district nurses, private nurses, etc.

The subjects of the essays for 1949 shall be: category (i), "What discipline do you think necessary in the training of nurses?"; category (ii), "What part of nursing duties can be delegated to others with safety?"; category (iii), "The care of old people in their own homes."

The purpose of these prizes is the promotion of systematic observation among nurses. In awarding the prizes due regard will be given to evidence of personal observation. No essay that has previously appeared in the medical press or elsewhere will be considered eligible for a prize. Nurses who are undergoing training at a

the prolapsed intervertebral disk. In each the critical position is one of flexion of the spine; but the fracture of the vertebral body is produced by forced overflexion, and the prolapse of the intervertebral disk by extension and rotation against resistance. The injury occurs in both at the site of the maximum movement during the maximum pressure. In a typical example, a man is standing in a slightly stooping position when a heavy weight falls on his shoulders, forcing him forwards, overflexing the spine, and causing a crush fracture of the first lumbar vertebra; or, alternatively, the weight misses the man and he stoops, inclining slightly to one side, grasps the weight with both hands and strains to lift it, thus extending and rotating the back, and suffers prolapse of the disk between the fifth lumbar vertebra and the sacrum.

At once it is apparent that the commonest sites for the bone and disk lesions are at opposite ends of the lumbar spine. There is an equally obvious difference in the method of their production. The force producing the bone injury takes the patient by surprise; in the disk injury the force is deliberately produced by voluntary muscular effort.

In those rare instances of fracture of the body of a lumbar vertebra in which the force is applied relatively slowly, as when a man is standing with his back to a stack of bales which collapses, gradually forcing him downwards, the injury is found most frequently in the fourth lumbar vertebra. In this case the man has just had time to brace himself to resist the force before overflexion of the spine has occurred. From this example it will be seen that the lower part of the lumbar spine is vulnerable to both flexion and extension strains when the victim is aware of the traumatizing force, and the upper part of the lumbar spine is vulnerable when he is taken unawares.

If a healthy individual is asked to bend and touch his toes and recover to the erect position, he will be found to maintain regular breathing, probably exhaling during bending and inhaling on straightening the back. But when a man is asked to raise a heavy weight he bends freely but rises against the resistance of the lifted weight. In these circumstances the man usually exhales bending; then there is a preliminary intake of breath, the breath is held at the initiation of the lift, and is released after inertia has been overcome and the movement of extension of the spine has begun.

When the body is braced for a big effort, as lifting a heavy weight, the shoulder girdle is fixed by the external respiratory muscles and the breath is held. The diaphragm is firmly fixed, and this is possible only when the bony attachments of its crura are stationary. The first three lumbar vertebrae are therefore held immobile and movement of the lower back, whether of forced flexion or of voluntary extension, occurs first in the lower lumbar region.

The man who was slowly forced to his knees by the collapsing stack of bales braced himself to resist the overwhelming weight, and, although he succeeded in fixing and therefore preventing overflexion of the first three lumbar vertebrae, suffered fracture of the relatively movable fourth. In the case of the man who attempted to lift the weight, the first three lumbar vertebrae were also held immobile at the initiation of the lifting strain, and the movement of extension occurred between the sacrum and the fourth lumbar vertebra, thus causing maximum pressure on the lowest two disks in the lumbar series.

The mechanism of production of the prolapsed disk as I understand it may be summarized in four stages: (1) Positioning: flexion of the whole lumbar spine with the separation of the posterior contiguous margins of the neighbouring vertebrae. (2) Preparation: fixation of the upper three lumbar vertebrae in flexion. (3) Overcoming

inertia: direct pressure on the lower disks, causing them to bulge slightly beyond the posterior margins of the vertebral bodies. (4) Raising: extension and rotation of the fourth and fifth lumbar vertebral bodies, causing the posterior margin of the bone to nip the bulging disk in a grinding movement with maximum pressure exerted to one side of the midline according to whether the man is inclined to the right or to the left.

It is often very difficult to obtain from a patient a coherent account of the mechanics of his injury. In many cases the workman has "thought back," and his account is no more than an imagination piece. It is essential, therefore, that investigation shall be carried out on the spot and not from the hospital notes. In these notes it is often recorded that the patient strained his back while lifting but never that at the initiation of the movement of lift the spine was in the position not only of flexion but also of slight rotation and lateral flexion, and that in rising the spine was therefore brought back to the straight position by a corkscrew motion.

How to Avoid the Injury

Obviously this leads to the conclusion that there is on particular type of strain that produces the prolapse of an intervertebral disk and, conversely, that it is nonsense to suggest that all heavy work places the nucleus pulposus in jeopardy.

Can the dangerous strain be eliminated or circumvented? Industry already has something to offer by way of solution. When the nature of the work renders back strain particularly prevalent methods have been adopted by custom which have been found to minimize the risks. One of the best examples is that of the coal-miner lifting a tub. The inexperienced man would risk straining his back each time he attempted its performance. Imagine him facing the tub, stooping with back well bent, putting his hands beneath the chassis, straining to lift, and inviting a disk injury. Generations of miners have learned to avoid this risk by the simple expedient of turning the back to the tub and lifting with the hands behind them. In this position the knees can be well flexed. The lumbar spine is held immobile until the actual lift has been initiated by the thigh muscles, and it is only when all the lumbar spine is mobilized by the release of the respiratory muscles that the back is somewhat straightened.

Individuals occasionally learn tricks which afford them some protection from recurrence of their symptoms. A mine-worker (a pan-turner) found that he could avoid pain if all his lifts were made in two stages: he would lift a short distance and then, after a moment's pause, complete the lift. After watching him at this manoeuvre I was able to satisfy myself that the initiation of the lift movement was produced solely at the hip and knee with a completely fixed spinal column and with the breath held, that during the momentary pause breathing restarted, and that full recovery to the erect position took place with even movement of the spinal column, thus distributing any strain up the disks.

But industry's method of selection, by trial and error of suitable work for the "back" case is obviously unsatisfactory, and a scientific approach through careful physiological and functional analysis both of the man and of the machine offers the only practical solution to successful placement. There are three main lines of research.

1. *How to Prevent Threatened Injury in the Performance of a Specific Act.*—The majority of back strains will be avoided if the workman is properly instructed in the art of lifting. Inertia should be overcome and the movement of lifting initiated by the thigh muscles; but if the workman is so placed that he is unable to bend his knees when stooping to grasp the

weight, the lift is initiated through movement at the hip and spinal joints.

2. *How to Avoid the Act which is Calculated to Cause Injury.*—It may not be easy to place in a heavy gang a man wearing the label of light work, but there should not be the same difficulty about placing him in the heavy gang with instructions to the foreman that, although he should do his full share of hard work, he should not be employed in lifting from knee level or lower. Many a man who has suffered a prolapsed intervertebral disk could resume his work at machine or bench without symptoms or fear of relapse if objects which he previously lifted from ground level could be stacked at a height of from two or three feet (60 to 90 cm.).

3. *The Correct Selection of Personnel for the Specific Act.*—At present selection tests are used by the industrial psychologist to determine both adaptability and accident proneness. The anatomist has also made a selection of types that are able to perform certain specialized manœuvres more readily and more efficiently than others. This method of selection was used in

perfection in treatment could be obtained only at the sacrifice of human form.

At the age of 15 a boy had his right hand severely mangled in machinery. The first, second, and fourth fingers were lost at the time, the skin was stripped from the palm and from the remaining half of the third finger, the thumb was split and its metacarpal shared the fate of the others in the hand—being splintered. It was decided to rebuild the hand by plastic surgery. The first stage after cleansing was to bury the hand in the abdominal wall to secure the necessary skin flaps. This was successful, and gradually the process of reconstruction went on. Operation succeeded operation; the stump of the third finger was covered with skin, the second metacarpal was excised, a rotation osteotomy was performed on the fourth metacarpal. Three years went by, during which this boy alternated between the squalor of a city slum and the relative splendour of a lavishly equipped country hospital. Now he possesses something which resembles in appearance the congenital "lobster-claw" hand: one claw is immovable and insensitive, the other

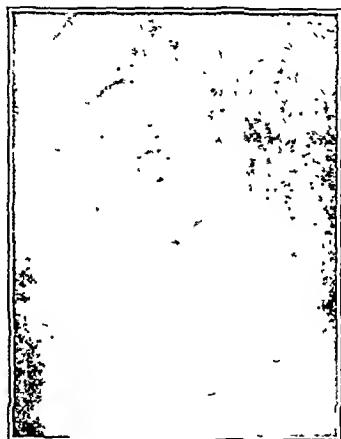


FIG. 1

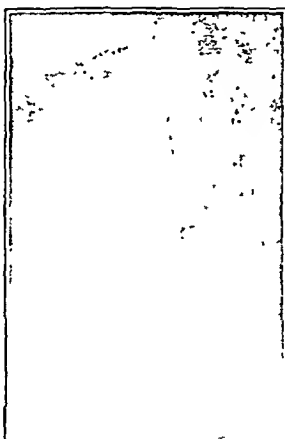


FIG. 2

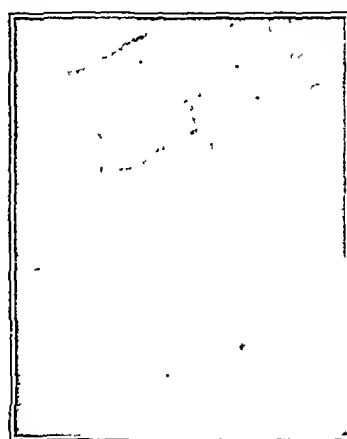


FIG. 3

Fig. 1.—Lumbar spine in the act of raising a weight with the breath held, showing upper three lumbar vertebrae fixed in flexion but the fifth lumbar vertebra extended with backward tilt on to the sacrum, tending to nip the disk. Fig. 2.—Same as Fig. 1, centred over the fifth lumbar vertebra. Fig. 3.—The same lumbar spine as Fig. 1, rising to exactly the same position but with the diaphragm free and showing even spacing between the fifth lumbar vertebra and the sacrum.

the war for picking naval anti-aircraft gunners. But no detailed research has yet been undertaken to determine accident proneness in relation to physique and particular function. It has, for instance, been stated that the long thin type of man represents the "disk" type—i.e., that these individuals are prone to prolapse of an intervertebral disk. But this is certainly not borne out in the cases that I have seen, which include tall and short, slim and burly. It is not impossible that some relation may be found between the length of reach and the patient's weight which may have a bearing on the problem. Perhaps a matter of some interest is that in cases of sudden prolapse of an intervertebral disk it is unusual to find x-ray evidence of other changes in the vertebral column. The buttressing of the vertebrae, sometimes spoken of as hypertrophic osteoarthritis, which is found in the spinal columns of many men who have undergone years of heavy work, is seldom seen in these cases.

With "Why" and "How" established, and the foundations well and truly laid, only the span of good will is necessary to bridge the gulf.

The Surgeon's Lost Touch

Surgery's lost touch with industry has been responsible for much unhappiness and much disability by concentrating on local morbidity instead of on general function. The surgeon seeks perfection in treatment, and his first concern is to restore the mutilated human body to conformity with accepted standards. But if he were to keep steadily in his mind that the ultimate aim of treatment is restoration of capacity for work it would sometimes be found that

has feeble and tremulous movement, though so restricted in range as to be quite useless. A sheet of paper placed between the claws flutters away to the ground; a pencil can be thrust between them and held but not grasped. The young man is now attending the physiotherapy department of the city hospital, marking time before readmission to his "country residence" for the next operation in the series.

Now what of the patient himself? He was of fairly good physique, now rather run to fat, but, as his father puts it, he is "no scholar." School, in fact, "did not agree with him," and his entry into industry at the age of 14 marked for him escape from the thralldom of uncomprehended letters. He was eager to declare his manhood, to "muscle in" with his fellows into the strife that was his birthright. Three long years have now gone by, three years of daily contemplation of a pitiful and puny limb, hideous alike in its appearance and in its uselessness. Had that hand been amputated at once a modern prosthesis would have enabled the boy to return to his work in a few weeks, still rejoicing in his strength and brim-full of the enthusiasm of youth. But now what is left but a tale of lost incentive, lost interest, and lost opportunity?

Choice of Treatment

Perhaps the selection of the right form of treatment for the individual patient needs a wider knowledge and a greater experience than any other of the surgeon's duties. One of the most important considerations in restoring working capacity is how long the patient can afford to be away from work without suffering such loss of skill, dexterity, or training as will render him temporarily or permanently

unfit for his pre-accident work although the treatment for his surgical condition has been apparently successfully concluded.

The time factor is of importance in the selection of treatment, but of even greater importance is the patient's own psychology. In the case of the boy with the mutilated hand, a psychological study would have revealed at the outset that his happiness and success in life depend upon his ability to perform simple tasks requiring muscle work but a minimum of reasoning power or intellectual effort. He is not of the type that absorbs instruction easily or is able to profit by lessons in craftsmanship. He belongs essentially to that class of worker designated unskilled labour. Had he been of a different type, of average or more-than-average intellectual capacity, the long years of treatment might have been devoted to preparatory training for some skilled trade or profession, greatly to his and the community's advantage. But for this boy these years were obviously wasted and little could be done to mitigate the bitterness and frustration of thwarted ambition.

After selection of the type of treatment to be given there may still be a variety of different ways of carrying it through. For example, if the patient is suffering from thrombo-angiitis obliterans the selected treatment may be resection of the lumbar sympathetic ganglia, but there are two different methods of surgical approach to the ganglia. First the transperitoneal method through a midline or paramedial abdominal incision; and, secondly, the retroperitoneal method through the loin. This latter is undoubtedly the easier operation to perform, but the risks and difficulties of the former may be justified in certain cases in which section of the loin muscles is likely to interfere with capacity for work. This is but one of many examples in which the surgeon's choice is no more than a guess if he remains in ignorance of industrial conditions.

In theory there can be no difference between the relative importance of treatment for different diseases and different injuries. Each and every one is a challenge to the surgeon, to be met with all the skill and resource at his command. But in practice it has long been the custom to differentiate between major and minor injuries and also to make similar distinction between diseases. The skilled surgeon has tended more and more to restrict his activities to the treatment of selected groups of cases and to delegate to his less experienced colleagues the treatment of minor maladies and minor injuries.

Now this modern surgical perspective is the result of the intrinsic study of morbidity coupled, it is to be feared, with the necessity for the reward for labour. Contact with industry, with its demands for man-power and man-hours, will force the surgeon into a new perspective. The treatment of fractured necks of femurs is not the most important thing in life. In terms of human suffering and human happiness fractured fingers must take pride of place. The fractured femur is a rare occurrence in industry, and if every case became a total loss this would represent only a tithe of the loss and suffering occasioned by the thousands of fractured fingers which occur each year. I am not going to suggest that the fractured femur must be neglected for the fractured phalanx, but that equal care and skill shall be lavished on both. The function of the femur is to sustain the body weight, and the surgeon need seldom modify his technique in treatment to meet industrial requirements. But the function of the finger is far more complicated, and no surgeon can attempt to make the best of his treatment unless he is cognizant of the full industrial requirements of the injured finger. It may be that there are fractures of the proximal and middle phalanges of the little finger with involvement of the first interphalangeal

joint. In such an injury it is not improbable that ankylosis would occur at the damaged joint. If the joint were fixed in extension instead of semiflexion the patient would be handicapped in the performance of such work as required the maximum span of the hand—e.g., use of a lever. But this position of the little finger would not incommode the mannequin, who might be seriously inconvenienced by the little finger fixed in semiflexion because of her inability to put on gloves without splitting them.

In dealing with the choice of treatment and its method of performance I have touched only on the surgeon's immediate responsibilities as they are reflected from industry, but to bring treatment to a successful conclusion much closer contact is necessary. In cases of accidents to the industrial worker it might fairly be stated that *treatment starts before injury*.

The Five Fears

In dealing with the problem of the treatment of the injured workman I must stress the importance of the elimination of the five fears—fear of pain, fear of deformity, fear of financial hardship, fear of industrial degradation, and fear of litigation. The elimination of each one of these fears is the direct concern of the surgeon, although the final responsibility may rest elsewhere. Fear is conceived in ignorance and is dispelled by knowledge. And if propaganda, precept, and example are made to play their proper part much of the fear of injury may be eliminated. If every potential patient is convinced that his particular injury will be the especial care of a surgical specialist, that during the time of his sickness and convalescence he and his family will be properly cared for, that his future will be assured and he will not be lost in that backwater of unwanted men, light work, and that he will not have to spend weary months in straitened circumstances fighting for what he believes to be his right, then indeed treatment will have started before injury.

Co-operation in Treatment

To secure this happy state team work is necessary and may be accomplished only if the yoke of responsibility is shared by the managing director and the hospital consulting surgeon. The armies mobilized in the battle against disease and injury are as much in need of direction from a unified command as ever were the armies engaged in internecine warfare. To this end, then, the influence of the hospital surgeon must pervade every phase of treatment—starting within industry, continuing in home or hospital, and being carried through to its conclusion again in industry. In fact, he must become not only the surgeon in hospital but the surgeon in industry.

The design and equipment of the factory surgery must be a matter of prime concern to the consulting surgeon, whose ultimate responsibility is the treatment of patients who pass through that surgery to hospital. Unless the treatment carried out there is in exact conformity with his ideas of hospital treatment, the surgeon may find himself fighting a rearguard action in the face of infection and deformity instead of continuing the general advance towards full recovery. As a simple example—a guillotine amputation of the pulp of a finger may best be treated by an immediate skin graft, but if the finger has been soaked in strong antiseptic, a familiar form of treatment in many surgeries, the chance of a successful grafting in hospital is very much diminished.

Whereas the factory doctor's consulting-room must be the centre of the teaching and practice of pure industrial medicine, the factory surgery should be an outpost of the hospital. Its personnel, medical officers and nurses, must follow the same routine in treatment as their colleagues in

hospital, and this of course is possible only if the two departments are in constant touch with each other. During the last war the Medical Director of the Ministry of Supply, who was responsible for industrial health in the Government Ordnance Departments, arranged that medical officers and nurses from the factory surgeries should attend courses at a selected hospital in order to keep them in touch with those methods of treatment that were acceptable to the consulting surgeon who, under the Director, was responsible for the treatment of injuries. Similar liaison between the consulting surgeon and the department of the industrial medical officer is essential throughout industry if the optimum treatment is to be afforded to its personnel.

But if the benefits of this close co-operation between the surgery and the hospital are not to be nullified in the case of the injured, still earlier precautions must be taken. Someone must make a stand against the tyranny of tradition, and, as surgeons are not usually lacking in courage, let the consulting surgeon be the first to defy the law and burn the first-aid box.

Rehabilitation

Now after the first stage of surgical treatment is over, further treatment is concentrated on rebuilding the general health and physique of the patient and in restoring and perhaps retraining his muscles to enable them to meet the requirements of his daily work. In many cases the immediate return to pre-accident work is made possible because of the surgeon's particular knowledge of the job and his willingness to modify his treatment to meet its requirements. As a simple example, a waterproof dressing on an injured finger worn during working hours may be sufficient variation from hospital routine. In some cases the later phase of treatment is carried out in the so-called rehabilitation departments of the hospital—or, when the industry is large enough and where the directorate is sufficiently informed, in the rehabilitation department of that industry. In other cases rehabilitation is best given by returning the patient to alternative work under the supervision of the industrial medical officer.

Aim of Treatment

Treatment in a rehabilitation department may take the form of diversional exercises, occupational therapy, or vocational therapy, but the aim of treatment is the same—restoration of the ability to perform certain manoeuvres with the strength, speed, and dexterity with which they were performed before injury. The surgeon will be failing in his duty if he does not inquire as carefully into the nature and duration of these exercises as he would into the circumstances of treatment of the more acute stages of disease. In hospital one all too often sees mixed classes of workmen engaged upon routine exercises, some of which are calculated to retard the recovery of the individual rather than to promote it. The selection and development of types of exercise for particular jobs are as important as is the selection of exercises for particular injuries and diseases. The majority of work is an athletic pursuit, and the prescribing of routine exercises for rehabilitation for all work is as likely to be successful as would be uniform training for a boxer, a professional golfer, and a boat-race crew.

In industry rehabilitation may be carried out in the rehabilitation workshop. This is nearly always a production unit whose output is essential. The unit, however, is run under sheltered workshop conditions and under the direct supervision of the industrial medical officer. It contains machines that are adapted to meet the requirements of specific injuries, and various bench jobs which provide such special exercises as may be prescribed. Here are

machines incorporating in their design special devices for inducing specific joint or muscle action not necessary for normal production.

In general, extremely good results are obtained by the intelligent use of the rehabilitation workshop, but there are many pitfalls. One that is not uncommon is the over-exercising of joints by means of gadgets which necessitate a wider range of movement than is demanded by the patient's normal job. For example, a lever that can be fully operated only by producing eighty or more degrees of dorsiflexion and palmar flexion of the wrist may be ideal in redeveloping suppleness and muscle control in the typist or pianist but is calculated rather to retard recovery in the case of the heavy labourer whose normal wrist excursion may be reduced to some thirty or forty degrees. It must always be remembered that the greater the power demanded of the muscles crossing a joint the less is the range of movement in that joint.

Skilled work is all built up of conditioned reflex actions operating along well-beaten nervous paths. Injury and disease tend to interrupt those paths, and their redevelopment may be facilitated by the choice of suitable exercises calling forth the same co-ordination of eye and brain and limb. Conversely, an exercise that is calculated to cut across the chosen reflex path will delay the recovery of skilled action. The lower the reflex arc in the nervous system the less the fatigue from its accomplishment. It follows, therefore, that maximum benefit with the minimum fatigue will be obtained from exercises which are based upon fundamental reflexes or simple conditioned reflexes. Rhythm must never be neglected, and complicated exercises which call for independent use of each arm and each leg, and which ignore such elementary laws as that of negative successive induction, cause unnecessary mental and physical strain and obscure still further the paths of old-established conditioned reflexes.

Enough has already been written on the advantages of the exercise of selected work over treatment by massage and physiotherapy, but the pendulum must not be allowed to swing to the other extreme: both massage and physiotherapy are invaluable in treatment. But it is still a debatable point whether they belong essentially to the hospital department or whether they should be carried into industry. Undoubtedly selected cases are enabled to continue at work because of a few minutes of special treatment that may be available at their place of employment. An example of this is the wax bath, which helps to loosen up stiff fingers in very cold weather.

Unfortunately it sometimes happens that from the very start of treatment the surgeon knows that it will be impossible to return the patient to his former method of work. In such circumstances it may be possible for him to develop alternative function; and here again nothing but a profound knowledge of industry or industrial conditions will enable the surgeon to plan his treatment ahead.

I have already pointed out one of the risks of exercises which are calculated to produce an extreme range of joint movement, but in selected cases they have a definite place in treatment and in the development of alternative function. An example of this is the production of extra movement in the left wrist of the plasterer who as a result of an old injury has limited extension at the elbow. Extreme wrist movement might enable him to accomplish that smoothness of finish to a ceiling which is usually produced by rotation of the forearm and shoulder with the elbow fully extended.

Further Collaboration

It is now necessary to examine the possibilities of further collaboration. In the case of very large factories employing

thousands of men and women it may be possible to arrange for the surgeon to meet the industrial medical officers and executives regularly there in consultation and see for himself the conditions in which disease and accident arise and follow through the results of his treatment from rehabilitation shop onwards. The majority of industrial workers, however, are employed in small units, and obviously all cannot be visited weekly or even monthly; the surgeon may therefore have to be content with a general knowledge of work and working conditions, but he must always be prepared to make a special investigation when the health of his patient demands it.

As I have intimated earlier, the benefits of the liaison of industry and surgery are not limited to the physical health of the industrial casualties. Together they have much to contribute to the general happiness of mankind, together they may be called upon as the guardians of the public weal.

Of the "five fears" the fear of financial hardship was the first the legislature attempted to relieve. Attempts have now been made to banish the fear of litigation. Last year new workmen's compensation laws were introduced in which the responsibility for the payment of compensation devolved upon the State. When England first introduced workmen's compensation to the world it was a genuine attempt to secure for the injured workman a subsistence allowance during the period in which he remained incapacitated for earning. The payment of his weekly compensation bore a definite relation to his earning capacity and therefore operated as a true, although often insufficient, subsistence allowance. The new workmen's compensation laws ignore the principle of earning capacity and base payment upon the physical standard of the average man. Thus if a workman loses a foot it is calculated that his physical standard has been reduced by 30%, and after a limited number of weeks of benefit he becomes entitled to a pension of 30%. If his work be clerical he may still earn his full pre-accident wage and enjoy the additional pension for his physical injury. But what if he be a stevedore with no prospect of returning to his work? The memory that in former times he would have been entitled to 100% workmen's compensation until such time as his weekly pay-packet came within measurable distance of his old earnings can only plunge him into a more profound state of misery and fear.

I am not proposing to argue whether the principle of workmen's compensation is right or wrong or, indeed, whether it is an anachronism in these days of national insurance; but when the law was being altered it was the duty of the surgeon to point out that, far from allaying the patient's fear, this fear of financial hardship was likely to operate still more effectively in retarding the recovery of his patients. Who but the surgeon can assess that fear, and who but he has the knowledge and the authority to point out the absolute ineffectualness of basing workmen's compensation upon the average man? The "average man," conceived and born in Whitehall, is neither tinker, tailor, soldier, nor sailor; in fact, this average man has never done a day's work in his life, and yet he is set up as the 100% standard by which the casualties of industry are to be judged and pensioned.

The voice of the Royal College of Surgeons should have been raised in protest; it should have thundered at Westminster and reverberated throughout the land. Instead it remained silent. Was it silent through ignorance of industrial conditions, or could it have been that it did not recognize its responsibilities?

I have endeavoured to show that in the proper understanding and performance of his work the surgeon must maintain a close alliance with industry; that his patient's

welfare and happiness are as necessary to the successful conclusion of treatment as is the application of his operative technique; that all the treatment he has to offer is both empirical and incomplete unless he studies to understand the conditions of his patient's work and the physical strains which are involved; that the greatest benefit he has to bestow on his patient is that independence of spirit that can come only with the power to work on equal terms with his fellows; that he has a duty to place his expert knowledge at the disposal of industry for the better organization of its work and the disposal of its man-power; and, finally, that the hospital and the factory are but small parts of the world that mark the sphere of his influence.

I now repeat my question—Is there a place in the hierarchy of specialists for the consulting industrial surgeon? I leave you to supply the answer, remembering that in this age of social service industry is the threshold of social surgery.

5,000 CONSECUTIVE DELIVERIES WITHOUT A MATERNAL DEATH DUE TO PREGNANCY

BY

NORMAN EMBLIN, M.B., F.R.C.S.Ed., M.M.S.A.
M.R.C.O.G.

Consultant Obstetrician and Gynaecologist, Halifax General Hospital; Consultant Obstetrician, Halifax District Nursing Association; Visiting Obstetrician and Gynaecologist, Royal Halifax Infirmary

In the Halifax Municipal Obstetric Service there were between Sept. 12, 1946, and Oct. 5, 1948, 5,000 consecutive deliveries after the twenty-eighth week without a maternal death due to pregnancy. This number includes all women after the twenty-eighth week of pregnancy (a) who were admitted to the Halifax General Hospital from inside or outside the borough, whether to the general medical and surgical wards, the maternity department, or the special unit for the reception of septic cases, and (b) who were delivered in their own homes by the Halifax Domiciliary Service or independent midwives. It will be seen from this that the cases are drawn from the widest possible sources. No emergency has ever been refused admission. In this series there was one death from acute myeloblastic leukaemia and therefore not attributable to pregnancy.

Rufus Thomas (1940a) described the Croydon Obstetric Service and published the magnificent series of 3,144 consecutive deliveries conducted by this service between Jan. 3, 1938, and June 4, 1939, without a maternal death due to pregnancy. In this number there were two deaths—one from pneumococcal pneumonia and therefore not counted as a death due to pregnancy, and the other from post-partum haemorrhage on June 8, 1938 (Thomas, 1940b). This case was considered to be outside the scope of the paper, as the patient had been delivered at home by an independent midwife and admitted after delivery. It was and, so far as I know, remains the largest consecutive number of cases with the lowest maternal mortality ever reported in this country or any other. This was indeed safe obstetrics, and with Croydon as a model and Thomas's work as inspiration it has been my personal ambition and the object and policy of the Halifax General Hospital at least to equal this achievement. Although the Croydon figure has been exceeded in Halifax by 1,856 deliveries it must be remembered that Thomas did not have the help of the later and more effective sulphonamides, blood and

plasma banks, penicillin, or the advantage of the knowledge of the rhesus factor in safeguarding against transfusion accidents. On the other hand, this series began, like his, after a maternal death; but it is still unfinished, as the total number of deliveries before another death occurs has yet to be determined.

At the Royal Halifax Infirmary there is a small maternity unit which deals annually with between 500 and 600 deliveries, mainly booked cases. My association with this institution is a recent one, and as all the infirmary cases are not my sole responsibility they are excluded from the total of 5,000 deliveries described here.

Description of the Service

The Halifax General Hospital has 450 beds—115 for obstetric and 35 for gynaecological cases. The maternity beds are distributed as follows: 80 lying-in, 25 antenatal, and 10 for potentially infected or septic cases. The hospital is a Part I training school, and it must be one of the few maternity departments in the country that have never been seriously short of staff.

Almost all the emergencies from Halifax and a surrounding densely populated industrial area, with a total population of about a quarter of a million, come to the General Hospital. Apart from emergencies, only primigravidae, patients with abnormalities, cases of multiple pregnancy, and those whose home conditions are unsuitable for delivery are admitted. Cases which become septic in the hospital are nursed in the special isolation unit, to which are also admitted septic cases from the domiciliary service and the county area served. There has been no death from puerperal sepsis in any of the admissions to this block since July, 1939.

The Emergency Blood Transfusion Service, for the whole area is based on the General Hospital, where, in addition to the ordinary blood and plasma bank, a supply of group O chesus-negative blood is always kept. No patient treated by this service has been lost in seven years.

The medical staff of the two departments consists of a registrar, a senior and a junior resident obstetrical officer, and an obstetric house-surgeon. As the obstetrician and gynaecologist in charge, I live within a few minutes of the hospital.

It is one of my main functions to attend at the antenatal clinics at the hospital and at the district home in the town. At these clinics all abnormal cases, whether the departure from the normal is medical or obstetrical, are seen and followed by me throughout the remainder of the pregnancy and labour.

It is a strict rule of the department that I am informed of all emergency admissions, of abnormalities, and of any condition which might even faintly threaten the life of the mother or child. No assistant is allowed to perform any major manipulation without my being present.

The Domiciliary Service.—The Halifax District Nursing Association is a voluntary body responsible for the domiciliary midwifery in the borough. It acts in this as agent for the local authority. The domiciliary service is based on the hostel "Kirby Leas," which is a Part II training school. It is run clinically as an integral part of the hospital, and in this way there is continuity of supervision by me of the difficult and abnormal cases.

The midwives carry "pitocin" and ergometrine to give by injection, and in a case of dire emergency threatening life—e.g., ante-partum or post-partum haemorrhage—they have the right to summon the emergency blood transfusion unit on their own initiative. In other instances the usual practice of summoning the patient's doctor is followed.

There were 795 deliveries, and medical aid was sought 274 times.

Results

During the period under review there were 5,000 deliveries (Table I) and of these 2,498, almost half, were in women pregnant for the first time.

TABLE I.—Showing Total Number of Deliveries, Some Major Complications, and Methods of Delivery

	General Hospital	Domiciliary Service	Total
No. of deliveries	4,205	795	5,000
Primigravidae	2,377	121	2,498
Twins	58	11	69
Forceps	198	10	208
Manual removal of placenta ..	21	0	21
Caesarean section	98	0	98
Eclampsia	4	0	4
Stillbirths	104	13	117
Neonatal deaths	53	6	59

The forceps deliveries numbered 208—a rate of 4.7% in the hospital and 4.16% in the combined service. Caesarean section was performed 98 times—a rate of 2.33% in the hospital and 1.96% in the total number of deliveries. The placenta was removed manually on only 21 occasions, or once in every 238 deliveries.

There were four cases of eclampsia; only one of them a booked case, and that patient had a solitary fit after delivery. In the three unbooked cases there were nine, three, and four fits respectively. All four babies survived. The booked patient should not have had a fit, as there was ample warning, which was not heeded. I believe that eclampsia is always a preventable disease.

Live Births, Stillbirths, and Neonatal Deaths

There were 69 sets of twins in the 5,000 deliveries. The total number of births was therefore 5,069. There were 117 stillbirths, including all premature, macerated, and grossly abnormal foetuses, giving a stillbirth rate for the service of 23.07 per thousand. Of the 4,952 live births 59 babies died. The neonatal death rate is therefore 11.91.

TABLE II.—Showing Stillbirths and Neonatal Death Rates

	General Hospital	Domiciliary Service	Total	Croydon	National 1946
Total births	4,263	806	5,069	3,178	842,809
Live births	4,159	793	4,952	3,086	819,814
Stillbirths	104	13	117	92	22,915
Neonatal deaths	53	6	59	43	—
Stillbirth rate	24.63	14.88	23.07	28.9	27
Neonatal death rate ..	12.74	7.56	11.91	13.9	22

Table II shows the total live births and stillbirths together with the stillbirth and neonatal death rates. For comparison the figures for Croydon from Jan. 3, 1938, to June 4, 1939, and those for the whole country for 1946 are included. The latter are the "latest available provisional figures" for a complete year, and have been supplied by the Ministry of Health. The stillbirth rate for the Halifax Municipal

TABLE III.—Showing Some Causes of Stillbirth and Neonatal Death

	Stillbirths			Neonatal Deaths			Total Combined Service
	Gen. Hosp.	Dom. Serv.	Total	Gen. Hosp.	Dom. Serv.	Total	
Dystocia and intracranial haemorrhage	17	2	19	12	2	14	33
Gross foetal abnormality ..	19	2	21	11	0	11	32
Prematurity	5	0	5	16	1	17	22
Maternal toxæmia	14	1	15	3	0	3	18
Maceration	16	1	17	0	0	0	12
Prolonged labour	11	1	12	0	0	0	12
Ante-partum haemorrhage ..	12	0	12	0	0	0	11
Cause unknown	6	0	6	3	0	3	9
Rh incompatibility	0	0	0	5	1	6	6
Pneumonia	0	0	0	3	1	4	4
Atelectasis	0	0	0	3	1	4	—
Total	104	13	117	53	6	59	176

Service is thus 3.93 lower and the neonatal death rate 10.09 lower than the national rate.

In Table III are set out the principal causes of stillbirths and neonatal deaths, given in their numerical order. The largest number were due to trauma during labour, and these form 18.75% of the total. Gross foetal abnormality (mainly anencephaly, spina bifida, and hydrocephaly) is a very close second with 18.18% of the combined stillbirths and deaths under 1 month. Of the total stillbirths and neonatal deaths 27.84% are accounted for by gross foetal abnormality and maceration, and at the present time it would seem to be impossible to reduce the numbers from these two cases. The greatest field for improvement lies in reducing the number of stillbirths and neonatal deaths caused by trauma, prematurity, and pregnancy "toxaemia."

Treatment of Major Complications

A brief outline of the treatment of the major complications, the choice of sedatives and anaesthetics, and the management of the puerperium is given below.

Ante-partum Haemorrhage.—This condition is treated conservatively until there is a definite indication to intervene. In all cases, when first seen, blood is immediately taken for grouping and cross-matching. Vaginal and rectal examinations and the giving of enemata are strictly forbidden. When it becomes necessary to intervene—e.g., in the case of small recurrent haemorrhage—every patient, no matter how good her general condition, has an intravenous drip started. With blood ready to be given, the patient is examined vaginally under anaesthesia in the operating theatre. If her condition is grave from loss of blood this examination is omitted and caesarean section is performed. In eight years, with a total of 12,830 deliveries in the hospital alone, only one case of ante-partum haemorrhage has been lost, and that death occurred in 1944 from concealed haemorrhage, and therefore does not come into this series.

Placenta Praevia.—This is treated almost always by rupture of the membranes or by caesarean section. The lower-segment operation is the one invariably used. Application of Willett's forceps and plugging with the half-breech are used only on very rare occasions. Packing and the insertion of an intrauterine bag have never been practised.

Accidental Haemorrhage.—This is treated by morphine, "pitocin," plasma or blood transfusion, and rupture of the membranes. Only once in eight years has it been necessary to perform caesarean section and only once to carry out a caesarean hysterectomy for this condition.

Post-partum Haemorrhage.—An attempt is made to prevent third-stage haemorrhage by giving "pitocin," 1 ml. intramuscularly, in the following conditions the moment the child's shoulders are born: prolonged labour, uterine inertia, overdistension of the uterus, delivery under anaesthesia, the presence of fibroids in the uterus, and in any patient who has anaemia. Cases of placenta praevia and accidental haemorrhage receive ergometrine, 0.25 mg. intravenously, as soon as the anterior shoulder has been born. If the placenta is not ready for delivery in half an hour from the birth of the child, or if there is even slightly more than the average amount of bleeding, "pitocin" is given as described above. If the placenta fails to be delivered promptly after the "pitocin" manual removal is carried out. Should the bleeding be heavy and the uterus atonic, ergometrine, 0.25 mg., is given intravenously. So far the intravenous ergometrine has been successful in stopping the bleeding in every case except the one complicated by acute myeloblastic leukaemia. Resuscitative measures can then be undertaken, and the administration of ergometrine does not, in our experience, make a manual removal any more difficult should this be required. Bleeding after the delivery of the placenta is treated by intravenous ergometrine. Intrauterine bags are never used.

Pre-eclampsia and Eclampsia.—Emphasis is placed on abnormal gain in weight as an early sign of pre-eclampsia. On an average the weekly gain should not exceed 8 oz. (225 g.). The maximum normal systolic blood pressure is taken as 120 mm. Hg. and the diastolic as 80 mm. Hg. Oedema is always considered to be pathological, and when, in the absence of pus,

there is albumin even in the smallest amount in the catheter specimen the disease is far advanced. Pre-eclamptic patients are treated by absolute rest in bed in hospital, with a low-sodium and low-protein diet and sedatives. Of the sedatives chloral hydrate and potassium bromide and "nembutal" are the most commonly used. If there is vomiting, sodium phenobarbitone, 3 gr. (0.2 g.), is given intramuscularly. Liberal use is made of 20% glucose solution in water intravenously in severe cases or in those with gross oedema. Ammonium chloride is also given for the latter condition. If the maximum diuresis is to be secured by the concentrated glucose solution a whole litre must be run into the vein in from 30 to 50 minutes. No attempt is made to interrupt the pregnancy unless the mother's condition is deteriorating. By following this rule the incidence of prematurity in these patients has been greatly reduced. I do not believe that chronic nephritis or permanent vascular damage is ever caused by pre-eclampsia or eclampsia, nor is a latent hypertension made manifest or "unmasked" at an earlier age by the pre-eclamptic pregnancy.

I cannot too strongly condemn rupture of the membranes in a patient with a long closed cervix. Rupture of these to induce labour in this condition should be done in only those cases in which the cervix is taken up, is beginning to dilate, and is easily dilatable and soft—a condition which has aptly been described as "ripe." If the cervix is long and closed and the patient's condition is deteriorating rapidly in spite of treatment then caesarean section under local analgesia should be the method of delivery.

Eclampsia is treated by morphine sulphate $\frac{1}{4}$ gr. (32 mg.) and sodium phenobarbitone or "nembutal" intramuscularly. Apart from loosening the clothes, the patient is not undressed or examined in any way until she is heavily under the influence of sedatives. Glucose, 20% solution, is used in all cases. Magnesium sulphate, 50% solution, for intramuscular injection, is kept in reserve for the cases which do not respond: these are exceedingly rare. When there has been no fit for twenty-four hours the patient is examined vaginally, and if the cervix is "ripe" the membranes are ruptured. So far caesarean section has not had to be performed for eclampsia.

Infection.—Of the sulphonamides, sulphadiazine is the drug most often used. Penicillin is reserved for cases that do not respond or for cases that are severe at the onset. As a prophylactic against infection penicillin is given to all cases of manual removal of the placenta, failed forceps, and internal version, and to those in which the membranes have been ruptured for more than twenty-four hours or the labour has been unduly prolonged. If caesarean section is to be performed on an infected or potentially infected patient a million units of penicillin are left in the peritoneal cavity and the drug is given systemically for five days after operation. In urinary infections sulphanilamide is used on account of its free solubility.

Disproportion.—The borderline cases are given a trial labour and if this fails lower-segment caesarean section is performed. In all primigravidae in whom the head is not engaged near term antero-posterior, inlet, lateral, and outlet radiographs of the pelvis are taken. Frequent use is made of lateral x-ray film to follow the course of a trial labour, and these have been most helpful.

Cardiac Disease.—This is treated in mild cases by frequent periods of rest in hospital during the pregnancy. In the severe cases the patient may spend the greater part of the pregnancy in hospital. Caesarean section under local analgesia is reserved for the severest cases. All patients with valvular disease are given penicillin for a week after delivery in an effort to prevent infection, which even in a mild form so often leads to a marked breakdown in the cardiac reserve.

Sedatives and Anaesthetics.—Pethidine in doses of 100 mg. intramuscularly is the routine sedative used. It is often combined with hyoscine hydrobromide 1/150 gr. (0.43 mg.). Since the introduction of pethidine it is rare to have to use morphine. A "heavy" spinal analgesic is used to anaesthetize the perineum if forceps are required for a patient with respiratory or cardiac disease. Spinal analgesia is never used for other forceps deliveries or for caesarean section. In a healthy patient these operations are carried out under general anaesthesia. Local analgesia is employed for caesarean section when indicated by the general condition of the patient.

The Puerperium.—The patients are allowed out of bed on the seventh day and normal cases are discharged on the tenth day. Active movement and breathing exercises are encouraged from the very beginning. Each ward is visited daily by a physio-therapist, who conducts the exercises. During a period of eight years, with 12,830 deliveries, there have been only two deaths from pulmonary embolism.

Discussion

In addition to the series here presented there were from 1944 to 1946 in the General Hospital three separate series, of 1,050, 1,346, and 1,730 deliveries, without a maternal death, and it must be stressed that such results are the outcome of a co-operative effort on the part of the whole staff of both parts of the Municipal Service and of the general practitioners in the area.

Particularly must I lay emphasis on the loyalty and diligence of the resident and nursing staff, who have given service far beyond the power of gold to buy. The excellence of the general administrative arrangements and the ancillary services provided have contributed greatly. Other factors of importance are the large proportion of antenatal beds and the continuity of specialist supervision for abnormal cases.

Of the therapeutic agents, blood, plasma, penicillin, and the sulphonamides have played a great part. It is important to give blood in adequate amount; for example, one greatly exsanguinated woman received 10 pints (5.68 litres), and at one stage two veins were being used at the same time to give the blood under pressure of oxygen. Such treatment has been made possible by the wonderful facilities provided by the Leeds Regional Blood Transfusion Service. Glucose 20% solution, too, has played its part, and Dieckmann (1942) has stated that the proper use of hypertonic glucose solution in pregnancy is one of the outstanding accomplishments of modern obstetrics. In third-stage and post-partum haemorrhage, ergometrine, given intravenously, has proved life-saving and deserves to rank in importance in obstetrics with penicillin.

These potent remedies together with modern methods of anaesthesia are great advances, but the most important single factor is the skill and ready availability of the senior staff to deal personally with abnormalities. It can be shown that the maternal mortality rate in the cases delivered in the General Hospital is lower than the rate for the borough as a whole.

In the last ten years the borough deliveries numbered 14,833, with 43 maternal deaths—a rate of 2.89. In the same period the General Hospital, dealing with almost all the emergencies from inside and outside the borough, had 14,324 deliveries with 24 deaths, giving a rate of 1.67. And it is noteworthy that part of this decade was before the introduction of blood banks and penicillin, and that as late as 1946 (the last year for which complete figures are available) the national rate was 1.43.

In the Ministry of Health Report (1937) Halifax was shown to be the county borough with the blackest maternal mortality record in the country. It occupied an almost equally unenviable position in the R.C.O.G. Report (1944), in which for the years 1939 to 1942 it was placed seventh in a list of county boroughs with the highest rate in England and Wales. This, however, was largely due to the eleven maternal deaths in Halifax in 1940; only two of these occurred in the General Hospital and one on the Domiciliary Service.

It is true, then, to say that the high rate for the borough in a list of county boroughs with the highest rate in deaths in the General Hospital or on the Domiciliary Service, where in the same ten-year period there were 4,389 deliveries with the death of only one woman.

Summary and Conclusions

Along the lines suggested by the Royal College of Obstetricians and Gynaecologists (1944) we have attempted to bring about the integration of the hospital, antenatal, domiciliary, and specialist services in the Halifax Municipal Obstetric Organization.

Between Sept. 12, 1946, and Oct. 5, 1948, there were 5,000 deliveries after the twenty-eighth week without a maternal death due to pregnancy.

The stillbirth rate in the series was 23.07 and the neonatal death rate 11.91.

A brief summary of the treatment of some major complications has been given.

The Halifax General Hospital has a large proportion of cases from the county area, and therefore the number of its deliveries in the last decade almost equals the total ascribed to the borough.

In this ten-year period the maternal mortality rate in the General Hospital was 1.67; in the Halifax Borough it was 2.89.

The belief is expressed that the most important single factor in reducing maternal mortality is the provision of skilled staff to deal with abnormalities.

This series began after a maternal death from pulmonary embolism and continues without a maternal death attributable to pregnancy at the time of writing (Oct. 6, 1948).

I am grateful to the M.O.H. for Halifax, Dr. G. C. F. Roe, for permission to publish these results and for the statistics relating to the Borough. My thanks are due to Mr. H. I. Deitch, medical superintendent and surgeon to the General Hospital, for his great help in many difficult cases and for encouraging the development of the maternity department of the hospital.

REFERENCES

- Dieckmann, W. J. (1942). *The Toxaemias of Pregnancy*, p. 397. London.
Ministry of Health (1937). Report of an Investigation into Maternal Mortality. H.M.S.O., London.
R.C.O.G. (1944). Report on a National Maternity Service. London.
Thomas, R. C. (1940a). *British Medical Journal*, 1, 562.
— (1940b). *Ibid.*, 1, 745.

A STATISTICAL AND CLINICAL REVIEW OF 107 CASES OF ECTOPIC GESTATION

BY

J. S. MACVINE, M.B., B.S., F.R.C.S.Ed., M.R.C.O.G.

AND

D. H. LEES, M.B., Ch.B., F.R.C.S.Ed., M.R.C.O.G.

(From the Central Middlesex Hospital, London)

Ectopic pregnancy is a condition encountered by all clinicians engaged in general medical and surgical practice. The management usually falls to the gynaecologist, but the problem of the differential diagnosis concerns all, and in many cases the operative treatment has to be done by the general surgeon.

Keeping that in mind, we have undertaken a survey of all cases of ectopic pregnancy occurring in a busy municipal hospital over a ten-year period. The findings are instructive in showing that the question of aetiology has not finally been settled. It is, however, in the sphere of diagnosis that we believe the value of such a survey lies. The various symptoms and physical signs are evaluated in the light of the case records and an attempt is made to ascribe to each its true place and importance. The treatment and general results are also considered.

Despite the enormous literature on ectopic gestation, few recent surveys of this type have been made, and nearly

all of these were in America. Several will be referred to subsequently.

Present Series

The cases in this series numbered 107. The average age of the patients was 29.9 years. This is in accordance with previously noted figures. The ages varied between 20 and 42. On an average the patients had had 1.25 pregnancies, and 34% of all the pregnancies ended in abortion—a rather high figure.

The time interval between marriage and ectopic pregnancy, or between the ectopic and the last intrauterine pregnancy, averaged 5.8 years. This finding agrees with the figures of Woodhouse (1940), Ware and Winn (1941), Marchetti *et al.* (1946), and MacFarlane and Sparling (1946). It supports the view that sterile or relatively sterile women are more prone to ectopic gestation. Whether this is a result of pelvic inflammation is another matter, and will be dealt with more fully later.

Right- and left-sided tubal pregnancy occurred in 55 and 50 cases respectively. There is thus no real preponderance of the right side as has been suggested by Mayo and Strassmann (1938) and by Nucci (1946). The theory is attractive, as the right side is that more likely to be involved following lesions of the appendix. Ovarian pregnancy occurred in 2 (1.87%) of the 107 cases. The usually quoted figure is 1%. There were six cases of recurrent ectopic gestation—an incidence of 5.6%. Nucci's figure is 6.6%.

At operation it is extremely difficult to say where the ovum originally embedded. This is particularly so if there is an old rupture with haematocele formation or if a tubal abortion is in progress. In this series fully 50% were definitely ampullary, about 10% were fimbrial, and a further 20% might have been either of these. Isthmic forms made up 10% of the total, and at least two of the most severe type were interstitial.

Causation of Extrauterine Pregnancy

We have considered the causation under six headings, really working on a basis of Novak's (1947) classification, and we attempted to evaluate this as a criterion.

1. *Pelvic Inflammation.*—A history of anything possibly classifiable as genital infection was obtained in only seven cases. In 18 cases there was a history of one or more previous abortions, most of which took place some years before the ectopic pregnancy, and in no case was an abortion followed by prolonged subsequent uterine. No patient gave a history of puerperal sepsis, but it is realized that some degree of puerperal or post-abortive morbidity may have been overlooked or forgotten. In several cases there was a normal delivery in the interval from the last abortion.

The operative findings were carefully recorded and gave the following information. In a total of eight cases there were some peritubal adhesions, but a certain proportion of these dated from the first blood leakage and were associated with the haematocele present. Hydrosalpinx was found in one case, and bilateral tubal occlusion following an old ileo-caecal tuberculous process in another. A chronically inflamed appendix was encountered at one operation for right tubal pregnancy.

These figures would suggest that pelvic inflammatory disease, particularly gonorrhoea, but also post-abortive and puerperal sepsis, has been much overrated as a cause or predisposing factor in ectopic pregnancy.

Many of the authorities are absolutely convinced of its importance, and Dougal (1937) estimates pelvic infection as a cause in 50% of cases. Novak (1947) supports this view, and Woodhouse (1940) puts the figure as high as 65.8%. These latter figures require a definite history, or showing evidence of pelvic inflammation at operation. MacFarlane and Sparling (1946) say that this is of unquestionable importance in the causation of ectopic pregnancy. They had a total of 17.2%

proved cases of pelvic infection. Marchetti *et al.* (1946) do not agree about the role of infection, and say that in most instances the aetiology is not clear. Dodds (1940) considered that in his series the possible predisposing causes were unconvincing.

2. *Previous Pelvic Operations.*—It does seem that previous operations on the pelvis may have a bearing, and it would be reasonable to expect conditions complicated by infection or peritonitis to be most prolific of ectopic gestation. In this series six patients had had appendicectomy, the appendix being ruptured, with local peritonitis, in one case. Six patients had had ectopic pregnancies, two had had ovariectomies, and two had had pelvic operations for tuberculous glands. Thus 16 of the 107 cases had previously had an operation. Farrell and Scheffey (1943) found that 26% of their cases had had previous abdominal operations. Dodds's (1940) figures for previous pelvic operations would work out at 20%.

3. *Congenital Abnormalities.*—The importance of congenital abnormalities or defects must be very difficult to estimate, and would be small.

4. *External Factors Altering the Lumen of the Tube.*—Alteration in calibre of the Fallopian tube and distortion due to external factors would seem to be a more likely cause. In this series we found the following:

Cystic or enlarged ovaries noted (not corpus luteum)	16 cases
Fimbrial or parovarian cysts	3 "
Uterine fibroids in a position to obstruct the affected tube	1 case
Tubal fibroid on uterine side of ectopic sac	1 "
Endometrioma of broad ligament	1 "

The enlarged or cystic ovaries were usually studded with a series of follicular cysts. These were seldom larger than $\frac{1}{2}$ in. (1.9 cm.) in diameter, but occasionally needed surgical attention. Many cases were not carefully examined, so that the incidence of these cysts is not fully recorded. The latter were the severe intraperitoneal rupture cases. Certain cases show this relationship very clearly. We have seen a tubal abortion in which the ectopic sac extended medially to a kink in the Fallopian tube caused by the pressure of a simple ovarian cyst the size of a pullet's egg.

5. *External Transmigration of the Ovum.*—One case afforded evidence of this. The ovary had previously been removed on the affected side and the tube on the opposite side.

6. *Tubal Spasm.*—This is held to be a very important factor, but we have not been able to collect any helpful information. In only two cases had a tubal insufflation been done—in both some time previously. A history of attempted abortion was given in three or four cases, but quite what the true incidence of this would be we do not know. From the very high rate of induced abortion in this particular district it would seem reasonable to regard it as a possible factor.

Diagnosis in Relation to Symptomatology

The proportion of cases in which particular symptoms appeared are as follows:

Abdominal pain	98%
Vomiting associated with the pain	41%
Faintness	42%
Anomalous uterine "bleeding"	76%
Amenorrhoea (including late or overdue period in a woman normally of regular cycle)	71%
Shoulder pain (including pain in the upper arm and in the upper chest or pectoral region)	37%
Bladder symptoms	26%
Rectal symptoms	16%

It will be seen that pain is by far the most reliable and constant symptom. It may be of any type, depending on the pathology. Pain sufficient to cause vomiting is a common description, and there is no doubt that it is a help in diagnosis. Nausea is not included in this estimate. The incidence of shoulder pain is higher than has previously been reported, and is a valuable diagnostic guide. The importance of bladder symptoms in diagnosis has never been fully recognized. These usually take the form of dysuria and frequency due to bladder irritation. In many of these cases urinary investigations were done and failed to reveal

any evidence of infection. Rectal irritation was evidenced as pain on defaecation, sacral pain, or diarrhoea.

There is general agreement on the importance of abdominal pain, amenorrhoea, and anomalous bleeding as the important triad. MacFarlane and Sparling (1946) found nausea and vomiting due to pain in 30% of their cases, while 35.4% complained of faintness due to pain; in 11.8% there were bladder symptoms. Marchetti *et al.* (1946) did not find nausea and vomiting with any regularity, although they noted faintness due to pain in 29.1% of cases and shoulder pain in 8.5%. Dodds (1940) reports that seven of his 19 acute cases had shoulder pain.

Diagnosis in Relation to Pathological Types

Cases of ectopic pregnancy may come under one's care at any stage of the pathological process, and the findings differ so much that some attempt at classification must be made. We have taken as a basis that of Dougal (1937). Briefly, the four types are: (a) where the ovum is still in the tube and there is little or no haemorrhage into the abdomen; (b) tubal rupture or abortion with diffuse intraperitoneal haemorrhage; (c) tubal rupture or abortion with encysted haemorrhage; and (d) advanced ectopic pregnancy. We have taken (a), (b), and (c) and termed them Types 1, 2, and 3, respectively. Our Type 1 group includes cases with a somewhat more generous blood leakage, while under Type 3 are included the subacute cases with haematocoele formation, even if not actually encysted.

Diagnosis in Relation to Physical Signs

The physical findings are considered in relation to the pathological type of ectopic gestation. Taking them in order, the incidence was as follows:

Type 1 (29 Cases)

Tenderness in iliac fossa or suprapubically ..	89%
Softening of the cervix ..	89%
Tender swelling felt per vaginam ..	82%
Uterine enlargement ..	62%
Pain on moving the cervix ..	58%
Breast activity ..	53%
Pulsation felt in fornices ..	2%

Type 2 (48 Cases)

Tender on abdominal examination ..	103%
Pain on vaginal examination (done in 39 cases only) ..	97%
Fullness felt on vaginal examination (ditto) ..	87%
Evidence of internal haemorrhage ..	85%
Distended abdomen ..	77%
Patient prostrate ..	56%
Abdominal resistance or guarding ..	50%
Free fluid in abdomen ..	41%
Tube palpable ..	Nil

Type 3 (28 Cases)

Mass felt on vaginal examination (with or without general anaesthesia) ..	100%
Tender on vaginal examination ..	96%
Abdomen tender on examination ..	89%
Softening of the cervix ..	88%
Pain on moving the cervix ..	84%
Uterus enlarged ..	65%
Uterus felt separate from the swelling ..	61%
Breast activity ..	54%
Patient pale in appearance ..	54%
Abdomen distended ..	50%
Patient apparently ill ..	46%
Abdominal guarding or resistance ..	32%
General feeling of tumour on abdominal examination ..	32%

Thus it is seen that all types, and particularly Type 2, have abdominal tenderness.

Pain on vaginal examination is the other common finding. This is usually elicited in the posterior or lateral fornix. A tender swelling is the usual accompaniment in Type 1, a generalized fullness is all that can be made out in Type 2, while a vague mass in the cul-de-sac is the common finding in Type 3.

Softening of the cervix is a very important diagnostic point and occurs in nearly 90% of Type 1 and Type 3

cases; it is of less diagnostic importance in Type 2, and is often overlooked in the obvious cases of that group. Pain on moving the cervix with the finger would appear to be a less reliable finding than tenderness in the fornices.

The presence of breast activity was a great diagnostic help in the less acute cases. Where there had been frank rupture and diagnosis was obvious it was surprising how often the breasts were not examined or at least no record of their condition was made.

Enlargement of the uterus was noted in 60-65% of Type 1 and Type 3 cases; it cannot be demonstrated in Type 2 cases.

In Type 2 there is very often evidence of internal haemorrhage, the abdomen is rather distended, and free fluid may be demonstrated. There is some degree of resistance or guarding in about half of the cases.

In Type 3 the patient often looks pale or ill. The average pulse rate was worked out for this group, and was 104 per minute. The temperature averaged between 99 and 100° F. (37.2 and 37.8° C.), with evening readings as high as 101° F. (38.3° C.). There may be some distension of the abdomen, but a tumour is rarely felt, and rigidity is also rare. In fully half of the cases the uterus was felt separate from the pelvic mass on vaginal examination.

The other signs, the blood investigations, pregnancy diagnosis tests, and curettage are usually too slow and unwieldy to be of value. We must admit, however, that the pathologist's report led to our exploring one of the cases.

Reference to the literature shows no great disagreement on these matters. Some authors stress the importance of one sign and some favour another. It must be remembered that diagnostic criteria are comparable only when a similar stage of the pathological process is encountered. There is a tendency both here and in America to discount the value of colpotomy, curettage, and haematological investigations in diagnosis.

Treatment

Blood Transfusion.—It has been our custom to give blood at once to the Type 2 cases admitted in a state of collapse. The theatre is meantime prepared and the patient is taken there with the blood-drip transfusion running. This is continued during the operation, and afterwards for as long as is necessary. We do not agree with those who say that blood should not be given before the operation is begun. Neither do we agree that operation should be postponed (in Type 2) till the general condition is greatly improved. The number of cases requiring blood transfusion was 41, and the average amount of blood given to each transfused patient was 1,080 ml. A reaction in the form of raised temperature and slight jaundice was observed in one case, but was quickly overcome. In nearly every case group O stored blood was given.

Williams and Corbit (1944), investigating 101 deaths from ectopic pregnancy, found that only 37 of the patients had received blood transfusion. Only four had more than one transfusion, although the time interval could have allowed of others. MacFarlane and Sparling (1946) transfused 57% of their cases, while Marchetti *et al.* (1946) transfused 42.16% of theirs.

Operative Treatment.—It was Lawson Tait (1888) who thoroughly established the treatment of ectopic pregnancy. The treatment is surgical and the earlier it is done the better. We think that if the patient is exsanguine and shocked it is reasonable to start blood replacement at once, with the other resuscitation measures. So far as the actual operation is concerned, it is advisable to do the least possible when the patient is in a serious condition. The affected tube is removed and haemostasis secured. In this series the following operations were done:

Salpingectomy	..	..	77
Salpingo-oophorectomy (one bilateral)	..	..	24
Oophorectomy	..	..	2
Removal of sac of pregnancy only	..	..	1
Partial salpingectomy	..	..	2
Laparotomy only	..	..	1
Cysts necessitating ovariectomy or cystectomy	..	..	7

Thus it will be seen that salpingectomy is usually sufficient, and in common with others we advocate total salpingectomy. The risk of recurrence in the same tube is otherwise said to be high. It is mainly in Type 3 cases that salpingo-oophorectomy is necessary, and is due to involvement of the ovary in the haematocoele to such an extent that it cannot be dissected clear. Ovariectomy is necessary in cases of ovarian pregnancy. The comparatively large number of cases with some cystic involvement of the ovaries will be noted, and was mentioned previously.

The above procedure is fairly standard. Mayo and Strassmann (1938) stress the importance of conservative measures. Dodds (1940) preserves the ovaries wherever possible, while Dougal's (1927) figures show that he was less conservative in treatment. There has apparently been a tendency in America to do operations for other abnormalities discovered at the time of dealing with the ectopic pregnancy. Williams and Corbit's (1944) investigations of mortality figures have led them to condemn the doing of multiple non-essential operations.

There was one death in this series, giving a mortality rate of 0.93%.

The number of days in hospital before operation was taken as a method of assessing the accuracy of diagnosis. All the days the patient spent in hospital before the operation are counted. The average time was 2.8 days. Marchetti *et al.* (1946) record that 27% of their cases were operated on within 24 hours of admission, while 70.2% had operation within 48 hours.

Summary

A series of 107 consecutive ectopic pregnancies occurring over a ten-year period is reviewed. The findings are compared with those of recent reviews.

In respect of aetiology we find little support for the time-honoured view that previous pelvic inflammation is all-important. We believe that previous operations on the pelvis are a predisposing factor, and we are strongly of the view that extratubal factors causing alterations in calibre of the lumen are an important cause.

Diagnosis is considered in relation to symptomatology, pathological types, and physical findings. Our figures show that carefully taken histories reveal a very much higher incidence of helpful diagnostic symptoms than has previously been reported. For example, we find a high percentage of those patients complaining of vomiting and faintness due to pain, of shoulder pain, and of irritative bladder symptoms.

The treatment of these cases has been orthodox in every way. We attach particular importance to the free use of blood pre-operatively, without delaying the operation once the diagnosis has been made.

REFERENCES

- Dodds, R. I. (1940). *Proc. R. Soc. Med.*, **33**, 783.
 Dougal, D. (1927). *British Medical Journal*, **2**, 1074.
 — (1937). *British Encyclopaedia of Medical Practice*, **5**, 258.
 Butterworth, London.
 Ford, D. M., and Scheffey, L. C. (1943). *Amer. J. Obstet. Gynec.*, **46**, 6-6.
 MacFarlane, K. T., and Sparling, D. W. (1946). *Ibid.*, **51**, 343.
 Marchetti, A. A., Kuder, K., and Kuder A. (1946). *Ibid.*, **52**, 544.
 May, C. W., and Strassmann, E. O. (1938). *Surg. Gynec. Obstet.*, **67**, 3.
 New, C. F. (1947). *Gynaecological and Obstetrical Pathology*, 2nd ed., p. 437. Saunders, Philadelphia.
 Noller, P. C. (1936). *Penn. med. J.*, **49**, 953.
 Taylor, R. (1935). *Lectures on Ectopic Pregnancy and Pelvic Hemorrhage*. Birmingham.
 Williams, H. H., and Winn, W. C. (1941). *Amer. J. Obstet. Gynec.*, **42**, 33.
 Williams, R. I., and Corbit, J. D. (1944). *Ibid.*, **48**, 841.
 Williams, R. I., and Corbit, J. D. (1944). *Amer. J. Surg.*, **49**, 3.

ENDOGENOUS GAS GANGRENE COMPLICATING CARCINOMA OF COLON

REPORT OF A CASE

BY

A. L. WYMAN, M.D., M.R.C.P.

Late Assistant Medical Officer, Lambeth Hospital

Clostridium welchii is commonly present in the human intestine. Its pathogenic qualities are well known, yet it is rare for gas gangrene to complicate diseases or surgery of the alimentary canal unless introduced from outside. Rare though it is, this complication has long been recognized. Welch (1900) gave three examples of primary emphysematous gangrene of the abdominal wall which he believed started from the intestine. Greeley (1918) described two cases of "idiopathic *Bacillus aerogenes capsulatus* infection." In one of his patients the blood culture was positive three months before death. In the case described below, the organism was grown from the blood 17 days before death.

Several writers have reported endogenous gas gangrene arising after operation, especially after appendicectomy (Eckhoff, 1930; Gamble, 1935; Johnson, 1936; Smith and Zimring, 1939; Breslin, 1940). Jennings (1931) found that 90% of cultures made from the contents of the lumen of appendices removed at operation grew *Cl. welchii*.

Gas gangrene may arise even when no operation has taken place. Gordon (1936) treated conservatively an appendix abscess which ruptured and formed a pelvic abscess. Gas gangrene of the right thigh developed, and at necropsy it was seen that the peritoneum and fascia overlying the iliopsoas muscle had been eroded and that the gas gangrene had spread down this muscle to the lower limb.

It may also arise after typhoid ulceration and tuberculous ulceration of the small intestine (Knapper, 1929; Galiani and Balaguer, 1946). Dawson and Hardy (1948) reported emphysematous cellulitis of the left thigh resulting from diverticulitis.

Case Report

The patient, a man aged 65, had all his teeth extracted in September, 1947. A few days afterwards he felt some pain in the lower abdomen on the left side. He had to strain to defaecate, and when he was successful the pain disappeared. Later he felt as though his bowels were not completely emptied after defaecation, and the pain was not completely relieved. The motions were soft, without blood or slime. His appetite was poor and he had lost weight. There was no nausea or vomiting, and urination was normal. He was admitted to hospital on Nov. 14, having been febrile for four days. He had had an operation for bilateral inguinal hernia in 1915.

On examination he was flushed and looked ill. The temperature was 102° F. (38.9° C.), pulse 80, and respiration 20. The gums were healthy, the throat clean, and the tongue furred. Some petechiae were seen on the floor of the mouth. The abdomen was tumid and there was a tender indurated area with slight erythema above the left Poupert's ligament. The hernia scars were healthy. Neither spleen nor liver was felt. Intestinal movements were audible. Rectal examination revealed nothing abnormal. There was a slight degree of kyphoscoliosis of the spine but no local tenderness. The patient kept his hips flexed, and there was some pain in the left hip on external rotation. A blood culture was taken before any treatment was given.

The next day the reddening of the skin was more apparent in a line 6-8 in. (15-20 cm.) long, about 1 in. (2.5 cm.) above and parallel to the left inguinal ligament. He was very tender near the left anterior-superior iliac spine. Penicillin and sulphamezathine were given.

In the course of the next few days the inflammation spread down the thigh, chiefly on its anterior and medial aspects, as far as the knee. The skin was red and brawny, with a small necrotic patch in the mid-thigh. A fine crepitation in the region of the anterior-superior spine was palpable. On Nov. 19 Mr. W. K. Targett incised the thigh. "With a large aspirating needle, foul-smelling greyish-brown pus was obtained fairly superficially in the thigh (inner side). An incision in the same area opened a superficial 'space' containing gas and more pus. This was lined with greyish necrotic material. A drain was inserted. A second incision lower down was made. More gas and pus were found. The whole process was more like a generalized infiltration than true abscess." Anti-gas-gangrene serum was given.

After the operation the patient's general condition improved a little, but locally there was an extension of the inflammation below the knee, with effusion in that joint and oedema of the leg. A black bulla was present in the thigh. Soon a necrotic area joined the two incisions. Subcutaneous crepitus could be felt in the upper and outer part of the thigh (Fig. 1).

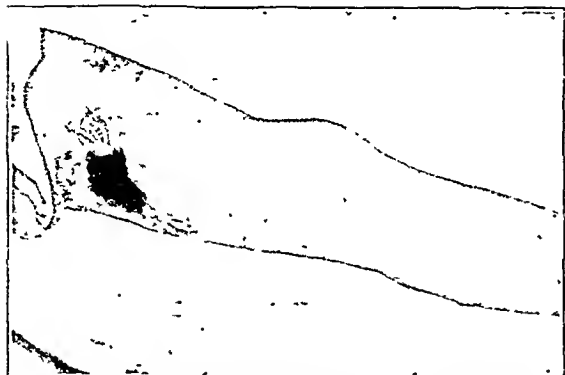


FIG. 1.—Wound in left thigh and extent of inflammation one week after operation

On Nov. 27 a fresh spontaneous sinus appeared near the knee posteriorly. The following day a morbilliform rash attributed to the sulphamezathine appeared on the right thigh and then spread generally. By Dec. 1 he looked worse; he became drowsy and dyspnoeic, and died the next day.

Investigations.—Nov. 15:—blood culture: growth of *Cl. welchii*; blood count: Hb, 90%; red cells, 5,140,000, white cells, 17,000 (polymorphs 81%). Nov. 17:—radiography: chest normal; spine and pelvis, no destructive bone changes seen, jaws edentulous. Nov. 19:—swab from wound: direct film—many Gram-positive and Gram-negative bacilli and cocci; aerobic culture gave a growth of non-haemolytic streptococci, coliform bacilli, and Gram-positive sporing bacilli. Anaerobic culture: no anaerobes isolated. Nov. 25:—radiography of left thigh: considerable gas present in the soft tissues, consistent with gas gangrene (Fig. 2).

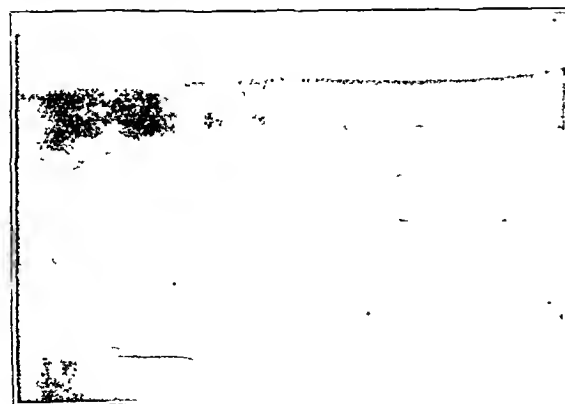


FIG. 2.—Radiograph of thigh showing gas in soft tissues

Post-mortem Examination.—A fungating carcinoma of the descending colon, 2 by 3 cm., was found just below the anterior-superior spine of the ilium. The carcinoma extended three-quarters of the way round the bowel and constricted the lumen but did not occlude it. There was a small stercoral ulcer 1 cm. proximal to the growth. The carcinoma was adherent to the psoas sheath and there was a track from the bowel into the psoas sheath, the contents of which were gangrenous. The superficial tissues over Poupart's ligament were also necrotic. Sections showed an anaplastic spheroidal-cell carcinoma of the colon with a marked trabecular formation. It had eroded through all layers of the gut wall. The muscle showed fragmentation with much oedema and hyaline degeneration. There were numerous clumps of *Cl. welchii* in the spleen. All swabs taken grew *Cl. welchii*.

Summary

An account is given of a patient with carcinoma of the colon presenting as a gas gangrene of the left thigh. The infection had spread from the intestine to the psoas muscle by means of a track connecting the carcinoma to the psoas sheath.

Similar examples of gas gangrene resulting from diseases of the bowel are quoted from the literature.

I am greatly indebted to Mr. W. K. Targett for the surgical treatment of the patient, and to Dr J. Hewlett and Dr G. Vincent for the pathological investigations

REFERENCES

- Breslin, F. J. (1940) *Amer. J. Surg.* 49, 501.
Dawson, R. L. G., and Hardy, R. H. (1948) *British Medical Journal*, 1, 498.
Eckhoff, N. L. (1930) *Brit. J. Surg.*, 18, 38.
Galiana, S. C., and Balaguer, J. P. (1946). *Rev. clin. esp.*, 23, 405.
Gamble, H. A. (1935). *Amer. J. Surg.*, 28, 389.
Gordon, S. (1936). *Brit. J. Surg.*, 24, 399.
Greeley, H. (1918). *Bull. Johns Hopk. Hosp.*, 29, 231.
Jennings, J. E. (1931). *Ann. Surg.*, 93, 828.
Johnson, W. W. (1936) *Amer. J. Surg.*, 33, 141.
Knapper, C. (1929). *Ned. Tijdschr. Geneesk.*, 2, 4792.
Smith, P. E., and Zimring, J. G. (1939). *Amer. J. Surg.*, 45, 351.
Welch, W. H. (1900). *Bull. Johns Hopk. Hosp.*, 11, 185. Reprinted in *Medical Classics*, 1941.

ENTERITIS NECROTICANS DUE TO CLOSTRIDIUM WELCHII TYPE F

BY

J. ZEISSLER, M.D.

AND

L. RASSFELD-STERNBERG

(From the Bacteriological Institute, General Hospital, Hamburg-Altona)

In Hamburg on Oct. 8, 1946, Beckermann and Laas gave an account of a number of cases of a severe illness, often fatal, due to a necrotic inflammation of several areas of the intestine, especially in the jejunum. The onset was acute, with very severe pain and slight rigidity, mostly in the left lower abdomen, without obvious guarding. Vomiting and profuse diarrhoea resulted in general dehydration; within a few days extreme circulatory collapse occurred, with general cyanosis. Increased blood urea, low blood chloride, indicanæmia, and indicanuria were often demonstrable. The temperature was slightly raised (up to 38° C.), the blood picture showed a moderate leucocytosis with a marked shift to the left, and the blood sedimentation rate was increased. Surgical and post-mortem examination showed a diffuse sloughing enteritis of the jejunum, ileum, and colon, beginning in the terminal part of the duodenum or the first loop of the jejunum. The most severe lesions were tube-like areas of necrosed mucosa a foot or more in

length. The folds of the mucosa were rigid and thick: large necroses in the upper part of the jejunum were associated with great swelling of the whole inner wall of the intestine. Microscopically the necroses were simple, often extending through the submucosa to the muscle layer, and retained much of the original architecture of the intestine. No significant organisms were recovered from blood, stools, or urine, and no rational therapy could be suggested.

Jeckeln (1947, 1948), in Lübeck, described a similar apparently new disease, called "darmbrand," and suggested that it might be due to a toxin. At the same meeting Ruppert stated that the prognosis was uncertain and the mortality probably 40%. Siegmund (1948) states that the surface of the necrosed mucosa contains many bacteria, especially Gram-positive bacilli.

Heine (1947) refers to very acute cases, one patient dying within twelve hours of the appearance of symptoms. In these he found only redness and swelling of the mucosa, but no necrosis, and is somewhat doubtful that they are cases of enteritis necroticans. As, however, his cases showed oedema of the intestinal wall without leucocytic infiltration it is possible that they were due to bacterial toxins and might be regarded as hyperacute cases of the disease.

Schütz (1948) claimed that the organism responsible for darmbrand was an obligate anaerobe "very closely related to *B. welchii* type A, if not identical with it." Guinea-pigs injected subcutaneously or intramuscularly with cultures of his organisms in Tarozzi broth developed typical gas gangrene. Injection of liquid cultures into the duodenum of guinea-pigs led, especially if alkali was injected at the same time, to oedema of the duodenal wall, necrosis of the mucosa, and even perforations of the lower ileum and caecum. Schütz made no attempt to determine the type of *Cl. welchii* to which his organism belonged. This typing is, however, extremely important, as *Cl. welchii* type A is normally present in the ileum and colon, and may ascend into the upper part of the intestine if other pathological changes occur there. Moreover, the toxins produced by the different types of *Cl. welchii* require entirely different antitoxins to neutralize them, so that any rational therapy must to this extent depend on exact identification.

Lezius (1948), apparently impressed by Schütz's findings, treated his cases with a sulphonamid ("marbadal," a derivative of "marfanil") effective against *Cl. welchii* type A and also with a polyvalent gas-gangrene serum containing *Cl. welchii* α -antitoxin but no β -antitoxin.

Between September, 1946, and January, 1948, we received material from cases of enteritis necroticans from our colleagues (Aschenbrenner, Baniecki, Kuster, Laas, Loeweneck, and Rabl) for bacteriological examination: three loops of intestine removed by operation, specimens of intestine from eight post-mortem cases, and stool from a living patient in whom the diagnosis was well established clinically and by x-ray examination. From all these materials an organism closely resembling *Cl. welchii* was isolated.

Morphology

Its rods are rather thicker and usually longer than those of *Cl. welchii* type A, often growing into long filaments and forming clostridia and chains of spindles like *Cl. butyricum* and *Cl. gigas* (*Cl. oedematiens* type B) (Figs. 1-3). In surface colonies swollen forms and clostridia are to be found mainly in rough colonies, whereas the smooth colonies consist almost entirely of smooth single rods, somewhat thicker than those of *Cl. welchii* type A. The rough colonies may closely resemble those of *Cl. oedematiens*; this, however,

causes no difficulty in identification, because *Cl. oedematiens* is peritrichous, whereas the organism isolated from cases of enteritis necroticans has no flagella. These morphological differences are, however, not consistent enough for use as discriminants, but the abundant development of rough colonies in surface culture and their marked difference

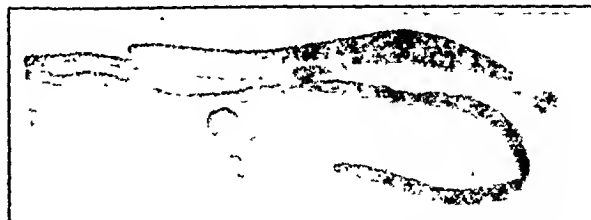


FIG. 1.—*Cl. welchii* type F, elongated forms ($\times 1,500$)



FIG. 2.—*Cl. welchii* type F, clostridial forms ($\times 1,500$)

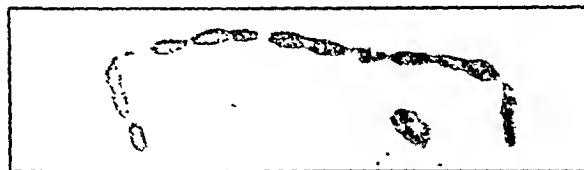


FIG. 3.—*Cl. welchii* type F, chains of spindles ($\times 1,500$).

from the normal smooth colony of *Cl. welchii* type A at useful indications of the presence of the new organism (Figs. 4-7).

A decisive difference between the organism isolated from cases of enteritis necroticans and *Cl. welchii* type A is the high thermal resistance of its spores. Though in nature *Cl. welchii* type A forms rather resistant spores (survive 100° C. up to 90 minutes), spores produced in the usual liver broth or brain pulp seldom resist boiling for more than ten minutes. In comparison all strains of the new organism grown on similar media produced spores resistant to boiling for from one to four hours. This high resistance of spores produced in culture is not only an important criterion for the identification of the new bacillus but lends readily to its detection and isolation.

For the opportunity of comparing the new bacillus with the other types of *Cl. welchii* we are indebted to Lieutenant-Colonel F. Buckland, Lieutenant-Colonel R. J. Townshend, Dr. G. M. Findlay, and Dr. S. T. Cowan (List Institute) and to Dr. C. L. Oakley (Wellcome Physiological Research Laboratories), who arranged for a supply of strains of all the types. Examinations showed that none of the types so far described—B, C, D, E (Bosworth, 194) produced spores capable of withstanding boiling for more than fifteen minutes.

It is therefore possible to differentiate the new bacillus isolated from cases of enteritis necroticans morphologically and culturally from all types of *Cl. welchii* so far described and we therefore propose for it the name *Cl. welchii* type F.

All cultures used in this investigation were separated from other organisms by repeated boiling of sporing cultures and were derived from single cells obtained by micro-manipulation

Toxicology and Pathogenicity

Toxicology—As no suitable sera were available in Germany for the discrimination of the types of *Cl welchii* eight strains of the new organism were sent to Dr. C. L. Oakley

the lamb-dysentery bacillus, which like *Cl welchii* type F produces β -toxin. It seems probable, therefore, that the damage to the intestine in enteritis necroticans is due to the β -toxin of *Cl welchii* type F

Sensitivity—*In vitro* tests showed that *Cl welchii* type F is inhibited by 10 units but not by 1 unit of penicillin per ml, that it fails to grow in "badional" (sulphamylthiourea) 1 in 156; that it is remarkably sensitive to "marfanil" (sulphamylon, *US*), "marbadal" (a derivative of marfanil),

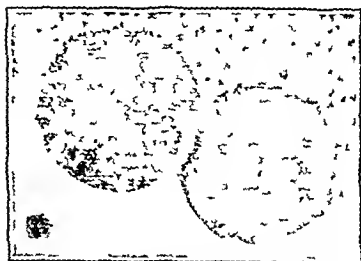


FIG 4—*Cl welchii* type F, one rough, one smooth colony ($\times 25$)

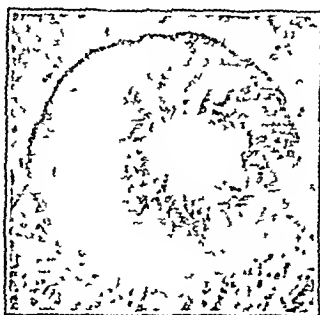


FIG 5—*Cl welchii* type F, mature smooth colony ($\times 25$)



FIG 6—*Cl welchii* type F, rough colony, with characteristic thornlike outgrowths ($\times 25$)

who reported that they produced traces of *Cl welchii* α -toxin, considerable quantities of β -toxin, and some γ -toxin. No δ -, ϵ -, θ -, λ -, or Λ -toxin was produced. Oakley's findings that the main toxin is β shows that treatment with *Cl welchii* type A serum would be of no value, as this serum contains no β -antitoxin, and that for any hope of success in treatment serum containing *Cl welchii* β -antitoxin would be essential.

Pathogenicity—Intramuscular injection of cultures of *Cl welchii* type F into guinea-pigs leads to the production of a glassy gelatinous or blood-stained oedema similar to that produced by injection of *Cl welchii* type B. Death occurs rapidly—something in our experience never seen in other anaerobic infections. Intravenous injection of culture usually led to death in a few minutes. Though feeding *Cl welchii* type F cultures to guinea pigs did not cause enteritis, injection of 5 ml of a one-day-old culture of *Cl welchii* type F into the lumen of the guinea-pig's intestine led to the development of an enteritis histologically

and "supronal" (a mixture of sulphamerazine and marbadal), which all inhibit its growth at 1 in 10,000 and that sulphadiazine does not affect its growth at all.

REFERENCES

- Beckermann, F., and Laas (1946) *Arzt Wschr* 1, 329.
Bosworth, T. J. (1943) *J. Comp. Path. Therap.* 53, 245.
Heine, J. (1947) *Ibid.* 1-2, 796.
Jockeln, E. (1947) *Dtsch. med. Wschr.* 72, 105.
— (1948) *Ibid.* 73, 177.
Lezius (1948) *Ibid.* 73, 176.
Schutz (1948) *Ibid.* 73, 176.
Siegmond (1948) *Klin. Wschr.* 26, 3.

THE TOXINS OF *CL. WELCHII* TYPE F

BY

C. L. OAKLEY, M.D., B.Sc.

Eight cultures of a type of *Cl welchii* isolated by Professor Zeissler from cases of enteritis necroticans have so far been examined. They were subcultured into meat broth within 24 hours of arrival, and after appropriate subculture were tested for toxin production by growing them for times varying from 5 to 16 hours in 5-litre quantities of meat broth plus concentrated papain digest of horse meat with a small amount of meat particles, 0.5% sterile glucose was added immediately before inoculation. The cultures were passed through sterile paper pulps to clarify them and finally sterilized by filtration through Sartz filters. In some instances filtrates were precipitated by saturation with ammonium sulphate and the cake so produced dried.

Examination for Toxins (cf. Oakley, 1943)

Lecithovitellin Tests (Macfarlane, Oakley, and Anderson, 1941).—Filtrates from all strains except Z6 and Z8 produced opalescence on incubation for one hour at 37°C with egg-yolk emulsion; this opalescence could be inhibited by adding to the filtrate *Cl welchii* α -antitoxin free from other known antitoxins, but was never marked enough to serve as indicator in a full serological investigation.

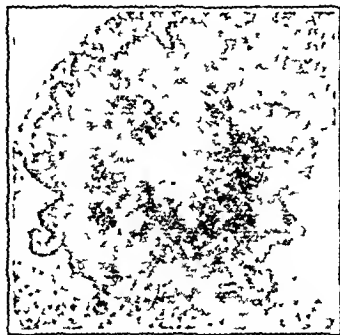


FIG 7—*Cl welchii* type F, rough colony with wavy outgrowths (resembling *Cl oedematis* type A) ($\times 25$)

and bacteriologically very similar to that observed in enteritis necroticans in the first days of illness (Professor Laas) and very similar to the enteritis and localized ulceration long known to occur in lambs and foals infected with

Haemolytic Tests.—Filtrates from all strains except Z6 and Z8 produced slight haemolysis of sheep red cells. This haemolysis was inhibited by *Cl. welchii* α -antitoxin and, like the opalescence produced in egg-yolk emulsions, is probably due to *Cl. welchii* α -toxin.

Necrotizing Tests.—All filtrates except those from Z6 and Z8 produced a necrotic reaction on intracutaneous injection into guinea-pigs. This reaction is readily inhibited by sera containing *Cl. welchii* β -antitoxin, and serum values can be determined against a standard, using the production of a small area of necrosis (approximately 2 by 2 mm.) as standard indicating effect. Table I shows that sera

TABLE I.—Serum Values against *Cl. welchii* Type F Filtrates in Necrotizing Tests to Show Presence of β -toxin

Serum	Serum Value Against Filtrate from Strain			β -antitoxin Value
	Z2 (NX 597)	Z4 (NX 601)	Z5 (NX 602)	
RR.2364 ..	1,000	1,000	1,000	1,000
RR.2452 ..	1,150	1,200	1,150	1,100
RR.5636 ..	380	450	425	400
RR.6160 ..	400	450	400	400
RR.4547 ..	1,100	1,150	1,100	1,200
RR.4642 ..	1,150	1,150	1,200	1,000
RR.4831 ..	2,000	2,200	1,900	2,100
RR.5993 ..	2,200	2,300	2,400	2,700
RR.4779 ..	2,000	2,200	1,900	2,500
EX.731 ..	95	110	110	100
R.3503 ..	650	675	700	700
R.8819 ..	700	750	800	800
RR.3518 ..	1,700	1,900	1,850	1,900
R.3547 ..	1,850	1,850	1,500	1,500
R.7365 ..	1,350	1,650	1,300	1,300

neutralize the necrotizing activity of these filtrates in proportion to this β -antitoxin content: the necrotic lesion is therefore probably due to β -toxin.

Lethal Tests.—All filtrates (except those from Z6 and Z8) produced rapid death in mice on intravenous injection. The lethal property is completely neutralized by sera containing *Cl. welchii* β -antitoxin, but serum-value tests show that both β - and γ -toxins are present in the filtrates. Thus the majority of sera examined give the same value in lethal tests as in necrotizing tests (Table II), and confirm the presence of β -toxin; a few, however, though giving the β value in necrotizing tests, give a much lower value in lethal tests, suggesting the presence of γ -toxin in the filtrates. No evidence could be obtained in either lethal or necrotizing tests of the presence of ϵ -toxin.

TABLE II.—Serum Values against *Cl. welchii* Type F Filtrates in Lethal Tests to Show Presence of β - and γ -toxins

Serum	Serum Value Against Filtrate from Strain			β -antitoxin Value
	Z2 (NX 597)	Z4 (NX.601)	Z5 (NX.602)	
RR.2364 ..	1,000	1,000	1,000	1,000
RR.2452 ..	1,100	1,100	1,100	1,100
RR.5636 ..	330	360	360	400
RR.6160 ..	360	400	380	400
RR.4547 ..	1,000	1,100	1,150	1,200
RR.4642 ..	950	1,000	950	1,000
RR.4831 ..	2,700	2,100	2,300	2,100
RR.5993 ..	2,500	2,800	2,800	2,700
RR.4779 ..	2,500	2,200	2,300	2,500
EX.731 ..	85	90	95	100
R.3503 ..	660	750	670	700
R.8819 ..	850	850	800	800
RR.3518 ..	1,900	2,300	2,200	1,900
R.3547 ..	380	550	475	1,500
R.7365 ..	850	650	675	1,350

Tests Using Fresh Guinea-pig Muscle, Collagen-paper, and Azocoll.—No κ - or λ -toxin (Oakley, Warrack, and Warren, unpublished) could be detected in any filtrate by use of these indicators.

Table III shows the toxins so far known to be produced by the various types of *Cl. welchii*. It is clear that the

TABLE III.—Toxins Produced by Various Types of *Cl. welchii*

Type	Toxins										Origin
	α	β	γ	δ	ϵ	η	θ	ι	κ	λ	
<i>Cl. welchii</i>											
Type A ..	+++	—	—	—	—	(+)	+	—	+	—	Gas gangrene
" B ..	+	+++	+	±	—	—	+	—	+	—	Lamb dysentery
" C ..	+++	+++	+	+++	—	—	+	—	+	—	Struck
" D ..	+	—	—	—	++	—	+	—	±	?	Enterotoxaemia
" E ..	+	—	—	—	—	—	+	+	+	+	? Pathogenic
" F ..	+	+++	+	—	—	—	—	—	—	—	Enteritis necroticans

present organism does not agree exactly with any type so far described. By the classical methods of Wilsdon (1931, 1932–3) it would be diagnosed as type C, but its failure to produce κ or δ , or to produce much α , or to ferment glycerol to any marked extent is good evidence against this view. It most closely resembles strains of *Cl. welchii* type I that have lost their power to produce ϵ -toxin; but in view of the high consistency in the strains derived from enteritis necroticans and Zeissler's observation (confirmed in these laboratories) that culture spores of these organisms are much more resistant to heat than those of *Cl. welchii* type B, I consider it reasonable to regard it as a new type—*Cl. welchii* type F.

Antitoxins in Convalescent Sera.—Of six sera examined from persons convalescent from clinical enteritis necroticans three contained about 0.2 unit of *Cl. welchii* β -antitoxin per ml.; the others contained less than this amount. No *Cl. welchii* α - or ϵ -antitoxin could be demonstrated.

I should like to express my thanks to Miss H. E. Ross and to Mr. H. Proom for subculturing these materials and for supplying me with much useful information; and to thank Miss Ross for providing all the culture filtrates.

REFERENCES

- Macfarlane, R. G., Oakley, C. L., and Anderson, C. G. (1941). *Path. Bact.*, 52, 99.
Oakley, C. L. (1943). *Bull. Hyg., Lond.*, 18, 781.
Wilsdon (1931). *Univ. Camb. Inst. Animal Path.*, 2nd Rep., p. 5.
— (1932–3). *Ibid.*, 3rd Rep., p. 46.

RECOVERY OF *CL. WELCHII* TYPE F FROM PRESERVED CULTURES

BY

C. DIECKMANN, M.D.

(From the Bacteriological Institute, General Hospital, Hamburg Altona)

Sixty-three strains identified as *Cl. welchii*, preserved in Professor Zeissler's collection of anaerobes, were inoculated into liver broth; from the growth five test-tubes containing brain pulp were inoculated. After two days' incubation in Zeissler's anaerobic jar at 37° C. and three days' at room temperature the test-tubes were boiled in Koch's stean pot at 100° C. for 5, 60, 120, 180, and 240 minutes and cooled immediately in cold water. From the material so treated 0.5 ml. was transferred to test-tubes containing liver broth and incubated in the anaerobic jar for two days at 37° C.

Of the 63 strains tested only two survived boiling for as long as 5 minutes—one survived 120 and the other 18 minutes. Both had the characters of *Cl. welchii* type I. Both were recovered from war wounds of German soldiers on the Russian front in 1943; one (Ru 62) was the only pathogenic organism recovered; the other (Ru 72) was associated with *Cl. sordellii*, *Cl. oedematiens maligni gracili*, *Cl. tetani*, and *Cl. putrificus verrucosus*.

ORIGIN OF *CL. WELCHII* TYPE F INFECTION

BY

E. HAIN, M.D.

From the Bacteriological Institute, General Hospital, Hamburg
Altona)

The following case throws some light on the origin of *Cl. welchii* type F infection in man

Case Report

A man aged 71, never ill previously but with a rather poor digestion for the last few years, ate with some friends a meal consisting of tinned rabbit, tinned fat giblets, and green cabbage. A few hours later he fell ill with abdominal discomfort and frequent vomiting, later he developed abdominal pain, and during the night passed about twenty watery stools. Increasing exhaustion and low blood pressure developed, and he was admitted to hospital next morning.

His notes state that he was a well-developed rather fat man, apathetic, weak-looking, pale, with some cyanosis of his extremities, his pulse was scarcely perceptible, his blood pressure very low. His abdomen was slightly distended, he felt no pain, but was tender in the right epigastrium. His temperature was 39° C. His blood picture showed a polymorphonuclear leucocytosis with a marked shift to the left, the blood sedimentation rate was increased. Electrocardiography revealed evidence of recent cardiac infarction.

Passage of frequent blood-stained watery stools led to further dehydration and impairment of the circulation, restorative measures and treatment with "resulphon" had no effect, surgical treatment was considered hopeless. The patient died about 40 hours after the onset of the symptoms.

At necropsy the clinical diagnosis of enteritis necroticans was confirmed, there was a necrotic inflammation of the jejunum, most marked in its upper part and decreasing in severity along its length. Several smaller ulcers were present in the ileum and rectum.

Two persons who shared the meal with the patient fell ill soon after it with slight sickness, and one passed a single watery stool. Both recovered in twenty-four hours without calling to a doctor.

Bacteriological Examination—Full bacteriological examinations were made of the remnants of food left from the meal of stools from the patient and from those who had shared the meal with him, and of the contents of a loop of the patient's intestine obtained post mortem. The green cabbage and stool from one of the friends yielded no significant pathogen, from all the other samples *Cl. welchii* type F was readily isolated by the following technique.

(1) **Stool**—Samples of stool the size of a pea were placed in test-tubes containing sterile broth and boiled at 100° C. in a steam-pot for 60 minutes. This acted as a first screen for selecting organisms with resistant spores. About one-fifth of the boiled material was inoculated with liver broth and both tubes were incubated in the anaerobic jar for 16 hours at 37° C. If no growth occurred in the liver broth it was reinoculated from the broth tube.

(2) **Other Materials**—These were inoculated into 100–500 ml of brain pulp and incubated for three to five days. From this material 0.5 ml was inoculated into fresh brain pulp and the five tubes so inoculated were boiled for 60, 90, 120, 180 and 240 minutes.

Then by repeated subculture from liquid to solid media, and from solid to liquid, with frequent boiling of sporing cultures, pure cultures were obtained and tested for action on gelatin, sugars, and alcohols, and for pathogenicity to guinea-pigs.

Comment

The food used in the meal had been prepared from home-bred rabbits butchered about three weeks before and used immediately. The tins were closed and boiled for

two hours in a water bath. When the tins were opened and the meat prepared for food three weeks later it appeared wholesome in appearance and odour. Notwithstanding this, three persons who ate it sickened; one of these died, and from the stools of two of them and from the meat *Cl. welchii* type F was recovered. It is clear that the usual method of sterilizing meat by boiling for two hours will not suffice if it is contaminated with this organism.

I have to thank Dr. Aschenbrenner for the clinical notes and Dr. Baniecki for the post-mortem record.

ON THE OCCURRENCE OF *CL. WELCHII* TYPE F IN NORMAL STOOLS

BY

E. HAIN, M.D.

In an investigation on the occurrence of *Cl. welchii* type F in the normal intestine, 108 stools derived from persons not suffering from enteritis necroticans were examined for the presence of this organism. The results are shown in Tables IV and V.

As the patients were a reasonable cross-section of the inhabitants of Hamburg, I feel that the figures show that about one-sixth of the normal persons in Hamburg during the winter of 1947–8 carried *Cl. welchii* type F in their stools. The strains recovered are, however, much less pathogenic for animals than those isolated from cases of enteritis necroticans. Most of the guinea-pigs who received

TABLE IV—Proportion of Cases in which *Cl. welchii* Type F was Recovered from Stools Arranged According to Age and Sex of the Patients

Age	Men				Women			
	0–14	15–50	>50	Total	0–14	15–50	>50	Total
No. of samples	13	27	10	50	14	34	10	58
<i>Cl. welchii</i> type F Present	2	3	2	7	2	9	1	12
Absent	11	24	8	43	12	25	9	46

TABLE V—Results Arranged According to the Origin of Stools Yielding *Cl. welchii* Type F on Culture

<i>Cl. welchii</i> Type F	Origin of Material					
	Cases of Typhoid and Paratyphoid Fever	Cases of Diarrhoea and Dyspepsia Suspected of Typhoid Paratyphoid or Dysentery	Cases of Surgical and Skin Diseases	Cases of Internal Disease	Personnel of Camp Kitchen	Total
Positive	2	2	3	9	3	19
Negative	11	11	18	47	2	89
Total	13	13	21	56	5	108

injections into the thigh of pure cultures of the organisms from normal stools would have recovered without treatment had they not been killed on the second or fourth day after injection.

The pathological changes produced in the injected animals (glassy gelatinous oedema of the subcutaneous tissues) were qualitatively similar to those produced by the more virulent strains but far less severe.

Further research will be necessary before it is possible to show whether carriers are of any importance in the epidemiology of enteritis necroticans.

Medical Memoranda

Cl. welchii Infection of the Eye

Panophthalmitis caused by *Clostridium welchii* is a rare condition, and the following case is presented for addition to the literature. Walker (1938) reviewed twelve cases, and in 1946 Capus reported on one.

CASE HISTORY

An apprentice plumber aged 15 sustained an injury to his right eye at 2.30 p.m. on Sept. 27, 1948, while using a steel chisel on a brick wall. A fragment of the metal broke off and became lodged in his eye. He was taken to the local hospital, where removal of the foreign body was attempted without success. Penicillin, 200,000 units, was given approximately two and a half hours after the injury was received. He was transferred to the Aberdeen Royal Infirmary, arriving there about 2.30 a.m. on the 28th. On admission he was examined and given 300,000 units of penicillin, this being repeated three-hourly.

Examination revealed the following: the pupil of the right eye was very small; the iris pattern was indistinct and the anterior chamber shallow; an incision of the cornea had been made running from 6 to 9 o'clock, and there was a wedge-shaped foreign body lying about 8 to 9 o'clock, with some bleeding beside it; no red reflex was seen. At 9 a.m. he was re-examined. The cornea was found to be bright and there was no obvious sign of infection. The foreign body appeared to be lying about 10 mm. behind the cornea. Twelve hours later the eye was septic and proptosed, so that enucleation became necessary. This was carried out by Dr. J. Mutch. During the operation gas and blood-stained pus escaped freely. Afterwards the socket was dusted with penicillin. When the eyeball was examined it was found to be distended with gas and pus. There was retinal detachment.

Post-operative recovery was rapid and the patient was discharged on Oct. 11 with a clean, well-healed socket.

Bacteriological Investigation.—The contents of the eyeball showed pus cells, diphtheroids, and Gram-positive rods. A loopful of pus was inoculated into Robertson's meat broth and litmus milk. A typical "stormy fermentation" reaction was obtained from the latter. A subculture plated on horse-blood agar and incubated anaerobically for 48 hours gave a heavy pure growth of *Cl. welchii*. The colonies were haemolytic. The Nagler reaction was positive. A broth culture filtrate made from the plated colonies was lethal to mice, 0.2 ml. of an 18-hour culture causing them to die within three to four hours.

COMMENTARY

Apart from the rarity of this type of case, it is interesting that panophthalmitis should ensue in spite of the early administration of penicillin in large amounts. It has been shown experimentally (von Sallmann, 1944) in rabbits that before a panophthalmitis can be produced *Cl. welchii* has to be introduced into either the lens or the vitreous, and as penicillin fails to diffuse into the latter in any appreciable quantity this would probably account for its failure to arrest infection in this case.

I am much indebted to Drs. L'w and Mutch for permission to use their case notes.

JEAN STUART, M.B., Ch.B.,
Department of Bacteriology,
University of Aberdeen

REFERENCES

- Capus, B. (1946). *Arch. Ophthalmol.*, 36, 226.
Von Sallmann, L. (1944). *Ibid.*, 31, 54.
Walker, S. (1938). *Ibid.*, 19, 406.

Dislocation of Hip-joint at "Rugger"

Dislocation of the hip is uncommon even in rough games, and occurs only as a result of great violence. It is seen in young people whose femur is strong and resilient enough to escape fracture of the neck. Nevertheless, in the course of twenty years of a busy undergraduate practice between the wars, among the many college and university players at Cambridge no case had been encountered at rugby football until the one now reported.

CASE HISTORY

On Jan. 29, 1948, I was called to a college ground where the captain of the home side was lying in agony, in drenching rain, while two friends held his right lower limb with the hip and knee joints flexed, and the thigh abducted, as requested by the patient. The slightest movement provoked cries of pain. Morphine was given at once. A brief examination indicated a diagnosis of dislocation of the hip-joint, and, not without difficulty and anguish, the patient

was placed in the waiting ambulance, his friends maintaining their attendance during the journey to the local nursing-home.

Reduction.—He was anaesthetized immediately with thiopentone, and the diagnosis of dorsal dislocation was confirmed. We were prepared for a long pull in a very muscular ex-Serviceman, but trial was first made of simple manipulation. The hip and knee were flexed, followed by simple movements of rotation while in this position. The head of the femur suddenly slipped easily back with a click into the acetabulum, and full movements were at once restored.

In view of the rarity of this accident at rugger, it is of interest to see how it happened.

Patient's Story.—The patient, a hefty centre three-quarter, stated that the ground was very wet, making swerving and even running at speed very difficult. "I had the ball and was running at medium pace, when a wing-forward tackled me from behind. I resisted the tackle, which stopped my forward momentum. As I continued to resist, the pressure was downwards and backwards, with my knees bent, and the strain taken in my hips. Gradually my legs bent wider and I fell sitting as they shot out in front. I think the joint was 'out' then—I certainly felt a great deal of pain—but as I saw down a second opponent kicked and swung the right leg across to the left. My leg remained sticking up in the air, held up by my own hand and subsequently by others. Any movement was agonizing."

From the above account it would seem that, with the feet everted to try to retain a grip on the slippery ground, the limbs were steadily forced into flexion while in a position of wide adduction, until the head of the femur became dislocated on to the dorsum ilii. The subsequent kick, swinging from without inwards, would merely serve to aggravate the displacement and to accentuate the pain.

Massage and infra-red rays were given daily at first. On the sixth day the patient got up on crutches and was bearing some weight, but he had pain on "swivelling." He returned to his rooms at college that day. On the seventh day he went up and down a flight of stairs to the w.c. On the tenth day he walked 1½ miles (2.4 km) and next day he rode a bicycle. After two months he played golf, tennis, and squash. Recovery was uneventful.

R. SALISBURY WOODS, M.D., F.R.C.S.

Diphtheritic Vaginitis

The following report of a case of leucorrhoea due to an infection by the Klebs-Loeffler bacillus is worth recording because of its rarity.

CASE HISTORY

A married woman aged 33 was referred to the gynaecological or patients department because of increasing leucorrhoea. This had been present in a minor degree for about a year, but during the past month had become profuse and offensive. Stovarsol pessaries prescribed by her doctor, had had little if any effect. She had had one pregnancy three years previously, which was terminated at a long labour by an incision of the cervix and a forceps delivery. Menstruation was regular. Her general health was excellent and she had had no serious illnesses in the past. No history of contact with a diphtheritic case could be obtained.

Examination of the vagina revealed a profuse watery dirty-coloured discharge, which had the odour encountered in the breath of patients suffering from faucial diphtheria. After cleansing the vagina by swabbing, the cervix was seen to be covered by large superficial discrete ulcers, the surface consisting of a greyish exudate which was adherent and could be removed only in small portions by very dry swabbing, leaving a raw bleeding area. The whole vagina was reddened and inflamed, and the upper two-thirds contained numerous pin-head ulcers. Examination did not cause undue discomfort. Specimens of the discharge sent for laboratory investigation revealed the presence of a pathogenic strain of the diphtheria bacillus.

The patient was transferred to the isolation hospital, where she was given a single intramuscular dose of 40,000 units of antidiphtheria serum, and penicillin 100,000 units twice daily for three days. This treatment caused an almost immediate improvement of the vaginitis, discharge being absent after one week. Three further specimens from the vagina, at weekly intervals, gave negative results for the diphtheria bacillus. Examination of the vagina and cervix one month after she was first seen showed a normal mucous membrane with no sign of the previous ulceration.

COMMENT

Diphtheritic infection of the vagina is rare, but if it can present a clinical picture which is so typical that it can be diagnosed with no difficulties in diagnosis, provided the possibility of infection is borne in mind.

I wish to thank Mr. H. A. Hamilton, gynaecologist, Gloucestershire Royal Infirmary, for permission to describe this case.

J. G. THURSTON, M.B., M.R.C.O.G.
Gynaecological Registrar,
North Gloucestershire Hospital Group.

Reviews

PROBLEMS OF FERTILITY

Problems of Fertility in General Practice. By Margaret Hadley Jackson, M.B., B.S., D.R.C.O.G., Joan Malleison, M.B., B.S., J.C.S., M.R.C.O.G., Kenneth Walker, M.B., B.S., by Sir Eardley Holland, M.D., F.R.C.S., D.G. (Pp. 255; illustrated. 17s. 6d.) Medical Books. 1948.

In the *British Medical Journal* of Feb. 14, 1948 (p. 294), under the heading "What the Medical Practitioner Wants to Know," Dr. R. T. Bevan analysed the 2,018 subjects which appeared in the "Any Questions?" column during the years 1943-6. He drew attention to the fact that in addition to those which were classified as gynaecological a large proportion of the questions were concerned with sex problems, implying that this aspect of medicine is not only inadequately taught in our medical schools but one on which it is not easy to obtain information from the books ordinarily found in a doctor's library. The remedy is now at hand in this volume published under the auspices of the Family Planning Association, and it is safe to say that most of the questions would never have been sent had this book been available to the inquirers.

Its individuality and its attractiveness depend in large measure on its wide, although essentially practical, view of human fertility. Thus it includes discussion of normal and subnormal fertility, abortion, contraception, and a small section on eugenics. The references to some of the most difficult clinical problems such as impotence, frigidity, premarital examination, artificial insemination, and eugenic sterilization are particularly helpful. There are, too, some useful hints on the terms which may be used when discussing these intimate matters with patients. The authors describe in admirable detail those procedures which can be regarded as coming within the province of the general practitioner, and say enough of the others to enable the family doctor to interpret, and to assess the value of, the results of investigations carried out by a consultant. Moreover, it would appear that great care has been taken to keep the account reasonable and free from those extravagant and unscientific claims which so often mar writings on these subjects. So much is this true that it is surprising that the description of the traditional treatment of threatened and habitual abortion with progesterone is not qualified in the way which recent work would appear to demand. It might also be remarked that it is questionable whether oestrogens merit a place in the treatment of trichomonas vaginitis in women whose ovarian function is normal; this is particularly true in cases of infertility, because the dose recommended is one which, according to another chapter, is sufficient to suppress ovulation. By and large, however, the authors are to be congratulated on a most interesting as well as informative work, which will undoubtedly have a wide appeal.

T. N. A. JEFFCOATE.

HERNIA

Hernia. Anatomy, Etiology, Symptoms, Diagnosis, Differential Diagnosis, Prognosis and Treatment. By Leigh F. Watson, M.D., F.I.C.S. Third edition, enlarged and thoroughly revised. (Pp. 732; 323 illustrations by Helen Lorraine, Willard C. Shepard, Ralph Sweet. £3 7s. 6d.) London: Henry Kimpton. 1948.

A comprehensive monograph such as Leigh Watson's, which is now in its third edition, is useful because there is so much divergence of opinion about the most suitable operation for each variety of hernia and because the methods used by surgeons of experience for the radical cure of hernia differ so considerably. This was brought out at a meeting of Service and E.M.S. consultants during the recent war. While for inguinal hernia one advocated the Bassini operation even in a young child, others preferred in young subjects to remove the sac and disturb the inguinal canal as little as possible, and in cases in which there was an agreed indication to reinforce the canal the methods practised were many and diverse. Such

experience should be enough to convince anyone of the difficulty of standardizing surgical practice and the need from time to time to review it in detail.

This edition is much better than the two which preceded it, and we are pleased to note that certain suggestions made in our review of the second edition have been adopted, notably the addition of an index of authors and a reduction of the space devoted to describing injectum treatment. The account of this treatment is in better perspective in this edition; it has but a small place—some surgeons might deny it even this—in surgery to-day. We might hazard an opinion that in future editions even less space will be given to discussing sclerosing therapy than the 70 odd pages still allotted to it. Lateral anastomosis (p. 81) is not often a good procedure, and end-to-end junction should in our opinion be performed by suturing and be given pride of place over all forms of anastomosis. Is Moynihan's absorbable bobbin still popular, as stated on page 79? It is certainly not in Britain; and the Murphy button illustrated a little further on is surely only of interest as evidence of the ingenuity of its inventor and because of its place in the history of intestinal anastomosis.

The author describes well the rarer varieties of hernia such as the obturator, lumbar, and perineal types, and the illustrations, which are all good, are plentiful throughout, as are the historical references. We should like to have seen Parry of Glasgow's name mentioned in association with Lotheissen of Vienna in connexion with the repair of femoral hernia by the inguinal canal route. The author might also have referred more to Halsted's important papers, which give a clear description of his operation for inguinal hernia by transplantation of the cord; after complete extirpation of the sac the canal is closed in by a double-breasted overlap of the external oblique behind the transplanted and now superficial cord. This operation has all the advantages of the fascial suturing procedures and is applicable to both the oblique and direct varieties of inguinal hernia. The many methods described may confuse the young surgeon, but they will probably be fascinating reading to the more experienced practitioner, serving to remind him how from time to time what are apparently innovations are in reality a reintroduction of methods which have previously been described, adopted for a time, and abandoned. Such may be said for most of the flap types of reinforcement in which pieces of rectus sheath or fascia lata are turned out of their normal position to reinforce the canal. Dr. Watson begins the first chapter with a quotation from Galen, "No great and perfect work is ever accomplished as a single effort, nor receives its final polish from one instrument"—a salutary observation which may well be applicable to the various editions of this book, of which the present one is by a wide margin the best yet.

LAMBERT ROGERS.

OPERATIVE GYNAECOLOGY

Operative Gynecology. By Harry Sturgeon Crossen, M.D., and Robert James Crossen, M.D. Sixth edition, entirely reset and revised. (Pp. 999; 1,334 illustrations, including 30 in colour. £3 15s.) London: Henry Kimpton. 1948.

The last edition of this book was published in 1938, and the new edition will be very welcome, for textbooks of gynaecological surgery are relatively few. The criticisms of the previous editions were directed in the main towards the length of the book and what some regarded as unnecessary details about relatively unimportant operations. The illustrations were always admired and the subject matter was clearly expressed and fairly easy to follow.

In the new edition much of what was regarded as redundant has been removed. The book is now of a convenient size, and taken as a whole it can be regarded as the leading textbook of gynaecological surgery in the English tongue. It is easy to find minor faults in a book of 900 pages. The arrangement of the subject matter is not altogether satisfactory, for much of the last 150 pages could have been introduced at the beginning, and perhaps the authors might have paid less attention to conditions which are not strictly gynaecological. On the other hand, their account of the methods of dealing with injury to the ureter is admirable and in excellent detail. They are clearly worried by the high frequency of malignant disease

of the female genital tract and pay much attention to the practical means of preventing it. Furthermore, they discuss the methods of treating carcinoma of the uterus almost at the beginning of the book. A point of some interest is that they do not seem to have such great enthusiasm for using drugs of the sulphonamide group as is customary in Britain.

The book will be generally welcomed, for it gives a full account of gynaecological surgery, and the manner in which the subject is presented is vigorous and stimulating.

WILFRED SHAW.

MEDICINE FOR NURSES

Introduction to Medical Science. By Gulli Lindh Muller, M.D., and Dorothy E. Dawes, R.N., M.A. Second edition. (Pp. 580; illustrated, 20s.) Philadelphia and London: W. B. Saunders Company. 1948.

The authors of this book, a pathologist and a nurse, provide in comparatively small space a comprehensive outline of pathology, clinical pathology, and public health for nurses. A historical introduction leads on to a systematic account of modern medical science. Sections on the causes of disease and the bodily changes they induce are followed by an account of how diseases may be diagnosed and treated. The last section is on their prevention. The authors omit little. For example, in sixteen pages on the pathology of tumours they describe some thirty different types of neoplasm, with six illustrations. In five pages on renal-function tests they find room to describe the principles and techniques of the concentration and dilution, the dye-excretion, and the various clearance tests, including those with inulin and diodrast. They mention the more important wartime advances in medicine, including even the uses of plasma fractions and parenteral amino-acid therapy.

So much detailed and up-to-date information compressed into so short a space makes the book rather dull reading, and the young student nurse for whom it is intended would find it difficult to see the wood for the trees. The book is "to serve as an overview of medical science prior to her services on the wards," but the order of the exposition, though logical, would probably make the book unintelligible to anyone without clinical experience. The first chapter is no easier than the last, and to guide the student through the many new concepts and unfamiliar terms there is only a glossary to help her. Even this may fail her, as in, for example: "A py, Condition of being sensitive to an atopen or a substance to which an allergic person is sensitive"; or "Gon:dotropic hormone, Hormone of the sex glands." The style, which is careless and inelegant, increases the difficulty of understanding the text.

Only a physiological approach can make modern medicine intelligible to the novice, and there is need for an introductory book in which disease states and their natural histories are interpreted in terms of disordered structure and function. The authors of this work do not attempt this. Its use in Britain will be chiefly as a book of reference for ward sisters and others responsible for teaching nurses. In America it presumably caters for a syllabus that our nursing curriculum fortunately does not include.

L. P. R. FOURMAN.

In *An Approach to Social Medicine* (Baillière, Tindall and Cox; 15s.) Dr. John D. Kershaw discusses the development of a particular attitude towards medicine and society. While every good practitioner is actively concerned with the development of medicine in relation to social life, too few have accepted the challenge that medicine (among other agencies) must actively influence social activities in the interests of human well-being. Dr. Kershaw reviews the structure of society in order to evaluate its disorders and then discusses the relation of the major branches of medicine to social activities. Finally he considers some of the health problems created by society. Social medicine is a philosophy of health, and in this chapter he deals appropriately with the human and social instruments of that philosophy. This practical work is recommended both to medical men and to those who claim to be intelligent responsible citizens; it is to this audience that the author appeals. Succinct and necessarily dogmatic, it will interest many readers, and for the more inquiring there is an excellent bibliography.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Les Entretiens de Bichat 1948: Chirurgie-Specialités. Edited by Dr. Petit-Dutaillis. (Pp. 374. 800 francs.) Paris: L'Expansion Scientifique. 1948.

Short articles on a wide variety of surgical topics, including ophthalmology and gynaecology.

Les Entretiens de Bichat 1948: Médecine. Edited by G. Larodie and L. Justin-Besançon. (Pp. 390. 800 francs.) Paris: L'Expansion Scientifique. 1948.

Short articles on many aspects of clinical medicine

Sexualhormontherapie. By E. Tscherné. (Pp. 231. 75 Sch.) Vienna: Wilhelm Maudrich. 1948.

A monograph on the physiology and therapeutic uses of sex hormones.

Diseases of the Nose and Throat. By the late Sir St. Clair Thomson and V. E. Negus, M.S., F.R.C.S. 5th ed. (Pp. 100-70s.) London: Cassell. 1948.

This edition includes new material on inflammatory complication and their treatment by chemotherapy and antibiotics.

Les Diastases. By P. Fleury and J. Courtois. (Pp. 216. 150 francs.) Paris: Armand Colin. 1948.

An introduction for students and non-specialists.

Marriage Counselling. By D. R. Macc, M.A., B.Sc., Ph.D. (Pp. 167. 8s.) London: J. and A. Churchill. 1948.

An account of the work done by marriage guidance councils

Péan. By R. Didier. (Pp. 242. 800 francs.) Paris: Maloine 1948.

A biographical study of the French surgeon.

Techniques in Physiotherapy. Edited by F. L. Greenhill, S.R.N., M.C.S.P., T.H.T., and others. (Pp. 222. 12s. 6d.) London: Hodder and Stoughton. 1948.

Intended for the practising physiotherapist.

La Dénutrition de Guerre. By E. F. Simonart. (Pp. 262. No price.) Paris: Maloine. 1948.

A study of the effects of starvation in Belgium during the war

A Textbook of Biochemistry. By R. J. Williams, Ph.D., D.Sc. 2nd ed. (Pp. 533. 25s.) London: Macmillan. 1948.

Intended specially for medical students.

Measurements of the Public Health. By F. A. E. Crew, M.D., D.Sc., Ph.D., F.R.C.P.Ed., F.R.S. (Pp. 243. 18s.) London: Oliver and Boyd. 1948.

Essays on such topics as population, illegitimacy, the sex ratio, marriage, and the biology of death.

Annual Review of Microbiology. Edited by C. E. Clifton, and others. Vol. 2. (Pp. 532. 36s.) London: H. K. Lewis. 1948.

Includes reviews of the nature of antibodies, the metabolism of malaria parasites, and the pathogenic streptococci.

Der praktische Arzt und die Tuberkulose. By H. Ulrich. (Pp. 165. M.7.50.) Berlin: Springer. 1948.

A guide to tuberculosis for the general practitioner.

The Medical Clinics of North America. (Pp. 288. No price.) London: W. B. Saunders. 1948.

A symposium on recent advances in gynaecology and obstetrics.

The Trent and I Go Wandering By. By R. G. Hogarth, C.B.E., D.L., J.P., F.R.C.S., Hon. LL.D.Ed. (Pp. 144. 12s. 6d.) Nottingham: Cooke and Vowles. 1948.

Stories of over 50 years of the author's life in Nottingham. Mr. Hogarth is a Past President of the British Medical Association.

Contributions to Psycho-Analysis, 1921-1945. By M. Klein. (Pp. 416. 21s.) London: Hogarth. 1948.

Papers on psycho-analysis reprinted, with one exception, from journals.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY FEBRUARY 12 1949

N.H.S. ACT IN AUSTRALIA

The medical profession in Australia, under the guidance of the Federal Council of the B.M.A., is taking a firm stand against the scheme for a National Health Service outlined in the Enabling Act passed by the Federal Parliament at the end of last year. The Act, a full account of the debate on it in the Australian Parliament, and a leading article giving details of the negotiations between the B.M.A. in Australia and the Government are published in the *Medical Journal of Australia* for Feb. 5. A summary of the main points in the dispute appears in this week's *Supplement*. The attitude of the Government to our Australian colleagues is expressed in forcible terms in a letter from Senator N. E. McKenna, Minister for Health and Social Service, to Sir Henry Newland, President of the Federal Council of the B.M.A. in Australasia, thus.

"It [the Government] has regretfully come to the conclusion that, despite the splendid services rendered by the great number of practitioners, your Association is grievously lacking in a sense of social responsibility.

"Having exhausted every endeavour to secure the co-operation of your Association, the Government does not intend that its proposals should be further delayed or frustrated by your Council or Association.

"I have to convey to you the decision of the Government that, within the limits of constitutional power, it will proceed to put its plans into operation."

Commenting on this, the leading article in the *Medical Journal of Australia* observes that "the Government of the Commonwealth of Australia is determined to force on the people a piece of legislation which is foredoomed to failure."

Proposals for a complete medical service for Australia were considered by the Federal Council in 1940, and after these had been looked into by the Branches the proposals, modified in some respects, were adopted in 1941. The B.M.A. scheme advocated the provision for every individual of the services of a general practitioner of his own choice, and of consultant and specialist and laboratory services and of institutional treatment all to be available normally through the agency of the family doctor. It also recommended the co-ordination of the several parts of a complete medical service by the application of a planned national health policy, and the direction of the medical service to the achievement of positive health and the prevention of disease no less than to the relief of sickness.

Towards the end of 1941 the National Health and Medical Research Council put forward its views in a document entitled "Outline of a Possible Scheme for a Salaried Medical Service." The Federal Council, taking notice of this, laid down its policy in more detail in 1943, and in May, 1944, adopted the fee-for-service principle "as one acceptable substitute for any unacceptable scheme proposed by the Government." In June, 1944, the Federal Minister for Health and Social Service declared the Government's intention to introduce a service which would

be free of cost to the citizen except through "such general contribution as may be made through general revenue channels." At the same time the Treasurer, who is now Prime Minister, observed that the Government would have at its disposal after the war "a considerable number of medical graduates . . . pledged to give their services to the Commonwealth Government for a period of years." The B.M.A. in Australia interpreted the Government's intention as being one to introduce a salaried medical service and declared its opposition to this. In May, 1946, the Minister for Health informed the Federal Council that the Government's policy was to make available to every person in Australia medical attention without any direct charge for the service, and to include in the scheme "the full range of medical attention, including all modern diagnosis and specialist services." In 1947 the Federal Council drew up principles which in its view should govern a national medical service, and included in these seven of the principles drawn up by the Council of the B.M.A. in Britain. The Federal Council advocated the payment on a fee-for-service basis of practitioners and of consultants and specialists in a national medical service, and suggested that "the role of a government in hospital administration should be one of co-ordination only, leaving the control to independent boards of qualified persons." In July, 1947, the Minister for Health stated in a conference between him and the Federal Council that the Government's aim was to abolish private medical practice.

The Federal Council was prepared to negotiate with the Government provided it did not reject the following principles: (1) control to be vested in a corporate body; (2) no contract between the Government and individual practising doctors; (3) payment on a fee-for-service basis. The Federal Council proposed that, under the direction of the Minister and at a level with the Director-General of Health, there should be a controlling body predominantly medical and representative of the practising profession, the medical representatives to be the direct nominees of the profession. The Council did not admit the right of the Government to fix a fee of which it paid only a part, and demanded that a scale of benefits should be laid down. It held also that no regulations should be brought out under the Act unless first approved by the controlling body. Medical practitioners, in the view of the Federal Council, would be unwilling to undertake the necessary clerical work or incur the liabilities of acting as the agent for the patient obtaining medical benefits. The Government proposed that the patient should pay half the doctor's fee and the other half should be obtained by the doctor on application to the Government: the Federal Council objected that this would oblige the practitioner to make available to a departmental officer his clinical records and thus destroy the confidential relationship between doctor and patient. It opposes the Act (1) because control will be under the Director-General of Health and not under a corporate body; (2) because of the wide powers of the Minister in making regulations; (3) because of its objection to experimental health centres under the control of the Government; (4) because of the Government's proposals for remunerating doctors. The essential basis of the opposition of the Australian medical profession is its belief that the Government's ultimate aim is the abolition of private practice.

The *Medical Journal of Australia* points out that the Pharmaceutical Benefits Act was brought to naught by the

refusal of the profession to co-operate with the Government, and implies that the same fate awaits the National Health Service Act if the Australian Government rejects the principles which our Australian colleagues are prepared to take as the basis for a complete medical service for the people of Australia. The stage is set for an acute conflict, which will be watched with interest and sympathy by the medical profession in this country.

ENTERITIS NECROTICANS

The *Clostridia*, sporogenous anaerobes found in variety and great profusion in soil and dirt generally as well as in the lower intestinal tract of man and animals, are among the most versatile of bacteria. They play a leading part in many forms of natural decomposition, particularly that of animal carcasses. Among their purely beneficent activities two species, *Cl. pectinovorum* and *Cl. acetobutylicum*, are responsible for valuable fermentative processes, the retting of flax and other vegetable fibres and the production of acetone and butyl alcohol from maize or molasses. On the other hand they are responsible for three distinct and very different diseases in man—tetanus, gas gangrene, and botulism—and for many animal diseases. Some of the latter—blackleg, black disease, and pulpy kidney—resemble human gas gangrene in their nature though not in their apparent origin, since the traumatic factor is absent. In others—lamb dysentery, struck, and braxy—the primary lesion is in the alimentary tract, a condition which has hitherto had no recognized counterpart in human pathology.

We publish in this issue a series of papers showing that an acute and often fatal intestinal infection, due to a *Clostridium* and having close affinities with these animal diseases, can occur in man. In the first paper Professor J. Zeissler and Miss L. Rassfeld-Sternberg, of Hamburg, give an account of its occurrence in various places in Germany during the past three years. The essential lesion is an extensive necrosis of the mucosa of the small intestine, particularly in its upper part, but sometimes extending into the colon, and though nothing characteristic is discoverable in the faeces examination of the lesions themselves shows the presence of numerous Gram-positive bacilli. These have been cultivated by various observers, and the contribution of Zeissler and Rassfeld-Sternberg to this study is an examination of the characters of some of the strains isolated by themselves from eight cases of the disease, which has now been named enteritis necroticans. The organism had previously been identified as *Cl. welchii* and believed or assumed to be of type A, which is the type causing gas gangrene in man. They found several points of difference: the individual rod is somewhat larger, the colonies are rough instead of glistening, and the heat resistance of the spores is considerably greater. *Cl. welchii* is among the least heat-resistant of sporogenous bacteria: spores formed in culture do not resist boiling for more than a few minutes. Those of the new organism withstood boiling for from one to four hours, a fact which provided not only a criterion of identity but a satisfactory method of isolation. Cultures not only brought on fatal infection in

animals when injected parenterally, but when introduced into the guinea-pig's intestine caused the intestinal lesions seen in man.

The story is here taken over by Dr. C. L. Oakley, whose study of the toxins of *Cl. welchii*, begun in connexion with work on gas gangrene during the war, has since been pursued with fruitful results. It appears that only six of the eight strains behaved consistently, but the characters of these are unmistakable. They form comparatively little of the α -toxin, the main toxin of type A, causing human gas gangrene; their main product is β -toxin, and this is quantitatively neutralized by *Cl. welchii* β -antitoxin. This is the principal toxin formed by the type B organism responsible for lamb dysentery, and human enteritis necroticans must therefore be regarded as having very close affinities with this disease. On the other hand the organisms are not identical, and Oakley regards both the failure of the new strains to produce subsidiary type B toxins, recently identified by himself, and their remarkable heat resistance as entitling them to recognition as a separate type, now to be designated F.

Three further papers throw some light on this organism from other points of view. Dr. C. Dieckmann has examined 63 preserved cultures of *Cl. welchii* and found only two of type F: these were derived from the wounds of soldiers serving on the Russian front. Dr. E. Hain has found that type F is recoverable from a small proportion of miscellaneous samples of human faeces. This need occasion no surprise, especially since these strains were of low pathogenicity. Wide variations in the capacity to produce toxin account in part for the contrast between the extensive distribution of such organisms as this and the comparative rarity of the dangerous infections caused by them. (An example of the exceptional case is reported by Dr. A. L. Wyman in this issue: gas gangrene of the thigh was found to be due to an endogenous *Cl. welchii* infection spreading from a carcinoma of colon.) In another paper Dr. Hain describes a case of enteritis necroticans in which the source of infection was clearly identified as home-tinned rabbit: boiling for two hours had failed, as might be expected, to destroy the type F organism which happened to be present in this meat. Is this method of preserving food the explanation of the occurrence of this disease exclusively—so far as we know—in Germany? None of the authors discusses this matter from a general point of view. It is possible that enteritis necroticans does occur outside Germany and has hitherto passed unrecognized as a specific disease, as well it might in view of the fact that the causal organism is only by refined methods distinguishable from a normal inhabitant of the intestine. It is to be hoped that this interesting series of papers, which can fairly claim to establish the identity of a new human disease, will enable others to recognize its existence elsewhere.

It is of some interest in this connexion that Mollaret, Prévot, and Guéniot¹ have recently described a case which they claim to have identified as a human equivalent of black disease in sheep—i.e., rapidly fatal hepatic necrosis caused by *Cl. oedematiens*. Except in the fulminating character of the disease the parallel between the two conditions does not seem particularly close, and the origin of

¹ Ann. Inst. Pasteur, 1948, 75, 195.

the infection is obscure. The organism was recovered in cultures made from the liver with the fullest aseptic precautions post mortem, but it is not mentioned as having been demonstrated histologically. Despite some dubious features this case suggests that the possibility of such an infection in man may be worth while bearing in mind.

PROPHYLACTIC ARTIFICIAL LIGHTING

There is disagreement about the value of ultra-violet irradiation during the winter months as a protection against infections such as the common cold. Dr. Dora Colebrook, working for the Industrial Health Research Board, was unable to demonstrate any better health among a large number of workpeople who were irradiated than among controls who imagined they were being irradiated but in fact were not.¹ A new approach to the subject has been made by Ronge² in Sweden, who studied the effect on school-children of ultra-violet irradiation emitted from lamps which acted as the source of artificial lighting in the classrooms. A quartz mercury-vapour burner was enclosed in an outer bulb of special glass which absorbed the shorter but transmitted the longer ultra-violet wavelengths. These burners were mounted with reflectors painted with ultra-violet-reflecting paint, and this paint was also used on the classroom walls. Supplementary incandescent lamps were used to tone the colour of the radiation. In Swedish schools during some of the winter months artificial lighting has to be used throughout the day, and practically no natural ultra-violet radiation reaches the earth during the winter. The dose of ultra-violet radiation in the classrooms was arranged so that some children received a daily "erythema-threshold" dose on their hands and faces, while others actually received a mild erythema dose: these latter became slightly pigmented on the exposed parts. There were no ophthalmic disturbances or other ill effects.

During this research detailed records were kept of all relevant physical and physiological observations. In Swedish children there is a seasonal variation in the plasma-calcium level, with highest values in the autumn and lowest in the late winter. This seasonal variation did not occur in the children whose classrooms were lit with the ultra-violet lamps. The haemoglobin concentration, which does not vary with the seasons, was unaffected by irradiation. A large dose of vitamin D was given to each one of a small group of children, but this did not increase the winter plasma-calcium level. Ronge devised a method of testing the physical fitness of the children by ascertaining the effect on the cardiovascular system of moderate muscular work on a bicycle ergometer. His results with this method appeared to show that the irradiated children were fitter than the non-irradiated controls. He attributed the difference to the effect of the irradiation in maintaining the amount of calcium in the plasma at summer level, but it is surprising to find that the non-irradiated children who received the large dose of vitamin D were also fitter than the controls.

Ronge also investigated the effect of the radiation on air-borne bacteria. He found that the bacterial count in irradiated classrooms was about half that in non-irradiated classrooms, and he believed that this accounted for the fact that the children in the former were less frequently absent from school than children in the latter. As the intensity of irradiation decreased when the emitters grew old, the children's absences became more frequent. No

claim is made for any "protective" effect other than that ascribed to the bactericidal action of the ultra-violet radiation.

This experiment differs from others in that the irradiation was more or less continuous while the children were at school, and its main purpose was to determine what effect if any this irradiation had on the physical fitness of the children. A possible flaw in the experiment lies in the difficulty of controlling the mental attitude of children undergoing performance tests. Schoolboys would quickly realize that some were being taught in classrooms lit by the new ray while others were not, and it seems likely that the irradiated boys would perhaps regard themselves as "supermen," while the non-irradiated might not have the same confidence in their ability to put up a good performance.

PROTECTING THE SKIN FROM IRRITANTS

The prevention of industrial dermatitis depends to a large extent upon cleanliness. When the cause of dermatitis is due to an allergic sensitiveness to some external contact the most scrupulous cleanliness and elaborate protective measures may fail, but where the occurrence of dermatitis depends upon the length of the period during which the irritant is in contact with the skin such measures are of major importance. The first requirement is a clean machine and a clean factory, to ensure that as little of the potential irritant comes into contact with the worker as possible: this is a problem for the engineer and not the medical man. Then follows the need to protect the worker by suitable garments and by the avoidance of prolonged contact with garments which may become impregnated with the irritant. Some help may be obtained from the use of appropriate barrier creams on exposed parts of the skin, but this procedure must be carefully and continuously supervised by a doctor or experienced nurse, and even so it has its limitations. The most important prophylactic measure is simple but efficient washing with soap and water immediately after work. The more knowledgeable workman has long known that washing is more effective when soap is massaged into moist hands to produce a thick soap emulsion than when it is diluted with large quantities of water, and in a recent paper on the subject of skin cleansers and protective creams Cruickshank¹ confirmed this and has suggested that even better results are obtained by using equal parts of milled, dried soap powder and fine wood flour. This no doubt has adsorptive properties and perhaps some abrasive action, and it prevents caking of the soap powder. The mixture would not be suitable for putting up in tablet form because of a tendency to abrade the skin.

In assessing the value of cleansers and barrier creams as a protection against the irritation caused by mineral oils Cruickshank carried out tests on three grades of oil—machine oil, cutting oil, and soluble oil—which vary in the ease with which they are removed from the skin. The efficacy of cleansing procedures was judged by observing the amount of fluorescence under ultra-violet light from oils remaining in the follicles. He did not find that barrier creams gave satisfactory protection, though creams with a soapy base were effective for limited periods; they also have the virtue of diluting the irritant and of making easier its removal by washing. Thorough cleansing of the skin after work is still of the first importance, and the sulphonated oils, which have found favour as cleansers in industry, proved less effective in removing the oil than the soap powder and wood flour emulsion.

¹ *Industr. Hlth Res. Bd. Rep. No. 89, 1946. London: H.M.S.O.*

² *Acta physiol. scand.*, 1948, 15, Suppl. 49.

³ *Brit. J. Industr. Med.*, 1948, 5, 204.

STREPTOMYCIN IN THE TREATMENT OF TUBERCULOSIS

REPORT OF A SUBCOMMITTEE

The Standing Advisory Committee on Tuberculosis in August last year set up a subcommittee* to advise the Ministry of Health and the Department of Health for Scotland on the application of streptomycin. The subcommittee has now prepared a report in which the following points are stressed.

Miliary and Meningeal Tuberculosis

For miliary and meningeal tuberculosis a daily intramuscular dose of 20 mg. per pound body weight up to a maximum of 2 g. is recommended. Intramuscular treatment should be maintained for at least four months, and in some cases further courses may be required. In addition, for meningitis 50-100 mg. of streptomycin dissolved in 5-10 ml. of saline should be injected intrathecally daily. The optimal frequency of intrathecal injection is not yet established, but it seems advisable in the average case to give intrathecal injections daily for the first three weeks and then every other day for two weeks. Further courses of intrathecal injection are probably necessary. The course of tuberculous meningitis under streptomycin treatment is very variable, and may be complicated by spinal block interfering with intrathecal therapy. Among the many schemes of dosage that have been used the following are two examples:

(i) Intramuscular streptomycin during weeks 1-3, 5-7, 10-12, 14-16. Intrathecal treatment every day during the first week, and on alternate days during weeks 2, 3, 5, and 10.

(ii) Intramuscular streptomycin during weeks 1-12, 17-20. Intrathecal streptomycin daily during weeks 1-4, 9-12.

In tuberculous conditions other than miliary and meningeal, 2 g. daily was at first the usual dose for all adult patients, but this produced toxic effects in most cases; 1 g. a day has been found to be less toxic, and is possibly equally effective; 0.5 g. a day is still less toxic, but its efficacy has not yet been fully established. It may be more satisfactory to adjust the dosage to body weight. As a general guide to dosage in both children and adults, 10 mg. per pound body weight per day is suggested. Since toxic effects are more severe in older age groups, the dosage should be lower for patients over the age of 45. The most recent evidence suggests that the maintenance of a fairly constant streptomycin blood level by injection at frequent intervals during the day is unnecessary. The administration of the daily dose in one or two injections is recommended.

No single scheme can be considered suitable for all forms of tuberculosis. According to present knowledge maximal effect is reached within the first one or two months, and for most cases other than miliary or meningeal tuberculosis it is useless and may be dangerous to treat continuously for more than three months. On the other hand, it is probable that treatment for less than one month is ineffective.

Toxicity

Vestibular damage is the commonest toxic effect. The damage to vestibular function is often irreversible, but some degree of compensation occurs, and unless the signs of dysfunction are sought the sequelae may be overlooked, particularly in the later stages. The danger of toxic effects increases with age, and they occur with especial frequency after middle age.

Vertigo most often begins in the fourth or fifth week of treatment. Nystagmus or altered vestibular reactions are frequent and may occur even in the absence of subjective symptoms. Difficulty in reading is sometimes complained of during the early stages of vertigo, but is usually transitory.

Careful watch should be kept for evidence of vestibular dysfunction. Tests such as the caloric reaction should be carried out where feasible, and in ambulant patients functional tests such as the Romberg test, walking along a straight line with eyes open and closed, or walking on a mattress.

*Sir Robert Young is chairman of the Streptomycin Subcommittee, and the members are: A. S. Hall, D. P. Sutherland, C. Price Thomas, Norman F. Smith, J. G. Scadding, E. H. Hudson, G. S. Todd, Andrew Morland, N. Lloyd Rusby, L. E. Houghton, W. E. Snell, A. L. d'Abreu, James Watt, P. M. D'Arcy Hart, Marc Daniels, and J. H. Harley Williams, who is the secretary.

Nausea, anorexia, and vomiting may begin during the third or fourth week and may be quite severe, but are often relieved by antihistamine drugs such as "benadryl" 50 mg. by mouth. Sensitization reactions such as skin eruptions and pruritus in the early stages of treatment are also usually relieved by antihistamine drugs.

Local pain at the site of injection may be relieved by adding 0.5 ml. of 1% procaine to the solution for injection.

Albumin and casts have been found in the urine in some cases. With the moderate dosage at present used, these abnormalities subside without discontinuing treatment. Serious neurological sequelae due to meningitis should be distinguished from toxic effects due to streptomycin.

In view of the risk of sensitization in attendants handling streptomycin it is advisable that they should wear rubber gloves while handling streptomycin and should wash the hands after removing the gloves.

Streptomycin Resistance

This eventuality must be borne in mind. A long-term plan of treatment should be made; in this a course of streptomycin can only be a part, and one which can probably not be repeated effectively. If the drug is indiscriminately used particularly in advanced cases with copious sputum, resistant strains will be disseminated. In order to detect dissemination of resistant strains, at the start of treatment in any particular case material if available should be collected for culture and the bacilli isolated and tested for streptomycin sensitivity.

In the present state of knowledge the simplest general criterion recommended for selection for streptomycin might be as follows: "Pulmonary tuberculosis in which the lesions requiring treatment are of recent development, progressive, and unlikely to benefit from conventional methods (e.g., bed-rest and/or collapse therapy) alone." Streptomycin should not be used as the only therapeutic measure in pulmonary tuberculosis. Indeed its major role may be to make possible the use of collapse procedures which in its absence would have had to be delayed or never performed.

Indications

Every diagnosed case of miliary and meningeal tuberculosis should be treated, but treatment of meningitis is difficult and prolonged, and miliary cases may be complicated by meningitis even while under streptomycin treatment. For these reasons streptomycin should be given only in hospitals with the facilities.

Streptomycin is of proved value in ulcerative tuberculosis of larynx, trachea, bronchi, tongue, and pharynx. In laryngitis and tracheo-bronchitis the diagnosis should be confirmed when possible by laryngoscopy or bronchoscopy before treatment started, and the examination should be repeated during and at the end of treatment in order to provide full assessment of the effects of streptomycin therapy. No additional advantage is apparently derived from giving streptomycin by method other than intramuscular.

Prophylactic use of streptomycin to "cover" routine thoracoplasties in the hope of decreasing the incidence of post-operative spreads is not recommended on present knowledge. It should be reserved for the treatment of spreads when they actually occur. Prophylactic use before and after resections of the lung for pulmonary tuberculosis is probably of value, but the best scheme of dosage for this purpose is not yet established. The value of streptomycin injected locally into infected subscapular spaces after thoracoplasty is established. Systemic treatment in addition to local may be of value.

Streptomycin often produces healing in tuberculous cutaneous sinuses and fistulae; local treatment in addition to systemic may be of value.

Favourable results have been reported in tuberculosis of the alimentary tract and peritoneum. Symptomatic improvement may occur rapidly, but relapses are frequent. Streptomycin may prove of benefit in some types of genito-urinary tuberculosis; and a few encouraging results have been obtained in bone and joint tuberculosis, but these are far from conclusive, and streptomycin treatment here too cannot replace standard therapy.

All the recommendations here summarized are provisional and will require modification as further experience accumulates. It is certain that indiscriminate use of streptomycin carries with

dangers both to the individual and to the community. The tendency to "try" this drug in every form of tuberculosis is to be condemned.

Streptomycin is generally supplied in one of three forms—as the hydrochloride, the sulphate, or a calcium chloride double salt. Since a mixture of the sulphate and the calcium chloride complex in the test-tube produces a precipitate of calcium sulphate it is recommended that a change-over from one of these two salts to another in intrathecal administration (and probably also in intramuscular administration) should be avoided; if a change has to be made it is recommended that several weeks elapse between the last injection of the one salt and the first injection of the other.

ROYAL MEDICAL FOUNDATION OF EPSOM COLLEGE

PENSIONS, SCHOLARSHIPS, GRANTS

Epsom College has available at the moment one or two *St. Anne's Scholarships* for girls attending Church of England schools. Candidates must be fully 9 years of age and the orphan daughters of medical men who have been in independent practice in England or Wales for not less than five years. The value of each scholarship is dependent upon the means of the applicant and the locality and fees of the school selected.

There are also available: (a) pensions for necessitous medical men fully 55 years of age, provided they have been registered for five years, and for the widows of medical practitioners who are 60 years and upwards (awards are made as vacancies occur); (b) scholarships and grants for children of either sex, not necessarily orphans, but candidates must be of public-school age and in need of such help; (c) grants from the Eastes Trust for the relief of registered members of the profession of any age, their widows and orphans, and for the educational assistance of their daughters or sons. Full information and forms of application are available, on request, from the secretary, Epsom College, Surrey.

Reports of Societies

RENAL LESIONS ASSOCIATED WITH PREGNANCY

A meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine was held on Jan. 21, with Professor *ILDA LLOYD* in the chair, for a discussion on the pathological features of cortical necrosis of the kidney and allied conditions associated with pregnancy.

Professor *JAMES YOUNG* said that the discussion concerned those acute states in relation to pregnancy which had as their dominant features anuria or severe oliguria, increasing azotaemia, and uraemia. The result was death, usually within even to twelve days, or, alternatively, increasing diuresis associated typically with a rapid disappearance of the uraemia, ending in the ordinary case apparently in complete recovery. This clinical sequence was found in cases of accidental haemorrhage, anuria being more frequent in "concealed" than in so-called "revealed" cases, and in obstructed labour, especially where there had been long-continued compression trauma of the soft passages. In concealed haemorrhage and in puerperal trauma the sequence was usually preceded by clinical shock, which might be severe. A striking feature in both these conditions was the selective nature of the renal lesion. In the case of traumatic anuria, however, the renal failure might be associated with a "massive" degenerative lesion of the liver and jaundice, the degeneration affecting especially the mid-zonal and central regions of the lobule. While the renal lesion might be typical, the fatigue of prolonged labour, severe nutritional disturbances, and inept anaesthesia had often contributed to the production of complex pathological changes.

The same sequence was also found in rare cases of eclampsia; very rarely in the course of a pregnancy which seemed otherwise normal; and in a group of conditions in which it was merely incidental to the pregnancy, as, for example, incompatible transfusion, or after the administration of sulphur drugs, or in association with certain infective conditions in the puerperium, especially that due to *Cl. welchii*.

Aetiology

Of the proximate aetiology little was known. It had been suggested that the renal lesion was due to anoxia from circulatory collapse following the shock of utero-placental haemorrhage. But in 59 consecutive cases of severe haemorrhage at childbirth necessitating blood transfusion the anuric sequence occurred only in 5 out of 10 cases of concealed accidental haemorrhage, and in none of the 37 cases of post-partum bleeding and the 12 cases of placenta praevia. Moreover, all degrees of the anuric phenomenon were clinically recognizable, and in the milder cases there had often been no evidence of shock whatever. Even complete suppression of urine could occur in a case without any shock.

The view sometimes taken that the whole sequence—accidental haemorrhage, anuria, azotaemia—was merely one manifestation of pregnancy toxemia was supported by the frequency with which it occurred as the final and critical climax in a toxemic patient; but there was no doubt that the anuric and uraemic sequence post-dated the acute utero-placental lesion. He thought the conclusion was not to be evaded that it was this lesion which precipitated the damage to the kidneys.

Confining himself to the findings in cases of concealed accidental haemorrhage, Professor Young said that, despite the uniformity of the clinical sequence and of the utero-placental changes in such cases, two quite different types of lesion were found in the kidney: (1) bilateral cortical necrosis, which was now believed to be the rarer of the two, and (2) the lower nephron lesion, affecting the second convoluted and collecting tubules, associated with degeneration of the epithelium and, though not invariably, with the deposition of crystals of blood pigment in the tubules.

The resemblance between the renal lesions in these and in crush cases raised the possibility of a basic similarity in genesis. It seemed unlikely that tubal blockage by pigment casts was an essential factor in either condition. Since in both conditions there was massive tissue damage—damage of muscle in the anuria following crush injuries and of the placenta in concealed accidental haemorrhage—it was conceivable that toxic metabolites from the tissues played an essential part. In the anuria of the crush syndrome recovery could be expected in a considerable proportion of cases with appropriate treatment. The majority of cases of anuria following accidental haemorrhage recovered, and it might be assumed that the lesion in these obstetrical cases was more likely to be of the lower nephron type and less likely to be cortical.

Finally, Professor Young reminded the Section that the pathology in these cases might have a special relevance to the genesis of pregnancy toxemia. He had referred already to the by no means uncommon occurrence of eclampsia with or without the anuric sequence in cases of concealed accidental haemorrhage. Further, it had long been known that blood pigment casts were relatively common, with or without tubular degeneration, in eclampsia. The significance of such findings was not easy to assess. It was clear that they did not constitute more than an occasional occurrence, and even in the kidneys of a patient with eclampsia dying from this type of anuria the pigment casts might be absent.

Other Views

The remainder of the discussion took the form of short reports by a number of workers. Dr. G. M. *BULL* (with whom were associated Dr. A. M. *Jockes* and Dr. K. *Lowe*), speaking of some work at Hammersmith Hospital, said that they had been interested in cases of anuric uraemia presenting some special problems. The most important point in treatment in the anuric phase was the maintenance of a correct water balance. Water overload was the most frequent cause of death in anuria. He emphasized the importance of a salt-free and potassium-free diet. Cortical necrosis was almost invariably fatal; in the other type of lesion recovery took place in a large proportion of cases.

Dr. J. F. *SMITH* described the morbid anatomy of uraemic cortical necrosis. It was not only in cases of septic abortion that these conditions were found; he had examined material from 17 fatal cases of eclampsia and had found pigment casts in 3, with some lower nephron changes in each case. He added that he had come across some cases of severe oliguria associated

with pregnancy in which death occurred suddenly after the administration of potassium citrate in substantial doses. If such a drug was given it was desirable that it should be the sodium rather than the potassium salt.

Professor KENNETH FRANKLIN discussed experimental findings and showed a coloured film illustrating the renal "shunt" mechanism in rabbits. He and his colleagues had advanced the hypothesis that in the toxæmia of pregnancy there was an increasing tendency to renal shunt. He defended the use of the word "shunt," although it had been challenged; it was a word coined and widely used in America, and its dictionary definition was "movement from one set of rails to another," which was what happened. When the tendency to shunt was slow it might be regarded as a physiological reaction calculated to give the uterus and its contents a better blood supply at the expense of the renal cortex.

Dr. J. F. HEGGIE described the first demonstrable lesion in the kidney in cortical necrosis, and showed the findings in an early case in which the patient died after two days' anuria. The glomeruli were shown uniformly dilated and filled with red blood corpuscles. At the same time or shortly afterwards congestion of the glomeruli occurred. The pressure might be such as to force red blood corpuscles from the main stream into the wall of the interlobular artery. He also spoke of the conditions in which recovery was possible. Dr. S. J. DE NEVASQUEZ believed that the essential primary lesion was a diffuse necrosis and discussed the factors which led to blockage by stagnation of blood cells.

Mr. T. L. T. LEWIS grouped the cases as (1) fatal cases of anuria in which the diagnosis of cortical necrosis was made post mortem; (2) fatal cases in which the diagnosis of lower nephron necrosis was made; and (3) recovered cases, in a few of which a biopsy had been carried out. In the first two groups the appearances were distinctly different, but the clinical pictures were similar. The withdrawal of heavily blood-stained urine heralded the onset of cortical necrosis. The patient remained cheerful all the time until near the end, when she became comatose. All the evidence pointed to a circulating toxin, and it was conceivable that following the sudden appearance of a toxic substance in the circulation the kidney dealt with it in one of two ways: either the remote vascular mechanism was brought into effect or else the specially susceptible cortex became engorged and finally blocked. In the first case lower nephron necrosis and, in the second, cortical necrosis developed. The latter was invariably fatal; lower nephron cases recovered, given time, and time was the vital element in recovery.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY

Following the annual general meeting of the society at the University of Manchester on Jan. 21, the new president, Mr. S. B. HERD, of Liverpool, took the chair.

Mr. S. W. LIGGETT described a case of spontaneous rupture of the uterus in a patient aged 76 who had been operated on for prolapse at the age of 60. Sixteen years later she developed symptoms of torsion of an ovarian cyst and at laparotomy was found to have free blood in the peritoneal cavity, a distended uterus and left tube, and perforation of a fibrous sacculus in the left uterine cornu. Subtotal hysterectomy with left salpingo-oophorectomy was carried out successfully.

Dr. W. CALVERT read a paper on ectopia vesicae. He had been able to trace twenty women who between them had had twenty-eight children, and after reviewing these cases he described one case which had been brought to his notice. This patient had had the ureters transplanted into the colon and the bladder excised for ectopia vesicae as a child, after which she had been able to live an active ordinary life as a schoolgirl and secretary. After marriage she had a successful vaginal plastic operation for dyspareunia and later conceived. During pregnancy there was renal insufficiency and near-term caesarean section with sterilization was performed, a healthy child being delivered. Recovery was uneventful.

Mr. F. J. MILWARD described cases of endometrioma of the umbilicus in a patient aged 38, and persistent vitelline duct with subacnt cyst and Meckel's diverticulum in a child of 9 years.

Correspondence

Aetiology of Erythema Nodosum

SIR,—In your annotation on this subject (Jan. 29, p. 181) you state:

"In the majority of adults . . . migratory arthritis was part of the clinical picture, and in some adults similar attacks of polyarthritis without erythema nodosum had occurred up to twenty years before. The belief that erythema nodosum is a manifestation of acute rheumatism dies hard in this country, yet despite the frequency of fleeting joint and limb pains Favours and Sosman could find no evidence that there is any close relationship between the two diseases. In fact they conclude quite categorically that erythema nodosum is not a form of rheumatic fever."

Sir Arnold Stott and I published a short paper¹ in 1940, in which we described a series of such cases sent to an Arm hospital, mostly with the diagnosis of rheumatic fever and presenting in many instances also the appearance of erythema nodosum. We were able to show as the result of serial blood cultures that these cases were in fact instances of low-grade meningococcal septicaemia. The history of recurrent attack in several of these cases also went back for a number of years. Subsequently other cases were seen and recognized as being of the same aetiology. We concluded that the condition although unrecognized in most cases for what it is, may not be uncommon.—I am, etc.,

London, W.1.

W. S. C. COPEMAN

REFERENCE

¹ *Lancet*, 1940, 1, 1116.

Overdose of Surface Analgesics

SIR,—I should be interested to know why Dr. D. Wilson (Jan. 29, p. 197) found it necessary to use such a great concentration as 10% cocaine hydrochloride for anaesthetization of the urethra. I have found a mixture of equal-parts of 1% cocaine hydrochloride and 1% sodium bicarbonate preparation immediately before use quite satisfactory, and it seems likely to be safer than 10% cocaine hydrochloride. The addition of an alkali to cocaine to enhance its action is discussed in Martindale's *Extra Pharmacopoeia* under the heading "Activated Alkaloidal Solutions" (vol. 18), and under the heading "Injectio Cocainae et Sodii Bicarbonatis" (vol. 21) is shown the same mixture with "chlorctone," a mixture favoured by the late Mr. Canny Ryall.

Incidentally, I should like to add a tip for urethroscopists who like to anaesthetize the urethra before examination. The urethra is filled with the anaesthetic solution and the patient does not urinate after it has had time to take effect the urethra is inconveniently wet, requiring much mopping, but if he urinates before the instrument is passed very little mopping is required. I must not occupy your space by discussing the reason.—I am, etc.,

London, S.W.1.

L. W. HARRISON.

Anuria

SIR,—Dr. J. F. Heggie's argument (Jan. 22, p. 151) appears a little weak for comment. He states that owing to certain events vasoconstriction of the renal arterioles "brings about the greatest reduction in calibre" of those supplying glomeruli "in the outer- and mid-cortical" regions, while "as a consequence the circulation through the juxtamedullary (15%) and some (5%) deep cortical glomeruli and the medulla is greatly augmented." May I ask him how it comes about that a general stimulus causing vasoconstriction of renal arterioles should be specific, affecting the arterioles of the outer two-thirds of the cortex and so unaffected those of the inner third that augmented blood flow through occurs? What is sauce for the goose is sauce for the gander! Dr. Heggie's argument appears untenable.

On Jan. 21, 1949, at the Royal Society of Medicine, eight papers on the pathogenesis of cortical necrosis of the kidney were read. Not one of the speakers mentioned a fundamental condition affecting the renal blood flow—the secretion of urine.

in October, 1947, at a discussion on the renal circulation I pointed out that Brodie had shown that if the ureter be clamped during diuresis the kidney becomes almost bloodless.² That during activity of an organ the blood flow through tends to be checked, to be limited, or even stopped is not peculiar to the kidney. Each time the heart contracts, the capillaries in its musculature, permeating the tissues of the ventricles, are clamped, so that no blood goes through at all.—I am, etc.,

Rusby.

R. H. PARAMORE.

REFERENCES

- ¹ *Proc. R. Soc. Med.*, 1948, 41, 342.
- ² *Proc. roy. Soc. B.*, 1914, 87, 571.

Infected Disk after Lumbar Puncture

SIR,—In their article on infected intervertebral disk after lumbar puncture (Jan. 22, p. 132) Mr. L. L. Bromley, Dr. Donaldson Craig, and Mr. A. W. Lipmann Kessel do not mention the simplest and most effective precaution against damage. For very many years it has been the standard practice among anaesthetists to tilt the needle towards the patient's head when doing lumbar puncture. If pushed too far the point will impinge on the next higher vertebral body, which may damage the former but not the latter. If, however, the needle is introduced at right angles to the skin over-enthusiasm will force its point into the intervertebral disk. In young patients with flexed spines the disks bulge towards the dura, and puncture of the thin annulus fibrosus may cause seepage of the nucleus pulposus with ultimate collapse of the disk. The unfortunate patient is then all set for a long period of invalidism.—I am, etc.,

St Albans, Herts

C. LANGTON HEWER.

Cinchocaine

SIR,—I beg to comment on the new official name of that familiar anaesthetic drug "nupercaine." It is now to be called cinchocaine. This name can be justified pharmacologically in that it suggests, rightly, a derivative of cinchoninic acid, but I feel that it is dangerous. Imagine a verbal order given by an impatient or irate anaesthetist (or conceivably a surgeon) in the course of a busy list. How easily the last two syllables might become the operative ones. It is true we put our cocaine in distinctive bottles, and in our hospital we colour the solution, but no precautions can be too great. I suggest that quinoacaine would be a safer name and yet have the same pharmacological justification.—I am, etc.,

Birmingham.

L. T. CLARKE.

Spinal Anaesthesia for Caesarean Section

SIR,—It is interesting that in the same issue of the *Journal* (Jan. 22) there should be a letter on the evergreen controversy which rages around this subject (p. 153), a report of a calamitous long-term sequel of lumbar puncture (p. 132), and another letter on the question of classical v. lower-segment operation (p. 156). It is unfortunate that so many of the disasters following lumbar puncture take so long to mature, because the original operator may be unaware that they have taken place or that his puncture has been anything less than 100% successful. It is also probable that minor disabilities such as backache may result from trauma inflicted at lumbar puncture and never come to light at all, being accepted by the patient as just another load to be borne in these hard times.

Lumbar puncture is often a very difficult operation to perform without touching bone or intervertebral disk, and is certainly not made easier by the presence of a full-term uterus, and I feel that a procedure with so many distant dangers is not justifiable for caesarean section except when the baby is very premature. Babies delivered by caesarean section generally cry immediately, whatever the anaesthetic, if it is chosen and given with reasonable skill. Ether in concentration enough to give plane I anaesthesia has remarkably little effect on the baby—far less than that of $\frac{1}{4}$ gr. (16 mg.) of morphine given two hours before.

But the babies which fail to cry are usually shocked, not anaesthetized. If the shock is not due to sub-oxygenation, which it need never be, it is in my opinion due mainly to trauma, and I think that the baby delivered through a poorly

developed lower segment, after a prolonged tussle with Willert's and other forceps, is likely to be feeble for precisely the same reason as if it had been delivered after a difficult high forceps, and the anaesthetic has very little to do with it.

Mr. Percy Malpas (p. 156) tells of a case where extraction was impossible through the lower segment. There are many cases where it is wellnigh so, and in these, where a general anaesthetic has been given and the baby has to be resuscitated, the anaesthetist comes in for more than his fair share of the blame, while babies delivered easily and rapidly by a classical operation hardly ever give anyone a moment's anxiety.

I agree with Mr. Duncan Ballantine and Dr. F. L. Robertshaw (p. 153) that it is desirable to maintain controlled respiration or 100% oxygen inhalation while the uterus is emptied, but surely the first is rather a horrible experience for a conscious patient under spinal anaesthesia; while if she has to be given a whiff during this critical stage, is not the whole object of the spinal defeated?—I am, etc.,

Colchester, Essex.

J. N. FELL.

SIR,—I have followed the recent correspondence on spinal analgesia for caesarean section with considerable interest and some amusement. I entirely agree with Dr. N. Beattie (Jan. 15, p. 114) that most of the hazards which are theoretically put forward against spinal analgesia have not been encountered in practice by those who have had personal experience of this procedure.

Some time ago I wrote to the *Journal* relating my impressions on watching Mr. Rufus Thomas performing lower-segment caesarean section under spinal analgesia. As I said at that time, I was most impressed with his technique and with the results, and I also stressed that I was at that time the only gynaecologist who had taken the trouble to see Mr. Thomas at work, although he had been advocating spinal analgesia for nearly ten years before I visited his clinic. Since then I have personally performed considerably more than one hundred lower-segment caesarean sections under "heavy" spinal analgesia, and I have had no reason to change my opinion as to the excellence of the method.

The uterus contracts usually extremely well after the baby has been removed, and bleeding is minimal. The baby causes no anxiety whatsoever, and frequently cries the moment that its head is delivered and when its body is still in the uterus. Falls of blood pressure do occur occasionally, but are not serious providing the technique described by Mr. Thomas is carried out, and the post-operative recovery has been in my experience uniformly excellent. It allows lower-segment caesarean section to be performed quietly and efficiently, and although I have on several occasions employed local anaesthesia I have not been able to obtain such satisfactory results so far as the actual operation is concerned.

I notice that Dr. Beattie refers to the use of light "nupercaine" anaesthesia and Mr. Duncan Ballantine and Dr. F. L. Robertshaw (Jan. 22, p. 153) to the use of an isobaric solution. About these two methods I cannot personally give any opinion, but I am in entire agreement with Mr. Rufus Thomas that nobody condemns all forms of inhalation anaesthesia simply because chloroform may at times be dangerous. Similarly, it is illogical to condemn all forms of spinal analgesia.

Mr. Rufus Thomas has obtained his excellent results, now amounting to nearly four hundred and fifty caesarean sections without a maternal death, using heavy nupercaine, and my results have been obtained using in the vast majority of cases heavy nupercaine and in other cases some form of "heavy" solution. None of my babies have been stillborn, and I have had no maternal deaths.

—I am, etc.,

London, W 1

D. G. WILSON CLYNE.

Malignant Tumour of the Small Intestine

SIR,—This communication on a case of primary jejunal cancer is prompted by Mr. F. J. C. Matthews's report (Jan. 22, p. 138, of the same type of growth in the ileum.

My patient, a man aged 53, was admitted as a case of perforated duodenal ulcer during Bristol's worst period of blizzards in October, 1940. He gave a three years' history suggestive of ulcer and had been in hospital under Dr. Richard Clarke, then senior physician. Skiagraphy had shown a pre-pyloric ulcer, but in the test meal the maximum rise of HCl was 9 (N/10 NaOH).

On examination he was somewhat flushed, fatty, and inclined to sweat. The only abdominal finding was epigastric tenderness.

Per rectum there was nil amiss. Pending operation he remained very miserable.

At operation (Oct. 11, 1940) I was astonished to find a typical string carcinoma on the jejunum, 10 in. (25 cm.) from the duodeno-jejunal flexure. In the related mesentery was a cluster of glands more or less discrete but suspiciously enlarged. To embrace these in the excision a large wedge of mesentery was excised, based on a 12-in. (30-cm.) resection of jejunum. Biopsy by Dr. A. D. Fraser revealed "columnar-celled adenocarcinoma of jejunum. Mesenteric glands all show subacute inflammatory changes." Two months later he was a "changed man."

On Feb. 12, 1946, when next I saw him, he reported that he had been taking alkaline stomach powders during the previous four months. Dyspepsia persisted, and skiagraphy (September, 1948) disclosed a peptic ulcer of finger-tip size in the lower curve of the stomach. He was transferred to the care of my general surgical colleague, Mr. Melville Capper, who agreed there was no sign of abdominal cancer. Under medical treatment his symptoms abated, and by December, 1948, the ulcer crater was obviously smaller.

The case is reported as an example of jejunal carcinoma apparently free from recurrence eight years after excision.—I am, etc.,

Bristol.

A. WILFRID ADAMS.

Arsenical Toxicity

SIR,—Having read your annotation "Arsenical Toxicity" (Jan. 1, p. 25) quoting the work of Sexton and Gowdey¹ on the value of vitamin B₁ in arsenical encephalopathy, I would like to draw your attention to an article by me in the *British Journal of Venereal Diseases*² on five cases of this complication which occurred during intensive "mapharside" therapy.

It will be seen that I pointed out the clinical and pathological similarity between arsenical encephalopathy and syndromes resulting from deficiency of vitamin B₁ (i.e., alcoholism, Wernicke's encephalopathy, etc.), and that the use of vitamin B₁ appeared to be of distinct value both in prophylaxis and treatment. Furthermore, I suggested that pyruvic acid estimations might be an added safeguard in patients undergoing intensive arsenic therapy and that in view of the known role of the other members of the vitamin B complex in intracellular metabolism better results may be obtained by using the whole complex rather than vitamin B₁ alone.

Two further points in the annotation call for comment. (1) It is stated that brain haemorrhages occur in fatal cases, but it is well known that on several occasions these have been absent and only cerebral oedema found post mortem. I therefore suggested that the primary pathological change in arsenical encephalopathy is intracellular oedema, which only at a later stage gives rise to haemorrhage and focal necrosis. This conception of the basic pathological change is important not only in emphasizing the difficulties of early diagnosis but also in understanding that the changes are completely reversible. (2) *Hyperglycaemia*. Blood-sugar estimations were carried out in several patients in our series and no significant change in blood values was found. I find it difficult to understand why hyperglycaemia should occur, since the metabolism of glucose is interfered with at the pyruvic acid level and not initially.

Finally, more mature consideration of all the factors involved in arsenical toxicity as a whole has led me to believe that the liver plays some as yet unknown but vital part in the interaction of arsenic, vitamin B, and intracellular metabolism.—I am, etc.,

London, W.1.

F. L. LYDON.

REFERENCES

- ¹ Arch. Derm. Syph., Chicago, 1947, 56, 634.
- ² Brit. J. vener. Dis., 1944, 20, 87.

Taking Children's Temperatures

SIR,—We read with great interest the article on rectal temperature-taking by Professor Alan Moncrieff and Dr. B. J. Hussey (Dec. 4, 1948, p. 972) and feel that to many practitioners it will come as a valuable confirmation and contribution in the field of clinical paediatrics.

In our hospital, where most of the patients are Zulus, temperatures are taken rectally in doubtful cases in children up to 5 years of age. Dr. Joan Malleon's timely warning (Dec. 18, p. 1078) comes opportunely, however, more especially

as we have recently had misgivings as to the effects of stimulation of this kind in infants—misgivings reinforced by closer knowledge of the almost universal custom found in Zululand of the daily or even thrice-daily administration of enemas to infants. These enemas may be either medicated or plain, and are given with a hollow reed or stem inserted into the child's anus. The mother is convinced that were this not regularly done the child would not have its bowels opened.

Various effects follow upon this custom: in the simple cases the mother brings the child with "sores in the rectum" and, everted anal skin, shows the pink mucosa which to her is the "sore." In the great majority of cases the child shows marked disapproval of this examination, wriggling and crying lustily. We are not yet satisfied as to the more complex effects of such hyperstimulation, but tentatively suggest that it may cause serious emotional imbalance, particularly in the sexual sphere. The gross hysterics found in a very high proportion of adolescent Zulu girls, constipation, vaginismus, etc., may quite possibly have their early origin in severe anal stimulation in infancy.

It is of interest to note that the Zulus themselves seem to have realized some connexion between anal stimulation and sexuality. In *The Social System of the Zulus* Krige writes (p. 67):

"Every child is supposed to be tainted at birth with a constitutional defect called isigwemba, which is held to be the cause of several ailments such as unusual sexual irritability, causing lecherous inclinations in adults or disposition to eczema, etc. To get rid of this taint the stem of a castor oil or umsenge leaf (*Cussonia spicata*) or a stalk of fibre is thrust by the mother into the rectum of the child and vigorously twirled round between both hands until, by scraping on the membrane of the bowel, blood is copiously drawn. Not infrequently children die from this treatment."

While rectal temperature-taking by the sophisticated physician can hardly be fairly compared with the barbaric practices of the Zulu, we might do well to exercise humility in our judgment when we number among our own scientific advances the development of the atomic bomb.

In view of the possible danger of rectal stimulation, however innocently intended or skilfully accomplished, it might be wise to enter into no fixed routines of rectal temperature-taking, but rather to exercise clinical judgment in each case. A temperature difference between 103° F. (39.4° C.) and 103.5° F. (39.7° C.) would not appear in a case of lobar pneumonia to be of great import in assessing the total pattern of signs, while even in a case of rheumatic fever, where slight deviations from normal are important, we have equally valuable guides in the pulse rate and erythrocyte sedimentation rate.

We have banished the soap stick from the nursery. Should we abolish routine rectal temperature-taking, keeping it only for cases where slight differences are vital?—We are, etc.,

S. G. LEE.

E. A. BARKER.

Nqutu, Zululand.

SIR,—Referring to the recent correspondence in the *Journal* on the taking of rectal temperatures, it seems remarkable to me that there has been no letter from psychiatrists supporting the position taken up by Dr. Joan Malleon (Dec. 18, 1948, p. 1078), who calls attention to the psychological dangers that may ensue from interference with the anal parts of infants. She quotes the late Dr. Forsyth's teaching in support of this—namely, "that all interference with the bodily orifices should whenever possible be avoided; for, being erogenous zones they will quickly become 'conditioned' either positively or negatively to interference, and may later become responsible for various functional disturbances."

As a matter of interest, some six years ago in the *Journal* (Oct. 31, 1942, p. 528), I published a letter attempting to put forward much the same views as Dr. Forsyth. In that letter I protested against Professor McNeil's recommendation that constipation of infants should be treated by frequent insertion of the doctor's little finger in the baby's anal canal. I gave an account of the psychological disorders of emotion, character and sexual developments that can ensue from this practice and similar methods of interference.—I am, etc.,

London, W.1.

A. CYRIL WILSON.

Approach to the Frontal Lobe

SIR,—Dr. P. Glees's plea (Jan. 29, p. 193) for co-operation between neurosurgeon and psychiatrist could not be better illustrated than in the problem of prefrontal activity. It is fairly certain that leucotomy by the standard or orbital approach, or by any other approach, is not the final answer to the surgical treatment of mental diseases.

In all neurophysiological research the task of solving a particular problem often draws the attention and interest of many investigators, and the literature of to-day is full of their now discarded claims. A new approach is useful for giving a different line of thought, and its recognized weaknesses and dangers can only give stimulation for further research. The work of Freeman has followed on "older methods" of bilateral section and may possibly lead to further observations and experiments which will ultimately cause rejection or modification of the original. I consider that prefrontal activity can be controlled by regulation of local blood supply and that this procedure in the hands of the neurosurgeon may become the operation of choice.

Whatever method is adopted or is subsequently fashionable, the selection of patients is best left to the psychiatrist, who will have the advantage of observing them for many years afterwards. Too often the experience of the neurosurgeon is limited to the post-operative sequelae. His interest in the patients ceases with their discharge from the ward. Neither is the psychiatrist fully equipped for their accurate study, as he has no knowledge of the exact pathways that have been severed in each case. Only when we have a precise method of interrupting clearly defined pathways will he be able to give a clear interpretation of its value.—I am, etc.,

Leeds.

P. P. NEWMAN.

SIR,—The letter from Dr. P. Glees (Jan. 29, p. 193) is a welcome reminder that we must beware of a complacent attitude, developing in some places, towards the therapeutic exploitation of damage to the frontal lobe. I heartily approve his statement that the newest mode of attack is being introduced while we are still struggling to disentangle the results of present methods.

Reckless "advance" at any price, without evidence to justify it, is to be deplored, especially when it involves damaging a vital organ. "Present knowledge of the frontal lobe," he says, "does not as yet permit of advice being given to the neurosurgeon as to what he should destroy." I agree. But is knowledge all that matters? We must not only disentangle the results, we must, as doctors, disentangle the academic and theoretical from the practical and therapeutic. As Professor Alstead has very recently pointed out, "The growth of sub-departments remote from the hospital ward has favoured research which may contribute little or nothing to the immediate requirements of the sick man. Clinicians are becoming increasingly entangled in techniques."¹

If anything, Dr. Glees has understated his case. Not only are we unable to tell the neurosurgeon exactly where to cut, but he as yet, in the blind procedure, cannot be sure of cutting where we ask. More than this, however, no one dare claim to know the mechanism of the major therapeutic effect of leucotomy. It could be a shock effect. If I now suggest that so far as we can be sure at present the advantages of the approach through the orbit are ease of performance, speed, and the lack of necessity for major anaesthesia, then its trial as an alternative to the standard Freeman method is certainly justifiable. I think I am right in saying that there have not yet been reports of the serious physical complications which Dr. Glees lists as possible. If they occur they will be the greatest single contraindication to the new technique. On the other hand, there may be anatomical advantages (or disadvantages), but it will take some time to collect enough information to decide.

In fact, as I am sure Dr. Glees will agree, it will be very long before we know enough about the lobes even for therapeutic purposes. Meanwhile we have to doctor our patients. I think it is in selecting the patients rather than in selecting the cuts that the greatest immediate clinical advance can be made. As a primary objective I should like to see a more careful selection of those patients who will probably benefit

anyway by the blind operation, regardless of just where the cut is made. They will inevitably provide material for studying the effects of slight variations in the incision, and, more important, for even better selection of patients in the future.—I am, etc.,

Runwell, Essex.

P. MACDONALD TOW.

REFERENCE

¹ *Lancet*, 1949, 1, 171.

Mechanism of Memory

SIR,—The number of nerve cells in the human brain and spinal cord is fixed before birth. If any die as a result of injury or disease they cannot be replaced. In this respect grey matter differs from many of the other body cells which are replaced regularly. This deficiency carries obvious physiological disadvantages which have recently been thrown into high relief by the work of Knisely.¹ He has shown that during sickness capillaries tend to become choked with sluggish blood corpuscles for a period long enough to bring about the death of the cells they serve. He hints that patches of brain cells may frequently be lost in this manner.

It may be that the inability to replace brain cells accounts for the fact that the human intelligence reaches a limit of development at the age of 17 or thereabouts. It has occurred to me, however, that without this apparent handicap the evolution of man would probably have been impossible.

The mechanism of memory would seem to reside in certain brain cells which in some way must store the nervous impulses they receive from the sense organs. Now it is reasonable to suppose that if these cells were regularly replaced the impressions stored by them would be lost. In that case long-term memory would be impossible. Without memory there could hardly be coherent speech, and therefore there could be no communication of thought.

It may be, then, that the inability of man to regenerate brain cells has been essential to his evolution. This is admittedly academic speculation, but it may prove of interest to neurologists.—I am, etc.,

Fareham, Surrey.

REFERENCE

¹ Knisely, M. H., Bloch, E. H., Elliot, T. S., and Warner, L., *Science*, 1947, 106, 431.

Fluorides and Dental Caries

SIR,—Dr. Alexander MacGregor's letter (Jan. 1, p. 29) admirably summarizes the present position of fluorine in relation to dental caries. But his suggestion that fluorides should not be made available to the public before adequate trials have been performed has its limitations. There cannot be, as he suggests, a similar treatment for fluorides as for penicillin, because fluorides are already available to the public in certain foods and liquids of established use. It is not unreasonable, from the U.S.A. evidence available, to suppose that the proprietary preparations containing fluorides to which he refers are designed to supply about 1 milligram of fluorine a day. From the data¹⁻⁴ on the fluorine content of drinking-water and foods one can obtain an approximate estimate as to how this quantity of fluorine can be taken in a normal manner.

	Average Fluorine Content (parts per million)	Approx. Amount to Supply 1 mg.
Drinking water:		
South Shields	1.4	1.3 pints (738 ml.)
Harrogate	0.6	3 " (1.7 litres)
London (New River) ..	0.35	5 " (2.8 ")
Milk, liquid	0.15	12 " (6.8 ")
Tea, Indian	40 to 60	2-3 " (1.1-1.7 litres)
Kidney	9	of 2% infusion
Tinned salmon or sardines	8	4 oz. (120 g.)
Bone broth	90	1 oz. (15 g.)

The water supplies chosen are comparatively rich in fluorine, since over Britain as a whole there is probably more water drunk with less than 0.3 than more than 0.3 p.p.m.^{1,2} For the foods quoted there is naturally a wide variation, depending on the origin of the material (this tea is reported to vary from 13 to 180 p.p.m.)³ or the method of preparation (for tea and bone broth particularly).

One must agree, therefore, with Dr. MacGregor that the marketing of tablets, etc., containing fluorine is undesirable in

view of the present lack of information as to their usefulness. But it should be appreciated that the diet and water consumed by many persons has involved for a long time an intake of fluorine similar in form and quantity to that which might arise from the use of fluoride tablets in fluorine-free areas. It is suggested, therefore, that emphasis should be placed on the pursuit of practical trials—of which so far there are few signs in Britain.—I am, etc.,

Didcot, Berks.

J. M. FLETCHER.

REFERENCES

- ¹ Bromehead, C. N., *et al.*, *Lancet*, 1943, 1, 490.
- ² Weaver, R., *Proc. R. Soc. Med.*, 1948, 41, 284.
- ³ Medical Research Council Memo. No. 18, 1948. London: H.M.S.O.
- ⁴ McClure, F. J., *National Institute of Health Bulletin* No. 172, 1939, Washington.

Lymphoblastic Leukaemia

SIR,—With reference to Dr. D. Pullen's article (Jan. 22, p. 137) on acute lymphoblastic leukaemia treated with urethane, there are several points which I should like to raise.

(1) The dosage of urethane given seems very small. I understand from perusal of the literature that the accepted dose is about 1 g. t.d.s. Creskoff, Fitz-Hugh, and Frost¹ even advise 4 g. per day. (Incidentally this and other references were omitted by Dr. Pullen.) (2) It is not my experience, nor is it that of colleagues (with whom I have discussed this matter), that remissions in acute leukaemia do not last more than a week. (3) A recent case of acute lymphatic leukaemia which came to my notice was treated with urethane, 1 g. t.d.s., for 30 days, and with repeated blood transfusions, with no clinical improvement whatever.—I am, etc.,

Liverpool.

J. G. U. O. ALEXANDER.

REFERENCE

- ¹ *Blood*, 1948, 8, 892.

Retaining Patency of Veins

SIR,—At the University obstetrics and gynaecological clinic in Budapest the following method is used when giving transfusions in order to ensure that the vein remains patent.

The wall of the vein is gripped with fine artery forceps; a thin thread is led under the vein, and when the needle is inserted in the vein the thread serves to fix it in position. When the transfusion is finished the wall of the vein just distal to the needle is gripped with artery forceps. The thread is cut and the needle is removed. The puncture wound in the wall of the vein can now be seen, and it is seized with a pair of fine Péan's forceps and undercut with a very fine catgut. On removal of the distal pair of forceps the circulation commences without any bleeding from the ligatured part. The wound of the skin is closed with two or three stitches.

Thrombosis rarely occurs in the ligatured vein, because the underlying secures contact of intima with intima, and the vein reacts as if the wall had been very finely sutured. Before removing the needle we inject heparin into the vein to avoid thrombosis due to injury of the vessel. On one occasion the same vein was used to give five transfusions to a patient in three days.

In so far as large veins are concerned our method is not a new one, because it has been applied in surgical institutes for closing the wounds of big vessels, but it is worth considering in the case of small veins. When blood transfusions are necessary every little vein may possess vital importance, and therefore they must be treated with caution. According to our experience this method seems to fulfil the best requirements.—I am, etc.,

Budapest.

GEORGES TANJAN.

POINTS FROM LETTERS

Causes of Rib Fracture

Dr. JAMES T. HAROLD (London, S.W.5) writes: Your issue of Jan. 22 contains references to several unusual causes of rib fracture. Some years ago I encountered another unusual cause. A young female stated that she had once sustained a fractured rib. Knowing her prowess as a huntress I thought it might have been acquired through horse-riding; but this noble animal was not to blame. It transpired that after some months' estrangement from her boy friend she had met him again, was lovingly embraced, and soon after experienced what she described as "a sharp pleuritic pain in the chest." Medical opinion was nonplussed for three days, when an x-ray revealed a fractured lower rib. Could this, Sir, be aetiological ascribed to emotional trauma?

Obituary

SIR EDMUND SPRIGGS, K.C.V.O., M.D., F.R.C.P.

Sir Edmund Spriggs died on Feb. 5 at the Ruthin Castle Clinic with which he had been associated since its creation. Sir Edmund, who had been ill for the last six months, was 77, and his death took place only a few hours after that of his wife.

Edmund Ivens Spriggs was born on Sept. 25, 1871, at Foxton Leicestershire. He was educated at Market Harborough Grammar School and Wyeliffe College, Stonhouse. A student at Firth College, which is now the University of Sheffield, he obtained a science scholarship at Guy's Hospital Medical School in 1892.

There he graduated M.B. with honours in 1896, proceeding to the M.D. in 1898. In that year Spriggs succeeded F. Gowland Hopkins as demonstrator of physiology under E. H. Starling and afterwards under M. S. Pembrey. Later he was also demonstrator of pharmacology, and he took the M.R.C.P. in 1899. In 1901, while holding the Gull Research Studentship, he worked in Kossel's laboratory at Heidelberg and published then his first paper on peptic activity. Returning to London, he was appointed in 1902 assistant physician to what is now the London Chest Hospital, and in 1903 to the Victoria Hospital for Children, Tite Street. At this time Spriggs was working on diabetes, and he published (with A. P. Beddard and M. S. Pembrey) work confirming the earlier observations of Minkowski and of Kraus.

In the following year, there being no near prospect of a vacancy at Guy's Hospital, Spriggs was appointed assistant physician at St. George's Hospital. He was elected F.R.C.P. in 1905, and in 1906 gave the Oliver-Sharpey lectures on "The bearing of metabolism experiments upon the treatment of disease." Studies of the metabolism of creatinine, made when he was dean of St. George's Hospital Medical School, were followed in 1909 by his first paper on the treatment of gastric ulcer by immediate feeding, the diet being adapted from that of Lenhartz. This method, with modifications, Spriggs used in suitable cases from that time onwards.

At the end of 1911 Edmund Spriggs had an illness which continued for fifteen months. He was advised not to return to London and was offered by Dr. David Lawson the post of senior physician at a new clinic for gastric disorders. This was accepted on the stipulation that the range of work should comprise internal medicine as a whole and that the clinic should be provided with suitable laboratories and scientific staff. The new clinic was conducted for ten years at Duff House, Banff, Scotland, and then moved to Ruthin Castle, North Wales. In 1917-18 Spriggs acted as medical adviser to the Ministry of Food, and was a member of the rationing committee. After the war he wrote the first of a succession of papers with O. A. Marxer on diverticulosis and diverticulitis. In 1923, with D. V. Pickering and A. J. Leigh, Spriggs recorded one of the earliest cases, if not the earliest in this country, of severe diabetes treated with insulin. A few years later (with J. H. Anderson) he was able to describe the recovery of the first two cases of pernicious anaemia treated in this country with the Minot-Murphy liver diet. Other papers which appeared later had been presented as opening addresses at medical meetings at Winnipeg in 1930 and at Wellington, New Zealand, in 1937.



(Elliott and Fry, Ltd)

in the Croonian Lectures in 1933 Spriggs reviewed 500 cases of headache. As recently as 1943 he wrote for the *Quarterly Journal of Medicine* a paper on polyps of the stomach and polypoid gastritis.

In a long and busy life Sir Edmund, as he became in 1935, published over a hundred papers. Out of doors his recreations were walking, fishing, shooting, and the breeding and training of retrievers; his Yellow Labradors competed with success in field trials.

He became a J.P. in Banffshire in 1919 and in Denbighshire in 1929. His two sons are both doctors, and the sympathy of all his friends and colleagues will be extended to them.

SIR FREDERIC J. WILLANS,
K.C.V.O., M.R.C.S., L.R.C.P.

Sir Frederic J. Willans died at his home in Sandringham on Jan. 27. He had held the post of surgeon-apothecary to his Majesty's Household at Sandringham since 1924, and had also been surgeon-apothecary to Queen Alexandra.

Frederic Jeune Willans, eldest son of the late Dr. W. Blundell Willans, was born at Much Hadham, Hertfordshire, in 1884. He was educated at Framlingham College, and at Durham University and the London Hospital, qualifying M.R.C.S., L.R.C.P. in 1910. Except for four years' service with the R.A.M.C. during the 1914-18 war, the whole of his active career was spent in general practice at Sandringham. He became surgeon-apothecary after the death of the first holder of the appointment to King Edward VII, Sir Alan Manby, whose assistant he was. In the course of his long and devoted service Willans had probably been consulted by members of the royal family more often than any other member of the profession; on many occasions he was the first medical man to be called in attendance. He was awarded the M.V.O. in 1923, promoted to C.V.O. in 1925, and created K.C.V.O. in 1933.

Sir Frederic was very popular among his many friends and patients in the Sandringham district, and although he had not been in good health for the past year his death after only a week's illness came as a shock to many. Always an active member of the British Medical Association, he was chairman of the West Norfolk Division in 1925-6 and chairman of the Norfolk Branch in 1936-7. During the recent war he presided over the King's Lynn district medical board. He married, in 1916, Wynnefred, the only daughter of the late Sir Alan Manby. There were no children.

An intimate friend has written: Not every man who has walked a hospital "can walk with kings, nor lose the common touch." Called very early in his medical career to minister at the bedside of royalty, Frederic Willans was nevertheless beloved by all the people of the villages on the estate which has for its centre Sandringham House. A keen cricketer, he once captained the Sandringham side. He was also an excellent tennis player, and he enjoyed his golf almost to the last. He was, too, an ardent philatelist. A warden of his parish church, he took a keen interest in the life of West Newton, where he lived. He had a real sense of humour, and children loved him. His heart, however, was in the work to which he gave himself with unsparing energy until a few days before his death. Since last summer he had known the serious nature of the condition which was to prove fatal, though with characteristic bravery and thought for others he concealed this from even his most intimate friends. In the country it sometimes happens that a man lives and works for so long in one place, and becomes so familiar a part of the village scene, that it seems he must always be there. His neighbours will find it difficult to imagine life without him. His tall, spare figure will be sorely missed by many, and especially in those hours of joy and sorrow when men and women find in their doctor the strength and help that no one else can give. Every agricultural worker knew that "Sir Frederic" would come to his aid at any hour of the day or night and with painstaking care give him as much attention as he gave to the highest in the land. The large congregation at his funeral was a remarkable testimony to the esteem and affection in which he was held among all sorts and conditions in the neighbourhood where he had practised for thirty-five years.

F. H. A. MARSHALL, C.B.E., F.R.S.

Dr. F. H. A. Marshall, who was for many years reader in agricultural physiology in the University of Cambridge, died suddenly after an operation on Feb. 5. Dr. Marshall, who was 70, had lectured on the physiology of reproduction to several generations of medical students at Cambridge.

Francis Hugh Adam Marshall was born at High Wycombe on July 11, 1878, and was educated at St. Mark's School, Windsor, and privately. He went up to Christ's College, Cambridge, in 1896 from University College, London. He took the Natural Science Tripos three years later and then went to Edinburgh to work as a research student with Professor Cossar Ewart. Later he was Carnegie Fellow and lecturer on the physiology of reproduction in the University, and it was only in 1908 that he returned to Cambridge as lecturer in agricultural physiology. He was a proctor in 1911-12, and subsequently served on the council of the Senate. Dr. Marshall continued as lecturer in physiology for more than thirty-five years until 1943, and for a short time he succeeded Professor T. B. Wood as director of the Institute of Animal Nutrition. He was successively fellow, tutor, dean, and, in 1940, vice-master of Christ's College. Dr. Marshall assisted Cossar Ewart with his experiments on telephony, and this stimulated his interest in the physiology of reproduction. He went on to study the oestrous cycle in sheep, in the ferret, and in the dog. The last of these studies led to the preparation of a paper written in collaboration with Professor W. A. Jolly and entitled "The Ovary as an Organ of Internal Secretion." Other papers were concerned with the effects of the removal and transplantation of the ovaries and with the part played by the Graafian follicle in the initiation of oestrus. Marshall's *The Physiology of Reproduction* was first published in 1910; the second and much enlarged edition appeared in 1922, and the third edition was published only last year.

H. A. RICHARDS, M.R.C.S., D.A.

Dr. Hugh Richards, consulting anaesthetist to King's College Hospital, died on Jan. 22 while on holiday at Grenada, British West Indies. Educated at Rossall and Clare College, Cambridge, he qualified from King's College Hospital in 1913. At the beginning of the 1914-18 war he was holding an appointment as ship surgeon in the Orient line, and he continued for a time as surgeon in charge of troopships. Later he went to France, and until his demobilization served in a casualty clearing station. There he first became interested in anaesthetics. In 1921 he was appointed to the honorary staff of King's College Hospital as an anaesthetist, and in 1935 he became senior anaesthetist, which post he held until his retirement in 1946. He was given the D.A. in 1936, and only last year was awarded the fellowship of the recently formed Faculty of Anaesthetists of the Royal College of Surgeons. He was also an active member of the Royal Society of Medicine, acting in the Section of Anaesthetists as secretary and later as president. In September, 1939, he gave up his private practice to take up a full-time appointment in the Emergency Medical Service, and throughout the war he worked at Horton Emergency Hospital, where he not only took a full share in the routine work but was largely responsible for the organization of the anaesthetic services and continued to teach students and to train residents.

Throughout his life Hugh Richards saw only the right way and the wrong way. He adhered unhesitatingly to the principles he had laid down for himself and expected others to do the same. His bluff and uncompromising manner prevented some from looking beneath the surface, but those who did so found a character of sincerity and great loyalty. Once given, his support was never withdrawn from one he found worthy of friendship. He was essentially a King's man, and he served his hospital ungrudgingly from his time as a student until his retirement. He gave either in a masterly fashion, and with it he obtained results which he claimed, with some justification, were equal to those of any other method; it had served him as a friend for many years and he was not easily led away by more recent methods. As a teacher he had exceptional ability, and he taught with zeal. His instruction was firm and dogmatic, and he taught mainly those fundamental principles which the undergraduate should know. He was intolerant of stupidity

and lack of attention to detail, and did not hesitate to use biting sarcasm; but this was only a part of his well-tryed method. His students learnt fast, and when they had finished their course with him they had a firm foundation on which to build in the future. He had a great interest in all student activities; during his early years on the staff he had much to do with reviving the hockey club, and he continued to support both it and the rugby football club until he retired. He was for many years treasurer, and for the last five years president, of the students' clubs and societies union, and his able management served this organization well.

Dr. Richards married just before he left the staff, and his friends thought he was assured of many years of contented retirement. By his unexpected death many of his colleagues have lost a generous friend and King's College Hospital has lost one of its most loyal supporters.

Medico-Legal

MEASLES IN A HOTEL

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

A prospective guest who had booked rooms for his family cancelled his booking when he heard that a child in the hotel had measles. The proprietor sued him for breach of contract, claiming £72, but the learned judge of Bournemouth County Court, Judge A. H. Armstrong, ruled that the prospective guest had been right and dismissed the suit.¹ A guest at a hotel is an invitee, and therefore has a right to be secured against harm. The duty to make premises safe is even more stringent when a child is a possible sufferer.

¹ *Evening Standard*, Nov. 24, 1948.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation on Jan. 20, the following medical degrees were conferred:

M.D.—F. Hampson.
M.B.—T. Bell, D. G. Jamison, *J. T. H. Green, *T. H. C. Lewis, *A. H. Campbell

* *In absentia*.

UNIVERSITY OF CAMBRIDGE

Sir Edward Mellanby, F.R.S., Secretary of the Medical Research Council, will deliver a lecture in the Physiological Laboratory Theatre on Friday, Feb. 25, at 5 p.m. His subject is "An Experimental Investigation into a Condition of Widespread Nerve Degeneration." The lecture is open to members of the University without fee.

UNIVERSITY OF MANCHESTER

The University Council has appointed R. S. F. Schilling, M.D., to be Reader in Occupational Health.

UNIVERSITY OF BRISTOL

The following candidate has been approved at the examination indicated:

M.D.—J. B. Brierley.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

At a meeting of the College, held on Feb. 1, with Dr. W. D. D. Small in the chair, the following were elected to the Fellowship: R. G. McInnes (Oxford), K. M. Morris (Edinburgh), W. J. Burns (Edinburgh).

The Diploma of Membership was conferred upon the following: W. G. Greene (Chester), F. O'D. Finigan (London), R. Natarajan (Deolali, India), Siva R. K. Padmavati (Coimbatore, India), J. M. Barber (London), F. G. Patrick (King's Lynn), A. M. Merriweather (Bechuanaland), R. E. Beamish (Winnipeg), R. P. Gillespie (Edinburgh), S. P. Hall-Smith (Hove), J. R. Mackenzie (Carlisle), I. H. Stokoe (Edinburgh), R. M. Marquis (Edinburgh), D. H. Reilly (Quebec), J. Williamson (East Kilbride), A. W. B. Cunningham (Edinburgh), R. G. Mitchell (Edinburgh), Alwyne B. Gordon (Sydney), R. A. Bustamante (London), G. L. Brinkman (London).

Medical Notes in Parliament

Remuneration for Temporary Residents

On Feb. 3 Colonel STODDART-SCOTT asked the Minister of Health if any payments had yet been made to the doctors in the National Health Service for the treatment of temporary residents, visitors, holiday-makers, foreigners, and those patients not on a doctor's list.

Mr. BEVAN replied that no payments had yet been made for the treatment of temporary residents, visitors, holiday-makers, and foreigners. The principles on which such payments should be made were under discussion with the medical profession. It was contemplated that payments in respect of the period from July 5 to Dec. 31, 1948, should be made on March 31 next. The amount of these payments was not yet known. So far as he knew, this country was at present the only one which provided such a service for its visitors.

Refresher Courses

During the period July 5, 1948, to Jan. 31, 1949, payment in respect of refresher courses under Section 48 of the National Health Service Act amounted to £1,335. In the same period payments amounting to £1,982 were made in respect of refresher courses for ex-Service doctors and dentists. There were in addition a large number of residential and other appointments in hospital for ex-Service doctors.

Fees for Sight-testing

Replying on Feb. 3 to Sir GEORGE HARVIE WATT, who asked what fees were payable to persons included in the ophthalmic list for services rendered under the National Health Service Mr. BEVAN replied that the fees were:

	£	s.	d.
Ophthalmic medical practitioners, sight testing fee ..	1	11	6
Ophthalmic opticians, sight-testing fee ..	..	15	6
Ophthalmic or dispensing optician, dispensing fee ..	1	5	0

He added that any proposals to adjust these amounts were matters for discussion with the professional organizations and regards ophthalmic medical practitioners and with the Optical Whitley Council as regards opticians.

Radioactive Effluent

Mr. BOYD-CARPENTER asked on Feb. 3 what steps were taken to check the degree of radioactivity of material in the River Thames resulting from the discharge of radioactive effluent from Harwell. Mr. BEVAN explained that each batch of effluent was tested and certified at Harwell before discharge into the Thames and the total amount of radioactive material discharged was always known at Harwell and by the Minister of Health. The amount which could be discharged with safety had been determined on the recommendations of a scientific subcommittee of the Medical Research Council. The amount so far discharged had been much below that safety limit, and would probably be too small, after dilution with river water to be detected at all. Tests of the river water would not therefore at present be of any value.

Milk Bill

At a meeting of the Parliamentary Medical Group at the House of Commons on Feb. 3 the officers of the Group were reappointed for 1949. The Milk (Special Designations) Bill was discussed with a deputation from the British Medical Association, and it was agreed to seek certain amendments. The Bill has already passed through the Committee and Report stages in the House of Lords.

Single-handed Doctor

Mr. MARTIN LINDSAY asked on Feb. 3 how many people received E.C./Reg.107, dated Jan. 14, from the Birmingham Executive Council informing them that they must change their doctor.

Mr. BEVAN said in reply that the executive council's letter of Jan. 14 was sent to 3,196 people. They were all on the list of a single-handed doctor whose total list amounted to 8,275 or over double the number agreed with the medical profession as the maximum which could be properly attended by one doctor. The action was taken in consultation with the doctors concerned. Mr. Bevan saw no reason to question it.

better technique

in the investigation of STERILITY

Designed mainly for the investigation of sterility, 'Visco-Pyelosil' eliminates many of the shortcomings encountered with earlier contrast media. 'Visco-Pyelosil' is a 35 per cent aqueous solution of diiodone and, by virtue of its viscosity, has far less tendency than ordinary solutions to run back between the cannula and the cervix, thus the risk of the picture being obscured by leakage of the medium into the vagina is very appreciably reduced. Because 'Visco-Pyelosil' is rapidly absorbed, there is no chance of chronic irritation resulting from its retention in the body cavities. Moreover, the preparation is free from toxicity even in much larger doses than those employed in practice. Exposures are made immediately after the injection of 'Visco-Pyelosil' and the resultant pictures are of high density and excellent definition, readily revealing any abnormality of the fallopian tubes.



10 cc. ampoules
in boxes of 1 & 5

brand Viscous solution of Diiodone

GLAXO LABORATORIES LTD., Greenford, Middlesex BYRn 3434

TEMPORIS ARS MEDICINA VERE EST (OVID)



The art of medicine is generally a question of time. With the peptic ulcer patient, as is well known, the rate of healing is determined by the ulcer's freedom from irritation. By rapidly buffering excess acid and at the same time avoiding acid rebound, 'ALUDROX,' a suspension of 5.6% colloidal aluminium hydroxide in gel form, ensures rest for the ulcer. Pain is relieved and time taken for healing reduced to a minimum.

ALUDROX
Aluminium hydroxide gel

JOHN WYETH & BROTHER LIMITED
11 Clifton House, Euston Road, London, N.W.1
DIAPHEX - ENDRINE - PETROLAGAR - PLASTULES

Wyeth



Nitrogen Mustard Hydrochloride- Boots

A POWERFUL cytotoxic agent which in carefully controlled dosage acts selectively against cells showing increased proliferative activity. Clinical trials have shown that the intravenous injection of Nitrogen Mustard Hydrochloride will reduce the tumour masses in cases of Hodgkin's disease that have become resistant to X-rays, and will bring about a fall in the white cell count in some cases of chronic myelogenous leukaemia. It is also of value in the reticuloses and in some cases of lymphosarcoma.

Boxes of 10 x 10 mg. rubber-capped vials.

Further information gladly sent on request
to the Medical Department
BOOTS PURE DRUG CO. LTD.
NOTTINGHAM, ENGLAND



S-22

A COLLOID OF FERRIC HYDROXIDE (10% Fe) One teaspoonful is equivalent, in iron content, to approximately 30 grs iron and ammonium citrate.

Neo-Ferrum is an inexpensive and highly effective form of iron suitable for general use in the treatment of iron deficiency anæmias. It is pleasantly flavoured and does not upset the stomach nor discolour the teeth.

Neo-Ferrum Tablets provide an extremely convenient and pleasant alternative; two tablets are equivalent to one teaspoonful of the liquid product.

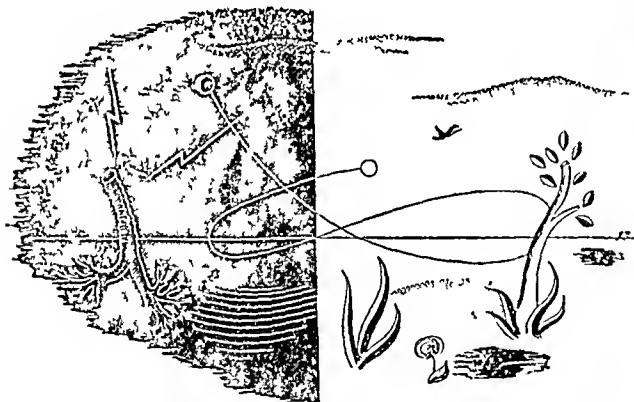
Neo-Ferrum may be given to young infants as well as to children and adults. The liquid preparation is readily miscible with milk feeds.



CROOKES

NEO-FERRUM

THE CROOKES LABORATORIES LIMITED • PARK ROYAL • LONDON • N.W.10



relief... in asthma

CONSCIOUS or unconscious fear of an attack often shadows the mind of the asthmatic. The knowledge that he has 'Franol' to forestall or relieve such attacks can dispel this shadow and restore confidence.

'Franol' is a potent combination of ephedrine (to relieve bronchial spasm), theophylline (to dilate the bronchioles) and 'Luminal' (to mitigate apprehension).

At the first warning of an attack, two tablets of 'Franol' will often bring relief. Taken regularly, 'Franol' will bring an all-round improvement in the general condition.

Medical literature supplied upon request

Tablets in tubes of 20 bottles of 100, 500, 1,000

Trade **'FRANOL'** Mark
ANTI-ASTHMATIC

BAYER PRODUCTS LIMITED
AFRICA HOUSE, KINGSWAY, W.C.2 (HOL 8730)

For chilblains 'PERNIVIT'

Tablets of Acetomenaphthone
and Nicotinic Acid B.D.H.

Considerable success in the treatment of chilblains has been reported following the use of acetomenaphthone in one group of patients and of nicotinic acid in a second group.

It may be that abnormal venous permeability and prolonged blood clotting time on the one hand and venous stasis from vasoconstriction on the other are both contributory causes of chilblains.

'Trial of a combination of acetomenaphthone and nicotinic acid collaterally, therefore, seems justified. 'Pernivit' is now available as tablets, each containing

Acetomenaphthone 7 mg.
(Prokayvit Oral)

Nicotinic Acid 25 mg.
Bottles of 50 and 500 tablets

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD LONDON N 1

Priv/E/525

Nursing Staff

Asked on Feb. 3 to give the number of nursing staff employed in hospitals at any convenient date in 1938, 1946, and 1948, Mr. BEVAN furnished these figures:

September, 1938—96,800 (including 800 part-time).
September, 1946—111,600 (including 2,600 part-time).
September, 1948—132,000 (including 19,000 part-time).

He added that the number of hospital beds unstaffed in September, 1948, was 57,000, or about one-ninth of the total number of beds.

Parliamentary Secretary.—Mr. ARTHUR BLENKINSOP, hitherto Parliamentary Secretary to the Ministry of Pensions, has been appointed to be Parliamentary Secretary to the Ministry of Health in place of Mr. L. J. Edwards, who becomes Parliamentary Secretary to the Board of Trade.

EPIDEMIOLOGICAL NOTES

Influenza

There were 37 deaths from influenza in the great towns of England and Wales in the week ended Jan. 29, as against 45 in the preceding week. In the first four weeks of 1949 the deaths were, on the whole, lower than they had been in any previous year except 1948.

There have been several reports of scattered outbreaks of influenza in camps and residential schools. This appears to be true influenza, and virus has been isolated from some cases. Generally speaking the disease is usually mild, with fever lasting about four days. The current English strain has not yet been finally identified, but one French and two Dutch strains seem to be identical serologically and related to, but not identical with, the English 1947 A. All these strains are remotely related to the PR8 strain of virus A.

Discussion of Table

In England and Wales increases were reported in the notifications of scarlet fever 322, whooping-cough 117, diphtheria 39, and dysentery 34. There was a decrease in the incidence of measles 668 and of acute pneumonia 134.

The decreased incidence of measles was due to the experience of the northern part of the country; in the south an increased incidence was recorded. The largest decreases in the notifications of measles were Lancashire 398, Yorkshire West Riding 228, and Gloucestershire 198; the largest increases were Southampton 251, Essex 119, and Surrey 60.

A small rise in the incidence of scarlet fever occurred throughout the country; the largest rises were Lancashire 108 and Yorkshire West Riding 55. With a few exceptions the local returns for whooping-cough showed only slight fluctuations; there was a rise of 37 in Surrey and a fall of 40 in Leicestershire.

The chief feature of the returns of diphtheria was an increase of 21 in Yorkshire West Riding; this was mainly due to an outbreak affecting 15 persons in Bradford C.B. Notifications of diphtheria in the south-eastern counties rose from 4 to 11.

An outbreak of dysentery with 5 cases was notified from Oxford, Bullington R.D. The largest returns for dysentery were London 41 (St. Pancras 31); Lancashire 24 (Liverpool C.B. 8, Oldham C.B. 8); and Yorkshire West Riding 8.

There were multiple notifications of acute poliomyelitis in London 3 (Islington 2); Middlesex 2; Gloucestershire (Bristol C.B. 2); Nottinghamshire (Bassford R.D. 2); Lancashire 2, and Yorkshire West Riding 2.

In Scotland there were decreases in the notifications of whooping-cough 56 and measles 45, with a rise in the incidence of scarlet fever 15 and diphtheria 13. The notifications of scarlet fever declined by 17 in the western area but rose in the remaining areas.

In Eire the notifications of diarrhoea and enteritis increased by 17 and the notifications of measles declined by 16. The increase in cases of diarrhoea and enteritis was due to the experience of Dublin C.B.

In Northern Ireland an increase was recorded in the notifications of scarlet fever 16 and measles 12. The incidence of measles rose in Belfast C.B. 19 and Antrim County 15, and fell in Tyrone County 31.

Week Ending January 29

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,191, whooping-cough 2,857, diphtheria 141, measles 11,656, acute pneumonia 935, cerebrospinal fever 45, acute poliomyelitis 20, dysentery 60, paratyphoid 2, and typhoid 3.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Jan. 22.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for (a) England and Wales (London included) (b) London (administrative county) (c) Scotland (d) Eire (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London) (b) London (administrative county) (c) The 16 principal towns in Scotland (d) The 13 principal towns in Eire (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases, a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	25	4	25	1	1	47	5	21	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	131	5	47	5	4	199	25	60	14	8
Deaths	3	—	—	—	—	2	—	—	—	—
Dysentery	104	41	36	—	4	131	7	43	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	—	—	—	1	—	—	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	40	4	5	—	—	55	15	6
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	—	—	—	—	—	—	—
Deaths	34	—	7	49	1	46	5	5	24	—
Measles*	10,254	357	63	41	163	3,457	284	1023	121	14
Deaths	—	—	—	—	—	—	—	—	—	—
Ophthalmia neonatorum	39	3	10	—	1	64	5	17	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	1	—	2(B)	1(B)	—	7	2	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza (from influenza)	1,050	45	16	13	9	780	69	7	4	4
Deaths	45	3	18	2	—	18	5	2	—	—
Pneumonia, primary	314	51	472	33	18	454	47	278	31	10
Deaths	—	—	—	—	—	—	—	—	—	—
Poli-encephalitis, acute	2	—	—	—	—	3	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	26	3	3	1	—	35	4	3	—	—
Deaths	3	—	—	—	—	3	—	—	—	—
Puerperal fever	—	—	10	—	—	—	1	7	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia†	96	9	13	1	1	110	12	10	2	2
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,311	77	288	92	60	1,847	127	350	39	45
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	3	—	—	—	—	6	1	1	4	1
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,942	195	248	66	67	2,547	155	39	42	4
Deaths	14	1	1	1	—	5	1	—	—	—
Deaths (0-1 year) Infant mortality rate (per 1,000 live births)	374	39	56	30	12	355	60	53	23	10
Deaths (excluding stillbirths)	5,851	944	833	222	145	5,222	788	655	215	156
Annual death rate (per 1,000 persons living)	—	—	16.7	13.8	—	—	—	13.8	13.5	—
Live births	7,754	1267	955	405	283	8,421	1319	1030	372	264
Annual rate per 1,000 persons living	—	—	19.1	25.1	—	—	—	20.8	23.3	—
Stillbirths	234	30	19	—	—	231	24	21	—	—
Rate per 1,000 total births (including stillborn)	—	—	20	—	—	—	—	20	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and poli-encephalitis for England and Wales, London (administrative county), are combined.

¶ Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

Medical News

Lord Webb-Johnson

Lord Webb-Johnson, President of the Royal College of Surgeons of England, has been made an Honorary Freeman of the Worshipful Company of Barbers, whose Master is Dr. G. G. Macdonald. The ceremony conferring the freedom took place at a recent meeting of the Court.

N.A.P.T. Colonial Scholarships

The National Association for the Prevention of Tuberculosis has decided to offer six further scholarships for postgraduate study in tuberculosis in Britain during 1949. They will be open to doctors and other medical personnel of either sex throughout the British Colonial Empire and the Sudan. The successful candidates will come to Britain for about six months to study tuberculosis in its widest aspects—preventive, clinical, administrative, and social. The awards are as follows: (a) two scholarships to doctors who either possess qualifications registrable in the United Kingdom (value of scholarships, £120 each) or are graduates of Colonial Medical Schools (value of scholarships, £100 each); (b) four scholarships (value £80 each) to matrons, nurses, health visitors, or members of Colonial Sanitary Departments. The successful candidates will be granted allowances to cover lodging and subsistence expenses from Colonial Government funds, and the details of their training during the tenure of the scholarship will be supervised by the N.A.P.T. Travelling expenses, purchase of books, and other incidental expenditure will fall to be met by scholars out of their scholarship money. Application, which should be made through heads of departments, will be forwarded to the Colonial Office, which will make recommendations to the Council of the N.A.P.T. Candidates should submit applications in time for them to reach the Colonial Office by May 1.

Infected Meat

The National Veterinary Medical Association has issued a warning to the public against buying uncooked meat at pet-food shops. Some of the meat may have been condemned as unfit for human consumption on account of its being infected with tuberculosis or other disease. There is an obvious danger of dogs and cats contracting the disease from this source unless the meat is thoroughly cooked; and the danger to animal owners handling such meat before it is cooked is said to be by no means negligible. Where such meat has to be handled raw, it is advisable to wash the hands thoroughly afterwards. One Cuy Corporation, on the advice of its Chief Veterinary Officer, has already obtained from Parliament authority to make by-laws to protect the public from this danger.

Hospital Catering Training Centre

A training centre for training in all branches of hospital catering is to be established under the auspices of King Edward's Hospital Fund at St. Pancras Hospital (now part of University College Hospital). The centre will provide meals for patients and staff in the hospital, be a model catering department in layout, organization, and equipment, and include all modern labour-saving devices. It will be at least six or twelve months before it is ready to take trainees. Mr. C. C. A. Gibbs has been appointed officer-in-charge of the centre. He was formerly catering officer to St. Mary's Hospital.

New Pharmaceutical Preparations

In order to help medical practitioners and pharmacists the *Pharmaceutical Journal* has started a service giving information about new proprietary and non-proprietary preparations. For two guineas a year the subscriber receives cards on which the preparations are described—their composition, indications for use, dosage, packing and price, and suppliers. References in the medical press on the use of some of the preparations are included. A filing cabinet for the cards is supplied. Information may be obtained from the *Pharmaceutical Journal* (Department N.P.), 33, Bedford Place, London, W.C.1.

National Insurance Scheme

Employed and self-employed new entrants to the National Insurance scheme on July 5, 1948, who were ill during the first six months of the scheme and, because they were not entitled to sickness benefit or for some other reason, did not notify the local National Insurance Office of their incapacity are advised by the Ministry of National Insurance to do so as soon as possible. If the local National Insurance Office is notified of incapacity, contributions can be excused in certain circumstances, even though the insured person is not entitled to benefit. Until a contribution is excused, however, an insured person remains liable to pay a contribution for each week he is sick and not receiving benefit.

Ipswich and Colchester Rahere Club

At a meeting held at Colchester on Jan. 8 under the chairmanship of Dr. Penry Rowland a Rahere Club was formed, open to old students of St. Bartholomew's Hospital in Suffolk and North Essex. The next dinner will be held at Ipswich in October. The secretary, Dr. W. Radcliffe, Wivenhoe, near Colchester, will be glad to hear from any old Bart's students in the district who may be interested.

COMING EVENTS

Liverpool University Medical Students' Society

The annual dinner of the Liverpool University Medical Students' Society will be held at Exchange Hotel, Liverpool, on Wednesday, Feb. 23, at 7 for 7.30 p.m., when the guest of honour will be Sir William Gilliat.

Swiss Medical Congress

The 17th Annual Congress of the Swiss Society of Internal Medicine will be held at Lugano on May 6-8. Information may be obtained from Dr. O. Gsell, Kantonsspital St. Gall, Switzerland.

International Congress of Electroencephalography

The second International Congress of Electroencephalography will be held in Paris on Sept. 1, 2, and 3, and on one day of the following week there will be a joint meeting with the International Neurological Congress. Full particulars may be obtained from the British representative on the organizing committee of the congress, Dr. W. Grey Walter, Burden Neurological Institute, Stoke Lane, Stapleton, Bristol.

N.A.P.T. Jubilee

The National Association for the Prevention of Tuberculosis will celebrate its jubilee this year by holding a Commonwealth and Empire Health and Tuberculosis Conference on July 5-8. The provisional programme is as follows: Tuesday, July 5: "Tuberculosis as a World Problem—Trends in the Modern Treatment for Tuberculosis, including Streptomycin and P.A.S." Wednesday, July 6: "Regional, County, and County Borough Tuberculosis Schemes—Organization of Comprehensive Tuberculosis Schemes in a British Colony." Thursday, July 7: "Problems in the Prevention and Detection of Tuberculosis, (a) Tuberculosis among Nurses and Students, (b) The Policy of B.C.G. Administration—Psychological and Social Readaptation of Chronic Disease in Industry." Friday, July 8: "Protection from Bovine Tuberculous Infection." Speakers will include: Dr. Marc Daniels, Dr. T. A. Lloyd Davies, Dr. John Francis, Professor Jorgen Lehmann, Dr. Geoffrey Marshall, Dr. John G. Scadding, Mr. C. Price Thomas, Dr. Charles Wilcocks, Dr. A. B. Williamson, Dr. J. Greenwood Wilson. The fees are three guineas for four days, one guinea for a single day or session. Particulars may be obtained from the N.A.P.T., Tavistock House North, Tavistock Square, London, W.C.1.

SOCIETIES AND LECTURES

Monday

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, London, W.C., Feb. 14, 4.45 p.m. "The Ultracentrifuge and Electrophoresis Apparatus in Protein Research," by Dr. P. Johnson, Ph.D.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, London, W., Feb. 14, 8.30 p.m. "Old Age." Discussion to be introduced by Dr. Trevor Howell and Mr. W. Sampson Handley.

Tuesday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Feb. 15, 5.15 p.m. "Diseases of the Nails," by Dr. I. Muende.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 15, 11 a.m. "Urethritis due to Protozoa, Metazoa and Fungi," by Dr. A. H. Harkness.

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, London, W.C., Feb. 15, 5.15 p.m. "Anatomical and Histological Correlations," by Dr. A. Schweitzer.

ROYAL COLLEGE OF PHYSICIANS, LONDON, Pall Mall East, S.W.—Feb. 15, 5 p.m. "Tuberculosis in Post-war Europe," Milroy Lecture by Dr. Marc Daniels.

Wednesday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Feb. 16, 5 p.m. "X-ray Technique," by Dr. C. W. McKenny.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 16, 11 a.m. "Urethritis due to Protozoa, Metazoa and Fungi," by Dr. A. H. Harkness.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London, W.C.—Feb. 16, 1.30 p.m. "The National Formulary, 1949," by Mr. T. C. Denston, B.Pharm., Ph.C., F.R.I.C.

ROYAL MICROSCOPICAL SOCIETY.—At B.M.A. House, Tavistock Square, London, W.C., Feb. 16, 5.30 p.m. Ordinary meeting. "Reflecting Microscopes—Past, Present, and Future," by Dr. R. Barer.

Thursday

EDINBURGH CLINICAL CLUB.—At B.M.A. Scottish House, 7, Drumshigh Gardens, Edinburgh. Feb. 17, 8 p.m. "Functional Disorders of Childhood," by Dr. J. L. Henderson.

EDINBURGH ROYAL INFIRMARY.—Feb. 17, 5 p.m. "Incoordinate Uterine Action." Hooymann Gillespie Lecture by Dr. Clifford Kennedy.

FACULTY OF RADIOLOGISTS.—At British Institute of Radiology, 32, Welbeck Street, London, W., Feb. 17, 8.15 p.m. Joint meeting with British Institute of Radiology and R.S.M. Section of Radiology. "The Physical, Cytological, and Medical Aspects of Protection from Ionizing Radiations with Special Reference to the Use of High Voltage X Rays and Radio-isotopes." Discussion to be opened by Sir E. Rock Carling, Dr. Frank Ellis, and Professor W. V. Mayneord.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., Feb. 17, 11 a.m. "Traumatic Urethritis," by Dr. A. H. Harkness.

LONDON UNIVERSITY.—At Large Lecture Theatre, St. George's Hospital Medical School, Hyde Park Corner, London, S.W., Feb. 17, 4.30 p.m. Lecture-demonstration: "Psychiatry."

LONDON: UNIVERSITY COLLEGE.—At Anatomy Theatre, Gower Street, London, W.C., Feb. 17, 1.15 p.m. "The New Philosophy of Science," by Dr. G. Burniston Brown.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Feb. 17, 5 p.m. "Tuberculosis in Post-war Europe," Milroy Lecture by Dr. Marc Daniels.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—At 26, Portland Place, London, W., Feb. 17, 7.30 p.m. "The Epidemiology of Yellow Fever in Central Africa," by Dr. A. F. Mahaffy. A discussion will follow.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—At B.M.A. House, Tavistock Square, London, W.C., Feb. 17, 5.30 p.m. "Can the M.O.H. Help to Prevent Accidents in the Home?" Paper by Dr. C. A. Boucher, to be followed by a discussion.

Friday

BIOCHEMICAL SOCIETY.—At St. Thomas's Hospital Medical School, London, S.E., Feb. 18, 2 p.m. 274th meeting. Papers will be read.

FACULTY OF RADIOLOGISTS.—Joint meeting with British Institute of Radiology and R.S.M. Section of Radiology, Feb. 18. Discussion: "The Physical, Cytological, and Medical Aspects of Protection from Ionizing Radiations with Special Reference to the Use of High Voltage X Rays and Radio-isotopes." (1) At Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., 2.15 p.m. To be opened by Drs. J. R. Nuttall, J. F. Loutit, and A. Glucksmann. (2) At Royal Society of Medicine, 1, Wimpole Street, London, W., 8.15 p.m. To be opened by Sir E. Rock Carling and Drs. Katharine Williams and W. G. Marley.

LONDON CHEST HOSPITAL, Victoria Park, E.—Feb. 18, 5 p.m. "The Place of Ear, Nose, and Throat Surgery in the Treatment of Chest Diseases," by Mr. J. W. S. Lindahl.

MIDDLESEX COUNTY MEDICAL SOCIETY.—At Edgware General Hospital, Edgware, Middlesex. Feb. 18, 3 p.m. General meeting.

ROYAL MEDICAL SOCIETY, 7, Melbourne Place, Edinburgh—Feb. 18, 8 p.m. "Lobar Pneumonia," by Mr. G. F. A. Howie.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—At South Kensington Hotel, 41, Queen's Gate Terrace, London, S.W., Feb. 18, 7.15 for 7.30 p.m. Dinner meeting 8.30 p.m. "Guild for Doctors," by Lord Horder.

Saturday

KENT PAEDIATRIC SOCIETY.—At Royal Star Hotel, Maidstone. Feb. 19, 2.30 p.m. "The Children's Act," by Dr. Dorothy Makepeace and Miss Harvie.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Arnott.—On Jan. 23, 1949, in London, to Dr. Ruth Arnott (née Bert), wife of Dr. D. C. Arnott, twin sons.

Baker.—On Feb. 3, 1949, at County Hospital, Hereford, to Bobbie (née Gelder), wife of Dr. W. H. J. Baker, a daughter.

Jones.—On Jan. 30, 1949, at Swiss Cottage, Llanelly, to Margaret (née Penny), wife of Dr. Derek Hayman Jones, a daughter.

Lamming.—On Jan. 10, 1949, to Olive (née Callow), wife of Robert L. Lamming, F.R.C.S., Douglas, Isle of Man, a daughter.

Pitt.—On Jan. 12, 1949, in Watford, to Penelope (née Reynolds), wife of Dr. N. P. Pitt, a daughter.

Tate.—On Feb. 1, 1949, at Nottingham Hospital for Women, to Margaret (née Bailey), wife of Malcolm Tate, B.M., of Bredon, Oak Tree Lane, Mansfield, a son—Philip.

MARRIAGE

Dalton-Gibson.—On Jan. 15, 1949, at Gorine-by-Sea, Worthing, John Dalton, M.B., B.Ch., to Jean Gibson, M.R.C.S., L.R.C.P.

DEATHS

Bateman.—On Jan. 30, 1949, at Chester Military Hospital, Albert Brooke Bateman, V.D., M.B., Ch.B., B.D.S., L.D.S.R.C.S., Surgeon Commander (D), R.N.V.R.

Derham.—On Feb. 2, 1949, at Nantbank, Taymull, Arxill, William Darling Derham, M.D., Ch.D., D.P.H., aged 47.

Riesby.—On Feb. 1, 1949, at Sunderland General Hospital, Doris Eliza Riesby, M.B., L.R.C.P.S.E., of Glasgow, aged 29.

Galbraith.—On Feb. 1, 1949, at Ross Memorial Hospital, Dingwall, James John Galbraith, M.D., D.P.H., J.P., aged 71.

Haldin-Davis.—On Feb. 2, 1949, at Greens End, Forest Row, Sussex, H. David Haldin-Davis, M.D., F.R.C.P., F.R.C.S., late of 52, Harley Street, London, W. Hayles.—Recently, Alfred William Hayles, M.R.C.S., of Pontnewydd, near Newport, Mon., aged 85.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Hereditary Influence of Epilepsy

Q.—Is there any evidence that the children of an epileptic are specially liable to nervous or other affections?

A.—Heredity is undoubtedly an important factor in the aetiology of epilepsy. Some studies have shown that as many as 10% of children with an epileptic parent are similarly affected. It seems likely, however, that this high figure is true only for institutional and severe cases, in which the hereditary component is strongest. Samples drawn from the general population, and thus including milder instances, give a lower figure—perhaps not much more than 2½%. Nevertheless this last figure is about five times greater than the general incidence of the condition. It is difficult, in the light of present knowledge, to be at all sure whether epilepsy should be regarded as one thing or many, speaking genetically. There is evidence that traumatic epilepsy is more likely to develop in those with a hereditary predisposition. The electroencephalographic studies of Lennox and Gibbs indicate that about 5% of the population show abnormal brain waves: it is suggested that the underlying condition behaves as a Mendelian dominant; it has also been found that identical twins always resemble each other in the presence or absence of abnormal rhythm and also in its type. Of the 5% who are predisposed, however, only about 1 in 20 ever has fits. Whether predisposition results in the manifest condition is presumably determined, or largely determined, by environmental influences. Thus, although the brain waves of identical twins are always alike, such twins not infrequently differ as regards actual epilepsy. It has also been observed that fraternal twins are considerably more alike in this respect than are brothers and sisters born at different times; presumably this points to the importance of prenatal or natal influences. Further research will be required before it becomes possible to elucidate the inheritance of epilepsy more precisely and also to calculate reasonably accurate chances in individual instances.

It would not appear that epilepsy is often genetically associated with other neurological and mental abnormalities, though some writers have claimed a connexion with migraine. The epilepsy which is so common in low-grade mental defectives is a special case; this is something different in its causation from the epilepsy occurring in those of normal mentality, and epileptic mental defectives do not appear to have any excess of epileptic relatives.

Water-Pitressin Test in Epilepsy

Q.—May I have full details of the water-pitressin test used as an aid to diagnosis in doubtful cases of epilepsy?

A.—The patient is confined to bed throughout the test. He is given an enema, is asked to pass urine, and is then weighed. He is fed on an ordinary diet with copious fluids. The intake and output of fluid are measured and are charted daily, and the patient is weighed morning and evening. An increase of 2% in the body weight with an excess of intake over output is taken as proof that a positive water balance has been established. This point is usually reached in 48 hours. Pitressin 0.25 ml. is then given intramuscularly, and 300 ml. of water by mouth. Further doses of pitressin (0.5 ml.) are given with 300 ml. of water every two hours to a total of ten injections unless a fit occurs before, when the test is stopped. Positive results have been claimed in from 40 to 80% of suspected epileptics, and there appears to be no risk of causing a fit in a person who is not an epileptic. Pitressin should not be administered to patients suffering from diabetes mellitus, nephritis, arteriosclerosis, or myocarditis.

Cl. Welchii and Gas Embolism

Q.—(a) What is the chemical nature of the gas produced in man by the gas-gangrene organisms (*Clostridium welchii*, etc.)? (b) Could the equivalent of "air embolism" be produced by this gas and lead to death from acute heart failure? I have in mind a case in which a clostridial infection followed a septic abortion, and death took place comparatively rapidly, with collapse, low blood pressure, and intense dyspnoea, clinically resembling pulmonary embolus. On opening the innominate veins at necropsy large bubbles of gas escaped.

A.—(a) Hydrogen and carbon dioxide in the proportion of about three parts to one. (b) No. Gas is found in considerable quantity only in tissues rich in fermentable carbohydrate—that is, muscle and liver. It is true that a small amount would be formed from blood sugar, and the accumulation of this after death might account for the appearance observed, but it could not conceivably accumulate during life in such volume as to cause fatal gas embolism. If embolism did occur in this case, is it not much more likely to have been due to the detachment of a thrombus?

Absorption of Dead Foetus

Q.—Can a dead foetus in utero (missed abortion) become absorbed and disappear with little external loss? Can such absorption be associated with toxic effects such as headaches, nausea, fainting, and leucocytosis?

A.—If the dead foetus is small, as in the first trimester, it is often absorbed and not found when the products of conception are expelled or removed. This is the case, for instance, in carneous moles. If by "foetus" the questioner means all the products of conception, the answer is still "yes." Even at term a placenta may be absorbed *in utero*, as has happened where a placenta accreta has been left *in situ* and a subsequent pregnancy has occurred. The absorption of a missed abortion may be accompanied by the signs and symptoms mentioned.

Persistent Sciatic Pain

Q.—A patient developed acute meningitis following cinchona hydrochloride injection, and this responded to treatment with sulphonamides. A month after his discharge from hospital he was readmitted because of left sciatic pain. This was increased by coughing, but there was no low back pain. The patient had a leucocytosis, but was afebrile, and there were neither motor nor sensory signs. Penicillin, 130,000 units in eight intrathecal injections, brought the white count to normal but had only a transitory effect on the pains. Is this a case of nerve-root compression due to inflammatory fibrosis? What treatment would you suggest, what investigation, and what is the prognosis?

A.—This is a problem case on which it would be impossible to give a dogmatic opinion without first making a full examination of the patient. There appear to be three possibilities. The first is that the sciatic pain is due to irritative neuritis resulting from the intrathecal infection; but if this was the case it might be expected that the symptoms would be bilateral rather than unilateral. The second possibility is that the condition is one of root pressure caused by a prolapsed intervertebral disk. Injury to a disk in the course of a difficult or ill-performed lumbar puncture might predispose to later prolapse. The third possibility is that the symptoms are due to some quite independent condition, such as spinal or pelvic neoplasms or sacro-iliac disease.

Before deciding on the best form of treatment it will be necessary to establish the diagnosis with greater certainty. It should be easy enough to dispose of the third possibility—the least likely one—after careful investigations, which should include pelvic examination; radiography of the hip-joints, sacro-iliac joints, and lumbar spine; cerebrospinal-fluid analysis, with particular reference to the protein level and bacteriology; and determination of the erythrocyte sedimentation rate. Assuming that extraneous conditions are thus excluded, it will then be necessary to decide between prolapsed intervertebral disk and irritative neuritis. The degree of the leucocytosis at

the time of readmission is not stated; but unless the white-cell count was significantly raised it need not necessarily be regarded as an indication of reinfection, particularly as there was no pyrexia. Because of the unilateral nature of the pain, and of the history of repeated lumbar puncture, disk prolapse is the more likely possibility; and if examination of the cerebrospinal fluid reveals no significant abnormality such a diagnosis should be made provisionally and conservative treatment instituted. Incidentally, treatment on very similar lines would be appropriate for a case of irritative neuritis. This should consist of: (1) application of a well-moulded plaster jacket from pubis to mid-thoracic level, applied with the patient standing; (2) rest in bed in the jacket for three to four weeks; (3) if improvement is occurring, ambulation and limited activity in the plaster is then permitted for a further six to eight weeks before removal of the jacket; (4) subsequently, if necessary, the patient may be fitted with a lumbo-sacral belt of strong design, to be worn for six months or more according to the clinical indications. Treatment on these lines has been shown to give excellent results even in severe cases of prolapsed intervertebral disk and, particularly in a case such as this, it would be wise to continue with conservative measures for a considerable period before considering any form of operative treatment.

NOTES AND COMMENTS

Threatened Abortion.—Mr. L. W. HEFFERMAN (Swansea) writes in an answer given in "Any Questions?" (Jan. 22, p. 163) I notice that the final opinion appears to be to discontinue the use of progesterone for threatened abortion. The following case may therefore be worthy of record. The patient was a woman, now age 30, who in 1940, as a primigravida, had a miscarriage at six months. Just prior to this occurrence she was in an air-raid shelter at the back of the house while there was some bombing. She became pregnant again in 1941, and, having decided to get away from the bombing area, she went to the outskirts of the town. She again had a miscarriage at six months, and on this occasion, in addition to being in a safe area, there was neither air-raid warning nor bombs. In 1942 she was pregnant for the third time and decided to seek medical advice. We put her on progesterone, and she duly gave birth to a full-time baby girl weighing 7 lb. 2 oz. (3.2 kg.). In 1944 she had a miscarriage at two months. In 1945 she again became pregnant and again sought medical advice. She was put on progesterone once more and again had a baby girl weighing 8 lb. 12 oz. (4 kg.). She is pregnant again (expected date of confinement May 16), and we are treating her with progesterone. She sought medical advice because she had had a slight loss. At the moment the foetus appears to be very vigorous.

In addition to this case I have personal records of twelve other cases, all of whom as primigravidae lost their first pregnancies. All the twelve subsequently in their second pregnancies were treated with progesterone. Eleven had full-time normal infants, but one had miscarriage for the second time in spite of progesterone. I have not seen her since, and in this case the Rh factor may be to blame. I notice that vitamin E was recommended, but I look upon this as more useful from a fertility point of view rather than for keeping the foetus *in situ* after the pregnancy has occurred.

Correction.—In the paper "Paludrine" (Proguanil) in Prophylaxis and Treatment of Malarial Infections Caused by a West African Strain of *P. falciparum*," by Sir Gordon Covell and others (Jan. 1, p. 88), a mistake occurred in describing under "Prophylactic Trials" how the patients were infected with malaria. The sentence should read: "The patients were infected once weekly over a period of 5 weeks, each subject under prophylaxis alternately being bitten by five to ten heavily infected mosquitoes one week and receiving the next week intravenous injection of a suspension of the salivary glands of one heavily infected mosquito by the technique described by Shu (1937)."

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atitolo, Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* and unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedad, Westcent, London*. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, 11, BEDFORD SQUARE, LONDON, W.C.1. TELEGRAMS: *Medisecra, Westcent, London*.

B.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY FEBRUARY 12 1949

THE SECRETARY REPORTS

THE SPENS APPROACH

There are two quite different groups of recommendations in the general practitioner Spens Report. The committee began by asking itself whether general practitioners as a body were receiving enough before the war. It had before it Professor Bradford Hill's estimate of the gross aggregate general practitioner income and his report on its spread among different practitioners.

The first, and not least important, conclusion of the committee was that the gross aggregate income was not enough. In effect, they said it was £3 million a year short of what it should have been. This conclusion stands quite apart from the Spens recommendations on how income should be spread among general practitioners, what percentage should receive one level and what percentage should receive another level of remuneration. While the difficulties of comprehending the Spens recommendations of the spread of income among general practitioners are very great even to those who have read the Report again and again, no such difficulty exists in understanding the Spens conclusion that general practitioners were underpaid before the war to the tune of £3 million a year. In fact, this conclusion enables us to calculate what the aggregate pool of general practitioner income should be to-day. In round figures general practitioners were receiving £28 million before the war. As this was £3 million short they should have been receiving £31 million. Spens says that that £31 million should be translated into terms of post-war money having regard to two things—the changed value of money and the increases received by other professions. In other words, the £31 million should receive proper betterment. But before making the calculation for betterment it is necessary to recall that at the time the £28 million was received by general practitioners the number of principals was 17,900. To-day it is over 20,000. Unless over 20,000 practitioners are to share a pool designed for 17,900, the pool must be adjusted for the additional number of practitioners sharing it. The adjustment is of the order of £3½ million. This brings us, on the basis of Spens, to £34½ million. Another adjustment is necessary because the number of people in England and Wales and Scotland is greater than it was in pre-war days. Another £1 million has to be added for this. We now reach £35½ million.

What should the betterment factor be? The Government first announced its figures of 20% addition to the net remuneration and 55% addition to the practice expenses element rather more than two years ago. At that time the figure which represented the increased cost of the middle-class budget, as calculated by an expert, was in the region of 45%. To-day the figure, as calculated by the same expert, is 85%. To put it at its lowest, if 20% was the right figure at the end of 1946 when the real figure was 45%, the right figure to-day is not less than 60%. Indeed, unless the 20% became something between 50% and 60%, general practitioners would have suffered a loss of real remuneration between the announcement of the Government's figure and its coming into operation. We could fairly claim that the figure should be somewhere between 160 and 185, taking pre-war as 100.

Size of Central Pool

The point I am trying to make is that, quite regardless of the mode of distribution, it is possible to negotiate the two adjustments which should be made in the size of the central pool to make sufficient money available for the remuneration of general practitioners. After all, unless the pool is of the right size the recommendations of Spens on its proper distribution can never be achieved.

Some people, remembering the difficulties imposed by the central-pool conception in Insurance Acts days, are wondering whether it would be wise to return to it. The difficulty about the old central pool was that it needed legislation to enlarge it. But this no longer holds. Bearing in mind that in the future the remuneration of a practitioner will need to be adjusted for the number of doctors who enter the Service as well as for the population and the betterment, there is a strong case for proceeding by stages, the first stage being to ensure that the aggregate pool is of the right size, the second being to secure its proper distribution.

Review of Hospital Staffs

Boards of guardians and regional hospital boards are now faced with two problems of unusual concern to the profession. The first is the decision which of the members of the hospital staffs they have inherited should be graded as specialists, and the second the allocation of duties to members of hospital staffs. On the first point the Ministry has made plain its views, which can be summarized in the following terms. Where a practitioner is engaged also in general practice, regard should be had to length and nature of experience and to the practitioner's standing as a consultant among his colleagues. The determination of status cannot depend solely on the possession of a postgraduate qualification but must take account of experience. Practice exclusively as a consultant or specialist cannot be employed as a criterion, since a number of practitioners engaged in other medical work may be qualified as specialists by experience or otherwise, and their services will be essential for the adequate staffing of the hospitals.

On the second point—the allocation of duties—the Ministry's view is that regard should be had both to the needs of the Service and the circumstances and preferences of the individual practitioner. It may be that a practitioner now working in two fields of medical practice may wish to confine himself to one, either as a whole-time or as a part-time officer. It may be that a whole-time officer may wish to be employed as a part-time officer in the Service. On this second point—the possibility of transferring to whole-time or part-time service—some doubts have been raised about the superannuation position. Would a practitioner making such a transfer lose in terms of superannuation? In general it may be said that the superannuation terms for the part-time officer are more favourable than those for the whole-time officer. In the former case the calculation of pension is based on $1\frac{1}{2}\%$ for each year of service, whereas in the case of the latter it is based on 1% .

There is an important proviso: in the case of the part-time specialist who devotes the bulk of his time to the Service the Minister may direct that the pension shall be assessed on 80ths (i.e., $1\frac{1}{2}\%$ for each year). If this proviso should come into operation in the case of an individual the result is that his mode of calculating pension is the same as for full-time service, the amount of the pension depending on the average remuneration in the last three years' service. He would receive for twenty years' service $20/80$ ths of that average remuneration, while in cases where the proviso does not apply the corresponding pension would be $1\frac{1}{2}\%$ of the total remuneration over the twenty years. If a whole-time officer transfers to, say, nine sessions, those nine sessions being maintained until the end of his career, the amount of the difference is likely to be relatively small. To sum up, the change in the pension position will be relatively small provided the number of sessions is high and—this is a most important proviso—the rate of sessions is maintained until the retiring age.

National Health Service

THE NATIONAL FORMULARY

The new *National Formulary* has been published (see *Journal*, p. 278), but will not be put into use for some weeks, since time must be allowed for circulation to manufacturing chemists, retail pharmacists, and the issue by executive councils to doctors on their lists. Every practitioner giving general medical services may expect to receive a copy early in April.

On or about May 1 the *National War Formulary* will cease to be the official formulary and will be superseded by the *National Formulary*. Prescribers are asked to refrain until then from using the titles or abbreviated titles of the new *Formulary*.

DEPENDANTS OF FORCES PERSONNEL OPHTHALMIC SERVICES

The Minister of Health has decided that an appropriately qualified ophthalmologist in the armed Services may prescribe on Form O.S.C. 2 for the wives and families of Service personnel. He should first apply to the Central Professional Committee for inclusion in the central list of practitioners having the prescribed qualifications. When his application is accepted he may apply to the local Ophthalmic Services Committee of his area for the inclusion of his name on the committee's ophthalmic list. His application should be on Form O.S.C. 11, obtainable from the committee concerned.

No fee is payable by the executive council for the sight test, and therefore the Service ophthalmologist does not use Part 5 of Form O.S.C. 2. Otherwise the ordinary procedure applies and the patient must obtain an initial recommendation, which may be given by a Service medical officer. These arrangements do not preclude the dependants of Service personnel from using the Supplementary Ophthalmic Service.

INCORRECT INCOME TAX DEDUCTION

Some Government Departments and local authorities are said to be deducting income tax at source even where the medical practitioner's services are of a casual nature. This procedure is incorrect.

The Board of Inland Revenue gives the following opinion: "Income tax should not be deducted from the fees or salary paid by a public department to a medical practitioner whose main source of income consists in private practice, except in cases where instructions to deduct tax under P.A.Y.E. are received from the Chief Inspector of Taxes (Departmental Claims Branch). Normally such payments are assessed on the recipient under Schedule D of the Income Tax Act, 1918, and are consequently outside the scope of the P.A.Y.E. system. The appointment of a medical practitioner to a salaried part-time post should, however, be notified to the Departmental Claims Branch when it is made, and a return of the salary and fees paid to him in respect thereof in any income tax year should be sent to that office as soon as possible after April 5. Where fees are paid for attendance on individual patients otherwise than in virtue of a salaried appointment, there is no obligation on the paying department to make a return to the Departmental Claims Branch."

(There was a note on a similar case of incorrect deduction by a regional hospital board in the *Supplement* of Oct. 16, p. 143.)

TRAINING OF NURSES

The Women's Liberal Federation discusses nurses in its pamphlet *The Great Partnership*. It emphasizes the importance of human relationships in maintaining a happy and efficient nursing staff. The preliminary training course should last 18 months to two years, and, except for the first three months, should be carried out in hospital. It should cover the minimum of essential theory and emphasize the learning of practical nursing skills. Those who pass a practical, oral, and written test at the end of the course should be entitled to

registration as "Enrolled Nurse." The staffing of hospitals should not be entirely dependent on the work of student nurses; enrolled nurses and domestics should take over some of the work. An advanced course lasting two years after the basic training should be taken by all those wishing to rise in the profession. Another six months should be spent on specialization. No nurse should be appointed to a position of responsibility without the advanced certificate which would give her State registration.

HOSPITAL APPOINTMENTS FOR EX-SERVICE DOCTORS

The Ministry of Health scheme for the postgraduate education of medical officers released from the Forces provided hospital posts:

(a) for practitioners who were called up within a year or two of qualifying, and on release required a period of hospital experience before entering general practice. These are Class I posts; salary at the rate of £350 per annum, plus £100 per annum if non-resident; period of tenure six months.

(b) for practitioners who before being called up were being trained to become specialists or consultants and on release desired to continue their training. These are Class III posts; salary at the rate of £550 per annum, plus £100 per annum if non-resident; period of tenure six months renewable for further periods of six months as necessary.

In some cases practitioners who had not begun to specialize before joining the Forces, but desired to do so on release, were given an initial period in a Class I post and, if suitable for specialized training, transferred to posts in Class III.

The scheme will be continuing under the National Health Service, and the postgraduate deans and directors of the universities are carrying on the work they have done hitherto in connexion with it, in co-operation with hospital management committees and the boards of governors of teaching hospitals. In future, however, practitioners recruited, shortly after qualifying, for service starting after Dec. 31, 1948, will not be eligible for appointments under the scheme when released, while those whose recruitment is deferred up to the age of 30 and who have started specialist training will still be eligible for Class III appointments on release. These appointments will usually be their pre-Service appointments (or equivalent ones) and will be on normal hospital establishments, but if necessary supernumerary appointments may be created.

PRESCRIPTIONS FOR OUT-PATIENTS

Where a hospital or clinic in the Service has neither a dispensary of its own nor regular and convenient arrangements for dispensing out-patients' prescriptions at another hospital, prescriptions may be given to out-patients for dispensing without charge by any chemist providing pharmaceutical services under the N.H.S. Act. No charge will fall on the hospital's accounts. Prescriptions issued under these arrangements must be signed by a doctor and may relate only to drugs and appliances, not to foods or toilet preparations.

In order that the patient may get it dispensed without charge, the prescription must be made out on a special form which is being prepared, at the foot of which the name of the hospital must be stamped. The Ministry states that it is impossible at present to extend these arrangements to hospitals which have their own regular arrangements for dispensing.

MEDICAL PRACTICES ADVISORY BUREAU A BRANCH IN EDINBURGH

An appointments information service is now available at the Association's Scottish Office. Doctors seeking openings in general practice, or the introduction of locums, assistants, or partners, should address inquiries to the Medical Director, Medical Practices Advisory Bureau, 7, Drumsheugh Gardens, Edinburgh, 3.

AUSTRALIAN HEALTH SERVICE ACT

The Federal Parliament of Australia passed the National Health Service Act at the end of 1948. It is an enabling Act providing for a service whose general administration will be under the Director-General—a legally qualified medical practitioner of not less than 10 years' standing. The services to be provided include general medical or dental practitioner services, consultant and specialist services, ophthalmic services, maternal and child health services, aerial medical and dental services, diagnostic and therapeutic services, convalescent and after-care services, nursing services, and medical and dental services in universities, schools, and colleges. The Director-General may establish, maintain, and manage hospitals, laboratories, health centres, and clinics, and provide scholarships or training for university graduates and others who have completed courses of training. He may also

establish, maintain, or develop, or assist in the establishment, maintenance or development of, courses of training in nursing (including dental nursing), dental hygiene, radiography, radiation therapy, physiotherapy, biochemistry, dietetics and other matters related to medicine or dentistry;

undertake or develop, or assist in the undertaking or development of, measures (including research and epidemiological investigations) for the improvement of health (including maternal and child health) and for the prevention of disease;

encourage group practice by medical practitioners and dentists; and

disseminate information relating to health and the prevention of disease.

The estimated cost with full participation of practitioners of the medical part of the services in the first year is £A6,000,000. The annual cost of the dental service is estimated to be £A4,000,000 within a few years.

Medical Benefit Scheme

Speaking on the Second Reading of the Bill in the Senate on Nov. 24, 1948, Senator N. E. McKenna, Minister for Health and Social Service, said that the Government's proposals were to pay 50% of the fees charged by the doctor for services given the patient, and to pay this amount on behalf of the patient direct to the doctor in accordance with a prescribed schedule of fees chargeable by doctors who participated in the scheme. The scheme would be begun as soon as possible and be extended as rapidly as circumstances permitted to include the various classes of specialists on terms similar to those for general practitioners. It was thought that full-time salary would be appropriate payment for medical practitioners in remote country areas, for full-time specialists, such as pathologists and radiologists in hospitals, with sessional fees for other specialists, and salaried service for medical superintendents and a full-time staff at hospitals.

The details of the scheme will be laid down in regulations. Practitioners will be required to make available the records of their services to patients in order to obtain their remuneration.

Health Centres

Senator McKenna said that the Commonwealth proposed to establish a number of health centres in different areas. They would correspond in function to the surgeries of the larger medical partnerships of the present day, and would provide general practitioner service, specialist service, and diagnostic facilities. It was contemplated that they would be established on varying administrative staffing bases, so that there would be opportunities for observation and comparison for future guidance.

Compensation

The Act provides for the payment of compensation to a medical or dental practitioner who is in practice in or near a place where a hospital, health centre, or clinic is established in connexion with the Health Service; who undertakes to make his professional services available exclusively for the Health Service; and who has thereby suffered or will suffer loss arising from a diminution in the value of his practice.

Hospitals and Other Services

The following may be taken over for the purposes of the service: (a) any medical service or dental service; (b) the whole or part of any hospital, laboratory, health centre, or clinic; and (c) any property used in connexion with these. The Minister may arrange for, or undertake, the manufacture of medical and dental supplies, appliances, and equipment, including visual aids and hearing-aids.

Specialists

The Director-General may "compile and publish a list of medical practitioners or dentists recognized by him as being specialists in any field of medical science or dental science." For a person to be recognized as a specialist the Director-General must be satisfied that he works wholly or mainly in that field and is generally regarded by medical practitioners or dentists as having special skill and experience; or that he has special academic qualifications in that field and has recently held or holds a hospital or other appointment affording opportunities for acquiring or demonstrating special skill and experience in that field. For guidance the Director-General may consult any list compiled by the appropriate State authority or professional body. A person who wants his name to be included in the list must apply to the Director-General, who may refer the application to an Advisory Committee.

Conflict with Profession

The Federal Council of the B.M.A. considers that the Act is unacceptable to the profession. In the first place it would prefer the control of the service to be in the hands of a corporate body composed predominantly of medical men instead of under the Director-General of Health. It fears the encroachment of State control over all aspects of medical practice, particularly since the Act allows the Government to make regulations that would bring the whole medical profession under its complete control. At the Council's meeting in December, 1948, it held that no regulations under the Act should be promulgated unless they have first been approved by the controlling corporate body. The Council points out that the system by which a doctor claims his fees for the items of service rendered to patients necessitates a breach of his confidential relationship with those patients. Further, the public would strongly object to having such details inspected by Government officers. Practitioners would be unwilling to undertake the clerical work and liabilities involved in acting as the agent for the patient obtaining medical benefits. They would prefer the refund system by which the patient pays the whole fee to the doctor and claims a refund of half the fee from the Government. The Council refused to admit the right of the Government to fix a fee of which it paid only a part, and therefore demanded that a scale of benefits and not a fee should be laid down.

In reply to a request from the Minister that a joint committee of Government and Federal Council Representatives should be set up, the President, Sir Henry Newland, wrote: "The medical profession . . . would insist that payment by the refund system be included in the scheme. . . . The Federal Council agrees to the principle of a joint committee of representatives of the Government and the Council to consider certain details of the proposed scheme, but only when major matters of policy had been agreed to by both parties. It will be prepared to participate as a whole in a joint committee when such agreement has been reached."

In his reply the Minister said: "Your intimation that your Council 'insists' that the Government makes its contribution to the hundreds of thousands of individual patients per month instead of to a few thousand doctors as a condition precedent to its participation in a joint committee is a presumptuous prerequisite and is accepted by the Government as an express rejection of its proposal for the establishment of a joint committee. . . . I have to convey to you the decision of the Government that, within the limits of constitutional power, it will proceed to put its plans into operation."

After saying that members of the Government have declared that no measure for the control of the Health Service is likely

to prove effective unless the co-operation of the medical profession is obtained, a leading article in the *Medical Journal of Australia* of Feb. 5 continues: "The members of the medical profession cannot be expected to consent to take part in a service which, according to the expressly stated opinion of the Minister, has as its ultimate aim the abolition of private medical practice—in other words, the denial of the freedom of the individual. From the point of view of the public it is abundantly clear that the sick person is to be regimented as well as the doctor, and that he will be liable to a scrutiny which should not even be regarded as possible in what is held to be a democratic community."

A VISIT TO THE EAST AFRICAN BRANCHES

BY

E. GREY TURNER, M.C., M.A., M.R.C.S., L.R.C.P.

Assistant Secretary, B.M.A.

London Airport was soaked in rain and the Thames was over its banks as we crossed it in a B.O.A.C. York. The rain cleared over central France, and the navigating officer pointed out Mont Blanc standing high and clear 150 miles to the east. The Rhône was in flood: from its mouth a huge tongue of dirty brown water stretched out many miles into the deep-blue Mediterranean. Unfortunately there was cloud over Tunisia, but I recognized the salt lake behind Tunis, and Sousse and Monastir. We spent the night at Tripoli. Next morning we flew over Benghazi and Alamein. The Delta—green, fertile, intensively cultivated and densely populated—looked exactly like a huge infarct in the desert. Cairo airport showed signs of war—Egyptian fighters ready to take off, A.A. batteries manned, sentries with bayonets fixed. I had arranged to meet the Honorary Secretary of the Egypt Branch, Dr. W. H. Hamilton, and we had a short but enjoyable lunch together. This brief contact was the first of many reminders that the Association has thousands of loyal members scattered all over the world. The Egypt Branch is unique in that it is the only Branch in a completely foreign country.

At Khartoum I was met by the Honorary Secretary of the Sudan Branch, Dr. H. M. Elliott, who drove me to the Kitchener School of Medicine, where I had the pleasure of attending a meeting of the Branch. At their request I gave a talk on the National Health Service. Throughout my tour all doctors showed intense interest in the National Health Service and in the affairs of the profession at home. The Sudan Branch holds monthly meetings, and appears to be full of vitality. It is not always appreciated that in many ways the Association plays an even more important role overseas than it does at home. In most places it is the only medical body, and in many—such as Dar-es-Salaam and Kampala—it is the only scientific or cultural society of any sort. For these reasons, apart from any others, the B.M.A. is greatly esteemed overseas. The *British Medical Journal* and the Association's other publications are keenly appreciated everywhere. Our overseas Branches play a vital part in the life of their communities.

On the third day we arrived over the green and undulant highlands of Kenya and crossed the Equator, at which point all passengers were formally enrolled into the Winged Order of Linc Shooters. I spent the next six days there. In the course of my stay I met nearly all the many members of our profession in Nairobi, which includes a high proportion of private general practitioners and specialists as well as the Government medical officers; and also the Chief Secretary (who was Acting Governor), the Chief Justice, the Member for Health (Mr. C. E. Mortimer), and the Director of Medical Services, Dr. N. M. MacLennan. I spent a day in the Kiambu Native Reserve, where I had the good fortune to meet an African chief, Waruhii, a man of very impressive intellectual and moral stature. I visited the Native Hospital, the Kiambu Hospital, the Mathari Mental Hospital, the pathological laboratory, and maternity and child-welfare clinics. In all of these, just as in all the other East African medical units which I was able to visit, a very high standard of clinical and educational work is achieved in spite of overcrowding, shortage of staff, and

unsuitable buildings. I was particularly impressed with the Mathari Mental Hospital, where Dr. J. C. Carothers has 400 patients of all races (in the whole of East Africa there is a large Asian population besides the African and European) under a minimum of restraint and in beautiful surroundings. The discharge rate is 75%, and the percentage of relapses within five years is low.

Population Problem

I attended a meeting of the Kenya Branch Council and addressed a full general meeting of the Branch. The Kenya Branch, and particularly my host, Dr. A. R. Paterson, are deeply concerned by the population problem in East Africa. Briefly, the problem is this: there is strong evidence that the native population of Kenya is increasing at a rapid rate (between 1% and 2% a year), while it is certain that the productivity of the land is declining fast owing to soil erosion, overcropping, and overgrazing. The combination of a rapidly expanding population and a rapidly dwindling food supply points clearly towards disaster. Dr. Paterson (who was once described by Julian Huxley as "like a very strong monsoon") is convinced that this threat overhangs all Africa south of the Sahara and (not unnaturally) that it overshadows all other questions. To my surprise, the population problem was scarcely mentioned in either Tanganyika or Uganda, but its existence in Kenya is visible even to the newly arrived visitor.

I know how dangerous it is to draw any conclusions from a brief visit, but flying across Kenya one can see many areas where vegetation is giving way to red desert, and one of my earliest impressions on landing was of the thinness of the Africans and their cattle. Of course a great number of factors, known and unknown, enter into this question, which is stated here only in barest outline. The agricultural and economic half of the problem is being energetically tackled by the Government. It is the much more difficult demographic half with which the Kenya Branch are concerned; and they consider very seriously that the whole subject of health and population in the African colonies should at once be investigated at the highest and most authoritative level—namely, by a Royal Commission.

On Jan. 12 I flew to Dar-es-Salaam, touching down *en route* at Tanga, where one of the medical officers stationed there met me to discuss a number of points. Tanganyika was extremely hot, far hotter than Kenya, where the weather had been like spring in England. My kind and thoughtful host was Dr. D. A. Skan, President of the Tanganyika Branch. Dr. Skan is the senior pathologist, and he showed me in his laboratory a German tablet commemorating the period when Robert Koch worked there on malaria. The Tanganyika Branch had arranged a full programme for my stay. I visited all the hospitals, met the medical profession of Dar and an up-country representative, and lunched at Government House with the Acting Governor. Dr. P. A. T. Sneath, the Director of Medical Services, very kindly entertained me to a large dinner-party at the Dar-es-Salaam Club.

Dissatisfaction in C.M.S.

Tanganyika is in many respects quite different from Kenya (as incidentally is Uganda), and the Tanganyika Branch is much different in character and outlook from the Kenya Branch. The Tanganyika Branch is composed almost entirely of Government members. It is no secret that the Colonial Medical Service is at present unpopular, and one of the principal objects of my tour was to investigate the causes of dissatisfaction with our members on the spot. One of the chief causes lies in the recruitment department of the Colonial Office. It is clear that in many cases incomplete or even inaccurate information is given to candidates about the work of a Colonial Medical Officer. Many men seem to have been recruited in the belief that their work would be purely clinical, and are aggrieved and frustrated when they discover their error. There is, of course, an immense and fascinating field of clinical work for the colonial medical officer, but he must also be prepared to occupy himself with a good deal of public health and social medicine, and with a certain amount of plain colonial administration—i.e., the government of backward peoples. There are plenty of doctors who would be attracted by a varied career of this sort.

Safe, effective bacteriostasis with 'SULFEX' in nasal and sinus infections

The intranasal use of 'Sulfex' ensures prolonged local bacteriostasis and prompt vasoconstriction. The microcrystalline ('Mickraform') sulphathiazole forms a fine, even 'frosting' over the nasal mucosa, and makes possible the maintenance of high local concentrations with the minimum of systemic absorption. The shrinking action of 'Paredrinex' renders the tissues more accessible to the sulphathiazole and promotes ventilation and drainage. 'Sulfex' is indicated in nasal and sinus infections — particularly those secondary to the common cold—and in sore throat. It is equally suitable for children and adults.

'Sulfex' is an aqueous suspension of microcrystalline ('Mickraform') sulphathiazole, 5%, in an isotonic solution of 'Paredrinex', 1% (pH 5.5 to 6.5). Issued in 1-oz. and 8-oz. bottles.

Sample and literature on request

MENLEY & JAMES, LIMITED

123 Coldharbour Lane, London, S.E.5

For Smith Kline & French International Co., Owner of the trade mark 'Sulfex'

P.S.3

Painless INTRAMUSCULAR INJECTIONS

e.g. of PENICILLIN, LIVER EXTRACTS,
ARSENO-BENZOLS, BISMUTH, etc.

Many substances create some pain on intramuscular injection. Novutox injected at the same time will prevent this pain.

Most substances are compatible with Novutox, which is also non-destructible to penicillin during the time that the latter is undergoing absorption.

Mixtures with Novutox should be made
immediately before use ONLY.

NOVUTOX

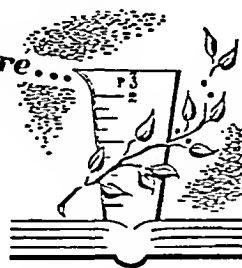
*Self-Sterilising
Local Anaesthetic*

Each c.c. of Novutox 2% contains 0.02 gm. ethocaine hcl, 0.00002 gm. epinephrine and 0.00002 gm. capryl hydrocuprelnotoxin hcl. Other strengths of Novutox contain these elements (with or without epinephrine) in varying proportions.

PHARMACEUTICAL MANUFACTURING CO. LTD.
THE LABORATORIES, CHELTENHAM, GLOS.

To supplement nature

the
natural
œstrogen



The use of 'PROGYNON' in gynecology ensures:

- ... Freedom from toxic effects
- ... A true physiological action and no other
- ... The restoration of the sense of well-being
normally dependent on ovarian sufficiency

'PROGYNON B OLEOSUM'

1 mg. and 5 mg.
estradiol benzoate
in 1 c.c. ampoule



167-169 GREAT PORTLAND STREET • LONDON • W.1



Fig. 1

CASE HISTORY

M.R. Aged 40. Housewife. Varicose ulcer with severe eczema right leg. (Fig. 1).

TREATMENT

August 9th, 1946.—Ulcer and surrounding skin cleaned with cod liver oil. Strips of Jelonet were applied to cover the ulcer and the eczematous area, with a pad of cotton-wool over the ulcer only. The whole leg was bandaged with Ichthopaste and then with Elastocrepe. (Fig. 2).

August 23rd, 1946.—Ichthopaste and Elastocrepe bandaging repeated.

Sept. 13th, 1946.—The oedema was reduced and the leg much less painful. Calamine lotion was



Fig. 2

VARICOSE ULCER WITH ECZEMA

Healed beneath Pressure Bandaging

applied over the whole area with a pad of cotton-wool and felt over the ulcer, and the leg again bandaged with Elastocrepe.

October 4th, 1946.—Calamine lotion, pad of cotton-wool and Elastocrepe repeated.

October 11th, 1946.—Repeated.

November 1st, 1946.—Condition healed. (Fig. 3). The patient was instructed to continue application herself of calamine lotion and Elastocrepe.

COMMENT. In this case the eczema was more troublesome than the ulcer. Both responded to the soothing effect of Ichthopaste and the firm pressure of Elastocrepe. Details and illustrations above are of an actual case. T. J. Smith & Nephew, Ltd., Manufacturers of Jelonet, Ichthopaste and Elastocrepe are privileged to publish this instance, typical of many, in which their products have been used with success, in the belief that such authentic records will be of general interest.



Fig. 3

A RICH SOURCE OF VITAMIN B₁

C.V.B.

CARR'S VITAMIN B₁

PREPARED WHEAT GERM

When a Vitamin B supplement is indicated, C.V.B. is a most reliable and pleasant addition to the diet, taken with a little milk—as a cereal—or sprinkled on stewed fruit, other cereals, milk puddings, etc.

B Group Vitamins and Minerals	Normal Daily Requirements	1 oz. C.V.B. Supplies
Vitamin B ₁	300 I.U. (0.90 mg.)	134 I.U. (0.40 mg.)
B ₂ (Riboflavin)	1.8 mgs.	0.3 mgs.
Niacin	12.0 mgs.	1.7 mgs.
Iron	10.0 mgs.	1.34 mgs.
Phosphorus	750 mgs.	310 mgs.

THE WHEAT GERM IS PROCESSED AND PACKED WHILST ABSOLUTELY FRESH

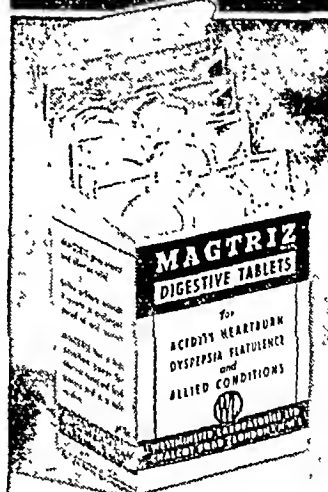
Only from Chemists . . . 3/- per 14 oz. packet

FULL SIZE TRIAL PACKET SENT FREE ON REQUEST

CARR'S FLOUR MILLS LTD

THE Modern

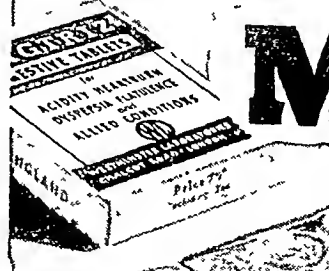
ANTACID ...



Prompt relief— Prolonged control

Magtriz Tablets provide a most convenient and palatable method of administering this effective combination of magnesium trisilicate and magnesium hydroxide. Packed in cellulose envelopes in cartons of 12 and 36 tablets. Dispensing size bottles of 250 and 1,000 tablets.

Liberal trial supply of **MAGTRIZ TABLETS** and professional literature sent on request.



MAGTRIZ

DIGESTIVE TABLETS

FORMULA
 Magnesium Trisilicate.....42.3%
 Magnesium Hydroxide.....9.5%
 Sucrose19.0%
 Cit. Marsh. Pil.2.2%

and if the Colonial Office stated the full facts plainly they would obtain recruits who would know what to expect and would enjoy it.

Another cause of low spirits in the Colonial Medical Service is the fault so commonly found in all large branches of Government service—bad man-management. The two essentials of man-management are personal interest and diffusion of information. A good leader of men, whether a general in command of an army, or the D.M.S. of a colony, or the S.M.O. of a province, will—at whatever cost to his other work—make frequent personal contacts with his subordinates and make them feel that he takes a personal interest in their work. He will also keep them fully informed of policy and developments at higher levels. Colonial medical officers are required to submit regular reports to their superiors; but I found no evidence of any flow of information in the opposite direction. As a result a number of medical officers seemed to be groping in the dark, without any clear idea of what purpose they were expected to achieve. Part of the blame for this lies also upon the Colonial Governments, who do not always appear to have formulated any clear medical policy. If the medical staff are to know what is expected of them, it is essential that the Government should sit down with its advisers and work out what purposes it proposes to achieve with the medical resources at its disposal.

There are other causes of dissatisfaction. Colonial medical officers are required to carry a heavy burden of secretarial and clerical work, much of which is purely financial accounting and book-keeping. I found a ready realization at the secretariats that this was entirely inappropriate work for doctors—one governor remarked that doctors are notoriously bad at figures anyhow—and in all three territories attempts are being made to recruit the non-medical staff necessary to take on this work. A more serious complaint, frequently heard, is that medical officers are judged more by their reports and returns than by their medical work. A D.M.S. pointed out that a good man is good at both, but it is unfair to a man to assume that he is bad at both because he is bad at one. The only fair method of assessment is by personal knowledge of the man and his work.

Then there are salaries, with which is bound up the vexed question of private practice. There is fairly general agreement that the Secretary of State's decision three years ago to abolish private practice in the Colonial Medical Service is simply not practicable in many stations. The difficulty is to devise a scheme of private practice which avoids the undesirable features of the old system. As regards salaries, there is no doubt that the remuneration of colonial medical officers, even after the recent revisions, lags appreciably behind the Spens standards. There are of course advantages in colonial life, though these must be weighed against heavy disadvantages. There is no doubt, too, that the Colonial Medical Service offers a magnificent field of clinical work and a fine opportunity to do a grand job for humanity. All these factors must be taken into account, and the East African Branches were deeply impressed by the exhaustive review which the Colonies Committee has recently completed of the terms of service in the Colonial Medical Service. Clearly the terms will require considerable improvement if they are to conform with Spens.

The last territory to be visited was Uganda. I flew from Dar-es-Salaam via Nairobi, where I spent a pleasant day with Dr. and Mrs. A. McK. Fleming, and Kisumu, where I had a short meeting with four medical officers stationed in the area. In Uganda, as in the rest of the tour, the most complete and admirable programme had been arranged for me by the Branch secretary, Dr. J. N. P. Davies, to whom the North Persian Forces Memorial Medal has just been awarded for his work on tropical diseases. I had the privilege and pleasure of visiting Sir Albert Cook at his beautiful home. Sir Albert, who has been fifty-two years in Uganda, founded the East African Branches and is the doyen of the profession in East Africa. I also met the Director of Medical Services, Dr. T. A. Austin, and the Governor, Sir John Hall, and lunched afterwards at Government House. I met Lieutenant-General Daubenton, of the Netherlands Army Medical Service, now WHO representative in Addis Ababa. He thinks highly of the medical services in our East African colonies. To our great pleasure General

Daubenton was able to attend the farewell dinner at the Imperial Hotel on the last night of my tour.

I addressed two meetings of the Uganda Branch and a meeting of the African Assistant Medical Officers. The Asian practitioners kindly entertained me to a large tea-party. The presence of three races in East Africa inevitably gives rise to complicated economic and political questions, and these have their reflection in the world of medicine.

I visited a number of hospitals, including Masaka, which is 84 miles up country, and Entebbe, where Dr. Fairfull Smith (of Glasgow) informed me cheerfully that medical practice in Darkest Africa is far preferable to practice in the Gorbals. The Mpigi dispensary comprises a busy out-patient department and three wards, all under the efficient charge of an African medical assistant (i.e., nursing orderly) with trained African female nurses to help him. This is rather larger than most of the up-country native dispensaries which I saw in East Africa. I visited a biggish hospital run by an Indian doctor for the employees of a 15,000-acre sugar estate. At all these institutions good work is being done, often under trying conditions. At Jinja I did not see the hospital, but enjoyed a long talk with five up-country medical officers and an R.A.M.C. officer attached to the King's African Rifles.

Makerere Experiment

Kampala is well equipped with hospitals, and is in some sense the medical centre of East Africa. Dr. A. A. Battson kindly conducted me round his attractive European Hospital. I spent an afternoon at Mengo, the pioneer hospital of the Church Missionary Society, nestling close to stately Namirembe Cathedral. Dr. R. T. S. Goodchild took me round and gave me an insight into the magnificent curative and educational work which the missions are doing and have done for so long. In the library at Mengo are kept all Sir Albert Cook's case reports since 1897. Mulago is the famous Government hospital, whose 1,000 beds make it the biggest in East Africa. It provides the clinical teaching for the medical school of Makerere College. The creation of a centre of university teaching for Africans is an ambitious project, and in the course of my tour I heard some criticisms of the Makerere experiment. All over East Africa I met medical diplomats of Makerere, and they impressed me very favourably.

But there are those who think that Makerere aims too high, and that it would have been wiser to move with less haste and to have concentrated at first upon a technical high school rather than a university; and in Uganda there are some who remark rather bitterly that all the medical resources of the territory are poured into Makerere and Mulago to the detriment of the remainder. There is some foundation for these criticisms; but I am inclined to agree with Dr. Eric Holmes, Makerere's distinguished professor of physiology, that the Makerere experiment, in spite of all its obvious dangers and difficulties, can and must succeed.

Thus ended my tour of the East African Branches. The overseas members were athirst for first-hand information about many things at home, and they were desperately eager to discuss their great and peculiar problems on the spot with a representative from Headquarters. The Association is a powerful Imperial link, embracing all territories and all races. I received the greatest hospitality and kindness from all members, and I was struck with the loyalty and affection of our overseas Branches towards the parent body. More than all this, however, I was enormously impressed by the devoted and skilful work which is being done, often under immense difficulties, by the medical profession in the colonies, whether in Government service, the missions, or in private practice.

The Ministry of Health states that some National Health Service doctors are continuing to prescribe on Form E.C.10 appliances which are not included in the Third Schedule (*Supplement*, Nov. 13, 1948, p. 172). Only appliances named in the Third Schedule may be ordered on Form E.C.10, and chemists are not authorized to dispense prescriptions for appliances not named in that list. Medical and surgical appliances not included in the Third Schedule may be supplied through the hospital service where considered necessary by a specialist at a hospital in the Service.

STANDING ADVISORY COMMITTEES

The following are the members of the Standing Advisory Committees set up by the Minister of Health other than the Medical Advisory Committee, whose composition was published in the *Supplement* of Feb. 5 (p. 58).

Standing Dental Advisory Committee

(a) *Members Appointed by the Minister after Consultation with the Central Health Services Council.*—Mr. F. J. BALLARD, dental practitioner; member of N.W. Metropolitan R.H.B. and University College Hospital and Eastman Dental Clinic Boards of Governors (until March 31, 1952). Mr. J. LAUER, dental practitioner; member of Dental Estimates Board (until March 31, 1950). Dr. H. T. ROPER-HALL, dental practitioner (until March 31, 1951).

(b) *Members Appointed by the Minister after Consultation with Representative Organizations.*—Mr. L. C. ATKINS, dental practitioner (until March 31, 1953). Professor R. V. BRADLAW (invitation to serve not yet accepted), Dean of Durham University Dental School; member of Newcastle Board of Governors (until March 31, 1953). Mr. W. K. FRY, dental surgeon; member of S.E. Metropolitan R.H.B. and Guy's Hospital and Eastman Dental Clinic Boards of Governors (until March 31, 1953). Mr. T. HINDLE, dental practitioner (until March 31, 1952). Professor H. F. HUMPHREYS, professor of dental surgery, Birmingham University; member of Birmingham R.H.B. and Board of Governors (until March 31, 1951). Professor W. C. W. NIXON, obstetrician, University College Hospital (until March 31, 1951). Mr. J. F. PILBEAM, senior dental officer, Middlesex County Council (until March 31, 1951). Mr. J. A. T. ROWLETT, dental practitioner (until March 31, 1953). Professor M. A. RUSHTON, professor, Guy's Hospital Dental School (until March 31, 1952). Mr. T. G. WARD, dental practitioner; dental surgeon, Queen Victoria Hospital, Grinstead (until March 31, 1951). Dr. A. G. WATKINS, paediatrician; member of Cardiff Board of Governors (until March 31, 1952). Professor F. C. WILKINSON, professor of dental surgery, Manchester University; member of Manchester Board of Governors (until March 31, 1952). *Secretary*: Miss J. E. CHAPPLE (Victoria 8540, extension 70).

Standing Pharmaceutical Advisory Committee

(a) *Members Appointed by the Minister after Consultation with the Central Health Services Council.*—Mr. R. H. HENRIKSEN, chief pharmacist, Dulwich Hospital (until March 31, 1951). Alderman W. J. TRISTRAM, pharmacist; member of Liverpool Executive Council (until March 31, 1952).

(b) *Members Appointed by the Minister after Consultation with Representative Organizations.*—Professor H. BERRY, professor of pharmaceuticals (until March 31, 1953). Mr. J. O. DAVIDSON, pharmacist (until March 31, 1951). Mr. P. DOBSON, pharmaceutical chemist (until March 31, 1951). Dr. P. J. HIBBONS, general practitioner; member of Liverpool Executive Council (until March 31, 1952). Mr. J. GILMOUR, pharmacist (until March 31, 1951). Dr. C. H. HAMPSHIRE, secretary, British Pharmacopoeia Commission (until March 31, 1953). Mr. J. C. HANBURY, manufacturing chemist (until March 31, 1951). Mr. J. B. HOUGH, pharmacist, Royal Gwent Hospital (until March 31, 1952). Mr. H. N. LINSTED, secretary, Pharmaceutical Society of Great Britain (until March 31, 1953). Mr. G. A. MALLINSON, secretary, National Pharmaceutical Union (until March 31, 1952). Mr. D. E. SPARSHOTT, pharmacist (until March 31, 1952). Professor E. J. WAYNE, professor of pharmacology; member of Sheffield R.H.B. and Board of Governors (until March 31, 1953). *Secretary*: Mr. F. F. MARCHBANK (Victoria 8540, extension 353).

Standing Ophthalmic Advisory Committee

(a) *Members Appointed by the Minister after Consultation with the Central Health Services Council.*—Dr. Janet AITKEN, physician (until March 31, 1950). Sir Herbert Lightfoot EASON, President of the General Medical Council (while President of

(b) *Members Appointed by the Minister after Consultation with Representative Organizations.*—Mr. G. W. BLACK, ophthalmic surgeon; member of Leeds R.H.B. (until March 31, 1953). Dr. Macdonald CRITCHLEY, physician and neurologist (until March 31, 1952). Mr. O. M. DUTHIE, ophthalmic surgeon; member of Manchester Board of Governors (until March 31, 1951). Mr. G. H. GILES, ophthalmic optician and lecturer (until March 31, 1952). Mr. R. A. GREEVES, ophthalmic surgeon (until March 31, 1951). Mr. J. R. HOWARD, dispensing optician (until March 31, 1953). Mr. D. H. LEWIS, ophthalmic optician and lecturer (until March 31, 1953). Mr. O. G. MORGAN, ophthalmic surgeon (until March 31, 1952). Mr. A. E. TURVILLE, ophthalmic optician (until March 31, 1952). Mr. S. M. WELLS, ophthalmic optician (until March 31, 1951). Dr. O. WILLIAMS, general practitioner (until March 31, 1953). Mr. F. M. WISEMAN, manufacturing optician (until March 31, 1951). *Secretary*: Mr. S. G. GAME (Victoria 8540, extension 328).

Standing Nursing Advisory Committee

(a) *Members Appointed by the Minister after Consultation with the Central Health Services Council.*—Alderman A. F. BRADBEER, member of Birmingham R.H.B., Board of Governors, City Council and Executive Council (until March 31, 1950). Mr. F. J. CABLE, superintendent, Manchester Royal Infirmary (until March 31, 1952). Miss N. B. DEANE, matron, Bristol Maternity Hospital (until March 31, 1951). Sir Herbert Lightfoot EASON, President of the General Medical Council (while President of G.M.C.). Mr. S. C. FRYERS, house governor and secretary, Leeds General Infirmary; member of Leeds R.H.B. (until March 31, 1950). The Hon. A. J. P. HOWARD, chairman of St. Thomas's Hospital Board of Governors (until March 31, 1950). Sir Wynne Cemlyn JONES, member of Anglesey County Council and Executive Council (until March 31, 1951). Miss E. J. MERRY, education officer, Queen's Institute (until March 31, 1952). Miss M. E. G. MILNE, matron, St. Mary's Hospital (until March 31, 1950).

(b) *Members Appointed by the Minister after Consultation with Representative Organizations.*—Miss C. H. ALEXANDER, matron, London Hospital (until March 31, 1952). Miss C. F. S. BELL, matron, Leicester Royal Infirmary (until March 31, 1951). Dr. C. Fraser BROCKINGTON, county medical officer of health, West Riding (until March 31, 1953). Mr. E. DAWSON, chief male nurse, St. Ebba's Hospital, Epsom (until March 31, 1953). Miss M. M. EDWARDS, secretary, Nursing Recruitment Committee of King Edward's Hospital Fund (until March 31, 1952). Miss L. I. GALE, ward sister, Liverpool Children's Hospital (until March 31, 1953). Miss F. G. GOODALL, general secretary, Royal College of Nursing (until March 31, 1952). Miss E. M. HILLIER, matron, Crumpsall Hospital, Manchester (until March 31, 1951). Mrs. G. C. JONES, assistant nurse, Stapleton Hospital, Bristol (until March 31, 1951). Miss C. M. PAMK, ward sister, St. Bartholomew's Hospital (until March 31, 1951). Miss K. M. ROE, public health nurse, London County Council (until March 31, 1952). Miss A. E. A. SQUIBBS, sister tutor, Leeds Infirmary (until March 31, 1952). Miss J. E. THOMAS, matron, North Wales Sanatorium (until March 31, 1951). Miss B. J. WALL, matron, Barming Heath Hospital (until March 31, 1953). *Secretary*: Miss P. M. MUSGROVE (Whitehall 4300, extension 722).

Standing Maternity and Midwifery Advisory Committee

(a) *Members Appointed by the Minister after Consultation with the Central Health Services Council.*—Dr. Janet AITKEN, physician (until March 31, 1950). Dr. Aleck W. BOURNE, obstetrician and gynaecologist (until March 31, 1950). Miss N. B. DEANE, matron, Bristol Maternity Hospital (until March 31, 1951). Sir William GILLIATT, President of the Royal College of Obstetricians and Gynaecologists (while President). Dr. W. V. HOWELLS, general practitioner; member of Swansea Executive Council (until March 31, 1950). Miss E. J. MERRY, education officer, Queen's Institute (until March 31, 1952). Miss M. E. G. MILNE, matron, St. Mary's Hospital (until March 31, 1950). Professor J. C. SPENCE, paediatrician; member of Newcastle Board of Governors (until March 31, 1952). Mrs. D. THURTELL, member of London County Council and Shoreditch Borough Council (until March 31, 1950). Dr. C. W. WALKER,

general practitioner; member of Cambridge Executive Council (until March 31, 1950). Alderman W. E. YORKE, Lord Mayor of Sheffield; member of Sheffield R.H.B. (until March 31, 1951).

(b) *Members Appointed by the Minister after Consultation with Representative Organizations.*—Miss M. N. FENSOM, educational supervisor, Central Midwives' Board (until March 31, 1952). Miss E. F. GORE, supervisor of midwives, London County Council (until March 31, 1953). Miss D. M. HAYWARD, superintendent health visitor, Mitcham Borough Council (until March 31, 1952). Dr. I. McI. MACKINTOSH, senior assistant medical officer (maternity and child welfare), City of Birmingham (until March 31, 1953). Mrs. F. R. MITCHELL, general secretary, Royal College of Midwives (until March 31, 1953). Miss M. O'CONNOR, member of Isle of Wight County Council and Executive Council (until March 31, 1953). Mr. E. W. SCORER, member of Sheffield R.H.B. (until March 31, 1951). Miss A. E. STEWARD, midwifery sister, Colchester Maternity Hospital (until March 31, 1952). Mr. A. WALKER, chairman, Central Midwives' Board (until March 31, 1951). Miss M. WILLIAMS, matron, Queen Charlotte's Hospital (until March 31, 1951). *Secretary:* Mr. E. HALLIDAY (Whitehall 4300, extension 178).

Standing Mental Health Advisory Committee

(a) *Members Appointed by the Minister after Consultation with the Central Health Services Council.*—Mr. C. F. COMER, general secretary, Confederation of Health Service Employees (until March 31, 1952). Sir Allen DALEY, chairman of the Council of the Society of Medical Officers of Health (while chairman of that Society). Professor A. J. LEWIS, psychiatrist; member of Bethlem and Maudsley Hospital Board of Governors (until March 31, 1952). Dr. W. G. MASEFIELD, psychiatrist; member of S.E. Metropolitan R.H.B. and Bethlem and Maudsley Hospital Board of Governors (until March 31, 1951). Sir Cecil OAKES, member of East Anglian R.H.B. (until March 31, 1951).

(b) *Members Appointed by the Minister after Consultation with Representative Organizations.*—Mr. C. BARTLETT, male nurse (until March 31, 1951). Dr. E. J. M. BOWLEY, child psychiatrist (until March 31, 1951). Dr. W. RUSSELL BRAIN, physician and neurologist; member of London and National Hospitals Board of Governors (until March 31, 1952). Dr. N. H. M. BURKE, medical superintendent, Cell Barnes Mental Deficiency Colony (until March 31, 1952). Dr. Desmond CURRAN, physician and psychiatrist; member of S.W. Metropolitan R.H.B. (until March 31, 1953). Dr. W. S. MACDONALD, general practitioner; member of Leeds R.H.B. (until March 31, 1953). Mrs. K. F. McDUGALL, psychiatric social worker (until March 31, 1951). Alderman M. PAYNE, member of Glamorgan County Council; chairman of Glamorgan Mental Hospital Management Committee (until March 31, 1951). Dr. J. R. REES, psychiatrist; member of N.W. Metropolitan R.H.B. (until March 31, 1953). Dr. J. I. RUSSELL, medical superintendent of North Riding Mental Hospital; member of Leeds R.H.B. (until March 31, 1952). Mr. P. E. VERNON, psychologist (until March 31, 1952). Miss B. J. WALL, matron, Barming Heath Hospital (until March 31, 1953). *Secretary:* Mr. H. J. CLARKE. (Kensington 3456, extension 5).

Standing Tuberculosis Advisory Committee

(a) *Members Appointed by the Minister after Consultation with the Central Health Services Council.*—Sir Wynne Cemlyn JONES, member of Anglesey County Council and Executive Council (until March 31, 1951). Professor Sir Harry PLATT, orthopaedic surgeon; member of Manchester R.H.B. and Board of Governors (until March 31, 1951).

(b) *Members Appointed by the Minister after Consultation with Representative Organizations.*—Major L. E. BURY, member of Birmingham R.H.B. and Salop County Council (until March 31, 1953). Sir Brunel COHEN, chairman of Ministry of Labour Disabled Persons Advisory Council; member of St. Thomas's Hospital Board of Governors (until March 31, 1952). Miss M. S. COLTART, almoner, Brompton Hospital (until March 31, 1951). Dr. P. W. EDWARDS, medical superintendent, Cheshire Joint Sanatorium (until March 31, 1953). Dr. F. HALL, county medical officer of health, Lancashire

(until March 31, 1951). Dr. P. M. D'Arcy HART, Director of Tuberculosis Research, Medical Research Council (until March 31, 1952). Dr. F. R. G. HEAF, senior medical officer of health to London County Council; member of Board of Governors, Hospitals for Diseases of the Chest (until March 31, 1953). Dr. Peter KERLEY, radiologist (until March 31, 1952). Miss D. LAMBERT, health visitor (until March 31, 1952). Dr. Wilfrid SHELTON, paediatrician; member of King's College Hospital and Hospital for Sick Children Boards of Governors (until March 31, 1951). Miss A. R. SPALL, matron, Clare Hall Sanatorium (until March 31, 1953). Mr. C. P. THOMAS, surgeon, member of Board of Governors, Hospitals for Diseases of the Chest (until March 31, 1953). Sir Robert A. YOUNG, chairman of Board of Governors, Hospitals for Diseases of the Chest (until March 31, 1951). *Secretary:* Mr. H. R. HARTWELL (Whitehall 4300, extension 134).

Standing Cancer and Radiotherapy Advisory Committee

(a) *Members Appointed by the Minister after Consultation with the Central Health Services Council.*—Professor W. G. BARNARD, pathologist; member of St. Thomas's Hospital Board of Governors (until March 31, 1950). Sir Ernest Rock CARLING, surgeon (until March 31, 1952). Professor Sir Henry COHEN, physician; member of Liverpool R.H.B. and Board of Governors (until March 31, 1952). Mr. S. C. FRYERS, house governor and secretary of Leeds General Infirmary; member of Leeds R.H.B. (until March 31, 1950). Dr. W. V. HOWELLS, general practitioner; member of Swansea Executive Council (until March 31, 1950). Dr. H. JOULES, physician and medical director; member of N.W. Metropolitan R.H.B. and Hammer-smith, etc., Board of Governors (until March 31, 1951).

(b) *Members Appointed by the Minister after Consultation with Representative Organizations.*—Dr. H. E. A. BOLDEO, physician; member of N.W. Metropolitan R.H.B. and Middlesex Hospital Board of Governors (until March 31, 1951). Dr. E. C. DODDS, biochemist (until March 31, 1952). Mr. E. FINCH, surgeon; member of Sheffield R.H.B. (until March 31, 1952). Mr. K. I. JULIAN, chairman of S.E. Metropolitan R.H.B.; member of Guy's Hospital Board of Governors (until March 31, 1952). Professor Hilda N. LLOYD, gynaecologist; member of Birmingham Board of Governors (until March 31, 1953). Professor W. V. MAYNEORD, physicist; member of Royal Cancer Hospital Board of Governors (until March 31, 1953). Professor J. S. MITCHELL, radiologist (until March 31, 1952). Mr. V. E. NEGUS, laryngologist (until March 31, 1952). Mr. J. R. K. PATERSON, radiologist (until March 31, 1953). Mr. J. A. STALLWORTHY, gynaecologist; member of Oxford R.H.B. (until March 31, 1951). Dr. M. J. STEWART, pathologist; member of Leeds R.H.B. and Board of Governors (until March 31, 1953). Mr. C. J. L. THURGAR, radiologist (until March 31, 1951). Professor R. M. WALKER, surgeon; member of South Western R.H.B. (until March 31, 1951). Professor B. W. WINDEYER, radiologist; member of Middlesex Hospital Board of Governors (until March 31, 1951). *Secretary:* Mr. R. GEDLING (Whitehall 4300, extension 253).

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar

Non-County Borough Councils.—Dartford, Radcliffe (limited to future appointments), WallSEND.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

Local health authorities may have arrangements for the loan of sick-room equipment to patients being nursed at home—such articles as bedpans, urinals, mackintosh sheeting, feeding-cups, air rings, and bed cradles—and possibly larger items such as water-beds, bed-rests, or commodes may be available in this way, usually through the local home nursing services. For expectant mothers confined at home, local health authorities supply maternity outfits—usually through the welfare centre or district midwife.

HEARD AT HEADQUARTERS

A Changing Council

The proposals for reforming the methods of election to the Council are deferred to permit a study of the map of the new constituencies. Briefly, the proposals would have the effect of making the Council more like a house of representatives and diminishing the senate element. Some people have suggested that continuity of membership should be better provided for. New blood is let in liberally every year, and the average length of service on the Council is short. Out of the 64 members who were on the Council eleven or twelve years ago, only seven are on the present Council. This seems a very small number, although it does include some of those who then as now were most prominent in Association work. Of the 14 present chairmen of standing committees only three were members of Council at that time.

The New Formulary

During the last two years a joint committee has been hard at work devising a standard prescribers' formulary. The committee consists of representatives of the British Medical Association, the Pharmaceutical Society, the Royal Colleges, the Ministry of Health, and the Service departments. The idea has been to bring out a pocket volume which will be of real use to the busy doctor and will include a section for children's medicines, with preparations, especially linctuses and mixtures in a palatable form. The new *Formulary* has now come from the printers, and it is expected to be generally available in the spring. The Association and the Pharmaceutical Society are bearing the cost of publication, and the Ministry has undertaken to purchase bulk supplies for distribution through local executive councils to practitioners, dentists, and pharmacists on the lists of those bodies. It should also be popular in hospitals.

A Forensic Medicine Prize

Under the will of a well-known member of the Association, the late Col. C. H. Milburn, of Harrogate, the British Medical Association and the Medical School of the University of Durham are residual legatees subject to the payment of certain annuities and a life interest. Money is bequeathed to the Association for the purpose of founding a prize or prizes for essays on the subject of medical jurisprudence and forensic medicine. No definite information can be given about the amount likely to be received for this purpose, but it is said to be substantial.

Recruiting Medical Boards

The Pulheems system of classification, which was the subject of an article in the *Journal* recently, was said to call for a considerable reduction in the number of candidates who can be examined by National Service Medical Boards in the course of a 2½-hours session. The Ministry of Labour has stated that the Boards are expected to examine 20 men or 15 women at such a sitting. These numbers were temporarily reduced while the Boards were gaining experience of the new procedure, but it now appears that they can be examined without undue pressure during the prescribed time. This has been confirmed by the Gateshead Division, which brought forward a motion on the subject at the last Annual Representative Meeting. The Council of the Association, in view of these assurances, has agreed that unless further complaints are received no action shall be taken to obtain a reduction in the number of candidates per session.

Like the House of Commons

Some of the proposals in the memorandum by the Winchester Division on the organization of the Association are directed to the reform of the Representative Meeting. Among other things Winchester wants the Representative Body to be reduced to members, and it also suggests that the hall in which it meets should have its seating arranged like that in the House of Commons. The Council would then occupy the "Government" benches, and unofficial speakers would speak from their

places among their groups, so that, says Winchester, they would be less at a disadvantage than now. We doubt whether there is at present any particular disadvantage to an "opposition" speaker in having to come to the rostrum, even though he be deprived of the physical contiguity of his friends. Speech from the rostrum is usual in other parliaments. The special arrangement in the House of Commons, and the House of Lords, too, was due to the two-party system, which has no place in the Association.

Air Trips for N.H.S. Patients?

The altitude treatment of pertussis is said to give good results, but it is expensive. We have heard of parents paying five guineas to charter a plane for an altitude flight, and larger sums than that have been paid to charter-aircraft firms. If altitude treatment is of proved value it must presumably be included among the treatments which patients are entitled to expect from the State. A correspondent inquires whether arrangements may be made with charter-aircraft firms to carry out this form of treatment, the cost to be reimbursed by the Ministry of Health or the local executive council. It is not a question we can answer. The Ministry must give a ruling.

Questions Answered

Retirement for Health Reasons

Q.—*I may have to give up general practice for health reasons. I am in the N.H.S., aged 34, and in partnership. Am I entitled to compensation on retirement? Can I take up another branch of medicine? Does the practice as a whole get compensation, or do I get my share of the compensation only if my partner continues in practice?*

A.—Compensation is payable on "retirement from practice as a medical practitioner providing general medical services under Part IV of the Act, or under Part IV of the National Health Service (Scotland) Act, 1947" (Medical Practices Compensation Regulations, 1948). Payment does not affect the right of the practitioner to undertake medical work in other fields of practice. The practice as a whole is assessed for compensation, but each partner will receive an amount in proportion to the share of the goodwill he held on the appointed day, subject to any adjustment to meet provisions of the partnership agreement as recommended by the Legal Committee on Partnerships.

Training after Demobilization

Q.—*I am due for demobilization in a few weeks. I am a graded medical specialist in the Army, and I am eager to become a civilian specialist. Is there a scheme whereby prospective civilian medical specialists can receive a period of training with financial remuneration after demobilization from the Services?*

A.—Yes. You should apply for particulars to the Director, British Postgraduate Medical Federation Central Office, 2, Gordon Square, London, W.C.1.

Payment for Anaesthetics

Q.—*(1) I several times obtained the assistance of a practitioner to administer an anaesthetic while I performed a minor operation on a patient on my State list at my surgery or at the patient's home. How should payment for the doctor giving the anaesthetic be obtained?*

(2) A patient on my State list elected to have an operation performed privately by a specialist in a nursing-home, for which I gave the anaesthetic. Can I obtain payment for this service?

A.—*(1)* The practitioner administering an anaesthetic should submit a claim for an anaesthetic fee to the local executive council. The B.M.A. is at present discussing the question of anaesthetists' fees with the Ministry.

(2) The practitioner is not entitled to charge a fee to a patient on his public list in respect of an anaesthetic for an operation carried out by a specialist in a private nursing-home, unless the anaesthetist holds an appointment at a hospital providing specialist services under the Act.

Correspondence

Genuine Hardship

SIR.—There seems to be a considerable amount of discontent amongst the profession as a whole, and it is difficult to decide how many of the complaints are really genuine. In my opinion it is time there was a little more honesty about the general practitioner's approach to the whole problem and time that the claims of those who have really suffered hardship since the inception of the N.H.S. were pressed more strenuously to the exclusion of frivolous complaints—which in some cases have become almost a habit or an attitude of mind in recent years.

As senior partner in a partnership of four and chairman of the Herts Local Medical Committee I am convinced that the only genuine hardship in the case of the practitioner with a list of over 2,500, or the partner in an active firm with a solid list, is that the items of service demanded by the patients have increased since July 5. There is unlikely to be much, if any, financial hardship, but the strain is so great that the employment of an assistant or the addition of an extra partner is essential for the maintenance of health. This will mean a diminution in income, and this again in a partnership will affect chiefly the junior partners. There is still in addition considerable disquiet about the future of partnership practice, and this is proving a particular hardship to the young assistant, whose future is indefinable at present. As many of those assistants have given several years in the Services and have family claims, the hardship is particularly pronounced. This can only be relieved by an increase in the capitation fee to permit of the employment of an assistant at a decent salary or a more satisfactory clarification of the partnership problem to permit of additions to a firm and not necessarily replacements of retiring or deceased partners.

In the case of doctors with lists of 1,500–2,500 the position depends very largely on the type of practice—i.e., the percentage of private practice remaining and the possibility of extra remuneration for services outside the range of the N.H.S. Without these there must in many cases be considerable hardship, now partially relieved by the new Mileage Fund. Where the list is 1,500 or below, and particularly in rural practice or specialized practice—e.g., in a health resort where the majority of the patients have hitherto been private—there must be grave hardship which must be having a prejudicial effect on the health and well-being of the practitioner and his family. The addition to the Mileage Fund is a gesture, but not more, and pride alone is standing between a large number and a claim on the Inducement Fund. The high cost of living is not balanced by the existing capitation fee.

The basic salary in its interpretation is proving a most unsatisfactory business, and local medical committees and executive councils are floundering between laxity of interpretation and a serious attempt to assess the claims without inflicting hardship on those who do not claim for one reason or another. One would like to see it ruled that all doctors with lists under 500 should have the basic salary for two years, and if they have not secured a list of over 500 in that time the basic salary of £300 should be halved for another two years and then eliminated—this preventing gross abuse—but the money should not come out of the Practitioners Fund. In a firm the total number on the list divided by the number of partners should be the deciding factor. In addition, if the earned income from other sources is £500 or over, no basic salary should be available.

With regard to the capitation fee, the only possible solution must be a graded fee—based on the "betterment" factor—with a drop of, say, half a crown in the second thousand, and a further half a crown in the third and fourth thousand, and a drop after that of such degree as to discourage a ridiculously large list and encourage the addition of a further partner—with every support from the executive council—or the employment of an assistant. This plan would ensure a satisfactory living for the rural practitioner or the man whose health and inclinations were towards a small list, while discouraging "clearing-house" medicine. In any case it is beyond my comprehension to understand why anyone should seek to encroach further into the super-tax level in these times to the detriment of health and strength.

I cannot speak for the specialist, but as a member of a hospital management committee I hope regional hospital boards will ensure that full-time staff in particular, and junior part-time staff, have their permanent appointments confirmed by March 31 as promised, and that their remuneration will be commensurate with the increasing demands now being made on their services.

Finally, let the large majority of general practitioners who are not suffering other than the hardship of overwork demonstrate a willingness to be less selfish in the interests of their brethren who are really suffering in the ways I have detailed, and not try to obscure the issue or delay the final decisions of the Minister, as every additional month is a grave matter for the latter class, whose position in the majority of cases is entirely beyond their control.

The B.M.A. is the target for all, but after hearing the Secretary state the case the other day so skilfully and efficiently as to render questions superfluous I am still prepared to lend my fullest support, and evidently a fair proportion of the 60,000 others must be of the same opinion or they would not now be sending their annual subscriptions in the way we have heard of from Headquarters.—I am, etc.,

Bishop's Stortford, Herts

R. P. GAMMIE.

Remuneration in General Practice

SIR.—The profession is quite rightly concerned at the remuneration which it is receiving for work in the National Health Service, and much attention is being paid in this connexion to the report of the Spens Committee.

The Spens Committee was much perturbed over two fundamental facts which soon came to light early in their deliberations; first, that most general practitioners had to work far too hard and too long hours in order to earn the necessary income to educate their children and keep their wives and families in conditions compatible with their status; and, secondly, that under the National Health Insurance Act the remuneration was so inadequate that it had to be subsidized by private fees. The Spens Committee endeavoured to amend these shortcomings and tried to ensure that the lot of the general practitioner in the new Health Service would be better than his lot in the past. They felt that doctors should be paid sufficiently well to attract the right type of recruits into the profession, and that general practice should be so remunerated that it attracted its fair share of the best recruits which entered the profession. They felt strongly that remuneration should be adequate to leave the doctor some spare time not only for leisure and recreation but also for reading.

It seems to me, therefore, that when the question is asked whether Spens is being implemented or not there is more than one question to answer. It is not only how much doctors receive per quarter for the work which they are doing, but whether they are better off now than they were in N.H.I. days, and whether in fact they do enjoy some time which they can call their own for leisure, exercise, and reading.—I am, etc.,

Bournemouth.

O. C. CARTER.

Advantages of Country Practice

SIR.—From Dr. M. D. S. Armour's letter (*Supplement*, Jan. 29, p. 52) suggesting a sliding scale of capitation fees, one is tempted to ask if the country doctor has no advantages over his colleague in the industrial areas. During the war I found that a great number of doctors in the Services were anxious to settle in country practices after their demobilization. This was still more obvious to me in 1946 when I was demobilized, as it was almost impossible to get into a country practice owing to the competition to buy. The answer was that most doctors preferred to live and bring up their families in pleasant country surroundings rather than in the crowded streets of suburbia or towns.

Surely the country doctor has a very real asset here which, though devoid of economics, is a blessing he cannot very well deny. A further asset, I suggest, is that the country doctor has the satisfaction of knowing that he at least is referred to as a medical sorting clerk. Having I can assure him this is worth a lot.

Bedfont, Middx.

M.A.N.

Filling a Vacancy

SIR,—There is one aspect of the surrender of the right to buy and sell practices to which I have seen no reference. It is the difficulty created by the loss of the right to sell from the point of view of administration. Formerly when there was goodwill to put on the market there was a strong incentive for executors in a death vacancy to take steps to keep the practice together and so to sell it as a going concern. At present there is no such inducement, and in a short space of time a practice dissipates itself among neighbouring practitioners. When the young doctor arrives he finds himself with no patients. True, he pays nothing, but he gets nothing.

The authority—in Northern Ireland the G.H.S. Board—finds itself faced with a genuine complaint from the man who cannot survive on his meagre capitation fees—a position which even in populous areas may take long to rectify itself. Was he not better off when he could borrow or insure his life in order to make a sound investment, while the authority would have a contented medical man?—I am, etc.,

Belfast,

S. T. IRWIN.

A Comparison

SIR,—The following figures may be of general interest. I have on my list a few more old N.H.I. patients than new E.C.1 patients. Between July 7 and Dec. 31 the number of home visits to each section were: E.C.1, 765; N.H.I., 293. I was unable to keep separate records of the surgery attendances.—I am, etc.,

Funbridge Wells, Kent.

T. MACKINLAY MILLER.

Staffing of Hospitals

SIR,—Many doctors will have received a letter from regional hospital boards inviting suggestions on the staffing of hospitals after March 31, 1949. This is a matter of the greatest concern to us all, so in order to focus attention and stimulate discussion of some of the issues involved I append the memorandum I submitted in reply on Jan. 15.

I have put this point of view forward at various Representative Meetings and it has been widely supported, but its reaffirmation is rendered urgent by the "terms of reference" reported in the *Supplement* of Jan. 22 (p. 35) that the Consultants and Specialists Committee "shall be an autonomous body with full powers to determine policy and action on consulting and specialist and hospital matters through the administrative machinery of the Association. The decisions of the Committee within that sphere shall not be subject to approval of the Council or the Representative Body."

On the face of it this seems the complete abdication by the Council and Representative Body—i.e., general practitioners—of all right to any say in hospital policy or any share in hospital work except that conceded by the specialists. I think that this is a matter which needs very thorough discussion at the forthcoming S.R.M., and may I express the hope that this Special Meeting will not simply register protests but that out of its deliberations will emerge a constructive policy for the conditions of work as well as the remuneration of general practitioners? Both are essential if our patients are not to suffer and our skill deteriorate.

I need hardly add that this letter is not inspired by any opposition to the specialists and consultants. I do think, however, that in trying to claim the hospitals as their own special preserve they are doing a great disservice to the public and endangering the whole practice of medicine in this country. Abuses can be checked by co-operative effort, and it is just as important for the specialists to try to understand general practice as it is for general practitioners to try to help the specialists.

MEMORANDUM

In my opinion the outlook of the circular letter is altogether too limited and fraught with danger to the practice of surgery and the development of medicine in general. It appears largely to reduce the surgeon to his original status of one called in to do the work with his hands—what we now term a technician. The surgeon is to be the one to do the work fed into the hospitals by general practitioners and possibly other outsiders.

There is a view of surgery, which has for years been practised with growing success and satisfaction by practitioners, which looks on an operation as only one episode in the treatment of the patient, and one kept as far as is reasonable or practicable in the one pair of hands, with undivided authority and responsibility. It is the cultivation of this type of practice which leads a patient willingly to undergo the undoubted strain and anxiety of an operation or other hospital treatment without much upset. Cases in such circumstances come to operation much earlier than otherwise; so that though the practitioner may not have the same skill as his more specialized colleague he also has much less need to exercise it, for his patients do not as a matter of fact usually require drastic treatment. Even in such a practice, where it becomes necessary to send a patient to a large hospital away from the practitioner's care, or even to call in another surgeon to operate, there is always much greater difficulty in getting the patient to agree (especially in cases of going away), and this, more than anything else, is why the large hospitals get a much worse type of case than we do in the smaller hospitals, and also why so many surgeons seem to have such a poor idea of the capabilities of the general practitioner. Where the practitioner is cut off from all care of his patient before and after operation and the opportunity of being present at operation, with some responsibility for what is done, it is inevitable that he loses much of any original enthusiasm or skill. His powers of surgical diagnosis wither, and though, when seriously ill, the surgeon's skill and the care of the nursing staff may be great, the patient is actually in a worse state than he need have been.

It is rash to make unprovable assertions, but the total of patients' suffering and disability will probably be much greater under the theoretically efficient system outlined in the circular letter than it has, in the past, been in areas where the general practitioner has been allowed free use of the local hospitals, even with the inevitable mistakes that he may make, and which, incidentally, he has to live down and avoid in future if his practice is to prosper.

For this reason I strongly deprecate the suggestion that young resident medical officers should be attached to small hospitals, while the introduction of specialist surgeons needs watching with the greatest care if the standard of general practice is not to be depressed more than his presence may tend to raise it up. No practitioner worth the name will resent the help that more skilled colleagues can afford, and in the past this help has been freely afforded and also frequently sought. The greatest factor in improving the medical service of the country is probably the raising of the standard of the general practitioner, so that cases come earlier rather than later to attention.

Though this is doubtless the intention of the scheme outlined, I feel confident that its effect will be exactly the reverse, for practitioners as well as patients are human beings, with their own feelings and perhaps foibles. Any scheme which does not fully take account of these weaknesses is bound to fail, for however high our aims and ideals we still remain human beings and not machines. In time I think that the scheme will also prove as disastrous to the surgeon as to the general practitioner, for with the pressure of work that will be laid upon him he is likely to become more and more the pure specialist, with less time than ever for the humane study of the human material forcibly put at his disposal.

—I am, etc.,

Winsford, Cheshire.

W. N. LEAK.

The Betterment Factor

SIR,—As information becomes available of the Ministry's proposals to implement the Spens recommendations, which were considered capable of leading to acceptable levels of remuneration, it becomes clear that these recommendations are not couched in terms sufficiently precise to prevent the Ministry attempting to place an interpretation on them which, if not resisted, would result in levels of remuneration far below that intended by the Spens Committee.

Spens stated: "... such adjustments should have direct regard not only to estimates of the change in the value of money but to the increases which have in fact taken place since 1939 in incomes in other professions (my italics). In our judgment, it is only if corresponding changes are made in the incomes of general practitioners that the recruitment and status of their profession will be maintained as against these professions."

As judged by the report of the negotiations on the betterment factor (*vide Supplement*, Nov. 27, 1948, p. 192) it would appear that the Ministry is pointing to the incomes of some members of certain professions whose present remuneration is either less or little more than in 1939, and claiming because of this that the betterment factor which would be justified by the change in the value of money between 1939 and the present time must be abated. They draw attention particularly to the

salaries of certain Civil Servants which have been subject to increases varying from 9% to 13% only.

But of what relevancy is this, and even so, is it not common knowledge that (a) a wage freeze has been rigidly applied to the Civil Service; (b) the levels of remuneration offered by the Civil Service have been found insufficient to attract an adequate number of recruits of the necessary quality; (c) Civil Servants of the grades presumably referred to are now in process of claiming considerable salary increases? Similarly, of what significance is it to medical practitioners that as a result of the war some solicitors have insufficient work and are not making much money, or that some architects are overworked and are making a lot of money?

Surely the common understanding of the sense of the words in italics (in the context in which they appear) is that they are supplementary and potentiating rather than detractory or emasculatory to the words immediately preceding them in the quoted passage, and that they are included for the specific purpose set out in the last sentence of the quoted passage—i.e., to ensure apart from all else that this purpose is achieved.

In negotiations concerning the betterment factor it can be taken as axiomatic that the Treasury (as the paymaster of the country's largest employer) will have instructed the Ministry's negotiators to resist acknowledging the betterment factor at its true dimension, for the reason that if an equitable betterment factor were acknowledged it would put a lever at the disposal of those employed by the Government and local authorities by which adequate increases in salary could be justified and claimed. This is a position the Treasury will strive by every manœuvre to avoid. It is likely to prove a considerable misfortune to the prospects of medical practitioners that through no wish of their own, and due to circumstances over which they can exercise no control, they find themselves at the spear-head of the fight for the economic survival of the middle classes.

The Government's financial negotiators are probably the most expert in the world; they are able to draw on a vast accumulation of experience gathered as the country's largest employer and have available to them the most able statistical and actuarial advice. Furthermore, they have the peculiar advantage of not having to shoulder the direct responsibility of the consequences of imposing an unsatisfactory settlement. They will receive credit in proportion to the hardness of the bargain they drive and will be apprehensive of repeating the blunder made in settling the level of remuneration of the dental profession.

In these circumstances our Negotiating Committee have a task which no one will envy them. Without questioning their general level of ability, one wonders if they have the very specialized experience necessary to deal with the forces arrayed against them. Their only hope of reaching an equitable settlement is to insist, if a satisfactory betterment factor is not offered, that the whole matter goes to arbitration. Particularly must the Negotiating Committee avoid the bait of "generous expenses" as a set-off against an inadequate betterment factor. In a very short time, with no issue of principle at stake, such expenses would be whittled away as evidence was put forward that they were not incurred.—I am, etc.,

Moretonhampstead, Devon.

W. D. GLYNN JONES.

Subsidized Trainees

SIR,—Your attention has been called previously to the plight of ex-Servicemen who can now no longer buy into a practice and who have to accept assistantships at a salary often lower (vide your advertisements) than subsidized trainees—all this after, say, eight years qualified and perhaps five years in the war. Let us get this anomaly put right at the same time as another shameful discrepancy—rural G.P.s' salaries.—I am, etc.,

Caldicot, Mon.

P. M. FEA.

Widow's Superannuation

SIR,—I should like to draw your attention to an outstanding injustice in the provisions of the N.H.S. superannuation scheme (see *Superannuation Scheme for those Engaged in the National Health Service*, Section C, Para. 22). By working in the scheme I thereby forfeit my right to a widow's pension on my retirement should my husband predecease me. My husband is in partner-

ship in a rural practice, and I became a third partner prior to July 5 in order to establish my right to practise. I have three small children, and am therefore unable at present to do much medical work, but my intention is to do more as my family grows up. I now have a list of about 50 patients, and generally assist in the practice. I do not anticipate that my income is likely to be sufficient to earn me a pension equivalent to that which we confidently hoped would accrue to me as a widow, should my husband predecease me.

The Medical Defence Union advise me that, "If you are of the opinion that you would be better off if you were to receive a pension amounting to one-third of your husband's pension after his death than you would be by receiving the pension which you yourself have earned under the Scheme, I can only suggest that you cease to be a partner in the firm prior to the completion of ten years' service." In fact all forms of medical work would be closed to me barring private practice.

There must be a number of married women doctors, nurses, and medical auxiliaries under the N.H.S. to whom this regulation will come as an unpleasant shock. There will be some who earn pensions even before they marry, and many who will wish to do at least part-time work after marriage. Should their husbands happen to be employed under the N.H.S. regulations, they will be denied the benefits for which their husbands have paid large compulsory contributions and which other wives in other occupations will receive without question. It is a sad day when a woman doctor must choose between sacrifice of her career and forfeit of the security earned for her by her husband.—I am, etc.,

Langport, Somerset.

STELLA D. HENDERSON.

Abolish Out-patient Departments

SIR,—The time has come, has it not, to abolish the out-patient department. Originally intended for the treatment of the poor, its function now is to provide a consultant service, paid for by the State, for those who cannot or will not pay private consultants' fees (and who now attend by appointment). Those who pay, the consultants see in their own consulting-rooms. The equipment, service, and arrangements found adequate for private patients should surely suffice for the great majority of State patients. There is, in fact, no logical reason for any distinction between these (as to place and method) in consulting any more than in "general" or family practice.

Certain types of case—e.g., fractures—might require special arrangements; and the hospital would retain a small casualty department to deal with such accidents and genuine emergencies as are beyond the range of the family doctor. For the rest these expensive departments with their big staffs of registrars, assistants, residents, nurses, dispensers, secretaries, typists, clerks, telephonists, porters, and messengers are no longer needed.—I am, etc.,

Bristol.

E. WATSON-WILLIAMS

Evening Surgeries

SIR,—Dr. V. M. Seifert (*Supplement*, Jan. 15, p. 24) has invited opinions from other doctors. I am sure we all would like more leisure, more time for serious reading, better remuneration, less work, fewer expenses. But is that not taking a very one-sided view of things? Fitting one day's attendances into one morning surgery would strain any doctor's patience and endurance, overtax the capacity of a waiting-room that is already overcrowded this time of the year, help to spread infections more, and would ask for more trouble, more visits, etc. And what about the convenience of the patient? What about the working man who needs that bottle of cough-mixture to help him to carry on his work, and to whom an attendance at the doctor's surgery in the morning would mean loss of half or one day's pay?

Is Dr. Seifert not very dogmatic? "I never see children at night," "I do not have domestic troubles? Does it mean he ref them away that evening when th probably for an acute trouble. has been out working in the mo he is not giving advice in do asked for it?"

ates: "I never
in domestic
and sends
his surgery
mother w
oes it
12

Of course, abolition of evening surgeries would please the doctor's wife, perhaps the various Ministers, and even the doctor himself, but would it please our patients, to whom after all we are under contract and pledged morally to look after their physical and mental welfare? We would indeed be poor doctors and perhaps good Civil Servants.—I am, etc.,

Hull.

ROBERT HAAS.

Finalization

SIR,—In these days when nouns, adjectives, and even adverbs are "verbed" I should like to be quite clear as to Air Commodore Kyle's correction in the *Supplement* of Jan. 29 (p. 54). It appears that the W.A.A.F. have reverted to their old first-war title of W.R.A.F. and that the question of permanent commissions and retired pay has not yet been "finalized." Will it be correct to assume that "finalized" means "decided," or has it some wider meaning?

"As permanent commissions are visualized, but not so far finalized"—may this be translated as, "As permanent commissions are under consideration (or contemplated) but no decision has been reached"? I have been unable to find the verb "to finalize" in any dictionary, but "to visualize" is defined as "to make visible or visual, externalize to the eye" or "(v.i.) to call up a clear mental image." With "bastardized" words, "misconception" is always a possibility.—I am, etc.,

Brookwood, Surrey.

H. M. STANLEY TURNER.

"Natural Selection"

SIR,—There seems little doubt that many doctors are hard hit by the Health Service, but a great deal of doubt as to how this can be corrected. I feel that we must seek some way which will at the same time improve the standard of medicine and keep it the highest in the world.

Schemes such as a sliding scale benefit the man whose list is limited by laziness or lack of public confidence as much as he who limits his list to the number which he can look after thoroughly. Yet it is only this latter type who will give the service envisaged by the legislators—and he is suffering most from the legislation.

A way out of the dilemma is to leave it to each member of the public to decide whether his doctor is worth more or not by allowing us to charge fees as well. I know this is against Socialist dogma, but, faced with dogma or good doctors, I know the choice of the public. We should have the relative freedom of the New Zealander, but the Government would be free from the worry of "overvisiting."

It would work out along these lines. First, patients will soon leave the list of the doctor who overdoes the charging—no need for an expensive bureaucracy to check on him. Secondly, the lazy or inefficient man is automatically penalized and the good man rewarded (at no expense to the Government). There are, of course, difficulties. The man in a slum will have few he can charge, but this is balanced by his being able to care for a greater number, as his travelling time is nearly zero and most can attend the surgery, where facilities are all to hand. Again, in the sparsely populated areas that are also often poor, a very substantial mileage fee (enough not only for running a car, but also for saving up to replace it) will compensate.—I am, etc.,

Cromer, Norfolk

A. HENRY GREGSON.

Display of Hearing-aids

SIR,—The Minister of Health's latest instruction to regional hospital boards to prevent reputable British hearing-aid makers displaying their wares in the hospitals is in my opinion an acknowledgment by the Minister that the much-publicized national hearing-aid does not represent the last word in hearing benefit for the deafened public as has been suggested by the Ministry. Why should the Minister wish to prevent the public seeing at the hospitals the best British hearing-aids, which are for sale, to compare with the national instrument, which is made available free? Surely no thinking members of the public would for a moment consider purchasing a hearing-aid if they were offered one free which was equally attractive and efficient.

Does the Government not owe to the British hearing-aid makers, who are doing so much to capture the overseas hearing-

aid market, the right to have their instruments exhibited in hospitals, where, free from all sales propaganda, they can be inspected and tested by the deafened public if they so desire it? Even if the Government is not prepared to make it possible for the public, under the Health Service, to obtain assistance towards the cost of a commercial hearing-aid, surely they should not deprive them of the opportunity of seeing and comparing the products of private enterprise under the auspices of the medical authorities.—I am, etc.,

Oxford.

O. C. LEADBITTER,
John Bell and Croxden.

Supplementary Ophthalmic Service

SIR,—The statistics provide the answer to Dr. Cecil B. F. Tivy (*Supplement*, Jan. 22, p. 40). About 3 million patients had their eyes examined through the supplementary service during the first six months, and there are about 7,000 ophthalmic medical practitioners and ophthalmic opticians on the approved list. If the work were spread out evenly it could be handled fairly comfortably. The fees were calculated on the assumption that every patient would receive a full and adequate ophthalmic examination. Any conscientious practitioner should not permit the increased demand to persuade him to lower his standards or to rush the work. If an ophthalmologist or general practitioner only does supplementary ophthalmic work on one or two days per week he should restrict the number of appointments to that which can be attended to adequately. The spending of about half an hour on an eye examination does not ensure good work, but on the other hand it is very difficult to carry out a full routine examination in less than about half an hour if every part of the examination is done properly, including a full investigation into the state of the binocular apparatus.

Dr. Tivy's remark that only careless people entrust their eyes to opticians rings a little hollow at a time when ophthalmic opticians are continuing to examine the eyes of about 85% of the ametropic population to the complete satisfaction of the public and of the Minister of Health.—I am, etc.,

S. BLACK,

Director, Information Bureau,
Association of Optical Practitioners.

London, W.I.

SIR,—Dr. Cecil B. F. Tivy (*Supplement*, Jan. 22, p. 40) is of course perfectly right in his contention that "all this talk about spending an average of half an hour with each patient is only eyewash." Any competent refractionist, whether medical man or optician, can fix up a simple presbyope in a quarter of an hour, whereas a complicated case of astigmatism and muscle imbalance often requires three-quarters or even a whole hour spent upon him. In passing, it is worth noting that, if half an hour per patient is really essential, very few hospital patients have ever been adequately refracted.

The Ophthalmic Committee was surely wrong in allowing our remuneration to be assessed on such a basis. If we are to provide the same service as an optician, and no more, there is no valid reason why we should be paid at a higher rate. As to why our fees should in fact be the higher, Dr. Tivy's letter suggests the answer. He is apparently ready to spend an hour "making sure of an incipient glaucoma," which is something he, and not an optician, is qualified to do. As things are, however, he renders this extra service gratuitously, for under the Supplementary Scheme he is engaged as a refractionist pure and simple. Our higher fee can be justified only on the grounds that, as medical men, we are capable of making diagnoses and (within the limits imposed by lack of hospital facilities) of prescribing treatment. Even the old N.O.T.B. recognized this.

At the moment many opticians, faced with a patient requiring a medical opinion and/or minor treatment, rather than send the unwilling victim to hospital prefer to forward his O.S.C.I to an ophthalmic medical practitioner and place upon the latter the onus of communicating with the patient's G.P. I submit that this is a very sensible procedure, since it preserves the liaison between two classes of medical men, saves the G.P.'s time and temper, and avoids cluttering up hospital O.P. departments with relatively minor conditions. I suggest that, rather than prepare sheepishly to accept a reduction of fees, the Ophthalmic Committee should be urging the Ministry to give *de jure* recognition to what is already a fact.—I am, etc.,

Birmingham.

J. H. AUSTIN.

Graduated Capitation Fee

SIR,—I was surprised to read in "The Secretary Reports" (*Supplement*, Jan. 15, p. 21) that an attempt had been made to reopen the question of the graduated capitation fee. The Secretary admits that one reason for the opposition to the universal basic salary was that it led to a tapering capitation fee position. The securing of the abandonment by the Ministry of the universal basic salary was, I always understood, a "great triumph of principle" upon which Headquarters congratulated itself.

The arrangement by which it is possible for smaller lists to draw a larger fee from a given global sum, whereas those with larger lists receive no less, is, I confess, beyond my understanding. The proposition that the ratio of expenses to receipts is likely to be higher in smaller practices is also a most dubious one. In fact, I have the testimony of an accountant that in all professional undertakings the exact opposite is the case. Whereas a doctor with a small practice may be able to carry on without any paid assistants, this is quite impossible in a large practice. This is not to say that we do not sympathize very sincerely with those who, through no fault of their own, have suffered a severe diminution of income.

The introduction of the graduated capitation fee, with all its inconsistencies and absurdities, is not, however, I am sure *not*, the correct method to assist them. But perhaps the best comment I can make is the following. At an exceptionally well attended meeting of the Wakefield Division held on Sunday, Jan. 16, 1949, the following resolution was carried unanimously: "That this meeting is opposed to the 'graduated capitation fee' in any shape or form."—I am, etc.,

A. G. JAMES.

Hon. Sec., Wakefield Division

SIR,—I read with pleasure the letter by Dr. M. D. S. Armour in the *Supplement* of Jan. 29 (p. 52). I agree with him that the only fair solution is sliding-scale capitation fees.

I have been working as an assistant in Birmingham for over 18 months now, and I do not think that the patient registered with a doctor whose list is swollen up to 4,000 and over is getting a fair deal. I have to see sometimes about 90-100 patients a day, not counting calls I have to make; and, even considering that we have three surgeries a day (270 minutes), on the average each patient is getting a little over two minutes per visit, including examinations, writing prescriptions, issuing panel notes, arranging hospital admissions, etc.—I am, etc.,

X Y Z.

Contact Between Hospital Bodies

SIR,—The letter from the editor of the *Hospitals Year Book* (*Supplement*, Jan. 22, p. 38) deserves the most careful consideration by every progressively minded person involved in the building up and maintenance of the new National Health Service. There certainly "has been plenty of communication, devolution, and directive downwards." Although one shudders at the thought of any more authorities, can it be gainsaid that the new Service is in mortal danger of becoming a series of independent units brought together only in so far as Instruments and memoranda issued in a steady flood by the Minister direct?—more and more memoranda, more and more officials, often with little knowledge and experience of the new highly paid duties which the Act, Instruments, and the memoranda necessitate, and a disgruntled medical profession, without which the whole machine will break, overworked and in many cases underpaid. There is need for those engaged in these multifarious duties to get away from the dead hand of bureaucracy and meet nationally and regionally, even locally, in freedom to compare experience and to discuss and formulate policy.

The British Hospitals Association provided a forum for the voluntary hospitals. In some parts of the country the regional and divisional hospitals councils established under the aegis of the Nuffield Provincial Hospitals Trust brought about immensely better relations between the local authority and voluntary hospitals. At a recent meeting of the committee of one of these councils there was an obvious feeling of reluctance to abandon the facilities which the council provided for discussion of hospital problems in the locality. The council, before it succumbs, is to debate the possible need for a consumers' council. While it is hoped that every board of

governors and hospital management committee will give proper consideration to patients' complaints, patients now have no contributory schemes associated with the hospitals to champion their cause.

Sir, is it not a matter of urgency that the new hospital authorities—boards of governors, regional boards, and management committees—executive councils, and local health authorities should be encouraged to send representatives (including representatives of independent hospitals, medical charities, and the general public) to regional—possibly sub-regional—meetings, that there should be a national council, an annual conference, and a national inquiry bureau, and that the statutory authorities should be permitted to pay their dues out of public funds? If they addressed their minds in the first instance to "costs and such economies as could safely be introduced without detriment to the Service" they might prove to be a handsome public investment—I am, etc.,

Bristol,

JOHN DODD.

Is This a Health Service?

SIR,—Most of the letters in the *Journal* recently are dealing with the financial side of the Service only, as far as it affects the general practitioners and specialists; not many of them mention the actual working of the Service. The efficiency of the Health Service is not proved by the large numbers of free dentures, spectacles, drugs, and appliances supplied, whether really necessary or not, but by the facilities obtained when a serious case needs investigation or urgent hospital treatment. I should like to mention a few cases which I had recently and which illustrate the real state of affairs.

A woman, aged 27, had a severe loss of blood and was practically exsanguinated. She needed an immediate blood transfusion. The local hospitals refused admission. She had to be taken by ambulance in a very critical condition to a hospital eight miles away for treatment.

A middle-aged man was operated on at a local hospital for a renal tumour. He was under observation at the same hospital as an outpatient. One day he sustained a fracture of the shaft of the femur. He was sent to the hospital for x-ray examination and treatment. He was x-rayed and sent by ambulance back home. The man was in agony for several days afterwards until he got admitted through the Emergency Bed Service into another hospital.

An elderly man was taken suddenly ill with severe pneumonia. He was very ill. He lived in a very small house; his wife was rather aged, and it was impossible to treat him at home. All the local hospitals refused admission. The Emergency Bed Service tried a whole day to admit him, and I was informed by them that evening that they were unable to get any bed for him anywhere.

A man fell off a scaffold and sustained an injury to his orbit and temple. He was referred to the eye department of a local hospital for investigation. He had to wait three weeks for an appointment. He was sent from there to the E.N.T. department and had to wait four weeks for an appointment. The E.N.T. surgeon referred him back to the eye department and the patient had to wait another three weeks before being seen.

I understand from other practitioners that this state of affairs is not confined to this particular locality and is universal. When a patient is sent for a barium-meal examination he has to wait over a month and even two before the result. For a report on an ordinary fracture one has to wait for over a week.

Figures have been published showing that the number of nurses has increased. The rate of sickness, as we can judge from the medical attendances, has not increased appreciably since last July. The only explanation of this deterioration must be that something has gone wrong with the hospitals. The almost cynical replies which one gets when trying to admit an urgent case to a hospital prove that the State control of hospitals converted the staffs into Civil Servants without any feelings for human sufferings. The patients themselves are very reluctant now of being sent to hospitals, as they can see the state of affairs; they try to keep away as long as possible from seeking advice.

If such state of affairs continues—and it looks as though it will go on for a long time—then we shall have not "the finest Health Service in the world" which was mentioned in the House of Commons by the Minister when the Bill was debated, but a very inferior one, which is bound sooner or later to affect the health of the people.—I am, etc.,

London, S.E.25.

A. FRY.

Medical Practice in Western Australia

STR.—As a new arrival in Western Australia I should like to give some information to colleagues in the U.K. who desire to come out here and settle in country-town practices.

I have visited half a dozen or so country towns of smaller size with populations of 1,200–2,000. Conditions are pretty primitive and doctors intending to come out should get detailed information about the place where they intend to work. There is electricity in most of these so-called towns, but only for lighting purposes, as the current is too dear for cooking, which has to be done on firewood, as gas is unobtainable. Almost all smaller towns are without modern sanitation, and occasionally—I have found it in one practice only—houses are provided with a septic tank. Water is another problem, and only a small part of the State—i.e., the south-west—is well provided with water, while other parts are dry and water has to be carted in long, hot, and dry summers.

Medical men are expected to equip the hospital with their own instruments—which are cheaper in England—and should be able to do major surgery, especially appendixes, hernias, and abdominal emergencies. Every Australian doctor does surgery and obstetrics in a country town, and the population expects a good surgical service from a general practitioner.—I am, etc.,

Perth, Australia.

W. WINTERTON.

POINTS FROM LETTERS

Reasonable Fees for Vaccination

Dr. G. H. M. FRANKLIN (Prees, Shropshire) writes: I have recently written to the county M.O.H. telling him that until a reasonable scale of fees for vaccination and immunization has been agreed between the Minister of Health and the representatives of the profession I am not prepared to render these services from now onwards. Might I urge all those doctors who are dissatisfied with the present arrangements to do likewise and so lend force to the arguments of our negotiators?

Basic Salary

Dr. N. WALSH (Scarborough) writes: The Minister of Health has been very clever in making the basic salary part of the "pool" allocated to all general practitioners. This is another of those things sprung upon us. As a result we are all made to contribute to the payment of basic salaries. It is only just, therefore, that a list of all people drawing basic salaries should be circulated to all doctors in each area. There are many rumours of abuse of the claim for basic salary, and the issue of such a list would go far to settle this matter. . . .

Association Notices

PROPOSED ALTERATION IN DENBIGH AND FLINT DIVISION

Notice is hereby given by the Council of a proposal to form two Divisions in the place of the present Denbigh and Flint Division as follows:

The East Denbigh and Flint Division: the area of the present Denbigh and Flint Division to the east of the Clwydian Range.

The West Denbigh and Flint Division: that part of the present Denbigh and Flint Division which lies to the west of the Clwydian Range, with the addition of Colwyn Bay, Old Colwyn, and Rhos-on-Sea.

Any member affected by this proposal and objecting thereto should write to the Secretary of the Association not later than Feb. 26, 1949.

CHARLES HILL,
Secretary.

SCHOLARSHIPS IN AID OF SCIENTIFIC RESEARCH

The Council of the British Medical Association is prepared to receive applications for research scholarships as follows: An Ernest Hart Memorial Scholarship of the value of £200 per annum, a Walter Dixon Scholarship of the value of £200 per annum, and four Research Scholarships each of the value of £150 per annum. These scholarships are given to candidates whom the Science Committee of the Association recommends as qualified to undertake research in any subject (including State medicine) relating to the causation, prevention, or treatment of disease. Preference will be given, other things being equal, to members of the medical profession.

Each scholarship is tenable for one year starting on Oct. 1, 1949. The scholar may be reappointed for not more than two additional terms. A scholar is not necessarily required to devote the whole of his or her time to the work of research but may hold an appointment at a university, medical school, or hospital, provided the duties of such an appointment do not interfere with his or her work as a scholar.

In addition, applications are invited for the award of the Insole Scholarship of the value of £250 for research into the causes and cure of venereal disease.

Applications for scholarships must be made not later than March 31, 1949, on the prescribed form, a copy of which will be supplied on application to the Secretary of the Association, B.M.A. House, Tavistock Square, London, W.C.1. Applicants will be required to furnish the names of three referees who are competent to speak of their capacity for the research contemplated.

Diary of Central Meetings

FEBRUARY

- 14 Mon. Armed Forces Committee, 2 p.m.
- 15 Tues. War Memorial Committee, 11.30 a.m.
- 16 Wed. Special Meeting of Council, 11 a.m.
- 17 Thurs. General Medical Services Committee, 11 a.m.
- 18 Fri. Joint Committee of B.M.A. and National Veterinary Medical Association, 2 p.m.
- 18 Fri. Drafting Subcommittee, 2 p.m.
- 24 Thurs. Occupational Health Committee, 2 p.m.
- 24 Thurs. Committee on Psychiatry and the Law, 2 p.m.
- 25 Fri. Film Committee, 2 p.m.

MARCH

- 1 Tues. Health Centre Committee, 2 p.m.
- 2 Wed. Dawson Williams Memorial Fund, 11.30 a.m.
- 2 Wed. Private Practice Committee, 2 p.m.
- 3 Thurs. Special Conference of Representative Committees, 10 a.m.
- 3 Thurs. Special Meeting of Council, 6 p.m.
- 11 Fri. Public Health Committee, 2 p.m.
- 23 Wed. Council, 10 a.m.
- 29 Tues. Special Representative Meeting, 10 a.m.
- 30 Wed. Special Representative Meeting, 10 a.m.

Branch and Division Meetings to be Held

BATH, BRISTOL, AND SOMERSET BRANCH.—At Royal United Hospital, Bath, Wednesday, Feb. 16, 8.30 p.m. Address by Professor Alexander Haddow: "Recent Advances in our Knowledge of Neoplastic Growth."

CITY DIVISION.—At Finsbury Health Centre, Pine Street, London. E.C., Thursday, Feb. 17, 8.30 p.m. Address by the Venerable the Archdeacon of London: "The Practice of Medicine and the Cure of Souls."

CLEVELAND DIVISION.—At Sparks' Café Royal, Middlesbrough, Thursday, Feb. 17. Address by Professor Ian Aird, preceded by supper at 7 for 7.15 p.m. New graduates, ex-Service practitioners, and members of the Stockton Division of the B.M.A. are specially invited to attend.

GREENWICH AND DEPTFORD DIVISION.—At Miller Hospital, Greenwich High Road, London, S.E., Wednesday, Feb. 16, 8.30 p.m. Dr. C. Edwards: "The Treatment of Some Common Neurological Conditions in General Practice." Members of the Woolwich Division are invited to attend.

HASTINGS DIVISION.—In Ball Room, Castle Hotel, Hastings, Sunday, Feb. 20, 3 p.m. Special meeting called to consider the following Resolution proposed by the Executive Committee of the Division: "That this Division demands a Special Representative Meeting for the sole purpose of deciding upon immediate action to raise the capitation fee to an equitable level. In the event of refusal by the Minister so to raise the capitation fee, mass resignation of all medical practitioners participating in the National Health Service should be called for by the Council of the Association on June 30." All medical practitioners in the area of the Division are invited.

ROCHDALE DIVISION.—Rochdale Infirmary, Monday, Feb. 14, 8.30 p.m. Clinical meeting. Dr. E. C. Easson: "Radiotherapy—Past, Present, and Future."

SOUTH-EAST ESSEX DIVISION.—At Southend General Hospital, Friday, Feb. 18, 8.30 p.m. B.M.A. Lecture by Sir Hugh Cairns. K.B.E.: "Closed Head Injuries."

STOCKPORT DIVISION.—At Stockport Infirmary, Tuesday, Feb. 15, 8.30 p.m. Mr. Wilson H. Hey: "The Prostate in General Practice."

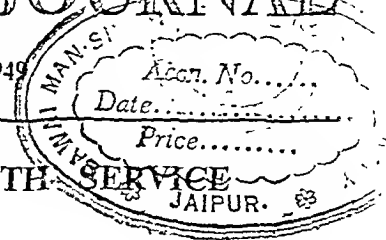
SUNDERLAND DIVISION.—At Sunderland Royal Infirmary, Friday, Feb. 18, 8 p.m. Clinical demonstration by Dr. H. J. Bell, Mr. David Brown, and Dr. R. H. Vasey.

SUTTON COLDFIELD DIVISION.—At Sutton Coldfield Hospital, Monday, Feb. 14, 8.30 p.m. Inaugural meeting. Paper by Professor F. A. R. Stammers: "Costo-cervical Syndrome."

TUNBRIDGE WELLS DIVISION.—At Spa Hotel, Tunbridge Wells, Sunday, Feb. 13, 3 p.m. Dr. H. Guy Dain: "The National Health Service." Members from neighbouring Divisions are invited.

BRITISH MEDICAL JOURNAL

LONDON SATURDAY FEBRUARY 19 1949



THE COST OF THE NATIONAL HEALTH SERVICE

BY

FRANCIS ROBERTS, M.D.

(From Addenbrooke's Hospital, Cambridge)

In the Beveridge Report, 1942 (Appendix A, p. 201), the cost of a comprehensive health service for Great Britain was estimated by the Government Actuary at roughly £170 million. On a basis of population Scotland's share can be taken at £19 million, leaving £151 million for England and Wales. The National Government White Paper, 1944 (Cmd. 6502, Appendix E, p. 84), gave £132 million for England and Wales. The service contemplated was, however, incomplete, because it left £6 million to be provided for voluntary hospitals out of voluntary contributions and because "it would probably be several years before the net expenditure on the new dental services reached £10 million and on the new ophthalmic services £1 million"—a prediction very soon to be shown false. Allowing £4 million for a contemporary estimate for these two services, we get £142 million for a complete service. The White Paper, however, assumed the existence of 120,000 hospital beds, a figure which the subsequent hospital surveys showed to be an overestimate. The actual figures cannot be stated with precision, since in two out of the ten surveys the number is not stated. Calculating from the remaining eight, we may take the number of non-existent beds as 86,000. The White Paper estimate of £86 million for the total cost of the hospital services would therefore, if accurate, be £71 million, giving for the complete service £127 million.

The National Health Service Bill, 1946 (Financial Memorandum, p. iv), reckoned the cost of a complete service at £152 million. Two years later the Minister of Health, in answer to Sir Ernest Graham-Little (*Hansard*, April 8, 1948), gave an estimate of £230 million at current costs. The corrected estimates for a comprehensive service are therefore as shown in Table I.

TABLE I.—Estimates for England and Wales: Adjusted for a Comprehensive Service in All Cases

Year	Authority	£M
1942	Beveridge Report	151
1944	White Paper	127
1946	N.H.S. Bill	152
1948	Minister of Health	230

These figures take no account of projected capital expenditure. Health centres (2,000 at £187,000 each) will cost £374 million excluding site values and cost of equipment: the 69,000* extra hospital beds needed according to the Hospital Surveys will cost £345 million. Adding the cost of rebuilding, renovating, and re-equipping existing hospitals, we reach a figure far in excess of £1,000 million. Even though the capital cost be spread over a number of

*This figure is, as I shall show, a gross underestimate. Moreover it does not include mental beds.

years, the annual charge, including the cost of servicing, will reach an astronomical figure. What a commentary on our vaunted conquest of disease!

Meanwhile our faith in the official estimates, already shaken by their remarkable antenatal rise, is shattered by such neonatal estimates as have come in. The ophthalmic service is reckoned to be costing £20 million and the dental service £28 million, so that these two services alone are costing one-third of the Beveridge estimate and one-fifth of the 1948 estimate for the whole service. Let us therefore examine in retrospect the sequence of thought culminating in the present set-up, paying particular attention to the Beveridge Report, its *fons et origo*. We shall then see that all the official predictions are totally unreliable—(1) because they ignore the effect of the ageing of the population, (2) because they ignore the intrinsically expansile nature of hospital practice, and (3) because they are based on a false conception of health and disease.

It should be borne in mind that, according to the Beveridge Report (p. 162), "the primary interest of the Ministry of Social Security is . . . in finding a health service which will diminish disease by prevention and cure." On p. 104 it foresees that "there will actually be some development of the service and as a consequence of this development a reduction in the number of cases requiring it." These two factors are expected to cancel each other, leaving the cost for Great Britain in 1965 unchanged at £170 million. The author therefore seems to have had little faith in the ability of his scheme to fulfil its purpose. Later opinions were only slightly more realistic. The White Paper (Appendix E, p. 81) foresaw that the 1938-9 cost would be "considerably increased" owing to "some expansion of accommodation and services," higher prices and wages, and payment for specialist services in the voluntary hospitals. The Bill (Financial Memorandum, p. 1) expected that "considerable capital expenditure on the provision and expansion of hospital and other accommodation would be necessary as well as a high rate of expenditure and upkeep of existing buildings and renewal of equipment," but put this down to the arrears which had accumulated during the war.

The Ageing of the Population

One needs no medical training to know that the need for medical attention increases with age. Lord Beveridge evidently realized it, for he emphasizes the necessity of providing for the increasing risks of later life, and assures us (p. 8) that he has taken the ageing of the population into account. Yet in predicting a diminution in the need for treatment he ignores the warning which glaringly confronts him in his own Report. The relevant figures are shown in Table II.

TABLE II.—Estimated Population of Great Britain by Age Groups (from the Beveridge Report, p. 91)

	1941*		1971		Difference	
	No.	% of Total	No.	% of Total	In Nos.	In % of Total
Under 15	9,573,000	20.6	7,600,000	16.5	-1,973,000	-4.1
Men 15-64; Women 15-59, both inclusive	11,421,000	67.5	28,804,000	62.6	-2,617,000	-4.9
Men 65 and over; Women 60 and over	5,571,000	12.0	9,576,000	20.8	+4,005,000	+8.8
Total	46,565,000		45,980,000			

* I go back to 1941 because that year is the nearest to the date of publication of the Beveridge Report and because no provision has been made for the changes which have since occurred.

How could anyone fail to see that the addition of 4,000,000 to the pensionable group must result in a considerable increase in the incidence of disease? For the estimation of this increase certain data are available.

1. *Incidence of Degenerative Diseases.*—Holingsworth and Klem (1943) found that in people over 65 in the United States the incidence of degenerative diseases was 86.4 per 1,000. Assuming a similar incidence in this country, the number of sufferers would rise from 483,000 in 1941 to 829,000 in 1971, an increase of 72%.

2. *Domiciliary Attendance.*—In the United States Collins (1940) found that domiciliary attendance on people over 65 and on younger people was in the proportion of 6.0:2.7. The figures for this country given in the Registrar-General's Quarterly Returns are roughly the same. Simple calculation shows that if all medical treatment were domiciliary the amount for the whole population would increase by $\frac{6.0}{2.7}$, or 9.5%, from this cause alone.

3. *Bed-provision for the Chronic Sick.*—An investigation carried out by the Surrey County Council on behalf of the hospital surveyors of the London Area showed that of the beds for the chronic sick 75% were occupied by people over 64, and 25% by younger people. The number of beds needed is estimated in the different surveys at between 1.2 and 2.0 per thousand. Taking the lower figure, Table III shows that the increase needed between 1941 and 1971 is 28,000.

TABLE III.—Beds Required for Chronic Sick (On a Basis of 1.2 per Thousand)

Year	Men over 64 and Women over 59			Others			Total Beds
	No.	% of Popn	Beds	No.	% of Popn	Beds	
1941	5,571,000	12.0	42,000	40,994,000	88.0	14,000	56,000
1971	9,576,000	20.8	72,000	36,404,000	79.1	12,000	84,000

Similarly, taking the higher figure, the increase is 47,520. Whatever the figure, the increase is 50%.

Lord Beveridge seems to have visualized a population after an active life of successive illnesses and restorations to health entering into healthy old age which eventually terminates in clinically blameless death. The hospital surveyors of the Eastern Area hope for a diminution in the incidence of degenerative diseases for improved home care and earlier diagnosis. But it has yet to be proved that home care is more economical than institutional treatment, and we have little evidence that earlier diagnosis will make tissues less liable to degenerate or old bones less liable to break. It is obvious to everyone that to our powerlessness to prevent these occurrences must be added our remarkable progress in retarding malignant and degenerative processes, and that, although this progress must itself in due course become retarded, we have still a long way to go before the limit of our achievements is reached. We shall certainly see a more widespread application of radio-

therapy and physiotherapy, which, whether really effective or not, will be valued, and therefore demanded, for the psychological satisfaction which they give not only to the recipients but also to their relatives. The transference, so to speak, in 30 years of 4,000,000 from the younger to the pensionable age group (a number which may well be increased by medical progress) cannot fail to impose a heavy economic strain on a working population diminished by 2,600,000 according to the official estimates, which, it should be noted, take no account of the further reduction that will result from Government-sponsored emigration on a large scale and from the raising of the school-leaving age to 16. We may derive a grim consolation from the easement of the burden owing to the diminution of 1,970,000 in the number of children under 15.

The Expansion of Hospital Practice

Prior to the last war the medical services undertaken by the State, apart from the activities of the Medical Research Council, were practically confined to the institutional treatment of chronic sickness, infectious and mental diseases, tuberculosis, and to part of general practice. With the exception of the surgical treatment of tuberculosis the cost of these was almost static, fluctuating only with the cost of living. Any undue rise in the cost of the general practitioner service could be checked by penalties for over-prescribing. When the State proposed to undertake the treatment of the acute sick it was assumed that this too was almost static. "There will be some development of the service," says the Beveridge Report. "There will be some expansion of accommodation and services provided (e.g., for cancer)," says the White Paper [italics mine].

These comforting words betray a singular ignorance of the most outstanding characteristic of the voluntary hospitals—namely, that their activities were determined by the application of science, which, as I have shown (Roberts 1948), resulted in the expansion with accelerating velocity of every branch of their work without exception. The growing demands made upon them they met by spending up to and often beyond their income, proudly displaying their adverse balances as a measure of their success and as a basis for appeals for more generous support. There was therefore every reason to suppose that when their financial embarrassments were removed their expansion would be still further accelerated. But owing to defective historical sense none of the official publications show any realization of this state of affairs, though it must have been obvious if only from experience gained in the Emergency Medical Service. Estimates were based on the then existing expenditure plus the amount due to arrears which had accumulated during the war. Had they been based on the rate of growth they would have furnished a more reliable indication of the magnitude of future commitments.

Misconceptions about the Nature of Disease

To sociologists disease has always appeared as something which causes poverty. It is one of the five "giants" (to quote the Beveridge Report) which threaten social security through the cost to the invalid and the economic consequences to him and to his dependants. Hence the first steps at mitigation were concentrated, in the National Insurance Act, on the wage-earner. In the Beveridge Report this view of disease receives its fullest expression. This can be seen in the repeated emphasis on "restoration to health" and the importance of rehabilitation. Steps must be taken "to prevent interruption or destruction of earning power from leading to want." According to the International Labour Office the principal object of sickness insurance is to restore health and working capacity. On this simple view the community can be divided into two

roups: those who are well and able to work, and those who are unwell and unable to work. Disease is something people recover from, and the doctor's duty is to expedite that recovery so that they may resume their labours.

For taking this restricted view sociologists cannot be blamed. Untrained in biology and medicine, they are incapable of seeing health and disease in their proper setting. The fault lies in ourselves. In what is known as Social Medicine we have joined hands with them in investigating the effect of social conditions upon health, but we have neglected the wider problem. We have failed to formulate any doctrine embodying the true relation between medicine and all the elements of which civilization is composed—human nature, social progress, standard of living, and control over Nature. This extremely intricate relation must now make an effort to unravel, a task we can best begin by taking one by one the delusions under which sociologists labour.

What is Health?

The Beveridge Report, as we have seen, conceives ill-health as something which threatens social security. But when it comes to the means of treating ill-health it disregards this restricted conception for one which is all-embracing. "For every citizen there must be available whatever medical treatment he requires, in whatever form he requires it, domiciliary or institutional, general, specialist, or consultant. . . ." We thus have in the same report two widely differing conceptions, and it is in the difference which separates them that the Health Service is most likely to founder. It therefore seems desirable to try to define health. The anonymous writers of the *Report on British Health Services in the Political and Economic Planning (P.E.P.) Series* (1937, p. 395) state that "we can only claim scientifically to know what health is." Their confessed incapacity, however, does not deter them from expounding, in common with many other writers, the ideal fiction of "positive health." This seems to be a serenely ecstatic state which will inevitably ensue from removal of adverse social conditions, from more intensive health propaganda, the training of more and better doctors, and the building of bigger and brighter hospitals. Maintaining that health can be regarded only as a neutral zero state, I suggest the following definition:

Within the limitations of diagnosis good health exists, (1) when the separate organs of the body are functioning within the recognized normal range, and when the integration of their functions permits growth and physical and mental activity within the normal range; (2) when the activity of the micro-organisms for which the body is the natural habitat are sufficiently counteracted so that they are prevented from impairing functional powers; and (3) when the physical and mental stimuli constantly arriving from the environment do not appear to impair structure or function at the moment, and, though individually subliminal, do not appear to be exerting a cumulative effect in impairing them in the future.

Whatever its imperfections, this definition is, I think, at least realistic. It recognizes that the fight against disease is one aspect of the struggle for existence, like the quest for food and for protection against the violence of Nature. This struggle, so far from becoming easier, must inevitably become harder at every step owing to our inherent moral and physical infirmities, our mortal nature, and the bounds of time and space. We cannot conquer Nature, for the simple reason that we are ourselves part of Nature; we can only come to terms with her, and she drives a hard bargain.

Social and Economic Conditions

It is necessary to remember," says P.E.P., "that there are often two alternative policies for dealing with ill-health

—either to treat the cases or to deal with the social and economic conditions producing the cases." If by "social and economic conditions" is meant poverty I can only reaffirm categorically that with the possible exception of tuberculosis none of the major diseases and few of the minor ailments are in any degree attributable to this cause. Housing conditions are still deplorable in many places, but preventive medicine, by making the slums, as it has made the jungle, more habitable, has made their abolition less insistent. As regards psychological disorders, can we, influenced by the prevailing philosophy of determinism, indefinitely attempt to adjust the environment to the individual, bearing in mind the function of the environment in the formation of character? Does our growing knowledge of the workings of the mind keep pace with the new problems for ever arising in an age when the increasing complexity of civilization inevitably breeds new sources of friction in human relations and when increasing self-consciousness makes man more critical of his environment though not more critical of himself? "The fault, dear Brutus . . ."

Industrial diseases present a similar problem. If our task were confined to the elimination of those which have long existed it would be formidable enough. We must remember, however, that industry is not static. Scientific discovery leads society to engage itself in the production of ever more complex chemical substances the ill-effects of which are discovered only by experience. Even more formidable are the risks involved in the industrial uses of x rays and γ radiation, and in the production of isotopes and radioactive substances. The protection of employees and the prevention of contamination of air, water, and earth require a cleansing ritual which is fantastically elaborate. Nor is it merely a matter of disease which is immediately apparent, for there is reason to fear the advent of pathological effects delayed by years and even the possibility of danger to succeeding generations. As man, spurred by curiosity and the struggle to survive, penetrates ever more deeply into Nature's secrets she exacts an ever heavier toll. With these increasing hazards, which become a progressively more integral part of industrial life, medicine strives frantically to keep pace. Danger is always one move ahead of prevention.

Disease and Working Capacity

"Disease and accidents must be paid for in any case, in lessened power of production and in idleness" (Beveridge Report, p. 158). This sweeping statement is a travesty of the truth. It ignores all those conditions which have no effect on earning power—minor and localized skin diseases, such as digital warts and birth-marks, minor errors of refraction in the illiterate, the loss of a tooth, and baldness (for which wigs are supplied in duplicate), to name only a few of the vast number for which correction is now being demanded. It ignores the fact that medicine is a luxury as well as a necessity. It ignores the coexistence of incurable neurosis with unimpaired functional efficiency. We all know the neurotic woman who, when asked whether her symptoms interfere with the performance of her household duties, replies with an indignant denial, the very suggestion being a reflection both on her sense of duty and on her capacity for martyrdom.

Underlying this view is the assumption that health is something which all desire. I once heard a distinguished sociologist speak of a friend as "enjoying ill-health." From his sympathetic tone it was clear that he was using the expression in its figurative sense and that he was ignorant of its true and literal meaning. This humourless view seems to be general among sociologists. The writer

PEP say: "Many of the costs of ill-health cannot be measured in money. The subjective element in the endurance of pain and sickness cannot be estimated. It is impossible to say what contribution might in happier circumstances be made to the community by that regrettably large body of persons who 'enjoy indifferent health,' whose energy is all absorbed in struggling through the daily round."

An associated idea is that health is an end in itself. Health, however, is not an end but a means to an end, the end being the full life, though it does not follow that the full life which results is necessarily the good life. Good health is, I imagine, as essential to a burglar as it is to a bishop. But if health is a means to an end there must be an end worth having. At the present stage of civilization the best way to diminish the vast amount of imagined ill-health is the removal of sources of frustration and the encouragement of initiative, independence, and self-respect.

The Standard of Living

National prosperity, it is believed, is necessarily increased by the advancement of medicine. The truth is that it is both increased and diminished. It is increased by treatment which secures without disproportionate expense complete recovery in the young and middle-aged; it is diminished by measures which promote the survival of the unfit without making them fit and by those which merely prolong invalidism at a level incompatible with functional efficiency. The question is, which of these two actions predominates? I believe it depends upon the stage of development to which medicine and civilization have attained. At lower stages the effect is a pure enrichment of society, but, as civilization advances, the opposite factor exerts an increasing back-lash until at a certain point national prosperity is threatened. I do not say that we have reached this point, but we are certainly moving towards it. We are cured of the simpler and cheaper diseases to fall victim later on to the more complex and more expensive. This is the price which society pays for lengthening the expectation of life.

It is hoped that as the Health Service improves the need for it will diminish, and that this factor should lower the cost (Beveridge Report, p. 104). This is another way of saying that disease still threatens security because treatment is inadequate. Study of the past gives no grounds for this belief. The phenomenal development of hospital practice has, as I have shown (Roberts, 1948), involved an increase in cost per patient far exceeding the rise in the cost of living, a fact which disproves the contention that the increase is due to the more widespread dissemination of existing facilities. The determining factor is the increasing application of science, which, if given free play, will without any doubt always outrun provision. In 1860 England and Wales, with a population of 20,000,000, had just under 11,000 doctors, practically all of whom were general practitioners. Their average income was certainly not more than £500. The total amount spent by patients was thus £5,500,000, including the cost of drugs. To-day the general practitioner service is costing more than £40 million excluding the cost of drugs and administration. In 1860 hospitals, except in large cities, were small and cheaply run, and in country towns almost non-existent. Workhouse infirmaries administered only the barest medical necessities. The country's total medical bill must have been well under £10 million.

It can indeed be laid down as a law, *that in a free economy the cost of medical treatment rises with the standard of living*. This is because medicine is more successful in treatment than in cure; because medicine is

partly a luxury and its cost therefore rises with the amount spent on other luxuries, as Dickinson (1947) has shown. because those engaged in medicine are themselves part of society and share its fortunes; and because medical progress and a rise in the standard of living are both due to the same cause—the advancement of science. Science which gave us radium and penicillin also gave us television and the electric washer. It follows that in a free economy if the standard of living were to fall the cost of medical treatment would fall with it. In a planned economy there is no knowing what would happen; it would all depend on the planners. Certain it is that if an attempt were made to maintain or increase the cost of medical treatment the fall in the standard of living would be catastrophically accelerated.

Let us here note one very significant fact. Just at the moment when the provision of individual economic security is accomplished comes the realization of the precariousness of our national economic security. This is reflected in (among other ways) the change of emphasis in appeals for voluntary support. It being no longer necessary to shock us into generosity with pictures of disease and consequent poverty or of poverty and consequent disease, our feelings are harrowed by statistics showing how disease impedes national recovery. The Empire Rheumatism Council, for instance (*The Times*, Nov. 3, 1948), tells us that 3,000,000 weeks of work are lost each year by the insured population through rheumatic disease. The meaning of this should be clear to all. It is that from the struggle for existence there is no escape. Nature sees to that. Legislation can remove it from the individual but only by transferring it to the State.

The Moral Implications

"It is a logical corollary to the receipt of high benefits in disability that the individual should recognize the duty to be well and to co-operate in all steps which may lead to diagnosis of disease in early stages when it can be prevented" (Beveridge Report, p. 158). This obligation, which incidentally can be read as a direct encouragement to abuse the Service, means more than refraining from malingering, a subject on which writers on industrial medicine are eloquent. It means that citizens will arm themselves with the moral shield and buckler against disease; that they will conquer the lusts of the flesh; that they will suffer neither their bones to be broken in drunken brawls nor their livers to become cirrhotic by chronic addiction; that they will not use their disabilities to tyrannize over their fellow-men; that they will always allow themselves to be made efficient members of society by surgical operation rather than remain permanent charges on the community by their refusal; and that they will think twice and even three and four times before sending for the doctor. The stability of the Health Service in fact requires a tremendous moral uplift the like of which mankind has never seen, an uplift which even ministerial supplications will be powerless to achieve. Failing this happy transformation of human nature the true logical corollary is the application to our weaker brethren, and perhaps to us all, of measures which, to put it mildly, will be anything but pleasant.

Medicine Considered as a Commodity

Sociologists maintain that medical treatment is above economic considerations. The Beveridge Report (p. 16) says that full prevention and curative treatment must be available "without an economic barrier at any point." According to Levy (1944), "economy in medical treatment contradicts the very foundation of medical science." This however, is true only in regard to treatment which results in partial or complete restoration of functional efficiency.

its application to complaints which do not impair functional efficiency and to diseases which are incurable and which cause total and permanent incapacity is a different matter. It will clarify our minds if we consider the differences and resemblances between medicine and other commodities—food, clothing, housing, and fuel. The chief differences are these: First, the direct cost of medical treatment is an addition to normal requirements. Secondly, allowing for individual variation in the conception of what is essential and what is extravagant, and for the fact that the luxuries of to-day become the necessities of to-morrow, the minimum requirements of other commodities can be at least roughly assessed. We know the amount of clothing, fuel, and food needed to keep us warm, dry, and well nourished. In contrast, the need and value even of the essentials of medicine are usually impossible to assess.

Thirdly, we know the cost of food and clothing; we can find out exactly the cost of repairing a house or a coat and we have a reasonable guarantee that the repair will be successful. In medicine we have no such assurance. The cost cannot be estimated nor can a cure be guaranteed. When an article reaches obsolescence we can decide whether to repair it or buy another; with our bodies we have no option, and the chances that repair will be successful diminish with the years. Fourthly, though fancy articles command fancy prices, the cost of food, fuel, and clothing is in normal times subject to little fluctuation, since it depends on the cost of labour and raw materials and is regulated by the law of supply and demand. Medicine, however, contains within itself the means of its own expansion—namely, the expansion of science on which it is based—an expansion beyond the control of market conditions and of which the only certainty is that it will continue indefinitely.

The resemblances, if less obvious, are no less real. Medicine, like other commodities, consists of a core of essentials surrounded by inessentials extending to luxury and extravagance. Illness makes many people less able to pay the cost of treating it, but it also makes them less able to pay for rent, food, and clothing. The means of providing all these commodities, including medicine, comes from the same sources—personal and national wealth.

The consequences of failing to understand these differences and of ignoring the resemblances are plain for all to see. At a time when food and clothing are rationed, when the housing shortage causes immense difficulties, and when the coal shortage constitutes the gravest threat to our standard of living, medical treatment is provided in abundance with no regard to economy. In unemployment pay, old-age pensions, and the death gratuity, where costs can be readily determined, the benefits are based on the minimum needed to keep our bodies in reasonable comfort and in due course to bury them with reasonable decorum. Moreover, for entrants of advancing years there is a minimum period of contribution before full benefits can be obtained, so that many people have to be helped by National Assistance. But in regard to sickness, the cost of which cannot be ascertained with anything approaching accuracy and of which the only certainty is that it will increase with accelerating speed, the State has underwritten an unlimited liability.

Conclusions

I believe that through ignorance and miscalculation in its preparation the cost of the Health Service has been grossly underestimated, that when in full operation it will be not less than £500 million, and that in future years it will rise to an even higher figure. Whatever the exact figure, I am firmly convinced that at the present rate of expenditure it will involve us in national ruin. The

alternative is hardly less comforting. It is that a limit will be set by shortage of personnel and materials. This means (mark it well!) that medicine will be rationed and controlled, and there is no reason for supposing that nationalized medicine possesses any moral superiority rendering it immune from the vices which rationing and control invariably bring in their train.

There have been occasions when nations have been decimated by disease. They have often recovered, but changed in social structure. The Black Death, for instance, by creating a shortage of labour destroyed the feudal system. In the twentieth century civilization is faced with a threat unique in its history, the existence of more ill-health than it can afford, due not to any temporary calamity but paradoxically to the advance of civilization itself. Society has opened a new Pandora's box, releasing new diseases of its own creation and with them innumerable new methods of treating all the diseases which it cannot cure.

The stupendous problem thus created calls for the exercise of the highest intelligence. Our duty as a profession is clear. We must teach our students and the lay public that the fight against disease is part of the struggle for existence; that medicine is not above economic law but strictly subject to it; that the claims of health, so far from being absolute, are relative to national well-being; that the country will get not the finest Health Service in the world but the Health Service which it deserves. We must not allow absorption in the daily round to prevent us from counteracting the hysterical clap-trap of demagogues, the impracticable visions of idealists, or the false premises of academic theorists. We must proclaim the faith that is in us, the faith inspired not by the Blue Books but by the bedside, not by Sidney Webb but by Hippocrates, not by the London School of Economics but by the Island of Cos.

REFERENCES

- Collins, S. D. (1940). *Publ. Hlth Rep., Wash.*, 55, No. 44.
 Dickinson, F. G. (1947). Report No. 60, Bureau of Medical Economic Research, Chicago.
 Holingsworth, H., and Klem, M. (1943). Social Security Board, Bureau of Research and Statistics, Memorandum No. 51, p. 176.
 Levy, H. (1944). *National Health Insurance*, p. 92. Cambridge University Press.
 Roberts, Ff. (1948). *British Medical Journal*, 1, 435.

The Poisons Board has made certain recommendations to the Secretary of State for the further amendment of the Poisons List and of the Rules made under Section 23 of the Pharmacy and Poisons Act. He therefore proposes to make Statutory Instruments which will effect the following changes in the law relating to poisons: 6-morpholino-4: 4-diphenylheptane-3-one and its salts will be added to Part I of the Poisons List. Dinitrocresols will be taken out of Part I and added to Part II of the Poisons List. Bis-bis-dimethyl-aminophosphonous anhydride, diethyl-paranitrophenyl thiophosphate, hexaethyl tetrophosphate and tetraethyl pyrophosphate will be added to Part II of the Poisons List. 6-morpholino-4: 4-diphenylheptane-3-one will be included in the First and Fourth Schedules to the Poisons Rules. Dinitrocresols will be exempt from the restrictions which apply to First and Fourth Schedule poisons when sold in the form of agricultural and horticultural insecticides or fungicides. Such preparations will be excluded from the general exemption from control of all substances containing dinitrocresols and not being preparations for treatment of human ailments; they will be the only preparations containing dinitrocresols and subject to the control of the poisons law which may be sold by listed sellers of poisons. The four phosphorous compounds named will be exempted from control when sold in any form other than agricultural or horticultural insecticides or fungicides. These preparations, and the similar preparations containing dinitrocresols, will be subject only to the restrictions imposed by their being included in Part II of the Poisons List and in the Seventh Schedule to the Poisons Rules. The form of words with which they are to be labelled will draw attention to the danger of using the preparation in an enclosed place and of allowing it to come into contact with the skin. Rule 30 will be extended to include insulin in the list of poisons which may be manufactured under the supervision of a duly qualified medical practitioner.

PEPTIC ULCER IN GLASGOW

A HOSPITAL SURVEY

BY

R. A. JAMIESON, F.R.C.S.Ed.

W. E. SMITH, M.A., M.B.

AND

L. D. W. SCOTT, M.R.C.P.

(From the Peptic Ulcer Clinic, Glasgow Western Infirmary)

From an analysis of reports from hospitals in Great Britain Nicol (1941) suggested that there is a geographical variation in the relative frequency of gastric and duodenal ulcer. Doubtless other geographical variations would come to light if sufficient information were available. Unfortunately the majority of hospital reports deal exclusively with in-patients, and if the criteria for admission vary from one hospital to another the omission of out-patients may lead to serious error. So far the only complete survey of hospital patients with peptic ulcer in this country was made in the Greater London area (Avery Jones and Pollak, 1945). We present for comparison the experience of a hospital in the West of Scotland.

Methods

A survey was made of the out-patients and in-patients with peptic ulcer attending the Western Infirmary, Glasgow, during the two-year period from May 1, 1946, to April 30, 1948. For the purpose of the survey it was necessary to adopt an arbitrary standard of diagnosis. For out-patients the diagnosis was taken as established when an ulcer had been demonstrated radiologically, and for in-patients when ulcer was the final diagnosis made by the clinician in charge. Out-patients were interviewed daily immediately after they had been x-rayed; the count of out-patients was complete as compared with the barium meal logbook, but, as was inevitable in a busy department, a few patients escaped interview. The count of in-patients was made by visiting each ward once a week, and virtually all the ulcer patients were interviewed save those who died within a few days of admission. The information obtained was recorded on punch cards to facilitate sorting. Care was taken to avoid counting any patient more than once, and (again to avoid duplication) out-patients subsequently admitted were classed as in-patients. Patients known to have a peptic ulcer but seeking advice for unrelated disease were excluded. Finally, to allow comparisons to be made with previous reports from other hospitals, we have wherever possible appended to our overall figures the data relating separately to out-patients and in-patients. This has proved all the more necessary as out-patients and in-patients differ (as we shall show) in respect of age, sex, site of ulcer, and complications.

Number and Sex Ratio of Patients

During the two-year period mentioned it was found that 3,258 ulcer patients passed through the hospital, comprising 2,286 out-patients and 972 in-patients. Figures for the total hospital attendances are not available for the exactly corresponding period, but during the two calendar years 1946 and 1947 the number of patients attending the general medical and surgical out-patient departments was 25,333 and the number of in-patients in the general medical and surgical wards was 22,425. Peptic ulcer accounted for a notable proportion of all hospital patients, especially in the out-patient service. To the 2,286 out-patients with ulcer must be added a further 244 out-patients who were subsequently admitted to the wards; peptic ulcer therefore

accounted for some 10% of the total out-patients. Among in-patients it accounted for 4.3%.

There were 2,526 males and 732 females—a ratio of 3.5 males to 1 female. This was considerably lower than the ratio of 4.7 to 1 given by Avery Jones and Pollak (1945); it is a matter for regret that comparable estimates from other hospitals have not been published. A point of interest in our series, to which further reference will be made, was the different sex ratio in out-patients as compared with that of in-patients: in out-patients there were 3.1 males to 1 female, and in in-patients 4.5 to 1.

Age and Site Distribution

The age distribution of the ulcer patients attending hospital is shown in Fig. 1. The large number of patients

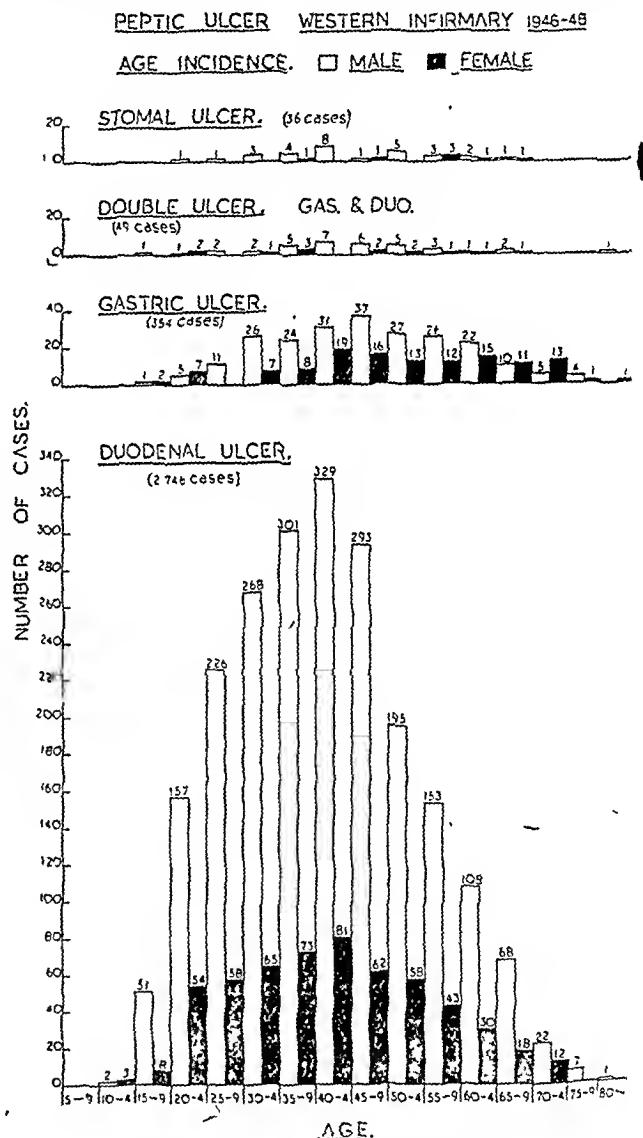


Fig. 1.—Peptic ulcer: Age and sex incidence. In 53 cases the site was not stated and in 4 cases of gastric and 17 of duodenal ulcer the patient's age was omitted.

(some 60%) concentrated between the ages of 30 and 45, which is worthy of notice. This emphasizes again the economic importance of peptic ulcer as a cause of chronic ill-health at a time of life when its victims are at the height of their wage-earning capacity.

The great preponderance of duodenal over gastric ulcer is also well shown in Fig. 1, and the overall ratio was 2.5 duodenal ulcers to 358 gastric ulcers, or 7.7 to 1. This preponderance was greater in males than in females—

males it was 9.5 to 1, whereas in females it was only 4.4 to 1. The ratio differed also in out-patients as compared with in-patients.*

An observation of great interest was the striking difference in the ages of patients with duodenal ulcer as compared with those with gastric ulcer. Thus in males the mean age for duodenal ulcer was 41.8 years and for gastric ulcer it was 47.6. In females the difference was even greater—namely, 42.0 and 51.5 years respectively. These large variations seem to reflect a real age difference in the incidence of duodenal and gastric ulcer. Strong support for this inference is provided by the evidence presented in Fig. 2 and Table I, in which duodenal and gastric ulcers

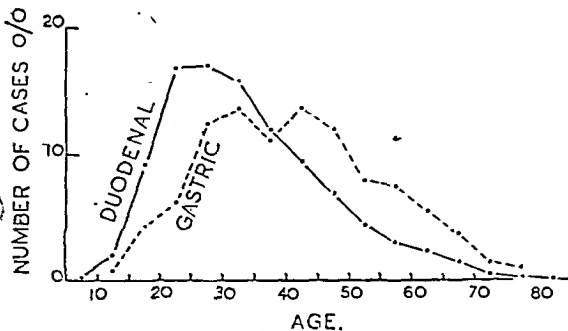


FIG. 2.—Peptic ulcer: Age at onset of symptoms.

TABLE I.—Age at Onset of Symptoms

Age (Years)	Gastric Ulcer	Duodenal Ulcer
5	0	5
10	2	45
15	13	226
20	19	413
25	38	421
30	42	391
35	34	292
40	47	231
45	32	169
50	24	103
55	23	74
60	17	55
65	11	33
70	4	11
75	3	1
80-84	0	1
Age not stated	49	256
All ages	355	2,763

are contrasted in respect of the age at onset of symptoms. It will be seen that symptoms begin at an earlier age in duodenal ulcer than in gastric ulcer.

Complications of Peptic Ulcer

Of the total 3,258 patients dealt with during the survey, 1,237 (38%) were undergoing treatment for a complication of peptic ulcer or had suffered a complication at some time in the past. Of the common complications we have classified perforation and haemorrhage, but have not felt justified in attempting to classify stenosis. Patients requiring operation for advanced stenosis have been classed with patients requiring operation for other intractable disability under the general term "elective operation." The incidence of complications (past or present) is shown in Table II.

It will be noted that the complication rate was much higher among in-patients than among out-patients. It is indeed hardly a matter for surprise that in-patients should

TABLE II.—Incidence of Complications

	Out-patients		In-patients		Total
	Male	Female	Male	Female	
Uncomplicated	1,208	414	159	42	1,823
Perforation	115	3	225	17	360
Haemorrhage	170	71	145	56	442
"Elective operation" ..	33	14	85	30	162
Perf. and haem. ..	25	1	26	5	67
Perf. and elect. op. ..	7	—	53	1	61
Haem. and elect. op. ..	14	5	63	20	102
Perf. and haem. and elect. op. ..	9	—	29	5	43
Unstated	149	48	1	—	198
Totals	1,730	556	796	176	3,258

comprise chiefly those who have suffered some complication of their ulcers. However, when it is shown that only one out of five of the out-patients suffered a complication as against four out of five of the in-patients, it becomes clear that out-patients and in-patients represent different sections of the ulcer community. We believe that it is because in-patients are selected mainly on the basis of past or present complications that they differ from out-patients in so many respects; the outstanding differences in age, sex, and site of ulcer have been stressed throughout this report.

The commonest complications were perforation and haemorrhage; the relative frequency of these is shown in Table III. In gastric ulcer haemorrhage was commoner

TABLE III.—Relative Frequency of Perforation and Haemorrhage

	Perforation		Haemorrhage	
	25 males	9 females	51 males	30 females
Gastric ulcer	456	23	294	114
Duodenal ulcer ..	—	—	—	—

than perforation in both sexes. In duodenal ulcer, however, there was a conspicuous sex difference: in males perforation exceeded haemorrhage in the ratio of 456 to 294, or 1.5 to 1, whereas in females perforation fell short of haemorrhage in the ratio of 23 to 114, or 1 to 5. This remarkable sex difference in duodenal ulcer remains unexplained. If it be accepted that duodenal ulcers which perforate are situated anteriorly, whereas those which bleed are mainly posterior, it would seem that women must have a relative immunity from ulcer of the anterior duodenal wall. This interesting speculation merits further investigation.

Site of Ulcer and Social Status

It has been claimed (Morris and Titmuss, 1944) that among the poorer classes there is a disproportionately large number of deaths due to gastric ulcer as compared with duodenal ulcer. It was of interest, therefore, to arrange our patients according to social status and site of ulcer, but it can be said at once that we were unable to confirm this finding. For the social grading we have used the scheme of the Registrar-General for England and Wales (1931); Grade I includes the professions, Grade III skilled artisans, Grade V unskilled workers, and Grades II and IV are intermediate.

Table IV shows that the observed and expected numbers were in general in close agreement. There was no systematic surplus of gastric ulcers in Grade V, and indeed in two of the three age groups there was actually a small deficit.

Lastly, we examined the possibility that peptic ulcer in women might be commoner in the unmarried because they tend to have the same conditions of work and meal-times as men. Among 584 women between the ages of 20 and 64 the unmarried amounted to 150 (26%). This seemed to us to be a high proportion, and we were surprised to discover

*The actual D.U./G.U. ratios were in males 1,559/137 for out-patients as against 638/94 for in-patients; and in females 454/86 for out-patients as against 112/41 for in-patients. Excluded from the calculation of duodenal-ulcer/gastric-ulcer ratios were 36 patients with small ulcer, 49 with combined gastric and duodenal ulcer, and 52 whom the site was not stated.

TABLE IV.—Social Grade of Male Patients Aged 20-64

Age	Site	Social Grade			
		I and II	III	IV	V
20-34	Gastric	2 (2.9)	20 (26.0)	7 (5.8)	11 (5.3)
		46	416	90	78
35-49	Gastric	3 (6.2)	62 (58.8)	13 (11.9)	11 (12.1)
		65	589	119	123
50-64	Gastric	6 (6.5)	40 (42.8)	15 (9.8)	8 (9.9)
		40	266	55	63

From the table are excluded 80 duodenal ulcer and 11 gastric ulcer patients whose social grade was not stated. The figures in brackets give the number of gastric ulcers expected at each age if site and social grade were independent.

that it agreed fairly closely with the proportion of unmarried women in the general population; for women aged 20-64 the 1931 Census for England and Wales gives the proportion of unmarried as 3,747,699 to 11,743,965, or 32%.

Relative Incidence of Duodenal and Gastric Ulcer in Great Britain

Nicol (1941) stated that the relative incidence of duodenal and gastric ulcers varied throughout Great Britain, and ranged from 8 to 1 in Scotland to 1 to 1 in London. He doubted whether the London figures were truly representative of the ulcer population in that area, and suggested that it was the practice in London to treat more cases of duodenal ulcer as out-patients than was usual in other cities, so producing an artificial difference in the ratio of duodenal to gastric ulcers. This was confirmed by Avery Jones and Pollak (1945), who by including out-patients found that in London duodenal ulcer was two and a half times as common as gastric ulcer. Nevertheless there is still a gross discrepancy with our finding in the West of Scotland that duodenal ulcer is about eight times as common as gastric ulcer.

Figures are not available giving the relative incidence of duodenal and gastric ulcers in the general population, but during the war many reports were made on peptic ulcer in the Services, and in these the D.U./G.U. ratio varied from 4.0 to 1 (Rook, 1943) to 8.7 to 1 (Morris, 1940). By taking only males under 45 years, and so making their series comparable with the Service patients, Avery Jones and Pollak made the ratio of duodenal to gastric ulcer 5.5 to 1. It would therefore appear that their experience with this age group may be taken as representative. However, when the same group of patients is considered in our series the D.U./G.U. ratio becomes 13.2 to 1. Consequently it must be concluded that the relative preponderance of duodenal ulcer over gastric ulcer is much greater in hospital practice in Scotland than in London. Whether this difference is due to an absolute increase in duodenal ulcer or a deficiency of gastric ulcers remains to be established.

Summary

A two-year survey of the peptic ulcer patients attending a Glasgow hospital is reported. The survey included both in-patients and out-patients. The chief findings were:

1. The overall sex ratio was 3.5 males to 1 female.
2. The overall site ratio was 7.7 duodenal ulcers to 1 gastric (4.5 to 1 for males and 4.4 to 1 for females). There was no evidence that the ratio of duodenal to gastric ulcer was influenced in males by social status or in females by marital status.
3. Patients with duodenal ulcer were notably younger than patients with gastric ulcer, and the age at onset of symptoms was also lower in duodenal ulcer.
4. The complications of ulcer which the patients had suffered were recorded. Attention is drawn to the relative rarity of perforation in duodenal ulcer in women.
5. In-patients differed from out-patients in respect of sex, age, site of ulcer, and complications. This is attributed to the

fact that in-patients were a selected group comprising chief patients who had suffered one or more complications.

6. The ratio of duodenal to gastric ulcer appears to be much higher in Scotland than in London. This finding is discussed.

We wish to express our gratitude to Professor Illingworth, who proposed this survey, to the physicians, surgeons, and radiologists of the Western Infirmary for their ready co-operation, and to M. S. G. Murray, Miss C. M. Atkinson, and Miss M. K. Chisholm for much secretarial help, loyally and efficiently given.

REFERENCES

- Jones, F. A., and Pollak, H. (1945). *British Medical Journal*, 1, 797.
 Morris, H. (1940). *Ibid.*, 2, 235.
 Morris, J. N., and Titmuss, R. M. (1944). *Lancet*, 2, 841.
 Nicol, B. M. (1941). *British Medical Journal*, 2, 780.
 Rook, A. F. (1943). *Lancet*, 1, 733.

THE DIET, HAEMOGLOBIN VALUES, AND BLOOD PRESSURES OF OLYMPIC ATHLETES

BY

W. T. C. BERRY, M.A., M.B. J. B. BEVERIDGE
 E. R. BRANSBY, Ph.D. A. K. CHALMERS, B.Sc.
 B. M. NEEDHAM, B.Sc. H. E. MAGEE, M.B., D.Sc.
 H. S. TOWNSEND, M.B.

Ministry of Health

AND

C. G. DAUBNEY, M.Sc., F.R.I.C.

Department of the Government Chemist

At a recent meeting of the Nutrition Society on the nutrition of athletes it was made clear that there were but few scientific data relating to the nutrition and physiology of athletes. The gathering of many athletes in London for the Olympic Games gave an opportunity for the study of certain aspects of their physiology—namely, the food consumption, haemoglobin levels, and blood pressures.

Food Consumption

Most of the athletes were housed and fed at the R.A.F. camp at Uxbridge, others being accommodated at a number of smaller centres. Different nationalities occupied different blocks, a dining-room in each block being reserved for the athletes. Food was prepared in three separate kitchens at the main camp. There was also one central cafeteria for snacks and light meals where athletes could entertain their guests. If any athletes were unable to come to camp for a meal they were provided with sandwiches; occasionally they had meals in outside restaurants. These various arrangements made the collection of food records somewhat complicated. Many of the athletes were under considerable mental tension before their contests, and it was therefore essential to exercise a good deal of tact in obtaining the food data. A further complication was that national dishes were in many cases provided and the nutrient values of these were not available in the customary tables of food composition.

The method of survey was as follows. On the Monday of each week the athletes chosen for study were interviewed and their co-operation enlisted. The study of each athlete lasted from Tuesday (breakfast) until Friday (supper)—that is, for four days. The athletes collected their food on the cafeteria system; a dietitian followed and was served with duplicates of the meal. At the end

each meal the food left by the athletes was collected. The duplicate meals and the left-overs thus obtained were sent separately into Kilner jars for eventual chemical analysis. Each meal the athlete told the dietitian what extras had been eaten since the previous meal, replicas of which were then obtained either from the cafeteria or from the teams' supplies. The Kilner jars were kept in cold storage, and the end of four days were sent to the Laboratory of the Government Chemist for chemical analysis. The collection of the food samples was done by three of us (J.B.B., K.C., B.M.N.). In addition, Miss Lowden, of the Ministry of Food, collected four sets of diets by the same method from a smaller centre, the results of which have been included here.

Chemical Analysis of the Diets

The chemical analyses were made in the Department of Government Chemist under the direction of one of us (G.D.). The mixtures of foods received for analysis consisted of duplicates, as near as could be judged, of the diets of the athletes as served at the camp canteens over

McCance and Widdowson (1946) and of Chatfield and Adams (1940) were used to calculate the nutrient values of any foods not obtainable for chemical analysis.

Results of Diet Studies

The results are shown in Table I. The protein intakes ranged from 65 to 231 g. a day, averaging 139 g. daily. Only three athletes had less than 100 g. daily. The high intakes were in the main due to large consumptions of meat, eggs, and milk. The intake of fat ranged from 92 to 223 g. a day, and averaged 137 g. daily. The carbohydrate intakes were from 128 to 572 g. a day, with an average of 390 g. daily. The proportions of glucose, sucrose, and starch eaten varied widely, some athletes taking liberal helpings of sugar in their tea, others taking glucose, while others took but small amounts of sugar and no glucose. The calorie intakes ranged from 2,113 to 4,739 daily, with an average of 3,350 daily. There was no consistent difference in the calorie intakes of different types of athletes—e.g., sprinter or long-distance runner. This aspect was further examined

TABLE I.—Average Daily Intakes of Nutrients by Olympic Athletes

Nationality	Age in Years	Civil Occupation	Height (cm.)	Weight (kg.)	Event	Protein (g.)	Fat (g.)	Carbohydrate (g.)	Calories	Basal Metabolism	"Spare" Calories	
											Per Day	Per kg.
British ..	29	Policeman	183	79	100 m.	136	161	413	3,645	1,915	1,766	17
Canadian ..	23	Student	181	80	100 m.	137	92	443	3,148	1,938	895	11
German ..	18	"	177	70	200 m.	192	125	459	3,729	1,905	1,451	21
American ..	23	"	165	57	200 m.	95	112	267	2,456	1,614	596	10
British ..	28	Clerk	190	75	400 m.	160	209	524	4,697	1,924	2,303	31
American ..	—	Student	186	72	200 m., 400 m.	124	109	490	3,437	1,866	1,227	17
Chinese ..	23	In bank	172	59	400 m.	99	105	338	2,693	1,653	771	13
Chinese ..	25	Clerk	174	61	400 m.	103	111	299	2,607	1,663	683	11
British ..	30	"	176	69	800 m.	158	200	481	4,356	1,745	2,172	31
American ..	—	Student	196	84	400 m., 800 m.	136	116	572	3,876	2,069	1,419	17
German ..	25	Clerk	175	69	800 m., 1,500 m.	187	110	419	3,494	1,770	1,375	20
British ..	27	Regular Army soldier	181	64	800 m., 1,500 m.	129	185	369	3,657	1,741	1,540	24
Canadian ..	22	Salesman	182	65	800 m., 1,500 m.	136	115	418	3,251	1,791	1,135	17
British ..	20	Student	190	88	800 m., 1,500 m.	143	153	531	4,073	2,106	1,560	18
German ..	25	"	169	63	3,000 m., 10,000 m.	169	104	322	2,900	1,663	947	15
British ..	41	In food factory	165	67	Marathon	231	164	367	3,865	1,590	1,691	25
Canadian ..	32	In aircraft factory	169	62	"	139	149	400	3,497	1,623	1,524	25
Chinese ..	—	"	173	59	"	146	126	326	3,022	1,604	1,116	19
Chinese ..	—	"	167	55	"	115	108	351	2,848	1,574	959	18
German ..	18	Student	181	78	120 miles cycle	172	223	511	4,739	2,039	2,226	29
British ..	22	"	165	67	120 miles cycle	137	146	411	3,505	1,732	1,423	21
German ..	25	Student	187	76	Jumping	114	114	310	2,722	1,921	525	7
German ..	28	"	178	75	Gymnast	169	172	413	3,876	1,857	1,631	22
Chinese ..	23	Printer	165	53	"	128	158	214	2,790	1,523	953	19
American ..	26	Lawyer	170	72	Wrestler	117	128	429	3,336	1,760	1,242	17
British ..	26	Student	180	82	Basket ball	134	104	397	3,050	1,934	820	10
Chinese ..	31	Business man	175	96	Hammer-throwing	65	149	128	2,113	2,005	103	—
Chinese ..	17	Student	—	—	Swimmer	101	93	309	2,477	—	—	—

period of (usually) four days, together with the actual "leavings" of meals.

To secure a representative sample each Kilner jar was weighed as received, the contents tipped into a large minimum container, and the jar weighed empty. Any pebbles, stones, and similar material of no food value were removed and weighed to obtain the amount of the edible material supplied and of the leavings. These leavings were analysed separately. The whole of the food was then introduced in portions into a large hand-operated mincer to produce a finely ground product. After thorough mixing an aliquot was transferred to a Waring blender to produce a homogenized product for analysis. If the liquid in the food was not sufficient for the blender to operate properly a known weight of water was added to bring the mixture to a suitable consistency.

The determination of moisture, ash, fat, and nitrogen was carried out as described by Bransby *et al.* (1948). The carbohydrate values were obtained "by difference"—that is, the amount remaining after subtraction of the moisture, protein, and ash. The factor 6.25 was used to calculate the protein content from the nitrogen values found by analysis. The factors 4, 9, and 4 were employed to calculate the calorie value of the diets from the respective protein, fat, and carbohydrate contents. The food tables of

by considering the energy available for the normal everyday activities and athletic exercise, after making allowance for the basal metabolism. Thus for each athlete the requirement for basal metabolism and the allowance for specific dynamic action—namely, 10% of the calories provided by the food—were deducted from the total caloric intakes. The remainder, called for brevity "spare" calories, were compared, according to the type of athlete. Again, there was no consistent variation of these "spare" calories with the type of event. The "spare" calories per kg. of body weight were then calculated for each athlete (last column, Table I). The results for four nationalities are set out, according to event, in Table II. The data for the Canadians

TABLE II.—"Spare" Calories per kg. of Body Weight per Day

Event	100 M.	200 M.	400 M.	800 M.	1,500 M.	10,000 M.	Marathon	120 Miles Cycle
British ..	17		31	31	24		28	
Canadian ..	11				17.18		25	
Chinese ..			11.13				18.19	
Belgian and Luxembourg ..		21			20	15		21.29

* Total calories less the sum of the basal metabolism and specific dynamic action.

and Chinese suggest that more "spare" calories per kg. of body weight were required for long-distance than for short-

distance events, but this was not substantiated by the data for the Belgians, British, and Luxemburgers.

Ascorbic Acid.—Estimations of the ascorbic acid intakes were made for seven athletes. Duplicate portions of all foods containing ascorbic acid were collected from the kitchens and were analysed by Dr. C. W. Herd. The intakes (mg.) per day were: British, 71, 80; Luxemburger, 45; Belgian, 81; Canadian, 41; Chinese, 43; Jamaican, 98. Orange juice contributed largely to the last value.

Food Habits

Twenty athletes were interviewed concerning their normal food habits and their food habits during training and on the day of the race or event. Most of them stated that they were always in training and that consequently their diet underwent little change when they were getting ready for a race. The majority stressed the value of generous helpings of meat, eggs, and milk. Thus one marathon runner normally has two or three eggs and 1-1½ lb. (453-680 g.) of steak daily, and a sprinter two eggs and 1 lb. of steak daily. There were, however, a number of interesting variations as the day of the race approached. Two short-distance runners tend to eat less, a marathon runner to cut down on milk, and a javelin-thrower to cut out afternoon snacks and drink more milk. A middle-distance runner has the same food but larger helpings, and a short-distance runner tries to have more eggs, milk, and meat. Another middle-distance runner has a normal diet throughout training, but on the day preceding the race eats more than usual. The athletes thus did not behave uniformly, but appeared to fall into three groups: those who did not vary their normal habits throughout training, those who tended to eat less, and those who tended to eat more.

On the day of the race food habits often changed considerably. The majority have a normal breakfast, but again there are interesting variations. One short-distance runner has additional eggs and bacon; two others omit breakfast, and another has a broiled steak the night before the race and poached eggs for breakfast. A middle-distance runner and a marathon runner have no breakfast. In practically all cases a lightly cooked meal is eaten three to four hours before the event. Most short- or middle-distance runners have a light snack, the favourite appearing to be poached eggs on toast; but two short-distance runners each have 2 lb. (900 g.) of steak, one additionally having milk, the other chocolate, three-quarters of an hour before the race. Each of the three marathon runners interviewed has a good meal of steak or eggs and bacon about four hours before the race; a 10,000-metre runner has a normal breakfast and nothing within four hours of the race; a wrestler has nothing between 6 o'clock the previous evening and the weigh-in in the morning, but about three hours before the event has a hearty meal of steak, potatoes, and cakes. A javelin-thrower has a normal breakfast and a light snack four hours before the event, and a high-jumper makes no variations at all from his normal diet.

Some athletes specially mentioned sugar, glucose, and salt. Two short-distance runners and a javelin-thrower make a point of taking a lot of sugar in their drinks before the race; a short-distance runner and a marathon runner have glucose every morning; and middle- and long-distance runners have glucose on the day of the race. Three short-distance runners make a point of taking plenty of salt in their food, and two middle-distance runners take salt regularly when in strict training. Two short-distance runners take synthetic vitamin B₁ tablets daily, and a jumper takes preparations containing vitamins A, B, C, and D. Most of the athletes avoid taking much fat or fatty foods before the event, as it is considered indigestible.

Haemoglobin Levels

Blood samples were obtained from 147 men from 18 countries. Their ages ranged from 16 to 47 years, and they competed in a wide variety of events. Blood was taken from the finger, the subject sitting after normal non-strenuous activity. The alkaline haematin method was used with a Medical Research Council Grey Wedge photometer, calibrated against Gibson Harrison standard. The same person (W.T.C.B.) examined all the bloods. Pipettes were tested and corrections made, where necessary beforehand.

The mean haemoglobin level of the 147 men was 16 g. per 100 ml., with a range of from 13.7 to 18.6 g. a standard deviation of 1.01 g. The mean level for 93 men from temperate countries was identical with that of 54 men from warm or tropical countries—namely, 16 g.

The haemoglobin levels of 35 men competing in events involving a high oxygen debt—short-distance runners, swimmers, cyclists, and oarsmen—averaged 15.9 g., which is not significantly different from the grand average. Six divisions into events demanding great strength, great endurance, and skill rather than endurance gave averages 15.9 g., 15.7 g., and 16.2 g. respectively. None of the differences between these is significant.

Blood Pressures

Readings were taken with the subject seated, after normal non-strenuous occupation. An ordinary mercury column and-cuff sphygmomanometer was used. The diastolic pressure was read at the beginning of the fourth phase. Readings were taken either by one of us (H.S.T.) or six instances by the doctor to the team.

Values for the whole group, and for men from temperate and warm countries, are shown in Table III. The

TABLE III.—Blood Pressures of Olympic Athletes According to Climate

Group	No. of Subjects	Mean Systolic mm. Hg	S.D.	Range	Mean Diastolic mm. Hg	S.D.	Range
Temperate countries	111	121.2	13.2	100-160	76.0	8.2	60-85
Warm countries	90	116.6	13.1	90-150	79.1	7.7	65-85
Whole	201	119.1	13.1	90-154	77.4	8.1	60-85

TABLE IV.—Blood Pressures of Olympic Athletes According to Body Weight

Group	No.	Systolic Pressure mm. Hg	Diastolic Pressure mm. Hg
Temperate countries:			
Less than 140 lb. (63.6 kg.)	11	112.8	68.1
140-164 lb. (63.6-74.5 kg.)	52	120.1	75.6
165-189 lb. (75.0-85.9 kg.)	33	121.2	76.8
190 lb. (86.3 kg.) or more	15	130.8	81.2
Warm countries:			
Less than 140 lb. (63.6 kg.)	23	114.1	77.1
140-164 lb. (63.6-74.5 kg.)	44	116.2	79.1
165-189 lb. (75.0-85.9 kg.)	16	117.4	80.1
190 lb. (86.3 kg.) or more	7	126.3	84.0

TABLE V.—Blood Pressures of Olympic Athletes According to Age

Group	No.	Average Age	Systolic Pressure mm. Hg	Diastolic Pressure mm. Hg
Temperate countries:				
Under 25 years	49	21.5	120.0	75.8
25-29 years	31	26.6	124.2	74.9
30 years or more	31	33.7	119.9	77.3
Warm countries:				
Under 25 years	37	21.7	117.0	78.2
25-29 years	29	26.6	116.2	79.0
30 years or more	24	33.4	116.6	80.8

group from temperate countries had a significantly higher systolic and lower diastolic pressure than the group from warm countries.

The average systolic and diastolic pressures showed a trend of increase with increasing weight (Table IV). Table V shows mean pressures according to age. While systolic pressure shows no consistent trend, diastolic pressure tends to increase with increasing age. Classification according to type of athletic event did not reveal any significant differences in blood pressures.

Discussion

Food.—From a study of the diets of Olympic athletes in Berlin in 1936 Schenk (1936) reported that the average caloric intake of the competitors was 7,300 a day—that is, an amount vastly in excess of the highest value found in his study. The difference between them was probably due to the difference in the method of survey, the Berlin investigation relating to the foods entering the camps, the present investigation to the foods actually eaten. The average caloric intake of the 28 athletes (3,350) is about the average need of a man engaged on light work, and thus confirms the view put forward by Abrahams at the meeting of the Nutrition Society that the energy requirement of athletes is not as great as is commonly supposed. There is, however, the possibility that the food eaten during the survey period was less than that normally eaten, as the members of some teams may have been unaccustomed to the foods and meals provided. Moreover, the period of survey—namely, four days—was short, though the results are fairly consistent.

There is a good deal of variation in food habits during training, but athletes in general seem to attach importance to liberal amounts of the animal protein foods in their diets. It is not possible, however, to say whether this preference is due to special value being attached to protein *per se* or to the foods themselves which contain animal protein—namely, milk, eggs, and meat. Some athletes take liberal amounts of the easily assimilated carbohydrates—namely, glucose and sucrose—but fat did not seem to be popular, especially near the time of the event, as it is considered to be indigestible. On the day of the race the short- and middle-distance runners mostly favour a snack or light meal a few hours before the race, but the marathon runners prefer a more substantial meal. There were, however, a number of notable exceptions. Vegetables are generally avoided near the race because they cause flatulence.

Haemoglobin Levels.—A wide range of mean haemoglobin values has been reported for different groups of healthy men. In 71 studies available to us from many countries 8 average values of 16 g. or over were reported, and 11 of 15 g. or less. The remaining 52 means lay between 15 and 16 g. Differences must have existed between one group and another in respect of food habits, indulgence in tobacco, and in the amount of exercise taken, and these may account for some of the differences found or these variations, which occur even between different groups in the same country. Most of the subjects of the present study lived on a diet which provided an abundance of the factors needed for blood formation; on the other hand they smoked but little, so that the increase in haemoglobin level associated with tobacco-smoking (Wintrobe, 1942) would presumably not occur. The effect, if any, of exercise upon haemoglobin level is not known for certain. Adcock *et al.* (1949) have shown that, in comparable groups of men, those engaged in active occupations had lower average haemoglobin values than sedentary workers, and the Medical Research Council's (1945) survey also gives lower values for the more active occupations. It will be noted, however, that the most active group of all the subjects of the present investigation, the short-distance

competitors and oarsmen, had a mean level which was not significantly different from the grand average.

The subjects of the present study represent man at his optimum, and it is of interest that the mean of 16 g. was found in men from temperate and warm climates alike. The standard deviation of 1 g. and the wide range which we found show, however, that wide variations from this mean are compatible with physical perfection, for obviously none of our subjects would have represented his country had his performance been physiologically impaired.

Blood Pressures.—Treadgold (1933), in reporting on the pressures of healthy R.A.F. personnel, gives systolic means from 122 to 125 mm. in healthy men of the age range in this study, and diastolic means of from 75 to 79 mm. Symonds (1923), in America, gives systolic means of from 123.5 to 126.4 and diastolic means of 79.5 to 83.3. Robinson and Brucer's (1939) life-assurance figures for Americans show an average of 121 mm. systolic and 74 mm. diastolic, but the systolic pressure is between 118 and 119.25 for the ages with which we deal. The mean pressures of the group from temperate countries are therefore within the range of average values reported in health, a point of interest in view of the tension which prevails at the time of a world athletic contest. It may be noted that the bounding pulse, popularly held to be typical of the athlete, was not common.

Published figures (Donnison, 1929; Chamberlain, 1911; Kilborn, 1926) for the mean systolic and diastolic pressures for different peoples living in warm climates differ markedly, some being well above and some well below European means. The group of men in this study are of several races, and the number from any one nation is too small for a comparison with the European means.

Symonds (1923) showed that both systolic and diastolic pressures rose as the weight-height ratio increased. In the present study the subjects were grouped according to weight, and both systolic and diastolic pressures tended to increase with increasing body weight. There is nothing noteworthy about the relation between age and blood pressures shown in this study, especially in view of the fact that subjects with high pressures may tend to drop out or be weeded out of world athletics as they grow older.

Summary

A study was made of the food consumption, haemoglobin levels, and blood pressures of a number of competitors in the Olympic Games held in London in the summer of 1948.

The average daily intakes of 28 male competitors were 139 g. protein, 137 g. fat, 390 g. carbohydrate, and 3,350 calories. Neither the total caloric intake nor the "spare" calories—that is, the total calories less those required for basal metabolism and specific dynamic action—per kg. of body weight varied consistently with the type of event.

The food habits of the athletes varied considerably during training. The majority stressed the value of generous helpings of meat, eggs, and milk. Some took glucose or vitamin preparations or large helpings of salt. On the day of the race the usual practice among short- and middle-distance runners was to take a light meal, and the marathon runners a more substantial meal, three to four hours before the event.

Haemoglobin values were obtained for 147 men, the average being 16 g. per 100 ml. There was no difference between the average values for men from temperate and tropical countries, or according to the type of event.

Systolic and diastolic blood pressures were taken on 201 men, the average values being 119.1 and 77.4 mm. Hg respectively. Men from temperate countries had a higher average systolic and a lower average diastolic pressure than men from warm or tropical countries. Both diastolic and systolic pressures tended to increase with increasing body weight, and there was a tendency for diastolic pressure to increase with age.

We wish to express our appreciation of the facilities placed at our disposal by Messrs. John Gardner (London), Ltd., the caterers at the Olympic Camp at Uxbridge, and other help received from members of their staff, and particularly Miss Blundell. We are grateful to the doctors and managers of the teams for their co-operation and assistance, and particularly to Dr. A. Istamboul for his help and for the data he provided. The study could not have been made without the good will of the athletes, and we wish to express our thanks to them for their co-operation.

REFERENCES

- Adcock, E. W., Brown, J. Kerr, Magee, H. E., and Milligan, E. H. M. (1949). "Haemoglobin Levels in Sedentary and Active Persons." *Brit. J. Nutrit.* (In press).
- Bransby, E. R., Daubney, C. G., and King, J. (1948). *Brit. J. Nutrit.*, 2, 89.
- Chamberlain, W. P. (1911). *Philip. J. Sci.*, 6, 467.
- Chatfield, C., and Adams, G. (1940). "Proximate Composition of American Food Materials." U.S. Dept. of Agric. Circ. No. 549. Washington, D.C.
- Donnison, C. P. (1929). *Lancet*, 1, 6.
- Kilborn, L. G. (1926). *Chin. med. J.*, 40, 1.
- McCance, R. A., and Widdowson, E. M. (1946). *Spec. Rep. Ser. med. Res. Coun., Lond.*, No. 235, 2nd ed.
- Medical Research Council (1945). *Spec. Rep. Ser.*, No. 252. H.M.S.O., London.
- Robinson, S. C., and Brucer, M. (1939). *Arch. intern. Med.*, 64, 409.
- Sehenk, P. (1936). *Munch. med. Wschr.*, 83, 1535.
- Symonds, B. (1923). *J. Amer. med. Ass.*, 80, 232.
- Treadgold, H. (1933). *Lancet*, 1, 733.
- Wintrobe, M. M. (1942). *Clinical Haematology*. Kimpton, London.

is obliged to provide for the entire secretion of fluid. As the result of this a chronic oedema arises, which gradually leads to degeneration and atrophy of the epithelium." One may suggest an analogous explanation for the secondary changes in the oral mucosa when they arise in cases of chronic xerostomia of any nature. According to Sjögren's investigations it seems clear that the dryness of the mouth and eyes is preceded by changes (microscopical) in the salivary and lacrimal glands.

Non-ocular features of the disease (Weber, 1945), in addition to the changes in the salivary glands and mouth may include dryness in the nose, pharynx, and larynx; secondary dysphagia (Plummer-Vinson syndrome); secondary cough (from dryness of mouth and pharynx); achlorhydria; dryness of skin; dryness and atrophic change in the vagina; almost complete alopecia; accelerated blood-sedimentation rate; hypochromic anaemia; low blood pressure; low blood sugar; low blood calcium; Raynaud-like blueness of hands and feet; telangiectasis on lips and tips of fingers; telangiectatic and pigmentary scleroderma-like changes in the legs (Sheldon, 1938-9); and delusional mental symptoms and occasional epileptic fits (Sheldon 1938-9). But some of these features may possibly be regarded as superadded conditions, not directly connected with Sjögren's disease. However, in regard to the curious pigmentary scleroderma-like dermatosis in Sheldon's case one of us (Weber, 1945) has heard of another case of Sjögren's disease with similar leg pigmentation.

In the present case the unusual feature is the occurrence of dryness of the bronchial mucosa with some radiological basal pulmonary shadowing of uncertain nature, which may perhaps be interpreted as an infected (granulomatous) atelectasis due to breakdown of the natural defence owing to the dry bronchial mucosa.

SJÖGREN'S DISEASE, WITH DRYNESS OF THE BRONCHIAL MUCOSA AND UNCERTAIN LUNG LESION

BY

PHILIP ELLMAN, M.D., F.R.C.P.

Consulting Physician L.C.C. Hospital Service
and Dorking County Hospital

AND

F. PARKES WEBER, M.D., F.R.C.P.

Consulting Diagnostician to the German Hospital

Henrik Sjögren (1933, 1935, 1936, 1946), of Jönköping, by the careful study of cases of kerato-conjunctivitis sicca, has succeeded in establishing the existence of a syndrome, or rather a disease, which in its complete form includes kerato-conjunctivitis sicca, xerostomia, rhinitis sicca, pharyngitis sicca, and laryngitis sicca, but the disease is far more often incomplete. The eye lesion need not be the presenting condition, and patients may first seek medical advice because of enlargement of salivary glands or because of xerostomia.

The chronic inflammatory changes in the parotid glands, usually without suppuration but with recurrent exacerbations, tend to produce permanent enlargement, sclerosis, or atrophy in irregular combination. Analogous changes occur in the other salivary glands and in the oral mucosal folds and also in the lacrimal glands, though usually without obvious clinical enlargement. It seems certain that many cases have been labelled as Mikulicz's disease or Mikulicz's syndrome. The skin, especially the sweat glands, and the stomach (acid-producing glands) may be involved in some cases. The clinical onset, often more pronounced on one side than the other, is intermittent and insidious. The patients are mostly middle-aged women. Clinical accompaniments may include accelerated blood-sedimentation rate, alterations in the blood count, in the body temperature, and in the blood-sugar curve, and not rarely arthritic symptoms (rheumatoid arthritis).

In regard to the eye condition Sjögren concluded: "The morbid changes appear to find their simplest explanation in the fact that, owing to intense diminution or complete abolition of the lacrimal secretion, the conjunctiva itself

The patient is a delicately built woman of medium height aged 34 on Nov. 13, 1948, thin, but apparently not losing weight. Her father died at 57 of heart failure; he suffered from bronchitis. Her mother died at 69 of "sugar diabetes." The parents had eight children, of which the patient is the seventh; all the others are said to be living and healthy. The patient herself has always been thin and delicate-looking, and since the age of 13 has been subject to short Raynaud-like attacks in the fingers—the tips turn white and then blue—relieved by putting the hands into hot water. She had measles at 17 and scarlet fever at 21. While still in the fever hospital after the scarlet fever she developed temporary swellings on both sides of the face, which were considered possibly mumps. About 1940 she noticed a peculiar dryness of the lips and mouth, which she did not get rid of. In January, 1942, painless cherry-sized parotid swellings developed, one on each side, and were diagnosed as Mikulicz's disease. For these she received deep x-ray treatment at the Cancer Hospital (six sittings) and they disappeared, but not the dryness of the mouth.

Menstruation, which began at 12 years of age, has remained normal. She married in February, 1939, and in December, 1943, a child (boy) was delivered by caesarean section owing to the presence of a uterine fibroid, which was removed at the same time. The boy was normal at birth and has remained healthy. After suckling him for 8½ months she developed two small painless lumps (September, 1944), one on each side, under the lower jaw. With deep x-ray treatment (six sittings) they disappeared. She received further deep x-ray treatment in February, 1946, but for the past eighteen months she has had a small painless swelling in the right sublingual region. About September, 1944, her eyes felt hot, dry, and irritable, and the doctor told her she had conjunctivitis. It cleared up, but has returned on and off ever since.

In April, 1946, she suffered from "dry pleurisy," first on one side and then on the other. For this she was in bed for three weeks only, but never got rid of the dry cough and since the

Case Report

as never felt quite well. Since then also the eyes have beenrier, and in February, 1948, they became much worse and follicular" conjunctivitis was diagnosed.

In May, 1948, a stiff neck was followed by painful swelling of the knuckles, and pain and stiffness in the wrists, knees, feet, and left shoulder, with some fever. This polyarthritis of the rheumatoid arthritis type, for which she was referred to one of us (P. E.) by Dr. W. Edwards and treated at the Leatherhead Hospital, has now nearly subsided. Her dry cough has become much worse, and when she is talking she has to sip water frequently to relieve the dryness.

Present Condition

She complains of dryness of eyes, mouth, and throat and irritable dry cough, much worse on talking. Sometimes she has ight difficulty in swallowing. Most of her teeth have been extracted. By palpation with the finger and thumb a painless berry-sized swelling can be felt below the tongue to the right of the middle line. There is slight symmetrical enlargement of the thyroid gland, but no clinical evidence of thyrotoxicosis.

A blood count (Aug. 14, 1948) showed: haemoglobin, 98%; ythrocytes, 4,980,000; colour index, 0.99; leucocytes, 6,000. nother blood count (Dec. 31) gave: haemoglobin, 103%; ythrocytes, 5,700,000; colour index, 0.9; leucocytes, 7,600. olymorphs 81%, lymphocytes 18%, monocytes 1%. Urine owed nothing abnormal. Blood pressure was 120/80 mm. g. Blood Wassermann reaction was negative. Blood sedi- entation rate was not raised on June 28, 1948, when it was ; but on Sept. 26 it was 22 (normal 4 to 8). Blood calcium as 10.6 mg. per 100 ml., blood phosphorus 3.9 mg. per 100 ml.. id blood alkaline phosphatase 9 units. There has been no utum at present. There was no clinical evidence of disease f the heart, abdomen, or central nervous system. In the lungs ere is diminution of air-entry at both bases, breath sounds e tubular in type at the left base, and numerous dry crepita- ns can be heard at both bases, but are especially marked at e left base.

X-ray examination of the chest (July 11, 1947) showed dimn- hed translucency in the left lower lobe, with pleural involvem- nt. On Aug. 16, 1948, there was an area of consolidation in e left lower lobe, with some scattered opacities in the right ver lobe. The heart, mediastinum, and trachea were centrally aced, the left diaphragm was obscured, and the heart was ormal in shape, size, and position. A further skiagram on ov. 30, 1948, showed little appreciable change. Bronchoscopy as negative, except for dryness of bronchial mucosa; no cretion was obtained (Mr. W. P. Cleland, St. Helier Hospital, arshalton). Electrocardiogram was normal. The hands owed soft-tissue swelling of the proximal interphalangeal nts but no bony changes, nor were there any bony changes e other joints.

The following additional investigations were carried out at e Hammersmith Hospital. The sputum showed Gram-positive cci and diphtheroids on direct smear, and *Staphylococcus reus* on culture. Fractional test meal gave normal secretion f hydrochloric acid. Urinary excretion of 17-kesteroids and e glucose-tolerance test were normal. Schirmer's lacrimation st showed moistening along 0.5 cm. of the filter paper com- ared with 3 to 5 cm. in controls. Salivation test, consisting f collection of saliva for three minutes after chewing and swa- wing fruit, gave 0.8 ml., whereas control subjects produced o 9 ml. A heating test for sweating gave normal response. iver biopsy (performed because pulmonary sarcoidosis had en suggested) showed normal histology.

Treatment

Treatment was directed symptomatically to the dry eyes, y mouth, and dry bronchial mucosa. So far as the eyes e concerned cod-liver oil drops gave symptomatic relief. ttempts were made to increase the salivary secretion by pilo- rpine, mechohine, and physostigmine. These produced no ppreciable response as shown by the salivation test. In the pe that the changes at the base of the left lung might be roved an attempt was made to alleviate dryness of the onchial mucosa by keeping the patient for a fortnight in steam tent (Hammersmith Hospital). This had no beneficial ect on the respiratory condition and the patient thought that

the dampness aggravated the arthritis. Breathing exercises and postural drainage produced no significant result. She was given vitamin A, 150,000 units daily, empirically, as it was thought that this could not possibly do any harm and might conceivably do some good. Closure of the lacrimal ducts by local diathermy was not carried out, since the eye symptoms were not the most troublesome. The patient thinks that inhalation therapy helped her at the Hammersmith Hospital.

Discussion

This case seems to be one of Sjögren's disease, which, we think, may be regarded as a lymphoid granulomatous condition, affecting especially the salivary and lacrimal glands and giving rise to dryness of the mouth and conjunctivae. The presence of slight rheumatoid arthritis may be regarded as a point in favour of this diagnosis. In the present instance the bronchial mucosa is specially affected, and there are pulmonary lesions of uncertain nature, probably granulomatous. Dryness of the bronchial mucosa seems as yet not to have been noted in Sjögren's disease, though its occurrence might have been expected in some cases.

The main salivary gland swellings have disappeared under deep x-ray therapy, but the dryness of the mouth and conjunctivae has increased if anything, and there is a swelling in the right sublingual region. Further treatment of the case, beyond inhalation therapy, is problematic, but we think that the lacrimal ducts should now be closed by diathermy in order to diminish the conjunctival dryness. Mikulicz's disease is a lymphoid granulomatous condition of the salivary and lacrimal glands very susceptible to x-ray treatment, and it is a question how far it can be distinguished from Sjögren's disease, to which perhaps it may be an allied condition (variant). The advisability of further deep x-ray treatment is a matter for consideration—in regard both to the sublingual nodule and to the lungs.

There is also the question of the lung condition being of sarcoid nature, but the negative liver biopsy makes this unlikely. We need not therefore consider the further question of a possible relationship between Sjögren's disease, Mikulicz's disease, and sarcoidosis. The replacement of glandular tissues in Sjögren's disease and Mikulicz's disease by a kind of lymphoid granulomatous tissue reminds one, it may be noted, of the gradual replacement of thyroid glandular tissue by lymphadenoid tissue in cases of so-called lymphadenoid goitre.

We are greatly indebted to Dr. J. G. Scadding for the investigations carried out at the Hammersmith Hospital. We have to thank Dr. J. N. Cunnings and Dr. S. A. Withers for the routine clinical-pathological and the x-ray examinations respectively.

REFERENCES

- Sheldon, J. H. (1938-9). *Proc. R. Soc. Med.*, 32, 255.
Sjögren, H. (1933). *Acta ophthalm.*, Supp. 2, 1.
— (1935). *Ibid.*, 13, 1.
— (1938). *Ibid.*, 16, 70.
— (1943). *A New Conception of Kerato-conjunctivitis Sicca*, translated by J. Bruce Hamilton, Sydney.
Weber, F. Parkes (1945). *Brit. J. Ophthalm.*, 29, 299.

The Ministry of Health states that in many hospitals and clinics the arrangements for the reception and treatment of out-patients in the past have left much to be desired. It suggests that boards and committees should have in mind the elimination of unnecessary out-patient attendances, the reduction of waiting-time to a minimum, and the maximum convenience and comfort of the out-patient. "The institution of an effective appointment system is probably the biggest single contribution that can be made to the convenience and comfort of out-patients." It adds that the resulting saving of space should make possible the replacement of unsightly and uncomfortable forms by cheap but comfortable chairs, and a canteen for out-patients is an amenity which should be provided. Particular attention should be given to the holding of treatment clinics such as physiotherapy and rehabilitation in the evening or at other times outside the normal working hours of patients, so that working time need not be lost by patients unnecessarily.

ILLNESS IN GENERAL PRACTICE

BY

JOHN PEMBERTON, M.D., M.R.C.P.

(From the Department of Medicine, University of Sheffield)

We are fortunate in this country in possessing elaborate and reliable information on the causes of mortality, but with the greater emphasis now being placed on the early diagnosis and the prevention of illness more data are required on morbidity.

This need is being partially met by the surveys of sickness carried out by the Social Survey for the Ministry of Health, whose first report appeared in 1946 (Slater, 1946). The information collected by the Social Survey is obtained by non-medical workers, and while it gives valuable information about the general incidence and trends of illness based on broad diagnostic groups it cannot be expected to provide the detailed information about illness in the community which only certification by doctors can yield. Detailed information on the causes of incapacity from sickness amongst the insured population of Scotland was published by the Department of Health for Scotland (1939), and provides a wealth of morbidity data about this population group in the year 1936-7.

The following survey was undertaken to obtain information about the types and relative frequency of illnesses which lead people to consult their general practitioner.

Scope of the Survey

Eight general practitioners living in Sheffield or its neighbourhood recorded the age, sex, and diagnosis of all the patients, panel and private, who consulted them in the course of one winter week, February 1 to 7, and one summer week, June 28 to July 4, in 1947. They also indicated whether the patient was seen in the surgery or the patient's home and which cases it was necessary to refer to a hospital or local authority clinic.

The total number of consultations was 4,656 (2,816 in the winter week and 1,840 in the summer week). Only seven of the doctors were able to carry out the summer week survey, as the eighth had left the district. Six of the practices were within the boundaries of the city of Sheffield, one was in Rotherham, and one was situated in the neighbouring mining-agricultural town of Clowne.

Of the 4,656 consultations, 3,041 (65.2%) were held in the doctor's surgery, 1,542 (33.2%) in the patient's home, and 73 patients (1.6%) sent relatives to the doctor on their behalf.

The average number of consultations carried out by each doctor was 353 in the winter week and 265 in the summer week. In 2% of the consultations the patient was referred to a hospital out-patient department, in 0.16% to an in-patient department, and in 0.2% to a local authority clinic.

Age and Sex.—Table I shows the distribution of the patients by age group and sex. The total numbers of

TABLE I.—Percentage of Patients Falling in Each Age Group, Males and Females

Years:	0-	5-	15-	20-	30-	40-	50-	60-	70-	80-	All Ages
Male ..	11.6	8.0	4.5	12.6	15.7	15.0	14.0	11.3	6.0	1.7	2,301
Female ..	9.4	6.9	6.5	18.5	15.4	13.8	10.2	9.0	6.8	3.2	2,326
Unstated											29
											4,656

males and females were nearly equal, but in certain age groups one sex predominated. Females exceeded males

in the age group 15-29 mainly because of consultations for obstetrical or gynaecological conditions. Males were in excess in the age period 40-69 but not after that age.

The Illnesses

Table II shows the main causes of illness found in the two-weeks survey and their relative frequency. The

TABLE II.—Incidence of the Different Types of Illness

Illness or Group of Illnesses	Winter Week (2,907 Complaints)		Summer Week (1,907 Complaints)		Both Week (4,814 Complaints)	
	No.	%	No.	%	No.	%
Respiratory disease	1,201	41.3	400	21.0	1,601	33.3
Digestive disease	193	6.6	186	9.7	379	7.9
Cardiovascular disease ..	203	7.0	161	8.4	364	7.6
Mental ill-health	174	6.0	138	7.2	312	6.5
Obstetrics and gynaecology ..	148	5.1	128	6.7	276	5.8
Chronic rheumatism	169	5.8	95	5.0	264	5.5
Accidents	113	3.9	134	7.0	247	5.1
Acute specific fevers	133	4.6	91	4.8	224	4.7
Skin diseases	69	2.4	96	5.0	165	3.4
Abscesses and cellulitis ..	72	2.5	68	3.6	140	2.9
Ear, nose, and throat	58	2.0	29	1.5	87	1.8
Anaemia	37	1.3	42	2.2	79	1.6
Neurological	28	1.0	47	2.5	75	1.5
Uro-genital	33	1.1	29	1.5	62	1.3
Senility	35	1.2	21	1.1	56	1.2
Eyes	27	0.9	24	1.3	51	1.1
Cancer	25	0.85	21	1.1	46	0.9
Vaccination	—	—	35	1.8	35	0.7
Miscellaneous and unclassified	189	6.5	162	8.5	351	7.3

number of diagnoses (4,814) exceeds the number of consultations (4,656) because some patients were suffering from more than one complaint.

Respiratory Disease.—The respiratory group of illness was by far the largest, accounting for 41.3% of the diagnoses in the winter week and 21% in the summer week. The frequency of the different varieties of respiratory illness is shown in Table III. In the winter week influenza

TABLE III.—Analysis of the Respiratory Illnesses

	Winter (1,201 Respiratory Illnesses)		Summer (400 Respiratory Illnesses)	
	No.	%	No.	%
Influenza	416	34.6	11	2.7
Bronchitis	386	32.0	144	36.0
Coryza	113	9.4	24	6.0
Diseases of pharynx and tonsils	78	6.5	106	26.5
Pneumonia, all forms	51	4.8	22	5.5
Asthma	51	4.3	29	7.3
Pulmonary tuberculosis ..	20	1.7	13	3.25
Emphysema	4	0.3	3	0.75
Other respiratory diseases ..	75	6.3	48	12.0

accounted for 34.6% and bronchitis for 32% of all respiratory illness. It so happened that a minor epidemic of influenza A reached its peak during this week (Stuart Harris, 1947). In the summer week bronchitis still accounted for 36% of the respiratory illness, while the percentage attributable to influenza had fallen to 2.7%. The fall in the number of influenza cases in the summer week has the effect of making the percentage incidence of the other causes of respiratory illness disproportionately high. There were, however, more cases of disease of the pharynx and tonsils in the summer week. The poliomyelitis epidemic was gaining ground at this time, and it is possible that some of these pharyngeal conditions represented abortive attacks of that disease. Taking the winter and summer weeks together, bronchitis was the commonest complaint for which medical aid was sought from the general practitioners, accounting for 11% of all the consultations.

Digestive Diseases.—These came next in frequency. In this group 68% were cases of dyspepsia of various types, excluding cancer. The other chief complaints in order

were diarrhoea and enteritis, disorders of the colon, hernia, and appendicitis.

Cardiovascular Disease.—The cardiovascular group, which was the third largest, was subdivided as follows: essential hypertension and cerebrovascular accidents, 37%; coronary disease, 14%; rheumatic heart disease, 12%; other diseases of the heart, 30%; and other diseases of the blood vessels, 7%. "Other diseases of the heart" included the rather ill-defined condition "myocarditis." Some of these cases should perhaps have been assigned to the coronary disease group.

Mental Ill-health.—Cases of mental ill-health consisted of psychoneurosis 93.6%, psychosis 6.1%, and mental deficiency 0.3%.

Obstetrics and Gynaecology.—In this group 36% were antenatal consultations, 31% gynaecological complaints, 10% menopausal disturbances, 9.4% post-natal visits, 5.4% abortions, and 5% confinements.

Chronic Rheumatism.—Under this heading, which accounted for 5.5% of the diagnoses, were included umbago, sciatica, fibrositis, rheumatoid arthritis, and osteoarthritis.

Accidents.—Of the accidents 18% were fractures, 9% strains, and 4% burns or scalds. The remaining 67% came under the heading "other accidents."

Acute Specific Fevers.—Of the 224 cases in this group 12% were measles, 9% chicken-pox, 4% whooping-cough, 3% German measles, 1% scarlet fever, and 0.9% mumps.

Preventive Medicine

No patients in this series consulted their doctors for a routine health examination or for advice on the preservation of their health. A certain amount of advice was given by the doctors concerned with regard to the prevention of further illnesses, but the only examples of purely preventive work which were recorded were the 99 antenatal consultations and 35 vaccinations. Together, these constituted 2.9% of the total consultations. No consultations came under the heading of forensic medicine.

From this survey it would seem that the most important classes of disease which the general practitioner is called upon to treat are the respiratory, digestive, cardiovascular, and psychological diseases in that order, followed by obstetric and gynaecological conditions, chronic rheumatism, and accidents.

The low incidence of psychological complaints (6.5%) was commented upon by two of the doctors participating in the survey. This may have been due partly to the fact that in the winter week the weather was very severe and may have discouraged a number of psychoneurotics from attending (although the summer figure was very little higher), and partly to the inclusion of some of these cases under other headings, such as "dyspepsia" or "rheumatism."

In amalgamating the diagnoses of a number of doctors the different criteria employed might lead to the grouping

TABLE IV.—Proportion of Each Doctor's Diagnoses Falling in the Seven Main Diagnostic Groups (winter and summer combined)

Diagnostic Group	Dr. A %	Dr. B %	Dr. C %	Dr. D %	Dr. E %	Drs. F & G %	Dr. H %	All Doctors %
Respiratory disease	28.0	27.2	42.5	36.8	30.2	31.2	37.0	33.4
Digestive disease	6.7	8.9	9.6	9.0	7.3	6.8	7.6	7.9
Cardiovascular disease	12.5	11.8	3.3	5.5	5.5	9.9	5.4	7.6
Mental ill-health	5.5	3.1	8.4	8.1	6.0	7.7	2.9	6.5
Obstetrics and gynaecology	7.3	5.8	3.6	6.4	2.9	7.3	6.0	5.7
Chronic rheumatism	3.6	7.2	5.0	5.2	7.7	4.5	6.2	5.5
Accidents	2.6	3.9	3.3	3.6	13.5*	3.4	5.0	5.1
Total no. diagnoses	494	415	554	595	749	1,190	457	4,814

* This practice was in a mining district.

together of conditions which are in fact distinct. The frequency with which the different practitioners diagnosed similar conditions is shown in Table IV, and their correspondence suggests that the diagnostic criteria used by the doctors concerned were similar.

Discussion

It is interesting to compare the pattern of morbidity as revealed in the present survey with a somewhat similar analysis carried out in Sheffield by Calvert Holland in 1843. He records his attempt "to ascertain the nature of the diseases prevailing amongst the working classes" in Sheffield, "from the books of the surgeons at the poor-house." His analysis of the illnesses of a random sample of 200 males whose ages ranged from 20 to 74 years is shown in Table V. No close comparison with the present

TABLE V.—Dr. Calvert Holland's Analysis of 200 Cases of Sickness in Men Living in Sheffield in 1843

Type of Illness	Percentage
Diseases of the air passages	30.0
Diarrhoea and dysentery	13.0
Diseases of the digestive apparatus	12.5
Rheumatism	12.5
Diseases of the nervous system	9.5
Fever	5.0
Diseases of the urinary organs	3.5
Diseases of the heart	1.5
Diseases of the skin	1.5
Debility	1.5
Miscellaneous	9.5

series is possible, as Holland's cases consisted only of adult males from the "labouring classes." Nevertheless it is interesting to note that the incidence of respiratory disease in his survey, as in the present one, heads the list—"diseases of the air passages" accounting for 30% of his series of cases, compared with 34% in the present series. The high incidence of diarrhoea and dysentery at that time compared with the present was no doubt largely due to the deficient sanitary arrangements which then prevailed. Digestive disease and rheumatism figure high in Holland's survey, as in the present one; on the other hand, cardiovascular disease was relatively unimportant. This may be attributed to the fact that only 29 of his 200 patients were over 50 years of age. He also tells us that the mean duration of life in Sheffield at that time was 24.12 years. At that time the chances of a baby living to a "cardiovascular age" were in fact not great.

The pattern of morbidity has changed over the last hundred years, but respiratory disease still dominates the picture. In this group, cases of bronchitis are numerically the most important.

Although the diagnosis of "bronchitis" is not always precise, the condition or group of conditions to which it refers is clearly of great medical and social importance as shown by this and other surveys. Thus in the report on incapacitating sickness in the insured population of Scotland it accounted for 6.57% of the total days of incapacity and was exceeded only by influenza. Gafafer (1944), analysing the causes of sickness absence among 293,960 male industrial workers in the United States, found that bronchitis was responsible for 7.5% of all absences, again being exceeded only by influenza.

The distribution of cases of bronchitis in the present survey by sex and age group is shown in the accompanying Chart, where it is compared with the notifications of pulmonary tuberculosis in Sheffield in 1947 (Roberts, 1947). In adult life the sex-age morbidity pattern of the two diseases is somewhat similar. Females predominate in the first part of working life and males in the later part. Adverse occupational conditions are known to influence the incidence

of tuberculosis. It seems highly probable that occupational factors are also concerned to an important extent in the aetiology of bronchitis.

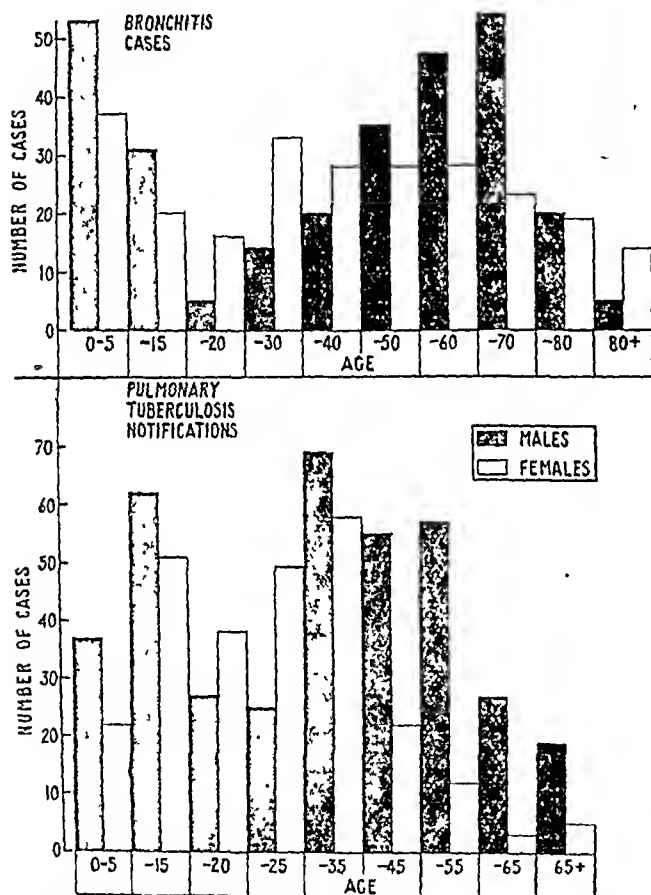
One of the general practitioners taking part in the present survey wrote: "I feel that the specialized fields of the profession have little conception of the actual work that is done by the general practitioners, and too much attention is paid to fields of medicine which the future general practitioner is rarely if ever called upon to practise."

The present survey does indeed suggest that the student who intends to become a general practitioner may spend a disproportionate amount of time in examining and studying relatively rare diseases. He would benefit from seeing more cases of minor illness than he can hope to find in a teaching hospital and from more opportunities of seeing

The following general practitioners, by their careful collection of data, made this survey possible: Drs. B. Droller, H. Droller, C. H. Foggitt, M. Jacob, R. B. Knowles, G. E. Tilsley, W. Toms, and E. Zadik. I wish to thank all of them for allowing me to use their records and for their suggestions with regard to the interpretation of the figures. The severe frosts and heavy snowfalls made the work particularly difficult during the winter week. I am indebted to Professor C. H. Stuart-Harris for helpful advice and criticism, and to Miss B. I. Richardson for valuable assistance in the analysis of the data.

REFERENCES

- Department of Health for Scotland (1939). Seventh Report on Incapacitating Sickness in the Insured Population of Scotland, July 1, 1936, to June 30, 1937. H.M.S.O., Edinburgh.
Gafafar, W. M. (1944). *Publ. Hlth Rep., Wash.*, 59, 1267.
Holland, G. Calvert (1843). *The Vital Statistics of Sheffield*. London.
Roberts, L. (1947). Annual Report on the Health of the City of Sheffield.
Slater, P. (1946). "Survey of Sickness, October, 1943-December 1945." Ministry of Health.
Stuart-Harris, C. H. (1947). *British Medical Journal*, 2, 994.



Distribution of cases of bronchitis by sex and age group, compared with the notifications of pulmonary tuberculosis in Sheffield in 1947

disease in its early stages. Some experience in the treatment of the chronic sick and of infirm old people in the home would also be of value to him. Suitably staffed health centres and home visiting from these centres might in the future be used with advantage for the demonstration of such cases to the medical student. In the health centres he could also learn to appreciate the opportunities for practising preventive medicine which occur in general practice.

Summary

The 4,656 consultations undertaken by eight general practitioners in one winter and one summer week are analysed by sex, age, and diagnosis.

Bronchitis was found to be the commonest condition in summer and in winter for which medical advice was sought, accounting for 11% of all cases.

The relation between the work done in general practice and the training of medical students is briefly considered.

AFEBRILE CASES OF MELIOIDOSIS

BY

R. GREEN, M.D., D.Sc.

AND

D. S. MANKIKAR, M.B., B.S.

(From the Institute for Medical Research, Kuala Lumpur, Malaya)

Recovery from infection with *Pfeifferella whitmori* is rare, the death rate being about 95%, and cases of melioidosis with freedom from marked constitutional symptoms are rarer still. The case history of an afebrile patient observed in Malaya in September, 1941, is given below. He had a localized infection with *Pf. whitmori* in a cervical gland but remained free from general symptoms. He was treated by aspiration of the gland abscess, and when this refilled he was apparently cured by treatment with sulphapyridine. His response to the drug was in keeping with the findings of investigators from 1943 onwards—of which a brief review is given. Reference is made to five other afebrile cases of melioidosis observed in South-East Asia. The *in vitro* effects on *Pf. whitmori* of newer antibiotics such as streptomycin, "polymyxin," and "chloromycetin" are also described and compared with penicillin.

Case History

A male Indian artisan aged 30 was admitted to hospital in Kuala Lumpur during September, 1941, for treatment of quartan malaria. While in hospital a swelling of one of the cervical glands was noted. This was painful and tender, but was relieved somewhat by glycerin and ichthyol dressing. After receiving quinine treatment for his malaria he had no fever on the fifth, sixth, and seventh days and was discharged at his own request. He returned to work, but one month later was readmitted to hospital because of further pain and swelling in the cervical gland, which by this time was fluctuating in the centre. He had no fever on readmission or during his six-week stay in hospital. The swelling was aspirated on the second day after readmission and thick mucoid pus was withdrawn. On culture the pus yielded a pure growth of *Pf. whitmori*.

A guinea-pig which was injected with 0.03 ml. of a peptone water culture of the patient's organism died within six hours, the animal's skin showing intense oedema, with commencing haemorrhagic necrosis at the site of inoculation. When recovered from the pericardial fluid of the dead guinea-pig and cultured on glycerin agar the organism showed some intensification of its original rugose growth. This type of growth has been shown by Nicholls (1934) to be associated with the more virulent variant of *Pf. whitmori*—in distinction to the mucoid type.

Other cultural characteristics of the patient's bacillus agreed entirely with those described by Stanton and Fletcher (1932). The patient's serum agglutinated his own strain of *Pf. whitmori* to a titre of 1 in 680. A known *Pf. whitmori* serum agglutinated the patient's strain of *Pf. whitmori* to a titre of 1 in 880. He continued to remain constitutionally well and had no fever. The leucocyte picture also remained within normal limits. His cervical gland was reaspirated eleven days after admission and *Pf. whitmori* was again isolated. This re-isolated organism was fully investigated and guinea-pigs were again inoculated; all the bacteriological findings coincided with the first aspiration. These findings, together with the rapid death of the guinea-pigs—the males showing the "Straus reaction"—left little doubt concerning the virulence of the strain of *Pf. whitmori* which was infecting the patient.

The abscess in the cervical gland remained with the skin unbroken, but it tended to refill after aspiration and to show central softening. About four weeks after readmission the abscess seemed about to burst through the skin. A third aspiration was considered, but it was decided to try a course of sulphapyridine instead. Over a period of six days the number of 0.5-g. tablets given daily by mouth was 6, 4, 0, 4, 4, and 6. Treatment being interrupted on the third day because the patient, who was feeling quite well, absented himself to attend to some private affairs.

Two days after the course of sulphapyridine treatment had been completed the swelling in the gland subsided. Attempts to reaspirate resulted in the withdrawal of a little blood-stained fluid which on culture did not show the presence of *Pf. whitmori*. A few days later the patient left the hospital.

He was lost sight of during the years following the Japanese occupation of Malaya, but in May, 1948, he was traced and interviewed. He stated that he had remained constitutionally well, and on examination no evidence of ill-health was found. The former swelling in the cervical gland had disappeared completely and there were no external signs. The only remnant of the former *Pf. whitmori* infection was some slight palpable thickening in the periglandular tissues, probably due to adhesions.

Notes on Similar Cases

The absence of constitutional symptoms in the above case was a remarkable feature. Stanton and Fletcher (1932) cite 83 recorded cases of human infection with *Pf. whitmori* and state that "melioidosis is a very deadly disease and, of known cases, only two have recovered." Full details of these two recovered cases are then given. One is described as being "desperately ill with fever, cough, and chest pains," and the second case is recorded as having "high evening temperature and bronchopneumonia. . . . For several weeks he lay in a drowsy typhoid condition." In their first case the fever lasted for three months and in the second case for four months.

Cases of melioidosis without marked constitutional symptoms have been recorded. Peck and Zwanenburg (1947) reported the case of an Indian havildar who developed a midline abscess of the neck above the suprasternal notch from which *Pf. whitmori* was obtained in pure culture. The patient had no constitutional symptoms, fever, or glandular enlargement. His serum agglutinated the organism to a titre of 1 in 80. The leucocyte count, both total and differential, showed no unusual features. Hasle and Nguyen-Duc-Khoi (1937) described the case of a Chinese with a suppurative adenitis of the neck from which *Pf. whitmori* was cultured. The patient had no general symptoms or fever. Recovery followed the formation of fistula.

Other cases of melioidosis remarkable for the absence of constitutional symptoms have occurred in Java, but the infection has been confined to superficial skin lesions. De Moor, Soekarnen, and van der Walke (1932) investigated the chronic skin lesion of the buttock and thigh of an elderly Javanese. This had been present for about

eighteen months and was painless. The skin was thickened and was beset with nodules containing pus from which *Pf. whitmori* was repeatedly isolated. Their illustrations show the absence of ulceration. The blood picture was normal and there was no fever. The patient's serum agglutinated his strain of *Pf. whitmori* to a titre of 1 in 600.

Again, Sudibyo (1938) described superficial seriginous ulcers occurring in two elderly Javanese. His illustrations show healed scarred centres of the ulcers bordered by raised nodular spreading edges. Sudibyo was able to isolate *Pf. whitmori* in practically pure culture from all over the lesions, and found that serum agglutination tests against the patients' organisms were positive at titres of 1 in 400 and 1 in 800. His two patients had no loss of appetite, no emaciation, and no fever.

Treatment of Melioidosis with Sulphonamides

The majority of the cases of melioidosis occurring in South-East Asia have been investigated during the two decades preceding the Japanese occupation from 1941 to 1945, but sulphonamide compounds were available only towards the end of the second decade. Again, melioidosis is seldom diagnosed at the bedside; more often diagnosis is made in the laboratory or post-mortem room, although Stanton and Fletcher (1932) estimate that 200 cases occur each year in Malaya. Thus the factors cited above would account for the scarcity of literature on cases and their treatment with sulphonamides.

Records of treatment of melioidosis with sulphonamides begin with those of Grant and Barwell (1943) and of Mayer and Finlayson (1944), and sulphadiazine treatment is suggested by *in vitro* tests carried out by Mirick and colleagues (1946): but the clinical response to sulphonamides is more extensively investigated in an admirable paper by Harries and co-workers (1948), who conclude that the most effective treatment for the disease is 2 g. of sulphamezathine four-hourly together with local penicillin treatment, where this is possible, combined with autogenous vaccine therapy.

These findings and our case of the Indian artisan described above, who responded in 1941 to sulphapyridine treatment by reduction of his abscess and disappearance of *Pf. whitmori* from the pus, prompted us to investigate further the *in vitro* effects of the sulphonamide compounds on strains of *Pf. whitmori*, but unfortunately all our Malayan strains were lost during the Japanese occupation. Also, this investigation had to be postponed until recently, and the only strain of *Pf. whitmori* available was one isolated by Major Harries in Burma and received by courtesy of the Bland-Sutton Institute for Pathology through Dr. F. R. Selbie and Dr. R. Lewthwaite. The response of this strain to *in vitro* tests against various sulphonamide compounds is shown in the accompanying table. Fleming's "gutter technique" as described by Mackie and McCartney (1946) was used.

Drug 1 in 5,000	Inhibition Zone in mm. Occurring with Dilutions of the Bacterial Inoculum		
	1 in 10	1 in 100	1 in 500
Sulphanilamide	Nil	Nil	Nil
Sulphapyridine	"	"	2
Sulphathiazole	"	11	16
Soluthiazole	"	Nil	12
Sulphamezathine	"	12	Nil
Sulphadiazine	10	12	17

Allowing for possible differences in the diffusibility of the drugs within the agar medium, these *in vitro* results suggest the further clinical use of sulphathiazole or the somewhat less toxic sulphadiazine in cases of melioidosis. (Mirick *et al.* (1946), when using 15 µg. per ml. of sulphadiazine,

observed complete inhibition of growth in *Pf. whitmori* broth cultures.)

Effect of Antibiotics on *Pf. Whitmori*

Harries *et al.* (1948), in addition to using suphamezathine for melioidosis, treated a lung cavity locally by direct injection of 6 ml. of saline containing 300,000 units of penicillin (i.e., 50,000 units per ml.), having found previously by *in vitro* experiments that at least 650 units of penicillin per ml. were necessary to inhibit the growth of *Pf. whitmori*. Miller and co-workers (1948) state that penicillin at concentrations of 1,000 units per ml. has no immediate effect on *Pf. whitmori*, and they use penicillin in such concentrations for three hours at 37° C. to get rid of unwanted organisms when culturing material for isolation of *Pf. whitmori*.

The use of penicillin in melioidosis is thus confined to local treatment, using concentrations many times higher than could be obtained in the blood stream. Some newer antibiotics such as chloromycetin, streptomycin, and polymyxin, however, have a wide range of activity on Gram-negative organisms, and two are known to be capable of attaining a fairly high concentration in the blood stream; for example, chloromycetin can be initiated at 40 to 80 µg. per ml. and maintained at 20 µg. per ml. when given by mouth (Woodward *et al.*, 1948), and streptomycin, by injection, between 10 and 20 µg. per ml. (Merck, 1947). We therefore considered it of some importance to undertake *in vitro* tests with these newer antibiotics against *Pf. whitmori*.

There is considerable literature on streptomycin and its properties, but less information about chloromycetin and polymyxin. We therefore give a few notes.

Chloromycetin, together with its production, purification, and antibacterial effects, both *in vitro* and in experimental animals, is fully described by Smith and co-workers (1948); the first general announcement on this antibiotic was made by Ehrlich and his colleagues (1947). This latter paper was summarized in a leading article in the *British Medical Journal* of Aug. 28, 1948 (p. 428). Chloromycetin is an antibiotic substance obtained during the growth in culture of a variety of *Streptomyces* isolated from soil in Venezuela. An identical substance has been obtained from a variety isolated from compost in Illinois (Carter *et al.*, 1948).

As an antibiotic, chloromycetin is unique in so far as it contains both nitrogen and non-ionic chlorine and in being well absorbed when taken by mouth. It is a crystalline substance and is comparatively stable under conditions of widely varying temperature and pH. (We have found no loss of potency in chloromycetin-saline solutions kept in the refrigerator for three months.) It also has a low degree of toxicity in experimental animals.

Chloromycetin inhibits the growth of rickettsiae and of various Gram-negative organisms, including *Brucella*, *Bacterium coli*, *Shigella paradysenteriae*, and Friedländer's bacillus, the last two being conveniently used as test organisms. We have found it markedly inhibitive *in vitro* to 15 Malayan strains of *Salmonella typhi*, to the "Inaba" and "Ogawa" strains of *Vibrio cholerae*, and to *Haemophilus influenzae* (a Malayan penicillin-insensitive strain), using concentrations of chloromycetin obtainable in the blood when given by mouth—that is, 40 to 60 µg. per ml. (Supplies of chloromycetin for such tests were received by courtesy of Dr. J. E. Smadel, who also provided samples of polymyxin, these two antibiotics being at present produced in experimental quantities by Parke, Davis and Co. and Lederle Laboratories respectively.)

Polymyxin is an antibiotic elaborated during the fermentation of various media by certain strains of *Bacillus*

polymyxa (Benedict and Langlykke, 1947; Stansly and co-leagues, 1947). It is said to inhibit a wide variety of Gram-negative and Gram-positive bacteria. *Brucella* and *Bact. coli* are used as test organisms in assaying the amount of polymyxin in solutions. This antibiotic appears to be basic polypeptide (Florey, 1948—personal communication) and we have found that it inhibits Malayan strains of *Salm. typhi* but is less active against *Salm. paratyphi* and *Salm. paratyphi* B when used in the same relative small concentrations (1 to 5 µg. per ml.).

The technique of testing was the ring-cup method, varying concentrations of the four antibiotics being placed in glass cylinders 15 mm. in diameter sealed on to the surface of culture plates seeded with *Pf. whitmori*. The results of repeated tests were as follows: streptomycin and polymyxin in concentrations up to 1,400 µg. per ml. failed to inhibit the growth of *Pf. whitmori*; penicillin up to 700 units (525 µg.) per ml. showed a maximum inhibition zone of 28 mm.* Chloromycetin, however, in concentrations clinically obtainable in the blood (60 µg. per ml.) gave an inhibition ring of 24 mm. Similar amounts of chloromycetin tested against 15 Malayan strains of *Salm. typhi* gave inhibition zones of 29 to 31 mm.

It is concluded that in cases of melioidosis chloromycetin should be of some benefit when used alone or combined with one of the sulphonamide compounds—sulphamezathine, sulphathiazole, or sulphadiazine.

Comment

It was of particular interest to note the inhibitory effect on *Pf. whitmori* of chloromycetin, which is produced by one species of streptomycetes, as against the complete lack of effect from streptomycin, which is elaborated by another, i.e., *Streptomyces griseus*. But the streptomycetes, which are likely to receive further attention as a source of antibiotics, present puzzling features; and Carter *et al.* (1948) have pointed out that the two varieties of streptomycetes of wide differing origin (Venezuela and Illinois) which produce the lowly toxic chloromycetin are very closely related *Streptomyces lavendulae*, from which the more toxic streptothricin is obtained.

The complexity of this subject, however, has been stressed by Waksman (1947), who mentions the widely differing chemical nature of antibiotic substances—for example, lipid-like bodies (pyocyanase), pigments (pyocyanin), polypeptides (gramicidin), sulphur-bearing compounds (penicillin), and quinones and organic bases (streptomycin)—that is, they have no resemblance except for their general origin.

Summary

The case history of a patient with melioidosis is given. He remained afebrile throughout weeks of observation. His gluteal abscess resolved rapidly under treatment with sulphapyridine and during the subsequent six years he had no recurrence.

Sulphamezathine, sulphathiazole, and sulphadiazine have also been used for treating melioidosis (abscesses in bone, skin and lung). Sulphadiazine is one of the less toxic compounds and it showed relatively a more marked inhibition of *Pf. whitmori* in a series of *in vitro* tests.

The antibiotics streptomycin and polymyxin were found to have no inhibitory effect on *Pf. whitmori*. Penicillin, except at very high concentrations unobtainable in the blood stream, also had no effect.

Chloromycetin, a new antibiotic obtained from a streptomycete, inhibited the growth of *Pf. whitmori* at concentrations obtainable in the blood when the antibiotic is given by mouth, and in clinical use, either alone or in combination with sulphonamides is therefore suggested.

*But only 2.5 units of penicillin per ml. are obtainable in the blood after an intramuscular injection of 250,000 units (Dyke, 1947).

REFERENCES

- Benedict, R. G., and Langlykke, A. F. (1947). *J. Bact.*, 54, 24.
 Carier, H. E., Gottlieb, D., and Anderson, H. W. (1948). *Science*, 107, 113.
 De Moor, C. E., Sockamen, and van der Walle, N. (1932). *Geneesk. Tijdschr. Ned.-Ind.*, 72, 1618.
 Dyke, S. C. (1947). *Recent Advances in Clinical Pathology*, p. 110. London.
 Ehrlich, J., Bartz, Q. R., Smith, R. M., and Joslyn, D. A. (1947). *Science*, 106, 417.
 Grant, A., and Barwell, C. (1943). *Lancet*, 1, 199.
 Harries, E. J., Lewis, A. A. G., Waring, J. W. B., and Dowling, E. J. (1948). *Ibid.*, 1, 363.
 Hasle, and Nguyen-Duc-Khoi (1937). *Bull. Soc. Méd. Chir. Indochine*, 15, 664.
 Leading Article (1948). *British Medical Journal*, 2, 428.
 Mackie, T. J., and McCartney, J. E. (1946). *Handbook of Practical Bacteriology*, p. 679. Edinburgh.
 Mayer, J. H., and Finlayson, M. H. (1944). *J. R. Army med. Cps*, 82, 4.
 Merck, E. (1947). Circular on Streptomycin.
 Miller, W. R., Pannell, L., Cravitz, L., Tanner, W. A., and Ingalls, M. S. (1948). *J. Bact.*, 55, 124.
 Mirick, G. S., Zimmermann, H. M., Manner, G. D., and Humphrey, A. A. (1946). *J. Amer. med. Ass.*, 130, 1063.
 Nicholls, L. (1934). *Ceylon J. Sci.*, 3, 183.
 Peck, C. R., and Zwaneburg, T. (1947). *British Medical Journal*, 1, 537.
 Smith, R. M., Joslyn, D. A., Gruhitz, O. M., McLean, I. W., Penner, M. A., and Ehrlich, J. (1948). *J. Bact.*, 55, 425.
 Stanley, P. G., Shepherd, R. G., and White, H. J. (1947). *Bull. Johns Hopk. Hosp.*, 81, 43.
 Stanton, A. T., and Fletcher, W. (1932). *Studies from the Institute for Medical Research, F.M.S.*, No. 21. Bale, London.
 Sudbyo, R. M. S. (1938). *Geneesk. Tijdschr. Ned.-Ind.*, 78, 1424.
 Waksman, S. A. (1947). *Microbial Antagonisms and Antibiotic Substances*, 2nd ed. New York.
 Woodward, T. E., Smadel, J. E., Ley, H. L., Green, R., and Mankikar, D. S. (1948). *Ann. intern. Med.*, 29, 131.

Medical Memoranda

A Case of Charcot's Disease of the Cervical Spine

The following case of Charcot's joint disease of the cervical spine was recently under treatment at the C.M.S. Hospital, Old Cairo.

CASE HISTORY

The patient, an Egyptian, first came to the hospital in 1944 complaining of difficulty in walking. A Kahn test of cerebrospinal fluid blood was negative, but the C.S.F. contained 70 mg. of albumin per 100 ml. and 76 cells per c.mm., and clinically the case appeared to be one of tabes dorsalis, a rare disease in Egypt. This diagnosis is confirmed by Colonel Spillace, neurological specialist, who kindly examined him.

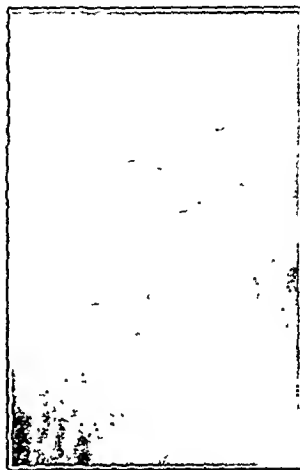
During the next year the patient had almost continuous treatment with N.A.B. and bismuth and improved considerably until he became able to walk two to three miles without undue fatigue. He remained ill until April 1947, when he began to feel "pins and needles" in the right arm and noticed some wasting of the muscles of his right arm; there was also clicking in the neck on forward and backward movement of the head. He did not suffer any serious disability, however, and continued his work as a clerk until October, 1947, when he quite suddenly had an attack of retention of urine, which had to be relieved by catheter. From this time onwards he had difficulty in micturition on and off, and gradual loss of power in the right arm and hand until Feb. 6, 1948, when he suddenly became unable to raise the arms at the shoulders or to flex them at the elbows, and there was a burning pain in the region of the right shoulder, made worse by bending the head backwards. He had also noticed girdle pains.

On Feb. 13 he was admitted to hospital. On examination he was found to be a thin, ill-looking man, aged 55. He was alert mentally, answered questions intelligently, and his speech was normal. He gave a history of having had syphilis at the age of 18, and stated that Kahn test on the blood serum, done a few weeks previously, had been mildly positive. He held his head somewhat flexed. Flexion and extension of the neck were fairly free, but there was marked clicking on bending the head backwards, and this movement caused severe pain to radiate down the right arm. Examination revealed the following signs:

A left internal squint, stated by the patient to have been present since he was 18 years of age. Very small regular pupils, inactive to light and reacting sluggishly to accommodation. The cranial nerves, apart from the 6th, were normal. There was complete loss of power of abduction of the arms at the shoulders and of flexion at the right

elbow, but some weak flexion was possible at the left elbow. Dorsiflexion of both wrists was very weak. There was marked wasting of both deltoid and biceps muscles and of the intrinsic muscles of both hands. In contrast to this weakness of flexion, extension at the elbows was quite strong. In the lower limbs the power was good in all muscle groups, but there was some sensory ataxia, as shown by the heel-to-knee test, especially on the left. The triceps jerk was active on both sides, but the biceps and supinator jerks were absent. The abdominal reflexes were very active. The knee jerks were present on both sides, but the ankle jerks were absent. Plantar response was indeterminate. There was no loss of appreciation of pin-prick or light touch, and some hyperaesthesia was present in the lower limbs. The sense of position was normal and Romberg's sign was positive. Sensibility to deep pain was much diminished, but the vibration sense was normal. There was no astereognosis. At first some difficulty was experienced in micturition, but this soon disappeared.

Investigations.—The cerebrospinal fluid was normal in appearance, with no increased tension; cell count, 2 per c.mm.; albumin, 70 mg. per 100 ml.; globulin, 10 mg. per 100 ml.; colloidal benzoin reaction, 0000022200000000; Kahn test and Wassermann reactions, negative.



Radiograph showing bony changes

The Kahn blood reaction was also negative. Radiographs showed marked bony changes (see fig.). I am indebted to Dr. Nessem Abu Saif, professor of radiology at Kasr-el-Aini Hospital, for the following report: "There is deformity, partial collapse, and backward subluxation of C3, 4, and 5, with bony condensation of an ivory appearance and irregular new bone formation, especially on the anterior aspects of these vertebrae. The intervertebral disks are preserved. This bizarre deformity is typical of Charcot's joint disease."

Treatment.—The patient was put on antisyphilitic treatment and received 500,000 units of penicillin daily for 10 days; 10 injections of N.A.B., given twice weekly, the dose rising from 0.15 g. to 0.6 g., then 0.6 g. weekly for 10 weeks; and "bismotab" 1 ml. weekly for the last five weeks. During the whole period he was taking by mouth liq. hyd. perchlor. $\frac{1}{2}$ dr. (1.75 ml.) and pot. iod. 10 gr. (0.65 g.) three times a day.

Under this treatment there has been definite clinical improvement. Micturition is normal. He can walk better and there has been a return of power to a limited extent of flexion at the elbow. He can now bring his hand to his mouth. The shoulder muscles, however, are still very weak, and the small muscles of the hand on both sides are very wasted. The sensation of pain in the right shoulder, of which he complained, is much less, but is felt occasionally. It is considered unlikely that any more improvement can be expected.

The interest of the case lies in the fact, first, that while the clinical picture is atypical, and there are only very mild changes in the C.S.F. to indicate an old syphilitic infection, the changes in the cervical spine are typical of Charcot's disease of the spine; secondly, that the cervical spine is very rarely affected by tabetic arthropathy, the lumbar region being the commonest site.

PHILIP E. J. CUTTING, M.D., M.R.C.P.,
P.M.O., Church Missionary Society Hospital, Old Cairo

The Ministry of Health has issued a new list of treatment centres for venereal diseases. It covers the United Kingdom and Eire, and gives the names of the centres, the towns where they are situated, and the times when patients are seen.

Reviews

GROUP PSYCHOTHERAPY

The Practice of Group Therapy. Edited by S. R. Slavson. Foreword by Nolan D. C. Lewis, M.D. (Pp. 271. 21s.) London: Puskhkin Press.

The treatment of patients in groups can now be regarded as an essential part of the psychotherapist's equipment. As in the case of individual therapy, the procedures vary as widely as psychotherapists' attitudes to the behaviour disorders. The editor of this volume—one of the best-known American workers in this field—and his contributors follow psycho-analytic thought, for the methods described most fully are those founded on the appreciation of transference relationships and in particular on the adequate treatment of the hostile feelings that enter into these relationships.

Slavson and his co-workers have developed two main methods—activity group therapy and interview group therapy. In the first, which is for children, the therapist provides a socially tolerant environment in which dominant themes of the inner world can be acted out. The therapist does little or no interpretation, and the modifications in the child's inner world which enable him to improve his relations with his outer world take place by the acting-out process in the "permissive" environment. The second method, the one of choice for adults, consists in spontaneous discussions by the group. Here the therapist makes interpretations through which the members gain insight into, and hence release from, their difficulties. The actual processes within groups conducted along these two main lines are clearly described in a series of contributions on a variety of psychological disturbances. Those starting to give group treatment will regret the omission of a detailed account of how adult groups are begun—how to introduce the idea of group treatment and to conduct the opening sessions.

The writers confirm the view that group therapy in skilled hands has very great potentialities. Equally, they expose the fact that much critical thought and systematic study are needed on both principles and practice. It is not at all clear, for example, why the composition of groups has to be so carefully planned. Again, in the interview-therapy method it is difficult to see why "relationship group therapy" is described as a distinct variant. The latter method is characterized by the analysis of the transference relationships between members of the group and between them and the therapist. But if the basic principles of psycho-analysis are accepted—and it is stated that these are fundamental to all brands of psychotherapy—we may ask whether the members of a group can achieve full insight into their difficulties without these interpretations. How else can the innumerable projections and other unconscious manipulations of the relationships in the group be brought to the patients' awareness? Moreover, in the acting-out process of activity therapy it is difficult for a psycho-analyst to imagine an unconscious need-system undergoing a radical change unless the patient gains insight through interpretation. The cases quoted certainly seem to have benefited, but it is not clear whether the improvement is the result of acting-out or of the interpretations that must have been given by other members of the group. Spontaneous testing of fantasy against reality is one of the most important ways in which the child's personality develops, so that there is no question of denying the possible effects of such a process. It is therefore puzzling to read that pre-school children, in whom the acting-out process would normally be most prominent, are not suited to activity therapy since they apparently have to be given insight through interpretation. It is possible that the methods of describing the cases and the interpretative procedures are

These and many other points are no doubt in the minds of the writers, who are to be congratulated on their pioneering work in this very complicated subject. This is a most useful volume for all psychotherapists, and a fitting word of praise is due to the editor on the way he has obtained a unified work by applying his subject to his contributors.

J. D. SUTHERLAND.

PROTEIN IN NUTRITION

Proteins and Amino Acids in Nutrition. By Melville Sahyun, M.A., Ph.D. (Pp. 566; illustrated. £2 5s.) New York: Reinhold Publishing Corporation. London: Chapman and Hall. 1948.

This book is about the all-important role of protein in nutrition including the consequences of deficiencies of protein and, within the limits of knowledge, of specific amino-acids. Consideration is also given to the metabolic interrelations between protein and carbohydrates, fats, vitamins, and mineral salts. Dr. Sahyun has acted as editor and has written the foreword and the chapter on "Plasma Proteins and their Relation to Nutrition"; the introduction is by H. B. Lewis, and the fourteen other chapters are written by experts in their own particular fields. For example, H. H. Mitchell writes on "The Biological Utilization of Proteins and Protein Requirements," and H. J. Deuel on "Caloric, Vitamin, and Mineral Requirements with particular reference to Protein Nutrition." Although there appears little on protein digestion in the ruminant, the nutritive aspects of meat and meat products are considered, and H. J. Almquist gives an account of the amino-acid requirements of avian species. The special problems associated with pregnancy, paediatrics, wounds, and immunity are considered, as is also the protein nature of toxins, antitoxins, filtrable viruses, and related substances. One of the most interesting chapters is that on the history of the significance of proteins in nutrition.

A compilation by many authors generally lacks unity, but the authors of this book have combined to present a very interesting and useful series of essays which are well knit together. The references are adequate for the purpose, and at the end of the book there are two appendices: (1) "Proximate Composition of American Food Materials"; and (2) "Nutritive Value of 100 g. of Selected Foods, Edible Portion." These have been compiled from U.S. Department of Agriculture publications.

D. P. CUTHBERTSON.

LETTERS OF NOAH WEBSTER

Webster, Noah. Letters on Yellow Fever addressed to Dr. William Currie. With an introductory Essay by Benjamin Spector. Supplement to the *Bulletin of the History of Medicine*. No. 9. (Pp. 110. \$2.) Baltimore: The Johns Hopkins Press 1947.

The subject matter of these letters is of considerable historical interest, though intrinsically of little importance, because, though they embody the views of "an intelligent layman" on the origin and propagation of yellow fever, they are views held before the work of Finlay and of Reed, Carroll, Lazear, and other members of the American Commission who cleared up so much which had till then been obscure. Webster does not, as he states, wish to "intrude into the province of the [medical] faculty," "not being acquainted with medical science myself," and later, "Facts are not to be reasoned away by airy speculation." Yet in 25 letters written between Oct. 26 and Dec. 21, 1797, he bases on personal observation and opinions and facts communicated to him by "medicinal friends" a mass of air speculation.

Webster ridicules the idea of the importation of yellow fever generally. He mixes up all sorts of infections, thus "Plague is a higher grade of the yellow fever, as the yellow fever is of the typhus or contagious fever"; again, "The symptoms [of the plague of Justinian, A.D. 542] were exactly the same as we observe in the violent case of yellow fever." "Dysentery is acknowledged . . . to be the same disease as yellow fever falling on the intestines."

These quotations will suffice to show that the letters form a curious collection. The main interest of this book and its most absorbing is the introductory chapter by Dr. Benjamin Spector, telling of the life of the author and giving a résumé of his ideas. Noah Webster was born at West Hartford, Connecticut, on Oct. 16, 1758, and died at the age of 85 in 1843. He graduated at Yale University, qualified as a barrister being admitted in 1781, and published the *American Spelling Book* in 1783 (60 million copies of this were issued). Ten years later he became editor of two papers, a daily and a bi-weekly. He took much interest in copyright activities:

so passed on to politics. As side-lines he studied climatology, vital statistics, and health questions, and in 1799 published his *History of Epidemic and Pestilential Diseases*. He was in advance of his times in advocating taking the public into confidence on general health matters.

Dr. Rush, of Philadelphia, was much impressed by the *Letters* and tried to find a publisher, but, as he said, practically all printers and booksellers believe that yellow fever is imported and are therefore prejudiced against Webster's (and Rush's) opinions. Consequently Rush suggested getting them printed in London and promised the author an introduction to Dr. Lettson, but nothing came of this, and the letters were never published except in their original form in 1797 in the *New York Commercial Advertiser*.

Noah Webster, by reason of his zeal and persistence, deserves to be included among non-medical men who have furthered interest in health subjects—men such as Louis Pasteur, Edwin Chadwick, Jeremy Bentham, John Howard, Mary Wortley Montague; and the student of medical history owes a debt of gratitude to the editor of the *Bulletin of the History of Medicine* for making these letters and the introductory essay available to a wider circle of readers.

H. HAROLD SCOTT

COMPULSORY HEALTH INSURANCE

The Issue of Compulsory Health Insurance. Edited by the request of Senator H. H. C. and the Subcommittee on Health of the Public Welfare. By George H. Brown. (Pp. 271. No price.) Washington 1948.

The latest addition to the steady stream of books on this subject coming from the U.S.A. is issued under the auspices of the Brookings Institution, which is "devoted to public service through research and training in the social sciences." It was prepared at the request of the Senate Committee on Labour and Public Welfare. The Institution was told that the issue to be examined was "not whether it shall be the policy to make medical care available to those who cannot afford to pay the full cost, but how the activities in this field should be planned, integrated, and systematized." It was further said that two major plans are under Government consideration: (a) to make grants in aid to the several States and let them design a programme to suit their own convenience, grants being given only to those States whose programmes comply with central requirements, and (b) to adopt a complete Federal compulsory health insurance. The Institution was asked to submit a report which would examine "all the evidence in support of or against both these plans."

The Institution committed the task to two men both of whom had large experience in medical and general sociology, and their report is a testimony to their thoroughness. There are masses of statistics; every imaginable question on the subject is asked and answered with apparent impartiality. In their summing up the investigators make some novel suggestions arising out of their experience. They say "the average lack of medical care in persons belonging to the 2,000 dollar and over income group at 1941 levels is due more to failure to give medical care high priority than to lack of income." There is a steady movement from the lower income levels. In 1930-6 about one-seventh of the population had incomes of from 2,000 to 5,000 dollars. In 1946 half the population was in this higher range. The figures of expenditure show that more money is spent by this group on cars, liquor, tobacco, and recreation than on medical care, which is supposed to be a necessity. The investigators suggest that much of the problem could be met if the public could be induced to give medical care its due priority, being encouraged to join voluntary approved agencies by suitable income-tax allowances. They agree that there would be a substantial number unable to meet the cost of medical care on any insurance system, whether voluntary or compulsory.

The book well deserves the attention of all interested in the subject. Its origin would seem to show that the politicians mean to do something about it—but then they have been saying so for some years now, and so one never knows. Perhaps they are waiting for a Gallup Poll.

ALFRED COX.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

The Secret Life of Salvador Dalí. By Salvador Dalí. (Pp. 423. 42s.) London: Vision Press 1948.

The autobiography of the surrealist painter.

British Chemicals and Their Manufacturers. Published by the Association of British Chemical Manufacturers. (Pp. 141.) London: British Chemical Manufacturers 1949.

The directory of the Association of British Chemical Manufacturers (supplied free to those who use it for professional or business purposes).

Atlas of Human Anatomy. By M. W. Woerdeman, M.D., F.R.N.A.Sc. Vol. 1. (Pp. 512. 70s.) London: H. K. Lewis 1948. This volume is on osteology, articulations, and musculature.

The Chest and the Heart. Edited by J. A. Myers, Ph.D., M.D., and C. A. McKinlay, M.D. (Vol. 1, pp. 1,021; vol. 2, pp. 824. 147s. for two vols.) Oxford: Blackwell Scientific Publications 1948. An illustrated textbook, with detailed accounts of treatment.

The Commonsense Psychiatry of Dr. Adolf Meyer. Edited by A. Lief. (Pp. 677. 39s.) London: McGraw-Hill 1948. Contains 52 of Meyer's papers, with a biographical narrative.

British Surgical Practice. Edited by Sir Ernest Rock Carling, F.R.C.S., F.R.C.P., and J. Paterson Ross, M.S., F.R.C.S. Vol. 4. (Pp. 486. 60s.) London: Butterworth 1948.

Authoritative articles in alphabetical order (F-H) on the practice of surgery, with references.

And Now to Live Again. By Betsy Barton. (Pp. 160. 7s. 6d.) London: Quality Press 1948.

A discussion of the problems of disabled people by a patient who is herself disabled.

Toxoplasmosis. By C. D. Binkhorst. (Pp. 163. Paper covers, 15s.; cloth covers, 19s.) London: H. K. Lewis 1948.

An account of the clinical, serological, and histopathological aspects, with special reference to eye manifestations.

A History of Science. By Sir W. C. Dampier, Sc.D., F.R.S. 4th ed. (Pp. 527. 25s.) Cambridge University Press 1948.

Includes the relations of science with philosophy and religion.

Functional Neuro-Anatomy. By A. R. Buchanan, M.D. (Pp. 242. 32s. 6d.) London: Henry Kimpton 1948.

A textbook for medical students.

Psychiatry in a Troubled World. By W. C. Menninger, M.D. (Pp. 636. 30s.) London: Macmillan 1948.

A study of the problems and practice of psychiatry in the U.S. Army in the recent war.

Elementary Anesthesia. By W. N. Kemp, M.D., C.M. (Pp. 289. 5500.) London: H. K. Lewis 1948.

A practical account intended for student and general practitioner.

Physician's Handbook. By J. Warkentin, Ph.D., M.D., and J. D. Lange, M.S., M.D. 5th ed. (Pp. 293. 52.) California: University Medical Publishers 1948.

A summary in note form of diagnostic procedures.

Joseph Lister: The Friend of Man. By H. C. Cameron. (Pp. 180. 17s. 6d.) London: Heinemann 1948.

A biography by the son of Sir Hector Clare Cameron, house-surgeon and lifelong friend of Lister.

Clinical Urology. By L. E. McCrea, M.D., F.A.C.S., F.I.C.S. 2nd ed. (Pp. 505. \$6.50.) Philadelphia: F. A. Davis 1948.

A practical book intended for general practitioners and students.

Pathologie Médicale. By P. Valléry-Radot and others. (Pp. 1,403. No price.) Paris: Flammarion 1948.

A textbook for students.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY FEBRUARY 19 1949

FINANCE OF THE N.H.S.

The supplementary estimate of £58 million for the National Health Service may be in part an indication of medical needs formerly unsatisfied, but it is also a sign that the Government was far out in its estimate of the cost of the Service introduced in July last year. For example, the supplementary ophthalmic services, estimated to cost £2½ million, are now expected to require over £14 million, and the estimate of £8 million for general dental services has swollen to the figure of £20½ million. These matters are being debated in the House of Commons as we go to press. Large though these increases may be (and the additional £52 million needed for the Ministry of Food) they nevertheless bring home to the country the importance of these two factors in the health of the nation—food and medical services. In this week's *Journal* Dr. Frangcon Roberts, in his role of vigilant critic of the contemporary medical scene, shows how the estimates have risen since the Beveridge Report in 1942. While it may be expected that the demand for spectacles and dentures will diminish after present defects have been made good, there remains the costly programme for building health centres and expanding the hospital system. Sir Frederick Menzies has already sounded a warning note¹ on hospital costs. He points out that in September, 1939, the cost of maintenance of a bed in one of the best of the voluntary hospitals in London was about £5 per week; the corresponding cost to-day is about £15 per week. Sir Frederick believes that unless steps are taken to reduce hospital costs these may have serious repercussions on other medical services. The *Observer*² says: "In principle it is hard to quarrel with the present social policy of the Government, bitter though its price is"; and it asks whether the people who have demanded the services now available are willing and able to foot the bill. The Government may yet consider it wise to ask the patient to make token payments for a doctor's services and for prescriptions. If this were considered feasible it would deter people from making unwarranted calls upon the doctor's time and unnecessary demands for pills and potions.

However necessary institutions and administration may be, it is essential that they should not be financed at the expense of the medical men and women who do the work of caring for the sick. That many doctors are suffering financial hardship has been admitted by Labour Party spokesmen in the House of Commons, and public opinion is aware of the discrepancy between the doctor's reward and that of those working in the ophthalmic and dental services. Everyone knows, as Mr. Fred Messer, M.P.,³ put

it, that the present situation cannot remain as it is. The first thing to be done is to remedy existing injustices; and the second—linked with the first—is to provide conditions that will continue to make medicine, and general practice in particular, a career that will attract able men into its ranks. It is, of course, not fair to pass judgment on a service barely eight months old, but the present prospect of overwork and financial anxiety is not one likely to appeal to the parents of a youth wanting to become a doctor. What can be alleviated now is the financial anxiety. Overwork can be remedied by the gradual distribution of medical men from over-doctored to under-doctored areas and by an increased entry into the profession.

In this week's *Supplement* appears a report on the remuneration of general practitioners drawn up by the General Medical Services Committee. This will be the main subject for discussion first at the Conference of Local Medical Committees on March 3 and later at a Special Representative Meeting on March 29. There are many ways in which the medical profession could have sought a solution to the problem of underpayment for work done. The General Medical Services Committee has adopted the approach of the Government when it decided to establish a Central Fund from which enough money could be distributed to general practitioners in terms of the recommendations of the Spens Report. The size of this Fund was related to an expected number of 17,900 principals. But on the appointed day rather more than 20,050 practitioners had joined the Service, and the number now is approximately 20,500. Allowing for assistants on the list there are at least 20,000 principals now in the Service. Therefore the Central Fund should be adjusted by about £3½ million to provide for the additional 2,000 or so principals in the Service. The remuneration advocated in the Spens Report was in terms of the 1939 value of money and the Report advocated that an adjustment should be made by applying what has become known as the betterment factor. In 1946 the Government decided on a factor of 20%—a figure which was not, and has not been, accepted by the medical profession. At that time it was estimated that the cost of living for the middle classes had increased between 45% and 50% over 1939. In 1948 this figure had risen to 85%. It will be recalled that the Government's 20% betterment factor was added to net remuneration while it applied 55% to practice expenses. These two taken together amount to a betterment figure of 34% to gross remuneration. The view of the General Medical Services Committee is that on the basis of an increase in the cost of living from 45% in 1946 to 85% in 1948 the betterment figure applied to gross remuneration should be in the region of 70%. This alone would increase the Central Fund by more than £16½ million.

These proposals for increasing the Central Fund will be debated at the two important meetings next month, and whatever modifications may be made in resolutions passed by the Association, backed up by the solid evidence of indisputable facts, will press the profession's case with the Ministry of Health. The Committee discussed the way in which the sought-for increase in the Central Fund should be distributed in order to relieve existing hardship, to fulfil the recommendations of the Spens Report, and to provide

¹ *People's Medical Journal Supplement*, 1948, 2, 220.
² Feb. 13, 1949.

a solution that the profession and the public would regard as fair. It is obvious that the doctors who have suffered most (apart from rural practitioners, now helped by the increased Mileage Fund) are those with small lists in health resorts, seaside towns, and residential areas whose private practices have by the decision of the patients become public practices. The Committee therefore is recommending that the increased money to be asked for should be used to increase the capitation fee for the first 1,000 patients on the lists of all practitioners. If, for example, the Association succeeds in securing £16½ million more for the Central Fund this would mean that the capitation fee for the first 1,000 patients would be 35s. With the increase of the capitation fee for the first 1,000 patients on a doctor's list existing hardship would be relieved and at the same time the building up of large lists would not be encouraged.

The demand of the profession for adequate remuneration comes at a time when the Government and the country are, by the supplementary estimate of £58 million, being made uncomfortably aware of the cost of the National Health Service. If the Ministry of Health receives the proposals as sympathetically as it did the proposal for the increase of the Mileage Fund the Treasury will no doubt resist the increase of expenditure demanded. But if saving has to be made it must not be made at the cost of the men and women who do the work of medicine. Parliament and the people demanded the Service and ignored those who suggested that such a service should be introduced gradually, so that by trial and error lessons could be learnt and mistakes avoided. In May of last year the medical profession with much reluctance decided to enter the Service, but during the past eight months has loyally co-operated with the Ministry to make it work as efficiently as possible in the circumstances. In the result doctors generally have been grossly overworked and some of them have been on the brink of financial disaster. If the Service is to evolve into what all would wish to see it be, then the proper payment of those who work in it must be the first consideration of the Government, because good work cannot be done in an atmosphere of discontent and a sense of injustice, and medicine will come to be looked upon as a profession to avoid.

TSETSES OVER AFRICA

It was only after the first world war that the French, British, and Belgian authorities began to realize how widespread and how serious was trypanosomiasis in man and animals. The economic difficulties which affected Africa no less than other countries in the early 'thirties put a stop to many promising schemes for the control of sleeping sickness. At that time the British Treasury made no grant to finance such schemes, and each colony was dependent on its own financial resources or on such money as it could raise by loan. Despite this crippling poverty much was done, but with the passing of the Colonial Development and Welfare Act in 1940 and its augmentation in 1945 more ambitious schemes for the control of trypanosomiasis could be planned. The first international conference on trypanosomiasis was held in Lagos while the war was still on, and the latest was held

in London last week. Representatives attended from the United Kingdom and Colonies, France, Belgium, Portugal, South Africa, Southern Rhodesia, and the Sudan. The proceedings were held in private, but we understand that about twenty papers were presented, including reports on field trials with "antricide" in the Sudan and East Africa.

Four excellent reports on what has been already done have recently been prepared for the Tsetse Fly and Trypanosomiasis Committee appointed by the Secretary of State for the Colonies. Professor P. A. Buxton's contribution is an account of trypanosomiasis in East Africa¹ and Professor T. H. Davey's of conditions in West and Central Africa²: both reports contain the results of fact-finding tours. Included in the other two reports,^{3,4} both written by Dr. T. A. M. Nash, are interesting accounts of original work: that dealing with the tsetse flies of West Africa will long remain the standard work on this subject. The other is a description of the Anchau experiment in Nigeria and shows how an area can be rendered tsetse free, and the whole life of the African raised to a higher plane, provided his willing co-operation is obtained by careful consideration and by explanation of every step. Saunders,⁵ writing from the Gold Coast, has also insisted on the importance of what he terms "infiltrative propaganda" before undertaking trypanosomiasis campaigns. There are many difficulties, however, in propaganda, for the interpreter is considered not as a medium for conveying ideas but as a middleman with a prescriptive right to commission and emolument from both sides.

It is obvious that the control of trypanosomiasis presents different problems in different parts of Africa. The variables include the species and strains of trypanosome, the species of tsetse common in the area, the presence of big game, the prevalence of other epidemic diseases, and the psychological make-up of the African. The difference in the response of *T. gambiense* and *T. rhodesiense* to drugs is already well known. In Nigeria infections due to *T. gambiense* are more easily controlled by chemotherapy than those in the Gold Coast. Measures to control tsetse obviously depend on the species present: where *Glossina morsitans* is predominant, destruction of all the big game will often end trypanosomiasis. Such measures have enabled the reclamation of many thousands of acres in Southern Rhodesia, but as a rule *G. morsitans* is only one of the tsetse present. The inhabitants of some areas, especially in the Northern Territories of the Gold Coast, have been decimated by recurrent epidemics of influenza and cerebrospinal meningitis. When the adult male population is reduced below a certain level communal hunts cannot be organized, game increases, and so does *G. morsitans*. As a result farms are destroyed, and only those close to the village can be kept in cultivation. It follows that the fallow period is shortened, the fertility of the soil decreases, and malnutrition and sleeping sickness reinforce each other.

Little is known of the reasons why some tribes readily submit to the activities of sleeping-sickness diagnosis and

¹ Trypanosomiasis in East Africa, 1947, 1948. London: H.M.S.O.

² Trypanosomiasis in British West Africa, 1938. London: H.M.S.O.

³ Tsetse Flies in British West Africa, 1948. London: H.M.S.O.

⁴ The Anchau Rural Development and Settlement Scheme, 1948. London: H.M.S.O.

⁵ *Ferns and Forest*, 1944, 5, 121.

⁶ *British Medical Journal*, 1949, 1, 63.

⁷ *Nature*, Lond., 1949, 163, 89.

⁸ *Commonwealth and Colonial Development*, 1949. London.

treatment campaigns while others do not. How closely trypanosomiasis is bound up with the culture patterns of each tribe is shown by a consideration of the village pond, anathema to the sanitarian because it provides all-the-year breeding conditions for mosquitoes and tsetse flies. For the villager, however, the pond provides green plants which, when reduced to ash, are essential as a source of salt. In some areas the ponds contain fish: these are sacred, for either the lives of particular fish may be connected with the lives of particular villagers or the fish may house the souls of the ancestors. In other areas the banks of the pond form the local latrine, and the fish eat up the faecal matter. Any interference with the village pond may thus have serious repercussions.

In many parts of Africa trypanosomiasis of cattle and pigs is as serious as trypanosomiasis of man, for methods of effective control have hitherto been lacking. The use of aeroplanes for spraying D.D.T. has opened up a new approach, and the discovery of the phenanthridinium compounds marked a first step in chemotherapeutic control. A further advance will be made if the new drug antrycide (4-amino-6-(2'-amino-6'-methylpyrimidyl-4'-amino) quinaldine -1:1'-dimetho salts) lives up to expectations. We gave some information about antrycide in a recent annotation,⁶ and a short account by the late Dr. F. H. S. Curd and Dr. D. G. Davey of the experimental evidence on which claims for the drug are based has now been published.⁷ *T. congolense*, *T. vivax*, *T. brucei* of cattle, and *T. evansi* of camels appear to be controlled, but the action on *T. simiae*, a pig trypanosome, is unrecorded. The cost of each injection will work out at approximately 2s 1½d., and since it will be necessary for prophylaxis to reinoculate cows at intervals of six or possibly four months the cost to the Government or to the individual cattle-owner will be considerable—a matter of some moment in a country such as Nigeria, where the average annual income of the population works out at twenty shillings. The question of drug fastness has still to be intensively studied, and, as in the case of proguanil, it will be some time before the true value of antrycide can be assessed.

Although eradication of the trypanosomes which infect cattle and pigs is a most important step in the supply of additional meat, there are other basic difficulties which will have to be overcome. In many areas there are already far too many cattle for the pasture available—this is because cattle represent currency and therefore power and prestige. Just as a dirty, torn Treasury note is still worth its face value, so a miserable scrawny cow is still a cow and represents a certain part of a bride-price or a sacrifice. Many cattle-owning African tribes, the Fulani in particular, are not attracted by anything that Western civilization can offer, and any attempt to reduce the number of cattle in order to improve the breed and prevent soil erosion is met by passive if not by active resistance. At present the quality of the stock is far too poor to fit it for the export trade. Thus, before cattle can be looked upon as an article of commerce by the African, there will have to be a radical change in animal husbandry, and this in many tribes will involve a complete change in social attitudes and culture patterns. When once this has been done it will be essential to replace thousands of square miles

of elephant grass by more nutritious pasture, to provide water, and to stop soil erosion.

At present meat may not be imported into the United Kingdom from countries where virus diseases such as rinderpest or swine fever exist because of the risk of infecting domestic herds. Swine fever is rife in East Africa, and rinderpest still exists all over tropical Africa, game animals forming a reservoir. The problem of rinderpest is already being tackled in British colonies with the goat-adapted virus introduced by Edwards, but if the disease is ever to be controlled international action is essential. Only when these difficulties have been met will it be possible to organize marketing and to arrange for the canning of low-grade beef and pork and their residual products. In addition, as Rita Hinden⁸ has pointed out, it will also be necessary to have cold storage at the abattoirs, refrigerated transport to the ports, and cold storage and suitable loading facilities at the ports. Anyone acquainted with the existing conditions on African railways or at African ports will realize what this involves. The great difficulty, however, perhaps more important even than the tsetse fly, is the attitude of the African cattle-owner. This will not be easy to change, and even if it can be done the question may well be asked, and in fact has already been asked by Africans, "How far are Western European nations, comparatively well fed by African standards, justified in removing from Africa first-class proteins in the shape of meat and eggs when African populations are still living on diets that are grossly deficient in proteins?"

CHEMOTHERAPY IN LUPUS VULGARIS

Secondary pyogenic infection of a tuberculous process may respond well to sulphonamide therapy, with improvement in the general condition of the patient and in the tuberculous process itself. In 1940 Domagk¹ described an inhibitory action of sulphathiazole on the growth of the tubercle bacillus *in vitro* and in experimental animals, and encouraging results were reported by Malluche² in patients with non-pulmonary tuberculosis and by Baumann³ in patients with pulmonary tuberculosis. Other investigators have claimed some successes with certain sulphones such as promin and diazone. In 1946 Domagk and his colleagues⁴ showed that it was the thiazol and thiodiazol groups which were responsible for the inhibitory effect, and they reported on two compounds of the thiosemicarbazone group (named P698⁵ and Q242) whose action, unlike that of sulphathiazole, was unimpaired by *p*-aminobenzoic acid and other antsulphonamide factors. Moncorps and Kalkoff⁵ have reported on the use of these substances in the treatment of 26 patients with severe ulcerating lupus of the face who had previously been treated with ultra-violet light, caustics, grenz rays, and by other means without permanent improvement. All were admitted to hospital so that renal function tests and blood investigations could be carried out and toxic reactions controlled. The drugs, mixed with equal parts of sulphathiazole, were given over a period of several months, and the dosage was regulated according to the tolerance of the patient; in some cases 0.125 g. of the mixture was given eight times a day, in others 0.25 g. four times a day. Blood changes such as a mild secondary

¹ Reported at the Gynaecological Congress, Vienna, 1940.

² *Med. Klinik*, 1947, 42, 314.

³ *Disch. Gesundheitsw.*, 1947, 2, 161.

⁴ *Naturwissenschaften*, 1946, 1, 315.

⁵ *Med. Klinik*, 1947, 42, 812.

anaemia or slight leucopenia were infrequent and occurred usually in the patients whose lupus improved considerably; the blood returned slowly to normal after cessation of treatment. Rarely the urine contained albumin and hyaline casts. In some cases pyrexial therapy appeared to produce a further improvement, particularly after drug treatment had been temporarily suspended owing to toxic reactions. Of the 26 cases treated, four were completely cured, three considerably improved, 10 made definite progress, six made only slight progress, and three remained unchanged. In three of the cases areas of skin treated with the Finsen lamp during the period of drug treatment improved more rapidly than untreated areas. The authors stress the importance of continuing treatment after apparent clinical cure and mention the danger of producing a resistant strain of tubercle bacilli if treatment is cut short without good reason. This report does not make extravagant claims for the cure of lupus vulgaris, and the importance of environmental factors in the assessment of therapy is stressed. The work is of interest in relation to the investigation of the treatment of leprosy by chemotherapy.

SYRINGE STERILIZATION

During the latter part of the war the Medical Research Council appointed a committee to consider methods of sterilizing syringes, and the result of its labours was the now generally familiar memorandum, *The Sterilization, Use, and Care of Syringes*.¹ The chief conclusion reached was that no chemical method can be depended on to sterilize a syringe and that absolute safety can be assured only by dry heat at 160°C. or by autoclaving. The use of certain chemicals was also objected to on account of their possible effects either on medicaments injected or on blood withdrawn for diagnostic tests. Provided that they were applied only to syringes used for aseptic purposes, methods such as simple boiling or immersion in spirit which do not achieve absolute sterility were considered permissible in certain circumstances.

At about the same time an inquiry into the same subject was undertaken in Switzerland by a commission appointed by the Swiss Society of Surgery. Its findings appeared in the form of a monograph by one of the members of the commission, Dr. Ernst Baumann.² A second edition of this has now appeared and is of particular interest, since it discusses the M.R.C. memorandum at considerable length and disagrees with it in several directions. Dry heat is granted to be an ideal method when feasible, but a higher temperature is recommended: this is stated as 180°–200°C., and the time-honoured Continental indicator of its attainment, the browning of cotton-wool, is also mentioned (but not the fact that this roasting of cotton-wool volatilizes tarry material which may condense on the syringe and needle). Autoclaving is approved, as also is a similar method almost unknown in this country, that of boiling under pressure; this would of course be feasible in any pressure-cooker. The remaining alternative method of absolute sterilization is boiling at atmospheric pressure in a disinfectant solution: this is a proceeding suggested for the general practitioner with neither time nor equipment for anything else. Four solutions are suggested—2% sodium carbonate with or without 0.1% of formalin, 2% "desogen" (a quaternary ammonium compound evidently widely used in Switzerland), or 1 in 20,000 "merfen" (phenylmercuric borate). These reagents have to be washed out of the syringe with sterile distilled water

before use; and this may seem to some English minds to be a serious objection to such methods, because supposedly sterile distilled water is a notorious source of contamination. If, as suggested, a fresh ampoule is used on each occasion, this danger should be obviated. The Swiss commission has been at great pains to show that such traces of these disinfectants as may remain in the syringe can do no harm, and elaborate pharmacological tests are described showing that adrenaline, insulin, strophanthin, penicillin, and certain vitamins and hormones are unaffected by them.

Four other solutions are specified, two containing formalin, one desogen, and one merfen, in which syringes used only for aseptic purposes and otherwise free from any danger of contamination may be placed between one use and another. This is almost the only concession made in an otherwise strict insistence on methods which can be depended on to ensure absolute sterility. It is interesting that there should be some conflict of opinion between experts in different countries on so apparently simple a matter as this. It would also be interesting to know what proportion of doctors in each country disregard all such recommendations and continue to use methods which all authorities are agreed in condemning.

FISH POISONING

Among the medical surprises of the recent war were the widespread incidence of mite-borne typhus in South-east Asia and the presence of Q fever in Southern Europe. In both the infections were the result of non-immune individuals going into regions not usually visited in normal times and contracting diseases which must have been present among the indigenous populations. An experience of the opposite kind has recently been reported by Ross,¹ who observed as an aftermath of war an illness previously unknown in a native population. At Fanning Island, in the Central Pacific, a fish-eating population, who had a sound practical knowledge of which fish were good to eat and which species or organs were not, in 1945 began suffering from an illness characterized by a fairly sudden onset of gastro-intestinal symptoms preceding or following paraesthesia of the limbs, face, and body. The illness followed a fish meal 3–24 hours previously. The body temperature was subnormal, pupils were usually contracted, and general weakness was a common complaint.

In the following 18 months nearly half the population had been attacked by this illness. After feeding fresh fish to cats, dogs, and domestic ducks Ross was left in no doubt about the immediate cause. In the animals paralysis was the prominent sign. All the human patients recovered, but sometimes it was several weeks before the sufferer was quite well. Europeans appeared more susceptible than the natives. Discarding of the internal organs of the fish followed by thorough washing before cooking did not prevent the onset of symptoms, and it was quite clear from experiments with cats that the skeletal muscle of the fish contained the poisonous substance.

Ross found that both migratory and non-migratory species of fish were involved. He next observed that all fish causing poisoning had been caught in localities where surplus war material, comprising metals and condemned food, had been dumped in July, 1945. Fish poisoning first appeared four months later. The signs and symptoms observed in the cases on Fanning Island resembled those of mussel poisoning in North America,^{2,3} in which death from respiratory paralysis may occur, but in the latter the

¹ M.R.C. War Memorandum No. 15, 1945, H.M.S.O., London.

² *Sterilisation und Sterile Aufbewahrung von Spritzen und Hohlnadeln*, 1948, Basle.

³ *Med. J. Aust.*, 1947, 2, 617.

⁴ Sommer, H., Wheldon, W. F., Kofoid, C. A., and Stohler, R., *Arch. Path.*, 1937, 24, 537.

⁵ Gibbard, J., and Nantbet, J., *Amer. J. natl. Hist.*, 1948, 22, 559.

onset was more rapid. Since it has been shown that the mussel poisoning is due to the dinoflagellates of the genus *Gonyaulax*, a plankton organism on which the mussels feed, Ross suggests that the fish poisoning at Fanning Island may have had a similar origin, and that the plankton and other creatures on which the fish feed might well be poisoned by substances originating in the deteriorating dumped war material. It is to be hoped that the physiological properties of the toxic substance or substances are being investigated and, if possible, that their chemical nature will be ascertained. Ross treated his patients by washing out the stomach in serious cases, the administration of cathartics and a nux vomica mixture, the application of local heat to the abdomen, and rest in bed.

ARTERIAL EMBOLISM

The question of whether or not to operate in cases of embolism of the limb arteries is one on which there is divergence of view. Considering the high mortality recorded in published series of cases, in some exceeding 60%, and the poor subsequent outlook for patients with severe cardiac disease, some authorities now advocate conservative methods of treatment only; of these heparin, sympathetic interruption by paravertebral block, and intermittent venous occlusion are the most important. By thus abolishing the spasm of collateral vessels and preventing a spreading thrombosis in the main arterial trunk approximately two-thirds of the affected lower and nearly all the upper limbs can be saved. Others believe that the chances of avoiding gangrene are improved by operative removal of the embolus, at least from the lower limbs, and in a recent paper Warren and Linton report that survival of the lower limb was secured in 15 out of 18 cases (83%), the mortality being no greater than in the cases treated conservatively. It must be realized that these are the results of specialists in vascular surgery, with a wide experience of blood-vessel suture and of the care of ischaemic limbs, and it is unlikely that such success can be achieved by the general surgeon. Warren and Linton consider that embolectomy is the treatment of choice, but not if the embolism is in the popliteal artery nor in patients with advanced arteriosclerosis. As a general rule 10 hours is regarded as the longest period which should be allowed to elapse between impaction of the embolus and operation if the treatment is to have a good chance of success; but operation has proved successful up to 60 hours after impaction, and Warren and Linton do not believe that a definite time limit should be set. In nearly 90% of their cases the source of the embolus appeared to be within the heart, and it is noteworthy that little more than a half of the patients suffered the severe pain at the onset which is one of the classical symptoms.

A rational view would concede the value of both lines of treatment. Operative intervention is indicated in patients whose general condition and cardiac reserve are good enough to withstand the shock not so much of operation conducted under local anaesthesia as of the sudden return of blood flow in an ischaemic limb. Other prerequisites for operation are absence of severe atheroma and accessibility of the embolus without the risk of damaging collateral channels. In this connexion the results of Warren and Linton show that operative treatment is most successful when the site of the embolus is at the bifurcation of the femoral artery; fortunately this is much the commonest site for the lodging of emboli. Whether or not operation is decided on, in embolism of the limb arteries treatment

by heparin and paravertebral sympathetic block should be carried out at the earliest possible moment, and, when there is doubt, failure to secure improvement in the temperature and colour of the extremity within an hour of the latter procedure may well tip the scales in favour of operation.

NUFFIELD HOSPITALS TRUST

The Nuffield Provincial Hospitals Trust, endowed with a million Morris Motors shares, was founded in 1939. Its purpose was to co-ordinate on a regional pattern the hospital and ancillary medical services in the provinces and to make provision for the carrying on or extension of such services as were necessary to complete the co-ordination. The National Health Service Act has meant a redirection of its activities, not the cessation of them, and has afforded an opportunity for a report on what the Trust has accomplished in nine years. This report is published by the Trust from its offices at 12, Mecklenburgh Square, W.C.1.

Before the Trust came on the scene the co-ordination of hospital services had been much talked about, but little had been done. The Sankey Commission set up in 1935 recommended the division of the country into regions, with the formation of regional councils and a central council. It was this report, together with the example of the Joint Hospital Board in his own Oxfordshire and adjacent counties, which led Lord Nuffield to form the Trust. The scheme for regionalization which it put forward covered half the country. The Trust also embarked on a series of hospital surveys, and when, a little later, the Government announced its intention of making similar surveys it accepted the offer of the Trust to organize and finance them in the provinces. Of the ten survey teams set up seven were appointed by the Trust.

Among other projects supported by the Trust, always with a view to the better co-ordination of hospital services the most noteworthy was the setting aside of £100,000 for the creation of the first professorship and Institute of Social Medicine in Great Britain—at Oxford under Professor J. A. Ryle. A grant of £15,000 was also made to the University of Birmingham towards the cost of a similar professorship there. Two experimental bureaux of health and sickness records have been set up—one in Oxford and the other in Glasgow. The Trust has interested itself in health services as affecting children, students, industrial workers, and others, and grants have been made towards work in university centres in psychiatry, neurology, plastic surgery, and other branches of medicine. The Trust also assisted Professor Sir Howard Florey's research team at Oxford. Altogether it is a record of large beneficence wisely and discriminately applied.

The Government's acceptance of regional co-ordination still leaves a number of problems unsolved. The Trust expects to find plenty of work still to do—making scientific studies of services, conducting practical experiments to test promising ideas, and demonstrating how new methods may be an improvement on old. It is at present making a job-analysis of the work of nurses in the hope of throwing some light on the stubborn problem of nursing recruitment and training. Another investigation concerns the functional design of hospitals. It is always an occasion of regret when voluntary efforts, if efficient, are superseded by statutory organization, although such supersession is in itself the highest compliment which can be paid to such voluntary enterprises. But it is a pleasing circumstance when, as here, the voluntary body remains at the statutory elbow to inform, to supplement, to prompt, to correct, or, more important, to avert the need for correction.

ROYAL COLLEGE OF SURGEONS

HUNTERIAN DINNER

The Princess Royal and the Duke of Gloucester attended the Hunterian Festival dinner at the Royal College of Surgeons in Lincoln's Inn Fields on Feb. 14.

Lord Webb-Johnson, who presided, read a message sent to the King from the Council and Court of Examiners expressing appreciation of his Majesty's interest as Visitor of the College, and stating that it was hoped soon to submit to his Majesty plans for the restoration of the College. The King in reply said he looked forward to seeing the plans for restoring the buildings towards which friends of the College in this country and overseas had contributed.

The Princess Royal, acknowledging tributes to the Royal Family, said it was the first time women had been present at the Hunterian dinner.

The toast "The College" was proposed by Mr. J. A. Beasley, High Commissioner for Australia, who spoke of the great value of the Sims Commonwealth Travelling Professorship, and of the Nuffield Benefaction which would make it possible for students to reside in the College. This would be much appreciated by medical men in the Commonwealth.

Lord Webb-Johnson, observing that ladies were present at the dinner for the first time, recalled that it was 40 years since Queen Mary, as Princess of Wales, had been present at the Hunterian Oration given by Mr. (later Sir) Henry Morris, and 22 years since the Princess Royal had attended the Oration by Sir Berkeley Moynihan, as he then was. The College of Surgeons was an important centre for postgraduate education, and so it came students from all parts of the Commonwealth. This was not a one-way traffic, and Fellows of the College went to the Commonwealth. Lord Webb-Johnson referred to the reciprocity now existing between the English and the Australian Colleges in respect of the Primary Fellowship. The teaching facilities of the College had been much increased by the munificence of the late Sir William Collins, and now Lord Nuffield's gift had made it possible to provide residential quarters in the College which would be especially welcomed by students from the Commonwealth.

The toast "The Guests" was proposed by Mr. L. E. C. Norbury and responded to by Mr. Norman Robertson, High Commissioner for Canada, and by Professor Lillian Penson, Vice-Chancellor of London University. Mr. Zachary Cope enlivened a distinguished occasion by proposing the health of the Hunterian Orator in verse, and the Orator, Mr. H. S. Souttar, replied.

LADY TATA MEMORIAL TRUST

The trustees of the Lady Tata Memorial Fund invite applications for grants and scholarships for research in diseases of the blood, with special reference to leukaemia, in the academic year beginning on Oct. 1. Grants of variable amount are made for research expenses or to provide scientific assistants for senior workers. Scholarships are awarded as personal emolument; their normal value has been £400 per annum for whole-time research, with proportionate adjustment for work on a part-time basis where this has been approved. Applications must be submitted before March 31, and the awards will be announced by the trustees in June. Further particulars and forms of application may be obtained from the secretary of the Scientific Advisory Committee, c/o Medical Research Council, 38, Old Queen Street, Westminster, London, S.W.1. The grants and scholarships are open to workers of any nationality and in any country in which it will be possible to make payments in the coming academic year. The available information on this point regarding particular countries outside the sterling area will be supplied to intending applicants on request.

The British Council has arranged for Miss Emily MacManus, matron of Guy's Hospital from 1927 to 1946, to visit Turkey at the beginning of February for a two weeks' lecture tour. Turkey, too, is the problem of attracting girls to the nursing profession, and Miss MacManus has been asked to talk to lay and professional audiences about the life of a nurse in Britain.

Reports of Societies

ARTIFICIAL PNEUMOTHORAX

In the Section of Medicine of the Royal Society of Medicine on Jan. 25 there was a discussion on the place of artificial pneumothorax in the treatment of pulmonary tuberculosis. Sir ADOLPHE ABRAHAMSON presided.

Dr. F. H. YOUNG said that this subject was last discussed in the Section in 1921, the year in which he performed his first artificial pneumothorax. After twenty-seven years' experience he was still in doubt about the cases in which the treatment should be used, the details of the treatment, and the length of time for which it should be maintained. Since 1921 pneumothorax had had a tremendous vogue; in the early 'thirties it was given a trial whenever there appeared to be any justification for it. Opinion had now swung the other way, and a number of authorities regarded it as a dangerous practice only to be used in carefully selected cases.

Cases unsuitable for this treatment, even when it was possible, were those of dense fibrotic disease at the apex and those of tuberculous tracheobronchitis. Among the main complications were the recurrence of tuberculous empyema and bronchogenic spread, mainly to the other lung. After one or two refills a case should be screened if possible and reviewed as carefully as it was before induction was considered. At this stage, if there were extensive adhesions to a cavity area, the artificial pneumothorax should be regarded as having failed; where the adhesions were less unpromising it might be continued, but unless the cavities had disappeared by the end of a month other measures should be taken. Cavities which failed to collapse were the cause of a large proportion of disasters. He could recall only one case in which, without causing trouble, the pneumothorax had been maintained in the presence of an open cavity over a period of years.

Dr. Young proceeded to give figures from three sources—his clinic at Brompton Hospital, where he exercised only a general supervision, his clinic at St. Bartholomew's, and his private cases. He thought that the figures demonstrated the great advantage of having all the work in connexion with a given case—the selection, the organization of treatment, and so forth—in the hands of one individual from beginning to end. His figures did not bear out the view that the danger of great loss of function after pneumothorax was so considerable and so unpredictable—though unpredictable it certainly was—that it was better to do an upper stage thoracoplasty. It had been suggested that in a number of pneumothorax cases the cavities reopened. It was difficult to be dogmatic on that subject. He knew of one case in which a pneumothorax was performed twelve years ago and the lung allowed to expand, and now the cavities had reopened. But among his private cases he had had only two in which closed cavities had reopened.

At the Brompton Hospital he had been able to trace satisfactorily only about 40% of the cases. He had taken those cases which had attended the regional clinic for at least two years and had been followed either until death or grave illness or until the pneumothorax had been allowed to re-expand. At St. Bartholomew's 70% had been traced, and among the private cases 75%. In the Brompton series of 204 patients about 32% were dead or dying and 68% were alive and reasonably well. In the other two series combined there were 99 patients, and 11% were dead or dying and 89% were alive and mostly well. The proportion of unclosed cavities in the Brompton series was so much higher than in the others that it was thought better to exclude these cases, and, this being done, in the Brompton series 80% were alive and well, and in the other two series 95%. These figures referred only to those patients who came back to the clinic ambulant, and therefore the pneumothorax had been to some extent successful. His conclusion was that the revulsion against pneumothorax had been overdone; the revulsion should have been against pneumothorax work which was not done properly.

After the Sanatorium

Dr. F. R. G. HEAF said that it was not always appreciated what a change there was between the quiet, orderly regime of

the sanatorium and the rough-and-tumble of the average household to which the patient returned. This change of environment had the most profound effect on his clinical progress. Although a patient might appear to have stabilized himself under sanatorium conditions there was no proof that there were not foci which would become active when he returned home and ran the risk of minor infections and ailments, as well as having a change of diet. The physician in charge of the case should be in possession of all the relevant facts. The spacing of the refills might need to be a little more frequent after discharge from the sanatorium, owing to the increased amount of exercise which the patient undertook. The importance of a regular timetable for attendance at the clinic, both for the convenience of the patient and also for clinical reasons, should be stressed. In some centres refills were given without previous x-ray examination. Surely pneumothorax treatment for out-patients should be given with the same care and under the same control as to in-patients.

Owing to shortage of beds there was a tendency to send people out of the institution with uncollapsed cavities, tuberculous lesions of the bronchi, and so on. If pneumothorax treatment was held to be of use it should be carried to its completion before sending the patients out. Once having got the patient, it was better to do the job properly. Patients with bilateral infections often did well under sanatorium conditions but relapsed under domiciliary treatment; the patient was not able to stand up to the strain of the domestic environment. The termination of pneumothorax treatment could also bring about difficulties. Minor complications would occur, and it was important in domiciliary treatment to have arrangements whereby a patient could go back to hospital for one or two nights to have complications attended to under the best possible conditions.

Dr. Heaf concluded with a plea for the keeping of careful records and for the development of a system whereby after-histories might be followed for five or ten years. It was time for another big survey of the real value of artificial pneumothorax under present conditions and in view of the improvements in technique which had taken place since the former survey was made.

Limitations and Difficulties

Dr. PHILIP ELLMAN said that, no matter what form of treatment was contemplated, the general constitutional nature of the disease must not be forgotten, nor the possible influence of the inherited diathesis. Artificial pneumothorax as it was known to-day, used with discrimination and with adequate radiological control, had revolutionized the management of certain cases of pulmonary tuberculosis, but he proposed to speak rather of the limitations, disappointments, and difficulties of the method.

The procedure was attractive by reason of its simplicity, but the result depended very much on the anatomical nature of the collapse. Any incomplete pneumothorax should be abandoned in favour of other measures. The patient with acute febrile illness and active exudative disease was best treated initially by an adequate period of complete bed-rest. Streptomycin was a useful adjunct. The lapse of time gave an opportunity for the inflammatory process to subside and might even obviate the need for collapse therapy. In this connexion streptomycin might in future make pneumothorax a safe procedure. The risk of adhesions forming during the period of observation seemed to be more theoretical than real. In the presence of bronchial tuberculosis an ineffective pneumothorax might, by reason of symptomatic relief, give a false sense of security. "The physician's needle can be responsible for complications more dangerous than the surgeon's knife." It might have been to the advantage of the patient if the induction of pneumothorax had required as much skill as thoracoplasty. In many cases a thoracoplasty was to be preferred as an initial procedure to an ineffectual attempt to produce a pneumothorax.

On the mechanism of the closure of cavities there were opposing schools of thought. Bronchial obstruction was the chief factor in cavity closure. There was much to be said for bronchial drainage, and the use of the bronchoscope might avoid many complications. With regard to effusions, many of these were small, containing no tubercle bacilli on examination, but he regarded as potential empyemata effusions which began

to contain tubercle bacilli. A reaction of this kind was much more likely with the unsatisfactory type of pneumothorax. Dr. Ellman concluded by repeating that an ineffective pneumothorax should be instantly abandoned to avoid complications.

General Discussion

Dr. MAURICE DAVIDSON said that what had been learned from the discussion was the need for insisting that pulmonary tuberculosis was not a disease of the lung but a systemic disease with a local lesion.

Dr. NEVILLE OSWALD said that from a study of the record in English medical literature he had arrived at the conclusion that out of 1,000 cases of pulmonary tuberculosis roughly 40 would have had an artificial pneumothorax attempted at some time or other. The other 600 would, of course, include a large number of minimal cases as well as a number of far advanced. It appeared that there was a 20% improvement in the five-year survival rate as a result of carrying out artificial pneumothorax.

Dr. F. A. H. SIMMONDS said that there were two principal ways of controlling pulmonary tuberculosis by collapse therapy—namely, by a good artificial pneumothorax or a good thoracoplasty. If neither one nor the other could be done, collapse therapy should be avoided altogether.

MEDIAEVAL "LEPROSY"

In the Section of the History of Medicine of the Royal Society of Medicine on Feb. 2, with Dr. ASHWORTH UNDERWOOD in the chair, an address was given by Lieutenant-General S. WILLIAM MACARTHUR on "Mediaeval 'Leprosy' in the British Isles." At the same meeting an exhibit of engravings and of books and other objects of interest relating to leprosy was provided by the Wellcome Historical Museum.

Sir William MacArthur said that it was very difficult to determine the extent of leprosy in these islands in the past. That it existed was beyond question. But many people assume that the word "leprosy" in the past had its present meaning, whereas actually it had a multiplicity of meanings. In the first place, it was used in the strict sense of the disease leprosy as now understood. The writings of some fourteenth-century physicians included accounts of leprosy in its more characteristic forms, along with a good deal else that was difficult of identification. Unfortunately the word "lepra" became a classic medical term, and by the suggestion of the word itself, whose basic meaning in the Aryan languages was "something that peels off," a host of skin conditions associated with scales or scabs which had nothing whatever to do with leprosy were regarded as manifestations of that disease. The use of the plural "leprosy" by writers as far apart as Pliny and Lucretius showed that they at least were aware of the comprehensiveness of the term.

The word "leprosy" was used also for conditions which were not believed to be leprosy even in the elastic sense of the word. It was used for diseases of animals and plants. "Mildew and rain make the grain leprosy." It was also used to describe miserable and pitiable states which had no connexion with the disease. The word "stricken" in *Isaiah* liii. 4 was translated by St. Jerome in the Vulgate as "leprosus," and John Wycliffe a thousand years later used "leprosus" in the same passage, yet if St. Jerome and Wycliffe were alive to-day they would agree—perhaps the only point on which they would be in agreement—that the word "stricken" which they would have expressed their meaning exactly. To make confusion worse confounded the term "leprosy" was extended out of all measure by ecclesiastical example and precept. The patriarch Job was proclaimed a leper because of his "boil." The condition of the beggar in the parable was similarly named. "Lazarus," which simply meant "without cure," became synonymous with the imaginary disease, and survived to-day in "lazar" and "lazaret."

Leprosy Houses

The leper houses were mostly small institutions, each with its own set of rules. They brought relief to many miserable creatures, among whom there was no doubt a proportion of genuine lepers. In a recently published volume the number of leper houses in the British Isles was given as 324, of which

283 were in England. Yet some of these leper houses were mentioned once only, in someone's will, and nothing whatever was known about the institution and there was nothing to show what the testator meant. Others were called leper houses merely because of a statement to that effect made by some visiting antiquary and based solely on local tradition. Others were nothing more than almshouses. Houses established specifically for lepers were often transferred to some other purpose. Among others he mentioned St James's Canterbury, founded for 25 women lepers, the King's Commissioners in 1341 found it occupied by 25 women "glowing with health". Romney leper house was described in 1363 as 'derelict and totally desolate' because no lepers could be found to occupy it, it was repaired and used otherwise.

Armagh was best known to students of medical history as the site of the famous leper hospitals said to have been sacked in 869 by the Danes. He had examined all the Gaelic texts in which this destruction of Armagh by the Danes was recorded and there was no mention of leper hospitals in any of them. Sir William MacArthur explained that these annals were translated into Latin in the eighteenth century by Charles O'Conor, a man of wide learning but not a good Celtic scholar. O'Conor misunderstood the original text and translated an old Gaelic word for oratories by *nosocomia* (hospitals). A later writer, one Belcher, committed a further error and glossed O'Conor's *nosocomia* by "leper hospitals." Thus the story began. The "leper hospitals of Armagh" were never anything more than fantasies of the imagination.

Robert the Bruce

Sir William MacArthur went on to tell the story of Robert the Bruce, who was commonly reported to have died of leprosy in 1329.¹ On what evidence had Robert the Bruce been condemned for 600 years as a leper? There was no mention of leprosy by any contemporary Scottish historical writer. The story began on the English side of the Border and was recorded in two connexions only, first to explain Bruce's strange action in appointing Moray and Douglas to lead the Scottish army against the English in 1327, and secondly to account for Bruce's death about two years later. The earliest mention of leprosy occurred in *The Chronicon de Lanercost*, the work of an unknown Franciscan monk of Carlisle. It explained that Bruce appointed Moray and Douglas to command the campaign "because he had become a leper." But Bruce was absent from this campaign not because of leprosy or any other disease but because he had gone on a secret mission to Ireland. Later he returned and carried fire and sword all over the North of England. Bruce's health was failing, but there was no question of his retirement, nor did anyone shun his company. Three weeks before his death he was carrying out State business in public, and when the end was near all his lords were summoned and, surrounded by them, he closed his days in gracious state, to use the words of a Scottish chronicler.

Bruce's long feud with the Vatican was interesting in this connection. Bruce and all his adherents were excommunicated by Clement V. Two cardinal legates were sent by a later Pope, and when they attempted over Bruce's head to publish a bull proclaiming a truce their messenger, with Bruce's concurrence, was stripped naked and the Pope's bull torn in pieces. Bruce was denounced thrice daily in every Mass excommunicated, and put under interdict, but he continued to defy the Pope. His enemies called him by every ill name, but "leper" did not appear among the epithets. Had Bruce suffered from leprosy or any disease that could have been termed leprosy, would not this "judgment" have been proclaimed in every church in Christendom?

It was often said that leprosy disappeared from England owing to the strict isolation that was enforced. But there was little evidence of any form of strict isolation. The custom of regarding the leper as one dead and deprived of civil rights was never followed in England. There was no contemporary evidence that the so-called "leper windows" in churches had anything to do with lepers. "Leper laws" proved to be extracts from the rules of one or other of the leper houses, having no authority outside the walls of the institution. Lepers had a

¹The current *Encyclopaedia Britannica* states "Bruce died of 'pross'"

legal right to beg. In some places they could help themselves to food exposed for sale in the market place. At Shrewsbury they could take a handful of grain from every sack offered for sale. If a man did not mind being called a leper his livelihood was assured.

He was not arguing that there were no lepers, only that no statement implying the disease as now understood should be accepted unless clinical data were given to point the diagnosis. In general the diagnosis was made by monks, friars, or parish officials. If such functionaries carried out a "leper hunt" in London hospitals to-day they would not come away empty-handed, they would find chronic and intractable skin diseases, ulcerations, and deformities which would fit in with their conception of leprosy.

SIR LEONARD ROGERS, SIR PHILIP MANSON BAEHR, SIR ARTHUR MACNULTY, and others participated in a brief discussion.

Correspondence

Whither Tuberculosis?

SIR—May I reply shortly to this correspondence and comment on Dr C O Staffsby's paper, 'Tuberculosis at the Crossroads' (Feb 5, p 207), and the leading article in the same issue (p 226)? First a slight emendation as to the fate of decisions of the new Standing Committee on Tuberculosis. These are to go to the Minister and to the Central Health Services Council—presumably as the Minister directs—and not, as could be implied in my letter (Dec 25 1948, p 1118), only to the Central Health Services Council.

Dr. S Vere Pearson (Jan 22, p 152) writes he does not understand the sentence, 'Tuberculosis, environmental and clinical, now merges into a general medical directive' The delightful rural position of independent Mundesley in a far corner of a minor county makes the change from county council and county borough administration to joint hospital boards centred in university towns of no great moment. Not so, however, for the vast majority of tuberculosis workers. They now find directives 'not from a public health committee but from academically minded regional hospital boards

My fellow-Liverpudlian's most valuable paper, "Tuberculosis at the Crossroads," needs no embellishment. His conclusions are sure and sound, and support the foundation of the old Lancashire scheme summed up in the words, 'Find, isolate, educate, treat, and rehabilitate the adult positive case'. Of course everything depends on how these mere words are translated into practical measures. Thus 'find' had to cover teamwork, beds for senior T.O.s x-ray plants, whole time capable health visitors, so that out of all these things there came, most important of all, cordial co-operation from all the general practitioners. Is it at last seen how absurd was the development of the *part-time tuberculosis officer*?

I agree whole heartedly with Dr Stallybrass's conclusions as to massive infections in the first page of his paper and would draw special attention to his paragraph on the segregation of infective cases. He does not refer to *The Fate of Young Children in Tuberculous Households*¹. In 1929 the Joint Tuberculosis Council published this report of an inquiry conducted by Lancashire county borough and county council tuberculosis officers. Their third conclusion was to the effect that "the death rate from non-pulmonary tuberculosis of children exposed to risk in tuberculous households from an adult with positive sputum was

nine	times greater than the control in age group 0-1
fourteen	" " " " " " " " 1-2
nineteen	" " " " " " " " 2-5

The deaths were due mainly to tuberculous meningitis."

Your leading article, 'Co-ordination of the Tuberculosis Services' (Feb 5, p 226), sums up well and truly the present position. But what are we to do? How can we maintain the essential integration of prevention and treatment now that the National Health Act has separated them? Who will put Humpty Dumpty together again?

The Leeds Region is, I understand, trying a way to avoid the fatal divorce. Two important unifying principles are at work there. First, the chairman of the tuberculosis advisory panel of the region is the most *un*-specialized tuberculosis worker possible—namely, a T.O. holding a university teaching post for medical students and having experience and interest in prevention. Secondly, the staff of the region are under one paymaster (i.e., no joint appointments and two masters), and the field of work given to each member of the region's staff, covering diagnosis, treatment, rehabilitation, and particularly prevention, is apportioned by the tuberculosis advisory panel.—I am, etc.,

Church Stretton, Salop.

G. LISSANT COX.

REFERENCE

¹ Published by C. Tinling and Co., Ltd., Liverpool.

Co-ordination of the Tuberculosis Services

SIR,—Your leading article (Feb. 5, p. 226) on the tuberculosis service is timely. As a social disease tuberculosis is responsible for a greater loss of man-power than any other pathological condition, and during the Hitler war for every two men from this country who were killed in action a third person died at home of this disease. Surely then the control of such a disease warrants the prime attention of those responsible for organizing the future health services of this country. Yet, as Dr. G. Lissant Cox has pointed out (Dec. 25, 1948, p. 1118), the Central Health Services Council has on it no tuberculosis specialist. Perhaps this would be excusable if it were that we knew so little about the disease that no special measures for its control were practicable, but nearly thirty years ago Sir Pendrell Varrier-Jones declared that there was no disease capable more easily of prevention than tuberculosis, and it is half a century since King Edward VII asked the famous question, "If preventable, why not prevented?"; and since then considerable progress has been made towards that goal.

It has been put forward that tuberculosis officers are wanting to treat patients. It should not be forgotten that most tuberculosis officers in this country to-day are probably seeing from 25-50% more new patients each week, keeping under surveillance many more minimal cases, and maintaining far more collapse measures than ever they were before the war. Why then should they be seeking to extend their activities even further? Surely because they are more acutely aware of waiting-list problems than any other worker in the tuberculosis field, and some of us wonder whether valuable sanatorium beds really need to be occupied for such long periods by individual patients when, with modern knowledge widening rapidly the range of treatable cases, it is becoming essential to treat more and more patients somewhere.

Few would dispute the dictum of Sir Robert Philip which you quote, that the centre of tuberculosis control must be in the old dispensary, but it must not be overlooked that modern developments require much greater skill and knowledge from the tuberculosis officer than formerly. No longer does it suffice to diagnose advanced phthisis with the stethoscope and microscope; he must be a competent radiologist as well as clinician, and responsible for diagnosing all forms of chest disease, not merely phthisis. No longer does after-care comprise recommending extra nourishment for the poor and needy; the chest physician must be competent to maintain a delicate pneumothorax (or two of them) for several years, and he must be acquainted with industrial and social conditions, enabling him to advise the D.R.O. in the important field of rehabilitation. And it is to be hoped that some day B.C.G. will extend his field yet further.

If progress is to continue toward the abolition of tuberculosis (which was the aim of the old Welsh National Memorial Association), then the status and remuneration of the new "chest physician" must be such as will attract men competent to prosecute such a campaign vigorously, regardless whether they attack the disease inside or outside institutions or whether their prime interest is in differential diagnosis, collapse therapy, or social medicine. There is ample room for all. But this alone will not suffice: there must be good generalship, and at least at regional level, if not national, clear co-ordination of all aspects of tuberculosis control is essential.—I am, etc.,

RECEIVED

W. H. TATTERSALL.

Mantoux-negative Nurses

SIR,—In his valuable paper, "Tuberculosis at the Crossroads" (Feb. 5, p. 207), Dr. C. O. Stallybrass states, "I do not think any responsible person in charge of a hospital admitting patients suffering from tuberculosis can be happy about present conditions under which Mantoux-negative nurses . . . come into contact with infectious cases."

You have from time to time published letters from me about risks to Mantoux-negative nurses, but as the last appeared over four years ago, and as such staff are still employed in nursing the tuberculous, I should like the opportunity of briefly re-expressing these views. They are based on a not inconsiderable experience with Mantoux-negative student nurses at this hospital and on the evidence in the world literature, especially that from Scandinavia, which provides overwhelming evidence that in a comparable environment Mantoux-negative persons have a far higher morbidity from tuberculosis than Mantoux-positives.

A few years ago the L.C.C. became impressed with these facts and arranged that no Mantoux-negative nurses should work in the tuberculosis wards of their general hospitals or in their tuberculosis hospitals, but they were not excluded from their sanatoria. Tuberculosis institutions in this country would appear to be divisible as regards this problem into three categories: (1) There are many in which nurses are not Mantoux-tested and "ignorance is bliss." (2) Institutions in which nurses are Mantoux-tested and carefully followed up by regular x-ray and routine examination, as recommended in the Joint Tuberculosis Council report. This is good so far as it goes, but this procedure, dictated as it is by the pressing need for nurses, does not protect them from infection. (3) A few institutions do not employ Mantoux-negative nurses in their wards.

An attempt has been made to differentiate between tuberculosis hospitals and sanatoria, chiefly by medical superintendents of the latter, in regard to the risks of infection in both. Apart from the fact that this distinction has become less and less obvious with the increasing use of collapse therapy and chemotherapy in all institutions, it must surely be recognized that wherever positive-sputum cases are treated the risk of infection is present.

When B.C.G. is available in this country, as it shortly will be, it is to be hoped that there will be a definite directive, both to general hospitals and to all institutions nursing positive-sputum cases, to urge this protective vaccination on Mantoux-negative nurses.—I am, etc.,

Colindale Hospital, London, N.W.9.

W. E. SNELL.

Tuberculous Infection of Infants

SIR,—In Dr. C. O. Stallybrass's article, "Tuberculosis at the Crossroads" (Feb. 5, p. 207), the work of the maternity unit at Black Notley Hospital is mentioned (p. 211), but the presentation of figures of infant morbidity may give rise to an erroneous impression.

It is true that in an early follow-up of infants the morbidity figures of those born to mothers remaining sputum-positive was 4 out of 11. We must point out that these figures related to those mothers who remained sputum-positive after discharge, and no infants were infected while in the unit. It is true also that 2 of these 4 died, but the other 2 developed only mild glandular infections and recovered. A follow-up, shortly to be published by one of us (M.C.W.), of a large series of infants and children treated at Black Notley for tuberculous lymphadenitis confirmed that this is a benign form of tuberculosis, and that a primary infection occurring in a child born of a tuberculous mother is not necessarily of evil consequence.

The series quoted was a small one, and an investigation of the larger numbers now available is proposed, but we have no reason to believe that the incidence of serious tuberculous infection in infants born in the unit is likely to be high. Dr. Stallybrass must be unaware that, though the conditions in the maternity unit are excellent, the infants reported on were in many cases discharged to the Greater London area under war-time conditions.

At the same time, although we feel that the dangers of familial infection of infants can easily be exaggerated, we would like to agree most whole-heartedly with Dr. Stallybrass that vaccination with B.C.G. of infants exposed to contact infection is

desirable as a promising means of reducing the incidence of tuberculous disease, however small it may be without that protection.—We are, etc.,

Braintree, Essex.

M. C. WILKINSON.
RAYMOND C. COHEN.

Spinal Anaesthesia for Caesarean Section

SIR,—It should be a *sine qua non* that those who desire to criticize any procedure, whether medical or surgical, should be sure of their facts and up-to-date in their knowledge of the relevant literature, and that their strictures should be supported by personal experience. The use of spinal anaesthesia for caesarean section has been the subject of far too much ill-informed criticism in the past.

Among the severest critics of spinal anaesthesia in pregnancy have been the late Dr. Joseph B. DeLee, founder and for many years head of the Chicago Lying-in Hospital, and Dr. J. P. Greenhill, DeLee's successor at the same hospital. The well-known *Year-Book of Obstetrics and Gynecology*, in which much of the criticism has appeared, has been edited by DeLee and Greenhill.

The main object of my letter is to place on record what I consider to be one of the most significant milestones in the course of the controversy about spinal anaesthesia in pregnancy. In October, 1948, I received a letter from Dr. George J. Andros, assistant professor of obstetrics in the Chicago Lying-in Hospital, which I think should be published in full.

"I have been intending to write you for a long time to commend you on your splendid work in championing the cause of spinal anaesthesia in obstetrics. Your efforts have made a great impression upon those of us who seek to further the use of this method in America. You might be interested to know that at the present time in the Chicago Lying-in Hospital approximately 85% of all caesarean sections are done under spinal anaesthesia (primarily continuous spinal) and over 50% of the vaginal deliveries are carried out under spinal (saddle-block) anaesthesia. You probably realize that this is quite a departure from the teachings of our founder, Dr. Joseph B. DeLee.

"My immediate purpose in writing you at this time is to ask whether or not it would be possible for me to obtain from you a copy of the entire text of the 'Discussion on Anaesthesia for Caesarean Section' appearing in the *Proceedings of the Royal Society of Medicine*, August, 1947. If you do not have this material at hand, can you direct me to the proper source? I wish to use the material presented in this discussion as reference for publications and lectures on spinal anaesthesia in obstetrics.

"Incidentally, we have done approximately 35 caesarean sections with 'heavy nupercaine' in doses of 2.5 mg. and 3.75 mg."

The significance of this letter, coming as it does from the assistant professor in Dr. Greenhill's own hospital, will not, I hope, be overlooked by those (and there are many) who have in the past criticized the use of spinal anaesthesia in obstetrics and more especially for caesarean section.

There is not the slightest doubt that spinal anaesthesia in some form or other (single dosage as used by me and many others, or continuous dosage as indicated by Dr. Andros) has established itself as a safe anaesthetic "for suitable cases" in obstetrics. There are of course certain contraindications, such as low blood pressure, shock, recent severe blood loss, and severe anaemia, to which I have never failed to draw attention in the various articles which I have written on the subject. But in many instances these contraindications can be eliminated and their dangers removed by blood transfusion and the use of hypertensive drugs, of which the best is undoubtedly *d*-N-methylamphetamine hydrochloride, and oxygen.

Finally, may I express the hope that those who have no personal experience will withhold criticism until they have taken the trouble to acquire the technique and tried it out for themselves, with, of course, the proper precautions?—I am, etc.,

Croydon.

RUFUS C. THOMAS.

Classical Caesarean Section

SIR.—In my condemnation of classical caesarean section I have been accused of using harsh words. I can only say they were deliberately chosen: only so could I hope to influence 'those who frequently practise' the operation. What is grievous, however, is that some of my colleagues have misread my letter (Oct. 16, 1948, p. 722) and so have objected to opinions

which I never stated. Just as for any operation, so for the classical caesarean section there are indications, some definite, some debatable; and I should now like to formulate these as my main contribution to the controversy and at the same time to comment on some interesting points which have been raised.

Definite indications for upper-segment caesarean section

1. The presence of a large cervical fibroid can obliterate the lower part of the cavity of the uterus to such an extent that it may be difficult to find the cavity, let alone deliver the foetus, if the uterine incision is placed low. In such cases an upper-segment incision must be performed.

2. Shoulder presentation in which the liquor has drained away and the uterus is tightly moulded round the foetus: in such a case a low vertical incision, which can be enlarged upwards if necessary, should be employed. This is the type of case described by Mr. Percy Malpas (Jan. 22, p. 156). In the most extreme example of the condition that I have seen the foetal elbow had prolapsed into the vagina through a cervix half dilated, and there was such a marked contraction ring round the arm and forearm that they were grooved by it: replacement of the foetus was quite impossible even under general anaesthesia. To deliver the child I used a vertical uterine incision, half in the lower and half in the upper segment.

3. Where there is a contraction ring requiring incision.

4. In certain dwarfs with little room between costal margin and symphysis pubis, and where the uterus fills the whole abdomen: access to the lower segment may then be very difficult.

Other conditions for which classical caesarean section may be indicated

1. When the lower segment is so narrow and ill-formed that there is not room in it for an incision large enough to deliver the child through—e.g., transverse lie in a uterus *bicornis unicollis* in a primigravida patient. In such cases a low vertical incision should be employed: this may be made partly in the lower segment if the bladder is pushed down first.

2. In certain cases of fibroids lying in the upper segment when they are to be removed at the time of the caesarean section.

3. Cases in which as a result of previous operations there are extensive adhesions between uterus and abdominal wall. In such cases the uterus should be opened in some readily accessible place. Caesarean section following previous ventrifixation of the uterus may come in this category. I have only operated on one such case, and rightly or wrongly freed the uterus from the abdominal wall and performed a lower-segment caesarean operation.

4. In cases where there are large blood vessels coursing across the lower segment and when the surgeon is inexperienced or anxious about the outcome of a low incision, an upper-segment incision is probably the lesser of evils. This is the type of case my namesake, Mr. P. M. G. Russell (Oct. 30, 1948, p. 798), refers to. In my experience these blood vessels do not always cause as much trouble as one expects. A tip of real value if bleeding threatens to be troublesome is to complete the incision by tearing rather than by cutting; this puts the edges of the uterine incision on the stretch and so closes the opened sinuses until they can be deliberately grasped with Green-Armayage or other forceps.

5. I am reluctant to accept Professor S. J. Cameron's claim (Nov. 27, 1948, p. 956) that classical caesarean section should be chosen "when rapid delivery is indicated." Emphasis on speed in midwifery is not without its dangers—to foetus as well as to mother—so I should prefer the advice "hurry slowly"; perhaps then the lower-segment caesarean section will be judged quick enough.

I agree whole-heartedly with Professor W. C. W. Nixon (Oct. 30, 1948, p. 798) in his plea for the low incision in abdominal hysterotomy; I have used this approach for some years and am sure it is generally preferable to the more usual high incision. A possible exception is the woman who is being operated on under local anaesthesia; access to the lower segment is then not easy.

Dr. Guy Roworth (Oct. 30, 1948, p. 798) suggests that in certain cases the vertical incision half in lower segment and half in upper segment is superior to the transverse incision in lower segment. I do not have enough knowledge of the late effects of what might be called the "half-and-half" incision to make any comments on this comparison. I hope others will feel able to give their experience on this subject.—I am, etc.,

Manchester.

C. SCOTT RUSSELL.

SIR.—I was interested to read Mr. Percy Malpas's letter on caesarean section (Jan. 22, p. 156) and the difficulties that he had encountered in delivering an impacted shoulder presentation by the lower-segment route. I have personally encountered five cases in which I had difficulties similar to those described by Mr. Malpas. Three of these were cases of impacted shoulder presentation and the other two were vertex presentations associated with severe kypho-scoliosis. In one

of the latter cases the patient was a severely dwarfed hunchback, and in the other the patient herself had been born with a spina bifida from which she had survived but which had left a severe pelvic deformity. In both of the latter cases pelvic measurements taken by x-ray pelvimetry were extremely small.

In the case of the shoulder presentations I encountered exactly the same difficulty as Mr. Malpas describes—namely, that it was nearly impossible to bring the babies' legs down the lower-segment incision without tremendous strain on both the foetal trunk and the uterine muscle. In the other two cases I found that the pelvic deformity was such that it was extremely difficult both to elevate the foetal head and at the same time draw it anteriorly into the uterine incision.

In each one of these five cases I found that the solution was to convert the transverse incision in the lower uterine segment into a T-shaped incision. This was carried out simply by incising the lowest part of the upper segment vertically from the middle of the transverse lower-uterine-segment incision. The length of this second incision was in each case about 3 in. (7.5 cm.), but I found that on completing the operation, and with full retraction of the uterus, this 3-in. incision now measured only about 1 in. (2.5 cm.). All that was then required was the insertion of one or two stitches into the vertical incision, followed by closure of the transverse lower-segment incision in the usual manner. It was quite simple to overlap both incisions with the reflection of peritoneum which is raised as a routine in performing lower-segment caesarean section. The resulting convalescence was excellent in all of these patients.—I am, etc.,

London, W 1

D. G. WILSON CLYNE.

Anaesthesia in Ludwig's Angina

SIR,—Dr. V. Torry Baxter, referring to my letter (Jan. 1, p. 31), has written (Jan. 22, p. 153) an able account of the considerations involved in anaesthetizing cases of this disease in which there is severe obstruction to breathing, but he goes on to state that to induce unconsciousness as a preliminary to surgical intervention in cases of Ludwig's angina is to court disaster. Whilst agreeing with this statement when it is applied to cases with severe respiratory obstruction, I am convinced it is not true of all cases.

By no means all cases of Ludwig's angina are complicated by respiratory obstruction: indeed, most of the cases that come to operation are breathing normally, while some are only obstructed to a minor degree. If Dr. Baxter's statement is true, halothane has for many years been courted with the aid of chloroform and, more recently, cyclopropane, with what can only be described as a very indifferent response. If, however, there is anyone who would wish to see this courtship fairly crowned with success, let him try induction with "pentothal" on a few of these cases. He will not have to wait long before his wish is abundantly fulfilled.

Mr. Eric K. Gardner (Jan. 22, p. 153) raises a point which will be generally agreed. Junior residents should not be expected to undertake this responsibility. If they were aware of the dangers involved they would doubtless more often enlist the help of their seniors. But as long as intravenous anaesthesia continues to be recommended for this operation in the latest surgical textbooks one can hardly blame them for administering it, and can only sympathize with them and the relatives when the results are disastrous.—I am, etc.,

Sutton, Surrey

JOHN H. WILLIS.

Bronchography without Surface Anaesthesia

SIR,—Anaesthesia for bronchoscopy and gastroscopy is undoubtedly necessary, and it may therefore be essential to use one of the more potent but toxic surface anaesthetics in cases requiring these procedures. However, Mr. C. A. Jackson in his article on amethocaine hydrochloride (Jan. 15, p. 99) and, more especially, Dr. C. Elaine Field in her letter (Feb. 5, p. 236) advocate the use of amethocaine hydrochloride in bronchography.

When bronchography is done by the cricothyroid-membrane route it has been common practice to inject some potentially dangerous surface anaesthetic through the needle into the trachea before the contrast oil is instilled. In an attempt to avoid the use of any member of this group of drugs, I and

others have done many successful bronchographies in adults without the use of any intratracheal surface anaesthesia. Coughing and discomfort are no more than with anaesthesia, which must always be very limited in view of the small bulk of fluid used. Procaine is, of course, used to infiltrate the skin and subcutaneous tissues over the membrane before the introduction of the needle.

I would therefore urge the abandonment of the use of any of the surface anaesthetics in bronchography. Let it be remembered that over a thousand years ago, in the *Guide to Physicians* by Isaac Judaeus, appeared the aphorism, "Treating the sick is like boring holes in pearls, and the physician must act with caution lest he destroy the pearl committed to his charge."—I am, etc.,

Liverpool

EWAN F. B. CADMAN.

Proguanil and Blackwater Fever

SIR,—In view of the recent letters on proguanil ("paludrine") I thought the following case might be of interest.

A young European was brought to hospital who had been comatose for 18 hours; blackwater fever was diagnosed, but despite treatment he died within 12 hours. This patient had been in the country some 15 months, living most of that time in the bush in a highly malarious district. For the whole period he took one tablet of proguanil every alternate day regularly. He had also been in Egypt for a short period before coming to Uganda. He had never suffered from malaria nor from fever of unknown origin, and he had never taken quinine at any time until this illness.

Before coming to hospital he had received treatment for clinical malaria in his bungalow—quinine bihydrochloride 30 gr. (2 g.) on three successive days. He was admitted to hospital on the fourth day of the disease.

From experience we have found that anything less than one tablet of proguanil a day will not suppress malaria. There have been several cases where the person was taking one tablet on alternate days regularly, yet they developed a typical attack of malaria with a positive blood slide (subtertian). It is presumed that the case reported above was in fact blackwater fever from the onset; if so, was it precipitated perhaps by the fact that proguanil was acting as an insufficient suppressive on the malarial parasites?

I am indebted to the D.M.S., Uganda, for permission to publish this report.

—I am, etc.,

Mbale, Uganda

A. M. BEST.

Strong Corsets and Pelvic Congestion

SIR,—During the past two years I have observed a group of 32 cases of women who have reported either at my consulting-rooms or the out-patient department with the symptoms of pelvic congestion. These took the form of backache, bouts of urinary frequency, fullness in the rectum, iliac-fossa aching, and general pelvic dragging. All these symptoms might appear together or singly, or in one or other combination.

The ages of these patients ranged from 22 to 42 years. A feature common to them all was that they had obese abdominal walls with very firm fat. Cystoscopy revealed on several occasions that the vessels, especially the veins of the trigone, were obviously more congested than normal (this was during the period of urinary frequency). When iliac-fossa aching appeared to be confined to one side it was more frequently noticeable on the right than the left side.

The second noticeable feature was that the patients' symptoms in this group dated from the acquisition of good, strong surgical corsets. Previous to the use of these strong, well-fitting corsets, which no doubt did mould the patient's figure in an approved fashion, this group had used what they considered loose utility supports. It was noticeable that this firm fat, presumably due to a high carbohydrate diet, had been deposited freely in the abdomen because there was no real pressure on this area to induce it to be deposited elsewhere (shoulders, breasts, thighs). I assumed that these strong corsets were compressing this firm fat against the inferior vena cava and impeding the venous return from the lower limbs, with stagnation in the pelvic veins or right ovarian veins. I asked these patients to either dispense with corsets for a month or wear them loosely. The improvement in the patients' symptoms

was definitely established; by wearing their corsets more loosely applied thereafter these patients very definitely improved or were free of symptoms without further therapy.

There are two other groups of cases which fit into a similar picture but of which I have not had sufficient cases with such definite reference in order to link them with the above. The first group consists of young women with long lower limbs beginning to wear a high-type girdle. These develop backache or right iliac-fossa aching, presumably due to abdominal constriction at the umbilical level. It would seem that by the time the blood from the lower limbs reaches the pelvis the *vis a tergo* is sufficiently low to permit stagnation in the pelvic or ovarian vessels (10 cases). The second group were elderly women who began to develop a progressively worse prolapse, also suggestively dated from the acquisition of strong corsets and abdominal compression (9 cases).

I would advise that corset manufacturers should warn their fitters that where the patient has not been accustomed to strong abdominal support corset fittings should be so applied that the abdominal compression can be increased gradually over a period of months, so as to obviate this syndrome developing—I am etc.

Derby

LINDSAY O WATT

Prescription of Barbiturates

SIR—I was greatly interested in Dr. Nathan Finn's letter (Jan 29, p. 195) regarding the prescription of barbiturates, as this problem has occupied my mind for some time. The idea of combining phenobarbitone with an effective emetic in the same tablet presents itself quite obviously, but the solution is not as simple as it appears to be.

From theoretical and practical considerations we have to include the optimum emetic dose (e.g., pulv. ipecac. which is the only drug suitable for the purpose) into the minimum lethal dose of phenobarbitone. The M.L.D. of phenobarbitone is 5-6 gr. (0.32-0.4 g.),¹ and the emetic dose of pulv. ipecac. is 15-20 gr. (1-1.3 g.). This means that every $\frac{1}{2}$ -gr. (32 mg) tablet of phenobarbitone will contain nearly the maximum expectorant dose of pulv. ipecac. with all its irritant properties—a quite undesirable feature.

Secondly, it is most important to remember that phenobarbitone, being absorbed simultaneously with pulv. ipecac. (probably at an even faster rate), will neutralize the vomiting effect of the latter by virtue of its own sedative properties. In practice the patient will be dead before he is "due" to vomit.

I see the solution of this important problem not in the combination of barbiturates with emetics but in avoiding prescribing these drugs to a phenobarbitone-conscious public and in the choice of other sedatives wherever possible. The open-chain ureides, like carbomal, etc., are fairly safe and generally not much less effective alternatives—I am, etc.

London NW 2

H. H. MARGULIES

REFERENCE

¹ Mutch, N., *British Medical Journal*, 1934, 1, 319

Cogs in a Machine

SIR,—With reference to the "health records" for this country in 1948, I should like to point out that it is absurd for us to congratulate ourselves upon the better health of the nation when arguing only from those figures which relate to physical well-being. There are no statistics available to give an adequate picture of the nation's health over the whole field—in, that is to say, its physical, mental, and psychological condition. Yet the human being is a threefold entity (body, mind, and spirit), each part of whose nature is intimately related to the other.

Most medical practitioners are becoming uncomfortably aware of the increasingly high incidence of psychological and psychosomatic conditions. Not only are positive personality disorders on the increase; very many people are exhibiting symptoms whose ultimate origin is psychological. Even where this is not the case, increasing numbers of people are becoming subject to irritability, disproportionate anxiety, and apparently unreasonable feelings of insecurity, which, while realizing their insufficient foundation, they find they cannot control.

To no small degree the reason is to be found in our machine civilization, which turns the individual into a cog in the industrial or military machine. This procrustean bed, to which each one of us in our proud individuality has to be

lopped, is proving very uneasy. The natural revenge is an increasing number of cases of derangement of the nervous system.

In this country, even to-day, there is a tendency to confuse the treatment of the disordered psyche with the treatment of the disordered brain. For the sake of the millions to whom the pressures of modern life have brought abnormal stress this attitude should be modified. The effects of machine civilization should be investigated and the conditions of life and work adjusted to human needs. This is all the more necessary because in the field of physical health our average of attainment is rising. Personality disorders and psychic conflicts are handed down from one generation to the next, not according to laws of heredity as in the physical sense, but according to laws of stress and reaction—maladjusted parents producing maladjusted children.

There is in English public life an extraordinary tendency to close the eyes to the fact that human health and human happiness cannot be attained by concentrating only upon one aspect of the human being. Although more sensible diet and more advanced discoveries in the realm of therapeutics have helped to improve our general level of physical health, that still gives us only one part of the picture. Moreover, if the mental and psychological well-being of the people is overlooked, it cannot be long before their physical health suffers too.—I am, etc.

London, W 1

EUSTACE CHESSE.

Malignant Tumour of the Small Intestine

SIR,—While awaiting a proof of the report on jejunal carcinoma (Feb. 12, p. 283) I wanted to add a few rather vital words to one sentence. Where it says in the penultimate paragraph "ulcer of finger-tip size in the lower curve of the stomach," please add, "No abnormality was noted in the jejunum"—I am, etc.

Bristol

A WILFRID ADAMS

POINTS FROM LETTERS

Dental Caries

Dr WILLIAM WALLACE (Glasgow) writes. A novel but neglected solution of the dental caries problem may be referred to in the *Transactions of the Royal Medico-surgical Society of Glasgow* (1933, 27, 217). I might now allude to the study of the comparative rate of the incidence of dental caries in the teeth of three groups of five-year-old children by Lady Mellanby and her colleagues (May 31, 1947, p. 751); they admit that they have failed to discover the direct or immediate extant of this disease and also that there is "an anomalous" freedom from caries in teeth of defective structure in institutional children. They now wish to know why and how this is so, and state: "If there are secrets yet to be discovered which can explain these results, as there almost certainly are, every effort should be made to reveal them." This disease is virtually pandemic. It is what may be called a primitive one—i.e., one due to the absence of something the teeth cannot do without (namely, daily use) lest they contract a microbic rust—when from nausea or loss of appetite mastication becomes interrupted for a day or more, during which time the ameloclast seizes the opportunity of affixing itself in an interspace between two teeth or a fissure in a premolar or molar. Anticipation of decay in the second molars is the key to the prevention of dental caries.

The Crisis in Lobar Pneumonia

Dr L. R. HOLZ (Stamford, Lincs) writes. The history of the following case of lobar pneumonia, which had no treatment with the "sulpha" drugs, seems to be worthy of record. I was recently called out to an ex-R.A.F. camp near here, which is now occupied by "squatters," to see a girl aged 6½ years about whom the mother gave the following story. Eight days prior to my visit the little girl had been seized with sudden pain in the left chest, accompanied by high fever, dry cough, and vomiting. As it was a Sunday and the parents did not wish to disturb the doctor on the Sabbath (how rare in these days of the new N.H.S.) they deferred until the next day. But she seemed a little better on the Monday, and so they hung on, day after day, until on the evening of the seventh day the child became delirious, sweated profusely, and was apparently exhausted. I was summoned for the first time on the following morning, and on examining the child found signs of consolidation of the lower lobe of the left lung consistent with lobar pneumonia: the temperature was 93.6° F. (34° C.), respiratory rate 40, and the pulse rate 120. Employing conservative measures, she made an uninterrupted recovery. How many of the younger generation of doctors have witnessed the "crisis" of lobar pneumonia, which this girl undoubtedly exhibited on the evening prior to my first visit? It must be a rare clinical experience in these days of penicillin and the "sulpha" drugs.

Obituary

H. D. HALDIN-DAVIS, D.M., F.R.C.P., F.R.C.S.

The death of Dr. Harold David Haldin-Davis, at Forest Row, Sussex, on Feb. 2, so closely following that of Dr. J. H. Sequeira, has robbed British dermatology of yet another outstanding figure. Dr. Haldin-Davis was 67, and for the past three years had borne with great fortitude the painful complications of a disease which he well knew to be incurable and ultimately fatal.

Educated at Charterhouse, he won a scholarship at Balliol College, Oxford, and took his B.A. with first-class honours in physiology. At St. Bartholomew's Hospital his preference seems to have been surgical at first, for in 1908, three years after graduating B.M., B.Ch., he added the F.R.C.S. to his other qualifications. Shortly afterwards he passed the examination for the M.R.C.P. About this time, too, under the tutelage of Dr. Adamson, one of the foremost dermatologists of the day, he began to take an interest in dermatology, and made it his special study. He read extensively, and with a rare memory for facts and figures would frequently flavour both his lectures and writings with classical and literary quotations. He passed without apparent effort all the examinations he ever sat for. In 1925 he proceeded M.D., and he was elected F.R.C.P. in 1931.

Haldin-Davis dedicated most of his professional life to the dermatological department of the Royal Free Hospital, where his fluent, witty, and discursive lectures won him a host of admirers and friends. He was equally popular at the Blackfriars Skin Hospital, and his influence there and the high standards he set enlarged its field of work and attracted many postgraduate students. But these activities and an increasing private practice did not satisfy him. He became the visiting dermatologist to the Children's Hospital at Paddington Green, and for many years he supervised the Willesden clinic for the treatment of ringworm of the scalp by x rays. This and other pioneer work was undertaken before the outbreak of the 1914-18 war. As a Territorial officer he served in the R.A.M.C. and saw active service in Palestine. In 1918 he took up his ordinary routine again and assumed an additional appointment as specialist in dermatology to the Ministry of Pensions.

Although he worked so hard, "Hal," as he was known to his friends, found time for social occasions, and his hospitality, ably furthered by his wife, both in town and country, became proverbial. But still it was not enough. He assumed civic duties, became a councillor, and was well in the running for the mayoralty of St. Marylebone. He had a fund of kindly humour, and his wit, though pungent at times, was always under control and seldom malicious. He was a great admirer of Dr. Johnson and a member of the Johnsonian Society.

He was secretary of the Dermatological Section at the annual meeting of the B.M.A. in 1922, and a vice-president in 1927 and again in 1929. Many reviews, annotations, and articles in this *Journal* came from his pen for more than twenty years. His handbook on *Skin Diseases in General Practice* reached a third edition in 1937. In the same year he became president of the Dermatological Section of the Royal Society of Medicine, where he had always been a frequent exhibitor of rare cases and an eloquent speaker at discussions. This office was admirably suited to his critical temperament and his natural and highly trained faculty for conducting meetings and committees. Haldin-Davis thoroughly enjoyed his two years as president, and particularly those occasions which required the kind of after-dinner speech at which he excelled. His polite cynicism, liberally adorned with appropriate quotations and anecdotes, enlivened many a dull dinner in those pre-war days.

Haldin-Davis was a born critic. Ever suspicious of new theories and sceptical of vaunted specifics, the old adage, "Make haste to apply this new remedy while it still cures," was frequently on his lips. But he was severely critical of himself too, and this attitude may account for the scarcity of dogmatic assertion and speculative theorizing in his literary work. Research was not in his line. He had neither the patience nor the aptitude for it. On the other hand he was

an extremely able man of business, and his sage advice on matters of finance was constantly in demand and was freely offered to many relatives and friends. His health had begun to fail even before the recent war, but in spite of his disabilities he continued to give his services to local hospitals, and helped to guide committees at Tunbridge Wells and East Grinstead. He also inaugurated a most successful War Savings group in the same area. His last official medical appointment was that of medical referee to the Ministry of National Insurance. All his many friends and colleagues will join in offering their sympathy to his widow and two stepchildren. His was a unique personality, and none who knew him well will ever cease to cherish his memory.

SIR EDMUND SPRIGGS, K.C.V.O., M.D., F.R.C.P.

A colleague writes: Sir Edmund Spriggs was best known, both to his medical colleagues and to a large circle of patients, by his association with, and development of, the Clinic now at Ruthin Castle. Here he had the opportunity for the intensive and detailed study, and also the controlled treatment, of most types of disease and particularly the metabolic and digestive ailments for which his earlier work in London had prepared him. Success in this field was recognized by his election as president of the Gastro-Enterological Society in 1947, of which society he was also a foundation member. Spriggs was above all a clinician. He was quick to receive new ideas, provided he thought that they were founded on sound physiological principles. Thus insulin was prepared at the clinic and used under his supervision in early 1923, but he always maintained that diet must still play an important part in the treatment of diabetes mellitus. The new was tried out against the old, and so the introduction of the electrocardiograph did not lead to the abandonment of the well-established "stair test." He always took the broad view and treated the individual as well as the disease. This attitude of mind was combined with a meticulous attention to detail, especially where diet, rest, and exercise were concerned. The best type of book to be read by a bad sleeper before trying to settle at night was not too trivial for discussion and advice. His own long illness in earlier years had given him an insight into the mentality of the "bed patient." The same attention to detail was shown in the way articles for lectures or publication were prepared. The description which only occupied a few lines of a typical case of gastric carcinoma in one such paper was the condensed analysis of over fifty cases personally observed. For another article more than 500 follow-up letters were written to ensure accuracy in his report on the final results. When the facts were ascertained the real work began, and the alterations and emendations in the manuscript only ended, much to the relief of his secretarial staff, at the last possible moment before delivery or publication.

While accepting that art is long, he often overlooked the fact that time is fleeting, especially if engaged on a task in which he was interested; this led at times to minor embarrassments. His own description of a perfect holiday was one on which no watch was carried and bodily needs were satisfied when hunger, thirst, or tiredness dictated. On such occasions he was an interesting and entertaining companion. He read rapidly and widely and had a retentive memory; this often led to the solving of a difficult problem by reference to an article read, or a case seen, years before. Cautious in reaching a conclusion, he was a formidable opponent if his views were attacked, but always ready to abandon a position when convinced it was untenable. He was "ever a candidate for truth" and eager to find out where it was hid. This urge to get to the root of the matter was noticeable in his work as a magistrate and vice-chairman of his bench. Calm, courteous, but persistent, he probed the case under consideration, and, as a court official said, "I will always be grateful to Sir Edmund, for he taught me patience." His quiet friendliness invited personal confidences, and he received many and, as one who had seen trouble himself, "his ready help was ever nigh." It is easier to write of the physician than of the man without being suspected of exaggeration. Tolerant, wise and far-seeing in counsel, kindly and generous in word and deed, with a high sense of duty and ready to further any good cause, as evidenced by the many societies in which he held office, he met the blows of life with serene courage and without any of the bitterness that might

Form E.C.157

WEST'S
EXECUTIVE COUNCIL

1. Patient's Name Paterson

2. Address 27 High St

3. City Birmingham

4. Date 1.1.49

5. Rx Ung Penicillin

6. B.P. Glaxo

7. M.D. 7th d.u.

suffix of significance
in your penicillin prescriptions

Experience has brought a clearer recognition of the sphere of usefulness of tropical penicillin. It has shown, for instance, the value of penicillin ointment in the treatment of superficial skin infections. And with penicillin ointment as with all penicillin preparations, your assurance of quality is the simple addition to your prescriptions of the suffix *Glaxo* . . . the first name behind penicillin.

5. Prescribed by
Doctor J.A. Bunt

6. Date 1.1.49

7. City Birmingham

GLAXO

PENICILLIN OINTMENT B.P. *Glaxo*

now in 1-oz. tubes

GLAXO LABORATORIES LTD., GREENFORD MIDDLESEX BY Road 34

A new water soluble X-ray contrast medium



The shadows obtained
with 'Viskiosol' Six

adequately demonstrate the size, shape and position
of uterus filling defects due, for example, to
interstitial fibroid or carcinoma uteri. Patency or
occlusion of the tubes are also evident.

The advantages of this water soluble product are:
Should intra-arterial injection occur there is no risk of
embolism. There is therefore no need to follow
the progress of the contrast medium on the
fluoroscopic screen.

for
hysterosalpingography

Since peritoneal spill is demonstrated within a short
time of making the injection the patient does not
require to return next day for a second time.

Our Medical Information Division will be pleased
to supply the medical books 'IIBB Water
Soluble Contrast Media' on request.

'Viskiosol' Six is supplied in ampoules of 15 c.c.
trade mark

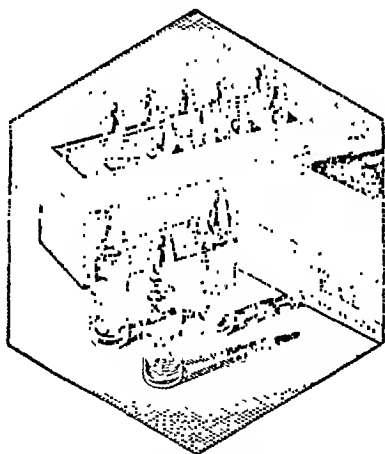


manufactured by

MAY & BAKER LTD

distributors

PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD. DAGENHAM



An effective
antidote for
ARSENIC,
MERCURY &
GOLD POISONING

Originally introduced during the war for the treatment of Lewisite gas poisoning, B.A.L. has now been applied to the treatment of poisoning by other arsenical compounds as well as mercury and gold salts.

Injection of B.A.L. consists of a sterile 5 per cent. solution of 2, 3-Dimercaptopropanol in arachis oil containing 10% Benzyl Benzoate. Supplied in boxes of 12 x 2 c.cm. ampoules.

B.A.L

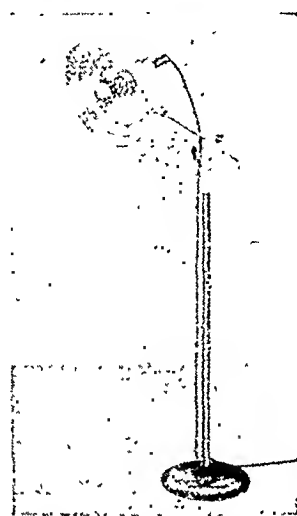
(BRITISH ANTI-LEWISITE)



Literature and further information gladly sent on request to
THE MEDICAL DEPARTMENT,
BOOTS PURE DRUG CO LTD, NOTTINGHAM, ENGLAND
S-1

*Introducing a valuable
new prescription model
infra-red treatment lamp*

Sovereign in the treatment of injuries and infections, and 'pre-eminent in the relief of pain', infra-red irradiation is most valuable when the patient can apply it at home. This new Sollux Lamp (Model H.VI) is ideal for domestic application. It gives the maximum output tolerable for house wiring, has interchangeable luminous and long-wave sources, and embodies universal adjustments. The price is £13 10.0. A patient can purchase only on producing a certificate from his own doctor stating that use of the lamp is necessary.



For details of construction and output, see Hanovia leaflet No. M. 175 — freely sent on request.

HANOVIA LTD. SLOUGH

The Specialists in Actinotherapy Equipment

London Showrooms: 3 Victoria Street, S.W.1

M175/1

**For children
who are growing fast**

Children who are growing rapidly and making heavy demands on energy reserves need not only the normal intake of rationed foods but also a supplementary supply of vitamins and carbohydrates to meet their high metabolic needs.

For children of all ages Radio-Malt is a desirable dietary supplement and metabolic stimulant.

Each fluid ounce contains

Vitamin A	2000 international units
Vitamin B ₁	200 international units
Vitamin B ₂	0.2 mg.
Vitamin D ₃	1000 international units
Calories	109
Protein	1.75 grammes

Radio-Malt is available in 1 lb. and 2 lb. jars.

RADIO-MALT

Trade Mark

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1

RM/E/522A

have soured a lesser man. That he was known to his staff as the Chief "is sufficient indication of the esteem in which they held him. It takes a big man to be a hero to his valet. 'He'll be sair missed' by all who knew him, and much sympathy will be felt for his two doctor sons in their bereavement."

Dr JOHN WATT, who died on Jan 2 at the age of 68, was a native of Glasgow. He took the L.D.S. there in 1904 and the Scottish triple qualification in 1913. He served in the first world war as a captain in the R.A.M.C. He then went to Skye first to Broadford and then to Portree. After five years' strenuous service Dr Watt decided to return to the mainland, and he took up practice twenty-six years ago in Muthill, Perthshire. Unobtrusive in nature and sparing in speech, he was skilful in diagnosis and endeared himself to the people by his kindly sympathy. Dr Watt took his share along with other local practitioners in the work of the Crief and District Cottage Hospital as a member of the honorary medical staff. He was also interested in the District Nursing Association, and during the recent war was in charge of the medical side of the local civil defence organization. He was also a justice of the peace for Perthshire. He was a keen sportsman, and many owe their skill as fishermen to him. His wife died with tragic suddenness seven years ago.—E. A. S.

Dr ALEXANDER GORDON INGRAM, who died on Jan 28 at the age of 85, had been in practice in Helensburgh for nearly sixty years. He graduated M.B., Ch.B. at Aberdeen in 1886, and went into general practice in Helensburgh in 1889. After taking the D.P.H. in 1913 he was appointed medical officer of health for the burgh and medical superintendent of the local infectious diseases hospital and sanatorium, he was also in charge of the child-welfare and antenatal clinics. Although he had given up his large general practice he continued active work in his other posts until a few months ago. Rather shy by nature, he was a man of wide interests but primarily he devoted himself to the care of his patients, by whom he was held in high esteem. A native of Banffshire, he had his full share of North-Country wit and had a great fund of anecdotes. Dr Ingram was chairman of the Dunbartonshire Division of the B.M.A. from 1933 to 1938. He took a great interest in the younger practitioners in the area, and he spared no pains to help and encourage them. His jubilee was marked by a public presentation from his patients and friends of an illuminated address and a cheque. When he reached his diamond jubilee he entertained his colleagues in the town to a dinner. Ingram was a man of keen intellect and genial kindness, and those of us who are left feel the better for having known him.—W. G.

Dr MAVIS VICTORIA ZANE, who died in London on Feb 7 at the age of 52, was born in Australia and graduated at the University of Sydney. After ten years as medical officer for girls' schools under the Egyptian Ministry of Education she served in a number of English hospitals and infant and child-welfare clinics. She joined the staff of the Save the Children Fund in January, 1948, and was appointed medical superintendent of the Fund's hospital at Schlutup near Lübeck. This was a 100 bed hospital for the children of displaced persons from camps in the neighbourhood. The hospital, on the shores of the Baltic, was formerly the administrative block of a secret war factory concealed in the neighbouring woods, and the building was admirably adapted to its new purpose. Changed conditions in Germany brought about the transfer of the hospital to the German authorities towards the end of last year. Dr Zane was ill when she returned from Germany last autumn, and did not recover.

The Services

The Prince Regent of Belgium has bestowed the decoration of Chevalier of the Order of the Crown upon Temporary Surgeon Lieutenant-Commander G. F. Carey, R.N.V.S.R., for distinguished services rendered to Belgium during the war.

The King of Norway has bestowed the decoration of Norwegian War Medal upon Surgeon Lieutenant-Commander J. M. Rudyard, R.N.V.R., for distinguished services with the Royal Norwegian Navy during the war.

The Efficiency Decoration has been conferred upon Lieutenant-Colonel G. E. O'Riordan and Major E. Fowler, R.A.M.C., T.A.

Medical Notes in Parliament

COST OF HEALTH SERVICE

Supplementary Estimates

It appears that the cost of the National Health Service for its first nine months will be £58,455,000 more than was originally estimated, an increase of over 39%. This is one of the main items given in the Supplementary Civil Estimates for £221,471,574 issued by the Stationery Office on Feb 9. For England and Wales the extra sum required is £52,800,000 and for Scotland £5,655,000.

The ophthalmic services, which were expected to cost £2,330,000, are now estimated at £14,970,000. The cost of dental services will be £21,800,000 instead of £8,150,000. Drugs, medicines, and appliances will cost £17,715,000, as against the first estimate of £12,700,000.

Payments to medical practitioners at a cost of £29,800,000 show an increase of £2,300,000. The administration of the Service will cost £1,606,000 as against £890,000.

The increase in the cost of hospitals and specialist services will be £24,446,000. The liabilities of the hospitals which were transferred to the Government on the appointed day exceeded the first calculation by £17,409,000.

These supplementary estimates are to be debated on Feb 17, and it is expected that the debate will turn mainly on the cost of the National Health Service. It had been estimated that the Service would cost in the nine months from July 5, 1948, to the end of the financial year about £150,000,000. The supplementary estimates now before the House show that the cost for the nine months will actually be £208,000,000. If expenditure continues at this rate the cost in a full year would be £277,000,000.

Too Many Patients

Mr BEVAN on Feb 9 informed Mr MARTIN LINDSAY that approximately 5,000 patients had been instructed by the Birmingham National Health Executive Council to change their registered medical practitioners. Later on the same day Mr Lindsay opened a debate on this subject.

He said that over 3,000 people in Solihull had been instructed by the Birmingham Executive Council to leave the doctors of their choice, whose patients they had been in many cases for a number of years. The same thing had happened all over Birmingham. On the appointed day last year a number of doctors found themselves taking over many more patients than they could hope to handle. One doctor in his constituency who had a reputation as a painstaking physician found that over 3,000 patients had registered with him beyond the figure of 4,000 laid down as a maximum. The local executive council in such cases had no choice but to ask some registered patients to leave their doctor and find another. Mr Lindsay did not question that, but questioned the method of selection of the patients who were to be removed. The fair method was to remove recent additions to the doctor's list and those people who had registered for the first time with him at the appointed date.

Another Birmingham doctor had been told that he had 500 patients in excess of 4,000 and must get rid of them by March 4 unless he obtained an assistant. The doctor had taken every possible step to find an assistant but could not do so because he could not offer accommodation to a married assistant and his family. Mr Lindsay noted that before July 5 this doctor had the same number of patients as he had now, and his practice worked smoothly. Mr Lindsay suggested that the figure of 4,000 should not be a statutory maximum but a guide to the approximate number of patients which a doctor could treat single handed. If the patients considered they were not getting satisfactory service they could leave the doctor of their choice and go to someone else. The doctor had every incentive to keep up his list by looking after patients properly. Some doctors were quicker than others, and some had practices which were topographically more compact. He suggested that the maximum number should be left to the doctor concerned, the figure of 4,000 being merely a guide. He asked the Minister to instruct executive councils that where a doctor's list was much too large the recent additions to it should be removed and not patients who had long been attended by that doctor.

Sir PETER BENNETT said that from his constituency on the other side of Birmingham he had received similar complaints.

Replying to the debate, Mr BLENKINSOP said it was far from the intention of the Ministry of Health or of the executive councils that there should be arbitrary decisions. When the medical profession had agreed to a general limitation of individual lists to 4,000, it was understood that at the start there

should be latitude to avoid splitting families. After discussion with the profession a circular was sent by the Ministry to executive councils last November suggesting that the lists should be examined because there were wide discrepancies. The general view of the medical profession as well as of the Ministry was that it would be impossible to get the type of service desired if these grossly overloaded lists were allowed. Before the Birmingham Executive Council was able to consider the matter the doctor to whom Mr. Lindsay had referred wrote to that council saying he found his list, which was more than 4,000 above the agreed figure, was too much for him. He asked the executive council to help in trying to reduce the list. The council was obliged to consider the appeal made by the doctor. The doctor himself was asked for his views. He felt that if he could limit his area of operation to a district outside Birmingham where he had a large practice and where there were few other doctors whom patients could choose he would be doing the right thing. He suggested those he wished to be removed from his list, and the Executive Council notified the names after they had been approved by the doctor concerned. Mr. Blenkinsop said that the Ministry could not accept the principle that those who came on the list last should be removed first. The action of Birmingham Executive Council had enabled the doctor to keep his practice over the 4,000 limit in an area with few alternative doctors and to release patients for whom there were a number of alternative doctors. The executive council had notified the surplus 3,000 patients, appending a note of the other doctors in the area whose lists were below the maximum figure. Mr. Blenkinsop felt that in this case the Ministry had looked at the problem and tried to find a solution fair both to the patients and the doctor. It was true that it was difficult to get accommodation for a married assistant, but it might be possible to get an assistant in the second practice to which Mr. Lindsay had referred. Many members of the medical profession felt that 4,000 was too high a figure, and it would be impossible to leave one doctor with over 8,000 on his list while other experienced doctors had much smaller lists. For the benefit of the patients the Ministry must in the friendliest way try to get some redistribution. He assured the House that the Ministry and the executive councils did not desire to take arbitrary action or to break up families or to take individuals off the list because it was a few over the maximum. There was no need to give fresh instructions to executive councils which had used reasonable discretion in the matter and had examined individual cases. The Ministry could examine individual cases of special hardship. He was anxious that the country should understand that there was no desire for arbitrary action and that the Ministry was anxious to secure the best personal service under the National Health Scheme.

No Household Remedies

Mr. KFEELING asked on Feb. 10 whether Mr. Bevan knew that some National Health Service doctors declined to write prescriptions for laxatives, first-aid dressings, antiseptics, and other household remedies which before the Service came into existence were not normally obtained on a medical prescription.

Mr. BEVAN replied that it was the duty of a doctor under the National Health Service to prescribe any drug or prescribed appliance which he considered necessary for the treatment of a patient or for the prevention of disease. It was no part of his responsibility to prescribe drugs and household remedies for healthy persons for purposes of self-medication.

Unstaffed Beds—Replying to Mr. HASTINGS on Feb. 10, Mr. BEVAN said that the number of unstaffed hospital beds on Sept. 30, 1948, was 57,500 including 4,800 in sanatoria. He added that there were 1,000 numbers of nurses not actively employed, many of whom would be willing to serve in an emergency. Their names were on an emergency reserve list kept by the Department.

Tropical Diseases Centre—Mr. BEVAN informed Mr. IVOR THOMAS on Feb. 10 that it was proposed to develop a tropical diseases centre as a unit of the London University College Hospital group. He and the Colonial Secretary were anxious to ensure that this development should be worthy of the object in view, and should take place as far as possible in building and other difficulties permitted.

Medical Superintendents—On Feb. 10 Mr. HARDY asked why medical superintendents were not allowed to attend hospital management committees in the Manchester regional area. Mr. BEVAN replied that it was a matter for the committee concerned. He added that after all the desirability of making this arrangement.

Lifeboat—Where a lifeboat has to be used to convey a patient to hospital the expense will be met by the regional hospital board. Where a patient has to be carried out to convey a doctor to a patient, the expense will be met by the local executive council.

Universities and Colleges

UNIVERSITY OF LONDON

George Lindor Brown, M.Sc., M.B., Ch.B., F.R.S., has been appointed to the Jodrell Chair of Physiology tenable at University College, from Oct. 1.

The title of Professor of Neuropathology in the University has been conferred on Alfred Meyer, M.D., in respect of the post held by him at the Institute of Psychiatry.

A name was omitted from the list of recognized teachers of the University printed in the *Journal* of Jan. 22 (p. 159). Mr. C. H. Gray has been recognized as teacher of surgery at the Royal Free Hospital School of Medicine and Dr. J. D. S. Flew as teacher of obstetrics and gynaecology at University College Hospital Medical School.

EPIDEMIOLOGICAL NOTES

Influenza

There were 64 deaths from influenza in the great towns of England and Wales in the week ended Feb. 5, as against 37 in the preceding week. This is not a high figure in comparison with the corresponding one for any previous year other than 1948. There has been an increase in the number and size of outbreaks reported from residential schools, Service establishments, and so on, but in all these outbreaks the disease appears to have been relatively mild and short-lived. Outbreaks are widely scattered.

In France the epidemic is on the wane, but in some regions a slightly higher proportion of serious cases is being reported than in the earlier stages of the epidemic. A number of comparisons between different strains have now been made and show that the virus isolated from cases in the United Kingdom in the latter half of January is identical with strains currently obtained from Continental Europe.

Discussion of Table

In England and Wales there were decreases in the notifications of scarlet fever 120, acute pneumonia 115, whooping-cough 85, and dysentery 44, and increases in the incidence of measles 1,402, cerebrospinal fever 21, and diphtheria 10.

The largest change in the local incidence of scarlet fever was a decrease of 37 in Lancashire. Notifications of whooping-cough increased in Yorkshire West Riding 57 and Lancashire 56 and decreased in Warwickshire 42.

The incidence of diphtheria increased in Lancashire 15, due to the experience of the county boroughs, and in Glamorgan-shire 7.

The largest increases in the notifications of measles were Staffordshire 215, Middlesex 190, London 130, Southampton 120, and Yorkshire North Riding 120; the only large decrease was 95 in Lancashire.

Small outbreaks of dysentery were notified during the week from Cornwall, Bodmin M.B. 7, and Dorset 6 (Beaminster R.D. 3 and Bridport R.D. 3). Other large centres of infection were Lancashire 15, London 6, and Worcestershire 6. Of the 20 cases of poliomyelitis 11 were notified in London and the south-eastern counties; the largest returns were London 4, Southampton 3, Kent 2, and Somerset 2.

In Scotland the only rise in the notifications of infectious diseases was 45 for measles; there were falls in the incidence of scarlet fever 16, diphtheria 14, and whooping-cough 11. Notifications of dysentery increased in Edinburgh from 4 to 9 and decreased in Glasgow from 21 to 7.

In Eire increases were recorded in the notifications of measles 77, scarlet fever 22, and whooping-cough 14. The largest outbreak of measles during the week was in Donegal, Stranorlar R.D. 17. The increased incidence of whooping-cough was contributed by Dublin C.B., where the notifications rose from 27 to 53.

In Northern Ireland a decrease occurred in the notifications of measles 24 and scarlet fever 25. In contrast to the trend for the whole country an increase in the notifications of measles was recorded in the counties of Down 14 and Tyrone 10.

Week Ending February 7

Notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,372, whooping-cough 3,168, diphtheria 116, measles 13,800, acute pneumonia 1,016, cerebrospinal fever 32, acute poliomyelitis 9, dysentery 75, paratyphoid 4, and typhoid 6.

No. 4

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Jan. 29.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths are for: (a) The 126 great towns in England, (b) London (administrative county), (c) The 13 principal towns in Eire (e) The 10

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	45	5	17	8	—	48	6	27	—	1
Deaths	—	1	—	—	—	—	—	—	—	—
Diphtheria	141	10	33	9	5	200	26	56	11	2
Deaths	—	—	—	—	—	—	—	—	—	—
Dysentery	60	6	27	2	5	208	15	29	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	—	—	—	1	—	1	—	—	—	—
Deaths	—	1	—	—	—	1	—	—	—	—
Erysipelas	—	—	43	11	8	—	39	11	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	47	—	—	—	—	—	—
Deaths	34	1	3	4	3	64	8	6	21	1
Measles*	11,656	487	108	118	139	4,233	340	883	88	13
Deaths†	—	—	—	—	—	—	—	—	—	—
Ophthalmia neonatorum	56	6	14	—	—	69	3	7	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	2	—	3 (B)	—	—	4	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza	935	52	31	10	3	850	56	9	6	8
Deaths (from influenza)	37	6	17	1	—	24	3	2	—	1
Pneumonia, primary	—	—	—	—	—	—	—	—	—	—
Deaths	276	52	463	37	10	316	39	260	32	8
Polio-encephalitis, acute	1	—	—	—	—	4	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	20	4	1	3	—	49	6	3	2	—
Deaths‡	1	1	—	—	—	5	—	—	—	—
Puerperal fever	—	—	6	—	—	—	4	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia§	89	9	5	—	1	106	7	12	3	1
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,191	67	272	114	35	1,926	105	355	36	48
Deaths†	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	3	—	1	2	—	2	—	—	8	2
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,857	168	237	80	64	2,725	191	32	65	10
Deaths	7	1	2	1	—	10	1	—	—	—
Deaths (0-1 year)	325	28	45	21	10	407	66	53	21	14
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	5,526	891	852	207	142	5,359	871	709	233	150
Annual death rate (per 1,000 persons living)	—	—	17.1	12.8	—	—	14.7	14.4	—	—
Live births	7,725	1,197	923	368	235	8,566	1,396	958	414	268
Annual rate per 1,000 persons living	—	—	16.5	22.8	—	—	19.3	25.9	—	—
Stillbirths	168	16	33	—	—	216	21	43	—	—
Rate per 1,000 total births (including stillborn)	—	—	35	—	—	—	—	43	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

¶ Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

Medical News

Surgeon to the King

Professor James R. Learmonth has been appointed Surgeon to his Majesty the King. Professor Learmonth is Regius Professor of Clinical Surgery in the University of Edinburgh, and is already Surgeon to the King's Household in Scotland.

Rheumatism Congress in New York

The British Association of Physical Medicine (45, Lincoln's Inn Fields, London, W.C.2) announces that a rheumatism congress will be held in New York in June, 1949. Members wishing to have further information about this congress should communicate with Dr. O. Savage, Deputy Honorary Medical Secretary, Empire Rheumatism Council, Tavistock House North, Tavistock Square, London, W.C.1.

Old People's Welfare

The Third National Conference on "The Care of Old People" was held in London on Nov. 26-27, 1948. The proceedings of this conference have now been published in full as an attractive booklet which can be obtained, price 2s., from the National Council of Social Service, 26, Bedford Square, London, W.C.1.

Mosquito Control

There has just been published a new edition of a *Memorandum on Measures for the Control of Mosquito Nuisances in Great Britain*, which appeared originally in 1940. This has been extensively revised, particularly in regard to the use of the more modern insecticides such as D.D.T. and "gammexane." The *Memorandum* is published by the Ministry of Health (H.M.S.O., price 9d.).

Hunterian Society Dinner

The annual dinner of the Hunterian Society, held at Grosvenor House on Feb. 10, was greatly enjoyed by a distinguished company of members and guests. Sir Walter Monckton, K.C., who proposed the toast of the Society, said that though John Hunter was the father of scientific surgery he must have been the worst witness ever to have appeared in a court of law. From his experience as chairman of St. George's Sir Walter felt justified in saying that life at the hospital was quieter than in Hunter's time: to-day one was unlikely to see any of the surgeons driving from Earls Court to Hyde Park Corner with a couple of buffaloes in the car. In reply the president of the Society, Dr. Mather Cordner, referred to the successful meetings of the previous year and expressed the hope that medicine would continue to attract adventurous spirits. The health of the Lord Mayor and the Corporation of the City of London was proposed by Dr. Franklin Bicknell, and Sir George Aylmer in reply said that he had not realized until a recent visit to Australasia what the leadership of this country meant to medicine and surgery in the Dominions. Mr. Dickson Wright proposed the health of the guests in a witty speech, in which he referred to the present as a time of "weeping, wailing, and nationalization of teeth." Sir Henry Dale in reply said that the Hunterian and kindred societies were in a central position to advance medical knowledge by observation, discussion, and communication, but it would be necessary to cling firmly to independence. Sir Ronald Burrows, K.C., who also replied for the guests, emphasized that both doctors and lawyers must be completely free to follow the course which is to the best advantage of their clients. During the course of the evening the president presented the gold medal of the Society to Dr. J. Lieber for the best essay on the treatment of obesity submitted by any general practitioner in the Empire.

Rehabilitation and Resettlement

The second report of the standing committee on the Rehabilitation and Resettlement of Disabled Persons has just been published. The report reviews the developments of the last two years in the field of rehabilitation and suggests that when the regional hospital boards have had time to review these services in England and Wales accommodation and equipment will be found to be satisfactory in most parts of the country. A brief description is given of the special centres for cardiac cases and of the experimental industrial neurosis unit at Sutton Emergency Hospital. There is also a short account of the special measures taken for the rehabilitation and resettlement of coal-miners. The report is published by the Ministry of Labour and National Service (H.M.S.O., price 9d.).

French Award

The French Government has conferred the Médaille de la Reconnaissance Française on Dr. L. G. Blair.

Honorary F.R.C.O.G.

Sir Henry Dale, O.M., F.R.S., and Professor J. Heyman, of Stockholm, have been elected to the Honorary Fellowship of the Royal College of Obstetricians and Gynaecologists.

McNeill, M.B., Ch B., aged 79.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Infective Hepatitis

Q.—In cases of infective hepatitis in children that I have seen recently there has been rapid clinical improvement without corresponding improvement in physical signs. Should one treat these cases with reference to clinical condition only, or does the presence of an enlarged liver and spleen call for additional rest in bed? Are any further investigations indicated?

A.—The liver may remain enlarged for several months after a severe attack of infective hepatitis. This does not necessarily mean that post-hepatic cirrhosis is going to develop. If, however, the liver edge becomes irregular or the spleen enlarges, the development of cirrhosis can be expected. One of the early indications in a patient convalescing from acute infective hepatitis that the liver is on the way to becoming cirrhotic is to find that, despite an adequate intake of food, the plasma albumin is low and the plasma globulin high. In the particular case mentioned it is advised that the plasma albumin and globulin be determined, and also the cephalin cholesterol and the thymol flocculation tests performed. If none of these indicates any abnormality the child can be allowed to get up and about; it is advisable that exercise be somewhat restricted for a start. The case should be watched for any untoward symptoms until the liver has returned to normal.

Premenstrual Tension State

Q.—Is there any alternative treatment for the cerebral anaemia of the premenstrual phase, with its attendant symptoms of depression, lack of concentration, and extreme fatigability, in a patient who has failed to respond to a salt-free diet with ammonium chloride therapy, and still complains of greatly reduced capacity for mental work for at least five or six days?

A.—The origin of a premenstrual tension state can often be traced back to an emotional shock, domestic upset, or marital difficulty, especially in a highly strung young woman. It would therefore be helpful to know the age, marital status, menstrual, and marital history of the patient as well as her temperament. A mistaken conception of the purpose and function of menstruation should also be excluded. Although it was originally suggested that the condition might be due to a relative deficiency of progesterone, it has recently become more usual to ascribe the syndrome to a high production of oestrogen and progesterone or to an increased body sensitivity to these hormones. Consequently the administration of testosterone is now favoured, even by Freed (*J. Amer. med. Ass.*, 1945, 127, 377), who had earlier recommended the treatment by "decongestion" already tried by the questioner. Testosterone propionate, 20 mg. injected twice weekly throughout the cycle, is advised for severe cases, while in the milder degrees methyl testosterone, 10 mg. sublingually for ten days premenstrually, may suffice. With the higher dosage manifestations of virilism should be watched for. The symptoms of the premenstrual tension state are not generally imputed to cerebral anaemia, but in this patient examination of the blood picture to exclude anaemia would be advisable.

High-frequency Diathermy for Hypertension

Q.—Has high-frequency diathermy proved of any value in cases of essential hypertension or for pain subsequent to coronary thrombosis? If so, what is the dosage, and are there any contraindications?

A.—High-frequency diathermy has been used for over ten years in the treatment of hypertension with varying degrees of success. The fall is most pronounced after the first treatment, and gradually decreases till a more or less constant level is reached. The degree of fall varies with individual cases, being

as a rule greatest with high pressures. According to Meyer's technique, one electrode 10 to 12 cm. in diameter is applied over the region of the heart; the other is placed over the vertebral column, either at the level of the fourth dorsal vertebra or on the left side of the neck at the level of the stellate ganglion. The wavelength is 6 to 16 metres, and sessions lasting 8 to 15 minutes are given every second day. A course of treatment comprising eight to twelve sessions. The systolic blood pressure is measured every two minutes, and any sudden fall or any rise is an indication to stop treatment for that session. Subjective sensations of precordial discomfort or nausea are contraindications to further treatment. Even when the blood pressure is not materially lowered the symptoms may be greatly relieved. This treatment is also used for angina pectoris, but has proved of little value for the sequelae of coronary thrombosis.

Pilocarpine and Eserine

Q.—Can pilocarpine and eserine sometimes produce a dilatation of the pupil in the same way as does atropine? If so, how is this brought about? Is there any literature on the subject?

A.—Most substances like pilocarpine, eserine, and atropine have two actions, the one being the opposite of the other. If 1 mg. of atropine sulphate is taken by mouth, the first effect is to slow the heart rate and to make the skin moist. Then, after one hour (or less), the opposite effect is seen: the heart rate quickens and the skin becomes dry. It is therefore conceivable that pilocarpine and eserine, given in a large dose, may have the same effect as excess of acetylcholine and cause paralysis of the muscles supplied by the third nerve as atropine does, and therefore produce pupil dilatation. This is a very unlikely action, but somewhat more probable with eserine than with pilocarpine. There is no published discussion of this double effect in the eye, but Gaddum's *Pharmacology* (3rd ed., p. 185) might be consulted, and then the paper by E. Bülbring (*Brit. J. Pharmacol.*, 1946, 1, 38), which contains several examples of this double action.

Tinnitus

Q.—A patient aged 52 has been suffering from menopausal tinnitus for 14 months. The left side only is affected, and despite the administration of barbiturates, stilboestrol, and vitamin B complex, and extraction of all the teeth, the condition continues unabated. There is no impairment of hearing. The patient is showing signs of nervous exhaustion, and I should be grateful for suggestions about further lines of treatment.

A.—A trial should be made of bromides, or, if there is hypertension, of iodides. Recently Garnett Passe (*Journal*, Nov. 6, 1948, p. 812) has treated cases of Ménière's disease by sympathectomy, and has claimed relief of the tinnitus in a proportion of them. If these results are confirmed by other workers the operation might be advised in this case. It must be admitted, however, that in many cases tinnitus can only be alleviated.

Dhobie Itch

Q.—A patient has suffered from attacks of dhobie itch every few months since coming to the Tropics eighteen years ago. These cleared up after one or two applications of an ointment composed of 2% salicylic acid, 2% sulphur, and 1% ammoniated mercury in equal parts of lanoline and petrolatum jelly. After a course of tablets containing vitamins and calcium pantothenate, for the last three months he has had a lowered immunity to this infection. What is the explanation of this? The infection is now controlled by daily inunction of the above ointment. Clothing is boiled. Is there any danger in the prolonged use of the ointment? If infected clothes are not boiled, how long will the fungus live in them? Has the cause of the scrotal dermatitis among prisoners of war in Japanese hands at Singapore been established yet?

A.—The diagnosis should be confirmed by direct examination and culture. If positive, infection between the toes and of toe-nails should be considered. Seborrhoeic dermatitis would seem to be a possible diagnosis, and a watery solution of one of the dyes a suitable application. The taking of vitamins

and calcium would not affect a fungous infection, but a state of health demanding such measures might bear upon the diagnosis of a seborrhoeic dermatosis. There is no danger in using the ointment mentioned apart from idiosyncrasy and sensitization. Repeated boiling or formalin treatment of clothes are effective fungicidal measures. Scrotal dermatitis may be evidence of a riboflavin deficiency. The Singapore cases are referred to by Sefton (*Brit. J. Derm. Syph.*, 1947, 59, 85-103 and 159-168).

Frequent Micturition

Q.—An unmarried female aged 26 has suffered from frequency of micturition since the age of 12. This greatly incapacitates her in her work, which entails attendance at lengthy public functions, and causes great mental strain. She can rarely hold urine for more than two hours, frequently passes it every hour, and sometimes several times in an hour, without any apparent predisposing cause. Investigation of the genito-urinary tract reveals no abnormality. The urine is acid with no abnormal constituents; no pathogenic organisms have ever been found. Treatment with alkaline mixtures has had no effect, and sedatives have proved useless. Would you advise the use of vasopressin, and, if so, in what dosage? Would there be any ill effects?

A.—It is assumed that a lesion in the nervous system has also been excluded. There is no indication for the use of vasopressin unless it is established that the frequency is due to polyuria. If there is neither nocturia nor nocturnal enuresis, then the condition is probably a functional one. If not already done, cystometric examination, including estimation of the bladder capacity, should be carried out by a urologist. Treatment would depend on the results of cystometry, but bladder drill—teaching the patient to retain increasing amounts of fluid in the bladder—is well worth trying. Among the drugs, atropine as a parasympathetic depressant, or ephedrine as a sympathetic stimulant, are most likely to be beneficial.

Vaccination for Recurrent Herpes

Q.—Can recurrent herpes simplex be treated by smallpox vaccine? What is the technique, and what are the results?

A.—Recurrent herpes has been treated, with variable success, by vaccinating patients with plasma from their own herpetic vesicles, with a formalinized 10% suspension of herpes-infected pads of guinea-pigs (*Brain, Brit. J. Derm. Syph.*, 1936, 48, 21), and with smallpox vaccine. Arnold (*Proc. Clin. Honolulu*, 1944, 10, 91) reported considerable success in the treatment of 14 patients by this last method. The technique is that normally employed in vaccination, and the procedure may be repeated at fortnightly intervals.

"Dry Socket"

Q.—What is the pathology of the dry dental socket? Can this be diagnosed before extraction, and what is the subsequent treatment?

A.—"Dry socket" is in reality a misnomer, since it is used to describe a septic socket the delay in healing of which is due to infection of the supporting bone. The condition results usually from three main causes: (1) the dislodging of the clot from the socket by mechanical means, such as misguided syringing or plugging into the socket; (2) infection in the socket causing disintegration of the blood-clot; (3) occasional failure of the blood-clot to form, due to excessive local vasoconstriction caused by large amounts of local anaesthetic. It is more prevalent in the lower jaw, owing to the fact that dependent drainage does not obtain as in the upper jaw; and any tooth showing sepsis at the apex is suspect, since any such tooth with deep infection at the bottom of the socket is liable to cause breakdown of the clot. After the tooth has been extracted the socket, if septic, should be treated as for any other septic condition—heat in the form of hot mouth-washes should be applied (hypertonic saline), and local penicillin in the form of pastilles given to reduce the infection; the pain in severe cases may be controlled by very light plugging of the socket with obtundents such as oil of cloves or "dentalone."

Hallux Valgus

Q.—A man aged 55 had a cerebral haemorrhage about six years ago, with resultant hemiplegia of the left side. He has now almost fully recovered the power and movements of the hand and leg, but has extreme hallux valgus, with the hallux at right-angles under the second and third toes. Would an operation be possible and likely to effect considerable improvement? What anaesthetic would be best? He is in good general health but has a chronic bronchial wheeze and cough.

A.—The treatment of hallux valgus should depend on the extent of the disability, as judged from the symptoms and functional capacity, rather than on the anatomical condition of the foot alone. Thus some patients, even those with severe deformity of the toe, are not sufficiently disabled to make operation worth while, whereas others, with relatively slight deformity, may demand operation for relief of arthritic or pressure symptoms. In the case under discussion there would be no particular contraindication to operation; and, if the disability is considerable, correction should be advised. Opinions differ on the question of the most suitable operation, but most would agree that a procedure of the Keller type, with excision of at least the proximal two-thirds of the proximal phalanx of the hallux, would lead to considerable improvement. Thiopentone induction, followed by nitrous oxide and oxygen or cyclopropane and oxygen, would be a suitable anaesthetic.

NOTES AND COMMENTS

"Rapid" Rat Test for Pregnancy.—Dr. A. D. TELFORD GOVAN (Glasgow) writes: In answer to a question regarding the diagnosis of pregnancy by means of rat tests ("Any Questions?" Jan. 15, p. 121) you referred specifically to a 2-hour test. There are four tests described in which the rat is the animal used. These are the 2-, 6-, 24-, and 36-hour tests respectively, all of which have had the description "rapid" applied to them. Eberson and Silverberg¹ reported their results on 24- and 36-hour rat tests and claimed a high degree of accuracy. Similar claims were made by Reiprich,² Walker and Walker,³ and Kelso.⁴ Later, in 1942, Salmon and his colleagues⁵ described a 6-hour test which was accurate in practically 100% of cases. Kupperman, Greenblatt, and Noback⁶ claimed a similar accuracy for the 2-hour test. In the research department of the Glasgow Royal Maternity and Women's Hospital we carry out approximately 1,500 pregnancy tests per year for hospitals and practitioners. During the past year we made a comparison of the 2- and 6-hour rat tests with the Friedman and Aschheim-Zondek tests. Immature female rats were used, and in our technique we doubled the usual dose and injected 1 ml. of urine intraperitoneally into either iliac region. We have found 2-hour tests quite unreliable, due to the difficulty experienced in reading the results. On the other hand, the 6-hour test was very easy to read and found to be as accurate as the Friedman and Aschheim-Zondek tests. Not only was the congestion of the ovaries more marked than in the 2-hour test, but in the majority of cases haemorrhagic follicles appeared. In our experience the 2-hour rat test, because of the difficulty in reading results and the too great importance of the personal factor involved in interpretation, is not suitable for use in the average laboratory. We would, however, recommend the 6-hour test using the double dose indicated. It is speedy, easy to perform, easy to read, and highly accurate.

REFERENCES

- ¹ *J. Amer. med. Ass.*, 1931, 96, 2176.
- ² *Klin. Wschr.*, 1933, 12, 1441.
- ³ *J. Amer. med. Ass.*, 1938, 111, 1460.
- ⁴ *Amer. J. clin. Path.*, 1940, 10, 293.
- ⁵ *J. clin. Endocrinol.*, 1942, 2, 167.
- ⁶ *Ibid.*, 1943, 3, 548.

Correction.—In the article "Enteritis Necroticans due to *Clostridium Welchii* Type F," by Professor J. Zeissler and Miss R. Rassfeld-Sternberg (Feb. 12, p. 267), the name of Lieut.-Col. R. L. Townsend should have been spelt as here, and Brig. H. T. Findlay should have been referred to in the same paragraph, not Dr. G. M. Findlay.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Alitology, Western, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads, Western, London*. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, EUSTON 2111. TELEGRAMS: *Mediseca, Western, London*. B.M.A. Scottish Office: 7, Drumsheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY FEBRUARY 19 1949

THE SECRETARY REPORTS

WHITLEY COUNCILS

The term Whitley Council has appeared from time to time in these columns. It may be as well to indicate rather more precisely what it means in relation to the medical profession. Whitley Councils derived their name from the Rt Hon J H Whitley M.P. Chairman of a Government Committee appointed in 1916 on relations between employers and employees. Broadly, the Committee recommended the formation in well-organized industries of joint negotiating machinery, statutory regulation of wages in badly organized trades, a permanent court of arbitration and Ministerial authority to hold inquiries regarding disputes. Subsequently the Whitley idea, which earned a firm footing in industry, was extended to non industrial fields including the Civil Service and the Local Government service.

In pre Act days questions of remuneration for insurance practitioners were negotiated directly between the Ministry of Health and the Insurance Acts Committee, there being no permanent conciliation machinery in existence. Arbitration on major points of difference was sought as a last resort. It is hardly an exaggeration to say that the first 30 years of National Health Insurance were punctuated by a series of crises on questions of remuneration. A permanent negotiating machinery backed by arbitration is likely to secure better relations and better results.

Government's Proposals

The Government's first proposals for the establishment of Whitley machinery for persons employed in the National Health Service contemplated a National or General Council and a series of Functional Councils, each of these bodies consisting of representatives of employers and representatives of those employed in the Service. The Functional Councils would be competent within their own sphere to decide questions which affect only that sphere, including questions of remuneration. The General Council would secure co-ordination between the various Functional Councils and deal with matters which concern more than one Functional Council. At the regional level it was proposed that there should be Regional Hospital Board Whitley Councils consisting on the employer's side of representatives of the regional board and on the staff side of representatives of the organizations represented on the Functional Councils. The third tier in the proposed structure is found at the hospital level, the regional boards being asked to encourage the setting up of staff committees in each hospital.

It was not clear that the Medical Functional Council would have complete autonomy in determining conditions of service and remuneration of members of the profession engaged in the new Service. It appeared that in certain circumstances decisions affecting the profession might be taken by a body composed predominantly of persons who were not members of the profession. The Association, in common with other interested organizations made representations to the Ministry on these early proposals and after considering the views of the various bodies the Ministry issued revised proposals in March, 1948. Later that year the Ministry summarized its proposals for the application of Whitley machinery in the case of the medical profession as follows:

The Medical Whitley Council—There would be a Medical Council on a functional basis, which would be responsible for dealing with all matters which concern the medical profession only, such as the remuneration and other conditions of service of doctors participating in the National Health Service. The decisions of the Functional Council on all such matters would not need confirmation or ratification by any other Council.

It would probably be convenient for this Council to set up sub-committees to deal with different branches of the profession—e.g., Hospital and specialists services, general practitioner services, public health service. The relations between the Council and the sub-committees would be matters for determination by agreement between

the parties concerned, but our idea would be that the conclusions of the subcommittees would be subject to confirmation by the Medical Whitley Council. They would not require confirmation by the General or any other Council.

The Medical Whitley Council would consist of two sides, the management and staff sides. The management side would contain representatives of the regional hospital boards and boards of governors of teaching hospitals as the employing bodies, the Ministry of Health and Department of Health for Scotland, and also of the local authorities as employers in the public health service. The composition of the subcommittee would vary with the services concerned. The composition of the staff representing the medical profession would be a matter for representatives of the profession to decide for themselves.

The General Council—There would be a General Council made up of representatives of the several Functional Councils. The General Council would be responsible for matters which are of common concern to more than one profession or grade of staff in the National Health Service—e.g., arbitration machinery.

There is also a proposal for a Scottish Council to deal with matters which might require to be considered in the light of special Scottish conditions.

It was emphasized to the Ministry that the profession was anxious that the machinery dealing with general practitioner and public health remuneration should be established as soon as possible. At the same time the Ministry was informed that the general plan set out above was regarded as acceptable on the understanding that all matters of terms and conditions of service of doctors participating in the National Health Service—other than those which it may be agreed to be matters for direct agreement between the Minister and the profession—fall to be decided by the Functional Council without the need of confirmation or ratification by any other body. The Ministry was asked for its suggestions as to the numerical size of the general practice and public health subcommittees. Up to the present, however, it has been unable to proceed with the establishment of a Medical Functional Council because the local authority associations (who will be represented on the management side to the extent that they are employers of practitioners in the public health service) have raised certain difficulties to which attention has already been drawn in these columns.

Present Position

The present position is that a General Council has been set up and is now dealing with matters of common interest such as arbitration procedure and the constitution of joint consultative councils in individual hospitals. The management side of the General Council includes representatives of the Ministry of Health, the Department of Health for Scotland, regional hospital boards, boards of governors, the Association of Executive Councils, and the local authority associations. The staff side consists of representatives of the staff sides of the various Functional Councils which have been established—e.g., the Nursing and Midwives Council, the Pharmaceutical Council, etc.

Seven Functional Councils have been set up for dealing with questions of remuneration and other conditions of service for each of the following classes—namely, Pharmaceutical, Optical, Nurses and Midwives, Professional and Technical Grades (two Councils (a) and (b)), Ancillary Grades and Administrative and Clerical Staffs. The management side of each of these Functional Councils includes representatives of the Ministry and Department of Health for Scotland, regional hospital boards and boards of governors, the local authority associations (except in the case of the Administrative and Clerical Staffs Council) and in the case of the Administrative and Clerical Staffs Council representatives of the Association of Executive Councils. The staff sides consist of representatives of the professional or other organizations concerned.

National Health Service

PRIVATE AND PUBLIC PATIENTS REFERRED TO PATHOLOGISTS OR RADIOLOGISTS

It is recognized that a person may elect to receive some of the benefits of the National Health Service and not others—e.g., that a person who is the private patient of a general practitioner may elect to receive specialist treatment as a public patient. The position has not been so clear, however, where a consultant wishes to have the opinion of a pathologist or radiologist on a private patient and the latter desires the services to be obtained under the public service.

The Ministry of Health makes the following statement:

1. A private patient seen at the physician's or surgeon's consulting-room may be:

(a) Referred to the pathologist or radiologist at the hospital through the out-patient department for examination free of charge as an ordinary National Health Service out-patient.

(b) Referred to a specialist, pathologist, or radiologist as the latter's private out-patient, if the pathologist or radiologist is allowed by his conditions of service to have private practice. In this case the hospital charges fees under the First Schedule of the Pay-bed Regulations and the pathologist or radiologist may charge the patient fees within the maxima in the Second Schedule.

2. Where the private patient of a physician or surgeon is in Section 5 accommodation as an in-patient:

(a) The physician or surgeon may, with the patient's consent, refer him to a pathologist or radiologist on the staff of a hospital for examination and report, the patient being regarded as the private patient of the pathologist or radiologist (this is, of course, if the pathologist or radiologist is permitted by his conditions of service to have private practice). In this case the hospital charges under the First Schedule of the Pay-bed Regulations are not made, but the pathologist or radiologist may charge the patient fees for his professional services within the maxima laid down in the Second Schedule.

(b) The physician or surgeon may, subject to what is said below, obtain an examination and report by a pathologist or radiologist in exactly the same way as if the patient occupied a general ward bed, free of extra charge. The contract of a whole-time pathologist or radiologist who was not allowed private practice should provide specifically that he could render service to patients in Section 5 accommodation. A part-time pathologist or radiologist could, of course, contract with the board to provide service for patients in Section 5 accommodation without charging the patient a private fee; but if his contract with the board did not provide for such service he would be under no obligation to agree to do the examination and report as part of his service for them, and could insist on an arrangement under 2 (a).

In cases 1 (b) and 2 (a) it would be open to the Hospital Management Committee or Board of Governors to waive the maximum professional fees in an appropriate number of cases where the patient agreed to pay more than the maxima.

HOSPITAL PROVISIONAL CONTRACTS

The Minister of Health has requested regional hospital boards and boards of governors to notify hospital medical staff whose provisional contracts expire on March 31 that they propose to extend the provisional contracts until July 4.

Meanwhile the consultants and specialists are negotiating their terms and conditions of service with the Ministry, and regional hospital boards and boards of governors are reviewing hospital posts and staff before readjusting duties where necessary.

CENTRAL CONSULTANTS AND SPECIALISTS COMMITTEE (SCOTLAND)

The Central Consultants and Specialists Committee (Scotland), at a meeting in Edinburgh on Feb. 4, accepted a proposal put forward by the Royal Scottish Medical Corporations for the setting up in Scotland of a Joint Committee similar to the Joint Committee established for the United Kingdom to negotiate with the Government on matters affecting consultants and

specialists in the National Health Service. The committee would consist of the four Scottish representatives on the central Joint Committee, and in addition one representative each of the Royal Scottish Corporations and of the Scottish Committee of the R.C.O.G., and three representatives of the Central Consultants and Specialists Committee (Scotland), a total of 11 members.

In moving acceptance of the proposals, Dr. W. D. D. Small, P.R.C.P.Ed., explained that on the central committee it was accepted that there would be need for a "top-level" committee of this kind to discuss with the Secretary of State for Scotland, as the Minister responsible to Parliament, and his officers, as the administrators of the Health Service in Scotland, matters affecting Scottish consultants and specialists. Mr. T. Murray Newton, referring to what he described as a lively and critical meeting of the Western Regional Consultants and Specialists Committee, over which he presided, said he was instructed to ask for greater representation of the Consultants and Specialists Committee (Scotland) to meet the needs of the Western Region, which embraced the largest group of consultants. Dr. Small, claiming that the basis suggested was equitable, adhered to his motion, since he felt that to do otherwise would mean reference back and harmful delay.

Dr. E. R. C. Walker, Scottish Secretary, suggested that it might help unity and urgency if the constitution was meantime considered to be provisional. Mr. Murray Newton said that in view of the discussion he would accept the responsibility, on behalf of the Western Regional Committee, of agreeing to the proposal on this basis. It was agreed that the provisional period should be one year.

The committee also considered a minute of a meeting of representatives of the Scottish Negotiating Committee and the Medical Superintendents' Society with the Department of Health for Scotland, at which the fear was expressed that a memorandum on hospital administration issued by the Department of Health to regional hospital boards was being regarded by certain boards of management as a directive, and that the duality of control which would result from the introduction of a lay administrator in addition to a medical superintendent would lead to disharmony in the administration of hospitals and would reduce the status and prestige of the medical superintendent, traditionally recognized as the chief executive in Scottish hospitals. Sir George Henderson, on behalf of the Department, gave the deputation an assurance that the memorandum was advisory in nature and suggested that the experiment should be allowed to continue for six months, after which there could be a further meeting with representatives of the profession to review the situation. It was agreed that these developments were of particular importance since they might ultimately lead to the abandonment of the hitherto accepted system of the great teaching hospitals of Scotland.

The matter was remitted to a subcommittee, but meantime it was suggested that acceptance of appointments as superintendents of grouped hospitals was inadvisable until more was known of the salaries likely to be attached to these posts.

FACULTY OF OPHTHALMOLOGISTS

The Honorary Secretary reports that at the Council meeting held on Dec. 17, 1948, it was revealed that the memorandum H.M.C. (46) 83 on the development of the hospital eye service had been prepared by the Ministry under the mistaken impression that it incorporated the views of the Faculty. This document is being revised and rewritten. It was stated that the Committee of Management of the Examining Board in England had accepted the recommendations of the Council regarding diplomas in ophthalmology; these recommendations will appear in the Annual Report of the Faculty.

As a result of the ballot among members of the Council, the following have been elected the representatives of the Faculty on the Ophthalmic Group Committee of the British Medical Association: Mr. George W. Black, the Hon. G. J. O. Bridgeman, Mr. J. D. M. Cardell, Mr. J. H. Doggart, Mr. O. M. Duthie, Mr. A. B. Nutt.

Alert... AND FREE FROM PAIN

When the burden of pain proves too heavy, mental outlook becomes distorted. In such a case the drug of choice is 'Physeptone' which gives satisfactory analgesia while leaving the mind clear.



'PHYSEPTONE'

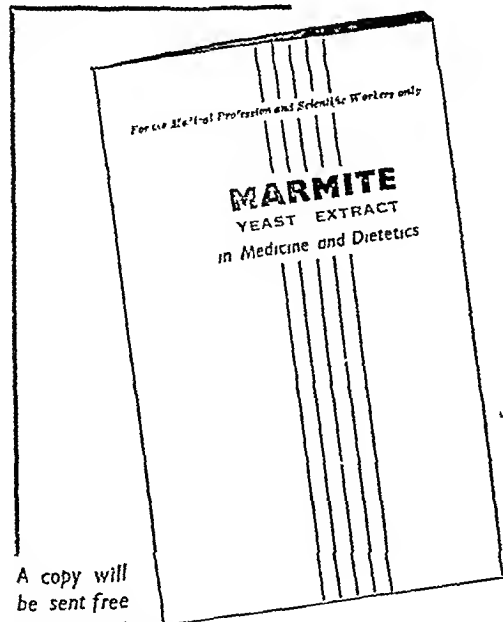
DIAMETHYL-2-METHYL-2-PYRROLIDINE METHANE-5-ONE HYDROCHLORIDE

THE NEW ANALGESIC



BURROUGHS WELLCOME & CO.
(The Wellcome Foundation Ltd) LONDON

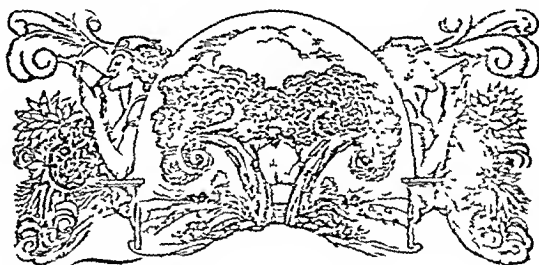
Revised Edition



A copy will
be sent free
on request

THE MARMITE FOOD EXTRACT CO. LTD.
35 SEETHING LANE, LONDON, E.C.3

4929



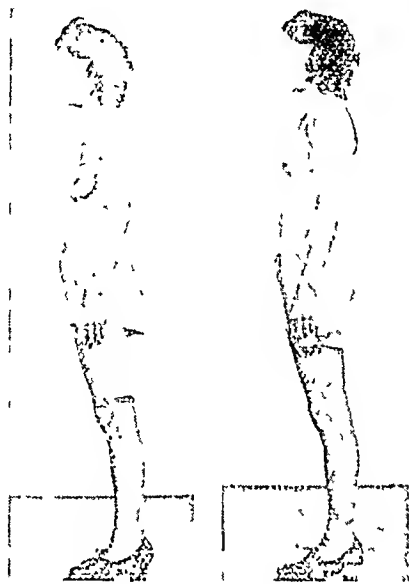
To Maintain proper Nutrition During and After Pregnancy

THE results of modern anaesthetics have emphasized the importance of proper nutrition of the expectant mother, in securing a normal pregnancy, labour and parturition and in endowing the infant with an ideally sound constitution.

The use of 'Ovaltine' throughout pregnancy goes far towards ensuring this ideal state of nutrition. 'Ovaltine' is a natural food tonic prepared from milk, egg extract, cocoa and soya. 'Ovaltine' is delightful in taste and is so readily digestible that restricted diets does not preclude its use.

During lactation it also enriches the milk and permits the mother to continue adequate feeding until the normal time for weaning occurs.





Fasciomyositis, Postural- relieved by a SPENCER Support

The patient pictured here, age 41, was presented to the Orthopaedist in May 1947 with long standing complaints of "Rheumatic" pain, especially in the back. The pain was frequently disabling.

The condition was diagnosed as fasciomyositis, postural—and initial treatment included the wearing of a plaster cast for 10 weeks; then a leather and steel jacket for 3 months. The patient complained of their heaviness and discomfort. A Spencer Support was applied in December 1947. Results have been excellent. The patient has found the Spencer Spinal Support very comfortable. It has corrected the lordotic condition, and improved the posture.

Therapeutically, Spencer provides the degree of support and postural correction required; yet its light weight, ease of adjustment, and comfort help to relieve back pain and, concomitantly, to improve the patient's mental outlook.

For further information write to:—

SPENCER (BANBURY) LTD

Surgical and Orthopaedic Supports
Spencer House and BANBURY Oxfordshire

BEWARE OF IMITATIONS. Spencer (Banbury) Ltd, regret the necessity of issuing warning to beware of copies and imitations. Look for the SPENCER LABEL stitched in the Spencer Support and ensure that it is a genuine Spencer Support and not a so-called copy

Spencer copyright designs are original and distinctive and for more than 20 years have been recognized by the Medical Profession as a symbol of effective control for abdomen, back and breasts.

SUPPLIERS TO HOSPITALS THROUGHOUT THE KINGDOM
UNDER THE NATIONAL HEALTH SERVICE ACTS OF 1946

Trained Fitters available throughout the Kingdom

Copyright Reproduction in whole or in part is prohibited except with the written permission of S(B)Ltd

B.M.J. 2/49

The heart *that is ageing*

In these days when increasing attention is being devoted to the care of the elderly, the use of certain xanthine derivatives has gained considerable favour for improving myocardial function and for patients whose coronaries are probably sclerotic or constricted. A useful representative of this group for routine treatment may be found in

Cardophylin

THEOPHYLLINE-ETHYLENEDIAMINE

VASODILATOR, DIURETIC AND RESPIRATORY STIMULANT

Its use is indicated in Angina Pectoris, Coronary Thrombosis, Cheyne-Stokes Respiration, Oedema, and Bronchial Asthma

Supplied in tablets for oral use, ampoules for intramuscular and intravenous injection and in suppositories.

SAMPLES AND LITERATURE ON REQUEST

Manufactured by WHIFFEN & SONS, LTD.

Home Sales Distribution by British Chemicals & Biologicals, Ltd.
(Benger's—Genatosan Division), Loughborough

to whom all orders and enquiries should be sent

GENERAL MEDICAL SERVICES COMMITTEE

THE N.H.S. CAPITATION FEE

A special meeting of the General Medical Services Committee was held on Feb 9, Dr S Wand presiding, to discuss a report presented by its Remuneration Subcommittee which it was proposed should form the basis of the general practitioner case for remuneration under the National Health Service to be presented to the Government as a matter of urgency. The agreed form of the report is published below.

The chairman explained that the task before the subcommittee had been to work out a method of remunerating practitioners on a capitation basis so as to implement fully the Spens ranges of income. It was the lower and middle ranges of income which formed the principal problem. The matter had been approached from the standpoint of the global sum—i.e., the total sum of money which should be made available on the basis of Spens to general practitioners as a whole. The aggregates so far achieved related to the pre-war total general practitioner income—the Spens adjustment for the amount by which that income was less than it should have been, and the addition for increase of population—had been agreed. A point which had not been settled, since exact figures were not available concerned the addition to be made for the increase in the number of principals. The pool was designed for 17,900. The number of general practitioners in the Service, as now ascertained from official sources, was approximately 20,500. Some correction would have to be made for the inclusion of assistants but probably the number of principals was not less than 20,000. There remained the question of the betterment factor. The Government at the end of 1946 laid down an addition of 20% to net income (or a compound figure of 34% to gross) though at that time the increase for middle class budgets over the pre-war figure was between 45 and 50%. The expert's figure for 1948 was 85%, so that it was evident that the Government addition was now quite inadequate and unless the betterment factor was properly adjusted the remuneration battle would not be won.

Dr F Gray pointed out the desirability of representing to the Ministry that the financial inducements for entrance into general practice should compare reasonably with the inducements to enter special practice. There was a strong financial bias in favour of specialism and unless there was a substantial improvement in the financial expectations of the general practitioner there was a danger that an unduly large number of able men would seek to become specialists. It was agreed to incorporate this point in the memorandum.

The Betterment Factor

A long discussion then took place on the question of the appropriate betterment factor in relation to the increase in middle class budgets. There was some difference of opinion on whether an exact figure or a range between two figures should be proposed to the Government, and there was dissent from any proposal that practitioners' remuneration should be automatically tied to cost of living. The chairman said that the important thing was that the negotiators should go to the Ministry with a figure which could be substantiated.

Eventually the committee agreed that, on the most modest view, it was obvious that unless a compound figure in the region of 70% was applied to gross remuneration the available pool of remuneration would remain inadequate. This was the unanimous view of the committee.

Proposed Augmentation for First 1,000

The committee then devoted itself to considering the distribution of the pool. It was proposed in the memorandum that the additional money made available by the application of a proper betterment factor and other adjustments should be devoted entirely to the augmentation of the capitation fee for the first 1,000 on all practitioners' lists. Thereby all practitioners would benefit, but those with the smaller lists would benefit to a relatively greater extent.

Dr H H D Sutherland pointed out that it was not only practitioners with average or below-average lists who were suffering hardship but often also practitioners with lists above the average. Formerly these practitioners managed comfortably by reason of the fact that they financed their national health

insurance practice from their private practice, and now they had twice as many 'State' patients as before, but, with the disappearance of private practice, less remuneration. It was pointed out, however, that these practitioners, like all others would benefit by what was now proposed.

It was also suggested that if a practitioner with a small list had other sources of income besides National Health Service practice he would be favoured as against his colleagues because he would have the first 1,000 on his list at a relatively high rate. An alternative proposed by one member was the closing of certain over-doctored areas and the establishment of a fund on the lines of the Special Inducement Fund to make it possible for doctors already in the area to be adequately remunerated, but this found no support.

Other objections were that the most successful doctors would be, relatively, penalized and that it would interfere with free choice if there were two classes of N.H.S. patients each with a different rate of payment. It was also urged that, if a differentiation was made, the gap between the two rates should not be large.

It was pointed out that it was desirable that the basic salary, and the Special Inducement Fund should tend to disappear, the one because it was not liked and the other because it was not used. The wise course would be effectively to reduce the number of people who could plead justification for basic salary, and whatever might be the demerits of the system now proposed it had the merit of reducing the field for the two funds.

The chairman said that it was important to emphasize to the profession that this system of augmentation for the first 1,000 meant a substantial increase in the capitation fee for all practitioners. Figures were presented to the committee showing the effect on practitioners' incomes of this adjustment at varying rates for the first 1,000.

The committee agreed that any increase obtained in the global sum should be devoted to an augmentation on these lines and on the proposition of Dr Pridham it was agreed with two dissentients, that the special augmentation of the rate for the first 1,000 or the 'two tier system' be approved in principle, subject to review in the light of experience. A proposal to attach the augmentation not to the first 1,000 but to the first 1,500 or even 2,000 patients was not accepted.

The question of the additional burden of work was postponed to be taken up with the Ministry when fuller information was available, and it was then agreed that, subject to the amendments made the memorandum should be taken as the basis of the general practitioner case to be laid before the forthcoming Special Conference, which would be asked to instruct the committee to press the Government as a matter of urgency to adjust general practitioner remuneration on these lines, the adjustment being retrospective to July 5.

REPORT BY THE GENERAL MEDICAL SERVICES COMMITTEE ON THE REMUNERATION OF GENERAL PRACTITIONERS

PART I

The Adequacy of the Central Pool

1. There is now abundant evidence of the unsatisfactory character of the remuneration paid to general practitioners under the National Health Service Acts. In terms of effective purchasing power the income of general practitioners generally is down, an inevitable result of the application of an inadequate betterment factor. Many practitioners notably those with lists of average and less than average size are experiencing loss of income on such a scale as to spell hardship for themselves and their dependants. The increase of the Mileage Fund to £2 million though welcome is but a partial solution of part of the difficulty. The problems are, first how best to secure that a sufficient sum of money is available for the remuneration of general practitioners as a whole, and secondly, to evolve an equitable method of distribution.

The Spens Recommendations

2. The recommendations of the Spens Committee accepted by the Government and the profession, provide the basis. They fall into two quite distinct parts. In the first place the Spens Committee, informed of the amount and spread of pre-war

general practitioner income, found that the total sum received was insufficient by some £3 million. It proceeded to recommend that to the gross aggregate pool, augmented by some £3 million, there should be applied a betterment factor to adjust pre-war moneys to present conditions, regard being had to two factors—to estimates of the changes in the value of money and to the increases which have taken place since 1939 in incomes in other professions. The committee goes on to say that "it is only if corresponding changes are made in the incomes of general practitioners that the recruitment and status of their profession will be maintained as against these professions."

3. The second part of these recommendations relates to a recommended spread of income in the profession with special reference to the 40-50 age group. The application of this second group of recommendations, necessarily couched in mathematical terms, is a problem of immense difficulty, and it is doubtful whether any system of remuneration can be guaranteed to secure with precise accuracy the exact percentage regarded as appropriate by the Spens Committee. But no such difficulties confront us in the calculation, on the basis of Spens, of the total sum of money which should be made available to general practitioners as a whole. Indeed, unless the aggregate sum is sufficient the recommendations for its spread among the profession can never even approach fulfilment.

How the Present Pool is Calculated

4. It follows that the first task before those who would seek faithfully to implement the Spens recommendations is to calculate the size of the total pool. The Ministry employed this approach when it first put forward its financial proposals. The Department started from the estimated pre-war total of gross incomes from all forms of general practice as calculated by Professor Bradford Hill at £28.14 million. This is an agreed figure. There was then calculated the amount, as agreed between the Government actuary and our own, by which pre-war general practitioner income was less than it should have been. The agreed figure was £3.1 million. So it was agreed between the parties that the pre-war gross aggregate general practitioner income should have been £31.24 million. The Ministry then proceeded to add to that part of the income which goes in practice expenses a betterment factor of 55%. It added to that part of the remuneration which is net a betterment factor of 20%. Compounding these two figures in terms of the betterment factor to be applied to the gross remuneration, the figure came to 34%. The Department then proceeded to add 3% in respect of the increase of the population since 1939, arriving at a gross income of £42.7 million. It was agreed between the Department and ourselves, though it could be no more than a guess, that 95% of the population would use the Service and that therefore general practitioners should get 95% of £42.7 million, or £40.5 million, in respect of service to those persons taking part in the scheme.

5. A certain sum of money, then £1.3 million, was set aside in a separate fund for mileage (recently £200,000 of the Inducement Fund and £500,000 of new money have been added to the Mileage Fund to bring it to £2 million).

6. The Department then proceeded to add certain sums for special purposes. They were 1% for inducement payments (£0.4 million), maternity fees, and grants for training assistants. Altogether the Ministry estimated that there would be an income of about £45 million from the new Health Service alone. It also drew attention to certain indirect benefits equivalent to income such as the Government's superannuation contribution of 8% of the net remuneration—estimated at about £2 million a year.

7. A scrutiny of the Ministry's main calculation reveals that many of the figures employed are agreed between the parties. For example, we agreed to accept £28.14 million as the total pre-war gross income; we agreed that £3.1 million represents the pre-war deficiency; we accepted an appropriate adjustment for the increase in population.

An Important Underestimate

8. In one important respect the Ministry's estimate of the Central Pool has turned out to be inaccurate. The £28.14 million, the estimate of gross aggregate pre-war general practitioner income, was based on a total number of practi-

tioners then in general practice as principals—viz., 17,900. It now emerges from official statements that the number of practitioners who joined the Service on the appointed day was rather more than 20,050, taking England, Wales, and Scotland together. The number to-day is rather more than 20,500. This figure includes some assistants who are on the list. Even so, a modest estimate of the number of practitioners participating as principals in the pool now available is not less than 20,000. This means that approximately 20,000 practitioners are participating in a pool that was designed for 17,900. In the original calculation the Ministry used what then appeared to be a fair figure, but subsequent events have proved it to be a gross underestimate. The profession is entitled to an adjustment of the pool in respect of the factor of the increased number of practitioners in the Service as principals, the adjustment to be retrospective to the appointed day. The amount of money to be added in respect of additional practitioners, calculated on the assumption of 20,000 practitioners, is £3½ million.

The Betterment Factor

9. The figure which was imposed by the Government, but not agreed, is the figure of 20% added to the net remuneration for what has become known as betterment. To the extent to which the betterment figure is inadequate, the whole pool is inadequate, regardless of the mode of its distribution. It is recognized that two factors are involved—the changed value of money and the increase in the remuneration of other professions—though it is clear that in introducing the second factor the Spens Committee had in mind any increase in the remuneration of other professions which would tend to make general practice relatively less attractive.

10. What is the fair betterment figure, taking into account both factors? When the Government laid down its figure of 20% at the end of 1946 the real figure of the increase for middle-class budgets was between 45 and 50%. In other words, when the Government laid down a figure of 120 in relation to 100 pre-war, the real figure was 145. The expert's figure for 1948 is 185. The profession could with reason claim that 185 should be substituted for 120. To put it at its lowest, if 120 were the right figure when the Government first put it forward, the real figure being 145, the figure now necessary to ensure that there is no reduction in real remuneration—now that the real figure is 185—is 160. Such an adjustment would only secure that the remuneration of general practitioners is not less in terms of real money than when the Government first offered the inadequate figure of 120. To put matters right, in relation to cost of living, the figure of 120 should now be replaced by something between 160 and 185. No precise figures are available on the increase in practice expenses in the last two years, though it is probable that they have gone up. Taking the most modest view, it is clear that unless a compound betterment figure in the region of 170 is applied the available pool of remuneration will remain inadequate.

11. The effect of increasing the betterment factor from 34%, the figure now being applied, to the modest figure of 70% here suggested would be of itself to increase the pool by more than £16½ million. It is not surprising that present remuneration should have been found so inadequate when it is realized by how much money the pool is short on any reasonable estimate of the changed value of money. The essence of the case is that the first task of the profession is to secure an adequate pool before the problem of distribution is approached.

The Revised Pool

12. There are set out below in abbreviated form the two calculations. The first, the Ministry calculation made before the Service started; the second, the adjusted calculation to meet the present conditions. It would be necessary from time to time to review the pool in proportion to the number of practitioners in the Service.

13. So far no reference has been made to an important factor. The Spens Committee stated "that unless the financial expectations in general practice are substantially improved the great majority of able men will seek to become specialists." Later it is stated in the Report that "it is important to improve prospects in general practice in order to render this branch of medicine sufficiently attractive to prevent all the able men endeavouring to enter specialist practice."

14 A crucial question is the margin between incomes in general practice and those in specialist practice in the future. The Spens Committee recommended that in the consideration

	Original Ministry Calculation	Adjusted Calculation to Meet 1949 Conditions
Pre-war total G.P. income	28	28
Spens adjustment	3	3
3% population increase	31	31
	1	1
Addition for increase in number of principals	32	32
		32
34% betterment	10½	70% betterment 25
	42½	60½
Adjust for 95% of population Less mileage	40½	57½
	1½	2
Increase necessary	59½	
	16½	
	£52 m	£52 m

of betterment regard should be had to the increases in remuneration of other professions. This must be held to relate not only to increases in income in other professions but to increases in other branches of the profession if the desires of the Spens Committee are to be observed.

PART II

Distribution of the Revised Pool

15 The size of the Central Pool now dealt with, we pass to the problem of its distribution or spread. Any calculations which are now possible to ascertain whether Spens is being applied to current incomes are vitiated by the assumption of the sufficiency of a betterment factor of 20% to the net remuneration or 34% to the gross remuneration. From the survey which has been completed this fact emerges. Despite this limitation, it does stand out most clearly that it is the practitioners with average and less than average lists who are suffering the greatest hardship. It is recognized that in a few instances the small list is due to deliberate restriction or to relative failure. But by and large the difficulty arises because in the absence of private practice—and it has virtually disappeared—few practitioners with average or less than average lists can secure an income of sufficient size. Inevitably the proportion which expenses bear to gross remuneration is higher for practitioners with small lists than for those with large lists.

16 Such conclusions lead the committee to the conclusion that the additional money made available in the Central Pool by the application of a proper betterment factor and the adjustment in relation to the increased number of practitioners should be devoted entirely to an augmentation of the capitation fee for the first thousand on practitioners' lists. The effect of this will be to increase the remuneration of all practitioners while increasing the rate of remuneration of practitioners with smaller lists to a relatively higher extent.

17 The committee recognizes that a case might be made out in favour of deducting from the revised pool some moneys previously regarded as additions to the pool—e.g., the Government's contribution to superannuation and the Special Inducement Fund. Even if such adjustments were made, the additional sum to which the profession is entitled, bearing in mind the Spens Committee's conclusions on the margin between general practitioner and specialist remuneration, is not less than £16½ million.

18 The effect of distributing £16½ million among the general practitioners in the Service, wholly in respect of the first thousand patients on the individual practitioner's list, would be to raise the average remuneration for the first 1,000 on every doctor's list to over 35s per head. For lists of over 1,000, the average remuneration per head for all patients on the list would vary from 26s 7d for 2,000 patients to 22s for 4,000 patients.

The Burden of Work

19 It will be noted that in this memorandum no reference is made to the greatly increased burden of work which the profession is experiencing as the result of the introduction of the Acts. It could have been fairly argued that in devising its recommendations the Spens Committee based them on the assumption that the doctor would do a reasonable day's work and be left with sufficient leisure. It is difficult, as yet, accurately to express this increased burden in terms of statistics. This being so, the memorandum has been limited to considerations which are capable of statistical expression and permit of immediate action. The subject of the burden of work, including non-medical work, may be taken up with the Ministry when fuller information is available.

20 It is proposed that the system of distribution outlined in this memorandum should be reviewed when sufficient experience of its working has been gained.

Recommendation

RECOMMENDATION. That the foregoing memorandum be approved as the basis of the general practitioner case the General Medical Services Committee being instructed to press the Government as a matter of urgency to adjust general practitioner remuneration on the basis of the memorandum the adjustment being retrospective to July 5.

THE G.P. IN THE SERVICE

DR. DAIN ON COMING DISCUSSIONS

A meeting of the Tunbridge Wells Division on Feb 13 was addressed by Dr H G Dain, Chairman of Council. Invitations had been extended to members in seven neighbouring Divisions, and a large proportion of the 200 or 300 practitioners present were visitors. The chair was taken by Dr A M Pollock, chairman of the Division, who was supported by Dr J G Thwaites and Dr R P Liston, members of the Central Council and Dr Moore Ede, divisional secretary.

Dr Dain began by remarking that someone had said to him that Headquarters must now be having an easier time. But things had not worked out like that, although the problems were different. There was more to do now that the Service had been started than there was when it remained in the offing. Before July 5, in contemplation of a service which was to include the entire population, they were right in fixing their attention on the principles on which the Service should be based, and there was some disposition to-day, in considering the hardships which the Service had brought to their brethren in certain types of practice, to forget that certain principles of freedom had been maintained.

Freedom of choice would have been completely destroyed had they accepted a State salaried service, and was it supposed that under such a service certain of the letters which now appeared in the *Supplement* could have been "titten or published"? "We have also established—though it is not as firmly fixed as it should be—the right of the practitioner to put up his plate wherever he wishes to practise, always provided that the area is not one of the few scheduled as restricted."

The Remuneration Problem

Now that the Service had started they were finding where the shoe pinched and what required modification or alteration in an amending Act or in regulations and there was the reconsideration necessary on the subject of remuneration. "Principles without pay would be a poor type of victor." In some quarters there was a demand that the B.M.A. should go to the Government and say, "Thirty shillings or nothing!" It was easy to say that, not so easy to implement it straight away. Obviously unless 100% of doctors or thereabouts were prepared to take that view and follow it up with necessary action it would be foolish to go to the Government and demand it.

What, then, was the central organization doing? The General Medical Services Committee had been investigating all aspects of remuneration in order that claims might be put forward which could not be gainsaid. The first claim was made on behalf of a group of practitioners who were believed to be suffering worst of all. The Ministry was told that something must be done urgently for rural practitioners, and the result

was the increase of the Mileage Fund by another £700,000, so that now it stood at £2 million, approximately three times what it was before July 5. It was understood from typical rural practitioners that this had gone a long way to solve their difficulties.

From the Spens Report the global sum which should represent the general practitioners' pool had been worked out. It had been possible to tender evidence to the Spens Committee by a statistical authority that the income of general practitioners in 1938 was £28 million. The Spens Committee accepted that evidence, and found that general practitioners were then being insufficiently paid. A sum of £3 million must be added to make good that insufficiency on the 1938 figures. A number of other factors had now to be taken into consideration. One was the increase in population in the course of ten years, estimated as equivalent in terms of the pool to another £1 million. Another factor was the difference in the number of principals—just over 20,000—now in the Service as compared with the original estimate of 17,900 on which the early figures were based. The same ratio would add £3½ million on this account.

The Betterment Factor

Dr. Dain then turned to the vexed question of the betterment factor. When the old capitation fee under N.H.I. was raised to 15s. 6d. in 1946 evidence from an expert economist was produced to show that cost of living had then risen from 100 before the war to 145. The Ministry agreed to an allowance for betterment of 55% on practice expenses and 20% on income less such expenses, the figure being compounded at 34% for gross income. If this betterment figure were taken, it appeared from the figures for certain representative sample areas that the Spens recommendations were being implemented, at least in the upper and middle ranges. But the same expert now produced figures for 1948 which had surprised him, although, like everybody else, he knew that cost of living had advanced since 1946. Actually the increase had been by 10 points or more each year, and at the end of 1948 the relevant figure was not 145 but 185 or more. Representations were being made at once to the Ministry that the pool should be augmented in view of the necessity shown for an increase in the betterment factor.

If substantial agreement were obtained on the subject of betterment a great deal of the difficulty concerning remuneration would be solved and Spens would be implemented in terms of present-day values. "This is the first time we shall have had the opportunity of looking at this problem squarely. We shall be in a position to say that we are not prepared to go on working in the Service and see our standard of living seriously depreciated as compared with the rest of the population." (Applause.)

At an earlier visit to the Ministry the officials had produced the White Paper of some twelve months ago on the stabilization of cost of living and income, urging that nobody should apply for increased remuneration and that the cost of living would not go up. But the cost of living had gone up, and so far as he knew many types of worker had applied to have that increased cost of living reflected in increased wages. Doctors, like others, were not asking for a higher rate of "wages" but only for the necessary adjustment in view of the increased cost of living. There was nothing unreasonable or out of place in this; it was happening in every

Capitation Fee and Size of Lists

The second part of the remuneration problem was to see that practitioners who because of the nature of the district in which they worked could not have large lists should not suffer. This problem was now being regarded in a comparatively new light. They had always said that whatever the size of the list a uniform capitation fee must be paid. The fee should be the same whether a doctor had four patients or 4,000. A standard capitation fee seemed to work reasonably well when only a small proportion of the population were brought in it did not work so well when a large proportion were brought in. The proposal which would be placed before the Association was that for the first 1,000 on every doctor's list an increased sum should be paid, the money to come out of the increase of the pool on the lines he had just set out. This increase would apply, of course, to all principals and

partners in a firm whatever the size of their lists. It would benefit the man who had 4,000 on his list as well as the man who had under 1,000. The actual rate for the first 1,000 and the lower rate for those above 1,000 must depend on the size of the pool to be agreed and particularly on the betterment factor. On how far the suggestion of the augmented capitation fee for the first 1,000 would meet the case of practitioners in towns, in the country, and in seaside resorts he had as yet no evidence. If it did not meet the situation other methods must be thought out. The important thing was to ensure that the people working in different types of practices did not suffer materially from the change-over to a national health service. By this he did not mean that there should be no redistribution of doctors. It was evident that in some areas there were more doctors than were necessary and in others fewer. But he recalled that in his own city of Birmingham after the coming into force of National Health Insurance the distribution gradually arranged itself, the doctors going where there was a living to be made, and he hoped that any necessary rearrangement under the National Health Service would come about in the same way. They had successfully resisted any direction imposed upon them from without.

The Amending Bill

There would be an amending Bill, but it had been subject to delays, in the first place because lawyers who were considering the alterations in the Act necessary to deal with the partnership difficulty were long in reporting. They had now reported, and the Government was considering what amendment should be made. Then the Minister had promised that he would put into the amending Bill a statement that the Service would never be made into a whole-time State-salaried service by regulation. Again, the Act did not at present provide—although the Minister had given an undertaking to that effect—that a practitioner was at liberty to settle in the place of his choice, unless it was a restricted area. That was in fact now the case, but it was not yet explicit in the statute. He deplored the action of the doctors in some areas in saying, "We have got quite enough doctors here. We want our area declared over-doctored." If they all did that it would be the worst example of trade unionism—the closed shop.

The profession also desired that the amending Bill should deal with the question of foreign visitors who obtained certain benefits from the Act during their stay. He had been told in Bristol of the case of a foreign seaman who touched at several British ports, and at each of them had his eyes tested and fitted with glasses, no doubt disposing profitably of the surplus glasses on arriving home.

Another thing which it was desired to obtain was security of tenure for the specialist in his hospital appointment. It was also desired to establish fully the position of hospital medical committees in the appointment of representatives to the management committee. There was no provision for this under the existing Act so far as regional hospitals were concerned.

Then it should be made legal for the private patient to obtain his medicines and dressings within the Service. (Applause.) The only thing to be done was to seek an amendment of the Act.

From what he had said it would be evident that the central organization had not been slow in bringing matters to an issue. Action had been taken as rapidly as it was possible to get the facts together. One question postponed for the moment was that of the overwork of practitioners. Practitioners were doing a lot more work for the same money, and in this respect Spens was not completely implemented because the income ranges it laid down were on the assumption that the practitioner would do only a reasonable day's work, and would have time for recreation and study. A reasonable day's work in medical practice was difficult to assess. A doctor's work varied from day to day, and especially from season to season. The time had been too short to enable the Association to obtain such facts as would enable it to deal properly with the overwork problem, but the question would be tackled in due course.

B.M.A. Organization

Finally Dr. Dain discussed the constitution of the Association. Under the terms of the Memorandum the Association suffered from certain disabilities when it came to collective bargaining. The Association was a limited liability company not run for

profit licensed by the Board of Trade to omit the word 'limited' from its title. It could not distribute any of its moneys to its members and therefore it could not offer financial compensation to any who in obedience to its policy suffered loss. Another disability was that it was prohibited from imposing any regulation, restriction or condition which if an object of the Association would make it a trade union. It was not the Association which had put these restrictive covenants into its memorandum; they were put in by the Board of Trade at the time as part of the limited liability licence. Conversion into a trade union or friendly society or any other organization which could distribute its money amongst its members would mean the winding up of the present Association and the distribution of its assets. One barrier in the way of becoming a trade union was that doctors could not be described as either masters or workmen so that the ordinary rules and privileges of trade unionism and in particular, immunity from legal proceedings would not apply even if a medical trade union were established. They were neither employers nor workmen within the meaning of the Trade Union Acts and so would get no advantages of collective bargaining by such a recourse.

The proposal which was approved by the Council would go to a Special Representative Meeting at the end of March was that there should be set up by the Association, but independently of it, a new body in the form of an independent board of trustees with power to organize and finance collective action by the profession and to provide financial compensation for practitioners suffering hardship through participation in such collective action. The new body to be entitled the British Medical Guild. "We do not want to see established a body of limited membership. We want to be able to take action if necessary on behalf of any and every doctor in the profession whether a member of the B.M.A. or not. Our membership is big enough to enable us to take that wide outlook. The policy of the profession would be laid down by the B.M.A. as at present through its Representative Body, but the job of enforcing it would be carried out by an independent body appointed by yourselves with full authority to act for you, which would not be under the disabilities to which I have referred. This will be fully discussed at the Special Representative Meeting."

It was also proposed to reorganize the methods of election to the Council so as to have smaller electoral areas and a larger proportion of members of Council directly elected by the constituencies.

These were the major problems which the Association was facing and he hoped that during the ensuing weeks they would receive serious thought from the membership as a whole, and that local meetings would be held at which constructive ideas would be brought forward and representatives duly instructed.

Points Elucidated

In reply to questions Dr. Dain said that it would not be possible for the Government to refuse a charter for the proposed Guild, also that such a Guild would not be associated with the T.U.C.

A Member. In saying that it is not possible for doctors to organize themselves into a trade union, does Dr. Dain imply that the Medical Practitioners' Union has been living in a fools' paradise?

Dr. Dain. The answer is "Yes" (Laughter).

Asked about fees for immunization, Dr. Dain said that according to the Act immunization should be carried out by general practitioners. The Act also placed the responsibility for doing it on local authorities. The framers of the Act assumed that it was a general practitioner service within the contract with the local executive council, and that the local authority would pay for the certificate stating that it had been done. But on further study it was discovered that this service was not among those to be provided by the executive council, and therefore the council was not in a position to pay for it, and it was not part of the doctor's contract. The local authorities therefore must pay for the service as well as for the certificate. The argument was not yet concluded.

Another question was on the subject of temporary residents. Dr. Dain said that it had not yet been possible to get the Government to move in this matter so as really to start the scheme. But the money would be paid, and the Association was doing its best in the matter.

Further questions related to the Whitley Council. Dr. Dain explained that the Association had agreed that a body of the type of the Whitley Council backed by arbitration should be set up for the profession. It had resisted a proposal that the Whitley Council should be one which covered all employees—nurses and others—in the National Health Service. There had been misgivings on the part

of local authorities who discovered that such an arrangement would react upon the salaries to be paid not only to their medical officers of health but to their other principal officers. The Association was taking action to bring about an early decision.

In reply to a series of questions asked by Dr. A. C. E. Beach Dr. Dain said that the Association had no intention of giving way on the subject of work done, but time must be allowed to discover the exact dimensions of this extra burden of work. That was not possible as yet in the short time during which the Service had been operating. The sample areas surveyed with a view to discovering how far Spens was being implemented were chosen as representative. It was a pure accident that none of them were in the south of England.

On the motion of Dr. Frank Gray a very cordial vote of thanks was accorded to Dr. Dain for his address.

HEARD AT HEADQUARTERS

Medical Film

The film 'Ancient Pectoris' shown by the St. Pancras Division at B.M.A. House recently, was directed by Dr. Joseph E. F. Riseman and photographed by the Harvard Film Service, Harvard University. It is a full-length colour film with a sound commentary lasting some 80 minutes and is a useful visual aid to the study of the subject. The film is in four parts—Clinical Characteristics, Physiology, Pathology, and Treatment. The photography is good and the main captions are excellent though the focus of some of the written material might be improved. The clinical manifestations are well described. The experimental physiology section is interesting and the pathological findings x-ray appearances, and dissections of the injected heart are remarkably clear. Treatment is dealt with exhaustively and the author ingeniously depicted and criticized the multiplicity of methods of treatment. A shot showed a multitude of bottles and remedies which were rapidly classified on shelves as of 'Great value', 'Slight value', and 'No value'. Cupboard doors closed over the latter two, and the emphasis was given to the former. Possibly the film is too long, and the expert might complain that it is too elementary, but for a rapid survey of a difficult subject it is hard to see how it could be improved. The student and general practitioner would be particularly interested. It may be borrowed from the B.M.A. Film Library.

Doing Sums

The members of the General Medical Services Committee revealed themselves as quick arithmeticians during an all-day meeting when they discussed remuneration. Sometimes they talked in millions—global figures—sometimes in shillings and pence, sometimes in percentages and at other times in vulgar fractions, but whatever it was it found them mathematically agile. But apart from the calculations two things emerged: one was the statesmanlike approach to the subject of remuneration. It was not a question of bargaining or chaffering but of fully substantiating every figure put forward so that as between a figure which was probably justified but lacked the final verification and a lower figure which could be fortified by actual facts the Committee chose the latter. The other point was the extraordinary amount of time these calculations and discussions have taken. The Committee itself has had no special meetings on the subject in addition to its regular ones and the members most closely concerned have been meeting on the average once a week since Christmas, entailing for some of them long journeys. This remuneration argument is no matter of putting two and two together and trying to make it five: there are people at the Ministry who can add up.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization.

Metropolitan Borough Councils—Fulham, Hackney, Poplar, Nor-Court, Borough Councils—Dartford, Radcliffe (limited to future appointments), WallSEND.

Urban District Councils—Denton, Droylsden, Houghton-le-Spring, Hutton-with-Roby, Redditch (restricted to new appointments), Tivdesley.

Correspondence

Graduated Capitation Fee

SIR.—Dr. Charles Hill last night (Feb. 1) gave to the Leeds medical practitioners a clear exposition of what the remuneration of G.P.s under the Act means and what the B.M.A. is doing about it. I went home and considered this remuneration problem once more *ab initio*, and the following argument proposed itself.

The Spens Report says that 50% of the G.P.s should earn £1,300 net or more. Dr. Hill told us that when the meagre 20% betterment factor is added the gross figure for 50% of G.P.s should be £2,613. He also said that the average number of patients available per doctor is 2,200. Assuming that as many doctors practise midwifery under the Act as do not, we can leave midwifery fees out of our calculation, and are then left with the fact that £2,613 divided by 2,200 (or 23s. 9d.) must represent the sum to be paid to a doctor for each patient if the Spens recommendation is to be satisfied. This sum of 23s. 9d. includes capitation fee and superannuation, and shows that even with the small betterment factor of 20% the capitation fee should be more than £1.

Next to rural practitioners, for whom a special mileage grant has already been made, the suburban G.P. is the hardest hit by the new Act, for he usually had a practice smaller than the G.P. in the thickly populated area and yet often had greater expenses. His mileage was greater, and so petrol and car expenses were greater. His rent was often higher, and his patients expected a higher standard of equipment. How, asked Dr. Hill, is it possible to help him? The answer is by using a sliding capitation fee. With the present betterment factor, the capitation fee should be 30s. for the first thousand patients, 20s. for the next thousand, 10s. for the third thousand, 7s. 6d. for the fourth thousand, and 5s. for the fifth thousand. The resulting income would be:

For 1,000 patients	£1,500 gross	
" 2,000 "	" £2,500 "	
" 2,200 "	" £2,600 "	(vide Spens)
" 3,000 "	" £3,000 "	
" 4,000 "	" £3,375 "	

This method of remuneration would tend to reduce the lists of those doctors who have more patients than they can adequately attend.

Another problem which is looming ahead is that of correlating the small expenses of doctors working in the new health centres with the large expenses of doctors working from their own rooms in the transitional period when health centres are slowly coming into action. The only fair way is to pay the doctor's expenses at his own rooms and then deduct the same amount as the doctor pays for his rooms in the health centre. It looks a big problem.

My final thought is that the adopted method of remuneration provides a financial stimulus to the G.P. to treat as many patients in a given time in the cheapest surroundings with the cheapest equipment, and I think the profession could well give thought to obviating this by a sliding scale such as I have outlined, remembering that it is based on a 20% betterment factor which is out of date and should be increased to be comparable with the increase in cost of living.—I am, etc.,

Leeds

R. A. MURRAY SCOTT.

Reflections on N.H.S.

SIR.—All of us, I am sure, will thank Dr. R. W. Cockshut for his "Reflections on N.H.S." (*Supplement*, Jan. 29, p. 46), and for telling us at last many of the secrets behind the negotiations. This secrecy of negotiation behind an iron curtain has been one of our main dissatisfactions with the B.M.A., for we have not appreciated being treated as children not yet reached the age of discretion, especially in a matter which has affected the whole of our lives. But now that we know the truth we can feel grateful to those who fought for us, and grateful that so much has been won to make our lives more bearable than they might otherwise have been.

Dr. Cockshut, however, claims certain gains which I personally consider were lost opportunities for altering certain conditions of

service to our advantage. I quote from his article under the heading "Our Gains":

"4. G.P.s are in full and free competition (inside a State service)." There are those of us who hold the considered opinion that a salaried service is not only desirable but even necessary from two aspects: (a) the ethical, because we believe that competition can lead to exploitation by the doctor of bedside manner (salesmanship), or exploitation of the credulity and superstitions of many patients; and (b) the practical, because competition is the economic lever which impels us to be slaves to a 24-hour and 7-day service, a state of affairs which is now an anachronism.

A rota of duty shared by neighbouring practitioners without fear of loss of income (as would obtain in a salaried service) would show an improvement in our health and in our tempers, and also, in direct proportion, in the quality of our work and in the enjoyment of it. It is no doubt extremely gratifying to our patients to have us at their beck and call at every hour of day and night, but let it be understood that under present conditions the G.P. no longer has an incentive to work these long hours of duty. The N.H.S., as I understand it, sets out to provide adequate medical service for all and sundry, without need of financial considerations. This condition would be adequately provided for by a duty rota. It is the B.M.A. which has insisted on the retention of free choice of doctor, and in a salaried service such free choice would obtain during an 8-hour-duty day, but outside these hours the patient would have the services of the doctor on duty. Why not? After all, when a patient is admitted to hospital he does not expect free choice of consultant, nor in practice does he have it. Why therefore should he expect free choice at all times from the G.P. section of the profession? Was not that merely a tradition deliberately engendered by the competition of private practice?

"5. . . and there is no chance of doctors being crammed into health centres before the merits of these have been assessed." "6. We practise in our premises and cannot at any time be forced into a health centre."—An important point here is to ascertain whether Dr. Cockshut is in active general practice at the present time. If he is not, then he can hardly be expected to appreciate the practical difficulties (as opposed to the theoretical) of trying to give a 24-hour service without domestic help in our homes, or to understand that this can in fact only be done at the price of the G.P.'s health and of that of his wife. Living-in domestic help is now unobtainable except in the form of a married couple or of a mother and child, neither of which can many of us afford either in money or accommodation. Daily domestic help, or that of a secretary, is obtainable from 9 a.m. until 5 p.m., but at a wage quite beyond the financial ability of most G.P.s, so long as we are paid at the 1939 value of money while labour is employed at the 1948 value. And these ladies do not work at week-ends. But I can assure Dr. Cockshut that the G.P.'s telephone rings long before 9 a.m. and continues to ring long after 5 p.m., nor is it altogether silent on Saturdays and Sundays. Bearing these facts in mind, I can assure him also that the G.P. awaits with anxiety and anticipation the provision of health centres, and that it would need no force whatever to make them use them.

On this point it would be enlightening to ask the G.P.'s wife to what extent she enjoys having no peace or privacy day or night in what should be her own home either on week-days, at week-ends, or holidays; having her home invaded by any stranger at any hour; having her meals and her sleep disturbed; having to leave the toast to burn and the milk to boil over and the baby to scream in the middle of its feed while she tires her already weary feet in order to answer the telephone or door-bell, as often as not for some quite fatuous reason. Ask her, in fact, how she likes having an office in her home—not just for eight hours, mark you, but during every hour of every day all through the year except holidays. Ask her how she enjoys having a husband whose mind never can be at rest, whose plans are always uncertain, and a home which can never be a home at any time, etc.

Sir, it is my contention that the present hours of duty expected of the G.P. should be altered because they are no longer necessary; that the N.H.S. gives us, for the first time, the conditions under which it is possible to better them; and that this change could be effected by the introduction of a salaried service and by a salaried service only.

Should we ever obtain the beatific working conditions which I envisage, the G.P. could then live at least five miles away from his practice and so be spared the constant interruption of his private life by matters which could be dealt with perfectly adequately by the duty doctor. In fact, had the Minister of Health (in spite of the B.M.A.) given us this inestimable boon many of us, and particularly our wives, would have lived to bless the name of Bevan.

After six months' experience of the N.H.S. I think it essential that a plebiscite should now be held among G.P.s on this point of the desirability of a salaried service so that the medical

negotiating powers could be conversant with the present views of the rank and file of the profession which they represent. Let the G.P. decide for himself whether the freedom gained for his private life would not in fact outweigh all the theoretical disadvantages of a salaried service.

No doubt our patients would not approve at first of the new system, but in time they would get used to it; and when they find that medical help is always at hand in the form of a duty doctor they would not resent the new-won freedom of the doctor and his wife. I feel sure of this, for if nothing before has proved it the N.H.S. has proved, anyway to me, the fundamental consideration of the vast majority of patients when they understand our working conditions and what they mean. As regards the inconsiderate type of patients, who are in the minority, I see no reason for us to pander to their selfishness.—I am, etc.,

Englefield Green, Surrey

W. E. R. BRANCH.

* In answer to a question put in the above letter, Dr. R. W. Cockshut is in active general practice.—Ed., *B.M.J.*

SIR,—I am glad to see that Dr. R. W. Cockshut's conscience is troubling him (*Supplement*, Jan. 29, p. 46) about the part he played in delivering up the profession bound hand and foot in that he finds it necessary to defend it publicly twice in a fortnight. His apology is more accurate on paper than in practice—e.g., local authorities may be banished but many familiar faces survive on management committees.

"We have the absolute right to set up in any part of the country. . . ." Has he tried? Is he aware of the 200 or so applications for each vacancy advertised?

"There will be no capital financial difficulty. . . ." In the bad old days an impecunious doctor could borrow £4,000 and be assured of an immediate income of £2,000 out of which he could live comfortably while repaying the loan. Now, according to Dr. Cockshut, he can set up and be assured of at least £300 per annum for the first year and maybe three times that amount in the second. How does he exist in this period, let alone rent a surgery or buy a car? The buying and selling of practices in a 100% scheme is logically indefensible and could never have been upheld against any political party, but that does not help the unfortunate doctor wishing to set up in practice.

"The decision to hold an immediate plebiscite was one of the wisest the Council took. . . ." He is certainly in a minority there. Most people would agree that it was this action which precipitated the landslide.

"The financial side will be remedied very quickly. . . ." What about the consultants and specialists, who, having lost their private practice, will receive only token payments for at least a year?

I agree with his remarks about losing the initiative; this was a worse tactical error than the second plebiscite. The fundamental and almost irretrievable error was in not getting satisfactory terms of service in black and white before agreeing to enter the Service. Any "well-informed doctor" or one with experience of bureaucratic medicine—e.g., in the Services—could have told him that on entering the Service one surrenders practically 100% of one's bargaining ability. The dentists took care not to enter until they were assured that their terms would be at least financially satisfactory. That this was probably due to a miscalculation on the other side is shown by the fact that their incomes have now been statutorily limited. Whatever one may say or think about the high calling of medicine and sordid financial gain, one cannot attend to the former with a pocketful of unpayable bills, and unless financial security is assured Mr. Bevan will very soon dance on our collective grave.—I am, etc.,

Bexley, Kent.

G. DALLEY.

Openings for Practice

SIR,—Dr. R. W. Cockshut (*Supplement*, Jan. 29, p. 46) has placed his finger on a spot that may become gangrenous in time. The tyranny of the Act will not be exercised by any Minister of Health but by members of our own profession. I think Mr. Bevan genuinely intended that there should be free movement of doctors except inside specially defined areas.

This intention is being thwarted and will be thwarted by the selfishness of local medical committees.

The cumbrous process by means of which a practice can change hands is likely to serve as a medical preserve in most areas. The young doctor is finding it increasingly difficult to settle anywhere. Men who for health reasons or family reasons wish to change into other areas either find themselves in a queue or the post is filled by a favoured nominee of the local medical committee. Everywhere committees are hastening to assure the Minister that their area is over-doctored in case their own lists might become smaller. The liberty of the profession is not being threatened by the Minister of Health but by the members of our own profession. We all know this is so in our own areas.

It is time that a survey is made of the whole of medical practice and—according to the population—openings made, irrespective of local opinion, for all the doctors who are seeking practices. If something of this sort is not done everyone will live and die in the same neighbourhood whether he is successful or unsuccessful. We made a vital mistake in giving up the goodwill of our practices, and our own brethren are riveting the chains with which we have bound ourselves.—I am, etc.,

Cambridge.

A. E. MOORE.

Superannuation and Spens

SIR,—It has been stated in the *B.M.J.* that the State's contribution of 8% of the assumed net income is taken into account in arriving at the true remuneration re implementation of the Spens Report. If this is so, it surely is essential that the superannuation regulations be amended so that, if a doctor dies or retires within five years of entering the National Health Service, he or his executor is refunded the State's contribution in addition to his own, with, of course, interest compounded on both sums. If the State's contribution is not so returnable, it then is certainly not deferred income for the unfortunate doctor who does not do five years' service.—I am, etc.,

Wolverhampton.

LLEWELLYN C. RUTTER.

Fee for Service

SIR,—After reading Dr. R. W. Cockshut's letter (*Supplement*, Jan. 8, p. 16) recommending resignation if there is any more talk by the Ministry of the totally inadequate 20% betterment factor, and that we discard Spens if it does not give us at least a 30s. capitation fee, I was amazed to read his apology for the B.M.A. (*Supplement*, Jan. 29, p. 46) and claim for a limited victory as a result of the Representative Body's surrender to the Minister. Most of the claim has been already shown as hollow or of questionable value by subsequent experience.

As to the betterment factor, what confidence can be placed in the B.M.A. economic expert's figure of 185% as compared with 1938? This calculation does not even include the cost of buying and running a car. One might as well control the price of steel taking no account of the increased cost of coal, materials, equipment, and labour since 1938. Again, large numbers of us do not own houses or have had to buy at post-war prices. A doctor should have an abode corresponding with the dignity of his profession, and this item must be included in the increased cost of living. The index assumption-controlled rents of houses and surgeries, and denies that the effect of post-war prices would be large.

When I read the various suggestions for increasing the capitation fee for the first thousand, weighting it for the old and the very young, and for inducement fees in certain areas, I feel how indissolubly complicated the capitation system must become yet still be unfair. No matter what capitation fee we receive—and we can be sure it will never be adequate from previous experience—our reaction to the capitation patient will always be that inspired by the insufferable nuisances we have on our list. Eliminate all this by an adequate fee for service plus a substantial addition by the patient and we will be paid in proportion to our work. In the country districts a mileage scheme will continue to operate.

I wrote to the Member for Dorset East challenging the Conservative Party, if re-elected, as champions of private enterprise and initiative, and freedom of the individual, to withdraw the compulsory weekly levy on the self-employed, saying that it

was universally detested. He replied that, while in favour of a national health service, the present Act went too far and he felt that a Conservative Government would bring in an amending Bill, but that one of the difficulties was the difference of opinion among medical men. He did not want doctors to be in the power of any Government, and having had experience of State medical services did not like them, except in special cases to meet special conditions. This was a reasonable answer under the circumstances, and I can only hope that most other general practitioners will seize the opportunity without delay to put the same question to their Conservative member or prospective candidate.—I am, etc.,

Bournemouth.

A. R. THATCHER.

The Stream of Specialists

SIR,—In the course of one's hospital career one has seen many men spend some of the most valuable years of their lives preparing themselves for the career of a consultant only to find that the way was blocked by lack of a "vacancy on the staff." Some of the best have been frustrated after years of hard struggle and have naturally become embittered. A feature of present-day hospitals is the large number of clinical assistants, first assistants, and registrars who are already upon the lower rungs of the consultant ladder. A glance over the advertisements in the *Journal* shows that apparently there is an ever-increasing number of these appointments—more than a year ago. There is also a great increase in the numbers of candidates for the higher qualifications. Even allowing for a vast increase in the posts for fully qualified specialists it is impossible to avoid a strong suspicion that in a few years there will be a large number of the brightest young doctors doomed to disappointment in their career.

The problem demands urgently the study by experts on staffing problems in order to promote a steady flow of the required number of consultants and to prevent the formation in a few years of a pool of the cleverest (not necessarily the best) young people in the profession engaged in internecine strife for promotion. It is not a medical problem, and it is really the duty of the Ministry (on grounds of economy alone) to see that this is done. Unfortunately it is open to the cynical to say that general practice is at any rate open to the unsuccessful would-be consultant, but this cannot be accepted at the present day, for their services are wanted in general practice about one year after qualification, not ten years after, when they will have become discontented specialists who have forgotten much of medicine away from their specialty. It may even be difficult for such to get into general practice at that period. It is not too easy to-day.

It is a much more urgent problem than the provision of easy-chairs in out-patient halls. It demands that the policy of the Ministry on future staffing of hospitals (if there is such a policy) be put on the table and submitted to the examination of medical and lay experts.—I am, etc.,

Hefensburgh, Dunbartonshire.

A. E. BARNES.

Association Notices

PROPOSED ALTERATION IN DENBIGH AND FLINT DIVISION

Notice is hereby given by the Council of a proposal to form two Divisions in the place of the present Denbigh and Flint Division as follows:

The East Denbigh and Flint Division: the area of the present Denbigh and Flint Division to the east of the Clwydian Range.

The West Denbigh and Flint Division: that part of the present Denbigh and Flint Division which lies to the west of the Clwydian Range, with the addition of Colwyn Bay, and Colwyn, and Rhos-on-Sea.

Any member affected by this proposal and objecting thereto should write to the Secretary of the Association not later than Feb. 26, 1949.

CHARLES HILL,
Secretary.

ELECTION OF MEMBERS OF THE COUNCIL BY BRANCHES NOT IN GREAT BRITAIN OR NORTHERN IRELAND

As a result of the nominations received for the election of members of Council by Branches overseas the following have been elected for the three years 1949 to 1952:

Branches within the area of the Medical

Association of Eire	P. T. O'Farrell, Dublin.
South Australian, Tasmanian, Victorian, and Western Australian	J. H. Anderson, Ruthin.
New Zealand and Fiji	J. A. Stallworthy, Oxford.
Hong Kong and China, Malaya	J. S. English, Newtownards.

The following candidates have been nominated for the Branches named:

West Indian Branches	H. B. Morgan, London.
	J. B. W. Rowe, Harrow.
Grouped African Branches	L. R. Broster, London.
	P. C. C. Garnham, Farnham Common.

Voting papers will be issued to all the members in these two Groups.

No nomination has been received in respect of the New South Wales and Queensland Branches.

CHARLES HILL,
Secretary.

Diary of Central Meetings

FEBRUARY

- 22 Tues. Committee on the Postgraduate Education of General Practitioners, 2 p.m.
- 24 Thurs. Occupational Health Committee, 2 p.m.
- 24 Thurs. Committee on Psychiatry and the Law, 2 p.m.
- 25 Fri. Film Committee, 2 p.m.

MARCH

- 1 Tues. Health Centre Committee, 2 p.m.
- 2 Wed. Dawson Williams Memorial Fund, 11.30 a.m.
- 2 Wed. Private Practice Committee, 2 p.m.
- 3 Thurs. Special Conference of Representatives of Local Medical Committees, 10 a.m.
- 3 Thurs. Special Meeting of Council, 6 p.m.

Branch and Division Meetings to be Held

CAMBERWELL DIVISION.—At St. Giles Hospital, London, S.E., Tuesday, Feb. 22, 8.30 p.m. Clinical meeting.

CHELSEA AND FULHAM DIVISION.—At Fulham Town Hall, Friday, Feb. 25, 8.30 p.m. for 8.45 p.m. Special general meeting. Address by Dr. L. S. Potter on the latest developments in the N.H.S., with special reference to the reorganization proposals recommended by the B.M.A. Council. Time will be allowed for discussion and questions.

GUILDFORD DIVISION.—At Royal Surrey County Hospital, Guildford, Friday, Feb. 25, 8.30 p.m. Address by Lord Horder: "Where Do We Go From Here?"

HASTINGS DIVISION.—Special meeting announced in *Supplement* of Feb. 12 (p. 80) to be held on Feb. 20, 3 p.m., has been postponed until March 20, 3 p.m.

HASTINGS DIVISION.—At Royal East Sussex Hospital, Thursday, Feb. 24, 8 p.m. Mr. F. T. Moore: "Plastic Surgery."

HENDON DIVISION.—At Hendon Hall Hotel, Tuesday, Feb. 22, 8.30 p.m. Combined address and demonstration by Dr. P. E. Thompson Hancock and Mr. Reginald Ledlie: "Early Diagnosis of Cancer of Stomach." Illustrations by colour cinematography and lantern.

LEIGH DIVISION.—At Boar's Head Hotel, Leigh, Tuesday, Feb. 22, 8.30 p.m. Joint meeting of Leigh and Wigan Divisions. Address by Dr. E. E. Claxton on the present position under the National Health Service, including remuneration and the trade union issue. Discussion and questions will follow.

LEWISHAM DIVISION.—At St. John's Hospital, Morden Hill, Lewisham, London, S.E., Sunday, Feb. 20, 11 a.m. Clinical meeting.

NORTH OF ENGLAND BRANCH.—At Royal Victoria Infirmary, Newcastle-upon-Tyne, Thursday, Feb. 24, 7.15 p.m., Clinical demonstration by Dr. C. N. Armstrong: "Hypopituitarism Following Post-partum Haemorrhage (Simmonds's Disease)." 8.45 p.m., address by Mr. C. Gordon Irwin: "America, 1948."

WESTMINSTER AND HOLBORN DIVISION.—At Post-graduate Medical School of the Royal Free Hospital, at Osnow Gardens, Fulham, S.W., Wednesday, Feb. 23, 8.30 p.m. Dr. M. Lederman: "Cancer of the Cervix." Open to all medical practitioners in the area of the Divisions.

WIGAN DIVISION.—At the Hollies, Wigan Lane, Wigan, Thursday, Feb. 24, 8.15 p.m. Lecture by Dr. R. S. Taylor: "The Diagnosis and Treatment of Heart Disease." A short general meeting will follow.

The permanent offices of the Fellowship for Freedom in Medicine are now established at 45, Nottingham Place, London, W.1.

BRITISH MEDICAL JOURNAL

LONDON SATURDAY FEBRUARY 26 1949

PAIN IN CHILDBIRTH

REPORT OF THE SUBCOMMITTEE OF THE MEDICAL WOMEN'S FEDERATION*

This subcommittee was set up by the Council of the Medical Women's Federation at its meeting in Bournemouth in October, 1947. In the course of correspondence in *The Times* during August and September, 1947, one correspondent had suggested that only married women doctors with children of their own could speak with authority on the need or otherwise for anaesthetics in childbirth, and inquired whether any concerted and thorough study of the whole question had ever been undertaken. This subcommittee was set up with the object of obtaining information on that point.

Method of Investigation

At its first meeting the subcommittee concluded that it was important to collect the necessary information as quickly as possible. It was thought that this information could best be obtained by means of a questionnaire to married medical women. It was decided to question only those whose youngest child was not more than 10 years old. As a preliminary step, a "pilot" questionnaire was sent out to about 300 medical women. The subcommittee is satisfied that the questionnaires were sent to a representative sample of medical women with children under 10 years. Names and addresses were supplied by members of the subcommittee and from information available at the headquarters of the Medical Women's Federation. It was felt by sending out questionnaires rather than by inviting those interested to apply for them, that a more satisfactory cross-section would be obtained of the group from which information was desired.

The questionnaire consisted of two parts, the first containing three general questions on relief of pain in childbirth and the second consisting of a separate sheet for each confinement on which details of childbirth and of the methods of relief given were requested.

The response to the questionnaire proved disappointing and only 196 replies are available for analysis. However a great deal of valuable information has been derived from the existing replies, and the subcommittee feels that no useful purpose would be served by any extension of the present inquiry. An inquiry designed to include all medical women with children would entail sending a questionnaire to all medical women, since there is no means of knowing which of them are married and which of those who are married have children. The response could not be expected to be great enough to justify the expense of an extended investigation of that kind.

*The members of the subcommittee were Professor Lucy Keen and Dr. Annis Gillie (ex-officio), Miss Josephine Barnes (chairman), Dr. Barbara Bailey (hon. secretary), Dr. K. K. Conrad (medical statistician), Dr. Enid Hughes, Mrs. Handfield Jones, Dr. K. G. Lloyd Williams, Dr. Mary Macaulay, and Miss D. Anderton Sharpe.

STATISTICAL ANALYSIS OF SOME REPLIES TO THE QUESTIONNAIRES

BY

K. K. CONRAD, M.B., B.S., D.P.H.

Out of approximately 300 questionnaires sent to medical women, 196 replies were received, giving details of 425 confinements. Of these 221, or approximately 52%, took place within the past five years, and 345, or approximately 81%, took place within the past ten years. Details of these are given in Table A below and also in Table VI. Of the 196 replies, two did not

Table A

Date of Birth	Number of Delivery				
	1st	2nd	3rd	4th and 5th	Total
1943-48	82	7	42	22	221
1943-48	67	20	15	2	104
Before 1943	44	23	9	4	80
Total	193	50	66	28	425

give details of the first delivery and one has been excluded as it occurred over 20 years ago.

The replies to the three general questions are analysed in Tables I, II, and III.

Table I.—Do You Consider that Relief of Pain in Childbirth is Necessary?

Yes	178	Unsure	1
No	6	No reply	1
Sometimes			

Thus 184 out of 196 medical women who have had children are in favour of relief of pain in childbirth.

Table II.—After your First Confinement Did You Dread a Second?

	Type of First Confinement		Total
	Normal	Abnormal	
Yes	18 (14%)	16 (25%)	34
No	169 (86%)	42 (65%)	151
No reply	5	6	11
Total	192	64	256

Table II has been divided for obvious reasons, into normal and abnormal first confinements. Only 14 of mothers having a normal first confinement and 25% of those having an abnormal first confinement dreaded a second.

Table III.—Did You Find that the Memory of Pain in Childbirth Faded Quickly?

Yes	11
No	61
No reply	4
Total	76

The replies to the questions on individual confinements were tabulated into tables numbered IV to XVII. Some of this material has been discarded, as will be indicated in the statistical analysis. There were two main reasons for discarding material: in some cases the information received did not appear to be relevant to the present inquiry, while in other cases the small numbers falling under each heading were inadequate for any conclusion of value to be drawn.

Tables IV and V dealt with abnormalities of pregnancy and with length of labour and reasons for induction of labour where this was performed. The material obtained was too diffuse for any useful conclusions to be drawn from it.

Tables VI and VIa deal with the method of delivery. The most notable feature is the high incidence of forceps delivery.

Table VI.—Analysis of Deliveries

No. of Delivery	Normal*	Abnormal*				All Deliveries
		Forceps	Complicated Breech	Caesarean	Total Abn.	
1st	130	54	1	8	63	193
2nd	123	10	—	5	15	138
3rd	58	6	—	2	8	66
4th	21	1	—	1	2	23
5th	4	—	—	1	1	5
Total	336	71	1	17	89	425

* Twins are counted as one delivery and included in the appropriate normal or abnormal group.

Table VIa.—Analysis of 54 Forceps Deliveries in 1st Group of Table VI

Reason not stated	26
Persistent occipito posterior	11
Uterine inertia	4
Deep transverse arrest of head	3
Foetal distress	2
On after-coming head	2
Face presentation	1
Disproportion	2
Impacted head	1
Cord round neck	1
Prolapsed haemorrhoids	1

The average age of the mothers in this group was 31½ years.

in first births, 54 out of 193, or approximately 27% (standard error (S.E.) 3.2) of first babies, being delivered with forceps. The average age of mothers in this group was 31½ years—slightly higher than the average age of mothers achieving a normal first delivery, which was 29 years. Table VIa shows an analysis of the reasons for forceps delivery, but the large number, 26, who gave no reason for the application of forceps prevents any conclusion being reached.

Table VII, which dealt with abnormalities in labour, was discarded as of no value.

Table VIII deals with the place of confinement.

Table VIII.—Analysis by Place of Confinement

Place of Confinement	Number of Deliveries									Total
	1st		2nd		3rd		4th and 5th			
	Normal	Abnormal	Normal	Abnormal	Normal	Abnormal	Normal	Abnormal		
Hospital	44	19	30	4	7	4	8	0	89	
Private ward	11	0	6	0	2	0	1	0	20	
Public ward	51	31	44	6	21	3	7	3	123	
Nursing-home	23	13	40	5	28	1	9	0	100	
Domestic	0	0	3	0	0	0	0	0	3	
Emergency hospital	1								1	
Car										
Total	130	63	123	15	58	8	25	3	336	

Of the total deliveries 116 (27%) took place in private wards, 166 (39%) in nursing-homes, and 119 (28%) in the mothers' own homes.

Table IX deals with the professional attendants.

Table IX.—Analysis by Professional Attendant

Attendant	1st		2nd		3rd		4th and 5th		Total
	Normal	Abnormal	Normal	Abnormal	Normal	Abnormal	Normal	Abnormal	
Specialist obstetrician	92	57	71	13	31	6	13	3	207
General practitioner	31	6	35	2	19	2	8	0	93
Midwife	7	0	15	0	7	0	3	0	32
House-surgeon							1		1
Born before arrival			2		1				3
Total	133	63	123	15	58	8	25	3	336

Obstetric specialists attended at the delivery in 6 normal births and 89% of abnormal births. An obstetric specialist was engaged by almost all those delivered by wives, but was unable to reach the mother in time to the child.

Table X dealt with the presence or absence of a specialist anaesthetist and the time of his or her arrival. The results of this question were inadequate to permit of analysis, and the table is therefore discarded.

Table XIa deals with anaesthetics given during labour.

The bulk of anaesthetics were given in the second stage of labour, those by far the most commonly used being chloroform and ether.

Table XIa.—Anaesthetics in Stage 2 of Labour. Total Deliveries

Anaesthetic	1st Labour			2nd Labour			3rd Labour			4th Labour			5th Labour			All Labour		
	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
Chloroform	87	11	2	63	8	2	34	3	—	8	1	—	2	1	—	194	24	4
Ether	21	3	—	7	1	—	2	1	—	—	—	—	—	—	—	30	5	—
Chloroform and ether	6	—	—	1	1	—	—	—	—	—	—	—	—	—	—	7	1	—
Gas and oxygen	18	7	2	7	5	2	4	3	2	2	2	1	—	1	—	31	18	7
Gas and air	17	21	12	15	13	7	—	3	2	1	3	2	—	—	—	33	40	23
"Trilene"	4	1	1	5	5	2	2	—	—	2	—	—	—	—	—	13	6	3
Cyclopropane	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—
Thiopentone	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
General?	7	—	—	7	—	—	1	—	—	1	—	—	1	—	—	17	—	—
Basal	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	2	—	—
Phenylchloride	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
No anaesthetic	11	—	—	12	—	—	10	—	—	1	—	—	1	—	—	37	—	—
Total No. of normal deliveries	130	—	—	123	—	—	58	—	—	21	—	—	4	—	—	336	—	—
Normal deliveries receiving anaesthetics	93%	—	—	90%	—	—	83%	—	—	7	—	—	7	—	—	89%	—	—

100% of abnormal births received anaesthetics: a completely satisfactory, b helpful, c, useless.

Classification of Anaesthetics in Table XIa—In general the entries are classified under the main anaesthetic. The ether group includes all gas, oxygen, and ethers. Gas-and-oxygen—given almost entirely by anaesthetist. Gas-and-air—usually given by the patient herself. "Trilene"—trichlorethylene. The basal anaesthetics were "Avertin" (bromethane) and paraldehyde. Thiopentone (pentothal) was given intravenously.

gas-and-oxygen, and gas-and-air. It must be noted that a high proportion of the births in this series took place before the introduction of analgesia with trilene.

Women doctors speak almost unanimously of the efficacy of chloroform given at this time. Out of 222 who received it 194 found it perfect; 24 of the remaining 28 found it helpful, leaving only four dissatisfied with its effects.

There is a suggestion that gas-and-air, administered in nearly every case by the Minnitt apparatus, was slightly more effective in the first stage of labour (see Table XIb), where 43% found it completely satisfactory, than in the second stage, where it achieved that degree of efficiency in only 34% of cases. There is a strong suggestion among the replies to the questionnaires that in the case of gas-and-air and gas-and-oxygen given in the second stage of labour the efficacy of the anaesthetic agent was greatly enhanced when administered by a trained anaesthetist. There are thus three variables—the type of anaesthetic, the experience of the anaesthetist, and the time at which it is given.

Table XIb shows that most of the sedatives and analgesics were administered during the first stage of labour. In the second stage of labour the effect of these drugs is often overshadowed by the additional effect of an anaesthetic. Investigation has therefore been limited to those given in the first stage.

In general, as would be expected, there is a pronounced decrease in the use of these drugs in increasing birth orders.

The sample is a small one, but there are two suggestive series of figures.

First, marked dissatisfaction is expressed with the effects of potassium bromide and chloral, the colloquial "mothers' mist." Out of 80 mothers who received it, 38, or approximately one-half, found it useless, and another 28 found it merely helpful, leaving only 14 who were entirely satisfied with it. Secondly, there is a suggestion that derivatives of opium were more helpful than morphine in a pure state—4 out of 31, or nearly 1 out of 8, finding the former useless, while 10 out of 40, or 1 in 4, found morphine itself useless.

Those who did not reply and had abnormal births all had caesarean sections. In the case of 336 normal deliveries, 53 mothers (16%) were left alone longer than they liked. Out of 89 abnormal deliveries, 12 (13%) made the same complaint. No cause for complaint in this respect was found in 83% of normal and 73% of abnormal labours. Of the 65 mothers who answered "Yes" to this question 40 were in the first stage of labour, 12 in the second stage and 11 at the end of the first stage and the beginning of the second.

Table XIII dealt with the question, "Were you made to wait about at any stage of your labour when you would have preferred to lie down? If so, when?" This table is not given, but the replies received showed that few of the mothers had any cause for complaint in this respect.

Table XIb.—Sedatives and Analgesics in Stage I of Labour. Total Deliveries

Sedative and Analgesic	1st Labour			2nd Labour			3rd Labour			4th Labour			5th Labour			All Labours			Total
	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	
Morphine	12	13	6	2	1	2	1	1	1	—	—	1	—	—	—	15	15	10	40
Morphine and hyoscine	3	3	1	1	1	—	1	—	—	—	—	—	—	—	—	5	3	2	10
Loxone	15	5	4	4	2	—	—	1	—	—	—	—	—	—	—	19	8	4	31
Opium and derivatives	4	2	1	—	—	—	2	—	—	—	—	—	—	—	—	6	2	1	9
Heroin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Barbiturates	—	4	2	1	2	2	—	1	—	1	1	—	—	—	—	2	8	4	14
Ethidine	6	7	4	7	9	2	2	3	2	1	1	—	—	—	—	16	20	8	44
Chloral—pot. brom.	4	15	27	8	7	8	2	4	2	2	1	—	—	—	—	14	28	18	80
Chloral	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	1
Veronal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Anaesthetics																			
Gas and oxygen	4	4	2	—	—	—	1	2	—	1	2	1	—	—	—	6	8	3	17
Gas and air	6	6	3	11	5	4	1	1	—	—	1	1	—	—	—	20	15	11	46
Trilene	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
No analgesics	61			86			—			18			5						
Total deliveries	193			135			66			23			5						
Received analgesics etc., total deliveries	68%			38%			35%			22%			Nil						

a, completely satisfactory b, helpful c, useless

Classification of Drugs in Table XIb—The hyoscine group includes scopolamine. The morphine and hyoscine group includes all "twilight sleep." The barbiturates include "amytal," barbitone soluble ("medinal"), "seconal," "hebaral sodium," thiopentone sodium, thiopentone (not intravenous), and pentobarbitone soluble ("nembutal"). The opium derivatives include "opoidine," "omnopon," "necpenite," and tincture of opium. Heroin=diamorphine. The chloral group includes chloral and potassium bromide ("mothers' mist") and chloral hydrate.

Table XII.—Were You Left Alone Longer than You Liked?

	Number of Deliveries								Totals	
	1st	2nd	3rd	4th and 5th	Normal	Abnormal	Normal	Abnormal		
Stage 1	2	1	0	1	0	3	0	3	7	49
Stage 2	2	1	4	1	2	1	1	0	9	12
Beginning of 2nd	2	2	3	0	2	0	1	0	2	11
End of 2nd	—	—	—	—	—	—	—	—	—	—
Total Yes	28	15	10	5	4	5	2	2	270	6
No reply	1	4	4	2	0	2	4	12	16	—
Total deliveries	130	63	123	15	58	8	25	3	336	425

Table XIV.—Wanted More Relief

No. of Delivery	Stage 1 of Labour			Stage 2 of Labour			Total Births		Grand Total
	N	Abn.	Total	N	Abn.	Total	N	Abn.	
1st	44	22	66	37	13	50	139	63	193
2nd	24	8	32	26	4	30	123	15	138
3rd	15	1	16	16	1	17	58	8	66
4th	7	1	8	4	1	5	21	2	23
5th	1	—	1	1	—	1	4	1	5
All deliveries	91	32	123	84	19	103	336	89	425
Wanted more relief, % total births	27%	36%	29%	25%	21%	24%			

N = normal, Abn. = abnormal

Table XIV deals with the question, "Would you have liked more complete relief?"

A rather large proportion seemed dissatisfied with the relief afforded them during their deliveries, particularly in view of the fact that 148 out of the 193 first deliveries were conducted

by obstetric specialists and that medical women know what to expect when labour starts. This proportion was higher in the first stage of labour among the abnormal deliveries (36% compared with 27% in normal labours), but lower in the second stage. This is almost certainly due to the fact that in the second stage 100% of abnormal deliveries were conducted with an anaesthetic, compared with only 90% of normal deliveries.

Tables XVa and XVb deal with the question of perineal repair.

The answer to the first part is that a large majority of the medical women who completed the questionnaire are in favour of relief of pain in childbirth. Table I shows that 184 out of 196 replied "Yes" or "Sometimes" to the question, "Do you consider that relief of pain in childbirth is necessary?" while only 8 answered "No."

The detailed investigation of the various aspects of childbirth has yielded less definite information. This is due to

Table XVa.—Perineal Repairs

Type of Anaesthetic	1st Delivery		2nd Delivery		3rd Delivery		4th Delivery		5th Delivery		All Deliveries		Total
	Normal	Abnorm	Normal	Abnorm	Normal	Abnorm.	Normal	Abnorm.	Normal	Abnorm.	Normal	Abnorm.	
General	55 (1)	48	40 (1)	7	14	2	2	—	—	—	111 (2)	57	168
Local	9 (2)	—	6 (2)	—	—	—	1	—	—	—	16 (4)	—	16
None	8 (1)	—	5 (1)	—	5 (1)	—	—	—	—	—	18 (3)	—	18
Total	72 (4)	48	51 (4)	7	19 (1)	2	3	—	—	—	145 (9)	57	202
Total births, excluding caesarean	130	55	123	10	58	6	21	1	4	—	336	72	
Average age of mother	29	31	32	—	35	—	—	—	—	—	32	31	

The numbers in brackets received inadequate anaesthetization

Table XVb.—Perineal Repairs. Approximate Percentage of Total Births, Excluding Caesarean

Type of Delivery	1st Delivery	2nd Delivery	3rd Delivery	4th Delivery	5th Delivery	Total Deliveries
Normal .. .	55% (S.E. 4.4)	41% (S.E. 4.4)	33% (S.E. 6.2)	14% (S.E. 7.8)		43% (S.E. 2.7)
Abnormal .. .	87% (S.E. 4.5)	70% (S.E. 15.3)	33% (S.E. 21)			79% (S.E. 4.8)
Total .. .	69%	44%	33%	14% (—)	Nil	50%

The position with regard to anaesthetization for perineal repair seems to be satisfactory on the whole. A general or local anaesthetic was given in the majority of cases and only 6 out of 184 mothers were dissatisfied. In the 18 cases where no anaesthesia was given only three expressed dissatisfaction.

A large proportion of the mothers required episiotomy or suffered perineal tears (see Table XVb): 55% (S.E. 4.4) of normal first births, 41% (S.E. 4.4) of normal second births, and 33% (S.E. 6.2) of normal third births. The average age of these mothers who required perineal repair was 29, 32, and 35 years respectively. Abnormal deliveries showed a higher incidence. In the larger sample, taking all normal deliveries together, the percentage requiring perineal repair was 43 (S.E. 2.7).

Table XVI and XVII dealt with the two questions, "Did you take any special steps in this pregnancy in order to diminish pain in childbirth? If so, what?" And, "Did you practise antenatal exercises for this purpose; if so, do you think they were of value?" The majority of the mothers answered "No" to these questions, and it is felt that not enough information was received from the replies to make it worth while to give those tables in full.

GENERAL NOTE.—With the exception of the differences between normal and abnormal cases shown in Table XVb, none of the differences noted as suggestive are statistically significant. In other words, the trend of the differences is suggestive but they could in fact be due to chance alone. The present sample is too small to minimize the effect of chance on the results of the analysis.

Conclusions

This subcommittee was set up with the object of obtaining the opinion of women doctors who had children of their own on the need or otherwise for relief of pain in childbirth. It was also asked to carry out a concerted and thorough study of the whole question. The only possible method of carrying out such an investigation was by a questionnaire, a method which is immediately limited by the number who reply. Although the numbers are relatively small, there is reason to suppose that the sample is representative and that certain definite conclusions can be drawn from the results.

two factors—the small numbers in the sample and the highly complicated nature of the problem. The investigation has shown the great diversity of drugs and anaesthetics used for analgesia and anaesthesia in labour. New analgesic and anaesthetic agents are being continually discovered and used in obstetric practice. It is noteworthy that very few of the medical mothers received pethidine and trilete, both agents which have found great favour in obstetric practice in recent years and which are now used to a large extent in many obstetric departments. It is therefore probable that if this investigation were repeated in ten years' time the picture from the point of view of actual analgesics and anaesthetics would be very different. In the present investigation, however, much of the information received from the detailed studies is highly suggestive.

It is found that the majority of the medically qualified mothers did not dread a second confinement even after an abnormal first confinement (Table II) and that over two-thirds (Table III) found that the memory of pain in childbirth faded quickly.

The striking feature of Table VI, which analyses the method of delivery, is the high proportion delivered by forceps. This stands in contrast to the relatively low caesarean section rate. It is not possible to analyse the reasons for the large number of forceps deliveries—54 out of 193 first labours—though it may be accounted for in some cases by demand for delivery from the mothers themselves or to over-anxiety on the part of the attendant.

Table VIII shows that the majority of the confinements took place in the private wards of hospitals or nursing homes, only 28% of mothers being confined in their own homes. Table IX, which deals with the professional attendant, shows that the majority of the mothers engaged an obstetric specialist for their confinements.

Two highly suggestive facts emerge from Table XI, which deals with anaesthetics given during the second stage of labour. Women doctors are almost unanimous in their

praise of chloroform, though, as previously mentioned, the majority of these births took place before trileine came into wide use for obstetric analgesia. The presence of a trained anaesthetist appeared to enhance the effect of gas-and-air or gas-and-oxygen.

Table XIb deals with sedatives and analgesics, mostly given during the first stage of labour. A suggestive fact here is the almost universal dissatisfaction with potassium bromide and chloral mixtures. There is also the suggestion that derivatives of opium itself, such as tincture of opium and papaveretum (omnopon, opoidine) are more effective than morphine in the pure state. The small numbers in each group preclude any further conclusions from this table.

Table XII deals with the question, "Were you left alone longer than you liked?" The answers showed that only 65 mothers out of 409 who answered this question had any complaint in this respect, but those who answered "Yes" felt very strongly about the matter.

Table XIII dealt with the question, "Were you made to walk about at any stage of your labour when you would have preferred to lie down?" The replies showed that only a few mothers had any complaint in this respect.

Table XIV deals with the question, "Would you have liked more complete relief, and, if so, when?" The replies showed that a rather large proportion of the mothers would have liked more relief. This may be partly explained by the fact that there is as yet no safe method of analgesia which is completely effective in all stages of labour—a point which only serves to stress the need for continuing research into methods of relief of pain in childbirth. The majority of these labours were conducted by obstetric specialists, who are likely to be familiar with the best available methods of relief and to offer them to their patients.

Tables XVa and XVb show that the situation with regard to perineal repair is on the whole satisfactory. Tables XVI and XVII dealt with antenatal exercises and preparation for childbirth. Unfortunately the information gained from these tables was inadequate. While there is a real need for information on these points, it could be gained equally well from mothers who are not medically qualified.

The subcommittee feels that this investigation has yielded some important information and has also indicated possible lines of future investigation into the conduct of childbirth. As stated earlier, it is not felt that any extension of this particular investigation would be worth the work and expense involved. This report is presented as fulfilling, at least partly, the terms of reference of the subcommittee and in the hope that it will prove of value.

It is fully realized that the medical mothers studied in this report represent a specially privileged group and that the type of obstetric care they received cannot, at any rate for many years, be made available to all mothers. It is well known that even when elaborate equipment is not available a doctor or midwife can safely relieve much of the suffering of childbirth. In spite of this, the scope and availability of obstetric analgesia in the country as a whole leave much to be desired. The medically qualified mothers in this series are, with few exceptions, emphatic in their opinion that relief of pain is necessary in childbirth, and it is hoped that it will not be long before adequate means of relief are made available to all mothers.

Summary

The Subcommittee on Pain in Childbirth was set up by the Council of the Medical Women's Federation to obtain information regarding relief of pain in childbirth from married women doctors with children of their own.

A "pilot" questionnaire was sent to about 300 medical women, and 196 replies were received from those whose youngest child is not over 10 years of age.

Analysis of the replies shows that women doctors who have themselves had children are almost unanimously in favour of relief of pain in childbirth.

It was found that in the majority of cases the mothers did not dread a second confinement, and also that the memory of pain in childbirth faded quickly.

Analysis of the method of delivery showed a high incidence of forceps delivery in primigravidae. No adequate explanation can be given for this.

Analysis by place of confinement and by professional attendant showed that the majority of medical women are confined in private wards of hospitals and nursing-homes and the majority are cared for by obstetric specialists.

Analysis of anaesthetics given mainly in the second stage of labour shows that this group of medically qualified mothers found chloroform by far the most effective anaesthetic agent. It is noted that most of these births took place before trileine came into wide use in obstetrics. The efficacy of gas-and-air and gas-and-oxygen appears to be enhanced by the presence of a trained anaesthetist.

The small size of the sample precludes any definite opinion on the relative efficacy of the various drugs and sedatives given in the first stage of labour. The results, however, show considerable dissatisfaction with potassium bromide and chloral mixtures.

Out of a total of 409 mothers who answered the question, "Were you left alone longer than you liked?" 65 answered in the affirmative. Few mothers were made to walk about during their labours when they would have preferred to lie down.

A rather large proportion of the mothers stated that they would have liked more complete relief, 123 out of 425 deliveries, or 29%, for the first stage and 103 out of 425 deliveries or 24%, for the second stage.

The situation with regard to perineal repair appears to be satisfactory.

No information can be obtained from this series regarding the value of antenatal exercises or of preparation for childbirth. Two questions were asked on these points, but no information of practical value could be obtained from the replies.

Dr. K. K. Conrad has carried out a tremendous amount of work in analysing the replies to the questionnaires and in compiling the statistical report. The other members of the subcommittee are greatly indebted to her.

The subcommittee would also like to express its thanks to Miss Mabel Rew, secretary of the Medical Women's Federation, for her help with correspondence, in sending out questionnaires, and in tracing names and addresses of medical mothers.

The National Birthday Trust Fund has given this investigation a grant to cover all expenses. The Medical Women's Federation would like to express its great indebtedness to the Fund.

The Ministry of Health has issued a memorandum on the treatment of mentally defective patients from institutions. The foundations of the scheme are (1) the selection of patients fit for community care, (2) choice of a suitable licensee and environment, and (3) social and medical supervision. The fuller the social training given and the greater the degree of supervised freedom and responsibility allowed, the easier it is to judge of a patient's capacity to live outside. An ancillary hostel from which they can go out to daily work is useful in testing their fitness for licence in the community. Mentally defective persons are generally unfit for the responsibility of marriage and parenthood, but the Board of Control considers that, where a patient who has been regarded as sufficiently stabilized for community care is found to be married, the presumption is in favour of discharge provided there is ground for thinking that the couple can maintain a home. Before recalling a patient who marries or is about to marry the superintendent should obtain full information, including a medical report on the patient's mental condition and reports on the character and financial position of the spouse and other relevant circumstances. The Board will then consider this information as well as the opinion of the hospital management committee before deciding on the question of discharge.

TUBERCULOUS MENINGITIS

EARLY DIAGNOSIS, AND A REVIEW OF TREATMENT
WITH STREPTOMYCIN

BY

J. RUBIE, M.D., M.R.C.P.

*Assistant Medical Officer, Highgate Hospital
(Archway Group of Hospitals)*

AND

A. F. MOHUN, M.B., B.S.

Senior Assistant Pathologist, Archway Group Laboratory

At a unit at Highgate Hospital, established under the auspices of the Medical Research Council, 67 cases of tuberculous meningitis were admitted during the period July, 1947, to August, 1948. We have analysed the clinical and pathological findings in these cases and in a further 9 patients who recovered without streptomycin.

For the purpose of assessing the results of streptomycin treatment the analysis is confined to 54 cases (Table I) admitted during the period July, 1947, to May, 1948, giving a minimum observation period of 231 days (8 months).^{*} Of these cases 23 were included in the Medical Research Council Report (1948).

Diagnosis

History of Contact.—A history of contact was established in 23 of 67 cases (34%). Patients under 3 years of age differed from older patients as shown in Table II.

TABLE II

	Total No.	No. giving History of Contact
Parents under 3 years of age	21	12 (57%)
Patients over 3 " "	46	11 (24%)
	67	23 (34%)

 χ^2 5.7 $P < 0.02$.

Three of the nine patients who recovered without streptomycin treatment gave a history of contact with tuberculosis.

Clinical Findings

Table III summarizes the main clinical findings and illustrates the interval between the first appearance of signs and symptoms and the day of diagnosis—the latter being the day on which the decision was made to start streptomycin treatment.

In this series of 67 cases the basic pattern of the disease was remarkably constant. Tuberculous meningitis has a prodromal period, characterized by irritability, listlessness, and fatigue, and failure to gain (or actual loss of) weight. It is not possible to know how long this stage lasts in any given case; it may be a few days or as long as three months. The child may appear to recover temporarily, or may pass directly into the next stage, characterized by headache, vomiting, anorexia, constipation, and fever (in that order of frequency of occurrence). Table III shows that diagnosis was most commonly made eight to fifteen days after the beginning of this second stage. Drowsiness, squint, photophobia, and neck rigidity came later, preceding diagnosis by one to five days.

Twenty-one of our patients were under 3 years of age. In this age group some of the signs and symptoms described above are not easily discernible or are impossible to elicit because such patients are often unable to convey complaints.

^{*}Cases admitted after May, 1948, form part of a series alternate members of which received intrathecal "sulphatrone" in addition to streptomycin; we hope to report on this series later.

TABLE III.—The Interval between the First Appearance of Signs and Symptoms and the Day of Diagnosis

		Days before Diagnosis									
		0-3	4-7	8-11	12-15	16-20	21-30	31-40	41-50	51-60	61-70
Headache	..	2	3	12	10	2	6	1	0	1	1
Vomiting	..	4	10	16	5	2	4	0	0	0	0
Anorexia	..	1	2	5	7	3	3	2	0	0	0
Constipation	..	0	5	5	3	0	0	2	0	0	0
Irritability	..	2	2	4	4	2	1	2	1	0	0
Fatigue	..	0	3	2	2	3	1	1	1	0	0
Wasting	..	0	0	0	2	1	1	0	1	1	0
Drowsiness	..	6	8	6	3	1	0	0	0	0	1
Squint	..	3	1	0	0	0	0	0	0	0	0
Fever	..	1	2	6	3	1	2	0	0	0	0
Neck rigidity	..	21	7	2	0	0	0	0	0	0	0
Paralysis	..	0	0	1	1	0	0	0	0	0	0
Fits	..	4	0	1	0	0	1	0	0	0	0
Delirium	..	1	2	0	0	0	0	0	0	0	0
Coma	..	6	0	0	0	0	0	0	0	0	0
Abdominal pain	..	0	1	0	1	0	0	0	0	0	0
Diarrhoea	..	0	1	0	2	0	0	0	0	0	0
Photophobia	..	4	0	0	0	0	0	0	0	0	0

The figures in the body of the table indicate the frequencies of occurrence of the intervals.

The prodromal features may be missed in this group; listlessness may be difficult to detect, and minor degrees of irritability may be attributed to teething or feeding difficulties. Such patients may be unable to disclose the presence of headache (the earliest and the commonest ever in the next stage), so that vomiting becomes the presenting feature. In very young patients the disease tends to run a more rapid course; the vomiting may rapidly give place to meningism, squint, drowsiness, and soon to coma. Vomiting (rapidly followed by meningism) was the earliest sign in 23 of the 67 patients, and 16 of these 23 were not more than 3 years of age, the oldest of the 23 being years of age.

Apart from the variations in mode of onset due to age certain less common signs and symptoms may be superimposed on the general pattern, or the presenting feature may be notably few in number. Three patients (all under 3 years of age) presented with fever only—followed by neck rigidity within a few days. In three cases diarrhoea accompanied vomiting, giving rise to a misleading picture of gastro-enteritis; in another two cases abdominal pain was prominent. Fits or convulsions occurred in six patients in one of these the fits preceded all else by ten uneventful days; in another the fit was followed by a hemiplegia which lasted six hours and then disappeared; in the remaining four patients fits were a late feature.

Transient paralysis of arm and leg (lasting 24 hours) occurred in one case 15 days before diagnosis and led to an initial diagnosis of poliomyelitis. Transient loss of speech for a few hours accompanied by a headache (which persisted) was noted in one case 40 days before diagnosis. Symptoms of the "middle stage" (see below) followed two weeks later. In two cases whooping-cough, and in one case mumps, occurred a few weeks before the onset of signs and symptoms of tuberculous meningitis.

In three cases the child had sustained a blow on the head before the illness. One of these cases was admitted to a hospital with headache and vomiting following a kick on the head, and was there found to be suffering from tuberculous meningitis (previously the child had appeared to be quite well).

On admission to the unit, all cases were classified in the following manner. Early cases (E): fully conscious patients with no focal signs and little or no meningism, but with pathological cerebrospinal fluid and a characteristic meningeal picture. Middle cases (M): fully conscious but sometimes drowsy and lethargic, with neck rigidity and perhaps focal signs. Advanced cases (A): unconscious or deeply stuporous patients. The length of the period of illness before admission bore no constant relation to the stage on admission.

Mental Picture on Admission.—The mental picture was that of apathy, with poverty of speech and movement even in fully conscious patients—often accompanied by resentment of even the slightest interference. We have come to the conclusion that this mental attitude is the most valuable single criterion in the differential diagnosis from other forms of meningitis. The apathy may later give place to a state of confusion, in which the patient lies quietly in bed; interrogation will reveal varying degrees of withdrawal from the environment. Occasionally noisy confused behaviour alternates with the apathy. This mental picture is of course recognized as indicative of raised intracranial pressure.

Eyes.—Papilloedema is a common finding in middle or advanced cases. Choroidal tubercles were seen in 5 cases in association with miliary tuberculosis of the lungs accompanying the tuberculous meningitis.

Diagnostic Investigations

(i) **Mantoux Test.**—This was completed in 51 cases; 16 patients lived only a few days after admission. The reactions are shown in Table IV.

TABLE IV

	E Cases	M Cases	A Cases	Total Cases
Positive at 1 in 10,000 ..	17	13	4	34
.. 1 in 1,000 ..	6	3	3	12
.. 1 in 100 ..	0	3	1	4
Negative in all three dilutions ..	0	1	0	1

A positive reaction was defined as an area of oedema measuring at least 8 mm. in diameter.

(ii) **Chest Radiograph.**—Definite abnormalities in the chest x-ray film were seen in 50 of 66 cases (one patient died before radiographs could be taken). They comprised:

a) *A primary complex* (usually hilar adenitis, sometimes accompanied by indications of pulmonary collapse) in 35 cases. (b) *Miliary disease of the lungs* in 13 cases. (A further 6 cases proved at necropsy to have miliary disease of the lungs, although there was no radiological evidence of this during life.) (c) *Phthisis*, present in two adults. In the remaining 16 cases no abnormality was seen.

(iii) **Cerebrospinal Fluid.**—The following investigations were carried out:

Cell Count.—The cell count ranged between 30 and 1,000 cells per c.mm. The figure bore no relation to the stage of the disease on admission. The picture was predominantly lymphocytic in all but two cases.

Protein Content.—All cases (with one exception) showed increased protein at the initial lumbar puncture: the figures ranged from 35 mg. to 3.5 g. per 100 ml., and bore no relation to the stage of the disease, except that grossly raised protein levels were usually associated with spinal loculation due to spread of the disease down the theca.

Chlorides.—It is generally appreciated that though a falling chloride level in the C.S.F. is often found the level is not usually of great help in diagnosis, because in early cases it may be quite normal or only slightly reduced. Our figures confirm this view.

Sugar.—C.S.F. sugar levels were not accurately estimated in the early period of our work, as it was not appreciated that diagnostic information would be obtained. When later such estimations were performed approximately 1 ml. of C.S.F. was collected in a separate bijou bottle containing an appropriate amount of sodium fluoride. The sugar levels at initial lumbar puncture are summarized in Table V. It will be seen that in no case was the level above 45 mg. per 100 ml. The significance of these figures is discussed later.

Direct Examination of C.S.F. for Acid-fast Bacilli.—Prior to and within 48 hours of admission, acid-fast bacilli were seen in the centrifuged deposit of the C.S.F. in 39 of 67 cases (58%).

TABLE V

C.S.F. Sugar mg./100 ml.	No. of Cases	C.S.F. Sugar mg./100 ml.	No. of Cases
5+	2	30+	1
10+	4	35+	5
15+	6	40+	2
20+	4	45+	—
25+	4	50—	—

Five further cases first showed acid-fast bacilli at later dates. The organisms were often very scanty in number.

Culture and Guinea-pig Inoculation.—Culture of the C.S.F. was made on Löwenstein medium in every case and a guinea-pig inoculation was carried out. The results* are summarized as follows: total cases, 67; positive by culture and/or guinea-pig, 58 (87%). Nineteen cases whose C.S.F. was negative by direct examination for acid-fast bacilli were verified bacteriologically by culture and/or guinea-pig inoculation. Four cases were diagnosed by microscopic examination of the C.S.F. but failed to yield positive cultures or inoculations. (The diagnosis in these cases was verified at necropsy.) If these are added to the positive cultures and inoculations the total number of cases diagnosed bacteriologically (otherwise than by post-mortem examination) is 62 (92%). Varying numbers of strains from 43 patients have shown no significant streptomycin resistance.

Differential Diagnosis

Nine patients admitted to the unit as cases of tuberculous meningitis were not treated with streptomycin. Meningitis was present in all. Their ages and the findings in the C.S.F. are given in Table VI.

TABLE VI

Case No.	Age (Years)	C.S.F. Findings				Remarks
		Cells	Protein	Chlorides	Sugar	
68	4½	193 (L. 95%)	160	710	—	N. in 19 days
69	6½	Blood-stained fluid with excess W.B.C.	35	740	—	N. 9 "
70	6	570 (L. 65%)	20	740	—	N. 20 "
71	1½	56 (L. 100%)	20	740	50	N. 14 "
72	1½	60 (L. 95%)	20	750	—	N. 7 "
73	4	34 (L. 80%)	40	695	—	N. 3 "
74	8½	95 (L. 15%) P. 85%	60	700	60	N. 9 "
75	½	18 (L. 100%)	20	760	—	N. 10 "
76	½	85 (L. 25%) P. 75%	35	705	67	N. 23 "

N. = Normal. L. = Lymphocytes. P. = Polymorphs.

Case 68.—Mantoux-negative. Chest radiograph, negative. History of contact, negative. Meningism, slight. No focal signs. Mentally alert. The meningism disappeared within 48 hours of admission. C.S.F. normal in 19 days; subsequent history uneventful.

Case 69.—Mantoux-negative. Chest radiograph, negative. No history of contact. The infant was unable to sit up, but seemed mentally alert. Full recovery with normal C.S.F. in 9 days.

Case 70.—Mantoux-negative. Chest radiograph, negative. History of contact, positive. Meningism slight. No focal signs. Patient mentally alert. Meningism disappeared within 48 hours of admission.

Case 71.—Mantoux-negative. Chest radiograph, negative. History of contact, positive. Definite meningism, with right sixth nerve paralysis. Patient mentally alert. This case caused us considerable anxiety at the time of admission. The picture was suggestive—but the mental condition (and the high sugar content in the C.S.F.) led us to withhold treatment. The child was much better within 48 hours—all meningism disappeared and the patient stood up at the foot of the cot and played happily. The C.S.F. was normal in 14 days. Subsequent history uneventful. Very slight right sixth nerve weakness persists.

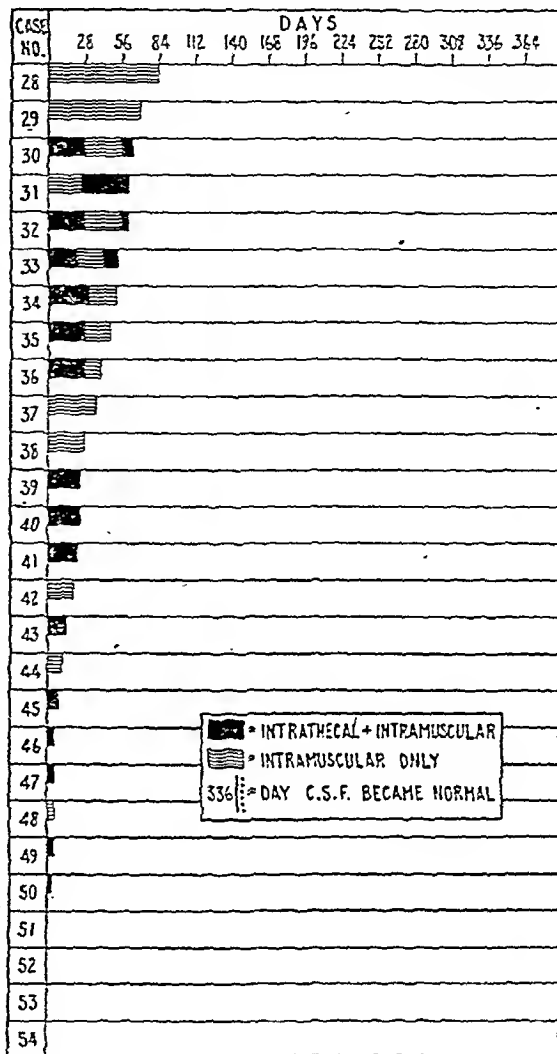
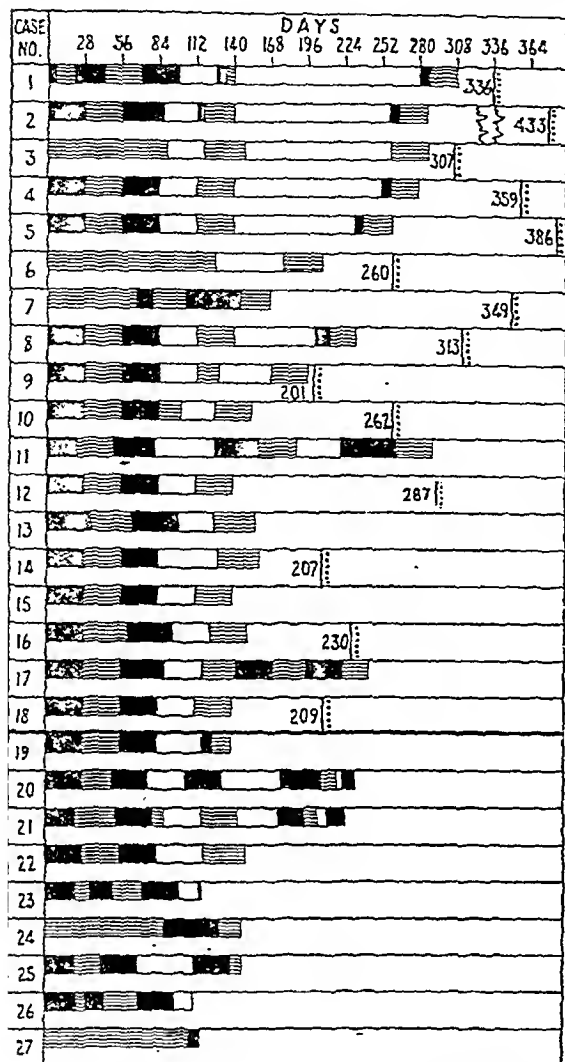
In the four above cases a diagnosis was never established. It is possible that they were cases of polio-encephalitis. It is also possible that Case 71 was in fact an abortive case

*These results do not allow comparison to be made between Löwenstein culture and guinea-pig inoculation, as the number of specimens cultured is greater than the number inoculated into guinea-pigs.

TABLE I.—Details of the 54 Cases dealt with in Section on Treatment

Case No.	Age	Days History Before Diag.	Stage on Admission	Direct Exam of C.S.F. for Tb.	Culture of C.S.F. for Tb.	Ga Pig Inoc. of C.S.F.	Chest X Ray etc.	History of Contact	No. of Days Observed	Method of Treatment	Result
SURVIVING CASES	1	4 6/12	10	E	+	+	P.C. Mil.	+	560	I.T. + I.M.	C.S.F. normal; deaf; slight ataxia
	2	4 7/12	31	M	O	+	O	O	547	I.T. + I.M.	C.S.F. normal; slight ataxia
	3	8 8/12	3	E	+	+	P.C. Knee P.C.	+	536	I.M.	C.S.F. normal; full recovery
	4	6 1/12	8	M	+	+	O	O	533	I.T. + I.M.	C.S.F. normal; full recovery
	5	6 6/12	8	E	+	+	O	+	517	I.T. + I.M.	C.S.F. normal; full recovery
	6	3 4/12	5	E	O	+	O	O	490	I.M.	C.S.F. normal; full recovery
	7	12 11/12	12	M	+	O	+	O	485	I.M.→I.T.	C.S.F. normal; full recovery
	8	15 6/12	8	E	+	+	+	O	481	I.T. + I.M.	C.S.F. normal; full recovery
	9	10/12	12	M	+	+	+	O	425	I.T. + I.M.	C.S.F. normal; full recovery
	10	10 4/12	30	A	+	+	+	O	363	I.T. + I.M.	C.S.F. normal; full recovery
	11	11	10	E	+	+	+	Mil.	290	I.T. + I.M.	Relapsed twice; doing well; C.S.F. almost normal
	12	17 8/12	28	E	O	+	O	O	287	I.T. + I.M.	C.S.F. normal; full clinical recovery
	13	10	10	M	+	+	+	O	282	I.T. + I.M.	C.S.F. almost normal; full clinical recovery
	14	6	13	M	O	+	O	P.C.	279	I.T. + I.M.	C.S.F. normal; right hemiplegia; great improvement; up and about
	15	5 6/12	10	E	+	+	+	Mil.	262	I.T. + I.M.	C.S.F. almost normal; full clinical recovery
	16	10 3/12	28	E	O	O	O	Mil.	246	I.T. + I.M.	C.S.F. normal; full recovery
	17	5 1/12	10	M	+	+	+	P.C.	238	I.T. + I.M.	Relapsed; responding again
	18	4 11/12	10	E	+	+	+	P.C.	231	I.T. + I.M.	C.S.F. normal; full recovery
19	7 2/12	17	M	O	O	+	O	O	270	I.T. + I.M.	Late relapse; was never well
20	5 2/12	42	E	+	+	O	P.C.	+	241	I.T. + I.M.	Late relapse; was never well
21	15 7/12	12	M	+	+	+	O	O	237	I.T. + I.M.	Late relapse after initial improvement; late surgical intervention
22	20	4	E	+	+	+	Pthisis	O	217	I.T. + I.M.	Initial response; sudden late deterioration
23	10 5/12	70	A	+	+	+	O	O	195	I.T. + I.M.	Slight initial response; became chronic; never looked like recovering
24	4 3/12	28	E	+	+	O	P.C.	+	181	I.M.→I.T.	Initial promising response, especially when given I.T. treatment
25	11 6/12	11	M	+	+	+	O	O	149	I.T. + I.M.	Late relapse; surgical intervention and further streptomycin prolonged life
26	19	15	M	+	+	+	Pthisis	O	120	I.T. + I.M.	Rapid deterioration; became chronic after surgical intervention
27	9 10/12	13	E	+	+	O	P.C. Mil.* P.C.	O	104	I.M.→I.T.	Initial promising response; life prolonged
28	4	17	M	+	+	+	Mil.	+	103	I.M.	Very slight initial response; slow deterioration
29	4 11/12	15	M	+	O	O	Mil.	O	69	I.M.	Slight initial response, then slow deterioration
30	11/12	19	E	+	O	O	O	+	67	I.T. + I.M.	Surgical intervention too late
31	5 11/12	30	M	+	+	+	P.C.	O	63	I.M.→I.T.	Initial improvement; life prolonged
32	17	12	M	+	+	+	O	O	63	I.T. + I.M.	Promising initial response; relapse; surgical intervention; vascular accident, due to arteritis
33	3 2/12	16	M	O	+	+	P.C.	O	55	I.T. + I.M.	Surgical intervention too late
34	4 9/12	14	A	O	+	+	P.C.	O	52	I.T. + I.M.	Initial response; life prolonged
35	2 10/12	23	A	O	O	O	P.C. Mil.* O	O	51	I.T. + I.M.	Initial response; life prolonged
36	2 9/12	21	E	O	O	O	O	O	45	I.T. + I.M.	Steady deterioration; no response
37	2 11/12	60	M	+	+	O	Mil.	+	37	I.M.	Initial response; life prolonged
38	1 5/12	9	A	O	+	+	P.C. Mil.* O	+	29	I.M.	Slight response
39	1 9/12	14	E	+	+	O	O	+	27	I.T. + I.M.	No response
40	2 9/12	43	M	+	+	O	P.C.	+	25	I.T. + I.M.	Rapid deterioration
41	5 1/12	9	M	+	+	+	P.C. Mil.* P.C.	O	23	I.T. + I.M.	Rapid deterioration
42	5 9/12	10	M	+	O	O	O	+	19	I.M.	Rapid deterioration
43	1 8/12	9	A	+	+	+	O	O	12	I.T. + I.M.	Admitted hopelessly ill
44	2 11/12	12	A	O	+	+	P.C. Spine Mil.	+	11	I.M.	Admitted hopelessly ill
45	27	56	E	+	+	+	O	O	8	I.T. + I.M.	Died of renal failure; Tb. kidneys; cachexia
46	1 7/12	15	A	+	O	+	P.C.	O	7	I.T. + I.M.	Admitted hopelessly ill
47	1	15	M	+	O	O	O	+	7	I.T. + I.M.	Admitted hopelessly ill
48	2 2/12	6	A	O	+	+	Mil.	+	6	I.M.	Admitted hopelessly ill
49	6/12	16	A	+	+	+	P.C.	O	6	I.T. + I.M.	Admitted hopelessly ill
50	8 11/12	36	A	O	O	O	P.C.	O	5	I.T. + I.M.	Admitted hopelessly ill
51	6 10/12	16	M	+	+	O	P.C.	O	4	I.T. + I.M.	Admitted hopelessly ill
52	1 4/12	6	A	O	O	O	P.C.	+	3	I.M.	Admitted hopelessly ill
53	2 6/12	9	A	+	+	+	P.C. Mil.* P.C.	+	3	I.T. + I.M.	Admitted hopelessly ill
54	2 1/12	10	A	O	+	O	Mil.*	O	2	I.T. + I.M.	Admitted hopelessly ill

E = Early case. M = Middle case. A = Advanced case. P.C. = Primary complex. Mil. = Military disease of lungs. Mil.* = Military found P.M.
 I.T. + I.M. = Intrathecal + intramuscular. I.M. = Intramuscular. I.M.→I.T. = Intramuscular going on to intrathecal.



Charts of the 54 cases detailed in Table I

of tuberculous meningitis, although this seems unlikely. We favour the diagnosis of polio-encephalitis here too.

Case 72.—This patient was in hospital following a pleural effusion, and was awaiting transfer to a pleural-effusion unit is a case of primary tuberculosis. Mantoux-positive. He developed a fever accompanied by headache and vomiting. The C.S.F. was pathological (see Table VI), but this child in particular was alert and happy. The C.S.F. was normal in 7 days.

Case 73.—After two months' history of listlessness, anorexia, and abdominal pain this patient had a fit and was admitted to a hospital in an unconscious state. He recovered consciousness but was mentally unstable: a week later he had a series of fits, after which his reflexes were absent and his plantar responses extensor. At this time the Mantoux reaction was very strongly positive at 1 in 10,000. He was transferred to our unit with the provisional diagnosis of tuberculoma of the brain. He had no further fits. His C.S.F. became normal in 3 days, and clinically he recovered completely. We had the advantage of seeing him late in the illness, when he was recovering and was mentally and clinically normal.

Case 74.—This patient was in a sanatorium for treatment of a large primary complex. His chest radiograph showed right hilar adenitis with pneumonic changes in the upper lobe. He

had displayed meningism. On admission to the unit he was mentally alert, and showed some slight neck rigidity but no focal signs. The C.S.F. became normal in 9 days.

Case 75.—This child had pulmonary tuberculosis with a pleural effusion. She became febrile again, vomited, and was less playful. Neck rigidity and drowsiness were noted. She was admitted with a C.S.F. picture as shown in Table VI. Clinical examination on admission (11 days after the onset of these symptoms) was negative. Her C.S.F. became normal in 10 days.

Case 76.—A boy aged 5½ years was admitted from a sanatorium where he had been under observation for primary tuberculosis of the right lung with a pleural effusion. He complained of headache and was febrile. Table VI shows the C.S.F. findings at the initial lumbar puncture at the sanatorium. He was admitted to the unit, and 48 hours after the initial lumbar puncture the C.S.F. showed: W.B.C., 316 per c.mm. (lymphocytes 100%); protein, 25 mg. per 100 ml.; chlorides, 725 mg. per 100 ml.; sugar, 37 mg. per 100 ml. In spite of this suggestive finding he was mentally alert, and he had no meningism or focal signs. The C.S.F. the next day showed: W.B.C., 184 per c.mm. (lymphocytes 100%); protein, 25 mg.; chlorides, 710 mg.; sugar, 55 mg. He remained well, was not treated with streptomycin, and the C.S.F. became normal in 23 days.

Cases 72-76, it will be noted, showed evidence of existing tuberculous infection, with a positive Mantoux reaction or an abnormal chest radiograph. (In this respect they differ from the first four cases described above.) It seems possible that they were examples of serous tuberculous meningitis (Lincoln, 1947).

In cases of miliary disease of the lungs receiving intramuscular streptomycin we have observed transient meningeal reactions, lasting 7-10 days and characterized by C.S.F. pleocytosis, raised protein, but normal sugar.

It is difficult to give precise reasons for the decision not to begin treatment with streptomycin in the nine cases summarized above: undoubtedly the mental condition of the patients was a factor. The contrast between this comparative alertness and the apathetic detachment of cases of tuberculous meningitis is an extremely useful guide to diagnosis. Perhaps a mother's statement that her child is "not himself" is in reality the earliest possible detection of this sign. Professor Craig (1948) stresses the early stage of this withdrawal from contact with others and gives a very full account of the subtle mental changes often noticed first by the mother.

In regard to the findings in the C.S.F., these are incomplete in respect of sugar estimations, as six of the above nine cases were admitted before our realization that such estimations might be valuable. In Cases 71 and 74 the C.S.F. sugar content was a factor in the decision not to treat with streptomycin. We agree with Lincoln (1947) that the low sugar content may be the earliest informative change in the C.S.F. in tuberculous meningitis, but it may not be evident when other symptoms are already suggestive, as the following case shows.

Case 18.—This is a proved case of tuberculous meningitis and is now doing well under treatment. The disease started with a convulsion. C.S.F. examination showed no abnormality: W.B.C., 4 per c.mm.; protein, 15 mg. per 100 ml.; sugar, 82 mg. per 100 ml.; chlorides, 770 mg. per 100 ml. Eight days later the C.S.F. showed: W.B.C., 500 per c.mm., mainly lymphocytes; protein, 60 mg.; chlorides, 730 mg. The child had suffered from erythema nodosum five months previously; chest radiographs showed a well-marked primary focus. She was admitted to the unit, and the C.S.F. findings were: W.B.C., 603 per c.mm., mainly lymphocytes; protein, 140 mg.; sugar, 40 mg.; chlorides, 690 mg. Three days later the findings were: W.B.C., 193 per c.mm.; protein, 160 mg.; sugar, 22 mg.; chlorides, 700 mg. Acid-fast bacilli were seen.

This case shows that in the earliest stages the C.S.F. may be normal. This point was also illustrated in Case 9, in which a normal C.S.F. was found at initial lumbar puncture and in which the C.S.F. became abnormal five days after the onset of symptoms. Case 36 showed a normal C.S.F. 11 days after the first symptoms. The first pathological C.S.F. was found 15 days after the onset of symptoms.

The causes of a lymphocytic cell increase in the C.S.F. may be summarized as follows: (1) Tuberculous meningitis, and serous tuberculous meningitis; (2) polio-encephalitis and poliomyelitis; (3) benign lymphocytic choriomeningitis; (4) glandular fever (infectious mononucleosis); (5) mumps encephalitis; (6) spirochaetal infections (syphilis, leptospiral diseases, relapsing fever); (7) infective hepatitis; (8) atypical pneumonia; (9) herpes zoster; (10) psittacosis; (11) trypanosomiasis; (12) yeast meningitis.

Summary and Conclusions in Regard to Diagnosis

Chest radiography, lumbar puncture, and the injection of 0.1 ml. of 1 in 1,000* Mantoux reagent should all be

performed within 48 hours and not be spread over several days.

We had hoped to be able to discover at least one diagnostically helpful feature in the C.S.F. But it is now clear that such a hope did not take into account the urgent necessity for earlier diagnosis. It is true that *when the disease has reached the stage indicated in the cases reviewed in this report* the most useful findings in the C.S.F. (if acid-fast bacilli are very scanty or absent) are the low sugar content, the raised protein, and the increased (lymphocytic) cell count—in that order of importance.

There is a high correlation between the speed of diagnosis and success in treatment.

Reference to the nine cases reviewed under "Differential Diagnosis" shows that patients may present themselves with a history of contact with tuberculosis, with evidence of extrameningeal tuberculosis, and with abnormal C.S.F. and yet may not develop what is ordinarily regarded as tuberculous meningitis. Our experience suggests that the crucial feature in diagnosis is the clinical picture—in particular the mental state of the patient. By this criterion we have (apparently successfully) distinguished the cases referred to above.

Lincoln (1947) and Choremis and Vrachnos (1948) have described cases displaying acid-fast bacilli in the C.S.F. but not developing tuberculous meningitis. On the other hand, three of our cases (9, 18, and 36) which in spite of suggestive clinical features initially showed a normal C.S.F. subsequently developed typical tuberculous meningitis.

Review of Treatment with Streptomycin

The scheme of streptomycin treatment we follow is: intrathecal and intramuscular, 28 days; intramuscular, 28 days; intrathecal and intramuscular, 28 days; rest period, 28 days; intramuscular only, 28 days. The intramuscular dose is 0.02 g. per lb. (0.45 kg.) body weight in 24 hours, given six-hourly. The intrathecal dose is 0.1 g. in 10 ml. normal saline daily. Further treatment is given subsequently if indicated.

On this scheme we have cultured tubercle bacilli from the C.S.F. in cases (which have since recovered) as follows: in 3 cases, 21 days after the beginning of treatment; in 1 case 53 days after; in 1 case 56 days after.

We feel, therefore, that there is no case for lessening the intensity or duration of the initial attack and are inclined to favour the suggestion of Dubois *et al.* (1947) and the practice of Smith, Vollum, and Cairns (1948) that 45 days or more initial intrathecal therapy should be given. This is, however, difficult because of the chemical meningitis and the general ordeal of treatment. One or two days' rest during intrathecal treatment allows the chemical meningitis to abate.

It is possible to effect a cure with intramuscular streptomycin, but we agree with the conclusions reported by the Medical Research Council (1948) that combined therapy gives better results, though there may be a misleading initial response.

During streptomycin treatment patients show to a varying degree fever, loss of weight, anorexia, vomiting, and skin rashes. With the exception of the last-named, these features if severe and prolonged, are due to the disease rather than the drug. Chemical meningitis varies in intensity. The urticarial rashes respond to "benadryl" and those of the exfoliative dermatitis type to local application of cod-liver oil. Towards the end of the intrathecal course patients complain of severe pains in the legs, probably due to nerve-root irritation. A soft growth of hair on the body

*Omission of the 1 in 10,000 dilution is considered justifiable: 48 hours may be saved, and the risk of troublesome local reaction is small.

(chiefly back, limbs, and neck) is common. Eyelashes become very long; scalp hair often falls out.

Most of the signs and symptoms seen before and during treatment are due to increased intracranial pressure, at first probably a diffuse swelling of the brain, but sooner or later hydrocephalus. Vascular lesions cause paralysis and occasionally death, and the exudate may be responsible for cranial-nerve abnormalities, especially of the third, sixth, and seventh nerves.

Drowsiness, voracious appetite (somewhat resembling the Kleine-Levin syndrome), facial flushing, glycosuria, hyperthermia, hyperalgesia, and emotional instability may be due to the hydrocephalus and its effect upon the midbrain, thalamic, and hypothalamic regions; or, on the other hand, the dominant lesion may be a tuberculous arteritis depriving these centres of their blood supply (Smith, Vollum, and Cairns, 1948).

We consider that carpo-pedal spasm and main d'accoucheur, resembling tetany, are manifestations of tonic fits (Ford, 1946). They do not respond to calcium.

C.S.F. during Treatment

Intrathecal, but not intramuscular, streptomycin causes a pleocytosis. A steadily rising protein level is usually of bad omen, indicating an extension of disease down the spinal theca. We have, however, seen complete recovery after the lumbar C.S.F. protein had reached 11 g. per 100 ml. Table VII shows the streptomycin levels in a case on

TABLE VII

Time	Streptomycin Content (Micrograms per ml.)	
	Lumbar C.S.F.	Cisternal C.S.F.
12 noon. Before treatment (0.1 g. streptomycin given intrathecally by lumbar route)	0	0
1 p.m. " " " " " "	4,400	174
4 p.m. " " " " " "	1,000	—
12 midnight " " " " " "	40	—
12 noon (24 hours after injection) " " " " " "	10	3.3

intrathecal therapy. Tests on another patient (24 hours after lumbar injection of 0.1 g.) showed a ventricular level of 2.7 micrograms per ml.

Return to Normal.—So long as intrathecal streptomycin is continued the C.S.F. remains abnormal in cell content. It gradually becomes more normal when streptomycin is stopped, and in the absence of relapse complete return to normal has been noted at approximately 200 days from the beginning of treatment on the lines described. However, cases have been observed in which, in spite of apparent clinical recovery, the C.S.F. cell count remained slightly raised. A further month's course of streptomycin was given to these cases, but the abnormality persisted and the C.S.F. did not return to normal till seven months after the cessation of all treatment and approximately a year after admission. Of the 18 cases which have survived for more than 230 days, 14 have a normal C.S.F. No case in which the C.S.F. has become normal has relapsed.

Chest Lesions.—Streptomycin does not seem to affect the process of healing of the tuberculous adenitis which accompanies the primary infection. Miliary tuberculosis of the lungs, however, clears radiologically in from 8 to 12 weeks. Such clearance occurred in one case in which nevertheless death resulted from tuberculous meningitis.

Eighth-nerve Lesions.—Audiogram tests were carried out in 8 cases. One child (Case 1) is very deaf and slightly ataxic; it is difficult to decide whether this is due to the streptomycin or to the disease. We believe it is due to the tuberculous meningitis. Audiograms on the other children

showed a loss of hearing of 10–20 decibels at all frequencies, but it requires this special test to detect the abnormality. A second child (Case 2) is very slightly ataxic, but the disability is improving rapidly and is hardly discernible. An older case (No. 12) was ataxic—in particular in the dark of the cinema; but with special exercises at King's College Hospital he too has improved.

Surgical Intervention

Ten cases have been operated on with the object of relieving hydrocephalus. The operations tried included the placing of a plastic tube 1 mm. in diameter in the lateral ventricle through a burr-hole. The hydrocephalus is of the communicating type, and, whereas in chronic hydrocephalus this operation is disappointing, in this acute condition (especially as the cause has been shown by Sir Hugh Cairns and others to be pressure of the brain back against the free margin of the tentorium) we felt it should be tried. We hoped that by relieving the intracranial tension we could break the vicious circle by relaxing the brain away from the tentorium and at the same time allow the drug to circulate. The approach is either by the anterior or by the posterior route.

A child aged 1½ years (admitted later than May, 1948) was treated by intrathecal and intramuscular streptomycin for a month, but a week after intrathecal therapy was stopped he vomited and cried and developed increasing meningism. A plastic tube was inserted into the right lateral ventricle through a frontal burr-hole and left *in situ* for six weeks. A Bateman needle occluded the end, and the stylet was removed every six hours to allow the C.S.F. to drain. (The lumbar C.S.F. protein rises while this is being done.) The tube has now been out for four months and the child appears to be responding. It seems that this operation relieved the acute hydrocephalus. This child is the only survivor of the 10 cases surgically treated.

In another infant Mr. Dickson Wright placed a fine tube into the third ventricle and ran the other end over the cortex backwards. In this case the child was too ill for the operation to have a chance.

A girl of 15 relapsed after seven months—a situation in which we have found that the mere placing of a tube into the lateral ventricle does no good. Mr. Dickson Wright raised a frontal flap, and in addition to the ventricular tube a second tube was placed at the site of the disease, in front of the optic chiasma, and streptomycin was given through it. She improved and life was certainly prolonged, but ultimately she died. Necropsy showed an extensive tuberculous exudate at the base of the brain.

To summarize, while surgical intervention seems to offer a logical approach to the relief of the hydrocephalus, our results have been disappointing. Only one of the ten cases thus treated survives, but in other cases life was certainly prolonged. Operation is useless in advanced cases. The difficulty is to formulate the indications for surgical intervention, which will probably need to be early to be successful. Further work on this problem is essential.

Other Factors in Treatment.—Many of these cases were admitted to the unit in a dehydrated condition, but it is remarkable how even the most drowsy will take fluid by mouth in automatic fashion. If this is not possible then rectal or intravenous fluid should be given. Chloral and barbiturates are used when indicated for restlessness or insomnia.

Nursing

The nursing of the cases presents a special problem. The patients are often irritable, unreasonable, and confused. They may be incontinent and wasted, and may vomit frequently. They sometimes refuse food, or are too ill to eat and have to be fed. By pushing food and fluid the

nursing staff can do much to improve the general condition of the patients, which otherwise becomes very poor. Bedsores develop easily, and very special attention must be given to the way in which a semiconscious or drowsy child lies. The constant crying out and the cephalic cry can be very disturbing. We attach importance to the frequent change of posture of these patients and feel that they should be sat up as soon as possible. If this is impossible they should be nursed prone for periods—with the object of preventing the exudate from settling heavily on the under surface of the cerebellum and round the foramina. Young infants who lie supine show this localization of exudate markedly, and it may yet be another factor in the bad prognosis of infants under 3 years of age.

It is our practice to give patients massage and passive exercises after eight weeks and to get them up after three months. Close co-operation with the physiotherapists will prevent much pain and delay in ultimately walking again.

In this unit we do all the lumbar punctures on a high narrow table, not in the bed. No local analgesic is used. Very difficult cases are premedicated with tab. "seconal," in dose according to age. The skin is sterilized with ether, spirit, and iodine; and thin, sharp lumbar-puncture needles are used (Howard Jones type). The latter are of various lengths from 2-3 in. (5-7.5 cm.), and are sterilized in packets in the autoclave in the operating theatre. After adequate scrubbing-up by the operator the punctures are performed without touching the shaft of the needle. No collodion or dressing is applied, but the skin is moved to break the track. A minimum of trauma and the avoidance of "bloody taps" are extremely important, especially in young infants. Patients need to be kept in hospital for five to six months and should then go to a suitable convalescent home for six months, but should still have cerebrospinal fluid examinations, probably fortnightly, for control.

Mention must be made of the problems which arise in regard to the relatives of the patients. These people are under great emotional stress, and this persists for several months in a way not commonly met with in other circumstances. The greatest tact and understanding are required from the nursing staff and others in dealing with these unfortunate people.

Results of Treatment

Table I details the cases admitted before May 28, 1948 minimum observation period of surviving cases, 231 days. We hesitate to regard any case as certainly cured. Our longest-surviving case has been under observation for 560 days (18 months). The 36 patients who died include 9 who lived for seven days or less after admission. Of the 8 surviving cases 14 have a normal C.S.F. (Cases 1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 14, 16, and 18). All have been bacteriologically proved except Case 16. The remaining 4 survivors show the following features:

Case 15.—Clinically recovered. C.S.F. normal except for low sugar. (Further observation is required to estimate the significance of delayed return to normal of the sugar level.)

Case 13.—Clinically recovered. C.S.F. shows slight pleocytosis and slightly increased protein.

Case 11.—This case has relapsed twice, and, although there was apparent response to further treatment, has a C.S.F. which is abnormal in respect of protein (55 mg. per 100 ml.).

Case 17.—Has relapsed once. Otherwise resembles Case 11.

When clinical suspicion of relapse is aroused a fall in the C.S.F. sugar should be regarded as confirmation.

The poor prognosis in patients under 3 years of age is largely due to the rapidity with which they reach the advanced state of the disease, as is shown in Table VIII.

TABLE VIII.—Cases under 3 Years

Stage on Admission	No.	Survivors
Early	3	0
Middle	4	1
Advanced	10	0
Total	17	1

Table IX summarizes the results with reference to stage on admission, and distinguishes the 40 cases which had the standard course* of treatment from the remainder (admitted in the earlier part of our work before the superiority of "combined" treatment was established).

TABLE IX

Course of Treatment	Stage	Cases	No. Surviving
Intramuscular only	E	2	2
	M	4	0
	A	4	0
Total		10	2
Intramuscular, followed by intrathecal	E	2	0
	M	2	1
	A	0	0
Total		4	1
Combined I.T. and I.M. course (with minor variations shown in Table I)	E	14	8 (57%)
	M	16	6 (37%)
	A	10	1 (10%)
Total		40	15 (37%)
Overall totals		54	18 (33%)

These results emphasize the importance of the earliest possible diagnosis of tuberculous meningitis. Apart from streptomycin, the most important single factor in such success as we have had is to be found in the quality of the nursing. At Highgate Hospital Sister S. E. Robinson and the nursing staff have maintained the highest standard in this respect.

Summary

Diagnosis

The clinical and laboratory findings in 76 admissions are analysed. A diagnosis of tuberculous meningitis was made in 67 cases. The remaining 9 included five examples of a meningeal reaction in tuberculous subjects which may have been cases of serous tuberculous meningitis.

The problems of early diagnosis are discussed in relation to these cases. Mental apathy is an important early diagnostic feature. In 3 cases of tuberculous meningitis the C.S.F. was normal in the earliest stage in spite of clinically suggestive features. Diagnostically important C.S.F. changes are fall in sugar, rise in protein, and pleocytosis.

Prior to and within 48 hours of admission acid-fast bacilli were seen in the C.S.F. in 39 cases (58%). *M. tuberculosis* was recovered by culture and/or guinea-pig inoculation in 58 cases (87%). Diagnosis by one or both of these criteria was established in 62 cases (92%).

A positive history of contact with tuberculosis was obtained in 12 of 21 patients (57%) under 3 years of age, and in 11 of 46 patients (24%) over 3 years of age.

The commonest interval between the first appearance of signs or symptoms and the day of diagnosis was 8-15 days.

The Mantoux reaction was positive in 50 of 51 cases.

Abnormalities in the chest radiograph were seen in 50 of 66 cases.

Treatment

Cases were classified on admission as "early," "middle," or "advanced." Of these, 54 are considered, with a minimum observation period of 231 days (8 months). Forty cases received combined intrathecal and intramuscular streptomycin: of these, 15 (37%) survive—comprising 8 of 14 early cases

*With minor variations shown in Table I.

(57%), 6 of 16 middle cases (37%), and 1 of 10 advanced cases (10%).

Ten cases received intramuscular therapy only (in the early part of our work), and two survive. Four cases received intramuscular therapy followed by combined therapy: one of these survives.

Important factors operating against success are vascular changes in the brain and hydrocephalus. Further work is essential to assess the value of surgical intervention to combat the hydrocephalus.

Strains of *M. tuberculosis* isolated from 43 patients have not shown resistance to streptomycin.

Eighteen cases (33%) survive, and of these 16 show full clinical recovery—14 having entirely normal C.S.F. and 2 showing slight abnormalities. Two survivors have a history of relapse and show definitely abnormal C.S.F. The diagnosis has been confirmed bacteriologically in all except one of the survivors.

Apart from streptomycin, the most important aids to successful treatment are the rapidity of diagnosis and the quality of the nursing.

The value of intrathecal sulphathione in addition to streptomycin is now being investigated.

We wish to thank the following for advice and help: Dr J. M. Alstoo, pathologist, Archway Group Laboratory (who also kindly performed the streptomycin-sensitivity tests); Dr A. B. Bratton and staff of the Central Histological Laboratory; the numerous technicians who helped, especially Mr. Hurst, of the Archway Group Laboratory, who gave much care and time to the pathological side of the work; Mr. J. V. Broad, otorhinologist; Dr C. D. Coyle, medical superintendent, Archway Group of Hospitals; Dr M. Daniels and Dr P. D'Arcy Hart, of the Medical Research Council; Mr A. Dickson Wright, consulting neurosurgeon; Mr G. Dorling, surgeon, Archway Group of Hospitals; Mr G. Ebbage, ophthalmologist; Dr A. L. Jacobs, physician, St. Mary Islington Hospital; Dr S. Oram, physician, King's College Hospital, London, in co-operation with whom Case 12 was treated; Dr H. E. S. Pearson, physician, Highgate Hospital; and Dr F. L. Ravner, radiologist.

BIBLIOGRAPHY

- Choremis, K., and Vrachnos, G. (1948). *Lancet*, 2, 408.
 Craig, W. S. (1948). *British Medical Journal*, 2, 374.
 Critchley, M., and Hoffman, H. L. (1942). *Ibid.*, 1, 137.
 Dubois, R., Linz, R., Leschanowski, H., Schlessner, K., and Wattiez, R. (1947). *Acta paediatr. Belg.*, 4, 193.
 Ford, F. R. (1946). *Diseases of the Nervous System in Childhood* 2nd ed., p. 974. Springfield, Ill.
 Kleins, W. (1925). *Msehr. Psychiat. Neurol.*, 57, 285.
 Levin, M. (1929). *Arch. Neurol. Psychiat.*, 22, 1172.
 Lincoln, F. M. (1947). *Amer. Rev. Tuberc.*, 56, 95.
 Medical Research Council (1948). *Lancet*, 1, 582.
 Smith, H. V., Vollum, R. L., and Cairns, H. (1948). *Ibid.*, 1, 627.

NASAL CARRIERS AND STREPTOCOCCAL TONSILLITIS

BY

G. T. COOK, M.D.

Bacteriologist, Public Health Laboratory Oxford

AND

D. MUNRO-ASHMAN M.B., B.S., C.P.H.

School Medical Officer

In discussing the possible sources of streptococcal infection in puerperal fever Colebrook (1933) considered that the nasal carrier might prove of greater danger than the throat carrier. Hamburger (1944), in a study of the transmission of streptococcal infection in Army hospital wards, showed that the incidence of cross-infections did not necessarily show a close correlation with the throat-carrier rate and suggested that some carriers were more likely to spread infection than others. Further studies by Hamburger and his associates demonstrated not only that many more streptococci were expelled into the environment by nasal carriers than by throat carriers (Hamburger *et al.*, 1945a), but also that the majority of hospital cross-infections studied could

be traced to heavy nasal carriers (Hamburger *et al.*, 1945b). Their findings led to an investigation of the relative importance of nose-blowing, sneezing, and coughing by nasal carriers in the dissemination of streptococci; it was shown that blowing the nose expelled the largest numbers of organisms and also resulted in sudden and heavy contamination of the hands (Hamburger and Green, 1946). These workers concluded that in certain situations, such as hospital wards, Army barracks, and boarding-schools, nasal carriers were of more importance in the spread of streptococcal disease than throat carriers because they caused a greater degree of environmental contamination. In such communities secondary reservoirs of infection—e.g., dust and bedding—are probably of special significance, and the part played by dormitories in the spread of scarlet fever, diphtheria, and streptococcal tonsillitis has been demonstrated (Dudley, 1923, 1926; Hamburger *et al.*, 1945b).

The outbreak of tonsillitis to be described illustrates the importance of both the nasal streptococcal carrier and the dormitory in the spread of infection in a residential school over a period of two terms. Symptoms were mild, complications few, and there were no rashes. Recovery was rapid and boys were usually discharged from the sanatorium in five to seven days.

The Outbreak

The school of 340 boys is housed in five separate buildings, which will be referred to as houses A-E. Each house has its own sleeping accommodation and common-rooms. D house has its own dining-room, but the boys from all other houses feed in the dining-room of A house, though each house has its own table. The classrooms are in a separate building and are shared by all the boys. Thirty-two of the 57 cases occurred in A house, where the sleeping accommodation consists of six dormitories holding 48 boys and 85 single rooms, the latter chiefly occupied by older boys. The boys of this house, whether sleeping in dormitories or in single rooms, mix freely with each other in the common-room and to some extent with the members of B, C, and E houses at meal-times. All boys meet other members of the school during classes, games, chapel, etc.

Epidemiology

The first case, H., occurred in A house on Feb. 16, 1948, and was admitted to the sanatorium with a sore throat and fever. A throat swab examined by another laboratory showed the presence of haemolytic streptococci, but these were not typed at that time, though later swabs grew haemolytic streptococci type 12. This boy returned to the school on Feb. 26; two days later a fresh case was reported, and further cases continued to occur almost daily till the end of the term on March 25. Cases of streptococcal tonsillitis due to the epidemic type were again observed within a few days of the beginning of the summer term, and 20 further cases among the boys occurred during this term, eight of them within the first two weeks. The last of these became ill on July 3. The accompanying Chart shows the daily incidence of cases of tonsillitis among dormitory and single-room boys of A house and the rest of the school. The overall pattern suggested an initial spread through A house, boys in dormitories especially being attacked, with a gradual extension to other houses towards the end of the Easter term. This general spread was continued during the following term until all houses had at least one case.

In all, 57 boys were attacked with acute tonsillitis—37 in the Easter and 20 in the summer term. Of the 37 cases in the first term 29 were in A house. The incidence of disease among boys in A house and the rest of the school for each term is shown in the Table, A house being divided

Table showing Incidence of Cases among Boys in A House (Dormitories and Single Rooms) and in Rest of School during Easter and Summer Terms

House	No. at Risk	No. Attacked		
		Easter Term	Summer Term	Total
A (dormitory)	48	19 (39.5%)	2 (4.2%)	21
A (single rooms)	85	10 (11.8%)	1 (1.1%)	11
B, C, D, E	207	8 (3.9%)	17 (8.2%)	25
Total	340	37 (10.9%)	20 (5.8%)	57

into those boys sleeping in dormitories and those in single rooms. During the Easter term the attack rate for boys in A house sleeping in single rooms, while higher than that for the rest of the school, was considerably lower than the attack rate for the dormitory boys. This difference is statistically significant; the probability of its occurring by chance is less than one in a thousand. The attack rate for each of the six dormitories in A house varied from 0 to 73%, though the numbers upon which these results are based are small.

In addition to the 57 boys, five members of the staff had tonsillitis—two in A house during the Easter term and three in other houses the following term.

Field and Laboratory Investigations

The aid of the laboratory was sought in the early days of the epidemic, when the majority of cases were from the dormitories of A house. It was therefore decided to take nose and throat swabs from all cases still in the sanatorium and from boys sleeping in the dormitories of A house. This was done on March 12, and further swabbing of new cases and carriers was repeated at intervals till the end of the term.

Grouping and typing were carried out the first time haemolytic streptococci were isolated from the nose or throat of any boy and on all subsequent isolations, except when the interval between swabbings was only a few days.

1 strains were typed at the laboratory by Griffith's slide agglutination technique and reacted with sera of types 5 and 12. The type was confirmed as type 12 by Lancefield's precipitin method in a number of strains examined from cases and carriers.

Streptococcus pyogenes, type 12, was isolated from 43 out of 57 boys either during their illness or, in some of the earlier cases, after their return to school. Most of the cases with negative swabs were undergoing local chemotherapy at the time the swabs were taken. The epidemic strain was isolated from the five members of the staff who became ill. It was also readily obtained from the dust of two dormitories and two day-rooms in house A during the Easter term and from the dust of one of these dormitories towards the end of the Easter holidays.

Preventive Measures

These were directed towards reducing the dust content of the school buildings and sterilizing the noses of persistent carriers. Thorough suction-cleansing and scrubbing of the premises were carried out during the Easter holidays

together with oiling of dormitory and common-room floors in A house. During the summer term all known nasal carriers and some throat carriers were each treated with penicillin-sulphathiazole snuff and penicillin throat sprays four times a day for fourteen days. The boys continued with their usual school activities during this time. The results of treatment are discussed later.

The Association of Nasal Carriers with New Cases

During the time the first case (H.) was in the sanatorium no further cases of tonsillitis developed in the school, but two days after his return to school a second boy became ill, followed by another six in the next three days. When H. was first swabbed fifteen days after his return from the sanatorium he was found to be a heavy nasal carrier, and it is reasonable to assume that he had been carrying streptococci in large numbers in his nose since his release.

A study of the distribution of 19 cases and four contact carriers among the six dormitories in house A showed

that 18 of these occurred in three dormitories with a total population of 28 boys and only five in the other three dormitories housing 20 boys. The attack rates for these two groups were 64 and 25% respectively. The first case in each of the three dormitories comprising the first group was found to be a heavy nasal carrier (at the time of the general swabbing of boys in the dormitories) and at least one heavy nasal carrier was present in each dormitory during the time streptococcal infections were occurring. Nasal carriers were not found in any of the three dormitories of the group with the low attack rate, except in one dormitory for the last four days of the term.

Throughout the summer term only three nasal carriers from the previous term were detected; a fourth carrier was later identified when a boy with a nasal discharge was swabbed. Only one of these boys slept in a dormitory (one of those heavily infected the previous term), and all four carried for a short time only and responded well to a course of local chemotherapy. During this term the incidence of tonsillitis throughout the school was lower than during the previous term and no dormitory outbreaks occurred.

Persistence of the Carrier State

The work of Lemon and Hamburger (1946) has suggested that most symptomless nasal carriers are missed cases and that true contact carriers are unusual. No mass swabbing of the school was carried out, and it was not possible to form any estimate of the probable carrier rate, though six out of 33 dormitory contacts were carrying streptococci in the nose or throat on the occasion of the swabbing of all dormitory boys on March 12. Two of these developed tonsillitis three days later.

Type 12 streptococci were isolated from 35 boys during their illness—in 13 cases from the nose and usually from the throat, and in 22 from the throat only. Twenty-three of the 35 boys were swabbed ten days later; streptococci were obtained from the nose of three out of eight boys

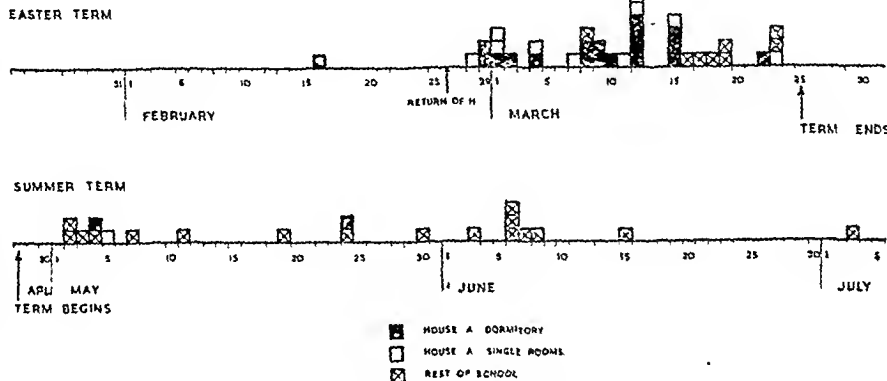


Chart showing daily incidence of new cases of tonsillitis among boys for the Easter and summer terms.

previously carrying in the nose, and from the throat of 11 out of 15 boys carrying only in the throat.

Twenty-five boys were carrying type 12 streptococci in the nose or throat when last swabbed at the end of the Easter term. Twenty-one were re-swabbed six weeks later at the beginning of the following term and 12 were still carriers of the epidemic type—three in the nose and throat and nine in the throat only. The three nasal carriers and five of the throat carriers were each treated for fourteen days with penicillin-sulphathiazole snuff and penicillin throat sprays and all 12 carriers were re-swabbed at the end of the term. All the nasal swabs were then negative, though two of the eight treated boys and three of the four untreated boys were still carrying in the throat.

One boy had a clinical attack of tonsillitis in both the Easter and the summer term, and type 12 streptococci were isolated from the throat on each occasion. This boy was not one of those swabbed at the beginning of the summer term, so it is not known whether he was a throat carrier from the previous term. This experience is unusual and contrary to previous reports. The second attack was less severe than the first and streptococci were isolated in small numbers only, so it is possible that this illness was not primarily a streptococcal infection. The serum of this boy was not examined for anti-streptolysin titres.

Presence of M Substance

Typing by the precipitin technique was attempted on 10 strains isolated from throat carriers at the end of the summer term and seven gave a positive reaction. This was particularly well marked in strains from three boys who had been carrying for at least 130 days; strains from four new cases in the summer term gave either weak or negative results. These findings are of particular interest in view of the degradation or progressive loss of M substance during the carrier state found by Rothbard and Watson (1948). In this outbreak typing by the precipitin technique was done on only a small number of strains, but a greater proportion of weak or negative results were obtained with strains isolated from boys infected at the end of the epidemic than with those from the earlier cases. The clinical symptoms were also less severe in the later cases.

Discussion

The pattern of the daily incidence of new infections (see Chart) suggests that the epidemic spread fairly rapidly through A house during the three weeks after the return of H., a heavy nasal carrier. By the end of the Easter term it had extended to boys in other houses, and it continued in the rest of the school the following term. During the first 18 days after the return of H. 17 new cases occurred among the boys in dormitories and nine among those in single rooms, the number at risk being 47 and 85 respectively. Thirteen of the 17 dormitory cases occurred in three dormitories where 27 boys were at risk. It is clear that during this time boys in dormitories suffered more heavily than the others and that most of the cases came from three of the six dormitories.

Glover (1920) has drawn attention to the importance of overcrowding in sleeping-quarters as a factor in the production of high carrier rates in cerebrospinal fever. The relation of dormitories to the spread of scarlet fever and diphtheria in naval training establishments was later shown by Dudley (1923, 1926). It is possible that the closer contact of the dormitory boys, together with their younger age, was partly responsible for their high attack rate compared with those boys sleeping in single rooms. On the other hand, not all those dormitories were heavily attacked (in one dormitory no case occurred), although the spacing of

beds, general ventilation, and ages of the boys in each were similar.

It is significant that during the eighteen days when most of the cases in A house occurred nasal carriers were associated with each of the three dormitories most heavily attacked and were not detected in the others. The first case in each of these dormitories was subsequently identified as a nasal carrier, and it was only after this boy's return to the dormitory that other cases occurred. In fact, a heavy nasal carrier was present in each of these dormitories during the time all except one of the boys became ill. One or more boys were carrying large numbers of streptococci in the nose for at least sixteen days in each of these three dormitories, and it is likely that a heavy streptococcal contamination of the environment took place during this time.

Streptococci of the epidemic type were readily isolated from the dust before the majority of dormitory infections had occurred. In addition to the possibility of infection being transmitted more or less direct from the carrier, the dormitory population was thus also exposed to the further risk of a heavily infected environment for several hours each night. Considerable dispersal of streptococci into the air and on to exposed clothing from floor dust and bedding would take place when the boys entered the dormitory at night and again during bed-making in the morning, and the attack rate under these conditions is likely to be high. The beds of the cases were not necessarily adjacent or in close proximity to the bed of the carrier, and the scattered spatial distribution of cases in the dormitories suggested general contamination of the environment. A study of the streptococcal content of the air and environment in wards and barracks occupied by streptococcal carriers has shown that the dispersal of organisms is commonly widespread and not limited to the vicinity of the beds occupied by carriers (Lemon, Loosli, and Hamburger, 1948). In this outbreak neither the streptococcal content of bedclothes or air nor the ability of the nasal carriers to infect their environment was investigated.

Out of 57 cases, however, only 15 came from the three dormitories heavily attacked during the Easter term. The remaining 42 were either boys sleeping in single rooms or sporadic cases in different dormitories. It seems evident, therefore, that a heavily infected dormitory environment was not the chief mechanism by which infection was conveyed to most of the school. Type 12 streptococci were recovered from the dust of the common-rooms in A house during the Easter term, and no doubt other infected environments played a part in spreading disease. All recognized nasal carriers were successfully treated in school during the summer term, but 12 fresh cases occurred during and after their period of treatment before the outbreak ceased. No swabbing of contacts was done during this term, and it is possible that an undetected carrier was responsible for the continuance of cases. Other factors concerned with the spreading of disease may have been infected dust in classrooms, the breathing of air infected by nose-blowing or the use of handkerchiefs, or the transmission of organisms from clothing or hands, either direct or from inanimate objects (Brown and Allison, 1937; Hamburger and Green, 1946; Dumbell *et al.*, 1948; Duguid and Wallace, 1948).

Epidemics of streptococcal tonsillitis in boarding-schools usually run on in the form of "dropping" cases to the end of the term (M.R.C., 1938), and this outbreak proved no exception. The occurrence of streptococcal infections of the same type in successive terms is not unusual, and Boissard and Fry (1944) attributed cases of scarlet fever in the autumn term and the following summer term to the same heavy nasal carrier. This boy was away for the intervening term, during which no

Experience of this and other epidemics has shown the frequent association of heavy nasal carriers with outbreaks of streptococcal tonsillitis in residential schools. It is important that nasal as well as throat swabs should be obtained from all cases, however mild; heavy nasal carriers should be treated until their swabs are negative. This is especially necessary with the single case or in the early stages of an outbreak before widespread contamination of the environment and the build-up of a carrier rate has occurred. During the holidays every effort should be made to sterilize the noses of persistent carriers and to disinfect school premises.

Summary

The epidemiological and bacteriological findings in an outbreak of streptococcal tonsillitis in a residential school are described. The outbreak extended over two terms, and 57 out of 340 boys were attacked.

All the early cases were in the same house as the first case, a heavy nasal carrier. A nasal carrier was also associated with each of the three dormitories with the highest attack rates during the time fresh infections were occurring. In most cases, however, the dormitory did not appear to be of special importance in the spread of disease, and the significance of this is discussed.

The early detection and isolation of heavy nasal carriers before widespread dispersal of infection has occurred is emphasized.

REFERENCES

- Boissard, J. M., and Fry, R. M. (1944). *Mon. Bull. Min. Hlth*, 3, 160.
Brown, W. A., and Allison, V. D. (1937). *J. Hyg., Camb.*, 37, 1.
Colebrook, L. (1933). *British Medical Journal*, 2, 723.
Dudley, S. F. (1923). *Spec. Rep. Ser. med. Res. Coun., Lond.*, No. 75.
— (1926). *Ibid.*, No. 111.
Duguid, J. P., and Wallace, A. T. (1948). *Lancet*, 2, 845.
Dumbell, K. R., Lovelock, J. E., and Lowbury, E. J. (1948). *Ibid.*, 2, 183.
Glover, J. A. (1920). *Spec. Rep. Ser. med. Res. Coun., Lond.*, No. 50, p. 133.
Hamburger, M., jun. (1944). *J. infect. Dis.*, 75, 58.
— and Green, M. J. (1946). *Ibid.*, 79, 33.
— and Hamburger, V. G. (1945a). *Ibid.*, 77, 68.
— (1945b). *Ibid.*, 77, 96.
Lemon, H. M., and Hamburger, M., jun. (1946). *J. Immunol.*, 54, 189.
— Loosli, C. G., and Hamburger, M., jun. (1948). *J. infect. Dis.*, 82, 72.
M.R.C. Report (1938). *Spec. Rep. Ser. med. Res. Coun., Lond.*, No. 227.
Rothbard, S., and Watson, R. F. (1948). *J. exp. Med.*, 87, 521.

SPONTANEOUS PERFORATION OF THE OESOPHAGUS

SURGICAL REPAIR, WITH RECOVERY

BY

JOHN SCHOLEFIELD, F.R.C.S.

Surgeon, West Middlesex Hospital, Isleworth

This rare condition has been the subject of a number of papers, chiefly dealing with single case reports. It is probable that it is not so uncommon as is supposed. Thus Eliason and Welty (1946) were able to record three cases seen by the senior author in the space of twelve months. The mortality until recently has been 100%, but Barrett (1947) and Olsen and Clagett (1947) have recorded recoveries after immediate operative intervention and repair.

In view of these successes it seemed timely to review the condition once more and to put on record two further cases, the second of which represents the third recovery that can be found in the literature; for, as Eliason and Welty (1946) say, "with improved techniques in anaesthesia, freer use of blood and plasma and effective chemotherapeutic agents, the limiting factor in the treatment of this condition is that of diagnosis."

Case 1

A man aged 41 was admitted to the West Middlesex Hospital at 4.30 a.m. on Dec. 10, 1941, with a diagnosis of perforated gastric ulcer. He had always enjoyed good health, apart from occasional indigestion, till 8.30 p.m. the previous day, when after a bout of vomiting he was stricken with severe pain in the lower chest and lumbar regions. A large midday meal of sausage pie was the only explanation the patient could give for the initial vomiting. There was no history of alcoholism. The pain, which was intense, had become more widespread; it was especially felt in the scapular regions and was made worse on breathing. His only other complaints were severe dyspnoea and an inability to lie flat in bed. The temperature was 101.2° F. (38.4° C.), pulse 100, and respirations 64. The blood pressure was 130/100.

Examination on admission revealed a cyanosed, breathless man of rather stout build. His breathing was shallow and obviously painful. At this time no abnormal physical signs were found in the lungs or cardiovascular system. His tongue was moist. The abdomen was tense and rigid but not tender. Rectal examination was negative. The diagnosis was thought to rest between a coronary thrombosis, lobar pneumonia, diaphragmatic pleurisy, and a ruptured oesophagus.

Morphine, $\frac{1}{2}$ gr. (16 mg.), was given and the patient placed in an oxygen tent. A radiograph of the chest taken four hours later revealed a bilateral pleural effusion, but further detail was obscured by respiratory movement, the patient being unable to hold his breath. By this time, some twelve hours after the onset of the catastrophe, the effusions were quite obvious clinically, and well-marked surgical emphysema had begun to develop in both supraclavicular triangles and was extending on to the chest wall. A confident diagnosis of spontaneous rupture of the oesophagus was made. The patient's condition, however, rapidly deteriorated and he died at 6 p.m. on the day of admission—i.e., about 22 hours after the onset of his illness. Before death the surgical emphysema had involved the whole of the upper half of the body and had closed both eyes. It was noted at the time how little relief this patient obtained from repeated doses of morphine.

Necropsy revealed a linear rupture 1 in. (2.5 cm.) long on the anterior aspect of the oesophagus $3\frac{1}{2}$ in. (8.75 cm.) from the cardia. A large quantity of fluid was present in the posterior mediastinum, and 24 oz. (680 ml.) of blood-stained turbid fluid was found in the right pleural cavity and 18 oz. (510 ml.) in the left. No direct communication could be demonstrated between the mediastinum and pleural cavities. Apart from the tear the oesophagus had no disease of any kind, and the rest of the necropsy was essentially negative.

Case 2

A woman aged 63 was admitted to the West Middlesex Hospital on Dec. 1, 1947, with a diagnosis of ? perforated peptic ulcer. After a heavy meal of tinned meat, cheese, and milk at 8 p.m. the previous day she had vomited twice, and this was rapidly followed by agonizing pain starting in the region of the upper part of the sternum and rapidly spreading to the epigastrium. The pain, which was severe and constant, was made worse by breathing and movement. There was no history of previous indigestion or alcoholism.

Examination revealed a pale, dyspnoeic, rather stout woman in extreme shock. The temperature was 100.8° F. (38.2° C.), pulse rate 124, and respirations 32. The blood pressure was 85/60. The trachea was centrally placed; there were rales at the left base and dullness at the right base. Surgical emphysema was present over the upper sternum. The heart appeared normal. There was rigidity of the whole anterior abdominal wall, with pronounced tenderness in the epigastrium. Normal peristaltic sounds were audible and rectal examination was negative.

She was seen by Dr. J. A. Torrens, who suggested the diagnosis of ruptured oesophagus, and exploratory thoracotomy was advised in spite of the patient being *in extremis*.

It was decided to explore the right chest in view of the effusion on this side, and accordingly a large segment of the eighth right rib was resected and an excellent exposure obtained by means of rib-spreaders. At least 2 pints (1.14 litres) of

fluid resembling weak tea was evacuated from the right pleural cavity and a small rent in the mediastinal pleura demonstrated. This was widely opened and much blackish foreign material was removed from the posterior mediastinum. Fragments of food were identified, and one was impressed by the large quantity of undigested food present.

A small vertical linear tear 1 in. (2.5 cm.) in length was found on the right posterior wall just above the diaphragmatic orifice. This was rapidly closed with interrupted fine catgut sutures, and the posterior mediastinum and pleural cavity were cleansed so far as was possible. A soft corrugated rubber drain was inserted across the pleural cavity into the posterior mediastinum, and the chest wall was closed around this and a large tube to the pleural cavity. Penicillin, 500,000 units, was injected into the pleural cavity at the close of the operation and closed drainage instituted. Shock was treated by plasma. Fluid requirements were met by intravenous glucose-saline, and infection was controlled by systemic penicillin and sulphamezathine. A radiograph two days later showed that the right lung had re-expanded, though there was now a little fluid in the left pleural cavity.

The mediastinal drain was removed and daily intrapleural injections of penicillin were continued. The intravenous drip was removed on the fourth day and a milk drip by means of a Ryle's tube substituted. At this time the left pleural cavity was aspirated and some 7 oz. (200 ml.) of straw-coloured fluid were obtained. The tube in the pleural cavity was shortened and finally removed on the twenty-first day after operation. The Ryle's tube was removed on the fourteenth day; but some leakage of milk occurred across the pleural cavity, so the tube was replaced. Two further trial removals were made, with further leakage, but eventually the Ryle's tube was discarded on Jan. 22, 1948, some eight weeks after operation. No further leakage occurred and normal diet was rapidly resumed. Excellent nutrition was maintained throughout by these means.

The patient was discharged on Feb. 18 with the wound almost healed, and when seen ten days later complete healing had taken place. Repeated chest films during the post-operative period had revealed a gradual return to normal, and a barium swallow on Feb. 26 showed an oesophagus of excellent calibre with slight dilatation of the lower end to the right, presumably due to adhesions. A letter from the patient at the end of June, 1948, told of perfect health and an ability to eat anything.

Incidence, Aetiology, and Clinical Course

Since the first classic case described by Boerhaave in 1724, Olsen and Clagett (1947) have been able to find some 60 cases in the world's literature. The majority of these were first diagnosed at necropsy, and only 14 were diagnosed before death. It should be made clear that these cases are those in which spontaneous perforation of a normal oesophagus has taken place, and that perforation of an oesophageal peptic ulcer or other disease process and rupture following instrumentation are excluded. The former inevitably fatal outcome allowed ample necropsy evidence that the oesophageal wall was indeed normal. There is no evidence to show that the muscle wall in these cases is exceptionally thin, and any congenital weakness can also be ruled out by the late onset of this catastrophe.

The presenting feature in almost all recorded cases is that of vomiting, and the sequence of events is probably as follows. The patient, after some dietetic indiscretion or a particularly heavy meal, begins to retch or vomit. There is a rapid rise in intragastric pressure, which is transmitted to the oesophagus. The sphincter at the cricoid level fails to relax and the oesophagus tears at its weakest point—that is, at the lower end of the oesophagus just above the diaphragm. Such tears have been produced experimentally and have also occurred in patients following crushing injuries to the abdomen, during convulsions, and after defaecation.

Barrett (1946), in a most comprehensive survey of the whole subject, has stressed the high percentage of alcoholics among these patients, and it is thought that, though alcohol

may have a deleterious effect on the oesophagus, it is the vomiting and retching it produces which is the important factor. However, as he points out, this condition is unfortunately not confined to gluttons and alcoholics.

The pathological findings are remarkably constant. A linear longitudinal tear 1–8 cm. in length, usually on the left posterior wall, is most often present, and this involves the lower end of the oesophagus just above the diaphragmatic opening. The right posterior wall, as in Case 2 above, may be affected, and occasionally two tears have been present. It will be noted that the tear was on the anterior wall in Case 1. The posterior mediastinum becomes filled with food and regurgitated gastric contents, and the pleural cavities may be secondarily involved.

Males are predominantly affected, and Ridgway and Duncan (1937) were able to find only five females in the 35 cases recorded at that time. The middle-aged are most often affected, and my second case is the oldest of those recently reported.

As noted above, vomiting and retching usually initiate the process. This is rapidly followed by pain, variously located in the upper abdomen, the lower part of the sternum, or posteriorly on the left at the level of the lower thoracic or upper lumbar vertebrae. The pain is severe and agonizing, and has sometimes been described as tearing in character. A feature noted by several authors is the lack of relief obtained from morphine. The patient shows the usual features of shock, the pulse being rapid and the temperature subnormal, though the latter may be raised. Dyspnoea, pain on breathing, and cyanosis are commonly present, and the respiratory rate is increased. The patient is unable to lie down, some relief being obtained by sitting up in bed.

In the very early stages there may be tenderness and guarding, amounting to board-like rigidity in the epigastrium, and many of these cases have come to laparotomy on the erroneous diagnosis of a perforated peptic ulcer. Very shortly two phenomena develop which give the surest clues to the diagnosis. First, unilateral or bilateral pleural effusion appears. Initially this is probably reactionary to the highly irritating gastric contents in the posterior mediastinum, but soon gastric juice itself appears in the pleural cavity, either because the tear involves the pleura or because it bursts through the pleura, and may readily be recognized on aspiration and analysis. Secondly, in many cases surgical emphysema has developed; this begins over the upper part of the sternum and then spreads to the neck and face.

Should all the classical features be present, diagnosis should not be difficult provided the condition be known to the clinician.

The chief conditions for which spontaneous perforation of the oesophagus has in the past been confused are perforated peptic ulcer, dissecting aneurysm of the aorta, coronary disease, acute pancreatitis, acute cholecystitis, and spontaneous pneumothorax. A brief consideration of the main symptoms and physical signs should lead to a correct diagnosis in the typical case.

In untreated cases death rapidly occurs, the majority dying within 48 hours. In a few cases the process has been much slower, and at least three such cases have ultimately survived. The mortality in the past for the acute cases which form the vast proportion has been 100%. However, Graham (1944) and Frink (1947) have reported cases of late drainage in patients who appear to have localized the spreading infection, with ultimate cure.

Barrett (1947) and Olsen and Clagett (1947) have reported successful repair in the early stages, and Case 2 above is a further instance. In all three cases direct approach to

Reviews

DIAGNOSIS OF VIRUS DISEASES

Diagnostic Procedures for Virus and Rickettsial Diseases. By various authors. (Pp. 347; illustrated. \$4.00.) New York: American Public Health Association, 1790, Broadway. 1948.

Virus diseases can be diagnosed and studied in the laboratory; many of them are of such importance that in the future the appropriate techniques will have to be available in many hospital and public health laboratories and not only in research institutes. This book is a mine of information, for its 17 chapters are all written by specialists, who tell how much can be done and is being done in the U.S.A. The specialists have been "given their head" to describe how they deal with the viruses which are their own special study, and no attempt is made to insist that exactly similar methods are described where one technique is applicable to several viruses. Some duplication is thus inevitable.

Some of the authors have interpreted their instructions liberally. Thus, the article by Meyer and Eddie on psittacosis, and some of the others, give much interesting assorted information about the virus concerned. On the other hand, the chapter by Parker on variola and vaccinia is almost too concise. That on poliomyelitis by J. R. Paul is full of useful information on the caging and handling of experimental monkeys. Phlebotomus (sand-fly) fever seems rather out of place in such a book, for human volunteers are necessary for any experimental study. Trachoma, influenza, mumps, rabies, yellow fever, and rickettsial diseases are among the other more important subjects discussed. Workers in diagnostic and in research laboratories will have many occasions to seek—and find—in this book the facts they need.

C. H. ANDREWS.

INFERTILITY

The Childless Marriage. Its Cause and Cure. By Edward F. Griffith, M.R.C.S., L.R.C.P. (Pp. 206; illustrated. 8s. 6d.) London: Methuen and Company. 1948.

Sterility and Impaired Fertility. Pathogenesis, Investigation, and Treatment. By Cedric Lane-Roberts, C.V.O., M.S., F.R.C.S., F.R.C.O.G., Albert Sharman, M.D., Ph.D., M.R.C.O.G., Kenneth Walker, M.A., M.B., B.C., F.R.C.S., F.I.C.S., B. P. Wiesner, D.Sc., Ph.D., F.R.S.Ed., and Mary Barton, M.B., B.S. Second edition. (Pp. 400; 96 figures; 2 plates. £1 4s.) London: Hamish Hamilton Medical Books. 1948.

Both these works were first published in 1939, and their second editions represent extensive revision made necessary by the many advances in knowledge and alterations in outlook which have occurred in the last decade. Dr. Griffith's book is not strictly a second edition, for it first appeared under a different title—*The Childless Family*. It is intended for the lay reader, is compact and cheaply produced, but contains a lot of information, perhaps too much. Many of the more strictly medical points, which the author advises the lay reader to skip, could be omitted. Although there are few, if any, errors in fact, the outlook is not always scientific, and some of the statements might be misleading to anyone without medical knowledge. The association between abortion and seminal faults is overstated to the extent that it might cause unjustifiable alarm, and the account of continence in the male leading to sluggishness of spermatozoa could have unfortunate repercussions. The recitation of individual cases is not convincing, nor are the illustrations of hystero-graphs, some of which are alleged to demonstrate uterine hypoplasia. Is it possible, at any rate without a specially controlled technique, to recognize this condition by this means? Nevertheless the book has much to commend it, and any couple who read and understand it will be left with a relatively wide knowledge of infertility, its causes, how it should be investigated and by whom, and the prospects for its cure. The final chapter, which occupies 40 pages, comprises a very full account of artificial insemination, setting out the arguments for and against, and giving many useful references. This alone justifies a place for the book in the general practitioner's library.

Sterility and Impaired Fertility is written on a different plane and prescribes for the general practitioner and consultant. It is one of the best books of its kind and already has a high reputation. The new edition has the same format as its predecessor, although the text is considerably modified in places. Dr. Mary Barton has now joined the team of authors and makes her presence felt by a new emphasis on cervical function and sperm penetration of cervical mucus. Other changes include a simplification in the technique and interpretation of semen analysis, the rejection of hormone analysis as a practical measure of real value, and a more cautious outlook on the value of hormone therapy and on the interpretation of tubal patency tests. Among some useful appendices may be mentioned a description of a new modification of the method of estimating pregnanediol in the urine, and a short account of irradiation of the pituitary and the ovary by Dr. Anthony Green. It is rather surprising to find that the carbohydrate in semen is still referred to as glucose when most workers now consider it to be mainly fructose. Moreover, there appears to be no mention of precoital douches of either sodium bicarbonate or glucose as a method of treatment. Although this may be regarded as old-fashioned and empirical it is widely used and at least deserves discussion. These, however, are small matters when considered in the perspective of this otherwise wide and authoritative account of fertility and infertility, an account which deserves to continue to be looked upon as a standard work for reference.

T. N. A. JEFFCOATE.

PUBLIC HEALTH IN THE U.S.A.

Public Health Administration in the United States. By Wilson G. Smillie, A.B., M.D., Dr.P.H., Sc.D. Third edition. (Pp. 637; illustrated. \$6.50 or £1 12s. 6d.) New York and London: The Macmillan Company. 1947.

The title of this book might suggest a discourse on the details of administration of public health in the United States with fairly ample reference to public health law, but this is not the author's line of approach. He discusses many diverse problems in hygiene. In a short first part he outlines the scope of public health functions; Part II is entitled "Administrative Control of Communicable Diseases," Part III "Basic Activities of a Health Organization," and Part IV "Organization of Public Health Programs."

The student of medicine will appreciate the section on infectious diseases, where the author describes not only the action taken by a health department in respect of various diseases but also their epidemiology, clinical features, and differential diagnosis. The reader is thus led to realize that sound administrative action must be based on the clinical and epidemiological features of a disease. The author makes a plea that there should be no rigidity of action in dealing with cases of infectious disease. He expresses the accepted modern view that infectious-diseases hospitals should be part of a general hospital scheme, since to-day their chief value is the advantage the patient derives from skilled treatment rather than the protection of the public by his isolation. As is to be expected, the discussion on epidemiology is especially directed to American problems, such as the differing incidence and manifestations of diseases in white and coloured peoples. He considers at length such diseases as malaria and rabies, whereas he makes little mention of bovine tuberculosis; his account of the work of port health departments, especially in relation to the spread of infectious disease, is not satisfactory.

The author lays great emphasis on the work of the public-health nurse. He discusses the ways in which her services may be utilized by a health department and whether each nurse should be limited to a special branch of public health nursing. Throughout the book he draws attention to the duty of health departments to educate the public, and he points out that in this respect there are virgin fields to be explored. Public-health departments in Britain may find this subject of particular interest now that they are being relieved of some of their former functions. The sick individual, in his view, is not the responsibility of the health department, and he emphasizes the value of "well child conferences." The author maintains that, ideally, prenatal service should not be a function of the health

department, since the medical supervision of the mother during pregnancy should be given by the physician who will have charge of the delivery. However, he realizes that this ideal cannot always be attained, and in these circumstances he stresses the importance of administrative co-ordination between the responsible authorities. He includes notes on such topical subjects as the rhesus factor, epidemic diarrhoea of the newborn, and fluorine in relation to dental caries. He defines geriatrics as the study of persons over 40 years of age, and indicates the value of periodic health examinations (or health inventories).

The chapters on administration, towards the end of the book, will give European readers a conception of the peculiarities of central and local government in a federation of States. The author uses the discussion on this subject to emphasize many of the more important points raised earlier in the text. Possibly the non-American reader would have benefited from the administrative information being included at the beginning rather than the end of the book. Illustrations are numerous and good, and—what is of considerable importance in this type of book—it has an adequate index and comprehensive lists of references on the wide range of subjects discussed.

R. T. BEVAN.

A SURGEON'S LIFE

The Trent and I Go Wondering By. Stories of over fifty years of my life in Nottingham. By R. G. Hogarth, C.B.E., D.L., J.P., F.R.C.S., Hon.L.L.D.Ed. Foreword by Lord Webb-Johnson. (Pp. 144. 12s. 6d.) Nottingham: Cooke and Vowles, Ltd., The Thoroton Press, St. James's Street.

The Trent and I should be assured of a welcome in and around Nottingham, for since 1894 there are few local institutions and events and very few prominent citizens with whom Mr. Hogarth has not had professional and apparently inevitably friendly relations. It is a very discursive book, rambling over the life of a successful surgeon and devoted citizen. It fully supports what the author says of himself, "I have enjoyed life." His versatility is amazing, and he seems to have worked as hard at his hobbies as he did at his profession. His medical career has been bound up with the Nottingham General Hospital, which he has seen enlarged and improved almost out of recognition since the days when he was a house-surgeon. His story of how he took the risk of a plunge into consulting surgery from a successful general practice is vividly told, as is the struggle to persuade his hospital to establish a pay-ward. This met with considerable opposition which momentarily disturbed his relations with the management of the hospital.

The older members of our Association remember Mr. Hogarth as its President in 1926 at one of our most successful Annual Meetings. It was a happy thought to include in this volume his memorable presidential address, full of common sense and delivered with immense gusto. His fame as a surgeon was recognized far afield and by good judges such as Lord Moynihan and Lord Webb-Johnson, who contributes an appreciative foreword to the book.

The influence of sport on Mr. Hogarth's career is well brought out—a successful athlete, a more than average cricketer and footballer, an enthusiastic motorist in the early days. Indeed, there is scarcely a branch of sport in which he has not indulged and been proficient. He gives the palm to fishing, especially salmon-fishing. Fishing, he says, "has been my principal joy and pleasure—but I have derived much the same from my work, and what more can a man ask?"

There is an eloquent and sensible chapter on "Importance of Health," with some shrewd reminders of the tendency in democracy to ignore the value of self-discipline, as shown for example in the shocking way in which our streets and parks are desecrated by litter. One notes that he has the usual surgeon's view of the value of "a bottle of medicine"—and he speaks with a knowledge of both sides. I was glad to note once again in the presidential address his quip about "the waters of healing laid on at the main" in Harley and Wimpole Streets. It is a happy book, especially welcome to those who know the author and his wife, to whom both he and Lord Webb-Johnson pay a graceful tribute.

ALFRED COX.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Krebsmetastasen. By H. E. Wähner. (Pp. 560. 60 Swiss francs.) Basle: Benno Schwabe. 1948.

A monograph, with many refereces to the literature, on metastasis of malignant growths.

The Clinical Examination of the Nervous System. By G. H. Moorad-Krohn, M.D., F.R.C.P. 9th ed. (Pp. 459. 16s.) London: H. K. Lewis. 1948.

An introductory manual, with many illustrations and diagrams.

A Shetland Parish Doctor. By H. P. Taylor, J.P., M.B., C.M. (Pp. 136. 10s. 6d.) Lerwick, Shetland: T. and J. Maason. 1948.

The late Dr. Taylor's autobiography, with illustrations from his hand.

The Chemist and Druggist Year Book, 1949. (Pp. 666. No price.) London: Morgan. 1948.

A compendium of information useful to pharmacists.

Vitamins and Hormones. Edited by R. S. Harris and K. V. Thimann. Vol. 5. (Pp. 478. \$7.50.) New York: Academic Press. 1947.

Articles by various authorities on recent advances in knowledge.

Bone Marrow Biopsy. By S. J. Leitner, M.D. English translation revised and edited by C. J. C. Britton, M.D., Ch.B., D.P.H., and E. Neumark, M.B., B.S. (Pp. 433. 42s.) London: J. and A. Churchill. 1949.

An illustrated monograph, with extensive bibliographies.

Abdominal Operations By Rodney Maingot, F.R.C.S. 2nd ed. (Pp. 1,274. 84s.) London: H. K. Lewis. 1948.

A detailed account of technique for the surgeon.

Operative Dental Surgery. By J. B. Parfitt, L.R.C.P., M.R.C.S., F.D.S.R.C.S., and W. E. Herbert, L.R.C.P., M.R.C.S., F.D.S.R.C.S. 6th ed. (Pp. 454. 30s.) London: Edward Arnold. 1948.

A textbook for dental students.

Company Finance for Everyman. By L. Mundy, O.B.E. (Pp. 84. 4s.) Oxford: Pen-in-Hand. 1948.

A simple explanation of how to understand balance sheets.

An Introduction to Cardiology. By Geoffrey Bourne, M.D., F.R.C.P. (Pp. 264. 18s.) London: Edward Arnold. 1949.

An account of the chief aspects of cardiovascular disease for students and practitioners.

Psicoanalisi della Vita Istintiva. By J. Flescher. 2nd ed. (Pp. 439. No price.) Rome: Scienza Moderna. 1948.

A sindy iotecoded for medical men and educationists.

Principles of Biological Assay. By C. W. Emmens, D.Sc., Ph.D. (Pp. 206. 21s.) London: Chapman and Hall. 1948.

A guide for the research worker or analyst on the planning of tests

Practical Public Health Problems. By Sir William Savage, B.Sc., M.D. 2nd ed. (Pp. 197. 14s.) London: J. and A. Churchill. 1949.

Discussion of such topics as the supervision of water supplies, milk, and other foods, the investigation of enteric outbreaks, and house inspection.

The 1948 Year Book of General Medicine. Edited by P. B. Beeson, M.D., and others. (Pp. 821. 21s.) London: H. K. Lewis. 1948.

Abstracts of recent papers, with editorial comment.

A Short Practice of Surgery. By Hamilton Bailey, F.R.C.S., F.A.C.S., F.I.C.S., F.R.S.Ed., and R. J. McNeill Love, M.S., F.R.C.S., F.A.C.S., F.I.C.S. 8th ed. (Pp. 628. 52s. 6d. for 5 parts, not sold separately.) London: H. K. Lewis. 1948.

This part includes accounts of the rectum, abdominal hernia, and the urogenital system.

Ocular Signs in Slit-Lamp Microscopy. By J. H. Doggart, M.A., M.D., F.R.C.S. (Pp. 112. 21s.) London: H. Kimpton. 1949.

Includes many coloured illustrations.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY FEBRUARY 26 1949

A TRUST FUND

The Representative Meeting in June last year referred to the Council a number of motions on the formation of a medical trade union or some other form of organization for the better protection of the interests of the medical profession. Since then the subject has been raised several times in the correspondence columns of the *Journal*. Behind the demand for a medical trade union is the feeling that if the Association had had trade union powers of applying sanctions and granting benefits it would have been in a stronger position in its conflict with the Government in the first half of last year. The demand is, in effect, an expression of dissatisfaction with the B.M.A.'s limited powers in its conduct of negotiations from 1942 to 1948. Behind this demand there is also desire to put more power into the hands of the profession in any subsequent conflict with the Government over the terms and conditions of service in the N.H.S. The Council of the B.M.A., in response to the request of the Representative Body, set up a committee on the constitutional position of the Association, and its report appears in this week's *Supplement*. The report is a long and closely reasoned document which, based on legal opinions of eminent counsel and the advice of the solicitors of the B.M.A., describes the present constitution of the B.M.A. and its advantages and disadvantages; the legal position of a trade union; the possibilities of converting the Association into some other form of organization; and the question of establishing some other form of organization linked to the B.M.A. in a way that would secure identity of interest. The legal arguments are not easy to follow, especially when it is observed that, like doctors, eminent lawyers see fit to differ. The principal conclusions, however, are that it is not possible to convert the B.M.A. into a medical trade union; that even if this were possible the advantages of trade union status are illusory because medical men are neither workmen nor masters and medicine is not a trade; and, finally, that to provide an effective weapon in future controversy a trust fund should be established under the control of a Medical Guild which, legally separate from the B.M.A., can use it for objects not defined in the Memorandum of Association.

The B.M.A. is registered with the Board of Trade as a "Company not for profit," and is thus enabled to dispense with the commercially tinged description "Limited." In granting the Association this licence the Board of Trade insisted on the inclusion in the Memorandum of Association of the proviso to Clause 3, which sets out the objects for which the B.M.A. was established, and Clause 4, which defines and restricts the manner in which the B.M.A. shall dispose of its income and property. The principal object of the B.M.A. is "to promote the medical and allied sciences and to maintain the honour and interests of the

medical profession." An important part of the interests of the medical profession is finance—the adequate payment of medical men for the work they do, linked as this is with the status and prestige of a learned profession in society. When this interest is threatened the B.M.A. is by its constitution limited in the action it can take, being unable to impose restrictions on, or to grant financial benefit to, members who acting on the advice of the B.M.A. suffer financial loss. It was because of this second disability that the Independence Fund, subscribed to by fewer than 6,000 doctors, was established in the early part of last year. It would seem that the B.M.A. is within its constitutional rights to *advise* but not to *organize* collective opposition, but in an acute conflict the dividing line between advice and organization might be hard to define; and any one person could seek an injunction against the B.M.A. on the grounds that its funds were being used in contravention of its Memorandum, and the Association would have to withdraw from the conflict for so long as the matter was being considered by the courts. But whatever the form of organization which might represent it the medical profession as compared with any other section of the community suffers from one big disability, if it may be so termed—namely, that it cannot strike in the sense of withholding its services from sick persons in need of them. If it did that it would cease to be a profession, and would cease to be worthy of its calling. It is, however, open to the medical profession to resign from an organized service such as the N.H.S. and at the same time to continue to look after the sick. If such a grave decision were taken the problem for the doctor would be one of securing payment for work done, or, rather, receiving financial support until the conflict precipitated by resignation had been resolved. It was to this end that the National Insurance Defence Trust was built up by insurance practitioners under N.H.I. and the Independence Fund established last year. It is to this end that the Council is recommending to the Special Representative Meeting to be held on March 29 that a Fund should be set up under the British Medical Guild.

It should not be necessary to set forth in the columns of this *Journal* the advantages of the constitution of an Association which has a proud record of promoting the medical and allied sciences over the past 117 years, but if it changed its nature and became a medical trade union would it in this way overcome the disadvantages it is at present presumed to suffer from? Under the Trade Union Acts the principal objects of any trade union are statutory objects. These are defined as the regulation of the relations between workmen and masters, or between workmen and workmen, or between masters and masters; in this regulation of relations restrictive conditions can be imposed upon the conduct of any trade or business, and benefits may be provided to members. In the opinion of Counsel medical men are neither masters nor workmen, however employed. Medical practice does not come within the definition of "trade," but could be held to be a "business." The statutory objects of a medical trade union would therefore be (1) the imposition of restrictions on the conduct of the business of its members, and (2) the provision to them of benefits. In taking action to defend its rights in a dispute an ordinary trade union

has some degree of legal immunity under the Trade Disputes Act of 1906. In this Act a trade dispute is defined as one "between employers and workmen, or between workmen and workmen." In the opinion of Counsel a medical practitioner is not a workman in the meaning of the Act, nor is he employed in trade or industry. A medical trade union, therefore, would not have (and does not have) this important legal safeguard provided by the Trade Disputes Act of 1906. The medical profession is also in the difficulty that it has hitherto strongly opposed a "closed shop" policy. Its best instincts and traditions would make it hesitate to use the trade union sanction of expelling a doctor from a medical trade union in order to deprive him or her of opportunity for employment.

As it is registered under the Companies Act the Association cannot transform itself into a trade union. If it were to wind up its affairs it would not be able to transfer its assets to a trade union which might take its place. The B.M.A. might free itself from its present restrictions by surrendering its licence to dispense with the word "Limited" in its title and thus be able to alter its Memorandum. This, however, might not be possible if 15% of the members objected; the Association would still have no immunity from legal proceedings, and power to impose restrictions and provide benefits could not become the principal objects of association. During any dispute any one person could still lay an injunction against the B.M.A. on the alleged grounds that these had become principal objects, and that it was therefore in fact acting as a trade union; the Association would be put out of action until the matter had been settled in the courts.

The Council, having dismissed as unrealistic or impossible the conversion of the B.M.A. into some other form of organization, looked into the question of setting up another and parallel body. It considered, for example, the possibility of establishing a medical trade union, membership of which would be conditional on membership of the B.M.A. and *vice versa*. Such a union might because of his failure to conform to policy expel a member, who would then be in the legally impossible position of being expelled from the B.M.A. for failure to conform with the policy the Association by its constitution would be prevented from enforcing. That being so, and even granted that membership of the trade union would be conditional on membership of the B.M.A. but not *vice versa*, the possibility or probability is that the two bodies would be unequal in numbers of members. This is an additional argument to the other ones brought forward against the proposed value of trade union status. The Council has been up against the difficulty that parallel bodies, like parallel lines, might be expected to meet at infinity. It is therefore recommending to the Representative Body that there shall be established a trust fund known as the British Medical Guild. This would be a legally independent entity lawfully able to organize and not merely advise the profession in the event of a dispute with the Government, and able to distribute financial benefits. The Guild would be controlled by a board of trustees, and this board could be composed of members of the Council of the B.M.A. The proposed British Medical Guild is closely similar to the Independence Fund set up last year. The Guild, in fact, would provide

the B.M.A. with weapons which its present constitution prevents it from using. If the Representative Body decides to adopt the suggestion made, then it will presumably support all efforts to secure contributions to the Fund. The relationship of this Fund to the National Insurance Defence Trust has yet to be examined.

The problem is intricate, and made not less so by the legal complexities which surround it. The position of the doctor in the community is in the last resort determined by the fact that he belongs to a learned profession dedicated to caring for the health of the people. The medical profession is older than parliaments and ministries, and whatever the changes in the organization of its services it has always retained its essential character. It is therefore important that, whatever alterations there might be in the form of professional organization, nothing should be done to impair the status and prestige of medicine and those of its traditions which are other than the passing changes of fashion. Apart from the difficulties and disadvantages of converting the B.M.A. into a medical trade union, such a transformation of a voluntary association of medical men and women might end in altering for the worse the essential nature of a great calling. Nevertheless, in a world in which hard economic facts increasingly obtrude themselves the profession needs an economic weapon as a measure of defence. The British Medical Guild is designed to produce this.

SPREAD OF STREPTOCOCCAL TONSILLITIS

Streptococcal sore throat, when unaccompanied by a rash, is not notifiable, and because of this school outbreaks frequently go unrecorded. But even when outbreaks of scarlet fever or streptococcal tonsillitis have been carefully investigated little or no progress has been made in determining the mode of spread or the best methods of control. Throat-carrier rates among contacts could be high or low, and, if some outbreaks ceased abruptly, most went on with cases cropping up throughout the term despite precautionary measures. It has been shown that the spread of streptococcal infections in wards where patients with burns, scarlet fever, and puerperal sepsis were being nursed was associated with gross contamination of the dust and air by the infecting streptococci, and the success of dust-suppressive measures in controlling secondary streptococcal infection in measles wards testified to the importance of this mode of spread. The next step was to find out how the dust became heavily infected.

Although Gordon¹ had shown in 1932 that convalescent cases of scarlet fever with purulent nasal discharge were most likely to give rise to "return" cases and clinicians had long known that the case or carrier of nasal diphtheria was a dangerous source of diphtheria infection, it was the work of Hamburger and his colleagues²⁻⁶ in Army camps during the late war which demonstrated clearly the importance of the heavy nasal carrier in spreading streptococcal infection. After they had confirmed the finding of earlier

¹ *J. Amer. med. Ass.*, 1932, 98, 519.

² *J. infect. Dis.*, 1944, 75, 58.

³ *Ibid.*, 1945, 77, 68.

⁴ *Ibid.*, 1945, 77, 96.

⁵ *Ibid.*, 1946, 78, 33.

⁶ *Ibid.*, 1948, 82, 72.

⁷ *Mon. Bull. Min. Hlth.*, 1944, 3, 160.

workers that patients with strongly positive throat cultures expel only relatively few organisms during talking or coughing, they showed by various tests—cultures of nose-blows, hands, bed patches, and dust—that the heavy nose carrier, whether or not he has any clinical signs of infection, nearly always profusely contaminates his surroundings, and that in fact he disperses about 80 times more haemolytic streptococci than the corresponding throat carrier. They further showed that nose carriers appeared to be responsible for outbreaks of streptococcal infection in hospitals and barracks and, in one instance, for a large-scale food-borne outbreak.

The question remained whether streptococcal infections spread among civilians, particularly among children in schools and nurseries, in the same way as among troops in training. Various recorded outbreaks have suggested that it is so; for example, Boissard and Fry⁷ reported that cases of scarlet fever occurred in a school in the autumn and summer terms when a boy with severe nasal catarrh was present, but not in the spring term when the boy was absent. In this issue of the *Journal* Drs. G. T. Cook and D. Munro-Ashman provide further evidence of the importance of the nasal carrier in the spread of streptococcal tonsillitis in a residential school. The outbreak began when a boy, subsequently shown to be a heavy nasal carrier, returned to his dormitory about the middle of the spring term after an absence of ten days with sore throat and fever. During the rest of the term 19 cases of illness caused by the epidemic type of organism and 4 contact carriers occurred in six dormitories of the house to which the first boy belonged; 18 of these cases came from three dormitories holding 28 boys in all (an incidence of 64%), and in each of these three dormitories the first case was found to be a heavy nasal carrier. The incidence was 25% in the other three dormitories of the same house and 11.8% in the single rooms, where the boys were older and in less close contact with each other. Although the premises were vacuum-cleaned and scrubbed during the Easter holidays, further cases occurred throughout the school in the summer term and continued even after known nasal carriers were treated successfully with penicillin-sulphathiazole snuff. However, there may have been undetected nose carriers, since no mass swabbing was carried out, and there is no mention of examination or infection of the blankets, often an important reservoir of haemolytic streptococci in an infected environment.

The important lesson from this and similar studies is that nose as well as throat swabs should be taken from all close contacts when search is being made for the source of streptococcal infection. If this swabbing can be done early, when only 2 or 3 cases have been reported, and a heavy nose carrier is identified as a likely focus, his removal and treatment may well prevent further spread. Too often, however, the infection is allowed to drag on for some weeks before action is taken, by which time there may be many carriers and a grossly contaminated environment. Large-scale swabbing, isolation of nose carriers, and a thorough "spring-clean" followed by disinfection of the premises and bedding then become necessary. It may be added that outbreaks of infection do not necessarily follow the discovery of nose carriers or streptococcal contaminated

dust. There are other variables—virulence of the organism, the nature and resistance of the community, and the accessibility of organism to host—which play their part, but the potential danger of the nasal carrier cannot now be denied.

RELIEF OF PAIN IN CHILDBIRTH

The report entitled *Maternity in Great Britain*,¹ on which we commented in a leading article a few weeks ago,² exposed many deficiencies in the maternity service. The Press and politicians find this a topic of constant interest and it is not without reason that women will demand that more attention be given to the problem. The main complaint of the mothers interrogated in this survey, which was made jointly by the Population Investigation Committee and the Royal College of Obstetricians and Gynaecologists, was that no attempt was made to relieve the pains of labour. In the Metropolitan boroughs, for instance, only 5% of the mothers confined at home and 48% of those confined in hospital were given relief. The report on pain in childbirth prepared by a subcommittee of the Medical Women's Federation and published elsewhere in this issue therefore appears at an opportune time. If ever a body of women would insist on adequate analgesia during childbirth it would surely be women doctors at their own confinements. There would also be a natural demand on their part for the best environment, accoucheur, and midwife. Yet when this report is examined some disquieting facts emerge. It must have been disappointing for the committee that only 196 replies were received from 300 medical women. The forceps rate of 27% in first deliveries may be due to the fact that most of the mothers were attended by obstetric specialists. In half of these cases the reason for instrumental delivery could not be stated. The perineum was repaired in 69% of first deliveries (normal and abnormal) and 18 of the mothers did not have an anaesthetic for this. The incidence of episiotomy is not stated, and local anaesthesia was used to repair the perineum on only 16 occasions.

It is surprising that 32% of the primiparae were given no analgesic during the first stage. On the other hand 90% received an anaesthetic during the second stage. Most women suffer the greatest pain towards the end of the first stage, when the os is about four-fifths dilated. It is at this time that analgesic drugs can bring such great relief. It is not clear why the subcommittee included gas and-air as an anaesthetic—a claim never made by Minnitt. A mixture of chloral and potassium bromide was prescribed in 80 labours and was ineffective in 38. The combination known as "mothers' mist" is still widely used in this country: the single dose of bromide is not pharmacologically effective, and the dose of the third ingredient, tincture of opium, is often 7½ minims (0.45 ml.), which is equivalent to ½ gr. (4 mg.) of morphine. Is there any justification for prescribing this amount? It would seem better to give 30 gr. (2 g.) of chloral. Pethidine was still on trial when this investigation was being made, and doubtless this is the reason why it was given in only 44 deliveries. Not unexpectedly, a mother who was having her third child found "veganin" useless.

¹ *Maternity in Great Britain*, 1948, Oxford University Press, London.

² *British Medical Journal*, 1948, 2, 948.

This group of women is a privileged section of the community in that the standard of obstetric care they receive is much higher than that available to the majority of expectant mothers. The questionnaire showed that opinion was almost unanimous in favour of pain relief in childbirth. Yet a considerable number (24%) said they would have liked more complete relief, and this despite the fact that many were being attended by obstetric specialists. The reasons for this should be sought. Are obstetricians disinterested in obstetric analgesia? Could more effective drugs have been given? Did the mothers react abnormally? The drugs and analgesic apparatus at present available to doctors and midwives are effective provided they are given at the right time and to women who have been properly trained during pregnancy.

It is now generally agreed that the better the mother is prepared during pregnancy for her confinement the less analgesic drug she will need. There is a tendency to rely overmuch upon the hypodermic needle or the tablet as part of a stereotyped system to relieve the pain of uterine contractions. Sometimes the doctor or midwife forgets that the mother is an individual who should and often wants to take an active part in her own delivery. The search for the ideal analgesic must continue, but further investigation should be made of those methods in which explanation and preparation for childbirth play an important part in antenatal care. Midwives conduct most of the deliveries in this country, and they should be able to instruct expectant mothers in the art of muscle control and relaxation. Pain can be relieved in well-trained mothers with the minimum amounts of drugs.

TUBERCULOUS MENINGITIS

Each successive report on the treatment of tuberculous meningitis with streptomycin gains added value from the length of the follow-up of surviving cases and the more mature judgment made possible by longer experience. In this issue we publish an account by Drs. J. Rubie and A. F. Mohun of a study of tuberculous meningitis and its treatment with streptomycin at Highgate Hospital, one of the centres established for this purpose by the Medical Research Council in July, 1947. Perhaps the strongest impression made by this paper is the necessity for early diagnosis and the skill which may be required in reaching it. Particularly instructive is the series of nine patients from whom treatment was withheld, despite meningism, cerebrospinal-fluid lymphocytosis and increased protein, and, in five cases, a suggestive history and known tuberculous foci elsewhere. All these patients recovered spontaneously from whatever cerebral condition they had. It seems that the surest guide to the experienced observer is the mental state: these patients were for the most part alert and happy, whereas the child with undoubted tuberculous meningitis is even at an early stage listless and apathetic. The Mantoux test may be helpful, in that a negative result is a strong point against the diagnosis: in his series the test was negative in only one of the proved cases. Among cerebrospinal-fluid changes a falling chloride content has now by general consent been ousted from its pre-eminent position as a diagnostic sign by a subnormal sugar content, which makes its appearance earlier and is thus of much greater value. This being so, it should be

generally observed that the collection of part of the specimen in a bottle containing sodium fluoride as a preservative is necessary if dependable information is to be obtained on this vital point.

The general results of streptomycin treatment were such as are now expected—recovery (fortunately complete so far as can be seen in 16 of the 18 patients concerned) in about one-third of all cases. The relation between the stage of the disease at which treatment is begun and its outcome is evident—11 of the successful cases being classified as "early," six as "middle," and only one as "late." The effect of age on prognosis is also clear: all the survivors were between 3 and 17 years old. The bad prognosis in infancy is attributed both to the difficulty of eliciting specific complaints in very small children and to the more rapid progress of the disease. Of three patients over 17 years of age all died, presumably because of extensive disease elsewhere—a much more common finding in the adult with meningitis than in the child. The results of different treatment schedules conform to those on which present recommendations by the Medical Research Council are based. Intramuscular administration alone was found to be inadequate; daily intrathecal injection is also necessary, at least in the first month. The present arduous treatment programme occupies five months, two being given to combined treatment, two to intramuscular injection only, and one, the fourth, being a rest period. It cannot be said that the best way of using streptomycin for this disease has yet been defined with certainty: dosage and duration of treatment are not standardized, and some workers have claimed that intrathecal injection alone is necessary. Perhaps the most hopeful line of advance is the combined use of streptomycin with another chemotherapeutic drug such as a sulphone. Such studies are being pursued in several countries, and Rubie and Mohun are themselves using sulphathione in this way. The results of this modification will be awaited with interest.

THE RISKS OF PREMATURITY

The importance of prematurity in relation to stillbirths and neonatal deaths has once again been stressed in a series of articles by Drillien,^{1,2} who has analysed the records of nearly 8,000 births at the Simpson Memorial Pavilion, Edinburgh, during the years 1943 to 1945. Complications of pregnancy, especially hydramnios and antepartum haemorrhage, were found to increase the prematurity rate, stillbirth rate, and neonatal death rate. With a spontaneous vertex delivery the combined foetal and neonatal mortality for premature infants was 21 times greater than for mature infants. Breech delivery increased the risk of death for both premature and mature infants, while the application of low forceps appeared to increase the risk for mature babies only. The principal causes of death in premature babies were prematurity alone, asphyxia, and infections, while in mature babies congenital defects accounted for the majority of deaths. The risk of death from all causes was far greater for the premature than for the mature infant. No diagnosis of a pathological condition was made in over half the stillbirths, but the principal ascertained causes were congenital defects and asphyxia, the former being responsible for more deaths

¹ *J. Obstet. Gynaec. Brit. Emp.*, 1947, 54, 300, 443.

² *Arch. Dis. Child.*, 1945, 23, 69.

³ Hess, J. H., Mohr, C. J., and Bartsch, P. F., *The Physical and Mental Growth of Prematurely Born Children*, 1934, Chicago.

⁴ Levine, S. Z., and Gordon, H. H., *Amer. J. Dis. Child.*, 1942, 64, 274.

⁵ *J. R. Soc. Med.*, 1947, 67, 409.

⁶ Baird, D., *J. Obstet. Gynaec. Brit. Emp.*, 1945, 52, 217, 339.

in the premature and the latter for more deaths in the mature infants.

By carefully considering the records of each stillbirth and neonatal death Drillien attempted to assess the primary cause in each case. She concluded that congenital defects and erythroblastosis were responsible for nearly 24% of all stillbirths and neonatal deaths, toxæmia and antepartum hæmorrhages for 30%, hazards of delivery for 20%, while all other causes accounted for only 6%. In 20% of the cases the cause was unknown. The investigation was completed by a follow-up of 103 premature and 174 mature infants. There was a significant difference between the ages at which premature and mature infants reached the various "milestones," and the average weight at any given age was found to rise steadily with increasing birth weight. In this follow-up no allowance was made for the degree of prematurity or for social conditions. Drillien points out that authors^{3,4} who have taken the degree of prematurity into account and who have compared the development of premature infants with their mature siblings have found no striking difference between the two groups after the first few years of age, and she suggests the possibility of an economic handicap continuing to act on the premature infant after birth.

Drillien's figures are of necessity based on a selected section of the population, but they are a valuable addition to the other published analyses. Crosse,⁵ for instance, investigated the records of 85,305 births which took place in the city of Birmingham during the years 1943 to 1946. She found that the prematurity rate was 6.9%, and that 42.8% of the stillbirths and 57.8% of the neonatal deaths occurred in premature infants. The causes of prematurity, stillbirth, and neonatal death were similar to those reported by Drillien, with the exception that mortality due to erythroblastosis was lower, such cases naturally being collected in hospital. The influence of social and economic factors on prematurity, stillbirth, and neonatal death was demonstrated by Baird,⁶ who analysed the records of 10,728 Aberdeen births and grouped them according to the different social classes. He found that the rates of prematurity, stillbirth, and neonatal death were all much greater in the poorer classes than in the better-off. The commonest obstetric condition associated with prematurity was toxæmia, and this was twice as common among the poor as the well-to-do.

All these investigations show that if the risks of prematurity are to be further reduced the interests of individual midwives, doctors, antenatal clinics, and hospitals must be merged in the general interest of obtaining the best result for each mother and her baby.

"DOGGER BANK ITCH"

Occupational diseases are often given graphic names which indicate the cause or the striking features of the lesion. "Dogger Bank itch," recently described by Bonnevie,¹ is an eczematous dermatitis observed in North Sea fishermen, particularly those fishing the Dogger Bank area, and is due to contact with the sea chervil, a seaweed-like animal colony, the coralline *Alcyonidium hirsutum*. It is rare for live animals to cause contact dermatitis, which is generally the result of chemical or vegetable irritants. The sea chervil is landed, sometimes in large quantities, in the nets with the fish and is thrown back into the sea. Bonnevie describes the case of a young Esbjerg fisherman who had been fishing the Dogger Bank for four years. The dermatitis started on his hands and cleared rapidly when he went ashore: on returning to fishing increasingly severe attacks

developed, with blistered and oedematous eruptions on the hands and arms, face and legs. Some men have had recurrences of the condition after attendance at fish auction rooms and as a result of journeying in an inspection ship over the Dogger Bank area without actual fishing. Bonnevie suggests that inhalation of the allergen from the atmosphere may be responsible for such relapses. Patch tests have been performed with material obtained from the inner and outer surfaces of the sea chervil and from expressed juices; these were all positive in the affected subjects but negative in controls. The disease has figured in the Danish Workmen's Compensation Act since 1939.

AFTERCARE OF THE HOSPITAL PATIENT

There are many signs that hospitals are now taking a close interest in their patients at home and at work, as well as in the ward or out-patient department. In the work of after care there is some doubt about when the hospital almoner should withdraw and the health visitor take over. An attempt by the Ministry of Health¹ to lay down a line of demarcation has been criticized by the Institute of Almoners, which does not agree with the instruction that "the almoner will not visit patients in their homes." In a leading article *The Times*² takes the side of the almoner on the grounds that so long as a patient is the responsibility of a hospital the social aspects of the patient's care should remain with the medical social workers on the hospital staff just as the medical care rests with the hospital doctors. Commenting on this, Dr. Fraser Brockington³ suggests that the difficulty is due to the fact that the health services have been divided administratively into three parts. "The time will come," he writes, "when such a division will no longer exist. Until then there must be a clear definition of responsibilities."

Almoners were first employed at hospitals to assess charges and sometimes to recover them; now they provide for the hospital medical staff the "background histories" which are needed for the full understanding of individual cases of illness. Health visitors' duties have also been widened. At one time they were employed solely for the purpose of reducing infant mortality; now under the National Health Service Act the welfare of the whole family, in health and sickness, is their concern.

Patients returning home from hospital can certainly be given valuable help by experienced social workers, whether almoners or health visitors. Already some hospitals, including one or two smaller ones which had never employed almoners, have been using health visitors for various purposes. In one area a health visitor was able to find accommodation for some elderly patients who had been occupying hospital beds for many months. In Cardiff health visitors have been calling regularly on patients discharged from hospital after treatment for diabetes and peptic ulcer. The scope of this work is wide, and the public will certainly appreciate any help of this nature which can be given. It would be a pity if the administrative line which separates hospital from health authorities gradually assumed the appearance of a railing with spikes. The right course is to make the best possible use of the almoner's training in social case-work (whether or not this involves home visits) and of the health visitor's training in nursing and health education. There may be a problem in theory, but there should certainly not be one in practice wherever health authorities and hospital management committees are ready to co-operate in order to provide the best service for the patient.

¹ Ministry of Health Circular 160, 1948.

² *The Times*, Dec. 15, 1948.

³ *Ibid.*, Jan. 7, 1949.

⁴ Davies, M., *J. Roy. San. Inst.*, 1948, 63, 302.

VIRUS RESEARCH AND THE VIRUS PROBLEM

LONDON UNIVERSITY LECTURE

Dr. Pierre L  pine, of the Pasteur Institute, Paris, gave a special University of London lecture at the London School of Hygiene and Tropical Medicine on Feb. 8.

The first study of the physical properties of viruses, he said, was directed to the determination of their size. As early as 1923 it was shown that groups of viruses were of different sizes. Here he referred to the important work on ultra-filtration carried out in this country by W. J. Elford from 1929 onwards. Colloid membranes were prepared with a given size of pore, and determinations of the size of many of the commoner viruses were made. The methods which had been developed since had served only to make more precise those original measurements. All that the early workers were concerned with was an accessory physical characteristic—namely, ability to pass through filters. Later experiments showed that some virus particles were of different shape, but none of these observations controverted the opinion that the viruses were essentially minute micro-organisms. Dr. L  pine mentioned the work of Stanley, who regarded the tobacco mosaic as a giant molecule and explained how virulence and infection came to be associated not merely with a definite chemical structure but with physical properties. This became the widely accepted view, and was generalized rather hastily to include all viruses.

The virus problem was being attacked by chemical as well as by physical methods, but Dr. L  pine disregarded the former, as they belonged essentially to a special branch of research into proteins. He reviewed the physical methods which had contributed to a knowledge of the virus. The use of filtration with membranes remained the simplest and most direct laboratory procedure, but another useful procedure was centrifugalization, which gave accurate information about the size and density of the virus and revealed the size distribution. Delicate but remarkably efficient instruments had been built for this work, which had been carried out under difficult conditions during the past few years at the Pasteur Institute.

The virus density measured by ultra-centrifuging could be compared with the size obtained by filtration. He described another procedure which had been developed for estimating virus size. This consisted of placing on a revolving machine an ampoule containing a virus the titre of which was known and irradiating with radium or x rays. Later the titre was again worked out and it was ascertained how much of the virus had been destroyed by a given amount of radiation. It was inferred that the whole of the virus substance was radio-sensitive and that the structure was homogeneous, but in animal strains it appeared that the sensitive area of the surface was not more than half the whole, and therefore the existence of different zones appeared likely. The structure of the virus, therefore, was not homogeneous.

Electron Microscopy

The coming of the electron microscope had made it possible to check visually the morphological data. In some cases the electron microscope had revealed structures infinitely more complex than might have been expected from the use of other methods. Dr. L  pine here showed a photograph of an electron microscope which was built in secrecy in Paris during the German occupation. It had now been turned into a commercial instrument, and was in use at the Pasteur Institute. By means of this instrument it was possible to sort out the viruses in groups according to size. At the top of the size scale (300 m  ) were such elementary bodies as the psittacosis group of viruses, which in structure and behaviour were closely related to the rickettsia. It seemed necessary to conclude that the viruses of this group had an organization not unlike that of the bacterial cell. Then, going downwards in the scale, came the animal poxes, and then the phages, their morphological characteristics suggesting that they were mere collections of molecules. By centrifugalization it was possible to break the phage up into its individual parts, the head, consisting of a nucleus within an envelope, and the tail. There was less detailed knowledge about a virus such as the influenza virus, but there was reason to think that it was not more

homogeneous than the phage. Further down were more elementary forms of virus, the virus of foot-and-mouth disease (diameter 10 m  ), and insect viruses.

Animal viruses had a wide range of size and structure, but none of them seemed to answer the description of a "giant molecule." Of plant viruses more than two hundred were known, and among these only about a dozen had been obtained as homogeneous protein found in living matter. All these viruses contained pentose sugar, which in the case of tobacco mosaic had proved to be ribose. Plant viruses of low phosphorus content were rod-shaped, and tended to take the form of long chains. Those with a higher phosphorus content formed particles.

Under the electron microscope it was possible to see that the crystals in the tobacco mosaic were the result of an agglomeration of particles tending to collect in long chains.

This invisible world, said Dr. L  pine in conclusion, comprised a vast and varied population, from the nucleoproteins up through organisms of increasing complexity. The notion of viruses as giant molecules was very attractive to some, but he thought it introduced a misleading simplification of the problem.

TRACER ELEMENTS IN BIOLOGICAL RESEARCH

Radioactive isotopes are being used increasingly in biological research. Much work has been done on the subject in this country, and more in the United States. Professor F. A. Paneth, F.R.S., in two recent lectures to the School of Pharmacy in London, stated that experiments were taking place with a number of hitherto unfamiliar chemical elements. In the biological laboratory of the near future there might be in use seven or eight elements so far scarcely known, but which might become as prominent in this field as radioactive phosphorus, the first isotope produced for medical research, or radioactive carbon, the classical example of a tracer element in biological experiment. He mentioned in particular "astatine," a chemical element behaving in physiological experiments very much like iodine. Little was known about it as yet, but it was said to offer interesting possibilities in view of its characteristic concentration in a particular part of the body.

The most extensive researches were now being carried out with iodine rather than with carbon or phosphorus. Professor Paneth showed charts illustrating how in animal experiments iodine was taken up by the thyroid and to a much smaller extent by the liver. Other charts showed the relatively diffuse distribution of radioactive phosphorus as compared with the heavy concentration of radioactive strontium in the bone. Strontium was deposited almost exclusively in the bone shaft and hardly at all in the osteoid matrix, whereas plutonium gave a heavy deposit in the matrix and appeared only superficially in the shaft. The use of all these radioactive substances, as Professor Paneth reminded his audiences, was potentially dangerous. If too much iodine were used, for example, the physiological condition seemed to alter and the substance acted more or less as a toxin. One of the surprises of recent years had been the smallness of the amount of radioactive substance which might have a dangerous effect, and it was not without significance that many of the early workers in the radioactive field died from pulmonary disease. Consideration had also to be given to the choice of the right isotope for biological experiments. The half-life must not be too long nor the tracer too strongly active.

Professor Paneth concluded by referring his hearers to the latest sources of information on the subject, adding, however, that the development of the new science was so rapid that no publication could keep abreast of it. The most recent compendium was the fourth report of the U.S. Atomic Energy Commission.

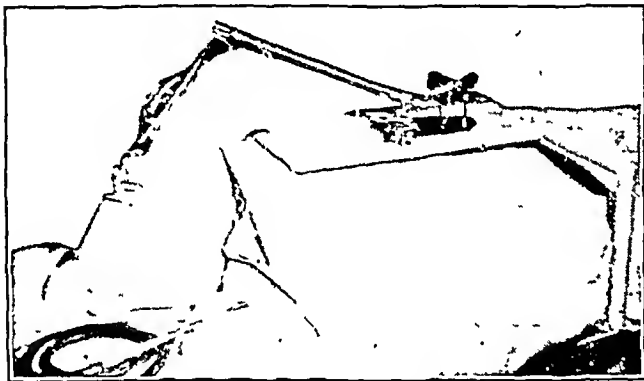
The British Council arranged for Dr. K. J. Powell, anaesthetist to Sheffield City General Hospital, to go to Italy on Feb. 21 to give a three months' course on anaesthesia at the Istituto di Patologia Chirurgica in Rome and to lecture in Florence and Milan. He has been invited to go to Rome by the Director of the Institute, Professor Valdoni, and the visit is a sequel to a wartime meeting. While Dr. Powell was stationed near Florence with a neurosurgical unit he acted as anaesthetist for Professor Valdoni at the Italian civilian hospital in Florence.

Preparations and Appliances

AN IMPROVED JACK FOR THE BOYLE-DAVIS GAG

Mr. TERENCE BANHAM, assistant E.N.T. surgeon, Royal Cornwall Infirmary, Truro, writes: Various methods have been devised for maintaining the airway when using the Boyle-Davis gag for tonsillectomy. Negus's jack (*B.M.J.*, Sept. 19, 1925, p. 523) and the Guy's model suspension rod with ratchet chest-plate are perhaps the best known. These methods are satisfactory in the majority of cases; but they are not ideal, particularly in children. They both exert pressure on the chest, and the Guy's method, though the more secure, utilizes a strap round the patient's neck which by pressure on the neck veins tends to interfere with the venous return from the head. This disadvantage can be overcome by using a much longer strap passing round the head of the table, but the plate still exerts pressure on the chest and, in very small children, on the upper abdomen.

The appliance here described makes use of the Guy's chest-plate but overcomes its disadvantages by holding it rigidly just above the patient. The stand is made of $\frac{3}{4}$ -in. (1.8-cm.) diameter galvanized iron tubing bent as shown in the photograph. The rectangle holding the chest-piece is filled in by



brazing a metal plate to the three sides, forming a platform. The side members of this rectangle are slotted and the Guy's ratchet breast-plate is attached to the top of the platform by two bolts with winged nuts, so that it can be moved backwards and forwards. The two vertical rods fit into holes which are standard fittings on many operating-tables (i.e., Watson Williams's E.N.T. table, made by Chas. Thackray, and the Allen and Hanbury's operating-table). If this rod is a fairly tight fit the whole apparatus is held rigidly by the backward pressure of the suspension rod. On the A. and H. table the rods fit into a sliding collar which is supplied with a lock-nut.

This appliance has been used for many months in the ear-nose-and-throat theatre of the Royal Cornwall Infirmary and has been found entirely satisfactory. It was designed and made for me by the hospital engineer, Mr. Fred Toy.

The first number of the *International Digest of Health Legislation* has recently been published. It will be recalled that the duties and functions of the Office International d'Hygiène Publique have been transferred to the World Health Organization. One of these duties was the publication of the *Bulletin Mensuel de l'Office International d'Hygiène Publique*, which first appeared in January, 1909. The *Bulletin Mensuel* continued its work until December, 1946, and published a great deal of information about public health legislation, communications and vital statistics, as well as many technical reports. In future the technical reports will be incorporated in the *Bulletin of the World Health Organization*, while what was the first section of the *Bulletin Mensuel* has now become the *International Digest of Health Legislation*. The *International Digest* will print translations of, or extracts from, the texts of the most important laws and regulations dealing with public health and related subjects in different countries. There are separate editions in English and French and each edition is issued in two forms—as a bound volume, and as a collection of separate fascicles in a loose cover.

Reports of Societies

THE HEART IN ENDOCRINE DISEASE

At a meeting of the Section of Endocrinology of the Royal Society of Medicine on Jan. 26 Dr. WILLIAM EVANS read paper on "The Heart in Endocrine Disease."

Dealing first with disease of the thyroid, Dr. Evans said that the finding of abnormal circulatory signs could be a valuable aid to diagnosis. When paroxysmal fibrillation occurred with a swelling of the thyroid, thyroidectomy might often end the arrhythmia, but this did not always happen, presumably because the thyroid condition was not the cause; established fibrillation found in hyperthyroidism was as a rule a sign of heart failure. If fibrillation persisted for ten days after operation quinidine therapy should be started. Two-thirds of such cases might be expected to return to normal without this; half the remainder would respond to quinidine, and the rest would continue with fibrillation, but at a slower rate. The persistence of fibrillation was not unfavourable, and digitalis need not be given unless exercise produced uncomfortable palpitation. He did not believe that cardiac enlargement progressed when the cause had been removed by thyroidectomy. Thyroid toxæmia might cause distension of the left auricle indistinguishable from that found in mitral stenosis. The speaker went on to discuss the heart signs in myxoedema and cretinism.

Speaking of acromegaly, he said that it was his experience that the heart did not show any changes in this condition, but in gigantism there might be generalized enlargement of the heart. After showing some electrocardiograms to illustrate abnormalities found in pituitary deficiency, Dr. Evans spoke of the heart in Addison's disease. In this condition, he said, the patient coming for investigation and treatment requires the services of the endocrinologist and the cardiologist. Most of the cases presented for diagnosis were doubtful examples of Addison's disease, and the help of the electrocardiogram was indispensable. Repeated electrocardiograms might prove a reliable guide in the control of therapy.

Addison's Disease

It was well known that the blood pressure was low in Addison's disease; hypotension was probably the most constant single physical sign. It was common to find the systolic pressure lower than 100 mm. Hg, but its reaction during successful salt therapy was not as well known. During treatment it might rise to normal, and sometimes hypertensive developed. Cases in which a low blood pressure persisted were many, and their progress in other respects might be satisfactory; in circumstances such as these it was difficult to judge progress during salt treatment.

Although a normal electrocardiogram did not exclude the diagnosis, a warning should be issued against accepting without due care in this circumstance a diagnosis based on suspicious clinical signs. This problem needed more attention. In studying the abnormal electrocardiogram it would be well to consider the changes in two groups. That changes might develop owing to excessive salt therapy was suggested from an experience of eight cases. Salt treatment first corrected the changes due to Addison's disease and then exerted its own influence on the tracing. If this was confirmed in the future an instrument of great value would be placed in the hands of the therapist dealing with Addison's disease. Treatment would aim at correcting the inversion of the T wave, restoring physiological electrocardiogram, and stopping short of inducing such inversion. After showing electrocardiograms in typical cases of Addison's disease, Dr. Evans said that although he left the story unfinished he hoped that what he had said had emphasized the fact that the investigation and treatment of any patient remained incomplete without electrocardiography.

The heart in Addison's disease was small owing to the reduced blood volume peculiar to that condition. Periodic radiological examination was a necessary accompaniment

treatment. Some degree of enlargement of the cardiac silhouette was to be expected as an effect of treatment, but greater increase should be avoided, and the appearance of conspicuous hilar shadows signified early death unless salt was withdrawn immediately.

With regard to other endocrine disturbances, he could not speak authoritatively on the gonadotrophic hormones, but in two cases of stilboestrol treatment for cancer of the prostate he had seen hypotension develop, although no such change had taken place from the same treatment in six women with carcinoma of the breast. It was reported that heart pain could result from too much insulin in diabetes—the so-called “insulin angina.” It was difficult to decide whether the relationship was causal or casual. In diabetic coma the electrocardiogram was often altered.

In conclusion Dr. Evans said that he had not pretended to give an authoritative treatise on the way in which the heart felt the impact of all endocrine diseases, but he thought they should examine the deficiencies in their knowledge of this section of medicine.

Dr. RAYMOND GREENE said that he agreed very largely with Dr. Evans when he said that two-thirds of the patients with thyrotoxic fibrillation recovered as a result of thyroidectomy, and about half the remainder recovered on quinidine. After he had seen his hundredth case of thyrotoxic fibrillation, he worked out the proportion of recoveries, and it coincided with Dr. Evans's suggestion. He had had one case of a patient with typical angina of effort who was found to have diabetes mellitus. She was admitted to hospital and stabilized and had never had angina of effort since. He was not convinced that thyrotoxicosis was a cause of hypertension. Hypertension occurred in patients with thyroid disease in about the same proportion as in the general population.

Dr. CRIGHTON BRAMWELL referred to the peculiar third sound heard at the right apex in thyrotoxicosis cases and which often gave rise to a suspicion of mitral stenosis. During the war when examining recruits this problem was frequently encountered. The question would arise whether a man had mitral stenosis, and very often there was evidence of slight thyrotoxicosis or else of an overacting heart. The sounds in the two cases were almost identical.

Dr. EVANS replied to the discussion.

EVALUATION OF RENAL CLEARANCES

In the Section of Experimental Medicine of the Royal Society of Medicine on Feb. 8 there was a discussion on the evaluation of renal clearances.

Professor R. A. McCANCE, F.R.S., in introducing the subject with Dr. J. R. ROBINSON, gave a definition of clearances, and discussed their physiological significance. He reviewed the various substances which had been used to measure the glomerular filtration rate and renal plasma flow. Speaking of urea clearance, he said that this was a valuable measure of renal function, though its precise significance was in some doubt. In chronic interstitial nephritis the urea clearance followed the progress of the disease, but it was less easy to say what it measured. In health, and when the urine volumes were high, the urea clearance was usually about 70% of the glomerular filtration rate; but in disease, while it was still probably some measure of that rate, instances had been reported in which it equalled or even exceeded it as measured by the inulin clearance. Nevertheless, the fact that urea clearance was an excellent measure of the progress of the disease was not disputed. The significance of all these clearances was much more problematical in disease than in health; he could multiply instances in which the physiological clearance ratios were upset, and no one knew on which of the two to rely.

Further problems had arisen since the function of the kidney in very young children had been studied. To begin with it was convenient to be able to refer the infant data to some standard used for adults. In children, after the age of about eighteen months, clearances seemed to vary fairly closely with the surface area, so that once the surface correction had been

made the baby could be thought of as an adult. But earlier than eighteen months, and especially in the very young infant, the clearances were very low, though there was no evidence whatever that such clearances were abnormal. Here again the exact significance of these clearances in the infant was not known. The inulin clearances seemed to measure the glomerular filtration rate, although this had not been tested out in infants as it had been in adults and in animals. Those who had measured diodone clearances at low levels of plasma concentration had found them low relative to the inulin clearances, and so high “filtration fractions” had been obtained. Could it be assumed in these circumstances that the diodone was measuring the effective blood flow through the kidney? Another interesting thing about the function of the tubules in young children was that the exogenous creatinine clearances were not consistently higher than the inulin clearances, as in the adult. They were in fact equal to the inulin clearances, so that there was evidence that creatinine was not excreted from the plasma to the urine by the tubules of the infant. Professor McCance concluded what he described as a provocative opening by repeating that little was really known about the significance of renal clearances in disease. Asked about the use of these substances clinically, he said that in his view inulin or diodone clearance was not of any particular value, but it would be interesting to hear what people with clinical experience had to say. He was content with urea clearance.

Effects of Anoxia

Professor KENNETH J. FRANKLIN showed a colour film made recently in the Department of Physiology at St. Bartholomew's Hospital illustrating the effect in the rabbit of anoxic diversion of the renal cortical blood flow. The existence of the “shunt” seemed to add, he said, to the difficulties being discussed. In the film, to permit closer study of the superficial visible changes, the left kidney was exteriorized. Free air entry into the trachea was restricted, and during the development of anoxia the kidney surface was seen to shrink in size, become wrinkled, and commence to pale. With free air entry the kidney surface rapidly flushed and then became red all over, but the wrinkling persisted for an appreciable time for some reason now being investigated.

Dr. J. A. BARCLAY brought forward certain observations which he said could be explained only on the basis of a three-component system of excretion—namely, filtration, secretion, and reabsorption. The discussion was continued by Dr. D. A. K. BLACK, Dr. W. T. COOKE, Professor ROBERT PLATT, and others.

Professor C. W. WILSON said that the urea clearance test was not readily applicable in hospitals as a routine, and yet it was true to say that it could yield much information. What he desired to see was a simple test applied in hospital, one which would not be subject to gross errors, and which might yield much earlier information concerning kidney reserve. He wondered whether endogenous creatinine clearances might be the answer as a measure of diminished glomerular filtration before the blood urea rose.

Professor McCANCE said that Professor Wilson's was a very difficult question to answer. Nobody knew what they were measuring when they measured endogenous creatinine. The difficulty was the chromogens, which were present in the plasma in variable amounts and reacted with the reagents. Until an absolutely specific method of estimating creatinine was available, so that the amount of creatinine normally present in plasma could be simply and easily established, it seemed useless to talk in quantitative terms about endogenous creatinine clearances.

Professor H. P. HEMSWORTH, who presided in the absence of the president, Professor G. W. Pickering, asked whether there was any real evidence that urea clearance was a test of renal function. Dr. J. R. ROBINSON, in reply, argued that while the urea clearance test would show that the kidney was not functioning normally, and would give some idea of how badly it was functioning, it would not distinguish between renal insufficiency due to abnormalities in the kidney and renal insufficiency due to extra-renal causes.

INTERNATIONAL STATISTICS

In a discussion on international statistics at the January meeting of the Royal Statistical Society, Dr. PERCY STOCKS, chief medical statistician at the General Register Office, described recent efforts to secure co-operation in the international field so far as mortality and morbidity statistics were concerned.

He believed that a greater degree of international agreement had now been reached concerning statistics of disease and death than about statistics of any other kind. An international list of causes of death had been in existence for fifty years and had been revised at international conferences of statisticians and medical experts. Two urgent needs had presented themselves: the first to obtain a classification of diseases and injuries apart from mortality, and the second to obtain agreement on methods of dealing with death certificates on which more than one cause of death was stated: more than half the certificates now gave multiple causes. He and Dr. Dunn, chief vital statistics officer in the United States, met after the international conference in 1938 and resolved to pursue these matters. Then the war came and Great Britain, the United States, and Canada were caught unawares without the morbidity classification which was urgently needed.

A committee of the Medical Research Council in this country set to work and produced a classification of diseases and injuries which had been widely used. At the same time, about 1944, a somewhat similar classification was produced in the United States. Fortunately both these classifications were based on the framework of the international list of causes of death, and it seemed possible to arrive at an agreed classification which would serve the purpose both for mortality and morbidity. This would do away with the ridiculous position whereby a soldier admitted to a military hospital, then transferred to a civil hospital, and afterwards pensioned off, might have half a dozen code numbers for the same illness, and if in America or Canada different numbers. At the end of 1945 Dr. Stocks went to Washington, and the first difficulties of settling the general principles with a large commission of American experts were overcome. A small working party was set up which in two months hammered out an agreed basis with the help of numerous specialists. This was intensively studied by a medical advisory committee, revisions were considered, an interim committee was appointed by the World Health Organization, and the list was circulated to seventy countries for their criticisms and comments. Replies were received from about forty, and at a subsequent meeting in Geneva as many of the amendments as were appropriate were incorporated. Meanwhile the United States and Canada decided to adopt the English system if this was approved by the International Conference of Statisticians held in Paris last year. The conference did approve, and approval was also given by the World Health Assembly.

It was decided to print the new manual in English, French, and Spanish and to produce a set of international regulations which would be obligatory from 1950 onwards unless a nation decided to contract out. The regulations required the use of the English system of notification of causes of death. The manual with the new classification was now on the way to Geneva, and should be available in London in a few weeks' time. The consequence of all this would be, Dr. Stocks added, that if he happened to be riding a bicycle and was knocked down by a taxi and got a septic compound fracture of the tibia, whether it happened in Hampstead or in Amsterdam, Copenhagen or Baltimore, his number—an eight-digit number—would be the same.

MANCHESTER PAEDIATRIC CLUB

The Manchester Paediatric Club was inaugurated on March 15, 1948, with a membership of twenty-five. Dr. Catherine Chisholm, C.B.E., was elected president, and Professor Wilfrid Gaisford is the secretary. Three meetings are to be held annually.

At the first meeting on July 7, Professor EDMOND KERPEL-FRONIUS, of Hungary, read a paper on "Body Fluids in Dehydration and Malnutrition," and Dr. M. L. THOMSON followed with "Notes on the Use of Arabin in Gastro-enteritis." The second meeting was on Oct. 5, when Dr. DOROTHY ANDERSEN, of New York, read a paper on "The Treatment of Coeliac Disease."

The first annual general meeting was held on Jan. 7, 1949, with a scientific session consisting of six papers in the morning, and a discussion in the afternoon on "Methods of Improving the Child Health Services." The annual dinner followed. The next meeting will be on May 9, when the lecturer will be Professor Lichtenstein, of Stockholm.

ACCIDENTS IN THE HOME

At a meeting of the Society of Medical Officers of Health held on Feb. 17 at Tavistock House, Dr. C. A. BOUCHER, a medical officer of the Ministry of Health, read a paper entitled "Can the medical officer of health help to prevent home accidents?" Sir ALLEN DALEY was in the chair.

Dr. Boucher said that the 6,000 fatal accidents which occurred annually in homes in England and Wales accounted for almost one-third of the total number of accidental deaths in the country each year. Apart from the fatal accidents it was reasonable to suggest that there were possibly 60,000 non-fatal home accidents of moderate severity each year. There had been over the last ten years no fall in the number of fatal accidents. On the contrary, in the two age groups under 5 years and over 65 there had been some increase. More children under 5 years lost their lives as the result of an accident in the home than from accidents on the roads.

It was probable that accidents were fairly evenly distributed throughout the country. This was confirmed by an analysis of fatalities from burns and scalds in the 83 county boroughs in England and Wales during the last three years. Surveys of home accidents suggested that the majority were preventable. In support of this Dr. Boucher referred to an inquiry made in 1943 by Dr. Marion Wright in Glasgow, from which she concluded that squalid living conditions, with overcrowding and a low standard of intelligence and conduct associated with them provided the background to the majority of these accidents. It was difficult to say what part was played by structural defects in the home; it was not believed that existing house design was a major cause, although it contributed to errors of judgment and carelessness. Dr. Boucher quoted an analysis of 504 burns and scalds which were admitted to the M.R.C. Burns Unit of the Birmingham Accident Hospital during the three years from 1945-7.

Three-quarters of the accidents in the home were provided by two types of injury. Falls accounted for 60% of the fatalities, and the large majority of these occurred among the elderly, while burns and scalds accounted for 15%, and these affected mostly children under 5. Too little account was taken of the many elderly persons with defective hearing and limited eyesight who were subject to attacks of giddiness. In the case of the elderly special attention should be given to safe stairs, adequate lighting, and sufficient handrails.

Unprotected Fires

The unprotected coal fire was still the greatest source of danger to the young and old, but the electric fire, especially of the portable variety, was becoming more and more a menace, and existing legislation did not provide for the adequate guarding of electric and gas fires. Dr. Boucher stated that tea in any of its stages of preparation or consumption was the commonest single cause of scalds, and accounted for one-quarter of the fatalities, which occurred mainly in infants and young children. He went on to draw attention to the considerable increase over the last ten years in deaths from suffocation mainly of children under 1 year of age.

He outlined what was being done to reduce home accidents but wondered whether this was sufficiently effective. He considered that there should be a more individual and personal approach, and doubted whether legislation, except with regard to the manufacture and sale of safe articles, could be effective. He suggested that the medical officer of health with his staff could contribute much of value, because of his intimate knowledge of conditions in his area and because he had access to the homes and could influence the people in the welfare clinics. In addition, he could arrange home safety exhibitions, and by means of lectures, pamphlets, and other propaganda could make his district "accident-conscious." The medical officer of health was concerned with the pre-school child, and in years to come

the problem of old people would become more urgent, in these two age groups the bulk of domestic accidents occurred. He suggested that the opportunity was there for the medical officer of health, and that it might be advisable to carry out a careful survey of accidents which had occurred in the district before undertaking propaganda and education to counteract them.

Dr Boucher mentioned the valuable work that was being done in some areas by the local education authorities through school teachers. He concluded by suggesting that the health visitor and sanitary inspector in routine visits could, by their influence and advice, eliminate accident-promoting hazards which existed in many homes and of which the occupiers were unaware.

LEEDS REGIONAL PSYCHIATRIC ASSOCIATION

The inaugural meeting of the Leeds Regional Psychiatric Association was held on Jan 29 at the General Infirmary. The objects of the association are to promote and improve the mental health of the individual and the community by the study of clinical social, educational, and administrative problems of the psychiatric practice in the region. In the course of a general discussion on the aims of the association Professor D R MacCALMAN, who was elected chairman, expressed the hope that the meetings would be of social as well as professional value and that it would be possible for the assistant psychiatrists in the mental hospitals to make their contribution to the work of the association. Ordinary membership is open to specialists in psychiatry and trainees who are accepted by the association's executive committee. Associate membership is open to psychologists, psychiatric social workers and lay therapists practising in the Leeds region. The honorary secretary of the association is Dr J W Affleck.

CHELSEA CLINICAL SOCIETY

The fifth meeting of the session was held on Feb 8 at the South Kensington Hotel with the president, Mr NILS ECKHOFF in the chair. A discussion on the insidious onset of serious disease was opened by Dr DESMOND MACMANUS and continued by Dr HORACE EVANS. Both speakers replied to the subsequent discussion by Drs POCOCK, SUNDELL, CHADWICK, ATKINSON, ECKSTEIN, STUART WEBB, SANDELL, HUGH GARDNER, NIALL MACMANUS, SIMPSON HARVEY, and Mr STEELER.

Certain sections of the Criminal Justice Act, 1948, involve the National Health Service. Section 24 confers upon courts of summary jurisdiction power to make orders for the reception and detention of offenders in institutions for persons of unsound mind. Where such an order is made it has the same effect in law as if it were a summary reception order made by a justice under Section 16 of the Lunacy Act, 1890. In most cases in which the question of action under this section arises the court will have remanded the person concerned for a medical examination and report on his mental condition under the provisions of Section 26. Before an order is made under this section the clerk of the court will normally ascertain, through the regional hospital board, the name of a hospital in which the patient can be received. However, where "catchment" areas have been allotted to mental hospitals, or as and when they are allotted, regional hospital boards should inform courts of summary jurisdiction in their area of the arrangements made in order to enable them to make the necessary arrangements for the patient's reception direct with the appropriate hospital. Subsection (3) enables payment of the usual allowances under the Witnesses Allowances Order to medical practitioners for attending and giving evidence for the purposes of the section. Section 26 enables a court of summary jurisdiction, where it is satisfied that the person charged with an offence, punishable on summary conviction with imprisonment, has committed the offence, to remand the offender on bail for periods not exceeding three weeks at a time for the purpose of medical examination and report on his physical or mental condition by a duly qualified medical practitioner. The court is empowered to make it a condition of his bail that he shall undergo examination at a specified institution or place or by a specified medical practitioner. The institutions and out-patient clinics in the National Health Service will be available to courts free of charge for this purpose. Unless the court for any special reason thinks it necessary that the medical practitioner who makes the examination should attend and give oral evidence, the report of the examination will be made in writing.

Correspondence

Plasma-cell Mastitis

SIR—Dr Max Cutler (Jan 15, p 94) has done a useful service by his excellent review of plasma cell mastitis in drawing attention to an uncommon lesion of the female breast which is of sufficient importance to merit more widespread recognition. Dr Cutler established this condition in the literature as a distinct entity with a characteristic clinical picture following a study of 10 cases in the year 1931,¹ and subsequent studies have served mainly to confirm the accuracy of his original observations.

In 1941, along with Dr M B Dockerty, I reported a series of 24 instances of plasma-cell mastitis from a group of considerably more than 12,000 benign, malignant, and inflammatory lesions which had been treated at the Mayo Clinic.² At that time I thought that the condition must be an extremely rare one but since then, with access to a much more limited supply of clinical material, I have encountered three additional cases, and I now wonder whether a careful look out for these cases by clinicians would not be rewarded by the discovery of a large number of unrecognized instances of the disease.

There are two points which should be emphasized in considering the aetiology of the condition. In the first place, it has been observed only in parous women. In some cases as long as 25 years have elapsed between the last period of lactation and the appearance of the lesion, but lactation has preceded every reported lesion. Secondly, when the patient has been available for questioning the usual finding has been that for some reason or another she had not been able to use that breast for nursing purposes. In seven out of the Mayo Clinic series of 24 cases the nipple was congenitally retracted. In another case in the same series and in one studied later, the lesion had occurred in an accessory breast. I believe that the retention of milk in the breast for long periods forms the most satisfactory explanation of the cause of the lesion. It is easy to understand that the retained products of lactation, probably altered by the action of enzymes, might eventually find their way into the ductal tissues and there, by chemical irritation, set up the typical low-grade inflammatory response characterized by infiltration of plasma cells, epithelial atrophy, and the appearance of giant cells. It would also explain the phagocytosis of fat droplets which is such a marked feature of some of the sections and the discovery of fatty acid crystals in others. However, the most convincing argument in favour of this hypothesis is the experimental production of a similar picture by Rodman and Ingleby,³ who injected pancreatized milk into the breasts of virgin rabbits and pancreatic extracts into the breasts of lactating rabbits.

Although on section of the affected breast the lesion appears to consist of multiple discrete foci, tridimensional inspection were that possible, would reveal a continuous extension of the cellular exudate along the outer surfaces of the milk ducts embracing them in much the same way as ivy overgrows the trunk and branches of a tree. One effect of this process is the tendency to compression and obliteration of the duct system which prompted the earlier German authors to style the condition "mastitis obliterans." This is indeed the most characteristic feature of the lesion, and the term is to my mind preferable to "plasma-cell mastitis," because it is applicable to the many specimens in which plasma cells although present, do not predominate. However, if the conception of the aetiology of the condition as stated above could be regarded as proved "stale milk mastitis" would be an even more appropriate title.

Dr Cutler's description of the characteristic clinical sequence of a minor inflammatory episode characterized by pain in the non-lactating breast followed later by the discovery of a lump bearing all the hall-marks of malignant disease is admirable and there is no question that a typical history may give a clue to the diagnosis. But unfortunately this history is not always obtainable. Five of the 24 patients studied by Dr Dockerty and myself gave no history of pain in the breast prior to the

finding of the lump. In these cases the condition could not have been suspected by clinical examination alone.

It has been suggested that "plasma-cell mastitis" can be diagnosed clinically. I think that the time has come when any surgeon who indulges in this type of guess-work should be brought to task for his errors. Biopsy is a simple and safe procedure and should be carried out in all cases of breast tumour. Any risk, discomfort, or inconvenience which may be occasioned to the patient by this trivial procedure cannot be weighed against the surgical crime, in the treatment of a lesion that may be malignant, of temporizing until the opportunity for its successful ablation has been irretrievably lost. In my experience the pathologist has had no difficulty in recognizing the inflammatory nature of the condition by the technique of quick-frozen section. The actual diagnosis has sometimes been in doubt, due to lack of acquaintance with the disease, but it has always been possible to rule out malignancy by this means. Some of the cases have been labelled "atypical tuberculosis," but the differentiation between the two conditions is not difficult when it is remembered that plasma-cell mastitis involves the ducts and periductal tissues, while tuberculosis usually has a perivascular and perilymphatic distribution. Furthermore, in tuberculosis typical tubercles are nearly always found, and they often contain caseous centres. In plasma-cell mastitis the tubercles are artifactual and caseation is not discernible.

The experiences of Rodman and Lübschitz⁴ serve as a warning that major surgery should be delayed until after the subsidence of the inflammatory stage. Dr. Cutler's observations on the radiosensitivity of the lesion during this period are interesting, but in view of the morbidity of irradiation and the tendency shown by the lesions to subside spontaneously the time-honoured ritual of painting the part daily with iodine is probably all that is needed in the acute stage after the diagnosis has been established by biopsy. Local removal of the residual lump or simple mastectomy should be carried out when the lesion is no longer painful or tender. There is no indication for radical surgery. In the case reported by Gronwald⁵ part of the plasma-cell exudate was left behind and no harm resulted.

I am not aware of any evidence to suggest a relationship between plasma-cell mastitis and carcinoma. Even if a case were to be reported in which the two conditions coexisted, the possibility of pure coincidence would have to be taken into consideration. Dr. Cutler's case of bilateral plasma-cell mastitis is the only one that has come to my notice. Two of the patients in the Mayo Clinic series gave a history of disease in the other breast, a cyst in one case and an abscess in the other. In the remainder the contralateral breast was free from disease. Dr. Cutler is to be congratulated on his discovery of this unique case.—I am, etc.,

Ottawa, Ontario.

COLIN D. L. CROMAR.

REFERENCES

- ¹ Cheattle, G. L., and Cutler, M., *Tumours of the Breast*, 1931, pp. 298-304. London: Arnold and Co.
- ² *Proc. Mayo Clin.*, 1941, 16, 775.
- ³ *Ann. Surg.*, 1939, 109, 921.
- ⁴ *Acta radiol., Stockholm*, 1943, 24, 403.
- ⁵ *Zbl. chit.*, 1931, 58, 663.

Self-administered Trilene Analgesia

SIR.—May I from 8,000 miles away make some comment on the letters of Mr. F. Neon Reynolds (Sept. 25, 1948, p. 620, and Oct. 23, p. 761), and Professor R. R. Macintosh and Dr. C. Langton Hewer (Oct. 9, p. 691)? It seems to me that the latter two correspondents are constrained to base their criticism of the present "trilene" inhalers on the fact that they are not ideally "foolproof" as seen through the eyes of an advisory council for midwives. Nothing in this world is "foolproof": least of all the motor-car, or even the bicycle, provided for the midwife. I suggest that the very stairs up which she climbs to attend her cases have been responsible for more foetal and maternal morbidity than trilene (or any other) analgesia ever will be.

A year ago I presented¹ a preliminary paper on trilene analgesia as yielded from a small pocket inhaler, now known as the "trilene inhaler" (10 oz. or 284 ml.), covering over 2,000 cases, of which about one-third were obstetrical, including mid and high forceps, eclampsia, craniotomy, perineal repairs, etc. Results from this group bore a striking similarity to those obtained in over 50 other painful conditions—85% good, 9% fair, and 6% failures.

Since this time I have collated approximately 5,000 cases of the use of my inhaler, and there are probably 10 times this number unobtainable up and down this country, in England, and in other parts of the world. As is the way of our profession, I have no doubt whatsoever that I should have heard sharply and crisply had any untoward sequels arisen through its use. I have had no such report.

An even more important point is that in a very considerable proportion of the cases (all of which were of course self-administered) the patients were Africans, often of necessity left unattended for long periods of time with what has become known as the "white-man's pain pipe." Now, in matters of medicine the Bantu has a staggering disrespect for quantities, and it has been observed that the trilene ampoule of 6 ml. lasts usually a much lesser time than when used by the European, owing to the former's inhalational enthusiasm. Yet no report of effect on the child has been received, and, except for one observer who thought "the duration of the labour was slightly increased," none on the mother.

Drs. Helliwell and Hutton² state that trilene passes the placental barrier. So does chloroform, ether, cyclopropane, etc. These and nitrous oxide have a relatively ineffective phase of analgesia: trilene has a very marked one. The point of interest is, however, whether the quantity of trilene required to provide maternal analgesia will be such as to jeopardize the infant. As far as my results from this inhaler show, there is no practical effect.

Thousands of women are being permitted daily to suffer pain in childbirth when we have at our finger-tips the means greatly to relieve them. To my mind it is fantastic that what is considered satisfactory and safe is being withheld from many thousands of ordinary people because the intermediary—the midwife—is considered insufficiently intelligent to lift the curtain of pain for one in the drama she unfolds for two.—I am, etc.,

Durban, South Africa.

J. T. HAYWARD-BUTT.

REFERENCES

- ¹ *Lancet*, 1947, 2, 865.
- ² *Anaesthesia*, 1948, 3, 176.

Haemolytic Disease of the Newborn

SIR.—Sir Leonard Parsons (Feb. 5, p. 234) has commented on our paper published in your columns of Jan. 22 (p. 123). It seems that the main point of controversy is whether the occurrence of kernicterus is or is not closely related to the severity of the haemolytic process.

In a letter to the *Lancet* on April 19, 1947, Sir Leonard Parsons wrote, "... there is no evidence that the products of haemolysis ever produce such damage [i.e., to the liver and brain]. Indeed the evidence is all to the contrary; for instance, changes in the liver and brain have never been described in congenital anaemia of the newborn in which the degree of haemolysis is greater than in icterus gravis." We summarized this letter by saying that Sir Leonard Parsons believed that there was an inverse relationship between the degree of blood destruction and the development of kernicterus, but readily accept his contention that we should have said that he had never found "any parallelism" between the two phenomena.

The causation of kernicterus remains obscure, but our observations strongly suggest that the condition is more likely to develop if the infant is anaemic at birth than if it is not. We have tried to show that this relationship is obscured by the changes in haemoglobin concentration that occur after birth; and we are not aware of any observations on cord blood which refute the evidence that we have obtained.—We are, etc.,

London, W.12.

P. L. MOLLISON.
MARIE CUTBUSH.

Diagnosis of Tuberculous Meningitis

SIR.—I have been reading with interest the recent correspondence on the diagnosis of tuberculous meningitis and should like to suggest that present investigators might do well to include an estimation of the blood/C.S.F. sugar ratio in their biochemical tests. In my series of cases examined ten years ago I found this estimation to be of greater diagnostic significance in the early stages of the disease than that of the C.S.F. sugar alone. It should not be forgotten that the convulsions

which so often mark the beginning of active trouble raise first the blood sugar and subsequently the C.S.F. sugar level,¹ and should the latter alone be estimated an apparently normal reading may be obtained. But this correlated with a blood-sugar reading taken at the same time will give a ratio below the lower limits of normality should tuberculous meningitis be present.

The level of C.S.F. chlorides is dependent on that of blood chlorides and is not, to my mind, of much diagnostic significance. If vomiting is a marked symptom, then they will both be lowered in the early stages, but I had several cases in which they approximated to normal even in the terminal stages of the disease. My results were published in detail in 1939.²

In view of the number of letters which appear in these columns drawing the attention of more recent workers to already published results which they have apparently overlooked, might I put in a plea that more use should be made of the *Quarterly Cumulative Index Medicus*?—I am, etc.,

Kempston, Bedford.

ESTHER H. WELBOURN.

REFERENCES

- ¹ McLean, M. B., *Arch. Dis. Childh.*, 1936, 11, 247.
- ² Herdy, E., *ibid.*, 1939, 14, 307.

Tuberculosis in the Family

SIR,—It may be interesting to recall some figures of my own which confirm the statement of Dr. C. O. Stallybrass in his excellent article "Tuberculosis at the Crossroads" (Feb. 5, p. 207). He says that "family contacts of known cases form at least one-third of the cases of tuberculosis." Some years ago with the help of all the London tuberculosis officers I was able to collect information on 6,933 new cases of tuberculosis with regard to their previous association with other cases of the disease within the intimate family circle.

In 2,167 instances, or approximately 31% of all cases, there was a history of household contact of some sort thought worthy of note, and in 350 of these there was more than one such contact. Investigation, however, concentrated on "important" contact—i.e., where a previously affected member of the immediate family was alive and suffering from tuberculosis, or where death had occurred from pulmonary tuberculosis in the immediate family within the preceding five years. A detailed analysis showed that 3,021 T.B.-plus male and 2,158 T.B.-plus female patients coming for residential treatment for the first time had been investigated and that the frequency with which contact with a previous case was noted was seen to diminish with increasing age. For instance, while 15% of all males with positive sputum showed previously important contact with the disease in the intimate family circle, the percentages ranged from 21 and 23 in the 16-20- and 21-25-year groups respectively, down to 10 in those over 40 years of age. As age advances a similar diminution in the importance of contact with a previous case was also seen in females.

Females throughout, however, showed a larger incidence of contact with a previously known case. Thus at all ages 22% had been in contact with a previous case in the intimate family circle, whilst the percentages ranged from 31 in the 0-15-year group down to 17 in those over 40 years of age. This greater incidence of contact as a factor in the causation of the disease in females as compared with males was thought to be due to the wider opportunities of exposure to infection in the family by reason of domestic and nursing duties. Kissing also might be a factor.

As regards the relationship of what might be called the "infecting" case, it was noted that the original cases were in parents in 20% in males compared with 27% in females. A tuberculous parent seemed to be a greater danger to a daughter than to a son. Here again the reason was possibly the special position of women in the household in regard to nursing and domestic duties and the like. Approximately three-quarters of all "infecting" cases were either living cases of pulmonary tuberculosis with positive sputum or cases which had succumbed to pulmonary tuberculosis within the immediately preceding five years.

I emphasized as a result of this work that contact with a previously diagnosed case of tuberculosis in the family was of sufficiently common occurrence in the history of new patients to stimulate examination of contacts in the attempt to find early cases, and I would agree now with Dr. Stallybrass that

data of this description should also stimulate us to press on with trials of vaccination by means of B.C.G. in these and other vulnerable classes of the community.—I am, etc.,

Brentwood, Essex.

F. J. BENTLEY.

REFERENCE

- ¹ *Annual Report of the L.C.C.*, 1937, 3 (Part 1), 45.

Tuberculosis at the Crossroads

SIR,—In his interesting study of "Tuberculosis at the Crossroads" Dr. C. O. Stallybrass (Feb. 5, p. 207) throws some incidental light on a possible signpost which may be of value. Those of us who for long have been gravely suspicious that among nurses there was a relatively higher incidence of tuberculosis will have noted his words that, while the mortality rate in this group was not higher than among other young women of similar age, there "would seem to be a higher rate of morbidity." The distinction is significant and understandable, as nurses should be favourably placed as to early discovery and treatment, though at a higher exposure risk.

Surely, however, "higher morbidity," if recognized, should hasten the day for B.C.G. protection, in which this country has lagged so far behind Scandinavia. While statistics are lacking, there is little indication that our beds, closed for lack of staff, are being filled. Parents hesitate about health hazards for their daughters, and our profession is uneasy. If we recognize a signpost at the crossroads perhaps we may the sooner reach Norway's happy position of having "waiting beds" instead of the "waiting lists" of which Dr. Stallybrass speaks.—I am, etc.,

Northwood, Middx.

ESTHER CARLING.

Whither Tuberculosis?

SIR,—Now that Drs. G. Lissant Cox (Dec. 25, 1948, p. 1118) and A. S. Hall (Jan. 8, p. 70) have had their say and the *British Medical Journal* has made a pronouncement (Feb. 5, p. 226) on the above subject, may the voice of one who has worked in the tuberculosis service as long as the gentlemen mentioned, but who does not see eye to eye with them in this matter, be heard? Or are we to be told that *B.M.J. locutus est, causa finita est*?

To put the matter in its proper perspective a little personal history is necessary. I was appointed district tuberculosis officer by the Derbyshire County Council in December, 1918, on a salary of £500, plus the right to private consulting practice in tuberculosis and diseases of the chest. As I had come into the tuberculosis service from the Indian Medical Service the system of a fixed salary for public work combined with consulting fees for private work was no novelty to me. I soon found that in my district a chest disease of great clinical interest had long been known among the gritstone masons, ganister miners, and cutlery grinders, and naturally this condition and its supposed relation to pulmonary tuberculosis attracted my attention. When in due course the first silicosis compensation scheme was put into operation, the work of examining the employees in the scheduled industries devolved upon me. For this work I was, of course, independently paid.

Near Buxton is situated the research station of the Safety in Mines Research Board, and there I made the acquaintance of Professor J. S. Haldane and many other scientists interested in questions regarding the production of dusts in industry and their effects on health. I began to see in front of me possibilities of an interesting career and life study in diseases of the chest, and I built myself a house in Buxton with a consulting-room and a waiting-room for my private patients.

Alas, "the best-laid schemes . . ." The Home Office decided to "keep its ain fish guts for its ain fish maws," and appointed special district boards under its medical department for the routine examination of the workmen in the scheduled industries. Officially silicosis was taken out of my hands, but unofficially I continued to see suspected and established cases of silicosis and to make my investigations. Now, after thirty years, I can claim to have made some contribution to knowledge regarding that and kindred diseases.

In the nineteen twenties certain Divisions of the B.M.A. began to object to private consulting practice being undertaken by salaried clinical officers. The question became acute about 1924. Our division of the B.M.A. held a meeting in Derby and decided to support the right of clinical officers to private consulting practice. A resolution to that effect was sent to the Representative Body, and I was elected as divisional representative and directed to move the resolution at the Representative Meeting at Bath. There, alas, I made the greatest mistake of my life, a mistake which ever since I have bitterly regretted and of which I am thoroughly ashamed. The

Council of the B.M.A., alarmed at our resolution, had decided to modify, if not withdraw, its opposition to the right of clinical officers to private consulting practice and throw the onus of decision upon the local authorities. The Council of the Society of Medical Officers of Health agreed to this course. On the night before the meeting at Bath the chairman of the latter Council saw me, and tried to convince me that this move on the part of the B.M.A. gave us all we wanted and that in the circumstances it would be an error in tactics to move the Derby resolution. I could find only one colleague to consult, and unfortunately he agreed with the Society of Medical Officers of Health. Bewildered, against my better judgment, I gave way to the pressure, and at the meeting publicly withdrew the Derby resolution. I had fallen into the trap prepared by both Societies. Within a year my right to private consulting practice was taken away. As a solatium my salary was put up to £750, rising by increments to £935. But my freedom as a consultant was gone.

Time brings its revenges if only one lives long enough. With the Health Act of 1946 the wheel has come full circle. The old subordinate "tuberculosis officer" has gone, and the chest physician (not "tuberculosis physician," *pace* the B.M.J.) has come into his own. His consultant status is established. He will have beds at his disposal in the hospitals in his district. His usefulness in the preventive and rehabilitation spheres will be increased by his new status and the new facilities at his disposal.

Being on the wrong side of 70 years, I can only survey the promised land from its frontier and wish my younger colleagues and successors good fortune in their new freedom. If, with the privilege of the aged, I may be allowed one or two suggestions for their consideration, I would venture to say: Avoid thinking in woolly abstractions such as "the community," and regard your patients and their families as human individuals, every one of them unique, none of whom loses any rights as a human being by suffering from tuberculosis. Remember that an Englishman's house is his castle, which belongs to him and not to "the community," and which you enter at his invitation as a friend and counsellor and not of any right as a State policeman. Remember that there are greater evils than tuberculosis stalking through the land to-day, and that one of them is the submergence of the individual in the savagery of the mob, the triumph of the cheap slogan and facile shibboleth over reason and experience—in the words of Charles Morgan, "The totalitarian attempt to disintegrate the human personality by offering to weary and impressionable men the opportunity to collaborate in a false, artificial and tyrannical unity."—I am, etc.,

Chichester.

PATRICK HEFFERNAN.

Rights of Inventors

SIR,—May I raise a question of general interest, that of the rights of a surgical inventor in his inventions? According to present conventions anyone may ignore an invention, may recommend it, may decry it, or may modify it. I think this is all to the good, although I would suggest that modifications should not be made without (if possible) notifying the originator of the device. This may save him the not uncommon annoyance of having an early variation which he has abandoned for good cause brought forward by someone else as an improvement. I submit, however, that there is one treatment of an invention against which one is entitled to rebel: it is that of inaccurate description. The cause of this present protest is as follows.

Some twenty years ago I published a theory of the treatment of talipes consisting of three carefully worked-out steps, no one of which was effective without the others. They consisted of a manipulation far more drastic than any previously described, the continuous wearing of a splint affixed with sticking plaster until a full range of movement was gained, and the final use of a night splint to maintain this range. I had the greatest difficulty in getting the Arris and Gale Lecture containing this theory printed, owing to the disapproval of the orthopaedic authorities to whom the editors of journals submitted it. However, it was much taken up in the U.S.A., and in the normal course of events has now reached this country. Some of the descriptions of it now appearing in textbooks are sound. There is, for instance, an admirably clear and succinct summary in *Pye's Surgical Handicraft* (Wright, 1947), to which I would refer those who are considering writing it up but cannot spare the time to see it actually applied. Others, however,

are exasperating travesties. In *Recent Advances in Orthopaedics* (Churchill, 1937), for instance, there is a figure showing the foot being bandaged in to the splint while the footpiece is still on the cross-bar—which shows that the writer has not a clue to the mechanics of the device. And in *British Surgical Practice* (vol. 4, Butterworth, 1948) the same splint is shown with the leg piece cut off, while the letterpress asserts (as I can well believe) that this splint will not hold an infant's foot. I teach that an uncomplicated talipes can be fully reduced to six months of age—after that only needing the night splint—I am not pleased by this.

Surely easily avoidable inaccuracies of this sort are unfavourable in three ways. First to me, in making me appear to recommend devices that certainly will not work. Secondly to the purchaser of the book, who depends on it for guidance. And thirdly, and most important, to the patient, who, as I have only too good cause to know, loses the chance of early and complete cure while being treated according to hopelessly misconceived ideas of what I really do.—I am, etc.,

London, W.1.

DENIS BROWNE.

Infective Ear Disease

SIR,—Mr. C. M. Johnston (Feb. 5, p. 237) places us further in his debt by stating the incidence of central perforation, attic perforation, and granulations in his cases of otitis media, and giving the result of treatment in each group of cases. One must agree with him that there is practical difficulty in advising operation in cases of "quiescence" or, as I would prefer to call it, persistent grumbling infection; and one must agree that occasionally with mere passage of time in the most unpromising case all active infection ceases. But exceptions make bad law.

Mr. S. R. Mawson (p. 238) agrees with me (Jan. 15, p. 11) in preferring dry toilet and powder insufflation to irrigation and his figures show how quickly effective such treatment can be. He advocates light insufflations with iodine-boric powder at daily intervals, fearing harm from heavy insufflations with penicillin-sulphathiazole-urea at longer intervals. His method has the advantage of proven value over many years, but I think his fears of the alternative suggested, with its less demands upon the patient's time, are exaggerated. Filling the meatus with powder does not in practice dam up discharge. Occasionally, all discharge apparently ceasing, the powder remains as concretions hiding the middle ear; this should be removed by forceps, crushing or curette, never by syringing. If removal not effected the patient should be told to attend again in a month, when no difficulty will present itself—in such a case there is no urgency.

Skin reactions are most uncommon (and incidentally were not quite unknown when boric powder was used), but an occasional heavy insufflation appears less liable to cause reaction than frequent light applications. The treatment is, of course, not to be repeated indefinitely; an early result is to be expected, and the case is unsuitable for the method.

It is suggested that silver nitrate prevents a detailed inspection of the middle ear. In chronic suppurative otitis media such inspection is not necessary every day, and in less than a week any obscuring effect has quite disappeared. To neglect the preparation is invaluable in treatment.

Mr. Mawson speaks of the essential prelude to powder insufflation, "meticulous dry mopping after suction of the middle ear with a Siegle's speculum." The need for this cannot be overemphasized.—I am, etc.,

Canterbury.

T. A. CLARKE.

A Clinic under the N.H.S.

SIR,—As one who has worked at the Institute for the Scientific Treatment of Delinquency for two years, I must say that Dr. Melitta Schmideberg (Feb. 5, p. 243) has been a little unfair both to the clinic clerical staff and to the National Health Service in her letter.

The staff's enthusiasm for paper work was well established long before the National Health Service took over; it is occasionally irksome, but it is the only clinic I have worked in that has never lost one of my patient's documents and nev-

nade a mistake over an appointment. This service is so good that I now gladly comply with their administrative requests.

Delinquents are naturally the worst of all hospital appointment-keepers, but I find it no more tedious to wait for them when I expect to be paid (some bureaucrat at the North-West Regional Board having so far held up my proper contract) than when I was not paid. There is always something to read or write to fill in the odd half-hour—I am, etc.,

London NW 1

J F COOPER

SIR,—In your issue of Feb 5 a letter signed by Melitta Schmeideberg appears (p 243) under the above heading. This letter refers to the Portman Clinic (I S T D), which is the new name under the National Health Service of the clinic formerly administered by the Institute for the Scientific Treatment of Delinquency.

The letter was discussed at the next routine professional staff meeting of this clinic on Feb 7, which was very fully attended. At this meeting it was unanimously decided that we should write to you and state that the professional staff of the clinic wished to dissociate themselves entirely from both the spirit and the content of the letter. In particular they deplored strongly the criticism of the clerical staff, whom they expressly stated they had found to be courteous, helpful, efficient, and obliging and singularly free from the faults attributed to them in that letter.—We are, etc

DENIS CARROLL,
J D W PEARCE,
Medical Co-Directors

Portman Clinic (I S T D)
London W 1

Heat and Blood Flow

SIR,—The annotation on heat and blood flow (Feb 5, p 230) is certain to disconcert many who use thermal agents to therapeutic ends. The news that more recent investigations carried out by Siems, Kosman, and Osborne support the well-established assumption that a temperature rise increases blood flow may, therefore, come as a relief to those who felt that the observations of Kemp and his co-workers were at variance with everyday experience.

A well-conceived "Comparative Study of Short Wave and Microwave Diathermy on Blood Flow" has led Siems and his co-workers to conclusions which they summarize as follows:

- (1) Short wave and microwave diathermy are equally effective in increasing local blood flow in the hind extremity of the normal dog.
- (2) Loss of motor or sensory innervation to the part does not affect the essential nature of the vascular response to heating.
- (3) Evidence is presented suggesting that the integrity of the sympathetic outflow in the dog is necessary for the typical vascular response to local heating.
- (4) There is no evidence that any known method of heating possesses properties which have specific effect on blood flow.

—I am, etc.,

London SE 1

P BAUWENS

REFERENCE

1 *Arch. phys. Med.*, 1948, 29, 759

Oral Reactions to Penicillin

SIR,—As a mycologist I was interested in the review and investigations by Dr W G Cross (Jan 29, p 171) under the title "Oral Reactions to Penicillin." The striking similarity between it and the mycotic infection *lingua nigra pilosa* suggests the same aetiology. In support of this the following points, common to both conditions, are presented: (1) The oral erythema as seen about the third day. It constitutes the irritant reaction to the irritation by the invading organism. (2) The discoloration of the tongue. This is due to the presence of the infecting fungus the colour varying according to species. (3) The common site of the lesion, i.e. the hypertrophy of the fungiform papillae as well as the denuded patches on the tongue. The latter lesions are later reactions to the infection.

The micro-organisms found in the course of the investigation are normal inhabitants of the mouth and the cells diagnosed as *Monilia albicans* represent a variety of yeasts which are not determinable except after detailed culture study. At the same time the failure to demonstrate mycelium in the scrapings is

hardly an indication of their absence, as prolonged and patient search by a mycologist is necessary before a case is pronounced negative. Even then culture will often reveal their presence.

In conclusion, the oral reaction to penicillin may be explained on the basis of symbiosis. Penicillin, being a metabolic by-product of a fungus, will furnish in the mouth an ideally favourable environment for other species of saprophytic fungi—which occur in abundance and are both ingested and inhaled at some time or other—to thrive as facultative parasites. In the circumstances, apart from withdrawal of the penicillin lozenges, gum, or spray, which in any case are replaceable by other bactericides, fungicidal treatment should be instituted in the form of mouth-washes of Lugol's iodine and alkalis—I am, etc.,

Wembley Park, Middlesex

N GOHAR

Cancrum Oris

SIR,—May I add to Dr Donald Mackay's observation (Feb 5, p 223) on *cancrum oris*? I have seen this condition not infrequently in the Tropics and sub-tropics, and can certainly confirm that penicillin is effective in arresting the local progress of the disease almost immediately. This however is only part of the treatment, as *cancrum oris* is a manifestation of debilitated disease, which in tropical conditions may be due to any combination of tropical anaemia, sprue, chronic malaria, kala azar, and worm infestation. A precipitating factor appears to be an infectious fever.

My first experience of this condition was in an Indian auxiliary in Assam. The patient had a spreading gangrene of the upper lip. Penicillin was given, and the spread was arrested immediately, a sharp line of demarcation forming. Then the gangrenous tissue sloughed without haemorrhage, but the patient died later of kala azar. I saw further cases of the disease in Mosul, Iraq, where judging by the frequency of the admissions to hospital, the condition must be not uncommon. I have no records of the numbers of patients treated, but they were considerable, and the value of penicillin had been well recognized.

The gangrenous areas became remarkably sharply demarcated after no more than 24 hours' penicillin treatment, and after separation a characteristic punched-out area was left. The gangrene was frequently extensive and deep, affecting bony structures—more frequently the adjacent alveolar margin—and often the whole of the superior maxilla bone would become bare, the teeth fall out, and finally a sequestrum separated. Fatahism was rare, but the residual deformities in severe cases were hideous and the danger of the plastic surgeon.

One fatal case of which I have a record is that of a young woman who was admitted with a gangrene affecting the whole of the left face from forehead to mandible and excavating posteriorly to include the palate, leaving the globe unaffected, rendering the appearance revolting beyond description. Even in this case penicillin stopped the spread of the gangrene, but the patient died perhaps not unfortunately, of inanition.

I can confirm an occasional spontaneous cure of *cancrum oris*, having operated on a patient in Mosul—a young Kurdish woman—for a typical punched-out defect of the upper lip with loss of adjacent alveolar margin; the lesion was acquired in childhood following a febrile illness, when a piece of tissue fell away.

Regarding Dr Mackay's suggestion that the disease is infectious, I found no evidence of this in Mosul where healthy children were admitted to hospital with the mother and affected child. I would suggest that in the case recorded there was a common predisposing factor—malnutrition, infestation or malaria—and both children acquired some infectious disease precipitating the onset.

Perhaps in conclusion it may be of interest to record that in the one case of genital phagedaena under my care in Iraq penicillin was as effective as in cases of *cancrum oris*.—I am, etc

Swansea

B BRENDAN HICKEY

Amethocaine Hydrochloride

SIR,—It is fair that I should confirm Dr P E Thompson Hancock's letter (Feb 5, p 236) on the subject of amethocaine anaesthetic fatalities as one of the cases reported by him was one of mine. This case had been gastroscopically preceded with no ill effects but on the second occasion received a considerable overdose. At that time (1937) the drug was not scheduled as dangerous and in trying to improve on the technique which

Dr. Hancock had taught me I was experimenting with a Schindler's anaesthetic tube. There was in this case no idiosyncrasy, as symptoms developed on the second occasion only.

Shortly afterwards it was my misfortune, though not through any responsibility of mine, to see a patient die in cocaine convulsions, again from overdose. The symptoms were identical—respiratory spasm, apnoea, cyanosis, and generalized convulsions following rapidly on each other. It seemed that there was not likely to be more than a few seconds for successful treatment of the established condition, and I should doubt if it would be feasible. Prevention is certainly the defence to rely on, and by the use of pastilles, supplemented by gargling, anaesthesia should be obtained with at the most 0.05 g. It is probably safer, if the throat remains irritable, to supplement local anaesthesia by general sedation, and on the advice of Dr. Avery Jones I have found intravenous injection—e.g., morphine—very helpful, and have had no anxiety from it.—I am, etc.,

Hove, Sussex.

W. A. BOURNE.

SIR,—We read with interest the article on amethocaine sensitivity by Mr. C. A. Jackson (Jan. 15, p. 99), for on the day of publication we experienced a similar near-catastrophe in which the picture was almost identical with that described.

Our case was a woman aged 71 admitted for gastric investigation. A gastroscopy was planned, and the fauces were painted with a total of 5 ml. 2% amethocaine solution. It is our practice to carry out this procedure with the patient seated facing the spot lamp and immediately to transfer the patient to the table, but in this case before the transfer could be effected she became distressed, made grunting noises, and became unconscious within 30 seconds of the completion of painting. She was lifted on to the adjacent table. Twitching of the facial muscles which rapidly progressed to general clonic spasm occurred, and pulse and respiration failed equally rapidly.

Resuscitation was commenced immediately, a steep Trendelenburg position being adopted, and inflation with oxygen by compression of the bag of a Boyle's apparatus was begun by one of us, while the other administered intravenous "pentothal" (1.5 ml. of 5% solution) and the surgeon scrubbed up for cardiac massage should it become necessary. The clonus ceased within one minute of the administration of pentothal, and intubation was now performed to facilitate inflation. The pulse became imperceptible at the wrist, and 10 mg. "methedrine" was injected intravenously. The pulse became perceptible, but with this improvement the clonus returned. Pentothal (1 ml.) controlled this, but the pulse failed again. A further 5 mg. of intravenous methedrine was given, and the pulse improved. The surgeon was now ready for cardiac massage and the abdomen prepared, but the pulse continued to improve and the respiratory movements began.

Within ten minutes in all of the onset of symptoms breathing needed no further aiding. A B.L.B. oral-nasal mask was applied, and the table gradually levelled. The patient was reacting to supra-orbital pressure within 30 minutes of the onset, and was returned to the ward after a further half-hour. She was drowsy all that day, but was her normal self the following morning. We had hoped to observe the effect of intradermal injection of 1 minim (0.06 ml.) of the amethocaine solution, but she refused all tests.

We feel that this case serves further to emphasize the possible danger of amethocaine sensitivity so admirably described in Mr. Jackson's paper, the existence of which as an entity has not in the past been universally appreciated.—We are, etc.,

G. J. REES.

J. H. WAKELY.

Liverpool.

SIR,—It is not surprising to me that Dr. M. McMinn (Feb. 5, p. 236) reports that a patient became unconscious after the injection of 4 ml. of a 2% solution of amethocaine hydrochloride. I have knowledge of a case where death occurred in a young adult after the injection of about 6 ml. of a 2% solution. This is a satisfactory concentration for surface anaesthesia, but is in my view forty times too strong for local infiltration anaesthesia.

My own experiences with amethocaine hydrochloride have been happy. I have used it over 5,000 times for gastroscopy (as a 25 mg. tablet or up to 5 ml. of a 2% solution) and well over 800 times as a field block for abdominal operations (350–400 ml. of a 0.05% solution with adrenaline), and in no cases were any toxic effects exhibited.—I am, etc.,

NORMAN C. TANNER.

London, S W 16

Specialization

SIR,—Specialization in medicine is a direct result of the inability of any one mind to assimilate the discoveries of many minds. It has phases of enthusiasm and growth, alternating with phases of disquietude and retrenchment. Specialization in every branch of medicine—e.g., neurology, psychiatry, paediatrics, and cardiology—has been resisted, and from time to time there are attempts to put the clock back in spite of the intellectual and practical fruits of such specialization. More recent specialties, such as endocrinology, in which I am particularly interested, have still to make appreciable headway against an understandable resistance.

Apart from innate conservatism, the causes of such resistance may be grouped under certain headings: (A) Too many specialists results in too few general physicians. (B) One cannot be a good specialist unless one has a sound general knowledge of medicine. (C) General medicine is too greatly impoverished and too severely drained by the specialists. These are valid. The solutions to A and B are obvious; to C less so, and C is therefore the greatest obstacle. In my opinion it can be solved in two ways. The general physician must be acknowledged to have an indisputable right to retain a sufficient number of "specialist" cases under his control throughout, so that his practice and teaching will be representative of all aspects of medicine: the specialist will still have in most big centres, a sufficient number of cases for the advancement of his own specialty. A specialist should always be available to give an opinion on a case under the care of a general physician colleague if so requested, but should never "claim" such a case for his own department, directly or by implication, or by common practice. This solution involves the spirit of humility and team practice, which, if accepted, will open up still further, as it has already done in some centres, the road to progress in the erudite and complex field of modern medicine.—I am, etc.,

London, W 1

S. LEONARD SIMPSON

Millilitres Correct

SIR,—Mr. N. A. Herdman (Feb. 5, p. 243) deplores the alteration of the abbreviation mil to ml. in the *British Pharmacopoeia*, 1948, and he gives reasons for his preference for mil. He could have added to these the fact that the Weights and Measures Regulations, 1907, give mil as the abbreviation of millilitre, and he thus has statutory authority on his side. Yet in spite of this I think that on balance it is to be preferred to ml, and perhaps the considerations before may incline Mr. Herdman to shift his sympathies in favour of ml.

There is a curious inconsistency in the Weights and Measures Regulations; the abbreviations for decilitre and centilitre are given as dl. and cl. respectively, and in conformity with this ml. might well have been expected for millilitre instead of ml. To be consistent the regulations should be amended so as to substitute ml. for mil. Mr. Herdman supports the use of ml. on the ground that it cannot be confused with any other measure. Actually, however, the term mil is also used as a linear measure representing one-thousandth of an inch. But perhaps the most important of all considerations from the practical standpoint is that scientific workers invariably use the abbreviation ml. and not mil, and the *British Pharmacopoeia* in adopting ml. has done nothing more than bring itself into line with modern scientific usage.—I am, etc.,

London, W 14

J. M. HAMILL

Marxist Genetics

SIR,—“To surround anything, however monstrous or ridiculous, with an air of mystery, is to invest it with a secret charm and power of attraction which to the crowd is irresistible. False priests, false prophets, false doctors, false patriots, false prodigies of every kind, veiling their proceedings in mystery have always addressed themselves at an immense advantage to the popular credulity, and have been, perhaps, more indebted to that resource in gaining and keeping for a time the upper hand of Truth and Common Sense, than to any half-dozen items in the whole catalogue of imposture. Curiosity is, and has been from the creation of the world, a master-passion. To awaken it, to gratify it by slight degrees, and yet leave some

is always in suspense is to establish the surest hold that be had, in wrong on the unthinking portion of mankind." wrote Charles Dickens more than a hundred years ago. The use of the mysterious is characteristic of all appeals to emotion and is incompatible with reason. Communists have aged to attach an undefined kudos to such vague terms as "identity," "proletariat," "dialectical materialism." The Lyenko imbroglia is part of the same woolly propaganda. In order to assess truth in a situation of any complexity it is necessary to separate individual issues from one another and to investigate each critically by the scientific method. Dr John R. Baker writes in his admirable little book *Science and the Planned State* (George Allen and Unwin, 1945):

There has been much propaganda for Lyenko's methods of controlling the time of germination of seeds, and people might be led to think that 'vernization' was a Soviet discovery. An American just tells us, however, that the discovery was made in the United States before the Civil War (Sax K. 1944, 'Soviet Biology,' *Science* 98). The principle was certainly firmly established by Braem in 1898, in connexion with the germination of the resting reproductive cells of animals (Braem, F. 'Untersuchungen über die Bryozoen aus dem Wasser,' *Bibl. zool.*, 1890, 2, (6), 1).

The proper critics of Lyenko's work are such as the established biologists. Doctors are little qualified to pronounce on scientific question and politicians not at all. But people with little real knowledge of biology and much enthusiasm for Communism will feel that by making much of Lyenko their ideal dogmas receive a scientific cachet. Whether he has or has not in fact confirmed the earlier work referred to by Baker is simply a matter of scientific proof or disproof. Communists, however, wish to make it a matter of political propaganda, and trumpet the presumed demonstration that Communism can occasionally influence the germination of the members of the vegetable kingdom as proof that the social environment alters human evolution.

This is a complete *non sequitur*. In simple fact the difference between Soviet biological science and Western science is that the latter is prepared to acknowledge or to reject the facts according to the accepted rules of trial and error, argument and control irrespective of politics, whereas Soviet science will reject any fact, truth, or proved discovery, such as Mendelian hypothesis or the work of Morgan, merely because it is inconvenient to the Marxist ideology. To quote Lyenko: "In order to get a particular result, one must want to get exactly that result." The converse is clearly, "If you do not like a result, that result is not true." This may be good logic but it is not science—I am, etc.,

London W 1

GEOFFREY BOURNE

POINTS FROM LETTERS

Animal Experiments

G. N. W. THOMAS (Penarth, Glam.) writes: Dr Michael Cullen (Dec. 25, 1948, p. 1122) raises issues over which, I am sure, many of our profession are deeply concerned from both the scientific and moral aspects. Dr Platten's view is that "experiments involving animals in considerable pain, mutilation, in which life is long delayed, or prolonged misery (such as food or water starvation) are of doubtful value in the progress of clinical science," and he refers to experiments in the U.S.A. whereby dogs the lower end of the aorta exposed, nine out of ten dogs died within one to seven days, with cold, cyanosed, and paralysed limbs. As in this country, as reported in one of our physiology books, kept alive in a laboratory for a year and a half after repeated removal of its cerebral hemispheres. Its utter misery from the operation can be imagined. As to dogs, Sir F. Treves (*Journal*, 1898, 2) said, "From operations on dogs I have everything to unlearn," Lawson Tait wrote, as to an epitaph on a tombstone, "I want one thing recorded on it, and that to the effect that 'he laboured to invert his profession from the blundering which has resulted from performance of experiments on the sub-human groups of animal in the hope that they would shed light on the aberrant biology of the human groups' (*Med. Pr.* 1899, 118, 498). Surely the cruelty in any shape or form is reprehensible. Should it not be prohibited in the pursuit of remedial measures in medicine and surgery?

Her Tuberculosis?

R. G. B. LORD (Rushden, Northants) writes: "Striving to better, we must what's well"—*King Lear*, I, iv.

Obituary

F. J. H. COUTTS, C.B., M.D.

Dr F. J. H. Coutts, who died at Bournemouth on the age of 83 on Feb. 13, was for many years a medical inspector of the old Local Government Board and senior medical officer of the Ministry of Health.

Francis James Henderson Coutts was born in Queensland, Australia, in 1865. He was the son of Robert Coutts of Windermere, and received his medical education at Owens College, graduating M.B., Ch.B., with honours in pharmacology and therapeutics, in 1892, and proceeding M.D. in 1898, when he was awarded a gold medal for his thesis. He was a research fellow in pharmacology at Owens College and from 1899 to 1901 he was assistant to Professor Sheridan Delepine in the public health department of the university. Encouraged by Delepine, himself a pioneer in public health bacteriology, Coutts decided to make public health his life work. He took the D.P.H. in 1900 and the B.Sc. in public health in 1907. In 1901 he was appointed medical officer of health of Blackpool, where he soon became known as a capable and efficient administrator.

Sir Arthur Newsholme had become medical officer of the Local Government Board in 1908, and one of his first recommendations was that Dr Coutts should be a member of his staff. Coutts was duly appointed a medical inspector of the Board. His early work there was in the Foods Branch with Buchanan and MacFadden. He was a Fellow of the Chemical Society, and his wide knowledge of chemistry was utilized in investigations of the value of condensed and dried milks and proprietary foods in infant-feeding. In 1912, as the result of the Astor Report, a national tuberculosis service was set up under the Local Government Board, and Newsholme entrusted Coutts with the direction and planning of its medical administration. Coutts, as he often said, never pretended to expert knowledge of tuberculosis, but his public health experience and his reliance upon the clinical members of his staff enabled him to integrate the public health aspect with the curative side of tuberculosis work and to provide an excellent organization for the needs of the major local authorities which were responsible for tuberculosis schemes.

Coutts was an indefatigable writer of minutes, and during the early years of the national scheme worked long hours in Whitehall, often being the last official to leave the building. Newsholme found him an ideal coadjutor, and in 1915 entrusted him also with the medical planning and organization of the new venereal diseases scheme. The characteristic conscientiousness and ability that Coutts applied to this work was recognized outside official circles by his election as president of the Society for the Study of Venereal Diseases. All these important duties left Coutts little time for other work, but in 1915 a special report of his to the Board on anthrax due to infected shaving brushes imported from Japan led to the control and abolition of this method of infection.

The Ministry of Health was founded in 1919, and Coutts became senior medical officer in charge of tuberculosis and venereal diseases work. Throughout his official life he was a kind and considerate chief, and his integrity and justice inspired loyalty and confidence among his staff. In 1923 he was created a Companion of the Bath for his services. He examined in public health for Liverpool, Manchester, Birmingham, and Leeds Universities. He was a freemason, attaining to high rank in the craft. He also found time in his busy life for gardening and for golf. He was an enthusiastic motorist and a member of the Savage Club. In 1930 he retired and went to live at Bournemouth, where he was always glad to welcome his old friends and colleagues. He was a keen member of the British Medical Association and was one of the chief organizers of the successful annual meeting held at Bournemouth in 1934.

In 1937 some concern was expressed about the prevalence of tuberculosis in Wales, and in September of that year Sir Kingsley Wood, the Minister of Health, appointed a committee consisting of Mr. Clement Davies, K.C., M.P., and Dr. Coutts to inquire into the anti-tuberculosis service in Wales and Monmouthshire. Their report, published in 1939, spoke highly of the official work of the Welsh National Memorial Association.

tion. The chief criticisms were directed to the preventive side of the work. The two-man committee did good service in stimulating co-ordination of the work of local authorities in Wales with that of the Association.

Towards the end of 1948 Dr. Coutts's health began to fail, and he died after a long illness. Dr. Coutts married Elizabeth Efford, daughter of Mr. C. G. Boullen, of Ambleside, in 1899. He is survived by his widow and two daughters.

C. H. ROGERSON, M.D., F.R.C.P.

Dr. Cuthbert Harry Rogerson, who died in Baltimore on Feb. 10 at the age of 37, was the medical director of the Seton Institute there. As a student at Guy's Hospital he was outstanding, and he won the Treasurer's gold medal for clinical medicine. He graduated M.B., B.S. in 1932, proceeded M.D. in 1933, and took the M.R.C.P. in 1934 and the D.P.M. two years later. Dr. Rogerson had been a house-physician and subsequently registrar in the department of psychological medicine at Guy's Hospital. At the end of this period he was awarded a Rockefeller fellowship and was able to spend a year with Dr. Adolf Meyer at the Johns Hopkins Hospital in Baltimore. He returned to Guy's as Sir Alfred Fripp fellow, and he was later psychotherapist at the Hill End Hospital, St. Albans. During this period he interested himself particularly in the psychiatric problems of young children. In 1937 he was appointed medical director of the Cassell Hospital at Peshurst. There he proved himself a capable administrator, and he wrote at this time a number of papers on play therapy in childhood, psychological factors in asthma, prurigo, and on the differentiation of neurosis and psychosis. In 1945 he was elected F.R.C.P.

Dr. Rogerson had already achieved much in his special field, and the opportunity for further achievement came in March, 1946, when he settled in Baltimore as director of the Seton Psychiatric Institute. He looked forward to the task of reorganizing the Institute, and he soon built up a staff of keen young men. He began teaching postgraduate students, and he renewed his old association with the Johns Hopkins Hospital. It seemed that he was safely embarked on a career that promised great distinction, and then about a year ago he fell ill.

B.A. writes: The news of Dr. Rogerson's death has not come as a shock to his many friends in this country, as for many months they had known the inevitable end. I leave it to others to give an account of his high professional qualities and achievements: his death is a great loss to British and American psychiatry. I want only to talk about the colleague and friend with whom I was closely connected for five years—war years, with strain, stress, and gross overwork, a time apt to bring out the best or the worst in people. In Dr. Rogerson it brought out the best. He was a man filled with human kindness, full of genuine and sincere interest in people, always ready to help by word and deed, a man with a deep understanding of human weaknesses who never had a bad word to say of anybody. He combined great modesty with quiet self-assurance, an inexhaustible thirst for knowledge, and an infinite capacity for work that made him the successful research worker he was. He had a great sense of humour which never deserted him, made difficulties less difficult, and added to the charm of his company. He had the rare gift of bringing out the best in with whom he worked. Not only his colleagues but the entire staff felt the human interest he brought to bear in all their joys and sorrows. His harmonious personality pervaded the whole hospital and made it a happy place. He was an excellent conversationalist. His interests were not confined to medicine; he was at home in art and literature, especially in poetry. There was hardly a topic, however remote from the commonplace, to which he could not contribute in his own inimitable way. He was very popular and will be missed by many, but for his friends the world has become a poorer place without him.

Dr. FREDERICK RITCHIE SINTON died on Dec. 8, 1948, following a motor crash in which his brother also lost his life. He was born in 1882, and graduated M.B., Ch.B. at Edinburgh in 1904. After a short assistantship at Goole he came to Leeds in 1908 and started practice in Woodhouse, where he lived and worked until his untimely death. He served the R.A.M.C. from 1915 to 1917, for much of this time in Salonika. He was a Conservative member of the Leeds City Council from 1920 to 1924; a member of the Leeds Panel Committee for many

years; carrying out the arduous duties of chairman from 1939 to 1946; and he was also a member of the Leeds War Emergency Committee. He was keenly interested in medical politics and opposed the precipitancy with which the present National Health Service was introduced. Dr. Sinton was an enthusiastic supporter of all outdoor sports, and particularly of the Headingley Rugby Football Club, of which at one time his elder son was captain. In his early days he was keen on boxing. He was a sound and progressive general practitioner, held in high esteem by his colleagues. He had a genial presence, with twinkling eyes and a ready, infectious laugh, and with his generous and sympathetic nature he endeared himself to his patients, fellow practitioners, and friends. Although in his later years Dr. Sinton suffered many serious illnesses which might well have daunted a lesser man, he always faced the future with high courage. He never lost his zest for life but carried on smiling and cheerful to the end. His wife, whom he married in 1906, died a year ago, and he is survived by two sons, the elder carrying on the practice and the younger being the Leeds City police surgeon.

Dr. JOHN GRIMSON MOSELEY, one of the best-known practitioners in Jamaica, died on Jan. 11 at the age of 62. Dr. Moseley, who was a student at the London Hospital, took the conjoint diploma in 1911. He then went back to Jamaica and was in practice with his father, the late Dr. C. A. Moseley of Port Antonio, until 1914. During the 1914–18 war he served in the R.A.M.C. with the rank of major, and after demobilization he graduated M.B., B.S., and proceeded M.D. in 1920. He rejoined his father for a short time, and subsequently settled in Kingston, where he did a great deal of work for the Nuttall Memorial Hospital and St. Joseph's Sanatorium. In the recent war he acted as surgeon-specialist to the Up-Park Camp until 1943, when he was appointed medical superintendent of the United Fruit Company.

H. A. L. writes: I knew Moseley intimately while we served together in the same units in the first world war. Straight as a gun-barrel, Moseley had a mind of his own, but was delightfully easy to get on with, a charming and intelligent companion with a common-sense outlook on life, and he appeared to me to have a deep knowledge of medicine. After the war he returned to Jamaica so that I saw nothing of him until I had the pleasure of a visit at the end of last year. He was tired, and said that he was glad that the time of his retirement from practice was at hand.

Dr. ALEXANDER MCCONNELL ERSKINE died in a nursing-home at Harrogate on Jan. 21 at the age of 80. He had been medical officer of health for Goole for forty-four years, retiring only two years ago. Dr. Erskine was born in Ulster, and graduated at Belfast University in 1889, proceeding M.D. in 1904. Two years previously he had been appointed medical officer of health for Goole at a time when the death rate was high and the infantile mortality rate was 188 per 1,000 births. Dr. Erskine saw the first child-welfare centre opened in the town in 1915, and this was followed by a maternity home in 1926, and in 1938 by the new health centre. He stressed the need for a cheap or free supply of milk to babies and infants more than forty years ago. He was also an early advocate of immunization against diphtheria, and was proud of the fact that since 1943 there had been no deaths from diphtheria in Goole. Dr. Erskine married Miss Dora Stanners Blair, daughter of Dr. Robert Blair, who survives him, and to whom the sympathy of all his friends and colleagues will be extended.

E. C. writes: Dr. Erskine had a real love and understanding of children and remained young in spirit up to the last. He was keenly interested in music, of which he had knowledge to enable him to appreciate it at its true worth, and he was widely read. In 1935 he was one of those who did the B.M.A. world tour and enjoyed it to the full, attending the annual meeting at Melbourne and making friends both on the voyage and in Australia. On the morning of Jan. 5, accompanied by his wife, he visited the isolation hospital, of which he was medical superintendent, and paid several other visits, driving his car with his usual ease and enjoyment. During the afternoon he suffered a coronary thrombosis, and until the day of his death on Jan. 21 he bore much suffering with fortitude and even with unfailing humour. His dignified and upright figure and his genial and lovable personality will be greatly missed by patients, colleagues, and a wide circle of friends.

In our obituary notice of Dr. F. H. A. Marshall (Feb. 12, p. 287) there was a reference to the third edition of his book *The Physiology of Reproduction*, which was first published in 1910. The publishers inform us that the third edition has not yet appeared, but publication is expected next year.

Medico-Legal

BREACH OF TERMS OF SERVICE

The Executive Council for the City of Sheffield unanimously approved on Feb 1 a report from the Medical Service Committee recommending that the sum of 150 guineas should be withheld from the remuneration of a medical practitioner.

This case arose out of the attendance at the surgery of a practitioner on the Council's medical list on Nov 9, 1948, of an insured woman who claimed treatment as a National Health Service patient. The practitioner was unable to trace her name in his records and he charged the patient a fee for which he issued a receipt. On Nov 10 the patient attended at the offices of the Executive Council to apply for a refund of the amount paid by her to the doctor, when she produced three medical certificates—a "first" certificate dated Nov 9, an "intermediate" certificate dated Nov 16 both signed by the practitioner, and a "final" certificate which was undated and unsigned. The issue of these three certificates appeared to disclose an irregularity and they were accordingly retained at the offices of the Council. On the same date, Nov 10 the patient signed a statement to the effect that all three certificates had been given to her by the practitioner at the same time, with instructions that they should be sent in the correct order to the Ministry of National Insurance.

The clerk of the Council communicated the details of the case to the district officer of the Ministry of National Insurance in order that the patient's claim to benefit under the National Insurance Act might not be prejudiced, and on Nov 11 he forwarded the three medical certificates, together with a copy of the patient's signed statement to the Ministry of Health in accordance with the provisions of Regulation 13(a) of the National Health Service (Service Committees and Tribunal) Regulations, 1948, for such action as the Minister deemed necessary.

In a letter dated Nov 22 the Ministry of Health stated the view of the Minister that the matter was one which ought to be investigated by the Medical Service Committee, since there appeared to be a *prima facie* case that the doctor had failed to comply with his terms of service. Clause 7(7) of Part I of the First Schedule to the National Health Service (General Medical and Pharmaceutical Services) Regulations, 1948 made it obligatory for a practitioner, in issuing medical certificates, to comply with any regulations made under the National Insurance Acts, 1946 and the National Insurance (Medical Certification) Regulations, 1948, were thus incorporated in the doctor's terms of service. Clause 2(b) of Part I of the Schedule to these regulations stated that every certificate should contain the date of the examination on which the certificate was based, and also Clause 4 stated that every certificate must have been given on a date not more than one day later than the date of the examination on which it was based and no further certificate based on the same examination should be furnished other than a certificate to replace an original certificate which had been lost or mislaid.

On Dec 7 the matter was considered by the Executive Council who decided, in accordance with Regulation 4(5) of the National Health Service (Service Committees and Tribunal) Regulations, 1948 to refer the case for investigation by the Medical Service Committee. On Dec 8 the clerk informed the practitioner of the Council's decision, and in a reply dated Dec 9 the practitioner stated he was still attending the patient. The certificate dated Nov 16 had been issued in the knowledge that he would attend her on that date and on that date he had visited her.

Subsequently the patient submitted to the Ministry of National Insurance three further intermediate certificates dated respectively Nov 23, Nov 30, and Dec 7, 1948 and in a statement to an officer of that Ministry on Dec 14 she stated she had attended the practitioner's surgery on Nov 9, when the practitioner had issued three medical certificates which she had taken to the offices of the Executive Council. The practitioner had visited her on Nov 23 and on each subsequent Tuesday. She had not sent for him, but he had visited her as arranged on the occasion of her surgery attendance.

Medical Service Committee Hearing

The practitioner was present at the hearing by the Medical Service Committee, as also were a member of the staff of the Executive Council and an officer of the Ministry of National Insurance. The patient did not attend. The practitioner stated that the patient had attended his surgery on Nov 9, when he issued a first certificate, and as the patient appeared to be in ignorance of the correct procedure he explained that she needed a certificate each week. He gave her an intermediate certificate dated Nov 16, and a final certificate which he had neither signed nor dated. The doctor stated he had not intended to sign the certificate dated Nov 16, but had done so inadvertently as he was trying to explain to his patient that she must have a certificate each week. He added it was not uncommon to give certificates in serious illnesses several at a time and to sign them later, when they became due. Such certificates could be signed on the occasion of a visit to the patient's home. The practitioner understood this was a technical breach of the Regulations, but he added that if a practitioner could not trust a patient to the extent of giving him a certificate form when he was seriously ill, and filling it up on the occasion of a subsequent visit, he thought the doctor had a very poor working arrangement with his patient. He frequently gave patients blank certificates which were to be presented to him for signature at later dates. The practitioner agreed that all the statements contained in the patient's statement of Nov 10 were correct.

In reply to a question the practitioner stated he saw the patient for the second time when he visited her, at her own home, on Nov 16. He was then asked if he could explain the patient's statement that he had visited her on Nov 23—no mention having been made of any visit on Nov 16—but to this the doctor made no reply. When asked if he had any evidence of his visit to the patient on Nov 16, he said he had a visiting card for her.

A member of the staff of the Executive Council stated that the patient had presented the three certificates in question to him as an officer of the Council, and had asked for the address of the Ministry of National Insurance to which they should be sent. He had then stamped the certificates with his personal stamp, showing that they had been received in the Council's office on Nov 10, 1948, and the patient had then voluntarily made the statement bearing that date. An officer of the Ministry of National Insurance stated that he had visited the patient, who in a freely given statement said the doctor had visited her on Nov 23. She had made no reference to Nov 16, and the officer, who had not asked for any specific dates, formed the opinion that the doctor had not seen the patient between Nov 9 and Nov 23, 1948. The member of the Council's staff here recalled, stated he had visited the patient, in the company of a colleague, on Dec 16, and in the course of questions on specific points he had asked her whether, definitely, the doctor had visited her on Nov 16, to which she had replied in the negative.

The practitioner then stated that when he visited the woman on Nov 16 she was in bed. He had to visit her home, but he did not get to see her because there was no one there. He understood the patient was in bed, as nobody answered the door, and he was told she was in bed. The date of his next visit was Nov 23, when he was able to see her. The doctor again admitted that on Nov 9 he had issued a certificate dated Nov 16.

Findings

The Committee found that the practitioner's action in issuing a post-dated intermediate certificate on Form Med 2A and an unsigned, undated final certificate on Form Med 2B, as admitted by him constituted a breach of Clause 2(b) and Clause 4 of Part I of the Schedule to the National Insurance (Medical Certification) Regulations, 1948, which are incorporated in the doctor's terms of service. The Committee felt strongly that this action of the practitioner's which was quite indefensible, was an extremely serious matter which indicated that no reliance could be placed upon his certificates. If the procedure used by this practitioner in the issue of medical certificates were adopted by other doctors it would soon become impossible to administer the National Insurance Act. The Committee felt that the integrity of the medical profession should be protected against such actions.

In considering the recommendations to be made to the Executive Council the Committee took into account the practitioner's attitude in this case, and also the fact that he had only recently appeared before them in connexion with another serious matter, when a warning had been issued to him that he exercise more care in his observance of the terms of service. The Committee accordingly recommended: (i) that a warning be issued to the practitioner that, in the event of his again being summoned to appear before the Committee in connexion with a serious breach of his terms of service, the Council would consider whether to exercise their right, under Regulation 6(d) of Part II of the National Health Service (Service Committees and Tribunal) Regulations, 1948, to make representations to the Tribunal that the continued inclusion of the practitioner on the medical list would be prejudicial to the efficiency of the service; and (ii) that the Council make representations to the Minister that, owing to the failure of the practitioner to comply with the terms of service, the sum of one hundred and fifty guineas be withheld from his remuneration.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

In a Congregation held on Feb. 5 the following medical degrees were conferred:

M.D.—J. A. Glover.
M.B., B.Chir.—*R. B. McGregor, *J. W. MacLeod, *F. D. Schofield, *P. J. Andrew, *J. G. Gill, *J. Halford, *J. C. Burne, *Margaret L. Cox

* By proxy

UNIVERSITY OF LONDON

The governing body of the British Postgraduate Medical Federation has approved the award of Postgraduate Travelling Fellowships for 1949-50, tenable for one year, to Mr. J. V. Crawford, of the London Hospital (Neurosurgery, U.S.A.); Dr. J. S. Prichard, of the National Hospital, Queen Square, and the Postgraduate Medical School, Hammersmith (Neurology, U.S.A. and Canada); Dr. R. D. Tonkin, of Westminster Hospital (General Medicine, U.S.A. and Canada); and Dr. J. E. M. Whitehead, of St. Thomas's Hospital (Bacteriology, Scandinavia).

UNIVERSITY OF LEEDS

At a meeting of the Council of the University held on Feb. 16 Wallace Ironside, M.B., Ch.B., D.P.M., was appointed Senior Lecturer in Psychiatry.

Dr. John Jamieson and Miss Jamieson donated £100 for the endowment of a Prize in Practical Anatomy in memory of their father, the late Professor J. Kay Jamieson.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At a meeting of the Council of the College held on Feb. 10, with Lord Webb-Johnson, President, in the chair, the appointment of Mr. V. Zachary Cope as Bradshaw Lecturer was announced.

Mr. Julian Taylor (University College Hospital) was re-elected and Mr. T. A. Hindmarsh (Newcastle), Mr. R. J. McNeill Love (Royal Northern), and Mr. Digby Chamberlain (Leeds) were elected members of the Court of Examiners.

Mr. J. S. Arkle (Newcastle) and Mr. F. C. Hunt (Nottingham) were elected to the Fellowship of the College *ad eundem*.

Sir Henric Ogilvie and Mr. L. C. E. Norbury were reappointed as the representatives of the College on the Council of the Imperial Cancer Research Fund, and Mr. J. M. Wyatt was re-elected as representative on the Central Midwives Board.

The Hallett Prize was awarded to I. S. R. Sinclair, of the University of Edinburgh.

The Diploma of M.R.C.S. was granted to C. P. Cotterill and to the 134 successful candidates whose names were printed in the report of the meeting of the Royal College of Physicians of London in the *Journal* of Feb. 5 (p. 249) as recipients of the diploma of L.R.C.P.

Diplomas in Public Health (twenty-two), Laryngology and Otology (five), Psychological Medicine (one), and Anaesthetics (two) were granted jointly with the Royal College of Physicians of London to the successful candidates whose names were published in the report of the meeting of the Royal College of Physicians of London in the issue of Feb. 5 (p. 249).

The following hospitals were recognized under paragraph 23 of the F.R.C.S. regulations: Mount Vernon Hospital and Radium Institute, Northwood (surgical registrar, first, second, and third, and house-surgeons); Hillington Hospital, Utbridge (surgical registrar and senior house-surgeon).

Medical Notes in Parliament

COST OF HEALTH SERVICE

Supplementary Estimate Approved

On Feb. 17 the House of Commons went into Committee on Supply to consider the supplementary estimate of £52,800,000 for the National Health Service in England and Wales.

Mr. BLENKINSOP, Parliamentary Secretary to the Minister of Health, said that the supplementary estimates were of a very large size and therefore warranted close inspection by the committee. The estimates were introduced some seven months before the introduction of the scheme. It was quite impossible to tell the extent to which the new scheme would be used by the general public. It was impossible to tell just how far the professional services would be available. A factor of great importance which again could not be evaluated at that time was what would be the remuneration of those taking part. At the head of the estimates would be seen provisions for hospital services. That covered the figures of advances both to regional hospital boards and to boards of governors of teaching hospitals. The additional sum was £22,346,000. The Service covered over 36,000 hospitals and clinics together with some 36 teaching hospitals. There had been £3,500,000 additional capital expenditure.

The major cause of the increased running expenses was increased pay of staff. The pay of student nurses had been almost doubled at a cost of some £3,000,000 a year, including improvements in other nurses' pay that amounted to an extra charge of £1,500,000. The increased pay of domestic workers in hospitals amounted to £2,000,000 a year, of which £750,000 was involved in the period of the estimate. Other staff increase amounted to about £1,500,000 a year, and special provisions had been made for increases to doctors and specialists in hospital as a result of the Spens Report, for which provision had been made by some £6,000,000. This might not be the end of the wage increases which might be needed in the professorial negotiations were proceeding at the moment.

Although provision was made for an extra £16,000,000 for liabilities transferred to the Minister, a large part of that would be recouped from the Hospital Endowments Fund. There was no intention to raid the fund. There would be a set-off on against the other, but they had no intention of depriving the fund at all. An extra sum of £370,000 was for increased payment to the Ministry of Pensions. It covered the provision of artificial arms and legs, and artificial aids of most kinds, including surgical boots, motor- and hand-propelled chairs, and artificial eyes.

There had been another large increase in the amount required for grants made to local authorities. Many of those services did not in the past attract any Government grant at all. To-day all of them attracted a 50% Government grant. Such services included care of mothers and young children, home helps, home nursing, and ambulance services. There was provision for an extra £716,000 for the expenses of administration. It had been found necessary to increase staffs to enable the work to be efficiently carried out. Some part of that expenditure was non-recurrent. Provision was also included for an extra £500,000 which had been added to the Mileage Fund for doctors in rural areas.

An addition of nearly £5,000,000 was required for the pharmaceutical service. The estimates were based on the old N.H.I. scheme, under which some 50,000,000 prescriptions had been issued in an average nine-monthly period. Provision had been made for an increase of a little over double that number of prescriptions. In fact something like 128,000,000 prescriptions would be needed in that period of nine months. The cost of the actual individual prescriptions had been greatly increased over the estimate. There had been payments to chemists in advance of the normal dates which merely represented transfer from one period to another. There was no evidence of any general misuse of prescribing by the medical profession. There might undoubtedly be individual cases, but full provision existed for keeping watch on that matter.

The estimates for the dental service—just under £12,000,000 increase—had been originally prepared before the Spens Report had been received. The increase for the ophthalmic services amounted to about £11,000,000. Under the N.H.I. scheme only 5% of those entitled to benefit had made use of the provision. The demand had been increased to some four times the previous estimate. Up to Jan. 31 nearly two million pairs of spectacles had been provided. They were not saying that either on the dental or on the ophthalmic side they were satisfied with the rates of payment to those who were participating, and discussions were proceeding on that matter which would no doubt assist in future periods.

They were a bulwark against the fears of insecurity in the past and to that extent were an encouragement to the economic effort and the difficult period which lay ahead.

Wrung from the Taxpayer

Mr. ASSHETON said that anyone who understood our financial position and had paid heed to the remarks of the Chancellor of the Exchequer in recent months must have been deeply shocked and alarmed by the introduction of a batch of supplementary estimates which represented in total practically all the money that was being wrung from the taxpayer by way of purchase tax.

Members of the Opposition who were in the Coalition Government and had had a hand in framing the post-war social services were feeling very great anxieties lest all the hard work should be brought to naught by the shocking administration of the Minister. In the declaration of policy which the Conservative Party had put to the electorate the intention had been laid down clearly to provide a comprehensive health service, and that had always been their policy. They should not overlook the fact that it was from the pockets of the working men and women that the greatest contribution came.

He wished to criticize first the childish underestimation in respect of which there had been no satisfactory explanation by the Parliamentary Secretary. He wanted to comment on the obvious growth of bureaucracy which these estimates showed. The National Health Service Bill was introduced on March 19, 1946. The final figure of the financial memorandum was "The net annual expenditure falling upon the Exchequer is £95,000,000." The estimate introduced by the Minister last spring was £132,000,000. He had now come along with an additional supplementary estimate for £52,000,000. Those figures for the estimate and for the supplementary estimate covered only nine months.

The matter of the ophthalmic service was very puzzling. The original estimate was about £2,000,000, the revised estimate was for £12,500,000—an error of estimation of 600 or 700%. Plenty of other people had known that the service would cost more than £2,000,000. The cost of a pair of spectacles was from £2 18s to £3 14s. Before the scheme came in there were about four million pairs made in England every year. Somebody might have guessed that the cost might be four million times £3. That would have given an estimate of £12,000,000.

Sir ROBERT YOUNG asked whether he was taking account of the number of spectacles exported in that four million.

Mr. ASSHETON did not believe that many had been exported and the Minister had said that more than two million pairs had been supplied by his Department.

On the general practitioner estimates, it was clear that the amount spent on one or two services alone this year exceeded the total amount spent on family doctoring. Critics had suggested that that disclosed a lack of proportion. He suggested that doctors up and down the country were in many cases over-worked and had not sufficient time to give attention to their more urgent cases. In some country districts doctors were badly hit financially while they saw around them enormous and wasteful extravagance which wise administration might avoid.

The teaching hospitals were to have had £10,000,000 and now wanted £18,000,000 and regional hospitals, which were to have had £91,000,000, were now up to £103,000,000. How could such estimating be excused? He had been told that the administration of hospitals had in many cases been removed from the hospital itself, that a great bureaucracy was growing up. There was great over-centralization of administration. The public had been deceived into thinking that there were far more services available than in fact there were. The Minister had shown himself quite irresponsible in financial matters and heedless of the best interests of the patients as well as of the medical profession. Mr. Assheton suggested that he was unfit to hold office and should go.

Extent of Need Shown

Mr. MESSER said that the supplementary estimate indicated the extent of the need for the Service. Did the Opposition suggest that, because the number of people who would benefit by an expensive drug like streptomycin was unknown, tuberculous people should die because the estimate was wrong? If that was the position the debate would be the finest ammunition for the general election there had ever been. The supplementary estimates could be justified on the grounds that human life was more important than cash.

Sir HUGH LUCAS-TOOTH suggested that the Minister was not only guilty of bad estimating but guilty of reckless understatement. The policy of the Minister had been to keep the estimates as low as possible so that the scheme would be on its feet and the House would be presented with a *fait accompli* in the supplementary estimates.

Miss BACON said that there were various groups in the country at present who were asking for more money. They might have a good case, but it was noticeable that in recent months the Tories had been encouraging those pressure groups to ask for more services of one kind or another. How did the Opposition reconcile that attitude with their present one?

Colonel STODART-SCOTT asked the Minister to say what step he was taking to prevent abuse of the dental scheme. Why was £11,000,000 extra wanted for the ophthalmic service? The Minister had built up an over-centralized administration. He had collected many new people who had had no experience of administering hospitals. He had shown a great unwillingness to accept advice, or take advice, or even seek advice.

Mr. W. GRIFFITHS said he did not think there was any substantial frivolous demand for the ophthalmic service.

Mr. H. LYNSTED said there was unnecessary competition between hospital groups in the matter of hospital salaries and wages of staff. He hoped that the Minister would leave the professions, regional boards, and management committees the greatest amount of liberty to put their enthusiasm into doing their job with the very minimum of central control.

Mr. FERNYHOUGH said that if there was extravagance it was a reflection upon the members of the medical and dental professions, because they were the people in whom the Minister must have complete trust. The people had given the scheme a welcome which augured well for the Labour Party's prosperity at the next election.

Sir HENRY MORRIS-JONES said that he had had a letter from a working man in a London hospital in which there was an analysis of the money being spent on the administrative sector of the hospital at the expense of the efficiency and equipment of the staff.

Mr. BEVAN said that if a charge was being made that a hospital was being extravagant, it was the honourable Member's public duty to give its name.

Sir HENRY MORRIS-JONES said that he would be informed of the name in due time. It was no wonder that Sir Frederick Menzies had stated on Dec. 11 [in a letter in the *Supplement* Dec. 11 1948, p. 220] that if some drastic steps to reduce hospital costs were not immediately taken those enormous costs might have serious repercussions on the medical services other than hospital work.

Mr. BEVAN asked if the salaries should be reduced.

Sir HENRY MORRIS-JONES said that he suggested nothing of the kind.

Mr. HADEN GUEST said that they should not lay too much emphasis at present on the building of new and expensive buildings for health centres. Rather they should spend their energies on building up teams of doctors. The difficulty was not to get doctors into buildings but to get groups of doctors to work together. He would like to mention that this week in the medical press—in one article in the *British Medical Journal* and another in the *Lancet*—there were reports of staggering progress in medical work. In the *British Medical Journal* there was the account of a series of 5,000 childbirth deliveries without one maternal death. In the *Lancet* there was a description of a new discovery for treatment of Parkinson's disease.

Mr. DAVID ECCLES asked whether they could not cut down some of the waste and get the same services for less with better administration. When the Opposition was accused of not wanting the health services that was not true. They were anxious that the maximum amount of money devoted to the civil estimates should be divided in the best way.

Dr. SANTO JAGER said that the Opposition talked about cost as being the most important factor. He disapproved of that attitude and condemned it. The Labour Party's attitude to life was not based on money, but that of the Opposition was almost entirely monetary.

Mr. W. E. ELLIOT said that the Opposition had been accused of being careless or of hostile to, improvement in the health of the people. They were perfectly willing to put their record against the record of any other party. Great sections of hospital accommodation were closed because they could not be staffed. The Minister asked for £180,000,000. How many more beds did he expect to open? That was the acid test.

The real danger was that a consolidation of our expenditure at a level away above the level before the war might take place. If the cost-of-living figures were established at something like 95% or still worse at 300%, as in the case of building, above pre-war the shock to the economy of the country would be profound.

Mr. Bevan's Reply

Mr. BEVAN, after protesting against the absence of Mr. Churchill, said that it had been hard to find out what the Opposition were complaining about. Were they saying that it would have been all right to spend this money in this way if it had gone in the original estimate, or did they object to spending

the money at all? The Parliamentary Secretary did not refer in his speech to the fact that, when they put in the estimate seven months before the money started to be spent he (Mr Bevan) had still been in negotiations with practically all the professions—chemists, dentists, ophthalmic opticians, and the B.M.A—negotiations with whom had not then ceased. Further, the Spens Committee on specialists' remuneration had not reported. How was he to know at that stage what would be the outcome of these negotiations?

When Ministers were in negotiation with sections of the community it was a very serious matter if a Minister in the middle of those negotiations was subjected to pressure lobbies and log-rolling by the sections concerned. He was engaged, or should be engaged, in defending the public interest against the sectional interest with which he was negotiating.

The fact was that he considered without, he thought, much immodesty that the launching of the National Health Service had been one of the greatest pieces of civil administration in the history of all civil government in peacetime. One of the reasons why the Opposition was now running away was because they had already found out that what Mr Churchill said last Thursday was almost as unpopular among Conservatives as among Socialists.

In future they would have a global budget determined by the regional hospital boards and the management committees of hospitals. Within those global budgets the management committees would have discretion to spend what they wished on this or that item of administration. If they spent more on one they spent less on another. They were trying to work out a system of resilient administration with as little bureaucracy as possible, with as much local self-government as possible, and would at the same time protect the public purse against extravagant administration. They would show the world how they could centralize financial responsibility and decentralize day-to-day administration in a great service of that sort.

The voluntary hospital system had been financially failing. The amount of money they were finding to keep the voluntary hospitals vastly exceeded all the money in their Endowment Fund. It was obviously impossible to know to what extent spectacles and dental operations would be required. How did they know what was going to be the demand?

Whenever they had been able to relieve in any way the burden of suffering of the people of Great Britain the burden had always proved to be heavier than they ever thought it would be. Past conditions concealed a vast amount of inarticulate misery and pain. In so far as those figures represented relief of genuine need everybody ought to be proud of them, but if there was abuse let them co-operate in getting rid of it.

The Service had not been launched in harmonious circumstances, in fact no medical service in the world had ever been launched in harmonious circumstances. Who would have thought that they would have in the Service many more general practitioners than the Government had thought would come in? Who would have suspected that 95% of the population would have registered with general practitioners by the end of the year? Although the financial burden was great they must set off against it the enormous sum of misery already alleviated.

Why did not the honourable and right honourable gentlemen opposite start ceasing to be sour? The Tory Party used to represent itself as a joyous party. However, that had all gone now—pale and miserable lot. Every increase in the health, buoyancy, and vitality of the nation—instead of welcoming it they gnawed at it. They hated it because they thought it spelt electoral defeat.

It was necessary that the money be not spent upon the most articulate members of the community, who might be the chemists, the doctors, the dentists or the ophthalmic opticians. It might be even the health workers because each one of these sections was highly organized and able to bring pressure to bear upon Parliament and upon Ministers. He was anxious that the money be not spent on the persons who could organize themselves into loud pressure lobbies and get their columns in the Press, but on the patients who had to make use of the Service. He welcomed the discussion which had taken place. It had shown the hypocrisy of the Opposition and it had shown the soundness of the Service.

The estimate of a supplementary sum not exceeding £52,800,000 was agreed to without division.

The Raw Opium Regulations, 1948, and the Dangerous Drugs Regulations, 1948, which came into effect on Jan. 1, include amidone and pethidine among those drugs of which a separate register or part of a register must be kept. They specify the preparations of opium which practising medical men may obtain on their own authority, and extend to registered veterinary practitioners the same authority in respect of the possession and supply of dangerous drugs as a registered veterinary surgeon has.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Feb. 5.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for (a) England and Wales (London included) (b) London (administrative county) (c) Scotland (d) Eire (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease are for (a) The 126 great towns in England and Wales (including London) (b) London (administrative county) (c) The 16 principal towns in Scotland (d) The 13 principal towns in Eire (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever Deaths	32	1	22	—	1	56	6	20	2	2
Diphtheria Deaths	116	10	35	10	3	223	19	55	7	8
Dysentery Deaths	75	8	22	—	2	160	28	39	11	—
Encephalitis lethargica acute Deaths	—	—	—	—	—	—	—	2	—	—
Erysipelas Deaths	—	—	39	3	8	—	—	45	11	1
Infective enteritis or diarrhoea under 2 years Deaths	35	1	3	48	1	38	3	9	14	1
Measles* Deaths†	13,800	496	142	100	178	5,596	511	831	121	17
Ophthalmia neonatorum Deaths	39	3	7	—	—	63	5	11	—	—
Paratyphoid fever Deaths	4	—	—	—	—	6	—	—	—	—
Pneumonia influenzal Deaths (from influ enza)‡	1,016	59	20	11	17	1,012	64	14	18	7
Pneumonia, primary Deaths	64	13	16	—	2	25	1	3	—	—
Polio encephalitis, acute Deaths	311	70	426	33	12	273	64	279	31	11
Poliomyelitis, acute Deaths§	9	—	1	1	—	25	1	6	—	1
Puerperal fever Deaths	—	1	10	—	—	—	—	7	—	—
Puerperal pyrexia|| Deaths	86	7	13	1	—	118	14	12	2	—
Relapsing fever Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever Deaths†	1,372	83	233	113	50	1,943	110	322	28	42
Smallpox Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever Deaths	6	—	—	1	—	12	2	—	8	1
Typhus fever Deaths	—	—	—	—	—	—	—	—	—	—
Whooping cough* Deaths	3,168	176	185	57	84	2,572	172	45	36	10
Deaths (0-1 year) Infant mortality rate (per 1,000 live births)	303	35	41	37	11	399	53	60	32	22
Deaths (excluding stillbirths) Annual death rate (per 1,000 persons living)	5,957	1,063	780	205	132	5,191	844	685	224	148
Live births Annual rate per 1,000 persons living	7,292	1,108	906	394	208	7,999	1,320	954	418	280
Stillbirths Rate per 1,000 total births (including stillborn)	19	24	25	—	—	24	21	25	—	—

* Measles and whooping-cough are not notifiable in Scotland and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county) will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county) are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Influenza

In the 126 great towns in the week ended Feb. 12 there were 94 deaths from influenza compared with 64 in the previous week. This figure is higher than that for the corresponding week of 1938, 1942, 1944, and 1948, but lower than the corresponding week of 1939, 1940, 1941, 1943, 1946, and 1947. There have been no definite reports of new outbreaks, but there have been many indefinite reports of a high incidence of upper respiratory disease in certain places.

There is an increased incidence of influenza in Northern Spain but no increase in general mortality there. There has also been an outbreak in the American zone of Germany, in South-west Bavaria, chiefly affecting school-children.

News has been received from Dr. Burnet, of Melbourne, that a strain of virus A recently recovered from the Ocean Islands is identical with the current European strain. All strains fully investigated by the World Influenza Centre, from this country and from the Continent in the first six weeks of this year, are identical.

Discussion of Table

In *England and Wales* infectious diseases were more prevalent during the week, and there were increases in the notifications of measles 2,144, whooping-cough 311, scarlet fever 181, acute pneumonia 81, and dysentery 15. There was a decrease in the incidence of diphtheria 25.

The largest increases in the notifications of measles were Yorkshire West Riding 422, Essex 316, Staffordshire 198, and Devonshire 154; the decline in Lancashire continued, and a fall of 189 was recorded. There was a small rise in the notifications of scarlet fever in every region except the south-western and eastern, where small decreases occurred.

The largest rises in the incidence of whooping-cough were Kent 66, Yorkshire West Riding 46, and Warwickshire 43. The decline in the notifications of diphtheria was mainly due to the experience of Lancashire, where the notifications fell from 39 to 19.

The increased incidence of dysentery was also contributed by Lancashire, where an increase of 26 was recorded. The chief centres of infection in this county were Blackpool C.B. 20; Liverpool C.B. 10; and Whiston R.D. 7. Notifications of acute poliomyelitis were 11 fewer than in the preceding week, and 3 of the 9 cases were notified in Gloucestershire, Bristol C.B.

In *Scotland* there were decreases in the notifications of whooping-cough 52, scarlet fever 39, and acute primary pneumonia 37; the only increase of any size was measles 34. Of the 22 cases of dysentery 13 were notified in the city of Edinburgh.

In *Eire* there were decreases in the notifications of whooping-cough 23 and measles 18. A decrease of 9 in the notifications of diarrhoea and enteritis was reported from Dublin C.B., but this was offset by an increase of 10 in the remainder of the country.

In *Northern Ireland* infectious diseases were more prevalent than in the preceding week, and increases were recorded for measles 39, whooping-cough 20, and scarlet fever 15. The largest increases in the incidence of measles were Belfast C.B. 37 and Antrim County 20. An increased incidence of whooping-cough and scarlet fever was general throughout the country.

Week Ending February 12

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,417, whooping-cough 3,011, diphtheria 148, measles 18,441, acute pneumonia 1,139, cerebrospinal fever 30, acute poliomyelitis 15, dysentery 68, paratyphoid 5, and typhoid 7. Deaths from influenza in the great towns numbered 94.

The first part of an exchange visit arranged by the British Council and the Polish Government began on Jan. 30 when a group of five Polish medical professors came to meet leading members of the British medical profession and visit hospitals and universities. In March a similar group from Britain will go to Poland as the guests of the Polish Government. The visitors are Professor Anton Dobrzanski, Professor of Laryngology and Dean of the Medical Faculty, University of Warsaw; Professor Adam Grucza, Professor of Orthopaedic Surgery, University of Warsaw; Professor K. Jonscher, Professor of Paediatrics, Poznan University; Dr. Tadeusz Kielanowski, Dean of the Faculty of Medicine, Marie Curie University, Lublin; and Professor Semerau Siemianowski, Professor of Internal Medicine, Warsaw University.

Medical News

Medical Fellowships and Fellowships in Chronic Rheumatism

In the advertisement pages of this week's *Journal* the Nuffield Foundation invites applications for medical fellowships and for fellowships in chronic rheumatism. The closing date for receipt of applications is April 1. Full particulars can be obtained from the secretary of the Foundation, 12 and 13, Mecklenburgh Square, London, W.C.1.

Committee on Carcinogenic Action of Mineral Oils

The Medical Research Council has appointed the following to advise and assist them in the prosecution of research on the carcinogenic action of mineral oils: Professor T. Ferguson (chairman); Colonel S. J. M. Auld, D.Sc.; Professor J. W. Cook, D.Sc., F.R.S.; Professor A. Haddow; Dr. J. O. Irwin, D.Sc.; Professor J. R. Squire; Dr. D. L. Woodhouse, Ph.D.; Dr. J. M. Rogan (secretary). In addition the Ministries of Fuel and Power, of Health, and of Labour and National Service have nominated representatives who will attend meetings when matters of interest to these departments are likely to arise.

City of London School Register

A comprehensive register, with biographical details, from 1837 to the present time, of all masters and pupils of the City of London School is being prepared for publication. All former pupils are asked to apply to the editor of the register, City of London School, Victoria Embankment, E.C.4, for a form of questionnaire. The late Dr. Ernest Hart, a former editor of the *Journal*, was captain of the school in 1851-2.

Dental Technicians' Associations to Amalgamate

The Denture Service Association and the United Dental Technicians Association have decided to amalgamate "with a view to the establishment as soon as practicable of independent status for dental technicians analogous to that already enjoyed by ophthalmic opticians." They have decided to oppose the Bill for regulating the craft of dental technicians.

Oliver Memorial Fund

The committee of the Oliver Memorial Fund intends to make the second award of the value of £50 to a British subject whose original work or service in connexion with blood transfusion is considered to be a notable contribution to the research, organization, or donor aspect of this subject. The committee will welcome applications and, in addition, communications drawing its attention to suitable candidates. All correspondence should be addressed to the honorary treasurer, F. W. Mills, Esq., National Provincial Bank, Ltd., Holborn Circus, London, E.C.1, to whom applications must be submitted by June 30.

Russia Leaves WHO

Soviet Russia, the Ukraine, and Byelorussia have cabled to the executive secretary their withdrawal from the World Health Organization. Their decision is stated to be based on dissatisfaction with the organization's work and the expense involved; its "swollen administrative machinery" is "too heavy for member States to bear." Dr. Brock Chisholm, the executive secretary, has replied, according to *The Times* of Feb. 17, that the telegrams have been received with regret, but that he cannot accept the resignations, for which the constitution of WHO makes no provision.

Beryllium Poisoning

Beryllium poisoning has been added to the list of industrial diseases prescribed under the National Insurance (Industrial Injuries) Act. An employed person who contracts it may claim industrial injury or disablement benefit. In a fatal case death benefit may be paid.

New Medical M.P.

Dr. A. D. D. Broughton, who won the recent by-election at Batley, has been in general practice at Batley since 1931. Dr. Broughton, who is a Cambridge graduate, trained at the London Hospital and subsequently took the D.P.M. at Leeds in 1936 and the D.P.H. a year later. He served in the R.A.F.V.R. as a squadron-leader during the war and has been honorary physician to the Batley and District Hospital for some years. He was honorary secretary of the Dewsbury Division of the British Medical Association in 1936-7 and chairman of the Division in the following year.

Visitor to U.S.A.

Dr. William W. Mushin, of the Department of Anaesthetics, Welsh National School of Medicine, is going to San Francisco early in March as visiting professor of anesthesiology at Stanford University. He will give a course of lectures and attend a conference arranged by the California Society of Anesthesiologists.

Marks.—On Feb 4, 1949, Urban Marks, M.R.C.S., L.R.C.P., of Bishopston
 Swansea, aged 58
 Marsh.—On Feb 6, 1949, at Greenways, Llanfrehfa, Newport, Mon. Octavius
 de Burgh Marsh, O.B.E., M.B., B.Ch.
 Moseley.—Recently, John Grimson Moseley, M.D., of Jamaica
 Park.—On Feb 2, 1949, Griffith Wynn Vaughan Parry, M.R.C.S., L.R.C.P.,
 Regent, Camden House, Mitchingley, Surrey
 Regan.—On Jan 31, 1949, at Bootle, Peter Leo Regan M.B., B.Ch., aged 60
 Richards.—Recently, Gwylm Caradog Richards, M.B., Ch.B., Cardiff.
 R.A.M.C., aged 25
 Spriggs.—On Feb 4, 1949, Sir Edmund Ivett Spriggs, K.C.V.O. M.D.,
 F.R.C.P. of Coed Marchan, Ruthin, Denbighshire
 Thoms.—Recently, Geoffrey Surindze Thoms, M.B., Ch.B., Surgeon Commander
 R.N.
 Tindal.—On Feb 12, 1949, at Cleff, David Tindal, M.D., F.R.F.P.S. Glas-
 gow 93
 Witham.—On Feb 3, 1949, at Church Street Nursing Home, Bath, Frank
 Witham, M.R.C.S., L.R.C.P., Major, R.A.M.C. retired, aged 83
 Zane.—On Feb 7, 1949, at Florence Nightingale Hospital, London, N.W.
 May, Victoria Zane, M.B., Ch.M.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Excretion of Barbiturates

Q.—What is the rate of excretion of the barbiturates? A recent article states that phenobarbitone is excreted at the rate of only 3% in 24 hours. Is this be so, continuous small doses would surely produce a dangerous accumulation in a short time yet I have known cases in which this drug has been taken regularly for years with no apparent ill effects.

A.—No single figure for the rate of excretion of the barbiturates can be given. Some barbiturates such as hexobarbitone or thiopentone are broken down, chiefly in the liver and are not excreted as barbiturates at all. Barbitone and phenobarbitone after ordinary therapeutic doses, consistently appear in the urine unchanged but even so a part of the dose is destroyed in the body. The part played by the liver in destroying phenobarbitone has been demonstrated in rabbits and cats in the following way. Chloroform anaesthesia, which depresses liver function, is maintained for two hours. Then 24 hours later phenobarbitone is given. It causes deep depression for long periods, and the animals may die from doses which are only half the average fatal dose. Thus damage to the liver by chloroform prevents adequate detoxification of phenobarbitone. Hence, while 3% of phenobarbitone is excreted in 24 hours, a good deal more is destroyed in the liver. The mere fact that some is excreted however means that destruction in the liver is far less efficient than it is when thiopentone is given. Since there may be a great difference between individual patients in their ability to detoxify phenobarbitone, it follows that in some people overdosage may easily occur.

Calculi in a Paraplegic

Q.—A man aged 21 has a complete paraplegia as a result of (?) myelitis in childhood. Although he is lifted occasionally into an invalid chair he mainly lies flat in bed. As a result he has recently begun to pass softish renal stones which usually become impacted just inside the external urethral orifice, so far it has been possible to remove them with forceps. Is there any drug or treatment which will prevent the formation of the stones and dissolve those probably already present in either the bladder or kidneys or both? He is incontinent but gets an erection occasionally.

A.—Not enough information is given to decide what would be the ideal treatment in this case. It is important to know whether there is evidence of infection of the urinary tract, which is likely in an incontinent patient. Radiology would almost certainly reveal the site of calculi which are already present. The stones are very likely to be composed of calcium phosphate, but it would be useful to confirm this by chemical means. It is clear, therefore, that treatment could be best given in an institution equipped to carry out the investigations. The following regimen should, however, assist in preventing the formation of further stones. (a) Four litres of fluid should be taken daily to ensure a dilute urine. (b) An acid-ash diet should be given with a minimum of milk—a high calcium diet has been shown to increase the urinary calcium excretion. (c) The reaction of the urine should be tested should it remain neutral or alkaline, regular ammonium chloride should be prescribed to ensure acidification. (d) The position of the patient should be changed as frequently as possible. It would be useful if he could be lifted into the invalid chair at least once daily. (e) Supplementary vitamins especially vitamin A should be given. (f) Any coexistent urinary infection should be appropriately treated according to the organism present.

To dissolve stones which are already present the use of the so-called 'solution G' of citric acid has been advocated.

B	G
Citric acid (monohydrate)	32.3
Magnesium oxide (anhydrous)	3.8
Sodium carbonate (anhydrous)	4.4
Distilled water	to 1 litre

As this must be irrigated through a urethral or ureteric catheter its use would be practicable only if he could be admitted to a well-equipped hospital. Surgery should of course be contemplated if any large calculi are shown to be present by radiology.

Keloid

Q.—(a) What is the most recent treatment for keloid and hypertrophic scar following an injury to the elbow and knee in a girl aged 12? The keloid is in the form of a raised scar about the size of a small marble and there is no tentacle formation.

(b) A young patient had a boil on her cheek some four months ago. The scar is now healing well and colour is becoming normal but there is a considerable degree of puckering. What is the most efficient treatment to improve this?

A.—(a) Treatment for keloid formation is as unsettled as it ever was, but most authorities are agreed that preliminary treatment with x-rays followed by excision and further post-operative irradiation offer the best chance of success. It should be pointed out, however, that many disappointing results follow the use of x-rays, years later x-ray dermatitis may result. The irradiation should be done only by a competent radio-therapist skilled in this particular work. Excision by itself, while it may be satisfactory, can also be disappointing the outcome depending on the site of the keloid and its relation to lines of skin tension. A plastic surgeon should be consulted on the advisability of operation. The hypertrophic scar in a girl aged 12 mentioned in the question is a case in point. Keloids are apt to recur in young people and this is particularly so on extensor surfaces such as those of the elbow and knee. Excision in an adjusted line would probably be advisable. X-rays would not be likely to help.

(b) The scar should be left for at least six months to resolve. If puckering still persists, careful excision by a competent plastic surgeon would be advisable.

Innervation of Uterus

Q.—(a) From what cord level does the sympathetic supply to the uterus come? Does it contain sensory as well as motor fibres and do these emanate from the same cord level? (b) Is there a parasympathetic supply to the uterus? If so what are its function and its cord level? (c) What is the effect of spinal analgesia and of caudal analgesia?

A.—(a) Knowledge about the innervation of the uterus remains incomplete and uncertain, and the extensive literature dealing with clinical and experimental observations in the human being and animals is confused and sometimes contradictory. Without listing all the issues concerned it can be stated that the elucidation of this problem is far more difficult than appears at first sight and most of the following statements should be regarded as general opinions requiring much qualification rather than as facts.

Although it is usual when innervation is considered to think in terms of the muscle elements of the uterus the vascular elements also have an autonomic nerve supply, and this may be important. For instance, the state of the circulation may have some bearing on sensations of pain arising within the uterus. The nerves in question probably accompany and are intimately associated with the main blood vessels to the uterus. As regards the nervous control of this organ whatever be its ordinary purpose it is not essential to the process of parturition and the uterus can empty itself with reasonable efficiency when all nervous connexions are severed. The main sympathetic supply passes to the uterus by way of the superior hypogastric plexus (presacral nerves) and the inferior hypogastric plexus. Stimulation of these nerves is thought to bring about contraction of the circular muscle fibres particularly those in the lower part of the uterus and upper part of the cervix. Sympathetic impulses therefore tend to hinder distention of the

cervix, and the general effect on the expulsive action of the uterus is inhibitory. There is some dispute about whether the presacral nerves carry sensory impulses too, but most authorities believe they do, and this is in part at least the basis of the operation of presacral neurectomy for spasmodic dysmenorrhoea. In a letter to this *Journal* (April 10, 1948, p. 706) Dr. J. Donaldson Craig pointed out, on embryological grounds, that the sympathetic nerves to the uterus are derived from segments D11 to L2, but some authorities have put the level at D5 to D8. It is also possible that some of the sympathetic nerves to and from the uterine muscle accompany the ovarian vessels.

(b) The parasympathetic nerves come from S2, S3, and S4 segments, and they reach the uterus by way of the inferior hypogastric plexus. The traditional view is that when stimulated they cause contraction of the detrusor muscles of the upper segment. However, some believe there is no parasympathetic motor supply to the uterus. Sensory impulses, especially those arising in the cervix, also travel through these nerves.

(c) The effect of spinal analgesia varies with the level of the nerve block. It probably has to reach L1 or even D11 or D10 before the sensation of a labour "pain" is abolished. With the level of analgesia sufficiently high to permit caesarean section the uterine muscle contracts strongly, sometimes almost in a tetanic fashion, and the uterine wall becomes blanched. Dilatation of the cervix is said to be hindered. This may represent the unopposed action of motor sympathetic impulses. If so, it suggests that sensory nerves are connected with the spinal cord at a lower level than the motor ones. With very low spinal analgesia this strong uterine contraction may not occur.

Caudal analgesia differs from spinal analgesia only in that the analgesic solution is applied to the nerve fibres extrathecally instead of intrathecally. The effects are similar, except that the contraction of the uterus is perhaps less violent and dilatation of the cervix is not significantly impeded. It is not clear why this should be so. Perhaps the height and completeness of the block are less constant, and in any case some observers hold that spinal analgesia does not interfere with cervical dilatation. With either spinal or caudal analgesia the pelvic floor reflex is lost and the patient finds it difficult, if not impossible, to "bear down" in the second stage and to effect delivery.

Varicocele

Q.—Is there a satisfactory cure or treatment for a male patient of 30 suffering from varicocele, which is causing considerable discomfort? Is operation recommended? If so, what operation, and what are the late results?

A.—In the ordinary course of events operation for varicocele should be avoided for as long as possible, the condition often being symptomless and the patients introspective in type. If it is causing definite discomfort, presumably from a dragging pain, surgery is advisable. Varicocele can be cured by injection, but the technique is a difficult one and reactions are apt to be severe.

The operation is performed through a small inguinal incision, the cord being exposed as it emerges from the external abdominal ring. The varicose veins of the pampiniform plexus are dissected out. It is wise to leave one or two radicles, as the chances of producing a secondary hydrocele are thereby considerably lessened. Apart from these radicles a length of the pampiniform plexus is excised, and by drawing the cut ends together the testicle is raised to the required extent. The actual length of veins excised will vary from patient to patient and approximately between two and four inches. A scrotal support for the immediate post-operative month is advisable. Late results in well-selected cases are entirely satisfactory.

Risk of Inherited Defects

Q.—Of three offspring born to normal healthy parents, with no relevant family history, the second had a spina bifida and the third was a mongol. Is there any recognized association between these conditions? Is there any reason for expecting defects in the offspring of the remaining healthy child?

A.—It is very unlikely that the occurrence of spina bifida and mongolism in this sibship is anything more than a coincidence. Both conditions have some hereditary basis, but other factors, presumably environmental, are relatively much more

important, so that familial incidences are very low. Hence the chance that the healthy child will have defective offspring is little if at all greater than would be the case with any random person with no such family history. If the mother is still of child-bearing age, the chance that another child will be deformed is undoubtedly somewhat greater than in a random pregnancy; even if she is elderly, however, it should be no worse than, say, 1 in 10.

Deafness and Tinnitus

Q.—A patient has had gradually increasing conductive (middle-ear) deafness, due to otosclerosis, for 17 years, and a hearing-aid has been used for the last six years. Would a fenestration operation help her, as there are no obvious changes in the internal ear? What is the prognosis after the operation? She also suffers from severe noises in the head: would the operation relieve this condition?

A.—If bone conduction for the frequencies 512, 1,024, and 2,048 double vibrations is good, fenestration should help. But the patient should be told that not even the (theoretically) most suitable case can be guaranteed any improvement. In many cases the restored hearing is lost from closure of the new fenestra or from serous labyrinthitis. Tinnitus is relieved in only a minority of these cases, and bromides or barbiturates may be required.

NOTES AND COMMENTS

Ammoniacal Dermatitis in Infants.—Dr. N. R. CARLSON (Pevensey Bay, Sussex) writes: In "Any Questions?" (Jan. 22, p. 164) there is an excellent account of ammoniacal dermatitis in infants. I would like to remark on the success I have had in using acid sodium phosphate (5 gr.) instead of alkalis such as citrate. The ammoniacal smell rapidly disappears, but soon returns if the acid phos. is withdrawn without first correcting the diet. It is a little difficult to explain why the acid phos. works so well. It may be that there is excessive loss of acid in the faeces (as these are always frequent and acid in reaction in this condition), thereby leading to a tendency to alkalaemia and an alkaline urine which cannot neutralize the ammonia being formed by the urea-splitting organisms or ferment. The acid phos. would give a slightly acid urine which could neutralize or buffer the ammonia. As regards the local treatment, I have found that a "sheet" of tulle gras laid over the excoriated area and dusted with boric powder protects the raw area and allows it to heal rapidly.

Fat Intolerance.—Dr. M. D. WRIGHT (London, W.6) writes. Answering a question on fat intolerance in "Any Questions?" (Jan. 22, p. 164) you recommend for vitamin A two tablets daily of carotene, each containing 4,500 units—a total of 9,000 units of carotene, of which rather over half is equivalent in units to vitamin A. In 1945 the vitamin A Subcommittee of the Medical Research Council published in *Nature* (156, 11) records of experiments on man in which it was shown that defective night vision and low plasma-vitamin-A values—arising through experimental deprivation of carotene and of all sources of preformed vitamin A—improved in one case promptly on a daily dose of 2,600 i.u. of carotene. In another case the improvement required about five months of the same dose. Too little precise experimental work is recorded on man, but the authors consider that even in the presence of deficiency symptom 2,600 i.u. carotene is sufficient to cure and 5,000 i.u. enough provide a reasonable margin of safety. The world shortage of vitamin A sources is still such as to make over-usage undesirable and the work quoted above gives useful guidance based on critical observations.

Correction.—Mr. E. R. BRANSBY, Ph.D., writes: In our paper on the diet, haemoglobin values, and blood pressures of Olympic athletes (Feb. 19, p. 300) an error inadvertently crept in. It is stated (p. 30) that the average calorie intake of 3,350 daily is about the average of a man engaged on light work. This should, of course, be moderately heavy work.

All communications with regard to editorial business should be addressed to the EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Attilio Westcott, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* and its Supplements. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Dr. Medads, Westcott, London*. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, EUSTON 2111. TELEGRAMS: *Medisecro, Westcott, London*. B.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY FEBRUARY 26 1949

THE SECRETARY REPORTS

CONSTITUTION OF THE ASSOCIATION

Although it cannot be pretended that it is an easy document, it is hoped that the Council's Report on the Association's constitutional problems will be widely read. It does not deal with the problem whether the trade union conception generally is one which the profession generally would accept. It is a technical document which, beginning with two recognizable defects in the Association's present constitution, seeks to answer the question whether trade union status in one form or other would solve our problems. It emerges that if our legal advisers are right the medical profession could never create a trade union which would enjoy the protection that the law affords to trade unions generally. That protection, it seems, is limited to associations of masters or workmen, and legally we are advised that doctors are neither.

The Report goes on to consider other ways of remedying the defects. Ultimately it comes down on the side of a parallel body which may be regarded as the Independence Fund Trustees in permanent form. The question may well be asked, as it was at the Council, whether such a body should have members. As one member of the Council put it, one cannot belong to a document. What influenced the Council in deciding against a body with membership was the need to maintain the position of the Representative Body as the policy-making body and the Council as its executive, utilizing the new body to do those two things which, by its constitution, the Association is unable to do. If such a body were to have membership it might well be considerably less than that of the Association. It would follow that the members would appoint and instruct the trustees with the danger that the policy of the trustees might differ from that of the Representative Body. In short, it is intended that the Association should remain the representative body of the profession, the Board of Trustees, which would consist of members of the Council, acting in those fields in which the Association cannot, because of its constitution, safely operate.

Clearly something more than a Central Board of Trustees will be needed if the new body is to be effective for the purposes for which it is proposed it should be created. After all, those purposes include the collection of money and the establishment of a machinery which can swiftly come into operation in the event of dispute. It will be for the Board of Trustees, should the Representative Body approve the Council's proposals, to set to work to establish a machinery including local machinery. It is probable that, just as the Independence Trustees advised the establishment of local Independence Committees, the Board of Trustees will advise the formation of local units of the Guild, continuous with the Divisions of the Association. In its report the Council has concentrated on general principles, leaving the Board, if and when established, to get down to the brass tacks of detailed central and local organization.

Betterment

The recommendations of Lord Chorley's Committee on the Remuneration of Higher Civil Servants are of great interest, particularly when the recommended rates of remuneration are compared with those obtaining in 1939. Some of the more important details are set out in simplified form in the accompanying table.

In pre-war days, when the scale for the post of Permanent Secretary of the Ministry of Health was £3,000, the salary for

the post of Chief Medical Officer of the Ministry of Health, according to Whitaker, was £2,200. To-day, when the salary for the Permanent Secretary post stands at £3,500, that of the post of Chief Medical Officer—a salary personal to the present holder—is £3,000. The Chorley Committee does not put forward recommendations for medical officers as such, but states

Administrative Class Salaries

Grade	1939	Jan. 1 1946	Chorley Committee Recommendation
	£	£	£
Permanent Secretary to the Treasury	3,500	3,750	5,000
Other Permanent Secretaries	3,000	3,500	4,500
Deputy Secretary	2,200	2,500	3,250
Under Secretary* (a grade which existed in some depts. only)	1,900	2,000	2,500
*Principal Assistant Secretary	1,700	—	—
Assistant Secretary	1,150-1,500	1,320-1,700	2,000

* The grade of Principal Assistant Secretary was abolished (although a few members of the obsolescent grade still remain) and the new grade of Under Secretary introduced into all Departments.

under the heading of "Other Classes" that they should maintain their present relativities with the Administrative Class. This should bring the remuneration of the Chief Medical Officer to approximately £4,000 a year. Similarly, the remuneration of other medical officers of the Ministry in comparable senior grades will, it is assumed, be raised in relation to increases in the remuneration of the Administrative Class.

In addition to these salaries, there are at present non-contributory pension arrangements. The Government has accepted the recommendations of the Chorley Report in principle, but has decided on a gradual application.

Visitors from Overseas

News has reached me, indirectly and not officially, that the Ministry has changed its view on the subject of the treatment of visitors from overseas. It has now made a rule, I understand, that the benefits of the National Health Service do not extend to overseas visitors, whether foreign nationals or citizens of the Commonwealth or Colonies. If those visitors come to this country for the specific purpose of using the Service. If, on the other hand, they should fall ill whilst here on a visit, they are entitled to use the National Health Service. Others will, no doubt, offer views about the steps to be taken by the practitioner to find out what prompted a visitor to come to this country. Advice will, no doubt, be offered on what measures the doctor should take if a visitor alleges that he came to this country to see his Aunt Mabel, though in fact he called on the doctor before calling on Auntie, if indeed Auntie exists!

But an issue of first importance is the legal one. Either the Act does or it does not entitle foreign visitors to use the National Health Service. If it does so entitle them, then a Government Department has no business to make rules which deny the Service to persons to whom the Act gives an entitlement. If, on the other hand, it does not entitle foreign visitors to use the Service, then the law is being broken by affording its facilities to any visitor from overseas. The Act does not differentiate between visitors to this country on any basis of the motives which inspired them to come. Concealed behind this latest decision is the important issue of the power of a Department to make or break the law.

National Health Service

SUPPLEMENTARY OPHTHALMIC SERVICE FEE REDUCED

Shortly after the introduction of the National Health Service the Ministry of Health became perturbed at the rate of remuneration of practitioners participating in the Supplementary Ophthalmic Service. It therefore collected details from a number of executive councils of the cases in which the highest sums had been paid. The area covered in this survey was about half the country, and the practitioners in respect of whom information was obtained represented roughly 5% of the practitioners operating the Supplementary Ophthalmic Service in those areas. There was no definite information about the average time taken by practitioners concerned for each sight test, since it was not known what portion of their time was devoted to the work. Nevertheless, bearing in mind that the practitioners had other commitments such as general practice or a hospital appointment, the figures supported an assumption that in those specific cases the time given to each patient was appreciably less than half an hour—the estimate on which the fee of £1 11s. 6d. had been assessed.

The survey could not, however, be regarded as a comprehensive or impartial inquiry, nor could it fairly be taken as an indication of the time devoted to each patient examined by the average ophthalmic practitioner. Indeed, the Ministry itself recognized that a further and more comprehensive inquiry was desirable, and at a meeting with the Ophthalmic Negotiating Committee in December, 1948, it suggested that such an inquiry should be carried out. Nevertheless it took the view that the information it had already obtained was *prima facie* evidence that the original estimate of half an hour was no longer correct, and proposed that there should be an immediate provisional reduction in the fee.

The Ophthalmic Negotiating Committee persuaded the Ministry that the inquiry should come first, and assured the Ministry that if such an inquiry was made it would be prepared to reconsider the question of the fee in the light of its findings. It was agreed that Professor Bradford Hill should be asked to advise on the conduct of the inquiry, but Professor Bradford Hill considered that an inquiry whose object would be known in advance to those participating could have no precise statistical value.

The Ophthalmic Negotiating Committee again discussed the position with the Ministry on Feb. 7, when the Department expressed the view that in the absence of an immediate inquiry it felt justified, as a result of the preliminary inquiries it had made, in imposing a provisional reduction in the fee. It agreed that a full and impartial inquiry was still desirable, and that an endeavour to carry it out should be made as soon as practicable. It also gave an assurance that if the inquiry revealed that the reduction was not fully justified this factor would be borne in mind in adjusting the fee.

The Ministry suggested that the fee should be adjusted on the basis of three cases per hour, and asked whether the Committee was prepared to agree or to make a revised estimate on the experience of the first six months' working of the Service. The Committee urged that an estimate of 20 minutes a case was too low in view of the type of case normally referred to ophthalmic practitioners and to the clerical work involved. This view has been accepted by the Ministry in reaching a decision. At the same time the Committee expressed the view that an estimate at this stage could have no significant value in comparison with a factual inquiry which would reveal the actual position. It could still see no justification for a reduction in the fee before a full and impartial inquiry had been made to verify whether or not the original estimate was correct. The Committee therefore again urged that the inquiry should precede any modification in the fee, and stated that if the Ministry did not adopt this course, but imposed a reduction of fee, it must be on the Department's responsibility.

The following letter has now been received from the Ministry:

I am directed by the Minister of Health to say that he has had under consideration the remuneration paid under the National Health

Service in the light of experience gained in the operation of the Service. The fee paid for sight tests carried out by ophthalmic medical practitioners is based on the assumption that the average time taken to complete a sight test is half an hour. Preliminary inquiries show that in a number of cases a shorter time is being taken. After discussion with representatives of the profession the Minister has accordingly come to the conclusion that a provisional reduction ought to be made. He accordingly proposes to provide that as from April 1 next the fee should be reduced from the present £1 11s. 6d. to £1 5s. on the basis of an average timing of 24 minutes. The Minister would propose to discuss further with the profession what steps can be taken to investigate the average time taken for a sight test, and if the proposed investigation should reveal that the reduction is not fully justified an appropriate adjustment would be made in the fee subsequently fixed. A similar letter has been sent to the Faculty of Ophthalmologists.

TRAVELLING EXPENSES FOR INTERVIEWS

The Ministry of Health has informed executive councils that they should refund travelling expenses when they interview short-listed applicants for an advertised vacancy. The full cost of a third-class return railway fare or bus fare from the applicant's ordinary place of residence is allowed when the sum exceeds 5s. Subsistence allowances are not payable.

ATTENDANCE AT COMMITTEE MEETINGS

The Ministry of Health states that in some instances professional officers—e.g., medical superintendents and matrons—are being excluded from meetings of management or house committees at which matters in which they are concerned are under discussion. The Minister considers it essential that they should be present to advise committees on such matters unless special circumstances make it desirable that they should be temporarily absent.

For example, where a hospital in a group has a medical superintendent in charge, he should be given the opportunity to be present at committee meetings (including those of the management committee of the whole group) when the officers of that hospital are considered. Similarly, the matron of any hospital in a group should be present when nursing questions affecting her hospital are discussed.

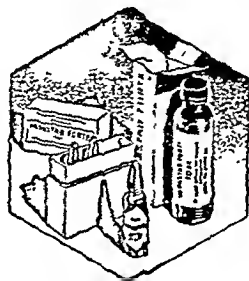
EDUCATION AND MENTAL HOSPITALS

Hospital management committees of mental hospitals may arrange educational classes for voluntary patients now that the Education Act, 1944, has been amended by the First Schedule to the Education (Miscellaneous Provisions) Act, 1948. Committees may ask the Director of Education of the area in which the hospital is situated for assistance so far as local resources allow. Classes would normally be held at the hospital, but it might be of therapeutic value to allow voluntary patients to attend classes in local schools or other outside centres.

Non-voluntary patients are not covered by the Education Acts, but if classes would be of therapeutic value management committees may ask the local director of education for assistance in finding teachers. In this case the committees would have to meet the costs, because the Education Acts do not provide for a grant.

HOSPITAL PROVISIONAL CONTRACTS: CORRECTION

Under this heading we incorrectly stated in the *Supplement* of Feb. 19 (p. 82) that "consultants and specialists are negotiating their terms and conditions of service with the Ministry." In fact, proposals are under discussion between the Ministry and the Joint Committee of Consultants and Specialists. As stated in the *Supplement* of Jan. 29 (p. 49), the committee is not negotiating; at this stage it is advising the Ministry on the terms and conditions of service which might in the committee's view prove acceptable or more acceptable to consultants and specialists.



HEPASTAB FORTE

HEPASTAB FORTE is a highly concentrated extract of liver which has been prepared in our Nottingham laboratories as the result of research conducted by our own chemists in co-operation with clinicians in this country and abroad. It contains all the known anti-anæmic factors of liver, is highly refined, painless on

injection, and highly concentrated. Each 1 c.c. of Hepastab Forte is obtained from 100 G. of liver and is therapeutically equivalent to 4,000-5,000 G. of fresh liver by mouth.

Ampoules of 1 c.c.: single ampoules, boxes of 3, 6 and 12 ampoules. Rubber-capped vials of 10 c.c.



Literature and further information gladly sent on request to Medical Department.
BOOTS PURE DRUG COMPANY LIMITED, NOTTINGHAM, ENGLAND.

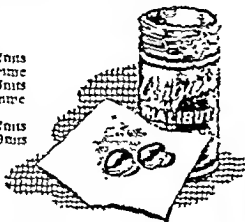
S 12

Compensation FOR THE SERIOUS LACK of FAT

World-wide rationing has reduced our fats and in consequence our fat-soluble vitamins. Angier's Halibut Liver Oil Capsules solve the problem of how the physician can prescribe the essential fat-soluble vitamins A & D, because Halibut Liver Oil is so rich in these natural vitamins that Angier's are able to put enough into two or three small, tasteless and easily swallowed capsules to provide the body's entire requirements for the whole day. Thus Angier's Halibut Liver Oil Capsules enable the physician to prescribe a preparation which can justly be expected to help in countering some of the more serious results of our dietary lack of fat.

FORMULA

Vitamin A: 32,000 International Units
Per gramme
Vitamin D: 2,500 International Units
per gramme
Which represents per capsule:
Vitamin A: 4,500 International Units
Vitamin D: 420 International Units



Angier's

HALIBUT LIVER OIL



CAPSULES

ANGIER CHEMICAL CO., LTD., 24, CLEVERWELL ROAD, LONDON, E.C.2.

THE DIVERSITY OF INJECTABLE 'D'

Whether you are treating chilblains, urticaria, or other relatively common allergies, the use of Colloidal Calcium with 'Ostein' is equally wisely considered. To these conditions add neurasthenia, debility, capillary haemorrhage and delayed union of fractures... and you have some measure of the really wide sphere of usefulness of this preparation. Indeed, Colloidal Calcium with 'Ostein' can be relied upon whenever the need is for prompt stimulation of the reticulo-endothelial system.

GLAXO

COLLOIDAL CALCIUM WITH 'OSTEIN'

Contains 5,000 i.u. of vitamin 'D' and 0.5 mg. of calcium per c.c. in colloidal solution.
Ampoules of 1 c.c. in boxes of 6, 12 and 100. Bottles of 30 c.c.

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX. BY 27-2434

MULTIVITE

Trade Mark

Multivite is the B.D.H. preparation of vitamins A, B₁, C and D, in chocolate-coated pellets which combine palatability with ease of administration.

Two pellets of Multivite provide the daily requirement of these four vitamins which are essential to health and, particularly in children, for normal growth. It is a valuable addition to the daily diet and invaluable when the diet is poor. A general feeling of well-being is noticeable after a course of Multivite, appetite is regained, listlessness disappears and susceptibility to infection is reduced.

Multivite is freely available in containers of 75 pellets.

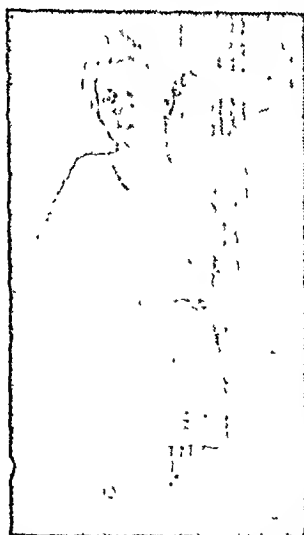
MEDICAL DEPARTMENT

THE BRITISH DRUG HOUSES LTD. LONDON N.1

TELEPHONE : CLERKENWELL 3000 TELEGRAMS : TETRADOME TELEX LONDON

MLVT/E/527

Strodex



STRODEX "Designed-to-Measure" Surgical Supports can be designed to meet exactly the requirements of the prescribing Medical authority.

The success achieved by our designers is reflected in the terms of praise recorded by Doctors and Surgeons in the leading Hospitals.

Official Contractors to the Ministry of Pensions

for the supply of Surgical Supports under the National Health Service.

STRODEX CORSET COMPANY LIMITED,
Fletcher Street, Long Eaton, Nottingham.

'Benylin'



expectorant

A palatable raspberry-flavoured elixir combining 'Benadryl' (β -dimethylaminoethyl benzhydrol ether hydrochloride) in a carefully balanced formula possessing expectorant, bronchodilatory and demulcent properties.

'Benylin' Expectorant is especially useful in the treatment of coughs, and other symptoms of congestion, associated with "colds." Although compatible with most sedatives and narcotics, 'Benylin' contains neither, and is therefore suitable for children.

<i>Each fluid ounce contains:</i>	'Benadryl'	80 mgm.
	Ammonium chloride ..	12 grs.
	Sodium citrate ..	5 grs.
	Chloroform	2 grs.
	Menthol	1/10 gr.

Adult dose: 1-2 teaspoonfuls.

Supplied in 4 and 16 fluid ounce bottles.

PARKE, DAVIS & COMPANY
HOUNSLOW MIDDLESEX

Inc. U.S.A., Liability Ltd.

*Telephone Hounslow 2361
(11 lines)*

CALL-UP OF DOCTORS TO H.M. FORCES

The Central Medical War Committee has been advised by the Ministry of Health that under the National Service Acts, 1948, which came into force on Jan. 1, 1949, the upper age-limit for the call-up of medical practitioners (specialists and general-duty medical officers) is 30 years. The only exception is the practitioner who makes a successful application to the Ministry of Labour, through the Central Medical War Committee, for postponement of call-up on grounds of exceptional personal hardship. In such cases the practitioner still retains his liability for recruitment beyond his 30th birthday for the length of the period during which the postponement certificate is in force.

In 1948 medical practitioners over 26 years of age were exempted from call-up as general-duty medical officers unless they had been granted deferment by the Central Medical War Committee to enable them to acquire further qualifications or special experience, in which case they were subject to recruitment until they reached their 30th birthday. The upper age-limit for the call-up of specialists during 1948 was fixed at 35 years. These arrangements are now superseded by the arrangements set out above.

Medical practitioners called up as from Jan. 1, 1949, will be required to serve for 18 months.

OPHTHALMIC GROUP

Members who are engaged wholly or predominantly in the practice of ophthalmology are invited to apply for membership of the Ophthalmic Group if they have not already done so. It is one of the Special Groups established by the Association, and seeks to provide a means whereby those members engaged in ophthalmology may bring their views before the Council for its consideration and support.

There are at the present time a number of problems of particular interest to ophthalmologists, and members of the Association who practise in this specialty may therefore wish to take a live interest in the activities of the Group and enjoy the opportunities which the Group provides of participating in the formulation of the Association's policy in matters relating to ophthalmology.

Forms of application for membership of the Group may be obtained from the Secretary.

British Medical Association

PROCEEDINGS OF COUNCIL

Wednesday, Feb. 16, 1949

THE CONSTITUTIONAL POSITION OF THE ASSOCIATION

Special Meeting of the Council of the Association was held on Wednesday, Feb. 16, for the purpose of considering the document entitled "Report of the Committee on the Constitutional Position of the Association" which is printed in this Supplement. Dr. H. Guy Dain, and in the concluding stages of the meeting Dr. E. A. Gregg, occupied the chair.

The Council first dealt with a report from the Group Committee concerned with full-time non-professional medical workers and laboratory and research workers. The Group Committee had suggested that the time was opportune for setting up a negotiating machinery to safeguard the interests of all full-time salaried practitioners who were not remunerated wholly through the National Health Service. They desired secure terms of remuneration not less favourable than those recommended for clinical specialists by the Spens Committee, which had not regarded it as within its terms of reference to make recommendations regarding the holders of such appointments, although it had expressed the view that to make such appointments sufficiently attractive an increased total remuneration should be offered.

The Council agreed to the request, and it was left to its chairman to consult with Mr. R. L. Newell, chairman of the Central Consultants and Specialists Committee, with regard to the setting up of a special committee, including members of the Council, to consider the subject and to make representations to the appropriate quarters.

Protection of the Interests of the Profession

The Chairman of Council, in introducing the report of the Committee on the Constitutional Position, reminded the Council that at the last Representative Meeting there was a demand in some quarters that the Association should be converted into a trade union. In the present Association charter there were two clauses, required by the Board of Trade, which limited the action that the Association could take in certain eventualities in support of its members. To convert the Association into a trade union would mean winding up the existing body and distributing its assets among its members, so that if a trade union were started it would start "naked"—an impossible

position. Moreover, doctors being neither "masters" nor "workmen," and not "employed in trade or industry," no benefit from trade union status would be derived under the Trade Disputes Act, 1906, Sect. 3 and 4, which afforded immunity from legal proceedings in respect of certain acts which ordinarily would be actionable wrongs, provided that these acts were committed in furtherance of a trade dispute or committed by or on behalf of a trade union.

Dr. Dain went on to describe the proposals for the formation of a parallel body as set out in the report. He submitted the report to the members of Council, acknowledging the work of Dr. A. Macrae, deputy secretary, assisted by the chief clerk, Mr. Twelftree, in drawing it up, and he moved as a recommendation to the Representative Body at the forthcoming special meeting:

That for the better protection of the interests of the medical profession in disputes with public authorities and other bodies, a new body be established in the form of an independent board of trustees with power to organize and finance collective action by the profession, and to provide financial compensation to practitioners suffering financial hardship through participation in such collective action;

That the new body be entitled the British Medical Guild;

That the new body be constituted in accordance with the trust deed as drafted by the Association's solicitors.

Questions

In reply to questions, Dr. Dain said that general practitioners who had contributed to the National Insurance Defence Fund during the last thirty years would probably desire to continue to do so, and the existing Trust would control that Fund. Dr. J. B. W. Rowe asked whether the use of the title "British Medical Guild" would make it necessary to apply for another charter and whether this might not be refused. Mr. Taylor (Solicitor, Messrs. Hempsons) said that a guild was not necessarily a chartered body; there would be no need to apply for a charter for any express form of constitution merely because it expressed itself as a guild.

Dr. R. G. Gordon asked what sum of money was envisaged, supposing the Guild was formed and was to be effective. It

would be necessary to impress a hostile Minister with the funds available if he was to take the Guild seriously. Dr. Dain replied that a large sum would obviously be necessary. The Guild would be in a position to invite contributions from the profession in the same way as was the Independence Fund.

Dr. H. H. D. Sutherland asked how this parallel body would work in line with the present B.M.A. membership. He added that he was all in favour of the Trust, he disliked the idea of partaking in trade union activities, but he was uncertain how the 60,000 membership of the B.M.A. would be brought into line. The Chairman of Council replied that that was one of the problems which the committee had had to face in considering the possibility of setting up a trade union organization. A union could confer benefits only on its own members, but a large number of doctors would not wish to join a trade union nor to have part of their subscriptions go to a trade union, and a body with limited membership would not be able to protect the whole profession. The idea was that the Guild should be run by a board of trustees which would be constituted for the purpose, having their own officers and organization, but there would not be any "membership" of the new body, and the funds raised and the action taken would be to protect members of the profession, whether members of the Association or not. There would be no act of "joining." In reply to a further question by Dr. Sutherland, Dr. Dain said that the effectiveness of the new body would depend upon its representation of the public opinion of the profession. Only by the consent of the great majority of the profession would it be able to pursue the action it wished to take. It could not act in any matter on which the profession was sharply divided.

Dr. J. A. Ireland said that if this was a short-term policy it would be ineffective because of lack of money. He thought that a fund of anything less than £4 million would be useless. The idea was an excellent one, but he failed to see its immediate practical value. Dr. J. C. Arthur said that the response to an appeal for subscriptions would be disappointing if practitioners were still paying subscriptions to the National Insurance Defence Fund. The Chairman said that members would not be expected to contribute to both.

Mr. A. Staveley Gough said that such a Guild was necessary, and he approved its purposes and the suggested machinery. It might be true that doctors were neither masters nor workmen, but 99% of them had a "master" in the Minister, and it was necessary to organize on parallel lines to trade unions.

After further questions by Dr. J. A. Gorsky and others, the Secretary (Dr. Charles Hill) said that in the committee it was felt to be desirable that there should be no sharp contrast between the membership of the Association and any membership of a parallel body which might be set up. The 60,000 members of the Association included overseas members, and if only 75% of the members in this country joined the Guild it would give a membership of something over 30,000, which, with a membership of 60,000, might give a wrong impression. The British Medical Association would be the body to which loyalty was due, and the new body would be in effect the instrument of the Association to do the two things which the Association was unable to do. These were the considerations which led the committee to decide to have a body to perform functions which the Association itself could not perform.

Dr. S. Wand supported the proposal as a means of overcoming the limitations imposed by the two articles of association. Did it matter about "membership" so long as the money was available and the necessary action could be taken? Dr. J. B. Miller said that trade unionists paid from one-fiftieth to one-eightieth of their wages to their union; on this basis, with an average income of £1,500 or £2,000, doctors would be required to subscribe only £20 to £30 per annum.

Dr. N. E. Waterfield suggested that a letter should go out with the document explaining points which were not clear. The Secretary mentioned the difficulty of simplifying a document with so many legal implications.

The Council then considered the report in detail, and some slight verbal amendments were made. In reply to Dr. Liston, who said that there had been no definition of "master" and "workman" in regard to the medical profession, and asked what would be the effect of a court decision on this point, the

Chairman of Council said that the body it was proposed to set up could easily be converted into a trade union should occasion arise.

The Question of Membership

Dr. Sutherland moved an amendment to Para. 26 of the report, to insert the words "open to all medical practitioners domiciled in the United Kingdom," thus giving the new body a membership, and this was seconded by Dr. Gorsky.

Dr. J. G. Thwaites said that at first sight it appeared to be an advantage to have a membership, but really it would be a weakness, unless membership included all the medical practitioners in the country. The important thing was to have an organization which could translate into action the feeling of the profession. Dr. J. C. Arthur said that a number of members of the Association wanted a trade union, and if simply offered this Guild they would say that the Council was doing what it did before—giving them little more than a body of trustees. It was not necessary that every doctor should be in the organization, but there should be a sufficient number of doctors willing to act in accordance with the terms of the Guild. He thought there should be a list of terms and conditions to which members of the Guild would be required to subscribe, and then when it was known how many members would join a decision could be made whether the Guild should be formed.

Lord Horder said that it was a little difficult to get the concept of a body which had no members. General opinion within the profession would ultimately decide issues, but how was this to be canalized? Would the Guild express itself through the Representative Body?

The Secretary said that the Representative Body would continue to express the views of the Association, and the Council would remain its instrument. It was contemplated that the Council would automatically be the governing body of the new Guild, in the same way as the old Insurance Acts Committee were the trustees of the National Insurance Defence Fund. If a separate membership were established it could not be ensured that the governing body would consist of the same persons or have the same policy.

Dr. S. Wand could not see the advantages of having a membership. If there was a membership the choice might be between membership of the Guild and of the Association leading to a split profession. Mr. Dickson Wright thought that to insist upon a membership would be to weaken the position. What they wanted was a parallel body to do the work when the time came. Dr. Gray also said that this was a fighting machine, part of the Association organization, but with certain names and so forth attached to it because of legal difficulties.

The amendment was lost.

The Secretary, replying to further questions, said that the policy of the Association would still be determined by the Representative Body, and the Council would continue to act as its executive, but would also come into action as trustees for the Guild when such action was desirable inasmuch as the Association by reason of its constitution was unable to take the necessary action.

Dr. O. C. Carter asked about the relationship between the *Journal* and the new body. The Secretary said that the same considerations as applied to the Association applied to the *Journal*, but the field of what the *Journal* might or might not do had not been explored, and it might be left to the *Journal* Committee to consider the matter. Mr. Lawrence Abel said that it was important that the Council could instruct the *Journal* to publish anything given to it for publication by the Board of Trustees.

It was agreed that the Constitution Committee should consider further this matter of publication and also of local organization of the Guild. In reply to a further question the Secretary said that once the Guild was formed the Trustees would issue an appeal for subscriptions and donations, just as in the Independence Fund appeal. Details would be left to the Trustees. The Association as such could not subscribe; it could collect if it charged the cost of collection. Subscription by the National Insurance Defence Trust would be possible.

The recommendation was then agreed to for submission to the Special Representative Meeting.

REPORT BY THE COUNCIL ON THE CONSTITUTIONAL POSITION OF THE ASSOCIATION

I PRELIMINARY

1 The A.R.M., 1948 (Minute 65), referred to the Council, "for consideration and report to the Representative Body as early as possible," a number of motions relating to the establishment, in the form of a trade union or otherwise, of an organization for the better protection of the interests of the medical profession, particularly in connexion with terms and conditions of service under the National Health Service Act. The Council appointed a special committee "to inquire into the general question of the constitution of the Association. It has had before it, in addition to the motions mentioned above, similar resolutions adopted more recently by the Birkenhead and Wirral Division and the Newcastle-upon-Tyne Division.

2 The Council has examined the opinions obtained from learned Counsel on a number of occasions as to the powers of the Association and the limitations imposed by its present constitution, and throughout its deliberations it has had the advantage of continuous consultation with the Association's Solicitors. Briefly stated, the questions which the Council discusses in the paragraphs which follow are these:

- (1) What are the disabilities from which the Association suffers by reason of its present constitution?
- (2) Could the present constitution of the Association be so changed as to remove these disabilities; and precisely what advantages and disadvantages would result from such change?
- (3) What other steps could be taken for the more effective protection of the interests of the profession?

II. LIMITATIONS OF THE ASSOCIATION'S CONSTITUTION

3 The Association is a limited liability company registered by the Board of Trade as a "company not for profit," and holding a licence from the Board of Trade to dispense with the word "limited" in its title. As an essential condition of the granting of this licence the Association was obliged to include in its Memorandum of Association the clause which appears as Clause 4 and the proviso which is attached to Clause 3, and it is because of these two sections of the Memorandum, both compulsorily imposed by the Board of Trade, that the Association is restricted in its efforts to protect the interests of the profession in medico-political conflicts.

4 Clause 3 of the Memorandum of Association is as follows:

"The objects for which the Association is established are

- (1) To promote the medical and allied sciences and to maintain the honour and interests of the medical profession
- (2) To hold or arrange for the holding of periodical meetings of the Members of the Association and of the medical profession generally.
- (3) To circulate such information as may be thought desirable by means of a periodical journal, which shall be the journal of the Association, and by the occasional publication of transactions or other papers
- (4) To grant sums of money out of the funds of the Association for the promotion of the medical and allied sciences in such manner as may from time to time be determined on
- (5) Subject to the provisions of Section 19 of the Companies (Consolidation) Act 1908 to purchase take on lease exchange hire or otherwise acquire any real and personal property and any rights or privileges necessary or convenient for the purposes of the Association
- (6) To sell improve manage develop lease mortgage dispose of turn to account or otherwise deal with all or any part of the property of the Association
- (7) To borrow any moneys required for the purposes of the Association upon such terms and upon such securities as may be determined
- (8) To do all such lawful things as may be incidental or conducive to the promotion or carrying out of the foregoing objects or any of them

Provided that the Association shall not support with its funds any object or endeavour to impose on or procure to be observed by its Members or others any regulation restriction or condition which if an object of the Association would make it a trade union."

5 Clause 4 of the Memorandum of Association reads:

"The income and property of the Association, from whatever source derived, shall be applied solely towards the promotion of the objects of the Association as set forth in this Memorandum of Association, and no portion thereof shall be paid or transferred directly or indirectly by way of dividend or bonus or otherwise, by way of profit to the persons who at any time are or have been Members of the Association, or to any person claiming through any of them, provided that nothing herein shall prevent the payment in good faith of remuneration to any officers or servants of the Association, or to any Member of the Association or other person in return for any services actually rendered to the Association."

Limitation imposed by Clause 4

6 One effect of Clause 4 of the Memorandum is to prohibit the Association from making any payment from its funds to a member in order to compensate him for financial loss incurred as a result of following the Association's advice. This position was confirmed by the Opinion given by Counsel (Mr. M. L. Gedge) in 1947 on the possibility of thus assisting a member who might suffer through adhering to the Association's policy on the "closed shop" issue. The following is an extract from this Opinion:

"In my opinion, the B.M.A. cannot properly afford financial assistance to its members who suffer financially as the result of following the advice of the B.M.A. not to apply for posts under authorities which attempt to enforce the 'closed shop' principle. Such assistance could not in my opinion properly be said to be 'the payment in good faith of remuneration to a member of the Association for services actually rendered to the Association' within the meaning of that expression as used in Clause 4 of the Memorandum of Association of the B.M.A., that expression applying, in my opinion, only to payment of remuneration for services actively rendered, and not to compensation for loss incurred for not adopting some particular course, and the payment would, in my opinion, be in breach of such Clause 4 as being a payment 'by way of profit' to a member."

Limitation imposed by the Proviso to Clause 3

7. To understand the restrictions imposed by the proviso to Clause 3 of the Memorandum it is necessary first to consider the nature of a trade union. For the purposes of the Trade Union Acts, 1871 to 1913, a trade union means any combination, whether temporary or permanent, the principal objects of which are under its constitution statutory objects, and these objects are defined as the regulation of the relations between workmen and masters or between workmen and workmen, or between masters and masters, or the imposing of restrictive conditions on the conduct of any trade or business, and also the provision of benefits to members.

8 In the opinion of Counsel (e.g., Mr. C. R. Havers K.C., and Mr. M. L. Gedge, 1946) members of the medical profession are neither "masters" nor "workmen," whether engaged in practice on their own account or employed by a public authority. Counsel consider, however, that medical practice, although not a "trade," would be held to be a "business" within the definition of statutory objects. Therefore the effective statutory objects which the Association could adopt are: (1) the imposition of restrictive conditions on the conduct of its members' business, and (2) the provision of benefits to members. These would have to be the principal objects under the constitution of a medical trade union. The question arises, then, as to whether the proviso to Clause 3 of the Memorandum in prohibiting the imposing of "any regulation restriction or condition which if an object of the Association would make it a trade union," debars the Association from taking such action as it might wish to take to induce its members, or members of the profession generally, to act in accordance with its views.

9 On more than one occasion expert legal advice has been sought on this matter. Some years ago, Counsel's Opinion was taken as to what the position of the Association would be in the hypothetical event of its wishing to advise the profession at large against acceptance of contracts of service of particular kinds.

The view expressed by Counsel (Mr. C. R. Havers, K.C.) was that this would constitute an endeavour by the Association to impose on or procure to be observed by its members or others a restriction on the conduct of their business. Counsel went on to say, however, that in his opinion the imposing of restrictive conditions generally, or of this restriction in particular, was not the principal object or even one of the principal objects of the Association, but merely ancillary to one of the principal objects (the maintenance of the interests of the medical profession). He concluded, therefore, that the restriction in question, if an object of the Association, would not make it a trade union and, consequently, that the Association, if it decided to give the suggested advice to the profession at large, would not thereby be acting in any way illegally or contravening the Memorandum of Association.

10. Because of the importance of this matter, the Association sought a second Opinion from Mr. Charles Harman, K.C. (now Mr. Justice Harman). Unlike Mr. Havers, Mr. Harman drew a distinction between an endeavour by the Association to "procure to be observed by its members . . . any . . . restriction" and an endeavour to "impose on . . . its members . . . any . . . restriction." He considered that the advice in question would constitute an endeavour of the former kind but not of the latter kind, because in his view the imposing of a restriction entailed a process backed by sanctions. He then pointed out that it is the "imposing of restrictive conditions on the conduct of any . . . business" which is one of the statutory objects of a trade union. It followed that, in his opinion, the suggested advice to the profession, if adopted as an object of the Association, would not be a statutory object. He added that, even if it were a statutory object, it would not be a principal object and would therefore not make the Association a trade union. On these grounds he concluded that the suggested advice would not involve any contravention of the proviso to Clause 3 of the Association's Memorandum.

11. On a more recent occasion, when the Opinion of Counsel (Sir Cyril Raddiffe, K.C., and Mr. J. H. Stamp) was taken on another matter, the following view was expressed as to the meaning of the proviso to Clause 3: "The proviso does not, we think, propose to weigh the activities of the Association against one another and forbid trade union activities only at the point at which they outweigh its other activities, but to exclude the trade union activities altogether. The reference to trade unions is for the purpose of identifying the character of the forbidden activities; and not of limiting the exercise of an activity which, within the limit, is authorized. The intention of the proviso is to close the door entirely, and not merely to leave it ajar. Any other construction appears to reduce the proviso to a nullity."

12. It will be seen that the eminent Counsel who have been consulted are not unanimous in their views on the effect of the proviso to Clause 3 of the Memorandum of Association. But even if the view were accepted that an endeavour to impose a restriction on its members and others would not make the Association a trade union unless the restriction were a principal object, the risk would still remain that the Association could be challenged at the point by any person so disposed. Such a person might allege that, if only for a temporary period—during a major dispute with the Government, for example—the imposing of restrictions on the conduct of medical practice was a principal object of the Association, and might seek to obtain a declaration from the Court that the Association's registration as a company was void, or an injunction to restrain the Association from using its funds in contravention of its Memorandum. While such actions were *sub judice* the Association would be rendered ineffective and would be unable to take any steps in pursuance of that policy or activity which was challenged for as long as the matter was under consideration by the Courts.

Conclusion

13. After consultation with the Association's Solicitors, in the light of the views expressed in the past by Counsel, the Council has come to the conclusion that the Association, in addition to being unable to make financial grants to members who have suffered through loyalty to its policy, cannot safely bring pressure to bear upon its members to induce them to adhere to its policy. Any pressure or threat would be dangerous; and it would seem to follow that the Association cannot *organize* (although it can *advise*) concerted opposition by the profession to acceptance of service or continued acceptance of service—for example, under the

National Health Service Act. It may advise with impunity; and its advice, if supported by public opinion in the profession, may have a potent influence on the conduct of the individual member. As was pointed out by Counsel many years ago in an Opinion on the Association's ethical procedure (Mr. J. H. Stamp, 1929), "the only real and ultimate sanction for the Ethical Rules is the public opinion of the profession, involving the disapproval and ostracism by their fellow practitioners of those who disobey them."

14. It is important to observe that the disabilities discussed above are not the result of the Association not being a trade union. It is not essential for an association to be a trade union in order to secure the power to provide benefits to its members or the power, within normal limits of law, to exert pressure on its members; and, as is explained below, even a medical trade union (unlike a trade union of workmen) could not safely act otherwise than within normal limits of law. The restrictions imposed on the Association are due, not to the fact that it is not a trade union, but solely to the fact that certain practices commonly adopted by some other organizations (and typically by trade unions) are specifically prohibited by its present Memorandum of Association.

III. POSSIBLE ALTERATION OF THE ASSOCIATION'S CONSTITUTION

15. The Council has considered whether there is any way in which the Association, while continuing to exist as a company, can so alter its constitution as to remove the restrictions imposed by its present Memorandum of Association. The Solicitors, after consultation with Counsel, advise that the restrictive clauses cannot be deleted from the Memorandum so long as the Association retains its Board of Trade licence to dispense with the word "limited" in its title. A possible course, however, is to surrender this licence and then—under a provision contained in Section 5 of the Companies Act, 1948—to alter the Memorandum by special resolution so as to omit those parts which create the restrictions.

16. The alteration of the Memorandum could be arranged in this way only if, among the Association's members, the opposition to the change were very small. A minority of not less than 15% of the members could take the matter to the Court. In that case the matter would be one for the discretion of the Judge. The minority might argue that the proposed alteration of the Memorandum might thereafter, in the light of the resultant acts of the Association, imperil the validity of the Association's registration under the Companies Acts, the course of *conduct* showing that the Association, although ostensibly a company, was in fact a trade union. The Solicitors, while doubting whether this argument would succeed, point out that there would certainly be a possibility of the proposed changes of the Memorandum being rejected by the Court; and the Association would then be left with its present restrictions but without its Board of Trade licence (which, however, might be re-granted).

"British Medical Association, Limited" ?

17. If the Board of Trade licence were surrendered, and the alteration of the Memorandum achieved without or despite opposition from a section of the Association's members, what would be the advantages and disadvantages of this change in the Association's constitution? The advantages would lie in the freedom thus gained to carry on activities of a "trade union" character. The Association would no longer be restricted to the giving of advice in connexion with acceptance or non-acceptance of appointments under public authorities and other employing bodies. If, for example, circumstances arose in which the Association thought it desirable that the profession should withdraw its services under the N.H.S. Act, it could engage in a campaign of intensive propaganda and agitation throughout the country, bringing pressure to bear on the individual doctor at local meetings and through written communications, and generally stimulating and organizing concerted opposition to continued acceptance of service under the Act. Similarly, in a minor dispute affecting only a few members of the profession, the Association could use pressure to induce the doctors concerned to support its policy. It could inflict the penalty of expulsion on those of its members who had refused to conform, and it could provide financial compensation to those of its members who had suffered monetary loss through their loyalty.

For the Dyspepsias

Whenever dyspepsia with peptic ulcer or hyperchlorhydria calls for a bland but nutritious diet, Bemax should not be forgotten. Besides supplying the vitamins of the B group it contributes materially to the protein intake, and yet adds no tasty extractives or roughage to maintain undesirable gastric motility.

BEMAX supplies, weight for weight, 50% more protein than steamed cod or whiting. Its amino-acid analysis renders it of equal protein value with fish. In any regime where particular dietary care is needed, Bemax will be found to conform to the strictest requirements.

Oxford and Cambridge BOAT RACE

March 26

We have space for a few doctors and their friends to view the race from our Hammersmith Wharf Accommodation. It is limited so please make early application for tickets to Vitamins Limited (Dept. S1 A), Upper Mall, London, W.6.

The nutritional factors of Bemax are well demonstrated in the table of assay figures shown below—

VITAMINS (per oz.)

B₁ - - 0.45 mg.
riboflavine 0.3 mg.
nicotinic acid 1.7 mg.
pyridoxine 0.45 mg.
E - - 8.0 mg.

PROTEIN, MINERALS etc.

protein (first class—
sec*) 30%
carbohydrate 39%
fat 8.5%
mineral salts 4.5%
moisture 5%
fibre 2%

• ESSENTIAL AMINO ACIDS

	fresh weight basis	16%N basis
arginine	2.5%	8.3%
histidine	0.9%	3.0%
lysine	1.8%	6.0%
tryptophane	0.3%	1.0%
phenylalanine	0.9%	3.0%
cystine	0.3%	1.0%
methionine	0.5%	1.6%
threonine	1.2%	4.0%
leucine	2.1%	7.0%
isoleucine	1.3%	4.3%
valine	1.6%	5.3%

This advertisement, including the analyses, is copyright.

Vitamins Limited

Upper Mall, London, W.6.



Fig. 1

CASE HISTORY

L.L. Aged 42. A female Sugar Packer. Whilst at work on June 16th, 1946, she cut the outer side of her left ankle: shortly afterwards a septic eczema of the ankle area supervened. On July 26th a large clot appeared in the internal saphenous vein on the inner side of the calf (Fig. 1).

Treatment. August 9th, 1946. A well-bevelled adhesive sponge rubber pad was placed over the clot, the eczema was covered by layers of Viscopaste and the leg firmly bandaged with Elastoplast from toes to knee (Fig. 2). August 23rd, 1946. There was no pain or soreness in contrast to the presence of both before treatment. Eczema was

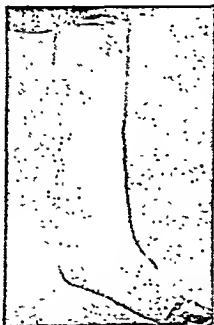


Fig. 2

SUPERFICIAL PHLEBITIS

Ambulatory Treatment With Elastoplast Bandaging

cleaned with calamine in oil, and dressed with Jelonet and Ichthopaste. The pressure pad was re-applied and the leg again firmly bandaged with Elastoplast.

August 30th, 1946. Treatment repeated. Sept. 27th, 1946. Clot completely disappeared, leg comfortable, eczema largely cleared up and internal saphenous vein sclerosed and obliterated (Fig. 3).

Comment. An example of ambulatory treatment of Phlebitis by local pressure over clot and firm bandaging, resulting in its speedy obliteration and in the restoration of the leg to normal condition. Details and illustrations above are of an actual case. T. J. Smith & Nephew, Ltd., Manufacturers of Elastoplast, Viscopaste, Jelonet and Ichthopaste, are privileged to publish this instance, typical of many, in which their products have been used with success, in the belief that such authentic records will be of general interest.

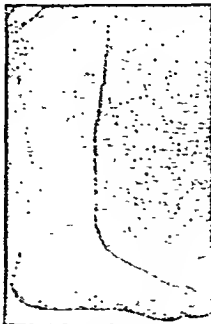


Fig. 3

LOCAL ANTISEPSIS

with 'AVLON'

MILD SILVER PROTEINATE B.P.C.

Mild Silver Proteinate is well known as an effective bactericide which can be applied in solution to mucous membranes without causing irritation or damage to sensitive tissues. Its clinical uses include the treatment of ophthalmic infections, vaginitis and urethritis, infections of the nose and throat, etc. The 'Avlon' product is characterised by its relatively low hygroscopicity and ease of solubility—factors which are particularly advantageous in the preparation of solutions.

'Avlon' brand Mild Silver Proteinate is issued in containers of 25 grammes and 3 kilos.

Literature and further information available on request from your nearest I.C.I. Office—London, Bristol, Manchester, Glasgow, Edinburgh, Belfast and Birmingham.

IMPERIAL CHEMICAL [PHARMACEUTICALS] LTD.

(A subsidiary company of Imperial Chemical Industries Ltd.)

MANCHESTER



Ph.354

in Circulatory Dysfunction



PADUTIN, an extract from the pancreas, has a selective action on peripheral circulation. Administration of this hormone produces dilatation of the peripheral blood vessels, with increased blood flow, limb volume and surface temperature. There is no appreciable effect on the blood pressure.

'Padutin' is of benefit in intermittent claudication, Raynaud's and Buerger's disease, and in faulty circulation giving rise to acrocyanosis and chilblains. Among the packings listed below the 10 c.c. bottle will be found particularly convenient

'PADUTIN'

Trade Mark

AMPOULES (3 biological units per c.c.)

Box of 5 x 1 c.c.

" " 50 x 1 c.c.

SOLUTION—Ora' (7 biological units per c.c.)

Bottle of 10 c.c.

" " 50 c.c.

BAYER PRODUCTS LIMITED

AFRICA HOUSE, KINGSWAY, W.C.2 HOL. 8730

Why Ribena in Acute Infections?

Because in acute febrile conditions such as pneumonia, diphtheria and rheumatic fever the blood vitamin-C level is markedly reduced, as is excretion of the vitamin by the kidneys.

Because it is believed that there is an important relationship between ascorbic acid and immunological reactions, as indicated, for example, in the lowering of resistance to diphtheria toxin effected by hypovitaminosis-C.

Because, on the practical side, good results are constantly being reported from the use of natural vitamin C, in the form of 'Ribena' blackcurrant syrup in rheumatic fever, scarlet fever, whooping cough, pneumonia and toxic diphtheria. More detailed information will be gladly supplied on request.

'Ribena' is the pure undiluted juice of fresh ripe blackcurrants with sugar, in the form of a delicious syrup. Being freed from all cellular structure of the fruit, it will not upset the most delicate stomach. It is particularly rich in natural vitamin C (not less than 20 mgm. per fluid ounce) and associated factors.

Ribena BLACKCURRANT SYRUP

(BIBLS NIOBA)

H. W. CARTER & CO., Ltd. (Dept. 3 A.)
The Royal Forest Factory, Coleford, Glos.

Enq.—Inquiries should be addressed to Proprietaries (Ire) Ltd.,
17/22, Parkgate Street, Dublin

18. In short, the Association could pursue two of the trade union statutory objects—the imposing of restrictions on the conduct of professional “business” and the provision of benefits to members—but without the protection against legal proceedings granted by the Trade Disputes Act, 1906 (which, as is explained below, would not be afforded even if the Association were a trade union). It must be remembered, however, that these objects could lawfully be pursued only provided that they were not among the Association’s principal objects. The risk would remain that a person who wished to harm the Association might allege that the Association was in fact a trade union; and if this allegation were substantiated the Association would be wound up under the Companies Acts.

19. The disadvantages of the suggested change in the Association’s status are by no means negligible. Although it would no longer be necessary to observe the formality of submitting proposed alterations of the Articles to the Board of Trade for approval, it would become necessary to make returns of the Association’s accounts in accordance with the provisions of company law. The Solicitors think it probable that the Association would cease to enjoy its present immunity from payment of income tax, and this might seriously affect its financial position. Finally, the Association would be obliged to use the title “British Medical Association, Limited.” There is involved here the prestige of the Association as the chief representative organization of a learned profession, and one concerned with important scientific and ethical matters apart from its medico-political functions. It would no longer be possible, for example, for the Association to enjoy the patronage of the King. For these reasons it appears desirable to consider whether another form of organization could not protect the interests of the profession no less effectively than could the Association with the changed constitution here discussed.

Conversion to a Trade Union?

20. It has been suggested from time to time that the restrictions imposed on the Association by its present constitution would be removed if the Association acquired the status of a trade union. The fact is that the conversion of the Association into a trade union is impossible. The Association is a company incorporated under the Companies Acts, 1862 and 1867, and it is laid down in the Trade Union Act, 1871, that these Acts, among others, “shall not apply to any trade union, and the registration of any trade union under any of the said Acts shall be void.”

21. Although the Association, while it remains a company registered under the Companies Acts, cannot be registered as a trade union, it is possible for the Association to be wound up and for its members, or such of them as might so wish, to form themselves into a new Association and seek to register the new body under the Trade Union Acts. Apart from other objections to terminating the existence of the Association, there is a special difficulty in that, in the opinion of Counsel (Mr. C. R. Havers, K.C., and Mr. M. L. Gedge, 1946) it would be impossible to transfer the assets of the Association to the new body, these assets in a winding up of the Association belonging to its members. The Council therefore does not regard this course as a practicable one.

22. Another possibility is for the Association to continue to exist for its present purposes and for a new organization to undertake such functions as are connected with the imposing of restrictions on the conduct of medical practice, and for this new organization to seek registration as a trade union. This possibility is discussed below; but in view of the commonly expressed desire that the Association itself should become a trade union, it may be appropriate to state here that this change in the Association’s status, if it were practicable, would by no means have all the advantages imagined by its advocates. The matter is explained clearly in an Opinion obtained from Counsel—Mr. F. Gore Browne, K.C., and Mr. H. H. Slessor (later Lord Justice Slessor)—in 1919, after substantial damages had been awarded against the Association in an action resulting from ethical proceedings against certain practitioners employed by the Coventry Dispensary on terms and conditions held by the Association to be contrary to the best interests of the profession. This Opinion is summarized in the two following paragraphs.

23. Those who advocate the registration of the Association as a trade union no doubt look mainly to the protection offered by the Trade Disputes Act, 1906, and particularly to Sections 3 and 4

of this Act. Section 3 provides that an act done by a person in furtherance of a “trade dispute” shall not be actionable on the ground only that it interferes with another person’s business, etc.; and Section 4 provides that an action against a trade union, whether of workmen or masters, in respect of any tortious act alleged to have been committed by or on behalf of the trade union, shall not be entertained by any court. In short, these Sections afford immunity from legal proceedings in respect of certain acts which ordinarily would be actionable wrongs, provided that these acts are committed in furtherance of a trade dispute or committed by or on behalf of a trade union.

24. It is to be noted, however, that the expression “trade dispute” is defined in the Act as meaning a dispute (connected with employment) “between employers and workmen or between workmen and workmen”; and that the expression “workmen” is defined as meaning “all persons employed in trade or industry.” Now, in the opinion of Counsel, a medical practitioner is not “employed in trade or industry” and is not a “workman” within the meaning of the Act; and it follows that, unlike a trade union of workmen, a trade union composed of medical practitioners could derive no benefit from Section 3 of the Act. It is to be observed also that Section 4 deals only with “an action against a trade union, whether of workmen or masters.” The opinion of Counsel is that medical practitioners are neither workmen nor masters within the meaning of the Act, and that Section 4 would not be extended so as to give protection to a medical trade union. “It must be remembered,” Counsel state, “that the Section, in removing from the jurisdiction of the Courts in regard to wrongful acts a section of the community, will be read strictly.” It appears, then, that the widely held opinion that the conversion of the Association into a trade union, were this practicable, would place it in a peculiarly strong position is without solid foundation so far as it rests on the supposed protection of the Trade Disputes Act, 1906, which offers real advantages to a trade union of “workmen” but not to a trade union of medical practitioners.

Conversion to a Friendly Society?

25. The Council is advised by the Solicitors that conversion of the Association into a friendly society, like conversion into a trade union, is impracticable. This again would involve the winding up of the Association and the distribution of its assets among its members.

IV. POSSIBLE FORMATION OF A PARALLEL ORGANIZATION

26. The alternative to the alteration of the Association’s constitution is the creation of a new organization, free from the restrictions imposed on the Association, and so closely linked with the Association that the policies of the Association and of the new organization would always be parallel. The Council has considered, in particular, the advisability of establishing such a parallel organization in the form of a trade union.

A Parallel Trade Union

27. It is clear, in the first place, that a parallel trade union could not achieve the desired results unless it were in a position to protect the Association’s membership generally. A trade union which attracted to its membership only a proportion of the Association’s members would be of no value. While it could advise the whole profession, it would have powers of compulsion only over its own members and it could provide benefits only to its own members. The ideal arrangement would be one under which membership of the Association was conditional on membership of the trade union and vice versa. Unfortunately, this ideal is unattainable. The difficulty is explained in the following statement received from the Association’s Solicitors:

“We think the test to be applied is this: suppose the new organization passed some policy resolution which the Association was precluded by its constitution from doing: for example, a resolution that no member should participate in the National Health Service. The new organization could expel from membership any member disobeying this policy resolution: if it were as suggested a condition of membership of the Association that its members should also be members of the new organization, then expulsion from the new organization would also mean the cessation of membership of the Association: in other words, a practitioner would cease to be a member of the Association because he failed

to comply with a policy resolution which the Association was expressly precluded by its constitution from enforcing. We think this makes it apparent that it would not be possible for the B.M.A. to introduce this new condition of membership."

28. On the other hand, the Solicitors state that it would be possible to make it a condition of membership of the parallel trade union (or other new organization) that the applicant should be a member of the Association. This, however, would not ensure that the membership of the trade union would largely correspond with that of the Association. The difficulty cannot be dismissed by stating that, if a considerable section of the profession did not see fit to join the trade union, these practitioners would have only themselves to blame for the fact that they could not enjoy the benefits of membership. The important consideration is that a trade union unable to provide pecuniary benefits to a large majority of the profession could not effectively organize collective action.

29. Apart from this problem of membership, what would be the advantages and disadvantages of a trade union as the parallel organization, as compared with other forms of organization such as an independent body of trustees controlling a "fighting fund"? The Solicitors advise that the only real advantage would lie in certain income tax exemptions granted to trade unions. As has been explained above, a medical trade union would not enjoy the protection of the Trade Disputes Act, 1906. The Solicitors advise that in the organization and enforcement of collective action a medical trade union would be no more effective than a body with a different form of constitution. Even if they were lawful in the case of a medical trade union, the activities of calling a strike and arranging picketing to prevent "blacklegging" are not such as would commend themselves to the medical profession; and it is questionable whether the profession, opposed as it is to the "closed shop" policy, would favour the exertion of pressure on medical practitioners by a threat of expulsion from a medical trade union as a means of depriving them of opportunities of employment.

30. In 1946 the Opinion of Counsel (Mr. C. R. Havers, K.C., and Mr. M. L. Gedge) was again taken on the advantages and disadvantages of setting up a medical trade union. They advised that the main advantage was that, if local or other public authorities made it a condition of employment that a member of the medical profession must be a member of a trade union, then there would be a trade union "ready made" for such a member to join. "The disadvantages as we see them," they wrote, "are all of a practical nature. We were informed in consultation that many members of the Association might object to the formation of a medical trade union, while in any event the formation of a separate entity must tend towards creation of a divided allegiance and thus be harmful to the Association. Registration as a trade union would also involve compliance with statutory provisions which might be distasteful—e.g., the submission to the Registrar of annual statements of receipts, funds, effects, and expenditure; and on balance our view is that, unless the advantage of having a trade union available for members to join would outweigh the practical disadvantages, no such union should be formed."

31. The Council has not omitted to take note of the view, held by many members of the profession, that there is virtue in the trade union designation, however limited the actual powers of a medical trade union might be. The argument is that a professional organization, merely by being constituted as a trade union, would more readily influence one or another form of Government in its favour. On this matter the opinion of the Council is that success in negotiation depends less on the form of the negotiating body than on the cohesion of an overwhelming majority of its members in determined support of its policy. The Council is not convinced that, in the case of a medical body, the trade union label would materially facilitate the process of negotiation; and it has had primarily in mind the question of what form of organization could most effectively pursue the aims of the profession when attempts at negotiation had had unsatisfactory results, as might well happen even if the negotiating body were registered under the Trade Union Acts. Regarding this matter from this point of view, it has reached the conclusion that there are no substantial advantages in the trade union form of organization as compared with other possible types of constitution. It thinks, however, that, should it be decided to set up a parallel organization in another form, it would be well so to frame its constitution and powers that, if at a future date a trade union seemed desirable because of a change in the situation or an enlargement of trade union powers, the

new organization could be reconstituted as a trade union or its funds transferred to a trade union.

Other Types of Parallel Organization

32. The other possible types of organization which the Council has considered are a friendly society, an unincorporated association, a limited liability company, and a board of trustees which would act in much the same capacity as the governing body of a trade union or other organization. The Solicitors advise that the first three have no positive advantages peculiar to themselves as alternatives to a trade union and accordingly the Council has discussed only the last. A parallel organization in the form of a board of trustees would in no way usurp the functions of the Association in connexion with the framing of policy in relation to medico-political issues. The Representative Body would continue as at present, to determine policy, and the Council would continue to take all lawful steps to carry out the policy so determined. The board of trustees would come into action only when, in pursuance of this policy, measures were called for such as the Association is precluded from undertaking because of the limitations of its constitution. There would thus be no question of any conflict of policy between the Association and a new body in the form here discussed. Indeed, the new organization would not be a "body" at all in the sense of an association which individual medical practitioners could join as "members." It follows that the board of trustees would not have at their disposal the sanction of expulsion vested in, for example, the governing body of a trade union, but it is felt that sanctions imposed by the constitution of the organization under consideration are not of great practical importance in view of the difficulties and dangers of their use in times of dispute, as indicated by the Coventry case and many others which have come before the Courts. It should again be stressed that the effectiveness as a sanction of expulsion from a working men's trade union lies not in the expulsion itself but in the fact that it brings in its train such grave consequences as prohibition of employment in "closed shop" works and the like, consequences which can safely be imposed by working men's trade unions because of the Trade Disputes Act, 1906, but not by an organization of medical practitioners. In practice the enforcement of sanctions depends on medical opinion. Unless the trustees speak with the voice of the medical profession their policy cannot be enforced in any case; and if they do, then public opinion within the profession will bring back-sliders into line more quickly and effectively than anything else.

V. SUMMARY AND CONCLUSION

33. After careful consideration of all the arguments the Council has come to the conclusion that the best course is to leave the Association's present constitution unchanged and to set up a parallel organization. The whole matter may be summarized briefly as follows:

1. For the protection of the interests of the profession in conflicts with public authorities and other bodies it is essential that there should be in existence an organization which, so far as is lawful, can exert pressure on members of the profession to induce them to adhere to the policy favoured by the majority, and can also compensate them for financial loss incurred through loyal acceptance of such policy.

2. As constituted at present, the Association is not in a position fully to perform these functions; for Clause 4 of its Memorandum of Association expressly prohibits the payment of pecuniary benefits to its members, and although expert opinions differ as to the precise interpretation of the proviso to Clause 3, eminent legal authorities have expressed the view that it entirely precludes the imposing of restrictions on the conduct of medical practice, and it is therefore clear that the Association cannot safely exert pressure on members of the profession in disputes of the kind contemplated.

3. The Association suffers from these restrictions solely because they are imposed upon it by its Memorandum, and not because the Association is not registered as a trade union; for it is by no means only a trade union that is entitled to express views as to the interests of its members and to seek to enforce its views.

4. It is possible that the Association, after surrendering its Board of Trade licence to dispense with the word "limited"

in its title, could remove the restrictive clauses from its Memorandum; but there would be serious disadvantages in the surrender of the licence, including probably the loss of the Association's present immunity from payment of income tax and certainly a lowering of its prestige in the professional world.

5. Alternatively, the Association could be wound up and a new body, free from its present restrictions, formed to replace it; but, if only because the assets of the Association could not be transferred to the new body but would have to be distributed to its members, this course is not one that can be considered practicable.

6. There remains the possibility of leaving the Association's present constitution unchanged and setting up a parallel organization with supplementary functions connected with the enforcement of collective action in medico-political disputes and the provision of financial compensation for pecuniary loss incurred by individual members of the profession through participation in such collective action.

7. This parallel organization could be established in the form of a trade union, but the advantages of this form of organization would be limited, and would not (as is commonly but erroneously supposed) include the protection of the Trade Disputes Act, 1906; while, on the other hand, there might be some disadvantages, including an apparent inconsistency in the Association sponsoring a medical trade union, opposed as it is to certain trade union policies such as that of the "closed shop."

8. The form of independent parallel organization which appears to deserve consideration is a board of trustees who would act in much the same capacity as the governing body of a trade union and, within normal limits of law but without the limitations of the Association's constitution, could seek to impose restrictions on the conduct of medical practice and organize collective resistance in disputes with public or other authorities; and the establishment of an organization of this kind seems to be the method of securing the desired result which involves the least disadvantage.

34. The organization proposed by the Council would act both in major disputes and in minor emergencies affecting individuals. It is not suggested that, in building up its finances, it should encroach in any way on the province of the National Insurance Efficiency Trust, which would continue to collect financial contributions from general practitioners for use at the discretion of its trustees; but the establishment of the new organization would provide the necessary opportunity for all other branches of the profession to make similar contributions. If it were decided to set up an organization of the kind recommended, it would be essential to secure a steady flow of subscriptions in advance of disputes, so as to avoid the necessity of an emergency appeal on the occurrence of a crisis. One possibility is that the Association could collect contributions to the new organization when collecting its own subscriptions from its members. The Solicitors have advised that this procedure, although it would not be permissible if the parallel body were a trade union, might be possible in the case of an organization of the kind proposed by the Council, provided that the administrative expenses incurred by the Association were reimbursed. Other matters which call for exploration are the part which could properly be played by the *British Medical Journal* in connexion with the activities of the proposed board of trustees, and the kind of peripheral organization necessary to secure local compliance with the policy of the board. The Council has these matters under consideration.

35. The Council suggests that the new organization should be known as the British Medical Guild. Appended to this Report is a Trust Deed prepared by the Solicitors, in consultation with Counsel.

VI. RECOMMENDATION

36. With reference to Minute 65 of the A.R.M., 1948, the Council recommends:

(1) that, for the better protection of the interests of the medical profession in disputes with public authorities and other bodies, a new organization be established in the form of an independent board of trustees with power to organize and finance collective action by the profession and to provide financial compensation to practitioners suffering financial hardship through participation in such collective action;

(2) that the new organization be entitled the British Medical Guild;

(3) that the new organization be constituted in accordance with the Trust Deed as drafted by the Association's Solicitors.

APPENDIX

THIS DECLARATION OF TRUST is made the
day of 1949 BETWEEN*

of of and
of the one
part and BRITISH MEDICAL ASSOCIATION whose registered
office is at British Medical Association House Tavistock Square
in the County of London (hereinafter called the Association) of
the other part

WHEREAS a sum of (£500) has been placed by certain donors in the hands of the Association to form the nucleus of a fund to be held on trusts concerning the same which are to be declared by the parties hereto of the first part and the said parties now desire to declare the trusts following in respect of the same and of any other sums of money or property which may hereafter be added thereto

NOW THIS DEED WITNESSES:—

1. THE said sum of (£500) and all other money and property which shall from time to time be subject to the trusts hereof are hereinafter called the Trust Fund.

2. THE Trust Fund shall be known as the British Medical Guild.

3. THE Trust Fund and the income thereof shall be held by the Association or other the trustee or trustees for the time being hereof upon trust to give effect to any directions of the Board of Trustees hereinafter referred to (hereinafter called the Board) which may be lawful and consistent with the provisions hereof and the Association shall not be liable for breach of trust in respect of any act done by it in pursuance or bona fide purported pursuance of any such direction.

4. THE objects to which the Board may direct the application of the capital and income of the Trust Fund (in addition to defraying the costs of administering the trusts hereof) are as follows:—

(i) During a period consisting of the lifetime of the longest liver of the issue now living of His Majesty King Edward the Seventh and 21 years thereafter

(a) The taking of action to acquire or appeal for additional money and property to be added to the Trust Fund;

(b) The taking of such action as the Board from time to time consider expedient in the interests of the Medical Profession or any section or sections of such profession;

(c) The giving of financial assistance to or for the benefit of any registered medical practitioner or class or classes of registered medical practitioners who at any time during such period may appear to the Board to have suffered or be likely to suffer hardship as a consequence of his or their loyalty to any policy sponsored or approved by the Board with reference to the affairs of the Medical Profession;

(d) The making of payments by way of distribution to persons who shall appear to the Board to have subscribed to the Trust Fund of any sum or sums appearing at any time and from time to time to the Board not to be required for the foregoing purposes or any of them such distribution or distributions to be in such proportions among the recipients as the Board shall in their uncontrolled discretion think just and equitable.

(ii) From and after the conclusion of such period such charitable objects as the Board may think fit being charitable objects connected with the Medical Profession and in particular such (if any) of the objects to which the Trust Fund or the income thereof are applicable during the said period as are charitable objects

PROVIDED ALWAYS that no person or body shall during the said period be entitled by reason of having subscribed to the Trust Fund or otherwise to question any exercise by the Board of their discretion to direct the application or distribution of the

*There will be the present members of the Council

Trust Fund or any part thereof and the income thereof or any part thereof except on the ground of fraud or bad faith.

5. THE giving of assistance to or for the benefit of registered medical practitioners or any class or classes of them shall be deemed to include the giving of like assistance to any parent wife husband widow widower child or issue of any such registered medical practitioner living or dead or to any person appearing to the Board to be or to have been a dependent of any such registered medical practitioner living or dead and the Board may direct payment to any person corporation or unincorporated body who or which seems to the Board to be a proper recipient of any sum the application of which they direct under this clause and the receipt of any such person or corporation (by its proper officer) or unincorporated body (by its Treasurer or other proper officer) shall be an absolute discharge to the Association in respect of such payment.

6. THE power of appointing new trustees hereof in place of the Association or any successor of the Association is vested in the Board. The expression "the Association" used herein means and includes (where the context does not otherwise require) British Medical Association and other the trustees or trustee for the time being hereof.

7. THE management of the Trust Fund shall be vested in the Board. The parties hereto of the first part shall be the first members of the Board and hereafter the members of the Board for the time being shall be the persons who from time to time are the members of the Council of the Association. Members of the Board shall enter and vacate office as such without any formality as a consequence of their entering or vacating office as members of such Council provided however

(i) that for the purposes hereof no member of the Board (other than the parties hereto of the first part) shall be entitled to act unless and until the Secretary of the Association shall have informed the Board or their Secretary in writing of his appointment as a member of the said Council and until such member of the Board has also executed a written statement (which shall normally be in the Board's Minute Book) that he has accepted office as a member of the Board; and

(ii) that no member of the Board shall be discharged from his office as such until the Secretary of the Association has given like written information of his ceasing to be a member of the said Council.

8. NOT less than two thirds of the members of the Board in office at the date of the dissolution of the Association may by deed make other provision for the appointment of members of the Board in place of the provisions of the foregoing clause hereof.

9. THE Board shall appoint a Secretary and any other office or servants whose employment seems to them expedient.

10. THE Board may act by resolutions passed by a majority of those present and voting at a meeting of the Board (except where by this deed they are required to act in some other way) and a written certificate of the Secretary to the Board stating the terms of any resolution of the Board shall be conclusive evidence to persons (including the Association) dealing with the Board both of the terms of such resolution and of the fact that it was duly passed.

11. THE Board may regulate their own procedure by means of standing orders passed by them as resolutions and unless and until they make any standing order to the contrary they shall be deemed to have adopted (mutatis mutandis) the standing orders of the Council of the Association.

12. THE Board may make regulations not inconsistent herewith for the conduct of the Trust Fund and may from time to time alter and revoke the same and any of them.

13. THE Trust Fund may be invested or applied in the purchase of or in lending on the security of any form of property whatsoever or wheresoever and whether or not authorised by law for the investment of trust funds as if the Association were an individual entitled thereto beneficially or in making loans on personal security to any person to whom or for whose benefit financial assistance may under the provisions hereof be given out of the trust fund or the income thereof.

14. WITHOUT prejudice to the generality of any other provision hereof any act done or omitted by the Board or the Association upon the advice of a member of the English Bar (not less than 15 years standing shall (unless such act is proved to have been done or omitted in bad faith) not give rise to any liability of the Board or the Association as the case may be) in breach of trust whether or not such advice is correct in law.

15. THE Auditors of the Association or other auditors from time to time appointed by the Board shall audit the accounts of the Trust Fund yearly and shall make a report to the Board as the Association.

16. IN the event of the dissolution of the Association the Board may adapt the provisions of this deed (other than the matters dealt with in Clauses 7 and 8 hereof) so as to ensure the continuance so far as practicable of the work of the British Medical Guild and such adaptation may be made by resolution. Provide however that nothing in this clause enables the Board to prescribe any trusts of the Trust Fund other than charitable trusts in respect of any time after the expiration of the period referred to in paragraph (i) of Clause 4 hereof.

IN WITNESS, etc.

ONE HUNDRED AND SEVENTEENTH ANNUAL MEETING, HARROGATE, JUNE 24 TO JULY 1, 1949

President-Elect: C. W. CURTIS BAIN, M.C., D.M., F.R.C.P., Senior Physician, Harrogate General Hospital

PROVISIONAL PROGRAMME

For the Annual Meeting at Harrogate the programme of scientific meetings and social events is almost complete, as will be seen from the information following. A longer period is devoted to the scientific meetings, which should prove of exceptional interest. On the social side a very full programme has been drawn up, including numerous excursions to places of interest in the neighbourhood, civic receptions, dances, theatres, concerts, and every kind of sport. It is hoped that the programme so arranged will provide suitable entertainment for visitors and make the meetings successful and enjoyable.

The Annual Representative Meeting will begin at the Royal Hall, Harrogate, on Friday, June 24, at 10 a.m., continuing all day on Saturday and Monday and, if necessary, on Tuesday morning.

The Representatives' Dinner will take place at 7.30 p.m. on Monday, June 27, at the Grand Hotel, and it will be

followed at 9 p.m. by the Statutory Annual General Meeting, which will be held in the Ballroom of the Grand Hotel. The adjourned Annual General Meeting and President's Address will take place in the Royal Hall on Tuesday, June 28, at 8.30 p.m., followed by the President's Reception in the Lounge Hall.

The Annual Dinner of the Association will take place on Thursday, June 30, at 7.30 p.m. in the Majestic Hotel.

It is hoped to hold a Civic Reception in the Royal Hall on Friday, July 1, at 8.30 p.m.

The Official Religious Service will be held in St. Peter's Church at 3 p.m. on Tuesday, June 28, and Catholic Benediction will be held in St. Joseph's Church at 3 p.m. on Thursday, June 30.

The Reception Room for registration, in the Sun Pavilion, will be opened on Monday, June 27, at 2 p.m. The Ladies' Club will be at the Prospect Hotel

The Annual Exhibition of Surgical Appliances, Foods, Drugs, and Books will be housed in the Sun Pavilion. The official opening will take place on Tuesday, June 28 at 9 a.m., it will remain open on June 29 and 30 and July 1 from 9 a.m. to 6 p.m.

The Pathological Museum in the Royal Bath Hospital, Cornwall Road, will be opened on Tuesday, June 28, at 9.30 a.m. and will remain open for the rest of the Meeting. It is hoped to hold a Civil Reception in the Royal Hall on Wednesday evening, June 29.

The Local Division hopes to hold a Garden Party on Thursday afternoon, June 30 at the Majestic Hotel.

The President-Elect has kindly offered to give a cocktail party at his house for the Representatives on Thursday evening, June 23.

There will also be a Concert for the Representatives in the Royal Hall on Sunday evening, June 26.

The usual Golf and Chess Competitions will be held.

VISITS AND EXCURSIONS

There are within easy reach of Harrogate a number of places of historic and scenic attraction. An opportunity will be given for those attending the Annual Meeting of the British Medical Association to see the Yorkshire countryside and to visit places of special interest.

Foremost among these is Fountains Abbey, the best-preserved of the Cistercian abbeys in Britain. Adjacent to the Abbey is Fountains Hall, a Jacobean dwelling which has recently been converted into a museum containing original charters relating to the Abbey and a number of other interesting exhibits. Rievaulx, Bylands, Jervaulx, and Bolton are other abbeys set in surroundings of great beauty to which visits have been arranged.

A short distance from Fountains Abbey is Ripon, a cathedral city full of historic associations and the last to preserve the age-old custom of curfew sounded by a horn. Arrangements have been made for a civic reception by the city authorities, and it is hoped to show delegates much of interest in this ancient town.

Yorkshire dales are well renowned and coach tours will carry the visitors through Wharfedale, Swaledale, Wensleydale, and Nidderdale, affording views of the wild and rugged Yorkshire moorland scenery.

It is hoped also to arrange excursions to the grounds and park of the Harewood estate.

A visit will be paid to Ripley Castle with its Cromwellian associations. Three miles away and also connected with Cromwell, is the township of Knaresborough with its ancient castle and dungeon, the old market place with its quaint setting, and many other features of archaeological interest.

The City of York, with its magnificent Minster, its Roman wall, and its many museums will be the venue of several excursions, visits have been arranged which it is hoped will give an insight into the attractiveness and charm of this ancient city.

A special excursion is also being arranged to the Bronte country, and those who visit Haworth will see the background of this strange family of genius.

A visit of great interest is that to Temple Newsam, the "Templestowe" of *Kianhoe* and the birthplace of Lord Darnley, husband and cousin of Mary, Queen of Scots now used as an art gallery and museum by the City of Leeds.

HOTEL AND LODGING ACCOMMODATION

Harrogate is fortunately placed as regards hotel and other accommodation to suit every requirement. No booking of accommodation for members will be undertaken by the B.M.A. other than for overseas guests. Members intending to be present at the Meeting are strongly advised to make their arrangements at a very early date, as hotel and boarding-house accommodation becomes very fully booked up for the season.

To assist members in making their arrangements a list of hotels is given below. The rates quoted are not guaranteed but are those published up to date. In order to benefit from

the special conference terms every member should mention when applying that he is attending the B.M.A. Conference.

Name and Address of Hotel	Tel. No.	Garage	No. of Guests	Full Board (3 Days or more) per Day	Bed and Breakfast (1 Day or more)
Avenue Victoria Avenue	4018	No	87	21/-	15/-
Avondale Cold Bath Road	7686	No	30	20/-	12/-
Balcombe, Victoria Avenue	4568	No	20	21/-	12/6
Bella Vista 23 Harlow Moor Drive	4890	No	14	16/6	9/6
Berkeley Court, 35 Victoria Av	430811	Yes	35	21/-	13/6
Boston Swan Road	2915	Open yard	10	16/6	13/6
Brentwood 6 Granby Road	82033	No	14	16/6	10/6
Britannia Lodge Swan Road	4706	No	16	21/-	12/6
Carm Hydro Ripon Road		Yes	240	35/-	21/-
Cambridge, 4 Cambridge Cres	50511	No	27	19/6	12/6
Carlton Deni Brunswick Drive	4452	Yes	13	22/6	15/6
Cavendish Lodge, 5 Kent Road	621611	Yes	14	21/-	12/6
Cecil Valley Drive	2148	No	82	24/-	15/6
Claremont Victoria Avenue	233111	No	87	21/-	15/-
Clarendon 27 West Park	447811	Yes	15	21/-	15/-
Continental 49 Valley Drive	19211	No	15	21/-	16/-
Conyngnam Hall Knaresborough (3 miles distant)	K bro 2281	Yes	26	21/-	16/-
Durton 23 Ripon Road	6662	No	80	16/-	10/6
Empress Church Square	4559	No	16	20/-	10/6
Evesfield 1, Swan Road	204511	No	14	25/-	12/6
Feamley Swan Road	4491	No	25	21/-	12/6
Granby Granby Road	3046-8	Yes	100	45/-	32/6
Grand Cornwall Road	4631	Yes	250	25/6	14/6
Grange Prospect Place	2656	Year by	80	25/-	1/6
Green Park Valley Drive	4681	No	100	30/-	21/-
Harrogate Hydro Swan Road	4051	Yes	300	18/-	16/-
Imperial Hydro Royal Parade	281211	No	36	25/6	16/-
Kensington Valley Drive	2787	For 1 car	60-70	22/6	12/6
Kirkcaldy, St. Mary's Walk	4472	No	80	21/-	15/-
Langham, Valley Drive	234711	No	40	21/-	17/6
Lion House West Park	248411	Adjoining	20	19/6	10/6
Lynwood 6 North Park Road	6271	No	100	45/-	30/6
Majestic, Ripon Road	2261	Yes	15-20	17/6	9/6
Manor, Clarence Drive	37611	No	18	22/6	12/6
Marlborough 53 Valley Drive	4447	No	16-20	20/-	12/6
Metropole Valley Drive	593211	No	32	21/-	12/6
Mount Edgcumbe 103-105 Valley Drive	237211	Open yard	30	21/-	13/6
Northdene 2 Valley Road	624811	No	26	15/-	10/6
North Eastern, Station Square	Office 4657 Vis 511411	No	40	25/-	
Ortagon Valley Drive	2611	No	36	22/6	15/-
Pembroke Queen Parade	2984	Yes	15-20	21/-	14/6
Pinemoor Harlow Moor Drive	345111	No	20	21/-	12/6
Prince of Wales, West Park	6675	Yes	210	42/6	30/6
Prospect, Prospect Place	4071	Adjoining	150	37/6	27/6
Queen Park Parade	2284	50 cars	220	35/-	21/-
Ridings, Springfield Avenue	2602	No	25	21/-	
Riversdale 17 19 Valley Drive	6193	No	32	22/-	12/6
Russell Valley Drive	3134	No	80	22/-	15/-
Santa Rosa, 19 Dragon Parade	6276	No	17	15/-	8/6
Somerset Parliament Street	491111	Yes	10	20/-	14/-
St. Aubyn's Harlow Moor Drive	3239	No	19	19/6	14/6
Studley Swan Road	6007-9	No	28	30/-	
The Knowle Coppice Drive	2559	Yes	20	24/-	15/-
Valley Gardens Valley Drive	3575	No	70	21/-	17/6
Victoria, Esplanade	317711	Yes	15	24/-	17/6
Wintingham Hall Knares- borough (3 miles distant)	K bro 2316	Yes	26	21/-	12/6

* Licensed hotels.

Note—Rauon books are required for visitors to hotels saving more than four nights.

SCIENTIFIC SECTIONS

The clinical and scientific work will be divided among eighteen Sections meeting on Tuesday, Wednesday, Thursday and Friday, June 28, 29, and 30 and July 1.

The Sections will meet in various hotels (see programme). Please note that it has been necessary to make some alterations in the original programme and therefore the following Sections will be meeting in different hotels from those specified in the B.M.A. brochure sent out in January.

Section	Hotel
Anaesthetics	Queen (not Prince of Wales)
Neurology and Psychiatry	Majestic (not Grand)
Ophthalmology	Prince of Wales (not Majestic)
Radiology	Queen (not Majestic)
Anatomy and Physiology	Carm Hydro and Prince of Wales
Otorhino-laryngology	Carm Hydro (not Prince of Wales)

There have also been some alterations in the number of days some Sections will be meeting—e.g., Radiology is a four-day (not a two-day) Section, Anatomy and Physiology, Cardiology, Dermatology, and Occupational Health are all now two-day

(not one-day) Sections. In fact, there are now no one-day Sections.

Below is a list of the names of the Sections and the officers appointed to each, together with provisional programmes.

The following Sections will meet on Four Days :

MEDICINE

President : Professor R. E. TUNBRIDGE, O.B.E., M.Sc., M.D., F.R.C.P. (Leeds).

Vice-Presidents : R. R. BOMFORD, D.M., F.R.C.P. (London); Professor H. W. FULLERTON, M.D., M.R.C.P. (Aberdeen); Professor A. P. THOMSON, M.C., M.D., F.R.C.P. (Birmingham).

Hon. Secretaries : T. G. REAH, M.D., M.R.C.P., 4, Spring Grove, Harrogate; J. L. LOVIBOND, M.D., F.R.C.P., 81, Harley Street, W.1.

Meeting-place : Harrogate Hydro.

The following programme has been arranged :

Tuesday, June 28.—10 a.m., *Discussion* : Diabetes Mellitus. To be opened by Dr. R. D. LAWRENCE (London), followed by Professor R. E. TUNBRIDGE (Leeds), Insulin and Diet; Mr. H. H. FOURACRE BARNES (London) and Dr. CHARLES ROLLAND (Edinburgh), Pregnancy Aspects; Mr. D. A. HALL, Ph.D. (Leeds), Rapid Blood Sugar Estimations; Dr. R. G. PALEY (Leeds), Skin Complications of Insulin Injections; and Dr. A. J. BALLANTYNE (Glasgow), Ocular Complications.

Wednesday, June 29 (Combined Meeting with Section of Surgery).—10 a.m., *Discussion* : Treatment of Peptic Ulcers. To be introduced and summarized by Sir HENRY COHEN (Liverpool) and opened by Mr. A. HEDLEY VISICK (York), followed by Dr. RICHARD DOLL (London), Sociological Aspects; and Mr. A. D. BEATTIE (Leicester), Surgical Aspect.

Thursday, June 30.—10 a.m., *Papers* : (1) Radioactive Substances in Clinical Medicine, by Dr. RUSSELL FRASER (London); (2) Anticoagulants, by Professor H. W. FULLERTON (Aberdeen); (3) Streptomycin, by Dr. GEOFFREY MARSHALL (London).

Friday, July 1.—10 a.m., *Discussion* : Cirrhosis of the Liver. To be opened by Professor J. W. MCNEE (Glasgow), followed by Dr. N. H. MARTIN (London), Pathology; Mr. J. E. RICHARDSON (London), Surgical Aspects; and Dr. E. R. CULLINAN (London), Summary.

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. *Demonstration* : The Role of Surgery in Rheumatism. "Movement is Life" (Lucas-Championnière).

OBSTETRICS AND GYNAECOLOGY

President : Professor A. M. CLAYE, M.D., F.R.C.S., F.R.C.O.G. (Leeds).

Vice-Presidents : GLADYS KAY, M.D. (Harrogate); Professor F. N. A. JEFFCOATE, M.D., F.R.C.S.Ed., F.R.C.O.G. (Liverpool); ARNOLD L. WALKER, M.B., F.R.C.S., F.R.C.O.G. (London).

Hon. Secretaries : C. RUTHERFORD MORISON, M.D., M.R.C.O.G., 2, Lancaster Road, Harrogate; Miss JOSEPHINE BARNES, D.M., F.R.C.S., M.R.C.P., M.R.C.O.G., 7, Wimpole Street, W.1.

Meeting-place : Prince of Wales Hotel.

The following programme has been arranged :

Tuesday, June 28.—10 a.m., *Discussion* : Breech Presentation and its Management. To be opened by Mr. R. NEWTON (Manchester), followed by Mr. C. M. MARSHALL (Liverpool), Mr. B. L. JAFFERSON (Leeds), and others.

Wednesday, June 29 (Combined Meeting with Section of Radiology).—10 a.m., *Discussion* : The Value of X-ray in Assessing Disproportion. To be opened by Professor CHASSAR MOIR (Oxford) and Dr. J. BLAIR HARTLEY (Manchester), followed by Miss MEAVE KENNY (London) and others.

Thursday, June 30 (Combined Meeting with Section of Dermatology).—10 a.m., *Discussion* : Pruritus Vulvae. To be opened by Professor T. N. A. JEFFCOATE (Liverpool) and Dr. G. A. GRANT PETERLIN (Edinburgh), followed by Dr. ELIZABETH HUNT (London).

Friday, July 1.—10 a.m., *Discussion* : Functional Uterine Haemorrhage. To be opened by Mr. V. B. GREEN-ARMYtage (London), followed by Dr. P. M. F. BISHOP (London) and Dr. T. N. MACGREGOR (Edinburgh).

PATHOLOGY AND BACTERIOLOGY

President : Professor R. J. V. PULVERTAFT, M.D., F.R.C.P. (London).

Vice-Presidents : Professor T. F. HEWER, M.D., F.R.C.P. (Bristol); J. G. GREENFIELD, M.D., F.R.C.P. (London); A. H. I. ROBB-SMITH, M.D., M.R.C.P. (Oxford).

Hon. Secretaries : J. V. WILSON, M.D., M.R.C.P., Harrogate General Hospital, Harrogate; Professor H. A. MAGNUS, M.D., Department of Pathology, King's College Hospital, Denmark Hill, S.E.5.

Meeting-place : Grand Hotel.

The following programme has been arranged :

Tuesday, June 28.—10 a.m., *Discussion* : The Laboratory Diagnosis and Prevention of Whooping-cough. To be opened by Professor R. CRUICKSHANK (London), followed by Dr. W. C. COCKBURN (London) and Dr. D. G. EVANS (Manchester).

Wednesday, June 29 (Combined Meeting with Section of Tropical Medicine).—10 a.m., *Discussion* : Fat Metabolism and the Sprue Syndrome. To be opened by Professor A. C. FRAZER (Birmingham), followed by Dr. DOUGLAS BLACK (Manchester), Dr. K. D. KEELE (London), and others.

Thursday, June 30.—10 a.m., *Discussion* : Chemotherapy in the Treatment of Malignant Disease. To be opened by Professor E. C. DODDS (London), followed by Sir STANFORD CADD (London), Professor A. HADDOW (London), and Professor F. DICKENS (London).

Friday, July 1.—(Subjects and speakers to be arranged.)

RADIOLOGY

President : J. L. A. GROUT, F.R.C.S.Ed., D.M.R.E., F.F.R. (Sheffield).

Vice-Presidents : C. G. HITCHCOCK, M.R.C.S., L.R.C.P. (Harrogate); J. ALEX. THOMSON, M.B., Ch.B., D.M.R.E. (Harrogate); Professor BRIAN W. WINDEYER, F.R.C.S.Ed. D.M.R.E., F.F.R. (London).

Hon. Secretaries : C. N. PULVERTAFT, M.B., B.Ch., D.M.R.E. York County Hospital, York; JOHN R. NUTTALL, M.D., F.F.R. D.M.R., Radium Department, General Infirmary, Leeds.

The following programme has been arranged :

Tuesday, June 28. *Meeting-place* : Queen Hotel.—10 a.m. Therapeutic Meeting. (Subjects to be chosen.)

Wednesday, June 29. *Meeting-place* : Prince of Wales Hotel (Combined Meeting with Section of Obstetrics and Gynaecology).—10 a.m., *Discussion* : The Value of X-ray in Assessing Disproportion. To be opened jointly by Professor CHASSAR MOIR (Oxford) and Dr. J. BLAIR HARTLEY (Manchester), followed by Miss MEAVE KENNY (London) and others.

Thursday, June 30. *Meeting-place* : Majestic Hotel (Combined Meeting with Section of Cardiology).—10 a.m., *Discussion* : Angiocardiography. To be opened by Dr. J. WILK (Sheffield), followed by Dr. FREDERIC JACKSON (London) and Dr. FRANCES GARDNER.

Friday, July 1. *Meeting-place* : Queen Hotel (Diagnostic Meeting).—10 a.m., *Discussion* : Radiology of Joints. To be opened by Dr. E. DUFF GRAY (Manchester), followed by Dr. P. H. WHITAKER (Liverpool) and Dr. J. B. KING (Edinburgh).

SURGERY

President : T. V. PEARCE, M.D., F.R.C.S. (Harrogate).

Vice-Presidents : H. HAMILTON STEWART, F.R.C.S. (Bradford); IAN J. FRASER, D.S.O., O.B.E., F.R.C.S. (Belfast); CECIL P. G. WAKELEY, F.R.C.S., F.R.A.C.S., F.R.S.Ed. (London).

Hon. Secretaries : GORDON N. BAILEY, M.A., M.B., F.R.C. 2, Lancaster Road, Harrogate; RODNEY SMITH, M.S., F.R.C. 6, Devonshire Place, W.1.

Meeting-places : Majestic Hotel (Tuesday, Thursday, Friday) and Harrogate Hydro (Wednesday).

The following programme has been arranged :

Tuesday, June 28.—10 a.m., *Discussion* : Prostatic Obstruction. To be opened by Mr. H. HAMILTON STEWART (Bradford) followed by Mr. WILSON HEY (Manchester) and Mr. JOE SWINNEY (Newcastle-upon-Tyne).

Wednesday, June 29 (Combined Meeting with Section of Medicine).—10 a.m., *Discussion* : Treatment of Peptic Ulcer. To be introduced and summarized by Sir HENRY COHEN (Liverpool) and opened by Mr. A. HEDLEY VISICK (York), followed

y Dr. RICHARD DOLL (London), Sociological Aspects; and
Mr. A. D. BEATTIE (Leicester), Surgical Aspect.

Thursday, June 30 (Combined Meeting with Section of Neurology and Psychiatry).—10 a.m. *Discussion*: The Treatment, After-Treatment, and Sequelae of Closed Injuries to the Head. To be opened by Professor NORMAN McOMISH DOTT (Edinburgh), followed by Dr. W. RITCHIE RUSSELL (Oxford) and Dr. E. STENGEL (Chichester). 2.30 p.m., *Occasional Paper*: The Mechanism of Speech and the Repair of a Cleft Palate, by Mr. MICHAEL OLDFIELD (Leeds), illustrated by coloured film and drawings.

Friday, July 1.—10 a.m. *Discussion*: Pain in the Right Iliac Fossa. To be opened by Dr. A. FULLERTON (Batley), followed by Professor D. CHAMBERLAIN (Leeds), Mr. R. K. BOWES (London), and Mr. G. H. MACNAB (London).

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. *Demonstration*: The Role of Surgery in Rheumatism. "Movement is Life" (Lucas-Championnière).

The following Sections will meet on Two Days:

ANAESTHETICS

President: Professor R. R. MACINTOSH, D.M., F.R.C.S.Ed., D.A. (Oxford).

Vice-Presidents: B. L. S. MURTAGH, M.B., Ch.B., F.F.A.R.C.S., D.A. (Birmingham); H. B. WILSON, M.B., Ch.B., D.P.H., F.F.A.R.C.S., D.A. (Aberdeen); GEOFFREY ORGANE, M.D., F.F.A.R.C.S., D.A. (London).

Hon. Secretaries: W. M. JONES, M.B., B.S., D.A., 4, South Drive, Harrogate; J. ALFRED LEE, M.R.C.S., L.R.C.P., F.F.A.R.C.S., D.A., 73, King's Road, Westcliff-on-Sea.

Meeting-place: Queen Hotel.

The following programme has been arranged:

Wednesday, June 29.—10 a.m., *Discussion*: Post-operative Pulmonary Complications. To be opened jointly by Dr. H. J. V. MORTON (Uxbridge) and Dr. E. M. BUZZARD (Oxford), followed by Mr. DONALD BARLOW (London) and others.

Thursday, June 30.—10 a.m., *Discussion*: Dental Anaesthesia. To be opened by Dr. W. S. MCCONNELL (London), followed by Dr. STEPHEN COFFIN (London) and Dr. FRED BANNISTER (Chester). *Occasional Paper*: Caudal Block Analgesia.

ANATOMY AND PHYSIOLOGY

President: Professor JOHN KIRK, M.B., Ch.B., F.R.C.S.Ed. (London).

Vice-Presidents: Professor A. HEMINGWAY, M.Sc., M.B., Ch.B. (Leeds); Professor FRANCIS DAVIES, M.D. (Sheffield); Professor C. McLAREN WEST, M.C., M.B., B.Ch. (Cardiff).

Hon. Secretaries: E. J. FIELD, M.D., M.S., Department of Anatomy, University of Bristol; R. J. SCOTHORNE, B.Sc., M.B., Ch.B., Anatomy Department, School of Medicine, Leeds, 2.

Note: On Tuesday, June 28, *Physiology and Anatomy* will meet as separate Sections, but there will be a united meeting on Wednesday, June 29.

The following programme has been arranged:

Physiology—Tuesday, June 28. Meeting-place: Cairn Hydro. —10 a.m., *Symposium* on the Control of Activity in the Gastro-intestinal Tract. *Speakers*: Professor R. A. GREGORY (Liverpool), Dr. A. A. HARPER (Manchester), Dr. R. E. DAVIES (Sheffield), and Dr. J. N. HUNT (London).

Anatomy—Tuesday, June 28. Meeting-place: Prince of Wales Hotel.—10 a.m., *Symposium* on Muscle Structure and Function. *Speakers*: Professor W. E. LE GROS CLARK (Oxford), The Vascularization of Muscle, with Special Reference to Ischaemic Necrosis and Reparative Processes; Dr. R. BARER (Oxford), The Organization of the Muscle Fibre; Dr. R. E. M. BOWDEN (London), Some Aspects of Denervation and Re-innervation of Human Voluntary Muscle; and Mr. W. F. FLOYD (London), Clinical Value of Electro-myographic Studies.

Wednesday, June 29. Meeting-place: Cairn Hydro.—10 a.m., *Symposium* on the Anatomy and Physiology of the Skin. *Speakers*: Professor H. BARCROFT (London) (subject to be chosen); Dr. C. A. KEELE (London), The Control of Sweating; Dr. R. E. BILLINGHAM (Birmingham), The Anatomical Basis of Epidermal Pigmentation in Man; and Dr. G. WEDDELL (Oxford), The Pattern of Cutaneous Innervation.

CARDIOLOGY

President: Sir JOHN PARKINSON, M.D., F.R.C.P. (London).

Vice-Presidents: JOHN R. H. TOWERS, M.D., F.R.C.P. (Leeds); Professor J. CRIGHTON BRAMWELL, M.D., F.R.C.P. (Manchester); D. EVAN BEDFORD, M.D., F.R.C.P. (London).

Hon. Secretaries: D. R. CAMERON, M.D., M.R.C.P., 14, Clifton, York; GRAHAM W. HAYWARD, M.D., F.R.C.P., St. Bartholomew's Hospital, E.C.1.

The following programme has been arranged:

Thursday, June 30. Meeting-place: Majestic Hotel (Combined Meeting with Section of Radiology).—10 a.m., *Discussion*: Angiocardiography. To be opened by Dr. J. WILKIE (Sheffield), followed by Dr. FREDERIC JACKSON (London) and Dr. FRANCES GARDNER (London).

Friday, July 1. Meeting-place: Majestic Hotel.—10 a.m., Simulation of Heart Disease by Other Conditions. To be opened by Dr. RAE GILCHRIST (Edinburgh). (a) Simulation by Pulmonary Conditions, by Dr. J. CLIFFORD HOYLE (London); (b) Simulation by Gastro-intestinal Conditions, by Dr. S. W. PATTERSON (Ruthin Castle); (c) Simulation by Psychoneuroses, by Dr. WILLIAM PHILLIPS (Cardiff). 12 noon, *Discussion*: The Treatment of Obsolete Heart Failure. To be opened by Dr. D. EVAN BEDFORD (London).

CHILD HEALTH

President: Professor C. W. VINING, M.D., F.R.C.P., D.P.H. (Leeds).

Vice-Presidents: Professor R. S. ILLINGWORTH, M.D., F.R.C.P., D.P.H., D.C.H. (Sheffield); A. A. E. NEWTH, M.B., B.S., D.P.H. (Nottingham); Professor W. S. M. CRAIG, M.D., F.R.C.P.Ed., F.R.S.Ed. (Leeds).

Hon. Secretaries: L. J. PROSSER, M.B., Ch.B., D.C.H., 11, Ripon Road, Harrogate; T. COLVER, M.D., M.R.C.P., 4, Claremont Place, Sheffield, 10.

Meeting-place: Grand Hotel.

The following programme has been arranged:

Wednesday, June 29.—10 a.m., *Discussion*: Common Feeding Difficulties in Infancy. To be opened by Professor R. S. ILLINGWORTH (Sheffield), followed by Dr. FRANCES CHARLOTTE NAISH (York), Dr. STANLEY G. GRAHAM (Glasgow), and Dr. JEAN MACKINTOSH (Birmingham). *Occasional Paper*: Domestic Care of the Premature Child, by Dr. JOAN MILLAR (Newcastle-upon-Tyne).

Thursday, June 30 (Combined Meeting with Section of Preventive Medicine).—10 a.m., *Discussion*: Behaviour Difficulties in Childhood. To be opened by Dr. MILDRED CREAK (London), followed by Dr. A. A. E. NEWTH (Nottingham) and Dr. W. S. McDONALD (Leeds).

DERMATOLOGY

President: J. T. INGRAM, M.D., F.R.C.P. (Leeds).

Vice-Presidents: BRIAN F. RUSSELL, M.D., M.R.C.P., D.P.H. (London); P. B. MUNFORD, M.D., F.R.C.P. (Manchester); GEOFFREY HODGSON, M.B.E., M.D. (Cardiff).

Hon. Secretaries: S. T. ANNING, M.D., M.R.C.P., 5a, Shaw Lane, Leeds, 6; H. J. WALLACE, M.D., M.R.C.P., 80, Harley Street, W.1.

The following programme has been arranged:

Thursday, June 30. Meeting-place: Prince of Wales Hotel (Combined Meeting with Section of Obstetrics and Gynaecology).—10 a.m., *Discussion*: Pruritus Vulvae. To be opened by Professor T. N. A. JEFFCOATE (Liverpool) and Dr. G. A. GRANT PETERKIN (Edinburgh), followed by Dr. ELIZABETH HUNT (London).

Friday, July 1. Meeting-place: Majestic Hotel.—10 a.m., *Discussion*: Psoriasis. To be opened by Dr. H. W. BARBER (London), followed by Dr. BRIAN F. RUSSELL (London) and Dr. J. H. TWISTON DAVIES (Manchester). *Occasional Paper*: The Uses and Abuses of Chemotherapy in Dermatology, by Dr. F. F. HELLIER (Leeds). 2.30 p.m., Clinical Meeting at Harrogate General Hospital.

NEUROLOGY AND PSYCHIATRY

President: W. RUSSELL BRAIN, D.M., F.R.C.P. (London).

Vice-Presidents: W. R. HENDERSON, O.B.E., M.B., Ch.B., F.R.C.S. (Leeds); DAVID ROBERTSON, M.D. (York); R. G. GORDON, M.D., F.R.C.P.Ed. (Bath).

Hon. Secretaries: JAMES VALENTINE, M.B., Ch.B., D.P.M., Scafebor Park, Burley-in-Wharfedale, near Leeds, Yorks; HELEN E. DIMSDALE, M.D., M.R.C.P., 18, Well Walk, Hampstead, N.W.3.

Meeting-place: Majestic Hotel.

The following programme has been arranged:

Wednesday, June 29.—10 a.m., *Discussion:* Intractable Pain. To be opened jointly by Dr. J. PURDON MARTIN (London) and Mr. WYLIE MCKISSOCK (London), followed by Dr. E. B. STRAUSS (London) and Dr. ANDREW WILSON (London).

Thursday, June 30 (Combined Meeting with Section of Surgery)—10 a.m., *Discussion:* The Treatment, After-treatment, and Sequelae of Closed Injuries to the Head. To be opened by Professor NORMAN MCOMISH DOTT (Edinburgh), followed by Dr. W. RITCHIE RUSSELL (Oxford) and Dr. E. STENGEL (Chichester).

OCCUPATIONAL HEALTH

President: Professor R. E. LANE, M.D., F.R.C.P. (Manchester).

Vice-Presidents: Professor G. P. CROWDEN, O.B.E., D.Sc., M.R.C.P. (London); F. S. COOKSEY, O.B.E., M.D., D.Phys.M. (London); W. BLOOD, M.R.C.S., L.R.C.P. (London).

Hon. Secretaries: CHARLES CRESDEE, M.R.C.S., Wits End, Faby Road, Huddersfield; R. S. F. SCHILLING, M.D., D.P.H., Department of Occupational Health, University of Manchester, Manchester, 13.

Meeting-place: Majestic Hotel.

The following programme has been arranged:

Wednesday June 29—10 a.m., *Discussion:* The Development of a Comprehensive Medical Service for Industry. (Speakers not yet settled)

Thursday, June 30.—10 a.m., *Discussion:* Tuberculosis and Occupation. (1) Tuberculosis in the Boot and Shoe Trade, by Dr. ALICE STEWART (Harrow-on-the-Hill); (2) Mass Radiography in Industry, by Dr. W. POINTON DICK (Denham); (3) Rehabilitation and Resettlement, by Dr. F. R. G. HEAF (London).

OPHTHALMOLOGY

President: JAMES FISON, M.D. (Harrogate).

Vice-Presidents: JOHN MARSHALL, M.C., M.B., Ch.B., D.O.M.S. (Glasgow); N. P. R. GALLOWAY, M.B., Ch.B., D.O. (Nottingham); A. B. NUTT, M.B., B.S. (Sheffield).

Hon. Secretaries: JANE A. M. SHEPHERD, M.B., Ch.B., D.O.M.S., 39, Harlow Oval, Harrogate; P. D. TREVOR-ROPER, M.B., B.Ch., F.R.C.S., D.O.M.S., 126, Harley Street, W.1.

Meeting-place: Prince of Wales Hotel.

The following programme has been arranged:

Thursday June 30.—10 a.m., *Discussion:* Ophthalmology in Relation to Diseases of the Skin. To be opened by Mr. J. H. DOGGART (London), followed by Dr. ALICE CARLTON (Oxford) and Dr. I. B. SNEEDON (Sheffield). Afternoon, *Occasional Papers:* (1) Scleromalacia Perforans, by Mr. H. V. INGRAM (Newcastle-upon-Tyne); (2) Angiomatosis Retinae, by Mr. A. G. CROSS (London); (3) Watery Eye, by Mr. JOHN MARSHALL (Glasgow).

Friday, July 1—10 a.m., *Occasional Papers:* (1) Toxoplasmosis, by Mr. A. B. NUTT (Sheffield); (2) Practical Ophthalmology in Spain and Holland in 1948, by Mr. JOHN FOSTER (Leeds).

ORTHOPAEDICS

President: R. BROOMHEAD, M.B., F.R.C.S. (Leeds).

Vice-Presidents: C. GORDON IRWIN, M.B., F.R.C.S. (Ed.); (Newcastle-upon-Tyne); H. JACKSON BURROWS, M.D., F.R.C.S., F.R.A.C.S. (London); F. W. HOLDSWORTH, M.B., M.Ch., F.R.C.S. (Sheffield).

Hon. Secretaries: IAN LAWSON DICK, M.B., Ch.M., F.R.C.S. (Ed.), 2, Walver Villas, Manningham Lane, Bradford; J. P. CAMPBELL, M.B., Ch.B., F.R.C.S. (Ed.), 1, Tavistock Avenue, Mapperley Park, Nottingham.

Meeting-place: Majestic Hotel.

The following programme has been arranged:

Tuesday, June 28.—10 a.m., *Discussions:* (1) Closed Fractures of the Shaft of the Radius and Ulna. To be opened by Mr. E. MERVYN EVANS (Birmingham), followed by Mr. F. W.

HOLDSWORTH (Sheffield) and Mr. IAN LAWSON DICK (Bradford) 11.30 a.m., (2) Upper Limb Pain due to Lesions of the Thoracic Outlet. To be opened by Professor LAMBERT ROGERS (Cardiff).

Wednesday, June 29 (Combined Meeting with Section Rheumatology).—10 a.m., (1) The Structure and Functions of the Synovial Membrane, by Professor D. V. DAVIES (London) followed by The Varieties of Pathological Reactions Encountered in Human Synovial Tissues, by Dr. D. H. COLLINS (Leeds) (2) Partial Denervation of the Hip-joint in Osteoarthritis, illustrated by film, by Mr. H. PETTY (Leeds); followed by Indications for Vitallium Mould Arthroplasty of the Hip and Results of End-results, by Mr. R. BROOMHEAD (Leeds).

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. *Demonstration:* The Role of Surgery in Rheumatism. "Movement is Life" (Lucas-Championnière).

OTO-RHINO-LARYNGOLOGY

President: A. B. PAVEY SMITH, M.C., M.B., F.R.C. (Harrogate).

Vice-Presidents: W. I. DAGGETT, M.B., B.Ch., F.R.C. (London); R. GARNETT PASSE, F.R.C.S., D.L.O. (London); GEORGE SEED, M.B., Ch.B., F.R.C.S., D.L.O. (Leeds).

Hon. Secretaries: J. E. REES, M.R.C.S., L.R.C.P., D.L.O., 10, York Place, Harrogate; H. S. SHARP, M.B., B.Ch., F.R.C. 149, Harley Street, W.1.

Meeting-place: Cairn Hydro

The following programme has been arranged:

Thursday, June 30.—10 a.m., *Discussion:* Nasal Allergy. To be opened by Mr. R. R. SIMPSON (Hull).

Friday, July 1.—10 a.m., *Discussion:* Acute Respiratory Obstruction in Infants and Young Children. To be opened by Mr. G. E. ARCHER (Manchester).

PREVENTIVE MEDICINE

President: Professor R. H. PARRY, M.D., F.R.C.P., D.P. (Bristol).

Vice-Presidents: D. D. PAYNE, M.D., D.P.H. (Harrogate); C. FRASER BROCKINGTON, M.A., M.D., D.P.H. (Wakefield); R. H. H. JOLLY, M.D., D.P.H. (Wolverhampton).

Hon. Secretaries: HUGH O. M. BRYANT, M.B., Ch.B., D.P. Health Department, Municipal Offices, Harrogate; H. TRENCHARD, M.B., Ch.B., M.R.C.P., Chest Clinic, 53, Grell Crescent, Harrow, Middlesex.

Meeting-place: Grand Hotel.

The following programme has been arranged:

Thursday, June 30 (Combined Meeting with Section of Child Health).—10 a.m., *Discussion:* Behaviour Difficulties in Childhood. To be opened by Dr. MILDRED CREAK (London) followed by Dr. A. A. E. NEWTH (Nottingham) and Dr. W. McDONALD (Leeds).

Friday, July 1.—10 a.m., *Discussion:* Marriage and Prognosis in Relation to Tuberculosis. *Occasional Paper:* Recent Developments in Influenza, by Dr. C. H. ANDREW (Hampstead).

RHEUMATOLOGY

President: W. YEOMAN, M.D. (Harrogate).

Vice-Presidents: G. NORMAN MYERS, M.Sc., M.D., F.R.C. (Cambridge); G. D. KERSLEY, M.D., F.R.C.P. (Bath); H. TURNER, D.M., M.R.C.P. (London).

Hon. Secretaries: D. N. ROSS, M.D., F.R.F.P.S., Royal Bath Hospital, Harrogate; DORIS M. BAKER, M.D., M.R.C.P., Upper Wimpole Street, W.1.

Meeting-place: Majestic Hotel.

The following programme has been arranged:

Tuesday, June 28.—10 a.m., *Discussion:* (1) Rheumatoid Arthritis in the Young. To be opened by Dr. B. E. SCHLESING (London). (2) *Clinical Lecture-Demonstration*, introduced by Professor S. J. HARTFALL (Leeds). (Other speakers not settled.)

Wednesday, June 29 (Combined Meeting with Section Orthopaedics).—10 a.m., (1) The Structure and Functions of the Synovial Membrane, by Professor D. V. DAVIES (London) followed by The Varieties of Pathological Reactions Encountered in Human Synovial Tissues, by Dr. D. H. COLLINS (Leeds) (2) Partial Denervation of the Hip-joint in Osteoarthritis, illustrated by film, by Mr. H. PETTY (Leeds); followed by Indications

for Vitallium Mould Arthroplasty of the Hip and Survey of End-results, by Mr R BROOMHEAD (Leeds) (3) Physical Treatment of Arthritis To be opened by Dr H F TURNER (London)

Thursday June 30 and Friday July 1—2.30 p.m., Royal Bath Hospital Demonstration The Role of Surgery in Rheumatism "Movement is Life" (Lucas Championnière)

TROPICAL MEDICINE

President G W M FINDLAY CBE, MD, FRCP (London)

Vice Presidents Professor B G MAEGRAITH MB BS (Liverpool) Colonel H E SHORTT CIE MD DTM IMS (Ret) (London) J BALFOUR KIRK CMG, FRCP DPH DTM&H (London)

Hon Secretaries B CLIVE NICHOLSON, MD MRCP DPH, 24, Swan Road Harrogate CLEMENT C CHESTERMAN OBE, MD, MRCP DTM&H 7, Parsival Road NW6 Meeting place Grand Hotel

The following programme has been arranged

Tuesday June 28—10 a.m. Discussion Tropical Diseases as Aftermath of War To be opened by Air Vice-Marshal T C ST C MORTON (RAF) followed by Dr A R D ADAMS (Liverpool) Dr J CAPLAN (London) Sir GORDON COVELL (London) Professor G J STEFANOPOULOS (Pasteur Institute Paris) and Dr F HAWKING (London)

Wednesday June 29 (Combined Meeting with Section of Pathology and Bacteriology)—10 a.m., Discussion Fat Metabolism and the Sprue Syndrome To be opened by Professor A C FRAZER (Birmingham) followed by Dr DOUGLAS BLACK (Manchester) Dr K D KEELE (London) and others

TIME-TABLE OF MEETING

Key

R—events available for members of Representative Body and Ladies accompanying them

L—events primarily arranged for Ladies

U—events for all Members and Ladies accompanying them

*—Academic Robes should be worn

Thursday June 23

8.00 p.m.—R "Get together"—Private Cocktail Party—Dr Bain's house, St Ann's York Place

Friday June 24

9.00 a.m.—A R M Inquiry Office open—Roval Hall
9.30 a.m.—Ladies' Club open for registration—Prospect Hotel
10.00 a.m.—Annual Representative Meeting—Roval Hall
11.00 a.m.—Civil Welcome to Representatives—Roval Hall
L Orchestra and coffee—Lounge Hall
12.30 for 1.00 p.m.—Lunch to Overseas Representatives—Queen Hotel
2.30 to 5.30 p.m.—L Coach tours
5.30 to 6.15 p.m.—Tour of Royal Baths
8.00 to 10.00 p.m.—R Coach tours
R Bridge
R Theatre

Saturday June 25

9.00 a.m.—A R M Inquiry Office open—Roval Hall
9.30 a.m.—Annual Representative Meeting—Roval Hall
9.30 a.m.—Ladies' Club open—Prospect Hotel
L Orchestra and coffee—Lounge Hall
2.00 to 5.30 p.m.—L Coach tours
5.30 to 6.15 p.m.—R Tour of Royal Baths
6.00 p.m.—Press Cocktail Party—Fountain Court (Royal Baths)
8.00 to 10.00 p.m.—R Coach tours
R Dancing
R Theatre
R Bridge

Sunday, June 26

R Church Services
R Tour of Royal Baths
R Tour of Royal Bath Hospital
R Golf
R Tennis
10.30 a.m. to 6.00 p.m.—R Long coach tours
2.00 to 5.30 p.m.—R Short coach tours
8.00 p.m.—R Celebrity Concert—Roval Hall

Monday June 27

9.00 a.m.—Council Meeting—Council Room Municipal Offices
9.00 a.m.—A R M Inquiry Office open—Roval Hall
9.30 a.m.—Ladies' Club open—Prospect Hotel
10.00 a.m.—Annual Representative Meeting—Roval Hall
10.00 a.m. to 12.30 p.m.—L Coach tours
10.00 a.m. to 6.00 p.m.—Coach tours
11.00 a.m.—L Tour of Royal Baths
L Orchestra and coffee—Lounge Hall
2.00 p.m.—Reception Room open for registration—Sun Pavilion
2.00 to 5.30 p.m.—L Coach tours
5.30 p.m.—L Tour of Royal Baths
7.00 for 7.30 p.m.—R Representatives Dinner—Grand Hotel
9.00 p.m.—U Annual General Meeting—Grand Hotel Ballroom

Tuesday, June 28

9.00 a.m.—Official opening of Exhibition by President—Sun Pavilion
9.00 a.m.—Reception room open for registration—Sun Pavilion
9.30 a.m.—Ladies' Club open—Prospect Hotel
9.30 a.m.—Opening of Pathological Museum—Roval Bath Hospital
10.00 a.m.—Scientific Sections
L Orchestra and coffee—Lounge Hall
3.00 p.m.—U* Official Religious Service, St Peter's Church
5.30 p.m.—U Tour of Royal Baths
8.30 p.m.—U* Adjourned Annual General Meeting and President's Address—Roval Hall (limited to 1,200)
9.30 p.m.—U* President's Reception—Lounge Hall (limited to 600)

Wednesday, June 29

9.00 a.m.—Council Meeting—Council Room Municipal Offices
9.00 a.m.—Reception Room open—Sun Pavilion
9.00 a.m.—Exhibition open—Sun Pavilion
9.30 a.m.—Ladies' Club open—Prospect Hotel
9.30 a.m.—Pathological Museum open—Roval Bath Hospital
10.00 a.m.—Scientific Sections
10.30 a.m. to 12.30 p.m.—L Coach tours
11.00 a.m.—L Tour of Royal Baths
L Orchestra and coffee—Lounge Hall
2.00 p.m.—L Notts Ladies' Challenge Cup Golf Competition—Starbeck Golf Club
2.00 p.m.—U Childre and Leinster Cup Golf Competitions—Oakdale Golf Club
2.30 p.m.—Overseas Conference—Council Room Municipal Offices
2.00 to 5.30 p.m.—U Coach tours
Melbourne Chess Competition—Prince of Wales Hotel
5.30 p.m.—U Tour of Royal Baths
5.30 p.m.—Empire Medical Advisory Bureau Cocktail Party for Overseas and Foreign Delegates—Lounge Hall (Fountain Court)
8.30 p.m.—U* Civic Reception—Roval Hall

Thursday, June 30

9.00 a.m.—Reception Room open—Sun Pavilion
9.00 a.m.—Exhibition open—Sun Pavilion
9.30 a.m.—Ladies' Club open—Prospect Hotel
9.30 a.m.—Pathological Museum open—Roval Bath Hospital
10.00 a.m.—Scientific Sections
10.00 a.m. to 12.30 p.m.—L Coach tours
L Orchestra and coffee—Lounge Hall
2.00 p.m.—Treasurer's Cup Golf Competition—Panama Golf Course
2.00 to 5.30 p.m.—U Coach tours
2.30 p.m.—Demonstration and tour—Roval Bath Hospital
3.00 p.m.—*Roman Catholic Service, St Joseph's Church
4.00 p.m.—Division Garden Party—Majestic Hotel
Melbourne Chess Competition—Prince of Wales Hotel
7.30 for 8.00 p.m.—Annual Dinner—Majestic Hotel
Theatre
Bridge

Friday July 1

8.30 a.m.—Annual Breakfast of the Medical Prayer Union—Harrogate Hydro
9.00 a.m.—Reception Room open—Sun Pavilion
9.00 a.m.—Exhibition open—Sun Pavilion
9.30 a.m.—Pathological Museum open—Roval Bath Hospital
9.30 a.m.—Ladies' Club open—Prospect Hotel
10.00 a.m.—Scientific Sections
11.00 a.m.—L Tour of Royal Baths
L Orchestra and coffee—Lounge Hall
2.00 to 6.00 p.m.—U Coach tours
2.30 p.m.—Demonstration and tour—Roval Bath Hospital
5.30 p.m.—U Tour of Royal Baths
8.30 p.m.—Popular Lecture—Roval Hall

GENERAL MEDICAL SERVICES COMMITTEE

A meeting of the General Medical Services Committee was held on Feb. 17, with Dr. S. Wand in the chair. The committee faced a formidable agenda, more than enough for the entire day which it devoted to the meeting, and it was agreed that the Executive Subcommittee already existing should be enlarged up to 11 members, and in addition to considering matters referred to it by the main committee should deal with matters of urgency in the intervals between sessions.

The chairman stated that the Ministry desired to settle to the end of the current financial year (March 31) the sum which should go to each executive council for the nine months. In spite of all attempts to avoid it there had been inflation of lists and areas which had been careful in this respect were likely to be in a less favourable position than areas which had not. The suggestion of the Ministry was that the number of persons in an executive council area who had signed on should be taken, and one-third of the difference between such number and the total population should be added, giving the basic figure for the computation of the pool, and that the maximum should be 98%, so that any area which showed a higher figure would be brought down to that level.

Some discussion took place on the accuracy of estimates of the total population and whether ration cards would not offer a more reliable method than the Registrar-General's computation, but the committee agreed to accept the 98% proposal as a temporary arrangement for the nine months and to set up a subcommittee of four to investigate deflation of lists or, in other words, the accuracy of lists in relation to population.

Training Grants for Assistants

The method of apportionment of grant as between principal and assistant has been explained in a statement issued by the Ministry to all executive councils. A motion from Cheshire was before the committee to the effect that the scheme as at present constituted was open to grave abuse and ought to be remodelled, and that a committee of investigation ought to be set up to consider the suitability of practitioners for accepting assistants as trainees.

Experiences were exchanged among members of the committee, especially on the practice of local medical committees in determining the eligibility of practitioners to participate in the scheme and the value of representation of the universities. It was stated that in some areas most of the applications for assistants were from principals who were compelled either to "shed" patients or to take an assistant, and that such principals could hardly have time to devote to training. A county was mentioned in which an application had been received from a practitioner with a list of 6,000. Some guidance was necessary to ensure that local medical committees worked on uniform principles.

It was agreed to set up a small special committee to consider this matter and, as it was desired to get the university point of view to ask Sir Henry Cohen, chairman of the special B.M.A. Committee on Postgraduate Education, to be a member of it, the other members being Dr. J. B. Bennett (chairman), Dr. A. T. Rogers, Dr. W. D. Steel, Dr. S. A. Winstanley, and Dr. W. Woolley. The Minister's "guidance" circular was approved provisionally and pending the report of this committee.

Legal Representation before Medical Service Committees

Dr. R. Forbes, secretary of the Medical Defence Union, attended in support of a letter which the Union had addressed to the committee drawing attention to the desirability that practitioners appearing before medical service committees should have the right to have legal assistance. He said that it had been the policy of the late Insurance Acts Committee that legal representation should be given neither to respondent nor to complainant, but as a result of changes this policy ought to be reviewed. Practitioners were now dealing with a class of patients likely to be more litigious, and an increasing number of doctors were being arraigned on alleged breaches of terms of service closely akin to negligence. If these doctors appeared without legal assistance some of them through unfamiliarity with legal procedure might do their case harm and unnecessarily disclose material which might suggest to the complainant that he should pursue the matter in court. Under the regula-

tions a doctor could be brought before the committee on a charge of negligence, and it was not fair to expect him to defend himself without skilled aid.

In the course of discussion it was suggested that in police court cases the appearance of a solicitor with the defendant often resulted in heavy weather being made of the case, that a case would take on a fresh importance if there was legal representation, and that this magnification might be reflected in the penalty. The view was strongly held that the domestic type of jurisdiction was most suitable in these cases.

It was finally agreed that inasmuch as in about a year's time the committee would be reviewing procedure under the Act including that of the Medical Services Committee, it should then examine the position as further experience revealed it, being informed in the meantime of what took place on these committees, and on this understanding no move should be taken at present to alter the arrangement.

Constitution of the Committee

The committee devoted some time to considering its own constitution. It was agreed that in future it should consist of 33 members elected on a territorial basis by local medical committees, 6 elected by the Representative Body, 6 by the Annual Conference, 5 *ex officio* members, 3 or 4 nominated by other bodies with which it is desired to be in liaison, and up to 3 co-opted members if necessary to secure representation of a particular class, making a maximum possible total of 57 members.

A plan for the election of the 33 directly elected members on an area basis which gave as uniform an allocation of seats as possible to different parts of the country was approved.

It was agreed that the Annual Conference of Local Medical Committees, instead of being held in October, as was the old Panel Conference, should be held from next year onwards some time before the Annual Representative Meeting, probably in the month of June.

Many other matters remained on the agenda at the end of the day, and several were referred to the Executive. A report was made on the setting up of the Joint Committee (with the Central Consultants and Specialists Committee) to consider matters of interest to general-practitioner specialists. A difficulty appeared to arise with regard to a number of medical men and women engaged in hospital work who are strictly neither general practitioners nor specialists, such as permanent medical officers in the infectious diseases service, a proportion of tuberculosis officers, and some medical officers from local authority hospitals. Of a certain category, both whole- and part-time, it cannot be said that they are of full specialist status, and the fear is that the authorities may introduce specialists into this intermediate grade, making it a repository for specialists and for some who combine general practice with a specialty. It was stated that the Joint Committee, which was meeting this Ministry, was fully alive to this problem.

One outstanding matter before the committee is the Report of the Working Party on Midwives, on which the Association has been asked for its observations, via the General Medical Services, the Public Health, and the Consultants and Specialists Committees.

FELLOWSHIP FOR FREEDOM IN MEDICINE POLICY AND ACTION DECIDED

The second general meeting of the Fellowship for Freedom in Medicine was held at Caxton Hall, Westminster, on Feb. 1. Lord Horder presided over a gathering of about 500. He was supported on the platform by Dr. R. Hale-White, vice-chairman, Dr. E. C. Warner, honorary secretary, Mr. R. T. Payne, honorary treasurer, and other members of the executive.

Lord Horder said that the membership was 2,200—in London 580, and 1,620 in the provinces. The Fellowship had made a general appeal for members, but had been recruited by personal contacts, and the result was not unsatisfactory. It was seeking still informally, to set up local groups. A successful provincial meeting had been held at Cambridge, and others were projected.

It was obvious, he said, that since the inaugural meeting the general situation had deteriorated. The more need for it

llowship! Inquiry was often made, "What are you going to do?" The logical reply was, "Come in and help us to decide." If the Fellowship did all the things it was asked to by correspondents it would spend itself on petty, trivial action which led nowhere. Certain basic proposals would be acted before the present meeting.

The moral effect of the Fellowship's existence had been definitely good. It had had some effect on the B.M.A. As a member of the Council of that body his lips were sealed, but his colleagues who were also members agreed that there was something a little novel and very desirable about the business the Council which was not noticeable before. Things were a little more definite. Instead of saying, "At an appropriate time," the Council now said, "By March 15"—or whatever the date might be. Some letters were received calling for signification from the Association, but the directive from the inaugural meeting was that the Fellowship should work with her bodies as far as possible, and, after all, the Association is a big machine through which, up to now, the profession had voiced its views. There had also been moral effect outside the country. The Americans, who were becoming alarmed at the same thing happened to their profession, had shown much interest in the Fellowship's existence, as the London letter of the *Journal of the American Medical Association* testified. Some people said that moral effect did not count at the building up of the medical profession over 2,500 years, but that in solidarity and progress and continuity of tradition there was nothing to touch it, had been the result of moral effect. "It is silly to say that moral effect gets you nowhere. What else gets you anywhere?"

Constitution

Lord Horder went on to say that a number of letters had been received from members and potential members asking whether the Fellowship was going to be a trade union. At the first meeting he had said something, quite irresponsibly, about it. He was voicing his own views when, after asking whether it should be a trade union, he added, "God forbid!" He could not retract that, but letters had come in saying they could not get anywhere unless they were a trade union. That was for the meeting to decide. If it did not become a trade union the Fellowship would lose some members; if it did, it could lose a great many more. For his own part, if the Fellowship did seek trade union status, he could not continue in the chair. That would not be naughtiness or petulance on his part, but rank disappointment of such magnitude that he could just go out and grow his cabbages. It would mean a real cause, and he was not very good at helping lost causes. In any case it appeared that the medical profession, being neither masters nor workmen, could not effectively adopt trade unionism. But the question of trade union status for the Fellowship had been considered in relation to the constitution, and he would put it to the meeting.

The legal adviser (Mr. Moir, of Messrs. Withers and Company) explained the legal position with regard to trade union status, and one speaker argued that as nearly all of them were in the H.S. they were surely "one body against the Government" and therefore entitled to trade union privileges. But the feeling at the meeting was overwhelmingly against such a policy. In reply to one or two who expressed themselves still dissatisfied, Lord Horder said that the matter was not closed. Things were changing very rapidly, and even a meeting of the Fellowship might take a different view in six months' time. He was not prejudging the future, but for the present the matter must be regarded as closed.

The meeting then discussed a memorandum of association in which the objects of the Fellowship were set out under headings (a) to (r). The first three were as follows:

- (a) To insist upon the preservation of the highest standards of medical practice.
 - (b) To protect the public and the medical profession from State monopoly in medicine.
 - (c) To preserve the ethical and professional freedom of the individual doctor in the service of his patients and to maintain the status of the general practitioner, including his financial security.
- Other objects were to oppose encroachments of the State, to define the limits of State medicine, and to support and protect the character, status, and interest of the medical profession generally.

Many suggestions were made from the meeting for improvements in wording, but the only one which was adopted was the substitution of "medical practitioner" for "general practitioner" in object (c).

The memorandum and articles were approved.

Repeal or Drastic Amendment

The first question of policy and action which was brought forward was whether the Fellowship should press for the repeal or, alternatively, the drastic amendment of the Act. Lord Horder said that they were agreed that it was a bad Act, but it was on the statute book, and to some of its sections there was nothing like the same dissent as to others. The question came down to what was practicable at this stage. If repeal were made the main objective of the Fellowship all its other activities would be small in comparison, and what would be the hope of success? (A voice, "None.") But they had had letters urging strongly that they should work for repeal as against drastic amendment—"amendment possibly so drastic that in effect when we have finished the job it will be emasculated and not the same Act, though it may remain on the statute book, as many dead Acts do."

Some speakers urged that they should go all out for repeal. Dr. C. E. Taylor (Purley) asked whether the Fellowship was prepared to accept "the nationalization of the family doctor." Dr. E. D. Broster (Wirksworth) thought that the Act should be attacked on general public grounds, saying that it had produced a sickness-minded population. It was an encouragement to every work-shy malingerer in the community.

The meeting decided by a very large majority to press for drastic amendment rather than repeal, and then turned to consider in what respects revision of the structure of the Act should be sought.

Minister's Powers of Appointment

Mr. Norman Lake urged that they should seek limitation of the Minister's powers of appointment, as, for example, to the Central Health Services Council and other administrative bodies. He cited Sect. 66 of the Act, under which

"Regulations may make provision with respect to the qualifications, remuneration, and conditions of service of any officers employed by any body constituted under this Act. . . ."

Why had the Minister been given these enormous powers? Mr. Bevan had stated that he was responsible to Parliament and must have sufficient control to ensure that the provisions were carried out. That sounded reasonable enough, but the real answer was to be found elsewhere.

Here Mr. Lake quoted an article written by the present Chancellor of the Exchequer some time before the present Government came into power. It was entitled, "Can Socialism Come by Constitutional Means?" and in it Sir Stafford Cripps suggested certain methods which must be adopted, as, for instance, that general planning and enabling Acts should be passed by Parliament and once passed should not be discussed by Parliament at all, but that the Acts should deal only with general provisions and the details should be decided by regulations. Sir Stafford Cripps also proposed that the right of appeal to the courts against a ministerial order should be abolished, and that the power of local bodies should be nullified by placing them under State-appointed regional councils, such councils to be filled by staunch party members who would see that ministerial orders were carried out efficiently. The close resemblance of the present Health Act to this forecast, said Mr. Lake, would be appreciated. The implication was complete party political control, and the doctors must be sacrificed and become mere pawns in the game.

The effect of Mr. Lake's speech was such that the meeting agreed without discussion that the Fellowship should strive for the limitation of the Minister's powers of appointment.

Teaching Institutions and Control

Mr. Reginald T. Payne proposed that the Fellowship should strive also for the exemption of undergraduate and postgraduate teaching institutions from the control of the Minister. He declared himself a critic of planning. When he saw these vast schemes of planning all his scepticism rose to the surface because so many of the schemes created more problems than they solved. His opinion of the Act was that it was the worst

that had been placed on the statute book affecting the medical profession. It "stank of dictatorship." The battle was one of doctors versus politicians. "When the Government gets legislative diarrhoea the body politic is weakened, and astringent action is called for. We are hoping to furnish that astringent action."

A good health service, Mr. Payne continued, could be maintained only if there was a healthy independent profession of medicine outside the State Service. Under the present scheme all hospital buildings belonged to the State. All medical teaching was carried on in such institutions. No comparable state of affairs existed in any other faculty. He mentioned the Central Health Services Council, with its 35 nominees of the Minister, against whom their own professional and educational leaders were in a small minority. The chairman of the council, a layman, had said recently that for too long the needs of the people had been subservient to the needs of medical training. What about the Royal Colleges, whose presidents—unhappy men!—were on that central council? The Colleges should represent the highest professional, educational, and ethical standards in the medical community. So far as he knew, none of the three presidents had joined the Fellowship. Medical education had been handed over to the control of the politician—a most dangerous and disastrous thing. If it continued, they might have to consider the establishment of independent Colleges outside.

This point also—the exemption of teaching institutions from the control of the Minister—was agreed to as a line of policy.

Ownership of Goodwill

Dr. A. C. E. Breach moved that the Fellowship should strive for the restoration of the ownership of goodwill in practices. It had often been said that the medical profession was the spearhead in the fight for the survival of the middle classes. The deprivation of goodwill struck at the very core of their freedom. The right to goodwill belonged to everybody, from the small shopkeeper up to the great stores, from the market gardener to the farmer of a thousand acres. It covered nearly all the professions, all the crafts. By giving faithful, attentive, honest service the giver had built up his goodwill. It had been said by the Government that what the profession was really fighting for was the right to sell the bodies of their patients. That was malicious nonsense. It was the right to pass on an introduction, and it remained for the patients to decide whether they liked the newcomer or not. It was true enough that the fight over this should have been waged last year, and they could never quite forgive their leaders nor themselves "who ran away from potential victory and succumbed to a simple threat of blackmail." They were told also that any fight on this point would be very strenuous, and that they would have no political support whatever. But it was their fight, and in waging it they were fighting the battle for the middle and professional classes everywhere.

The discussion on this point evoked some dissent. One member said that it was nonsense to talk about "selling patients," but what right had the doctor to take a capital sum for the services which he had rendered in the past and for which he had already been paid? Moreover, a man might sell his practice, not to the best person to carry on his work, but to the highest bidder. The profession was against canvassing, but what more effective method of canvassing could there be than to recommend a successor simply because a capital sum had been paid for his introduction?

Lord Horder said that the letters received on this point had rather stressed the impracticability of restoring ownership of goodwill, but that might be a defeatist attitude. There had been no enthusiastic mail in the other direction. Did the meeting wish this to be made one of the planks in the platform?

There were cries of "Yes," and the affirmatives had it by a large majority.

Other Points of Policy

Dr. Goodwill (Attleborough) urged the insertion of a clause permitting grants in aid ("contracting out") towards the cost of medical services in private wards of hospitals or performed for private patients elsewhere. Dr. Beare (Dorking) said that the profession had accepted the 100% inclusion only with the proviso that any members of the community, whatever their

income, should be entitled to obtain medical services, in part or whole, privately.

This point was agreed to, and on a related matter the chairman said that the right of a private patient to have his prescription dispensed under the N.H.S. would shortly come before a county court, where a patient was suing the Minister.

Dr. R. Hale-White briefly touched on the question of remuneration. The method favoured by the profession was an increase in the capitation fee for the first thousand on the list and a large increase in the present hopelessly inadequate betterment factor. When the decision was made he hoped it would not be subject to bargaining, but that the profession would state what it intended to have and considered fair, and would brook no other figure.

The final point concerned relations with other bodies. Lord Horder said that at the inaugural meeting he had declared that the Fellowship was no breakaway organization.

"If and when we are confident that the B.M.A., whether by reorganization or otherwise, and/or the Royal Colleges accept and carry out the obligations to the profession and the public for which we stand we can dissolve, but that time is not yet."

If they did not take the view that they were in definite and positive opposition to the B.M.A. they would lose perhaps 100 members; if they did declare that opposition they would lose perhaps four times that number. He was not suggesting that numbers should settle the matter; they were out for quality, not quantity.

"Is it your view, as it was in November, that at this juncture we do not oppose by any active steps the Association or any other body?" ("Agreed.") "Critical? Oh, yes. Ginger? Yes." (A voice: "May we say that we are out to capture the Association, peripheral and central?") "Well, I would not dissent from it as a long, long view, but it is not necessary. Reforms take place in bodies as old and adamant as the B.M.A. It depends who is there to help. Then our policy remains as it was enunciated at the first meeting."

Those present subscribed to this view by general applause, and the meeting terminated.

BASIC SALARY APPEAL

On July 5, 1948, two doctors who had previously been assistants to two partners practising in a northern town became third and fourth partners in the practice and were placed on the executive council's medical list. These two doctors applied for the basic salary. The first partner had 2,400 patients on his list and the second, who was doing part-time specialist work, had about 760. The third and fourth partners had 740 and 620 respectively—a total of about 4,500. The second partner resigned from the practice three months after the appointed day, and the executive council gave permission for his list to be divided equally among the three remaining partners, who then shared the receipts of the partnership equally.

Appealing jointly against the executive council's decision not to grant their application for basic salaries, the two junior partners contended that the annual income of the partnership had been reduced from £8,000 to less than £3,500. They considered that the total list of 4,500 was a small one for the partnership and that, unless the £300 were granted to them both, they would suffer hardship for the first few years while building up the practice. They stated that the receipts of the partnership still showed a marked decrease and the number of patients on the list provided an inadequate income. The executive council and the L.M.C. said that they had felt the applications should be considered in the light of the partnership. The two former assistants and the other partner shared equally the receipts of the practice; 4,500 patients were considered sufficient to provide an adequate income for the three doctors without undue hardship.

In deciding not to allow the appeals the Minister took account of the following facts: (1) The doctors could not be regarded as starting a new practice because they took over shares in the partnership. (2) They were suffering no loss of income due to the National Health Service, for prior to July 5 they were assistants. (3) As this was an equal partnership, the granting of the basic salaries would benefit the partnership as a whole and not these two doctors particularly, yet the capitation fee would be reduced in respect of their two lists only.

CONFERENCE OF REPRESENTATIVES OF SCOTTISH LOCAL MEDICAL COMMITTEES

An all-day conference of representatives of Scottish Local Medical Committees was held at B.M.A. House, Edinburgh, on Thursday, Feb. 10, 1949. Members of the General Medical Services Subcommittee (Scotland), Dr. Wand, Chairman of the General Medical Services Committee, and Dr. Stevenson, Deputy Secretary, also attended. Dr. William Knox, Glasgow, presided, and in his opening remarks explained that such opinions as the Conference might express would not be binding on anyone, but that they could and would be referred to the General Medical Services Subcommittee (Scotland). It would be useful in any case to know the consensus of Scottish opinion on a number of the matters on the agenda.

Eight motions on the agenda touched on the question of the capitation fee—which the Conference, without dissent, considered "grossly inadequate."

The principal debate on the subject centred round a motion by Perth and Kinross that payment should be by a fixed capitation fee; paid without deduction, with separate fees fixed for temporary residents, emergencies, anaesthetics, and other contingencies, plus a sliding mileage scale with a fixed unit value, plus an inducement payment where necessary.

Dr. McDonagh, who moved the motion, said the position at the moment was that they looked forward to adequate remuneration at the end of the quarter, but all they found was that the capitation fee they were promised was cut up and diverted into various channels. The present system produced the anomaly of practitioners all over the country getting different rates of remuneration for the same work. What the profession wanted to know was what they would get for a particular job.

Dr. Wand said that what they had to see was that the total sum received by the doctors in this country for the job done was the right one and that it was properly distributed. He described in considerable detail proposals likely to be made to the Central Conference on March 3.

The Perthshire motion was defeated by a large majority.

The Special Inducement Fund

During a debate on four resolutions on fixed annual payments and inducement payments Dr. Wand urged members of the profession to avail themselves of the Special Inducement Fund. Some men, he said, felt it was like making application for public assistance relief and that there was a means test, but he thought it was right and proper that those who administered the Fund should assess the needs of the applicant, which could be done only by assessing income. The number of applications under the Fund had been so small that nothing like a fraction of the Fund available had been expended. "I urge that anyone who knows of a case in which there is hardship should see that application is made to this Fund."

The Scottish Secretary, Dr. E. R. C. Walker, explained that the Department of Health's view on the Inducement Fund was that, as the name implied, it was intended to deal with types of area rather than just any case of hardship, as the Ministry now seemed to suggest. On his suggestion the Conference agreed that the matter should be referred to the General Medical Services Subcommittee (Scotland) to take up with the Department.

Dr. Wand's appeal arose on a motion by Aberdeen that the scope of the Inducement Fund should be widened and that it should be renamed in order that consideration might be given to applications for payment from the Fund in cases of special hardship.

Dr. Kellie Brooke on behalf of Kirkcudbright and Wigtown Local Medical Committee suggested that the following formula should apply to the whole of Scotland: Capitation rate multiplied by the number of patients, plus a fixed annual payment (where applicable), plus annual mileage payment, plus inducement payment, equals £1,500. His committee's difficulty was in knowing when an inducement payment was necessary and up to what level.

After some discussion, during which the figure of £900 net was mentioned by Dr. Wilkie Millar as being under considera-

tion by the Medical Practices Committee, the motion was withdrawn, the Conference approving the general principle involved.

Of six motions on the agenda on mileage payments, four were withdrawn. The first of the two remaining—that by Roxburgh, Berwick, and Selkirk, that mileage should be paid from a separate fund and not deducted from the Practitioners' Fund—was defeated on a vote. The other—by Inverness—that mileage for maternity services should be separated from ordinary mileage and should be paid on a running basis and not on a case basis, was referred to the Maternity Services Subcommittee.

X-ray and Diagnostic Facilities

Dr. Robertson, Edinburgh, spoke at length in submitting a motion that general practitioners should have direct access to x-ray facilities without the necessity of prior reference to physicians or surgeons at an out-patient department. His motion also asked the Conference to recommend that the possibility of employing radiologists and their equipment for the National Health Service should be favourably considered. The motion was on the agenda, he said, because of the action of a regional hospital board in the West of Scotland in rejecting such a proposal. If such facilities were available they would greatly enhance the work of the general practitioner. At the same time, however, it was realized that if such a proposal were carried it would embarrass radiologists, and for that reason they included the recommendation in the last part of the motion.

The resolution was accepted without a division.

There were two motions on the question of the provision of diagnostic facilities. The first, by Lanarkshire, proposed that diagnostic centres should be set up in all areas. Commending the motion to the conference, Dr. McArthur said it was hoped that such places would provide a centre where laboratory diagnostic procedures could be carried out for the local practitioners by qualified technicians. Others felt that radiological equipment should be available and that there should be an attendance of consultants at certain periods. The establishment of such centres would help to relieve the general practitioner of the extra work he had to do, especially in his surgery. The other motion, also by Lanarkshire, was a development of the first, and proposed that where a health centre was established all practitioners in the area, whether practising from a centre or not, should have available all consultant and diagnostic facilities provided therein.

It was pointed out that meantime the ruling of the Department of Health was that only the patients of those doctors practising from the health centre could be treated at the centre, the others being deprived of such facilities.

Both resolutions were unanimously accepted.

Expenses for Attending Meetings

There were five motions on the question of expenses in connexion with attendance at meetings of local medical committees.

In the course of the general discussion Dr. Wand intimated that the matter was to be considered at a meeting of the General Medical Services Committee the following week.

On behalf of the Highlands and Islands it was pointed out that many practitioners had to travel by sea or air to the mainland and were absent from their homes for two nights. It was claimed that in such cases a subsistence payment ought to be made in addition to travelling expenses.

Dr. Walker pointed out that Sir George Henderson at a meeting with the General Practices Subcommittee of the Scottish Negotiating Committee had undertaken to consider the possibility of the adoption of the Subcommittee's suggestion that travelling and subsistence allowance should be paid in the Highlands and Islands executive council areas.

Dr. Wand said he would look into the possibility that arrangements might be made for the payment of travelling expenses from the Central Fund, but he was not hopeful in regard to payment for subsistence.

The Conference remitted to the General Medical Services Committee a motion by Dumbarton on the deductions made in respect of assistants in assessing a principal's income for superannuation purposes.

By a majority the conference decided that the committee representing general practitioners under the National Health Service in Scotland in discussion with the Department of

Health for Scotland did not require more autonomy than had the similar body under the old National Health Insurance Scheme.

A large majority carried a motion moved by Edinburgh that the General Medical Services Committee (Scotland) should be formed by the election of representatives of each of the 25 local medical committees in Scotland. Other proposals in the motion—that the number from each local medical committee need not necessarily be on a population basis; that there should be *ex officio* members from the Central (National) Committee; and that the Scottish representation on the Central Committee should be by election from the members of the Scottish General Medical Services—were remitted to a subcommittee for further consideration.

The Conference referred to the General Medical Services Subcommittee (Scotland) a motion on the question of the preparation of a model scheme for the election of local medical committees in Scotland.

Other motions directly associated with the scheme which were discussed included a proposed free supply of medicines to private patients; certificates of incapacity required by employers; the provision of locums; telephone charges in rural practice; filling of vacancies in general practice; and the appointment of a committee at Scottish Headquarters to deal with the problems of general practitioners in Scottish hospitals.

Lastly, the Conference gave their unanimous support to a motion calling attention to "the very unsatisfactory state of the tuberculosis service throughout the country and particularly to the fact that open and infectious cases were kept at home in overcrowded houses."

Dr. Douglas Robertson urged upon the Conference the importance of the subject. Responsibility for the present position, he said, must lie at the door of the community, with the Minister of Health, and to some extent also upon the medical profession. "It is up to us to keep hammering away at the stone wall of complacency."

The Conference closed with votes of thanks proposed by Dr. Ian Grant, Glasgow.

PSYCHOLOGICAL MEDICINE GROUP

A meeting of the Psychological Medicine Group will be held at B.M.A. House on Monday, March 7, at 11.30 a.m. to receive a report from the Group Committee and to discuss matters of interest to members of the specialty. The main theme of the discussions will centre round the Hospital Index Cards 1 and 2 which have been introduced into mental hospitals for statistical purposes. Dr. C. P. Blacker, F.R.C.P., London, will address the conference in the morning on the value of the statistics to research in genetics, and in the afternoon Professor T. Ferguson Rodger, of Glasgow, will speak on the value of diagnosis in clinical records in mental hospitals. The Group Committee hopes that as many members as possible will attend, and extends a cordial invitation to all non-members of the Group who may be interested.

HEARD AT HEADQUARTERS

The First Thousand

The proposers of the plan to have a larger capitation fee for the first thousand on the list showed a certain anxiety lest the proposal be misunderstood. It scarcely seems possible for the most casual person to suppose that it benefits only the practitioners with small lists. Obviously it benefits all practitioners. If the augmented rate for the first thousand is 30s. (the figure is taken only as an example and for ease in calculation), it would mean an increase of £629 in the remuneration of the practitioner with only 1,000, as compared with the present rate of 17s. 6d., but it would also mean an increase of £629 for the practitioner with a list of 2,000, or 3,000, or 4,000. It is not therefore a scheme for having two classes of practitioners, one paid at a lower and the other at a higher rate. Nor does it mean two classes of Service patients, for the question whether a patient is within the first thousand or within a

subsequent thousand, or is on a short list or a long list, will make no difference than it does at present.

Echoes from Yesterday

In her posthumous book *Our Partnership*, recently published, the late Mrs. Sidney Webb makes some unkind references to the British Medical Association of forty years ago, at the time when she and her husband were campaigning for the abolition of the Poor Law. She speaks of the Association as representing, or being, "inferior medical practitioners fearing the encroachment of preventive medicine on physick mongering." Later, at the time of the Insurance Acts controversy, she speaks of the B.M.A. as having only one idea, to protect the interests of the worst type of medical man by a futile insistence on free choice of doctor. Mrs. Webb considered free choice an "obvious absurdity," as absurd as free choice of teachers by school-children or by parents—indeed, more absurd than free choice by parents would be. With her brilliant mind, Beatrice Webb combined sharp judgments on men and things, and the B.M.A. is in good company under her denunciations. For example, she refers to Mr. Churchill as "egotistical, bumptious, shallow-minded, and reactionary." Some prominent B.M.A. figures come into her narrative, including "the unfriendly Tory president of the B.M.A.," the allusion being to Dr. Macdonald, of Taunton, who was not President but Chairman of Council. Dr. Smith Whitaker, the B.M.A. secretary, also comes in. She says that he was not unfavourable to her plan for transferring Poor Law medical relief to public health authorities. She asked him, "Is the B.M.A. going to dominate the new service or is it not? If it throws itself at once on the side of the new regime then it will dominate it; if it opposes this development, the new scheme will organize itself as a rival." "That is what I tell them," said Smith Whitaker. Much traffic has rolled down Whitehall since those battles of long ago.

Dear Doctor

A doctor has received the following letter from a patient: "Dear Doctor X,—Two years ago you gave me some tablets to get my weight down, which I did (18 lb.). Now I find I keep rapidly gaining again—nearly 13 st. As I am only 30 years of age surely this is far too much. I put on about 2 lb. per week. May I have some more tablets, and I will stick to a diet again? I was wondering if it was possible to have some of the new stuff they use for jockeys and fighters that gets their weight down without a lot of diet. I would be quite willing to pay for it as a private patient, as I don't suppose it comes under the scheme. Perhaps you would let me know. I've only put on all this weight since Y. was born in 1944." This letter is in a rather different vein from others. There seems to be some doubt about what the N.H.S. can do.

In Favour

A correspondent tells us that having been placed on a short list of candidates for a vacancy on an executive council list he was asked by the chairman of the interviewing committee: "Are you in favour of the National Health Service, and how do you propose to carry out its projects in the area of the practice in the event of your appointment?" We do not know what his answer was; expediency would seem to have demanded "Yes" to the first part, for the chairman is said to be a prominent Socialist. In any case it is wholly undesirable that a candidate for a vacancy should be subjected to what can be interpreted as a political test. The chairman then asked: "As you are married and have children, how do you propose to arrange for the education of your family?" It is difficult to see what bearing this impertinent question can have on a doctor's fitness to practise in any area, and again we are left wondering—as the candidate was—whether political considerations prompted it. Is the approved answer, "At a State school"? What makes the matter worse is that both these questions were read out from a list, so presumably they had been carefully considered and represented a defined policy.

Contact Men?

We have heard a lot about contact men recently—those obscure catalysts facilitating transactions between the Govern-

agent and the public—and it seems that some people imagine their doctors to be in that category. Gone are the days—for them—of falling ill, seeing a doctor, being cheered by his keen interest in an important case, cured by his incomprehensible prescription. "Positive health" is their aim, and a line to their doctor will bring the resources of the State to their door. A doctor sends us a note that he received the other day: "Will you give Harold M. 4 week certificate put date Sat. 22, 1949, also will you give him a note for extra coal and a note for hirts vests and pants. . . . Another doctor sends us the following: "To Doctor X. Please may we have our tonics renewed 'One for Albert' (Cod Liver Oil and Malt and iron tonic), a tonic for Gran (80) to help her sleep and keep her good-tempered, and may I have some tonic capsules for James: he's 15½ and taking his school cert, something to keep him fit and energetic, and lastly may I have some capsules or something to keep the family fit and if I may have something to help me sleep (middle age you know) and thank you for all you've done in the past and all you'll be doing in the future."

Questions Answered

Trainee Assistant

Q.—*I applied to the local executive council for the employment of a trainee assistant. The assistant started on Dec. 1, 1948. Will his remuneration be paid from that date, the council being aware that the assistant started to train as from Dec. 1?*

A.—The grant is payable from the date on which the assistant takes up the appointment, or the date on which approval of the training grant is notified, if the appointment has been made beforehand.

Prescribing Spencer's Support

Q.—*Can Spencer's support for left inguinal hernia be obtained on Form E.C.10?*

A.—The Ministry's view is that this is not a truss but a type of belt, and therefore it cannot be prescribed on Form E.C.10 as the Third Schedule stands.

Basic Salary and Partnership

Q.—*Just before July 5, 1948, I purchased a half-share in a partnership in general practice. Both my partner and I applied for the fixed annual payment of £300 per annum. My partner's application was granted; mine was refused. Over 90% of the patients in the practice are on my partner's panel. In computing our quarterly cheque our local executive council deducted one-seventh of the number on my partner's panel before paying the capitation fee. Should they not have deducted the one-seventh from half the number of patients on our combined panel, as by the terms of our partnership agreement half the patients are really mine and the Minister undertook that partnership agreements would not be interfered with?*

A.—Normally, practitioners in partnership pool all their earnings and draw out from a common account in proportion to the share of the practice they hold. Unless some other arrangement was mutually agreed by the partners concerned, the fixed annual payment of £300 and the automatic adjustment of the capitation fee would be likewise pooled. Thus the executive council is correct in deducting one-seventh from the capitation fee in respect of the number of patients on your partner's list.

Examination of Traveller

Q.—*A well-to-do patient came to see me last week with a request that I should examine her, since she had to be certified as fit (especially in regard to tuberculosis) before being accepted to join a party at a Swiss hostel. I did not request a fee for this service, but it has since occurred to me that the scope of the service rendered was outside the National Health contract. Is this so or not?*

A.—You are required by your terms of service to render all proper and necessary treatment to one of your public patients. You are therefore debarred from charging the patient for the medical examination. But if the patient requires a medical

report for the purpose of joining a party at a Swiss hostel you can charge an appropriate fee, since such a report is not included among the list of medical certificates which are required to be given free of charge.

Circumcision

Q.—*Are circumcisions performed on babies considered to be under the terms of service of medical practitioners, to whom it is open to refer the case to hospital for operation, or can I charge a fee? The point arose in connexion with a baby a week old who had a tight foreskin, and I considered it necessary to circumcise the baby, though I was not given a medical aid form for that because I had been called to attend the mother. I claimed for attending the baby in addition on form M.20, but this was disallowed on the aforementioned grounds.*

A.—The view of the Ministry is that the remuneration payable to general practitioners must be inclusive of all treatment carried out which does not demand special qualifications or experience. It recognizes that there are various items of treatment which, while not regarded as being an obligation upon all practitioners under their terms of service, some practitioners will wish to carry out, but, having regard to paragraph 10 (i) of the terms of service, no extra remuneration will be payable where they do. Circumcision, infantile and adult, is held by the Ministry to be covered by the above ruling. If the patient, however, is not on the doctor's list or the list of his partner or assistant a fee may be charged in the ordinary way.

Claim for Compensation

Q.—*I have to pay interest and capital on a large sum of money borrowed to purchase my practice in 1946. I understand that payments on account of compensation are now being made. I should be grateful if you would inform me of the steps necessary to claim a payment on account of compensation due to hardship.*

A.—Under the Medical Practices Compensation Regulations, 1948, a practitioner who claims to suffer hardship by reason of the non-payment before the date of his retirement from practice or death of compensation to which he is entitled under these regulations may at any time submit to the Minister a request for immediate payment of the whole or any specified part of the compensation to which he is entitled or, if the amount of compensation payable to him has not been ascertained, for an advance payment on account thereof. Claims, giving full details of the grounds on which they are made, supported by such written evidence as is considered necessary, should be addressed to the Secretary, Department A.G.D. 3, Ministry of Health, Whitehall, London, S.W.1.

Anaesthetist's Fee at Confinement

Q.—*Is any additional fee payable for the services of a second doctor when required to give an anaesthetic at a confinement? What form should be used?*

A.—If the maternity service is being provided under the arrangements of the Act, it is the responsibility of the first practitioner to notify the local executive council on Form E.C.24 or 24A that he has called in a second practitioner to give an anaesthetic, and the executive council would then submit a claim to the local medical committee, which would decide the appropriate fee for the service. If, however, the case was a midwife's emergency, the fee for giving the anaesthetic is £1 15s. and should be claimed by the first practitioner on the official form of report submitted to the medical officer of health.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.
Non-County Borough Councils.—Dartford, Radcliffe (limited to future appointments), Wallsend.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

Correspondence

Payment of Clinical Teachers

SIR,—Would the problem of payment of clinical teachers not be best solved by a frank recognition of the fact that the appellation "whole-time teacher" is a misnomer? All such teachers are obliged to do clinical work, and their clinical responsibilities are identical with those of their colleagues on hospital staffs. Previously it was necessary to practise privately to gain an income from clinical work, and in consequence the universities invented the myth of the whole-time clinical teacher. The necessity for prolonging this pretence no longer exists. Why not say so?

A part-time salary as a teacher and a part-time salary under contract with a board of governors, with suitable restrictive clauses on both sides, would clear the air from every point of view. Clinical teachers of all kinds would then know exactly where they stood, the hospitals would be on proper terms with their staffs, and the universities would have lost nothing. Indeed, their anxieties as to the future of their salary scales could only be eased by such an arrangement.—I am, etc.,

Liverpool

CHARLES A. WELLS.

Loading the Capitation Fee

SIR,—Here we are faced with the problem of enabling the man with a small list—say 1,000 upwards—to remain solvent without diminishing the emoluments of the man with the big list, and at the same time keeping within the recommendations of the Spens Report. In order to do so it is necessary to consider the approximate expenses or outgoings of a sample of general practitioners taken throughout the country, which gives the following figures:

	£
Allowed for income tax purposes	757
Disallowable expenses	270
Income tax, housekeeping, clothing, etc. ..	862
Total ..	1,889

At the present rate of remuneration the doctor with 1,000 patients on his list would receive £986 if granted the basic salary, or £800 without. How can this class of doctor become solvent? There are several ways:

By loading the capitation fee to £2 per head for the first thousand. Is this possible? After much juggling, with the aid of my accountants we found it was *not*, because if the first thousand had a capitation fee of £2 per head, i.e., big enough to cover all expenses—it would be impossible to preserve equity with larger lists and still keep within the Spens Report. The following computation is therefore suggested:

No of Patients	Capitation Fee	Total	Balance Credit or Debit
1st 1,000	£1 10s	£1,500	Will require a basic salary or expenses allowance to meet his liabilities
2nd 500	£1 5s	£625	Just about covers his expenses
3rd 500	£1	£500	Has a balance credit of about £300
4th 500	15s	£375	Has a balance credit of about £500
5th 500	15s	£375	Balance credit increased but income tax much heavier
6th 500	10s	£250	Big lists require to be discouraged in future
7th 500	10s	£250	

List of 4,000 produces which is within £700 of present scale.

After many hours working on the problem it was decided that it is impossible in equity to others to make the man with 1,000 patients solvent except by basic salary or expenses allowance. The idea, therefore, was abandoned with regret.

What are the advantages of this method of meeting the situation? It would raise the average rate of payment for those men who on change-over from private to State practice, have now small lists, or whose geographical position renders it impossible to collect large ones, and make them solvent without interfering with the remuneration of the larger lists. It would meet the difficulty that the rate of expenses or receipts in the smaller practices is much higher. It would in all except

the 1,000-and-under lists enable the basic salary to be abolished except for new entrants and the aged, and also the Inducement Fund except in special cases. It would greatly help the young man starting in practice, who otherwise would find it difficult to make ends meet. It would tend to discourage the swollen lists and help in time to spread patients more evenly.

Disadvantages: It would tend towards laziness in some practitioners; but there are black sheep in every flock, and I am sure the percentage would be very small compared with the overall benefit obtained. The reason for the small list would also soon be known to the executive council, which would take what action it considered necessary where abuses were known to exist.

Alternatively by expenses allowance.—An expenses allowance sufficient to cover the minimum basic professional charges before a man can go into practice at all might be granted, in which case the capitation fee would be by way of "remuneration for professional services," the doctor's total emoluments being built up in this way with the addition of mileage, etc., where applicable.

Advantages: The young man just starting in practice would have enough to make ends meet until he attracted patients to himself. The elderly practitioner would be able to ease off and still pay his way.

Finally, there is the method suggested by me, published in the *Lancet* of March 22, 1947, which as a long-term view has much to recommend it but cannot be dilated on here.—I am, etc.,

Worthing, Sussex.

HAROLD LEESON.

Graduated Capitation Fee

SIR,—When in May last the profession astonished the world in general and Mr. Bevan in particular by its precipitate surrender it left unsettled, and in large measure undiscussed, nearly all the really important details of the Service to which it committed itself. One of these important details, itself closely linked with the question of remuneration, is the faulty distribution of general practitioners in relation to the population of the country.

Before the Service started it was possible for a doctor to earn a very satisfactory living with 1,000 patients if these were private patients of substantial means accustomed to look to their doctor for individual care and consideration and to pay him accordingly. And such a doctor might well put in just as long hours and devote just as much skill to his work as his colleague at the other extreme who worked a vast panel and contract practice in an industrial area. Each doctor had selected the type of practice he preferred, and neither would have felt at home in the other's shoes. All this is arbitrarily changed by the advent of the N.H.S., and while the doctor in the industrial practice is working harder than ever and is earning substantially more the man with the small list practising in the "over-doctored area" is facing stark ruin. From the public point of view the position is thoroughly bad, for it means that skilled man-power is to an extent being wasted.

All this was abundantly obvious years ago, yet nothing was done about it; and in May our leaders advised us—and we accepted the advice—to enter the Service trusting to the well-known benevolence of our new autocrat to smooth away the difficulties. This is one of the many really bad features of the N.H.S. Act, and one of which we must demand amendment as a matter of urgency. It is no solution of the problem to say, as some of the "planners" do, that it will be resolved in time by supply and demand reinforced by the Special Inducement Fund. Such a process would take 10 or 20 years, and in the meantime what is to happen to the doctor with the small list? Is he to be forced out of his home and the practice in which he has worked for years by economic pressure and to become a suppliant to this committee and that for permission to practise his profession in some district where doctors are scarce?

Under existing conditions the financial inducement is entirely towards numbers without regard to quality of work. The best income is to be earned by the doctor who is prepared to act as a sorting-room clerk, passing on his patients to hospital without even troubling to make a diagnosis. A few friendly words of reassurance, a suitable batch of certificates, a brief introductory note, and the responsibility is shifted in a very

few minutes without loss of goodwill. By this means very large numbers of patients can be dealt with. But are we really content to prostitute our skill and our training in this way? Arbitrary methods of control by way of direction, whether positive or negative, are highly obnoxious in a freedom-loving community, and must be resisted in the interests of the nation no less than of our own profession.

The basic salary is, of course, a half-hearted attempt to meet the difficulty of the doctor with a small list. It is objectionable in that it certainly constitutes a step towards State-salaried service and that it is wide open to abuses of various kinds. Mileage grants, even with the latest increases, are wholly inadequate to meet the needs of the practitioners in a sparsely populated area in that no account is taken of the time they are compelled to spend in transit. The Special Inducement Fund if fully applied would do little more than scratch the surface of the problem. It has, moreover, been badly publicized and to most doctors wears an unpleasant odour of charity.

What then is the solution of the problem of securing that in a reasonably short time doctors will be so distributed through the country that the public is adequately looked after and that each practitioner has a sufficient income without the necessity of taking on so many patients that he has no time to devote his skill to any of them? The arbitrary lowering of the ceiling from 4,000 to 3,000 or 2,500, coupled with a very substantial raising of the capitation fee, would no doubt solve one aspect of the problem, but it would leave large numbers of patients in crowded industrial areas without a doctor. It is, moreover, objectionable in that it constitutes yet another arbitrary interference with freedom.

There remains the method of the graduated or tapering capitation fee. For example:

A capitation fee of 35s. for the 1st thousand patients
A capitation fee of 30s. for the 2nd thousand patients
A capitation fee of 25s. for the 3rd thousand patients
A capitation fee of 12s. 6d. beyond 3,000 patients

This method has much to commend it in that it provides for all types of men and women practising in the Service. Those who prefer to limit their lists to 2,000 patients in order to deal with them fully and intimately are able to earn an adequate income, while those who delight in a large practice are rewarded for their popularity and their extra labours, but on a diminishing scale as the numbers on their list approach the limit of efficient work. Above all, the individual is free to make his own choice as to the type of practice he will have. He is free from the coercion and the arbitrary control which characterize the other methods.—I am, etc.,

Orpington, Kent.

A. C. E. BREACH.

SIR.—I would like to add my support to the plea of Dr. C. W. Warner (*Supplement*, Feb. 5, p. 59) for a careful consideration of the suggestion of the Secretary that a graduated capitation fee might go far to solve our present difficulties (*Supplement*, Jan. 15, p. 21). Dr. Warner, following Dr. Reginald Deane's review (Jan. 1, p. 5) of the financial rewards and responsibilities of general practice, makes the obvious point that it is quality as well as quantity that should be rewarded, but it is one of those obvious points that are so easily forgotten by the planners. Now, real quality in general practice cannot be assessed in figures; it is one of the imponderables, depending on personality as well as training and the fitness of the man for his job. Financial rewards will not create it. All we ask, therefore, is that the lack of them should not actively discourage it. That, however, is precisely what the uniform capitation fee, with financial rewards only for big lists, and no extras, is bound to do. There are some, especially in the prime of life, who may be able to "deal" with 3,000 patients, but should they be rewarded beyond those whose method it is to give more time, offer their patients the results, perhaps, of a riper experience, and perform services ranging from simple psychological explanations to items of minor surgery, the necessary skill for which they have acquired through the years? I suggest they should not.

Now, a graduated capitation fee, providing a reasonable income for the man who, by necessity or choice, keeps his list at about 1,500, and offers considerably less reward *per capita* if he increases it above that figure, will favour the type of practice that we can most approve, and the type that a con-

siderable proportion of the population have been used to in the past and have paid for at fees varying from 5s. to 10s. 6d. per visit, in fact the solid body of middle-class private practice by means of which we have for years subsidized, and made possible, our panel practice. These middle-class patients still expect—and in my submission have a right to expect—similar services under the State scheme. It is a fallacy of egalitarianism to suppose that the business man or university professor can be given the medical services he needs as quickly as the labourer. In the former case the whole mode of approach must be different to obtain and retain confidence, explanations of the illness are demanded more often, and alternatives of treatment and disposal more fully discussed, so that the doctor practising among the higher strata of society must of necessity spend more time to give equal service. This is a simple psychological fact known to anyone who has experience of different types of practice, and provision for the difference in the pay-sheet would go far to remove the present dissatisfaction and injustice. To obtain this, apart from a different capitation fee for persons of different income levels, with all the difficulties such a system would involve, the Secretary's suggestion would seem to offer the best prospect.

Nor should we be quite so opposed to payments for extra services. A high level of what is to be regarded as "general medical services" is not inconsistent with special payments for special services that a practitioner has made himself competent to render. Indeed, this is the only way to avoid the out-patient departments' being cumbered with work that can equally well be done in the surgeries, and younger practitioners' never acquiring the skill to render many services well within their potential powers. Varicose-vein and pile injections and paracentesis of the drum fall into this class, and a list could easily be drawn up that would have the general agreement of the profession and would encourage the practitioner used to giving as full a range of service as his competence allows to continue to do so, to the greater satisfaction of his patients with the State Service in which they now find themselves, and to his own added zest and profit. Incidentally, it is surprising how often State patients to-day wish they might be allowed to pay themselves for some extra service from their doctor which they have valued.

That abuses might occur is not sufficient reason for reducing general practice to a clerkship. Where are the regional medical officers who used to call and advise us on our problems under the panel, and who could surely still be chosen to carry our confidence and assist in working a Service both safe and satisfying? The fact is that psychology has been ignored—the psychology of patient and doctor alike—and variety in practice has been ignored, and until these fundamental errors are recognized and corrected the Service will not in any true sense have been born.—I am, etc.,

Wembley Park, Middlesex.

H. M. HARRIS.

SIR.—Years ago it was mooted wives and children were to be put "on the panel" at a lower capitation fee than that for the wage earners. Do I rightly remember that the B.M.A. thought this "a wrong principle," for "a wife would need just as much treatment as a husband and extra numbers did not change that fact"? Have I read letters of honoured colleagues, here and in the Dominions, affirming that justice required payment per item of service?

Is it true that practice expenses (mileage apart) are less per head for comparable service in the crowded areas? "Tell that to the marines" would be a fair if rude reply. If the ratio of expenses per head to total income is in fact less in the industrial areas, that, I suggest, is due to the miserably poor quarters in which my hard-working colleagues of slum districts live and work compared with the elegant, if not palatial, homes and gardens of many of our country brethren.

I am sorry for the rural doctor who has lost income and I would be prepared to pay to help him, but not by the foolish method of making slum practice still less attractive and increasing the imbalance in the numbers of practitioners between town and country. One of the aims of the Health Act was to redress this balance, not by forcibly shoving human beings into the arms of conscripted doctors marched into the slums, but by making conditions in these less happy districts more inviting for doctors and patients. In poor districts there is, in fact, no private practice. I doubt whether any Government

would be so stupid as to affront the sensibilities of the poor whose doctors have to have lists of more than 1,000 or 1,500 by telling them that their doctors are to be paid less, on the average, for each of them than are the country doctors for each of their patients.

Limit lists, yes, to the number which population arithmetic, decent consideration for sentimental ties, and the average doctor's energy suggest is right, and beyond that do everything to help each of us to practise medicine with the self-respect which comes from good work; but do not turn the slum practitioner into a disgruntled man by making him feel, as he sees his last few patients at about 10 p.m., that he is getting less and less for more and more.—I am, etc.,

London, S.E.16.

J. A. GILLISON.

SIR,—In the *Supplement* of Jan. 15 under "The Secretary Reports," correspondents are invited to discuss the question of a graduated capitation fee. I am delighted that the B.M.A. is open to reconsider its former attitude to this question, as I feel sure that the adoption of such a method of payment would go far to solve our financial problems.

The present method of payment is based on the erroneous assumption that a city doctor with 4,000 patients does twice as much doctoring as a country doctor with 2,000. The error in this assumption lies in the following classes of work which the general practitioner normally does in the country but not in the town:

(a) Treatment of superficial sepsis, most injuries, including simple fractures, infection of varicose veins and haemorrhoids, circumcisions, tapping hydroceles, etc., which the city doctor sends to casualty departments

(b) The simple diagnostic investigations for which the city doctor uses hospital out-patient departments.

(c) The in-patient work in cottage hospitals (excluding specialist work) for which the payment by the regional boards is quite inadequate

I think it would be deplorable if this essential and natural difference between town and country practice were wiped out by the present unimaginative method of payment. The desire, or otherwise, to do as much as possible himself is an important factor in a doctor's choice of practice; and for a country patient to have to travel fifteen or twenty miles to the nearest casualty department to have his whitlow opened or his baby circumcised, because his doctor now has too many patients to spare the time to do it himself, would be a real hardship.

I certainly do not wish to see the idle or incompetent man subsidized by his colleagues, but I do think that some help should be given to the man starting in a new practice, whose difficulties are now very great indeed. I suggest therefore the following scheme of payment:

- (1) Basic salary for the first three years in practice, payable automatically, as a matter of right.
- (2) Standard capitation fee for the first and third thousand.
- (3) 175% of standard capitation fee for the second thousand.
- (4) 25% of standard capitation fee for the fourth thousand.
- (5) Really adequate mileage.
- (6) Higher payments by regional boards for staffing general-practitioner hospitals.

If the standard capitation fee is correctly linked to Spens the above method of distribution should give fair remuneration to all.—I am, etc.,

Ilfracombe, Devon.

A. STORMONT.

SIR,—Everyone should read Dr. C. W. Warner's letter (*Supplement*, Feb. 5, p. 59). Very clearly and rightly he draws our attention to the evil that results from the present capitation system. If we are to retain such a system of remuneration at all, as Dr. Warner points out, it must be graduated to increase the income of those with relatively small lists. This is an economic necessity, but it is even more important that we should break away from the damaging conception that a doctor's work can be valued everywhere by the simple addition of the numbers for which he has undertaken to be responsible.

The same number of the *Supplement* contains an account of Dr. Charles Hill's address to the Metropolitan Counties Branch, with his answer to a questioner in which he is so rightly insistent that we should demand nothing more or less than the

application of Spens. However, the application of Spens may not be so simple. In the first place it is difficult to ascertain just how far Spens is actually being applied at any given time. Then if remuneration is found to fall below the standard there is much more loss before it can be corrected. Worst of all, to secure such correction it looks as if the profession is now to be involved in a series of plebiscites and strikes which will lower its prestige and eventually give the public an excuse for complete nationalization and utter degradation.

Apart from several adjustments, including graduation, the capitation fee should be permanently attached to every known factor that affects the general level of professional remuneration. Then the onus of constant checking and vigilance to see that Spens is applied should not fall entirely on the profession. Its application should be automatic and all variations applied to the quarter's or year's remuneration, retrospectively if necessary.

The main difficulty at present in the way of all this is the profession's pathetic clinging to a handful of private patients. The Minister can always claim that any doctor with a small list is spending his time on private work rather than giving a correspondingly greater degree of attention to each *caput*. Public appointments need present no difficulty, as these could be assessed at so many *capita* apiece both for purposes of graduation and for the overall application of Spens. It is to be hoped that some such step will shortly be taken to secure the status of our profession for all time, yet if our leaders prefer to wage a constant battle to keep remuneration abreast of varying circumstances we must on every occasion support them to the extent of striking if we are not to be worn down to the status of pre-war farmers.—I am, etc.,

Eye, Suffolk.

J. SHACKLETON BAILEY.

Private Patients at Health Centres

SIR,—I venture to suggest that at some B.M.A. meeting in the near future some such resolution as the following should be discussed—and I hope adopted.

That it is the view of this meeting that the Minister of Health is acting in a despotic, inequitable, and contemptible manner in denying to certain citizens the right of access to health centres and the right to the provision of drugs by the State, for both of which rights they pay specific taxes.

This meeting presses for strong action to be taken in the House of Parliament to remedy these injustices from which some of His Majesty's loyal subjects now suffer.

I understand, Sir, that at the last Conference of Local Medical Committees the question of the right of private patients to attend at health centres was brought forward by delegates from Birmingham. I believe the matter was not strongly pressed because it was felt it might be to the advantage of the doctor if his private patients did not have access to any health centre. If this is true, Sir, it is a deplorable example of the philosophy which is destroying us. If we continue to decide the rights and wrongs of a matter according to its good or ill effect upon our own financial well-being we are indeed doomed to yet deeper degradation than we have yet suffered; and how seldom matter affecting us are ever discussed from any other angle is revealed by a glance at any issue of the *B.M.J.*

This question of the provision of drugs for private patients and their right to all the facilities for diagnosis and treatment available to the general public, is a matter of justice and right and should be dealt with accordingly, and not at all—either by us or by the Minister of Health—from any financial aspect.—I am, etc.,

Stafford.

JOHN FREW.

Frustration

SIR,—The National Health Service is now a *fait accompli*. We have lost the right to practise where we like without the permission of the local executive council; we cannot buy or sell the goodwill of a practice; we can only claim compensation for our loss of goodwill of our practices when we resign from the Service, and this most of us cannot do. Our young doctors have more than considerable difficulty in finding suitable posts.

We have been asked by our leaders to make this National Health Service a success, and this, I am sure, all reasonable

and conscientious doctors have tried to do; but now, at the end of six months of a National Health Service, can we truthfully say that the average general practitioner is happy and contented in his work? Financially many are better off, others worse off. In many, however, he is better or worse off, a subtle psychological change has taken place. There is a "to tell with it all" attitude of mind. "Why bother? Let them have what they want, and don't let us have an argument." And why this feeling of frustration and weariness? Our dental colleagues do not suffer from it: they are happy in their work and feel it is worth while practising conservative dentistry. Why? Because they have been adequately paid for their services. The average doctor is frustrated because he feels he is being exploited and there is nothing he can do about it. True, by increasing his N.H.S. list to a size which he is incompetent to deal with, he can make a good living. He might even employ an assistant to relieve him of some of his work, but a large list is still necessary if he is going to pay that assistant's salary. He can cut down his list to a reasonable number, but if he has no private practice to augment his income his former standard of living must be reduced.

There is going to be a Special Representative Meeting in March to discuss remuneration. Before this meeting, do let us forget about the recommendations of the Spens Report. After all they were only the incomes of various percentages of doctors of different age groups and in various conditions of practice. These in many cases were based on the incomes of N.H.I. practices, which were subsidized by good private practices in the days of private enterprise. Now the whole situation is changed, and no matter what service we give and what type of waiting-room and other amenities we provide for our patients' comfort we are all paid alike. Private practice has in many parts of the country ceased to exist.

Before this Special Representative Meeting in March let all the Divisions in the country be of one mind and instruct their representatives to demand an adequate capitation fee for every doctor no matter where he practises. Let that fee be 30s. per patient for the first 2,000 patients on the doctor's list, and a reduction for every 500 on the list above that number, so that it would not be worth while for anyone to take more patients on his list than he could attend to. Such a scheme would avoid our younger and impecunious colleagues being exploited as assistants in practices with huge lists, and would perhaps enable some of them to set up in practice on their own in what might then become "under-doctored" areas if lists were limited. It would also encourage our senior members to take the younger men into partnership.

Let us know what we want, and be determined to get it or resign from the Service, lest the standard of medicine we have been accustomed to in the past be lost for ever.—I am, etc.,

D. McLELLAN.

Aberdeen.

Fees for Advising on Films

SIR,—Are doctors acting as expert advisers in the production of films entitled to charge fees for services rendered? This question was recently discussed by the Medical Committee of the Scientific Film Association. The committee considered that heavy and onerous work, involving considerable expenditure of time by the expert, was inevitable in the making of a film, and unanimously passed the following resolution:

"Medical experts who give advice and assistance in the production of films are entitled to charge fees."

—I am, etc.,

KENNETH GOADBY,
Chairman, Medical Committee,
The Scientific Film Association.

Demands by Telephone

SIR,—Is there anything the B.M.A. can do to stop the scandalous and degrading practice the public have been encouraged into by the N.H.S. scheme of phoning up their doctor and calling out a monotonous list of articles they would like him to send on a prescription by post, as if he were a grocer or fishmonger? I am losing a number of registrations almost every week merely because I refuse to act as their stooge. Is there nothing the B.M.A. can do to defend us from this dreadful state of affairs where any unscrupulous member

of the public can blackmail a doctor with the implicit threat, "Either you put down what I tell you, or I'll take my card away and let you starve"?

What a brilliant victory we have won according to some of our representatives! Victory indeed!—I am, etc.,

London, N.W.4.

G. DAVID.

Public Health Salaries

SIR,—The proposals of the B.M.A. Negotiating Committee on public health salaries (*Supplement*, Jan. 29, p. 45) are very interesting, but I think you have made a mistake in including the 20% betterment factor, for several reasons.

(1) Whatever you say, it encourages the Ministry to think you will accept it.

(2) It makes it difficult to compare with the two Spens Reports, and to a casual observer makes the proposals appear higher than they are in relation to these.

(3) Further adjustments one way or the other will be made on the 1938 figures, not on these plus 20%, so 17% will have to be taken off your figures anyway when further adjustments are needed.

I think you should have put the scales at the same level as the two Spens Reports, and said that you would accept no advertisements which were not 20% above the scales. Also, why do those under Section VII (a) get £120 less than those under Section VI? Their responsibilities are as great or, I think, greater.—I am, etc.,

Yelverton, Devon.

JOHN SLEIGH.

Red Tape

SIR,—The other day I came across a beautiful example of red tape, ideally designed to steal the doctor's valuable time. I ordered the other day massage for a patient, a man of about 65 who is suffering from neurovascular disturbance in his legs, due to which the patient occasionally finds himself unable to walk. I believe that this complaint is also called intermittent claudication. To help the patient I informed the massage clinic that he should have treatment at home. I was informed, however, that treatment at home could only be prescribed by a specialist. In this case I did not consider it necessary to consult a specialist as the case was quite clear to me, and I cannot possibly see any useful purpose served in wasting the specialist's time just to get his signature to another superfluous certificate required by our masters and rulers.—I am, etc.,

Welwyn Garden City, Herts.

E. JACOBS.

Abolish Assistantships

SIR,—I wish most heartily to endorse the views expressed by "Assistant" (*Supplement*, Feb. 5, p. 64). The Association's interest in the younger members of the profession has always been minimal. The type of abject slavery euphemistically termed "assistantship" is a disgrace. Unfortunately, instead of our enlightened rulers seeking to eliminate the practice, they have created in the N.H.S. a system which makes it extremely difficult for a young doctor to start as a principal.

The entrant into general practice (and it should be borne in mind that he will often have been qualified for five or even ten years) is often forced to sell his personal life and professional soul to an older man with no hope of redemption for many years to come. Is this the victory for professional freedom that the Association claims to have gained?—I am, etc.,

"ANOTHER ASSISTANT."

Delayed Settlement

SIR,—Dr. J. V. Cope writes (*Supplement*, Feb. 5, p. 60) that it is time our leaders realized the urgency of our position. That they do not do so is emphasized by Dr. Hill's comment (p. 55) that the extension of provisional terms for a further three months after March 31, 1949, is inevitable. It may be inevitable now, but it should have been averted by resolute action on the part of our leaders as early as March, 1948. Patience in negotiation is not a virtue when it is exerted at the expense of tactical position.

The immorality of the present situation appears to have escaped notice. Large numbers of doctors, on release from the Services, accepted appointments on a temporary basis (the position of the "£1,000 p.a. specialists" is by no means unique). That the pay was inadequate was acknowledged, but correction,

in accordance with the Spens Report, was promised for Jan. 1, 1948, at the inception of the N.H.S. On Jan. 1, 1948, the N.H.S. was put back to July 5, and on July 5 doctors were asked to continue on a temporary basis. Now a further delay of three months is proposed and cannot be gainsaid.

While cleverly hooked holders of temporary posts contrive a hand-to-mouth living, the economic situation of the profession as a whole deteriorates steadily. Gone is the stability of pre-N.H.S. days when an increment of remuneration came from independent sources. The Government holds hundreds of thousands of pounds of doctors' money—free of interest, be it noted—and possesses the power to say how much will be paid back. Surely this is immoral.

The longer settlement is delayed the more precarious is the profession's position. What then if the ultimate proposals are unsatisfactory? Are doctors in a position to refuse the only terms which may make them financially solvent? The majority will be subject to crushing coercion by the Ministry and forced to accept terms which it appears may be very different from those mooted in 1948.

One may well ask how the situation has arisen. Is it merely the ineptitude which has characterized all other schemes of nationalization, or is it a deliberate expedient on the part of the Ministry? Whichever it is, it bodes ill for the profession, yet our so-called leaders appear to do nothing to fight this development.

The situation is strongly reminiscent of the "phony" war. Should we not say to our leaders—as did the Parliamentarian of those days—"In the name of God—go"? Men with the courage to face and act up to these responsibilities which nationalization has placed upon us are needed to protect the future of this profession.—I am, etc.,

Burton-on-Trent.

R. LUNT.

Pay for Holidays and Overtime

SIR,—There seems to be unanimous agreement among doctors that our rate of remuneration is inadequate. That is obvious from the correspondence columns of the *B.M.J.* But is the general public also convinced of this important fact? I very much doubt it, judging by the poor support we have received from the Press over this issue.

Recently it was announced that the health services have cost £58 million more than estimated, and that the Opposition in Parliament threatened a vote of censure because of this extravagance. Is it likely in this atmosphere that the Government will suddenly decide to increase the doctors' pay and further swell the growing expenses of the Health Service? One cannot help feeling sceptical about it.

Now that doctors have been degraded to the status of Civil Service clerks we must be prepared to be treated as such by our lords and masters. Complaints of our poor pay are not likely to be sympathetically received at a time when it seems fashionable for everybody to demand more pay and less work.

On the appointed day itself, when Utopia began, Mr. Bevan informed us that Conservatives were less than vermin. I should think that the great majority of doctors were, or at any rate are now, Conservatives in their political outlook. The conclusion is obvious. Why should we, less than vermin, dare to demand an increase in pay?

There are other demands we could make which are also very important and which would certainly receive more support from the Press. The first of these is holidays with full pay. This surely is an obvious privilege now that we are Civil Servants. It is most unfair that doctors who go on holiday still have to pay for locums. Can we imagine other Government employees being denied holidays with pay? They would soon go on strike if they were. I feel the B.M.A. should press this claim on the Government with all the vigour at their disposal and at the same time enlist the support of the popular press.

Secondly comes the question of hours of work. Why not an eight-hour day with extra pay for overtime? The details might be difficult to arrange, but in this age of ubiquitous planners it is surely not beyond the resources of the powers that be. As a corollary to this of course comes the five-day week with double pay at week-ends.

Thirdly, as we are Government employees, should not our surgeries and equipment be provided for us? The wonderful

new health centres were one of the lures of the N.H.S. Where are they now? Why doesn't the B.M.A. make more of a fuss about it? It was a false promise which the Government have no intention of fulfilling.

Finally, as cars are essential to our work, the expense of buying and running them ought to be paid for, and also a servant provided to look after the surgery and answer callers and the ever-ringing telephone.

These are issues in which we can expect the support of the general public and the Press—far more than bleating about our poor pay. What about it, B.M.A.?—I am, etc.,

Sheffield.

CLAUD C. M. WATSON.

Constitution of B.M.A.

SIR,—I am aghast to see it reported that at the Special Representative Meeting on March 30 there will be a proposal to form a "medical trade union." The medical profession, composed of men and women professing the highest ethical standards, cannot be a trade, for it demands that everyone shall give of his best without any regard to future remuneration for himself. There can be no first-class, second-class, or third-class patients: all must receive the best possible advice and treatment. This profession takes no regard of race, class, or creed. All patients are professionally equal in the doctor's sight. Up to the present time the doctor has been indispensable to the whole community in that without reasonable health life is but misery and travail.

Trade is essential and honourable, but it is not a profession. Therefore I would urge that the word "trade" be eliminated from any title associated with the medical profession. Being faced, as we are now, with enormous expenses and poor receipts, let us not submit to being demoralized by commercialism, for that would soon bring us down to ruin.—I am, etc.,

London, W.1.

WILLIAM IBBOTSON.

POINTS FROM LETTERS

Practice Earnings

Mr. DONALD M. O'CONNOR (Launceston, Cornwall) writes: ... Dr. H. K. V. Soltau's letter (*Supplement*, Jan. 22, p. 38) led me to take careful stock of my own position last week. I paid 152 visits and rendered 158 other services, making a total of 310 services. My gross earnings under the Act are of the order of £35 per week, so that the average gross payment per service works out at slightly less than 2s. 5d. Take away practice expenses and income tax, and my rate of pay is not greatly more than one gives as a tip to a porter on "our" railways. I travelled 282 miles, for which I am being paid, thus far, at the rate of 3½d. per mile—less than the cost of running my ancient cars.

The Cost of Hospitals

Mr. A. L. R. WALTON, F.C.A. (London, E.C.2), writes: Mr. J. P. Wetenhall (*Supplement*, Jan. 22, p. 38) gives a reply to Sir Frederick Menzies, but I venture to suggest that we are not to the root of the matter. I think the disquiet expressed by Sir Frederick is even more widely shared than either correspondent has implied. But there will be no beginning of relief, much less of resolution, before a sufficient basis of fact is cleared to examine the problem with confidence. ... Your issue of Jan. 22 carries (at p. 141) an announcement or notice of *The Hospitals Year Book, 1948*, with a figure quotation from Mr. Wetenhall's Financial Review in the *Year Book* itself. "The cost of the voluntary hospitals (802 complying with R.U.S. conditions) for maintenance alone rose by 115% between 1938 and 1946." "115%" is a sure reverberator. It astonishes us as surely as we were astounded by Sir Frederick's figure of trebled and still rising bed costs; we are like to be hypnotized by it as readily as we succumbed to the term "new look." The figure is of the utmost importance. As the latest and only authoritative group figure of its kind for the whole country that is available to the medical and hospital world, it is indispensable. Since it is true, no quarrel can be had with it or with its dissemination—so long as it is adequately protected in its integrity. I find it naked as all of us were born and in far unkindlier isolation, rest of all context. So presented, to the very ends of the earth where your *Journal* serves with such distinction—and, as a country, we depend not lightly on the confidence of our friends—I think you will agree that the figure might unintentionally mislead. I am satisfied that the quoted 115% increase of expenditure was incurred on 19% more available beds, 11% more in-patients, and 12% more out-patients, as well as by the advance of prices and improvements in terms of employment that are not so little known.

SPECIAL CONFERENCE OF REPRESENTATIVES OF LOCAL MEDICAL COMMITTEES, MARCH 3

MOTIONS FROM LOCAL MEDICAL COMMITTEES

ANGLESEY: That part of any increase of the Central Fund be devoted to diminishing the discrepancy between the remuneration of the rural, as opposed to the urban, practitioner.

BERKSHIRE: That the deduction of 1/7 made from the capitation fees of a doctor receiving the basic salary be increased to 1/3.

BRIGHTON: That after the word "case" in the second line of the recommendation the following words be inserted: "subject to the substitution of the figure 185 for the figure 170 in the last line but one of paragraph 10, and."

BIRMINGHAM: That the betterment figure asked for should be 185 and not 170 as suggested in Para. 10 of Part I of the Report. This will involve alterations in Paras. 10, 11, and 12.)

That payment for mileage should not be provided from the pool, but from a separate fund.

That Para. 16 of the Report should read: "Such conclusions lead the Committee to the conclusion that 50% of the additional money made available in the central pool by the application of a proper betterment factor and the adjustment in relation to the increased number of practitioners should be devoted to an augmentation of the capitation fee for the first 1,000 on practitioners' lists."

BUCKINGHAMSHIRE: That this Conference recommends that the Spens Report be accepted as a basis and the betterment figure demanded be 85%, which is the official Government figure of the increase in cost of living at the present time over 1939 levels.

CAERNARVONSHIRE: That the betterment figure should not be less than 70%.

That the Mileage Fund should be distinct from and in addition to the Central Practitioners' Pool.

CAMBRIDGESHIRE: That, whilst agreeing with the British Medical Association Memorandum on remuneration of general practitioners, in which it is suggested that the total pool should be increased by £16 7/12 million, this Committee considers that there should be a uniform capitation fee for the first 2,000 patients and that the payments for patients in excess of that number should be steeply and progressively down-graded.

That in view of the fact that under present Superannuation Regulations no medical practitioner can qualify for a pension who was over the age of 59 years on July 5, 1948, and also that only a small minority are physically and mentally capable of continuing in active practice up to the age of 70 years under the stress of modern conditions, the Government be urged, in the public interest, at once to make provision to enable all medical practitioners who so desire to retire from active practice at the age of 65 years with a pension economically adequate.

DEVON AND EXETER: That, with the undermentioned amendments, the foregoing memorandum which is accepted as a fair interpretation of the recommendations of the Spens Committee be approved as the basis of the general practitioner case, the General Medical Services Committee being instructed to press the Government as a matter of urgency to adjust general practitioner remuneration on the basis of the memorandum, the adjustment being retrospective to July 5, 1948.

(a) That Para. 10 of M22 should read as follows:

10. What is the fair betterment figure, taking into account both factors? When the Government laid down its figure of 20% at the end of 1946 the real figure of the increase for middle-class budgets was between 45 and 50%. In other words, when the Government laid down a figure of 120 in relation to 100 pre-war, the real figure was 145. The expert's figure for 1948 is 185. To put matters right, in relation to cost of living, the figure of 120 should now be replaced by 185.

(b) that line 7 on page 4 of M22 should read:

Adjust for 98% of population.

GALLOWAY: That any loss which may be incurred by an executive council in running a vacant practice until a new practitioner has taken over should not be paid for from the Local Medical Pool.

That in determining an appropriate betterment factor account should be taken of the increased demand for services.

That for the purpose of calculating superannuation the fraction of mileage deducted for expenses should be less than the 50% as calculated at present.

That the treatment of venereal diseases is outwith the duties that a practitioner should perform for his patient by contract with the executive council and that he should be remunerated by the regional hospital board under a scheme similar to that introduced during the war by the County Councils of Kirkcudbright and Wigtown.

GATESHEAD: That in any allocation of pool increments which may be secured consideration shall be first given to practitioners with small lists, having regard to the relatively high proportion of the practice expenses in such lists, but that no final decision as to distribution be made until more concrete information is available as to the increment likely to be secured.

HASTINGS: That, with reference to Para. 20 (of M22), as certain age groups automatically require more service than others, it is suggested that all children below the age of 5 years, and all adults reaching pensionable age, should bear a higher capitation fee. In this way the difficulties of residential areas might be solved.

ISLE OF WIGHT: That this Conference approves Part I of the General Medical Services Committee's Report on the Remuneration of General Practitioners.

That this Conference, while approving in principle the recommendations of Part II of the General Medical Services Committee's Report on the Remuneration of General Practitioners, considers that the character of services rendered by the average rural practitioner *vis-à-vis* his urban colleague is not met by the present mileage fund of £2,000,000.

That this Conference is of the opinion that adequate payment for the treatment of temporary residents should be made from the Central Fund.

That this Conference is of the opinion that, if any basic salaries are found to be necessary, they should be met from the Central Fund and not from the Local Fund.

That this Conference is of the opinion that a list of 4,000 patients is too great for a single practitioner to provide proper medical services, and is therefore all the more anxious to secure adequate remuneration for smaller lists.

KENT AND CANTERBURY: That this Conference is of opinion:

(a) that the method of remuneration be immediately amended so that a practitioner with a list of 3,000 patients shall earn a gross income of £4,500 subject only to deductions for superannuation, and

(b) that to achieve this result, remuneration be by way of tapering capitation fees as follows:

For the first 1,000 patients, 35s. per caput;

For the second 1,000 patients, 30s. per caput;

For the third 1,000 patients, 25s. per caput;

For the remainder over 3,000 patients, 12s. 6d. per caput.

(c) that, subject to the foregoing, the basic salary be reserved for such new entrants to the Service and special cases as may be recommended by the local medical committees.

LANCASHIRE: That there should be an adequate Central Practitioners Pool which should be liable for the payment of capitation fees only.

That separate pools should be formed and financed by the Treasury to pay mileage, basic salary, temporary resident treatment, and anaesthetists' fees.

MIDDLESEX: That this Conference is of the opinion that the figure of 185 should be substituted for 170 in all negotiations with the Ministry of Health affecting the betterment factor in accordance with the figures quoted by the expert advisers of the profession.

That, whilst agreeing that it is necessary to load the income of doctors with small lists, this Conference does not agree that the whole of any additional money should necessarily be allotted to the capitation fee for the first thousand patients on a doctor's list.

That this Conference cannot agree that the Government's superannuation contribution shall be considered as part of a doctor's remuneration or that any adjustment of the Central Pool shall be made therefor.

That this Conference request the General Medical Services Committee to investigate the method adopted to calculate population figures and to suggest alternative methods to relieve hardship to doctors.

NORFOLK: That this meeting regrets that the General Medical Services Committee has not obtained precise figures for increase

in practice expenses, and requests that this be done as soon as possible, as such can easily be obtained and made available if of use.

READING: That since the B.M.A. has employed an expert who had decided that the betterment factor is 85%, this is the figure that the B.M.A. should demand.

That the Minister be asked to define exactly what is included in the capitation fee and that, the capitation fee having been determined, no deductions whatsoever should be made from it.

SOMERSET: That the "basic salary" be abolished.

SOUTHAMPTON: That, with reference to the figure 95% mentioned in Para. 4 of M.22, this figure should be subject to review by the General Medical Services Committee from time to time.

STIRLING AND CLACKMANNAN: That this Conference congratulates the General Medical Services Committee on their work done in preparing and submitting their report on remuneration of general practitioners.

That this Conference accepts the Committee's report in full and approves of their recommendations.

That this Conference urges the General Medical Services Committee to take immediate steps to have their recommendations put into effect, or, failing this, to place before the Minister the resignation of the general practitioners.

WEST SUFFOLK: That mileage fees in respect of maternity services should not be payable from the Mileage Fund available for general medical services.

SURREY: That, when publicity is envisaged, betterment should not be expressed as a percentage to be applied to total remuneration, but rather as one betterment figure applied to net income and another applied to expenses allowances, in order that the public may not be confused.

That the additional money made available in the Central Pool should be devoted entirely to an augmentation of the capitation fee for the first two thousand on a practitioner's list.

EAST SUSSEX: That, in view of the fact that the expert's figure for 1948 is 185 in relation to 100 pre-war, this Conference considers that the figure of 185 is the only basis of negotiation, particularly bearing in mind the hardship which is being suffered by many members of the profession at the present time in consequence of the National Health Service Act.

That Para. 10 of the General Medical Services Committee's Report be amended as follows:

- (a) In line 7 substitute the word "can" for the word "could."
- (b) Delete the words from "to put it at its lowest" to the words "is 160"
- (c) In line 17 delete the words "something between 160 and."
- (d) In lines 19 and 20 delete the words "taking the most modest view."
- (e) In line 21 substitute the figure "185" for the figure "170."
- (f) In paragraph 12 of the Report, page 4, substitute "85%" for "70%."

That a time limit—namely, March 31, 1949—be set to the negotiations between the profession and the Minister regarding the adjustment of remuneration to general medical practitioners. That the General Medical Services Committee should ask general medical practitioners to place their resignations in the hands of the Committee forthwith, and, if the time limit is exceeded without the just demands of the profession having been met, the resignations of all general medical practitioners within the National Health Service should take effect on March 31, 1949.

WESTMORLAND: That, whilst supporting the General Medical Services Committee's memorandum M.22/1948-9 and its recommendations in principle, this Conference considers that a much larger sum than £2,000,000 should be set aside for mileage payments, in view of the fact that rural practitioners are prevented from having lists as large as is possible in urban areas because of the scattered nature of their practices, and that they should be recompensed for time spent in travelling.

That, when the capitation fee for the first 1,000 patients has been increased to the figure suggested in M.22/1948-9, the basic salary should be either abolished or, in the event of its retention, paid out of the Central and not Local Pools.

That it would appear desirable to inaugurate some scheme for the protection of practices when a vacancy occurs and

delay is involved in filling it, whereby neighbouring doctors should be allowed to accept patients only on a temporary basis during the interval.

EAST RIDING OF YORKSHIRE: That "85%" be substituted for "70%" in Para. 12 of the Report.

That, whilst appreciating the achievement of the General Medical Services Committee in obtaining an increased Mileage Grant, this Conference is of opinion that it is still far from adequate.

ABERDEEN AND KINCARDINE: That this Conference considers that a graded scale of capitation fees is essential for the equitable distribution of the funds available.

LEEDS: That the General Medical Services Committee be urged to employ a firm of accountants to assist them in preparing and presenting the case for increased remuneration.

Association Notices

MARCH

- 1 Tues. Health Centre Committee, 2 p.m.
- 2 Wed. Victor Horsley Memorial Fund Trustees, 10.30 a.m.
- 2 Wed. Dawson Williams Memorial Fund, 11.30 a.m.
- 2 Wed. Private Practice Committee, 2 p.m.
- 3 Thurs. Special Conference of Representatives of Local Medical Committees, 10 a.m.
- 3 Thurs. Special Meeting of Council, 6 p.m.
- 4 Fri. Library Subcommittee, 12 noon.
- 4 Fri. Science Committee, 2 p.m.
- 8 Tues. Central Ethical Committee, 2 p.m.
- 9 Wed. Publishing Subcommittee, 11 a.m.
- 11 Fri. Public Health Committee, 2 p.m.
- 23 Wed. Council, 10 a.m.
- 24 Thurs. Ethical Rules Subcommittee, 12.15 p.m.
- 29 Tues. Special Representative Meeting, 10 a.m.
- 30 Wed. Special Representative Meeting, 10 a.m.

Branch and Division Meetings to be Held

BOURNEMOUTH DIVISION.—At Boscombe Hospital, Tuesday, March 1, 8.15 p.m. Dr. Charles Hill: "The Present Position of the National Health Service." Questions will be answered.

HASTINGS DIVISION.—At Royal East Sussex Hospital, Hastings, Tuesday, March 1, 8.30 p.m. B.M.A. Lecture by Dr. R. D. Lawrence: "Diabetes in General Practice."

LANCASTER DIVISION.—At the King's Arms Hotel, Lancaster, Saturday, March 5, 7.30 p.m. Annual dinner. Dr. Charles Hill will reply to the toast of "The British Medical Association."

MARYLEBONE DIVISION.—At 26, Portland Place, London, W., March 3, 8.15 p.m. Agenda: Instruction of Representatives to Special Representative Meeting on March 29 and 30. All medical practitioners in the area of the Division are invited.

MID-ESSEX DIVISION.—At Chelmsford Rural District Council Chambers, London Road, Chelmsford, Sunday, March 6, 10.45 a.m. Dr. MacDonald Critchley: "The Crimes of Dr. Marcel Petiot."

NORTHAMPTONSHIRE BRANCH.—At Nurses' Home, Northampton General Hospital, Sunday, March 6, 3 p.m. Illustrated lecture by Dr. J. Arthur Gorsky: "The Medico-Legal Investigation in some Murder Cases."

NUNEATON AND TAMWORTH DIVISION.—At Red Lion Hotel, Atherton, Tuesday, March 1, 8.30 p.m. Dr. S. P. Meacock: "The Borderland of Medicine, Surgery and Dentistry."

RICHMOND DIVISION.—At Royal Hospital, Richmond, Tuesday, March 1, 3 p.m. Clinical lecture by Mr. Harold Dodd on a "Selection of Recent Advances in Surgical Practice." To be illustrated by lantern slides and a demonstration of actual cases.

STAFFORDSHIRE BRANCH.—At Town Hall, Crewe, Sunday, March 6, 3 p.m. Meeting arranged jointly by Crewe and North Staffs Divisions. Address by Dr. Charles Hill. All members of Divisions in Cheshire, Staffordshire, and Shropshire are invited.

SUSSEX BRANCH.—At the Pavilion, Brighton, Wednesday, March 2, 3 p.m. Address by Dr. H. Guy Dain.

WAKEFIELD, PONTEFRAC, AND CATFORD DIVISION.—At Wakefield General Hospital, Thursday, March 3, 8 p.m. Film: "Angina Pectoris." Discussion to be opened by Dr. John R. H. Towers.

Dangerous Drugs Act: Withdrawal of Authority

The Home Office announces that Dr. Alfred Leslie Clare Harter (Leeds) is no longer authorized to be in possession of or to prescribe those drugs to which the Dangerous Drugs Regulations apply.

BRITISH MEDICAL JOURNAL

LONDON SATURDAY MARCH 5 1949

JOHN HUNTER THE OBSERVER*

BY

H. S. SOUTTAR, C.B.E., D.M., M.Ch., F.R.C.S.

John Hunter was born in 1728 at Long Calderwood, a small state in Lanarkshire seven miles south of Glasgow, near the village of East Kilbride. He was the last of ten children, of whom seven survived childhood. Of them James, fourteen years his senior, entered medicine and joined his brother William in London, only to end from phthisis a career of brilliant promise at the age of 29. William, ten years the senior of John, was for five years a student at Glasgow, and at first was destined for the ministry. When he was 19, however, he joined Dr. William Cullen, who at the age of 27 had a busy practice at Hamilton, near Kilbride. They must both have been young men of enterprise, or they arranged that in each winter one of them should study medicine in Edinburgh or Glasgow while the other carried on the practice. In 1740 William Hunter attended Alexander Morris's lectures in Edinburgh, and in 1741, at the age of 23, he made up his mind to seek his fortune in London. Cullen went to Glasgow, where he became Professor of Medicine; but a few years later he moved to Edinburgh, occupying successively the Chairs of Chemistry, Institutes of Medicine, and the practice of Physic, and left a high reputation as a lecturer renowned for the clearness of his exposition.

William Hunter lived at first in London with Dr. William Smellie, another Lanarkshire man and a friend of William Ullens. Smellie had settled in London at the age of 42 after studying in Paris, and was just entering on a distinguished career in midwifery. He gave lessons in the art, using a real pelvis lined with leather for practical demonstration, and he was one of the first to stress the importance of accurate measurements. William Hunter remained with him only a short time, and became assistant to Dr. John Douglas and a surgeon's pupil at St. George's, where he worked in the dissecting-room. He visited Paris, and it is evident that he made great progress in anatomy, for in 1748 he established his own dissecting-room and advertised a course of lectures.

A Gift from Heaven

It was at this juncture that he was joined by his brother John, a raw red-headed Scottish boy of 20 who had so far given no signs of any ability, who hated books, and who was as evidently regarded as the black sheep of the family. To the amazement of everyone he settled down to his new life in the dissecting-room as one born to it. He produced beautiful dissections and delighted his brother William, who was rapidly making his way in the field of midwifery and to whom this unexpected assistance must have seemed a gift from Heaven. At the same time he was a rough

customer, and a curious point in his favour was that he was a favourite with the resurrection men, upon whom the dissecting-room was dependent for materials. It must have been a rough place for all modern antiseptics and preservatives were unknown, and dissection under such conditions was both unpleasant and dangerous and could be carried on only in the winter.

It is worth while pausing for a moment to consider these young men, Smellie, Cullen, and the two Hunters, and the country of their origin. Glasgow itself was only a small town of 15,000 inhabitants, and the corner of Lanarkshire from which they all came must have been primitive in the last degree. Beyond this stretched the Highlands, a country without roads and in a state of barbarism beside which Afghanistan would seem civilized. Moreover, just before this, in 1745, the Highlanders had invaded England in a destroying horde, pillaging Glasgow itself and all the surrounding country on their way. It was such an environment, and not the quiet amenities of a university town, that threw up four of the greatest leaders in the history of medical science.

Hunter's Medical Pupilage

In the summer of 1749 by his brother's influence John Hunter, now 21, became a pupil at Chelsea Hospital of the great Cheselden, now nearing the end of his career. On his death in 1751 Hunter became a surgeon's pupil at St. Bartholomew's Hospital, where Percivall Pott was rising to fame. Finally, in 1754 he returned as a pupil at St. George's Hospital, where he was afterwards to serve as a surgeon for twenty-five years. In 1756 he was appointed house-surgeon, but after five months he gave it up in order to devote his time to anatomy. His interest now extended to the anatomy and physiology of the whole animal world, and he worked from morning to night dissecting every animal he could find. Naturally his health gave way, and in 1760 after an attack of inflammation of the lungs he obtained a commission as staff surgeon in the Army and saw three years of foreign service at Belleisle and in Portugal. His health recovered, and in 1763, at the age of 35, he returned to London and set up in practice as a surgeon in Golden Square.

While waiting for practice he again established a dissecting-room and a school of anatomy, devoting the greater part of his time to preparing specimens and teaching students. In order that he might also study living animals and their functions he took a plot of land "two miles from London at a place called Earl's Court," and there he built a small house in which he could indeed live but which was the centre of a most extraordinary zoo.

*The Hunterian Oration delivered before the Royal College of Surgeons of England on Feb. 14, 1949.

Over the front door was the wide-open mouth of a crocodile. In the garden were many strange animals, including a couple of leopards and a pair of buffaloes which were occasionally put into harness and driven round London. A jackal, a zebra, an ostrich, a young bull, and many smaller animals all lived together in perfect harmony.

It was scarcely an orthodox way to develop a surgical practice, but he was acquiring a vast knowledge of comparative anatomy, and his contribution to this new science was recognized in 1767 by his election, at 39, to the Royal Society. In the same year he ruptured his tendo Achillis, and this irrepressible man not only treated himself successfully on ultra-modern lines but performed a whole series of experiments on dogs to see how tendons united. Next year he was elected a surgeon on the staff of St. George's Hospital, and he now moved to his brother's old house at 42, Jermyn Street. It was a good house, suitable for a surgical practice and into which he could take, as was the custom, a number of pupils in surgery. Among his pupils were several who rose to great distinction, and we find the names of Astley Cooper, Abernethy, Clive, and Edward Jenner. But it must have been a strange house, for already Hunter's one absorbing interest was in his collection. It grew until every available room was filled with strange specimens, dry and bottled, covering the whole animal and vegetable kingdom, whilst in the passage a giraffe appeared to be emerging from the floor below. How a surgical practice could be developed under such conditions is a mystery, but it gradually grew to large dimensions. Practice was, however, always a secondary consideration, and every penny that could be spared went to the collection.

Hunter's Daily Life

Of Hunter's daily life Ottley has given such a perfect description that I cannot do better than to quote it.

"He commenced his labours in the dissecting-room generally before six in the morning, and remained there till nine, when he breakfasted. After breakfast he saw patients at his own house until twelve, when he made a point to set forth on his rounds, even though persons might be waiting for the purpose of seeing him. . . . He dined at four, then the fashionable hour, and gave strict orders that dinner should be ready punctually whether he was home or not. He was a very moderate eater, and set little value on the indulgence of the palate. During many of the later years of his life he drank no wine, and very seldom remained long at table after dinner, except when he had company. After dinner he was accustomed to sleep for about an hour, and his evenings were spent either in preparing or delivering lectures, in dictating to an amanuensis the records of particular cases, of which he kept a regular entry, or in a similar manner committing to paper the substance of any work on which he chanced to be engaged.

"When employed in the latter way, Mr. Bell and he used to retire to the study, the former carrying with him from the museum such preparations as related to the subject on which Hunter was engaged. These were placed on the table before him, and at the other end sat Mr. Bell, writing from Hunter's dictation. The manuscript was then looked over, and the grammatical blunders, for Bell was an uneducated man, corrected by Hunter. At twelve the family went to bed, and the butler, before retiring to rest, used to bring in a fresh argand lamp, by the light of which Hunter continued his labours until one or two in the morning, or even later in the winter. Thus he left only about four hours for sleep, which with the hour after dinner was all the time he devoted to the refreshment of his body. He had no home amusements, no cards, for the relaxation of his mind; the only indulgence of this kind he enjoyed consisted in an evening's ramble amongst the various denizens of earth and air which he had congregated at Earl's Court."

It was about this time that Hunter, at the age of 43, married Anne Home, the daughter of an Army doctor and

29 years of age. She was a woman of great charm and considerable social distinction, the friend of Haydn, Madame d'Arblay, and Mrs. Montague. She was something of a poetess, and wrote the words for Haydn's *Creation* and the song "My mother bids me bind my hair," which in Haydn's setting is immortal. She must have had a difficult life, but she was devoted to Hunter, and her appreciation of his work is shown in her touching epitaph inscribed on his memorial tablet in St. Martin-in-the-Fields. Only two years after their marriage Hunter at the age of 45 had his first attack of coronary thrombosis, and though he made a good recovery the fear of angina shadowed the rest of his life. It only drove him to greater efforts to complete his work, but, whilst his indomitable courage demands our unstinted admiration, perhaps we owe a greater debt than we realize to Mrs. Hunter in the background.

In 1783 the lease of his house in Jermyn Street came to an end, and he bought the lease of a large house on the east side of Leicester Square and a house behind it in Castle Street, now Charing Cross Road. On the ground between the two he built a lecture room and a museum large enough to house his immense collection. In the Leicester Square house were his consulting-rooms, whilst the Castle Street house was devoted to dissection and the preparation of specimens for the museum. This back entrance must have seen some strange sights, from the visits of resurrection men to the arrival from Earl's Court of the skeleton of O'Brien, the Irish giant, which now stands beneath this very roof. A vast staff was employed, and between the cost of this and the cost of the building Hunter expended on his collection more than £70,000. For two years this extraordinary man lived and worked in these extraordinary surroundings, a constant sufferer from attacks of angina, and in the end, at the age of 65, its victim.

Hunter's Outlook

John Hunter was above all things an observer. He was devoured by a passionate desire to know how things were made and how they worked, and it was typical of the man that he realized that the only way to do this was to look and see for himself. Indeed, he summed up his whole outlook on life in his famous aphorism, "Do not think. Try. Be patient, be accurate." To us who grow from our cradles in a world of laboratories and research it is difficult to realize how revolutionary such a proposal must have seemed to his contemporaries. For most of them all knowledge was contained in tradition and there was something almost indecent in attempts to dissect Nature. To doubt the word of Aristotle was as perverse as to doubt the book of Genesis and was to uproot the foundations of all human knowledge. It is a mistake to suppose that the objections centred only on human dissections and the resurrection men; they went far deeper into resentment at any interference with what were regarded as established facts.

It was through this veil of prejudice and ignorance that John Hunter and his museum tore so completely, and it is this achievement which so amply earns our gratitude. The specimens in his collection are themselves of value, but of greater moment is the lesson they teach us of the value of observation.

The Value of Observation

What precisely do we mean by observation, and where lies its value? In a sense every one of us is the product of observation, for each of us is moulded by his reaction to environment. But scientific observation means something more than this. First of all it means inquiry, and inquiry means that we have asked a question. Something

has happened that we do not quite understand and our curiosity is aroused. We try to produce the same event and to follow the train of circumstances which led to it. Then—and it is here that the genius of the observer appears—we modify the circumstances and see the effect upon the result. Nine times out of ten they all fit together into well-known categories, and, though our curiosity is satisfied, that is all. But just once in a while things do not quite fit together, and then if we are fortunate and have infinite patience and persistence we may find a chink through which we may peer into one of Nature's secrets. Let me give you some examples.

In 1785 Henry Cavendish by passing an electric spark through common air succeeded in getting the oxygen and nitrogen, substances with which he was only vaguely acquainted, to combine together to form nitric acid. There was, however, a small residue, less than 1%, of gas left, which he surmised might be a gas of a different nature. A century passed before Lord Rayleigh astonished the world by the discovery of argon, the unknown residue which Cavendish with his primitive apparatus isolated. His observation was perfect, but no means then existed for its interpretation. Yet the observation itself was well worth while. The foundation of a building must be laid before the keystone is placed in the arch.

You are all familiar with the spectrum, that single octave in the vast range of ether waves which we call light and by which we see the world around us. To most of us it is just a series of brilliant colours, but to the physicist it consists of a vast number of narrow lines, each the product of a single length of wave, of a single pure tone in the harmony of light. These lines form definite groups, and each group is the luminous signature of a burning element which by this signature can be identified even in a star a million million miles away. Thousands of these lines had been measured so that their position was known with extreme accuracy, but in spite of endless attempts no connexion between these measurements could be discovered.

In 1885 a little Swiss schoolmaster in Basle named Balmer felt an urge towards research in physics and consulted Professor Hagenbach about what he should do. The professor, with a smile I imagine, suggested that he should find the relation between the measurements of the four principal lines of hydrogen. The wave numbers of these lines—that is, the number of waves in a centimetre—are 15,233.22, 20,564.79, 23,032.54, and 24,373.06.

It did not seem a very hopeful problem, but to the amazement of everyone Balmer returned in a few days with the answer. If you divide all these numbers by 109,677.69 the result can be written in the simple form: $(1/4-1/9)$, $(1/4-1/16)$, $(1/4-1/25)$, $(1/4-1/36)$. Obviously these are only the first four of a series, and since his time fifty more lines have been discovered, each taking its exact place in the series. Moreover, this curious number—109,677.69—is the magic key to the place of every line in every spectrum. It is now known as Rydberg's constant, and with it Niels Bohr, the great Danish physicist, was able to unravel secrets of atomic structure which have revolutionized our whole conception of matter. But it was Balmer who found the key.

In 1900 Crookes devised a toy in which a minute speck of radium was placed in front of a tiny fluorescent screen. On looking through a lens you saw a shower of bright sparks. A young physicist named Rutherford from the backwoods of New Zealand was intrigued by this and took the trouble to count the sparks under varying conditions. They proved to be the key to the secrets of radium and of atomic changes until then unknown, secrets which have already produced the atom bomb and which if they do not destroy us must certainly revolutionize our lives.

Some twenty years ago Alexander Fleming found a spot of mould growing on one of his culture plates, and he noticed that none of the bacteria in culture grew near the mould. Overcoming his natural resentment at such an impertinent intrusion into his laboratory by a mere mould, he studied

the intruder and found that it possessed the very remarkable power of preventing bacterial growth. He suspected that this might be due to some chemical substance secreted in the mould, but he had to wait over ten years for this substance to be isolated by Florey and for the discovery of penicillin.

Now in each of these cases the first observation was a simple matter: the genius of the observer lay in his appreciation that there was something here which he did not understand, some new fact outside his experience. He has found a door, but he does not know where it may lead and he cannot open it until he has found the key. But the observation was the first step, and without it the door would never have been found. And the initial observation is often so trivial that for most of us the event would have passed unnoticed and the observation never have been made at all. Think of Cavendish with his primitive globes of gas; the little Swiss schoolmaster with his incomprehensible figures; Rutherford and a few sparks; Alexander Fleming and a spot of mould on a culture plate. Yet each was peering through a tiny window into a new world.

It is, however, only very rarely that the power to make observations and the ability to unravel their meaning are combined in the same individual, or, indeed, that both can be accomplished in the same epoch. As we have just seen, years may elapse between the observation and the full appreciation of its meaning. It was in observation that Hunter was supreme, and, although within the limits of his time he often made acute deductions from his observations, his records are still worth our study as examples of what can be done with little more than unaided eyesight.

The Background of Observation

With such a great example before us I feel that it will be worth while to devote a few moments to consideration of "observation," to see in what it consists, to study its uses, and to examine how such power can be acquired and developed. In a sense our whole lives are spent in observation, for when you come to examine it you will find that our every action is a result of some stimulus and a reaction to environment. But this is not quite what we mean by conscious observation. Surrounded by a vast stream of events, of which fortunately we can appreciate only a minute fraction, we sometimes actively direct our attention to some detail which has aroused our interest. What is involved in such attention and under what conditions can it serve a purpose?

The mere fact that our attention has been attracted shows that something unusual has occurred either in the external world or in its impact on our mentality. It is usually the latter, for Nature is very conservative and rarely allows a variation, but in any case the important fact is that to us the event was exceptional. I suppose that for countless aeons of time men watched the stars stream across the sky before one of these men noticed that one of the stars had moved from its place. But notice that that man himself must have watched the stars for years till their permanent relation was fixed in his mind and he was startled to find that one had changed its place. You can imagine that he kept the secret to himself and watched night after night to see if it were really true. And if he were a wise man the more certain he became the more closely would he guard such a revolutionary discovery.

You see, then, that observation itself demands a background of conscious knowledge. Our first astronomer saw the stars as other men saw them, but with this difference—that up to the moment of his great discovery he realized that they all kept their appointed stations, night after night and year after year. Without that background his observation would have been meaningless: with that background

it was a discovery which marked an epoch. The first-essential of all useful observation is, then, a background of established knowledge—that is to say, that on our memories is imprinted a pattern to which events around us conform, arousing our memories, perhaps, but without disturbing the pattern. In most of us the pattern becomes so fixed that variations pass unnoticed, and indeed since events are never exactly repeated such assimilation of variation is essential if the pattern is to remain. But then one day we become conscious of some variation, perhaps because of its insistent repetition. Our interest is aroused and we stir ourselves to active observation.

Curiosity an Essential Factor

Here men are divided into two great groups, the incurious and the curious. Of the causes of the divergence we know nothing; perhaps it is based on some endocrine or nutritional factor; but, however that may be, we all recognize the man to whom discovery is the breath of life and the man to whom it is anathema. The latter is often a first-class teacher who not unnaturally fears the disturbance of his mental categories; the former may be a great researcher but is often entirely unintelligible to his pupils because he can never keep clearly before them the picture they require, since his mind is too fluid. Just occasionally you find the rare mind with a clear picture but a burning curiosity which can inspire the pupils as well as the teacher.

I should say, then, that one essential factor in observation is curiosity. There are many kinds of curiosity, from the mere desire to interfere, with which we are all familiar, to the urge to satisfy some deep longing for comprehension, to resolve a discord in a final harmony. Whatever its true nature it is undoubtedly an instinct essential for fruitful observation and one with which every teacher should seek to inspire his pupils. In John Hunter it was almost a mania, and it was the steady driving force behind all his work.

A background of knowledge, curiosity, and the desire to extend that knowledge are thus essential for fruitful observation, but something more is still required—the training of the power of observation itself. For the mere act of observation is not a simple act but a highly complex process in which many factors are involved, and in the trained observer all these factors are subconsciously combined into a perfect unity, so perfect that its complex origin is concealed from the observer himself.

Each of us is given at birth eyes, ears, and touch corpuscles in his fingers. Over these primary organs of sense we have little influence; fortunately we have little if any power of modifying their structure, and they do not appear to vary greatly from one individual to another. These different organs carry impressions to the nervous matter of the central nervous system and ultimately to the brain, the great central exchange for the correlation and synthesis of nervous impressions. Of how the brain works we know very little, but two facts appear to be well established. After a very early age its cells never divide and therefore never multiply, but they have the power of forming connexions with adjacent cells and of facilitating the passage of impulses by the reduction of the resistance at the synapse where they connect.

Trained Observation

Each of us, then, is provided at birth with sense organs which he cannot modify, and a system of intercommunicating cables along which he can transmit messages but to which he can make no addition. By constant repetition of one system of impulses, however, he can break down resistance at the appropriate synapses so that the message passes

freely and without conscious effort. We can in fact develop a trained action or acquire a habit. We can modify or combine the impressions coming in through different channels so that, far from colliding, they reinforce one another and resolve confusion into a single clear, definite picture.

It is only by such training that the power of observation in any field can be acquired, and a few examples will make this perfectly clear.

The artist has trained his eye and his hand so that they work together in perfect harmony, and while he studies his subject you can see his hand already making the movements which will ultimately convey to paper through his pencil what his eye has grasped. Do you imagine that a violinist thinks where to put his fingers? He does not think about it at all, for he knows that his ear and his fingers work together in perfect harmony and that they will give him all that he asks, whether in brilliant cadenza or in subtle tone. And yet the co-ordination demanded in the artist and the musician does not surpass that necessary to the skill of the true clinical observer.

A physician is standing by a child's bedside; his fingers are on its wrist. He feels the dry, hot skin. He notes the racing pulse and estimates its power, its quality, its regularity. He sees the flushed face with its tinge of blue; he sees the nose expanding at each quick intake; he hears the hurried respiration and its characteristic grunt. And he knows that he is faced with a case of acute pneumonia with a certainty which nothing but direct clinical observation can afford. His long experience has gathered together a great number of separate impressions into one clear picture. He is a trained clinical observer, and all his impressions are grouped together subconsciously into one observation which sweeps away irrelevant detail and grasps the one essential fact.

Perhaps I have chosen too simple an example, but the point I wish to stress is the value of trained observation and the great complexity of the factors which are involved in its achievement. I do not in the least degree undervalue the aids which science has placed at our disposal—chemical investigations, microscopical studies, and x rays, for example—but all these are details to be assimilated by the observer and brought into the general picture, for without this co-ordination they are all too likely to lead to errors.

Even elementary observation is the most difficult thing for a student to learn, and trained observation is only slowly acquired, but it is a power at which every student should aim from the first moment and of which every teacher should enforce the value. For the majority of us visual impressions are the most important, and these can be developed better and more rapidly by attempts at drawing than in any other way. However crude the drawing may be, the mere attempt enforces observation, and the shape of a bone, for example, can in a few minutes be fixed in the memory. The mere fact that one is rousing from slumber tracts in the brain so far unused means an incalculable addition to one's powers. And if one can succeed in arousing by such means a latent curiosity the trained observer is in sight.

The Teacher's Problem

This is the real problem of every teacher—how to teach his students to observe. Great variations in methods are possible, and in no field of action is there greater scope for originality, but at least in a field so complex as that of medicine certain broad lines must be followed.

First of all the student must be shown in detail all the essential elements of the completed picture which he should ultimately retain as a permanent pattern. Most of us are visualists, and only what we have actually seen leaves a permanent impression on our memories. In Continental clinics the lecture-demonstration fills a more important role than it does in this country, and I feel that we might make much greater use of it than we do. I still remember

demonstration on tuberculosis of the spine given by the late Professor Hotz at Basle. It began with a series of fine pathological preparations showing every stage of the disease, with skiagrams and photographs to show its clinical progress. A little man with an old healed angular curvature then came in, and he was followed by two bed cases, one of paraplegia and one of psoas abscess. In an hour we had been shown a complete picture of the disease so vivid that it still remains to me a living memory after twenty-five years. Such a demonstration involves resources in material and assistance which are rarely available, but can you question their incomparable value?

Next the student must have access to specimens, to microscopical slides, and to patients, so that he may study every detail of the picture at his leisure. In this College we are rapidly building up a pathological museum with this very object in view, where the student will find ready to his hand all the material for training his mind in exact observation which no book can supply. The patient himself must be studied in the hospital, but perhaps we may in the very distant future have even our own clinic for the more advanced study of disease.

With this experience behind him the ward demonstration will take on for the student an entirely new significance. Here the teacher can draw upon his own experience and illustrate the points he desires to stress from the patients around him, while the student is introduced to the human side of observation as distinct from the purely scientific.

Finally, in the out-patient department the art is acquired of rapid recognition of main symptoms and their separation from a confused mass of unimportant details. The student learns to recognize disease at sight, to become in fact the trained observer.

You will see, then, that the mind of the great observer is replete with pictures of definite entities, each a vivid and living reality based on an actual experience. It has been my good fortune to meet some of these great minds who leave so deep an impress on our own personality, and when I mention the names of Harold Barnard, Henry Head, and Wilfred Trotter many of you will be recalled to happy memories. With Barnard every case was an adventure into the world of romance, every specimen a trophy from a voyage of discovery. To Head a small area of increased sensation was an Open Sesame, a slight change in gait the key to deeply seated processes of vital import. The quiet glance of Trotter could penetrate into the subtle instincts which, to us unknown, play so large a part in all our lives. Each was a great observer and each has left for us the golden harvest of what he saw and the gleaming inspiration of his example.

In the ancient world men looked within themselves for knowledge, and for them the world around had little interest. For us a vast field of Nature has been opened of which they knew nothing, and it seems to be as limitless as the heavens. Whether we look down a microscope at a minute organism, or through a great telescope at a nebula a million years of light away, we realize that there is an infinity beyond. But, infinitely small or infinitely distant, it is there for us to see, and it only awaits our observation. All around us are whole worlds for us to see if we will only look, to hear if we will only listen.

"What does it matter where or how we die

So long as we have health to see it all—

The different ways that different things are done,
And men and women loving in this world?"

Could a better epitaph be found for the great observer we honour to-day—John Hunter?

HAEMATEMESIS

WITH SPECIAL REFERENCE TO CHRONIC
PEPTIC ULCER

BY

D. C. LEWIN, M.D., M.R.C.P.

AND

SIDNEY TRUELOVE, M.D., M.R.C.P.

(From the Radcliffe Infirmary, Oxford)

While haematemesis remains one of the common emergencies in hospital practice it is natural that its prognosis should be the subject of controversy. This controversy has been fostered by the widely different fatality rates recorded by various workers. To a great extent these discrepancies have arisen from faulty selection of data and errors in their presentation. The fallacies of many published series have been pointed out by Avery Jones (1947), and he has suggested criteria for estimating the fatality rate which if generally adopted would permit fair comparison of different series. Avery Jones has also presented the largest personal series of cases of haematemesis treated in this country, with a fatality rate of 8%. It is likely that haematemesis carries a considerably higher fatality rate in the country as a whole, for it would be absurd if a highly trained specialist did not obtain better results than less-experienced workers.

The great value of Avery Jones's results is that they set a standard which others may seek to achieve. In this connexion it is noteworthy that the literature shows that most series with a low fatality rate have come from interested single physicians presenting their own cases, whereas studies of gross hospital figures commonly indicate a much less favourable prognosis. Thus Babey and Hurst (1936), Smith (1945), and Avery Jones (1947), who report their own cases, record fatality rates of 6-8%. Conversely, recent publications of mass hospital figures show a fatality rate ranging from 13 to 25% (Chiesman, 1932; Cullinan and Price, 1932; Burger and Hartfall, 1934; Hellier, 1934; Aitken, 1934).

We believe that mass hospital figures are more truly representative of the dangers of haematemesis than are the results obtained by a few specialists, provided that the data are handled with an appreciation of possible fallacies. The one essential is that only those data which are likely to be accurately recorded in the notes should be employed. The present study shows that haematemesis remains a highly dangerous condition.

Data

The sources of data of this study are the in-patient notes of the Radcliffe Infirmary, a general teaching hospital in a half-rural, half-industrial area, covering the ten years 1938-47 inclusive. Case notes of all patients admitted as emergencies because of haematemesis or melaena have been analysed. The cause of the bleeding was classified under the following headings: (1) chronic peptic ulcer; (2) acute peptic ulcer; (3) other causes; (4) unknown.

The criterion used for making the diagnosis of peptic ulcer was a record in the case history of epigastric pain with at least two of the following characteristics: (1) relationship to meals; (2) relief by food, alkalis, or vomiting; (3) periodical remissions. In addition, a history of previous perforation or positive x-ray findings were taken as strong evidence in favour of the diagnosis. Ulceration was deemed to be acute if there was no history of periodicity and the symptoms had been present for less than three months.

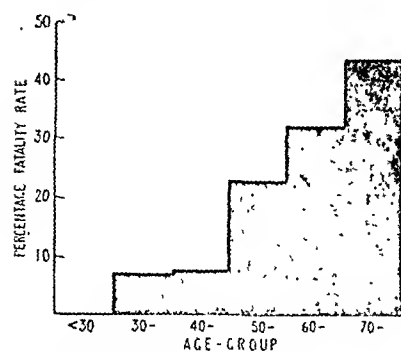


FIG. 1.—Whole series: fatality rate from haematemesis

(2) subarachnoid haemorrhage (30 days after admission); (3) partial gastrectomy (for perforation on 14th day after admission); (4) partial gastrectomy (51st day); (5) liver failure due to a concurrent hepatitis (31st day after admission).

Results

Table I and Fig. 1, dealing with the whole series, show the relation between age and fatality rate and demonstrate that the fatality rate climbs steeply with advancing years. There

TABLE I.—Total Series. Fatality Rate from Haematemesis by Age

Age Group	No. of Cases	No. Died	Fatality Rate
<30	26	0	0%
30-39	42	3	7.1%
40-49	67	5	7.5%
50-59	84	19	22.6%
60-69	56	18	32.1%
70+	30	13	43.3%
Total	305	58	19.0%

TABLE II.—Fatality Rate in Groups Under and Over 50

Age Group	Cases	Fatality Rate	Difference	Standard Error of Difference
<50	135	5.9%	23.5	4.0
50+	170	29.4%		

TABLE III.—Fatality Rate by Age in the Different Groups

Age	Chronic Ulcers			Acute Ulcers		Other Diagnosis		Unknown	
	No. of Cases	No. Died	% Died	Cases	Died	Cases	Died	Cases	Died
<30	18	0	0	2	0	2	0	4	0
30-39	30	2	6.6	7	0	0	0	3	1
40-49	44	4	9.1	14	0	3	1	6	0
50-59	59	15	25.4	10	0	7	1	8	3
60-69	41	13	31.7	5	1	2	1	8	3
70+	16	5	31.2	6	2	1	1	7	5
Totals	208	39	18.8	44	3 (6.8%)	17	4 (23.5%)	36	12 (33.3%)

appears to be a sharp increase at about 50 years of age, and the fatality rate of the over-fifties is about five times as great as that of the under-fifties (Table II).

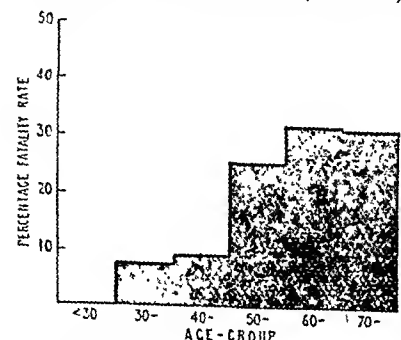


FIG. 2.—Chronic ulcer group: fatality rate from haematemesis.

In considering the fatal cases we have adopted the criteria of Avery, Jones (1947) in excluding only those deaths due to unrelated diseases or to elective operation after recovery from the bleeding. Those excluded were due to:

(1) pyaemia arising from a boil (44 days after admission);

cases diagnosed as proved or probable chronic peptic ulcer. A certain number of patients included in the "unknown" "acute ulcer" groups were later found to be suffering from chronic peptic ulcers. However, we have deliberately not included such cases in our chronic ulcer group for the reason that a diagnosis of chronic ulcer can always be made at necropsy, but the final diagnosis is not necessarily certain in the patient's life. In other words, to work on final diagnosis might unduly weight the "chronic ulcer" group with fatal cases. In consequence we have preferred to deal with the cases whose previous history made the diagnosis of chronic peptic ulcer reasonably certain on admission to hospital. It may be noted that no gross distortion of our main conclusion occurs if we work on final diagnosis.

Effect of Sex

Table IV shows the results of classifying the chronic ulcer group into males and females and two main age groups—below and above 50 years. Considerably fewer women than men are admitted with haematemesis due to chronic ulcer, and the discrepancy between the sexes is more pronounced in the younger of these groups. The effect of age on fatality rate appears to be similar in men and women, so that when we deal with the whole group this effect is not an artifact due to different proportions of men and women in various age groups. For comparison we have regrouped Avery Jones's data in the same way (Table V). It will be seen that a similar sex distribution occurs.

TABLE IV.—Chronic Ulcer Group Only: Effect of Sex on Fatality Rate

Age Group	Males		Females	
	No. of Patients	No. Died	No. of Patients	No. Died
<50	74	5	18	1
50+	83	26	33	7
Totals	157	31	51	8

TABLE V.—Avery Jones's Figures Regrouped as in Table IV

Age Group	Males		Females	
	No. of Patients	No. Died	No. of Patients	No. Died
<50	166	3	54	2
50+	180	25	130	12

tribution occurs. A small point worth mentioning is that among the men the proportion of patients over 50 is almost identical in the two series. Avery Jones's belief that municipal hospitals have to deal with an unduly large proportion of elderly patients therefore does not appear to be well founded.

Length of Ulcer History

Although it is well known that older patients are more prone to die from haematemesis, there is little clear evidence to show the precise reason. It is important to elucidate whether the change in fatality rate is brought about by (a) general bodily changes due to ageing of the patient or (b) local conditions in the ulcer, particularly those due to chronicity. Since a chronic peptic ulcer may persist for many years it is evident that among the older age groups there would be a large proportion of patients with long-standing ulcers. Therefore in order to separate the effects of age of patient from length of ulcer history, we have so analysed our data as to show the influence of both these factors simultaneously (Table VI and Fig. 3).

From Table VI it appears clear that the age of the patient is of profound importance and the length of ulcer history is negligible. The finding is so clear-cut that it is unlikely to be an artifact. Unfortunately, previous workers have not presented their data in such a way as to demonstrate whether or not this is a general finding. It is true that Burger and Hartfall (1934) mention the length of history of all their cases of peptic ulcer and of the fatal cases, but no account is taken of the patient's age. When their data are rearranged and presented as in Table VI we find that patients with a history of more than ten years have a worse prognosis than those with a history of 1-5 years, but the difference is not great (Table VII). The

Table III shows that 208 patients were classified as suffering from chronic ulcer by the criteria already given. The effect of age of patient on liability to death remains as pronounced as with the whole series, and Fig. 2 is similar in shape to Fig. 1.

In what follows we are concerned solely with the group of

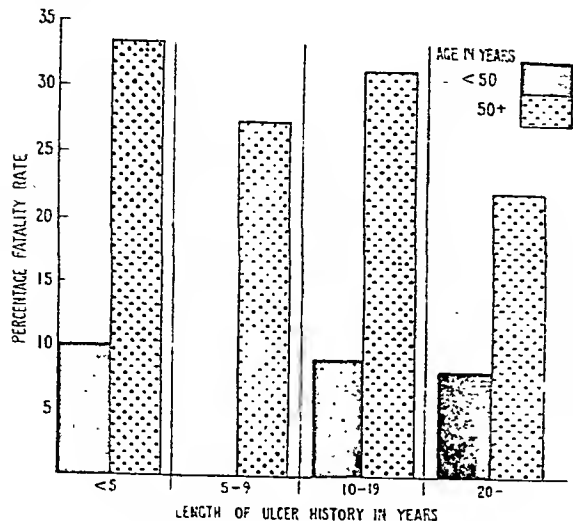


FIG 3.—Fatality rate in relation to length of ulcer history and age group.

TABLE VI.—Chronic Ulcer Group. Influence on Fatality Rate of Age of Patient and Length of Ulcer History

Length of Ulcer History	Age of Patients in Years					
	<50			50+		
	No. of Patients	No. Died	Fatality Rate	No. of Patients	No. Died	Fatality Rate
5 years ..	30	3	10.0%	18	6	33.3%
5-9 " ..	24	0	0.0%	22	6	27.3%
10-19 " ..	22	2	9.1%	48	15	31.2%
20+ " ..	12	1	8.3%	27	6	22.2%
Not specified ..	4	0	—	1	0	—
<10 years ..	54	3	5.6%	40	12	30.0%
10+ " ..	34	3	8.8%	75	21	28.0%

TABLE VII.—Fatality Rate from Rearrangement of Burger and Hartfall's Data

Length of Ulcer History	No. of Patients	No. Died	Fatality Rate
1-5 years ..	51	14	28%
5-9 " ..	12	1	8%
10+ " ..	29	11	38%

group of patients with a history of 5-10 years is so small that little attention can be paid to its low fatality rate. When we bear in mind that long-standing ulcers are more common in older age groups the greater average age of such patients might well account for the small difference observed.

Prognostic Significance of Previous Haematemesis

A history of previous haematemesis is not uncommon among patients in the chronic ulcer group. It is naturally important to know whether or not a past history of haematemesis influences prognosis. Table VIII shows the results of comparing patients with and without a history of previous haematemesis in the two main age groups.

TABLE VIII.—Chronic Ulcer Group. Prognostic Significance of History of Previous Haematemesis

	<50			50+		
	No. of Patients	Fatality Rate	Difference and Standard Error	No. of Patients	Fatality Rate	Difference and Standard Error
With previous haematemesis	33	9.1%	4.0 ± 5.8	47	27.7%	1.5 ± 8.6
Without previous haematemesis	59	5.1%		69	29.0%	

There is no significant difference in fatality rate between these two classes of patient, but the effect of age remains unaltered. In other words, a history of previous haematemesis has no bearing on immediate prognosis. Conversely, the greater fatality rate among older age groups is not because they contain a large proportion of patients with a history of previous haematemesis.

Severity of Bleeding

In considering why older patients are more prone to die from haematemesis we must take account of the possibility that such patients may bleed more profusely or for a longer time than younger patients, possibly because their vessels are arteriosclerotic and cannot retract efficiently. It is evident that no accurate estimate of the extent of bleeding can be obtained without precise and repeated studies of haemoglobin and blood volume. Such elaborate data are not available in case notes, and we have been forced to rely upon (a) a record of repeated frank haematemesis or melaena, or of general signs of internal haemorrhage, to indicate the occurrence of further bleeding after admission to hospital, and (b) the amount of blood transfused as a rough indication of the total blood loss.

Table IX shows that while recurrent bleeding is more common in the older age-groups the difference is not great, and it is certainly not sufficient to account for the much higher fatality rate.

TABLE IX.—Chronic Ulcer Group. Frequency of Recurrent Bleeding Among Age Groups

Age Group	No. of Cases	No. with R.B.	Difference	Standard Error of Difference
<50 ..	92	28 (30.4%)	6.7	6.6
50+ ..	116	43 (37.1%)		

Table X shows the amount of blood transfused to patients in the two main age groups. If we define a massive blood transfusion as one of ten pints (5.68 litres) or more, it is of interest that in each of the age groups about the same proportion of patients received such a massive transfusion: 6 out of 92 (6.5%), compared with 10 out of 116 (8.5%). Massive bleeding is therefore not uncommon in the younger age-groups, but it does not often appear to be fatal when treated with blood transfusion.

TABLE X.—Chronic Ulcer Group. Amount of Blood Transfused

No. of Bottles of Blood	Age: <50		50+	
	Cases	Died	Cases	Died
0 ..	49	0	35	4
1-4 " ..	29	4	47	13
5-9 " ..	7	0	15	5
10+ " ..	6	1	10	6
Unknown ..	1	—	3	—

Within the limitations inevitably imposed by the nature of our data, these findings do not suggest that the greater fatality among older age groups is mainly due to more severe haemorrhage. We are thus led back to our previous conclusion that the difference is due to the general bodily changes which occur with age.

Results of Surgery

Very few cases were treated surgically. Eight patients, all over 50, were treated by emergency partial gastrectomy because of recurrent bleeding. The results were not encouraging, for five patients died. In such a small group random sampling errors may be very large, so that no firm conclusion can be drawn from this result. Six patients were treated by surgical procedures, such as under-sewing the ulcer to an artery. Among these, of four who were alive, and of two over 50 both died. We are here with the relative merits of surgical and medical treatment for which an *ad hoc* inquiry is preferable. On including these figures it is to show that the overall poor risk with haematemesis whether treated medically or surgically. More important in the present context, cases treated surgically is not large enough to draw conclusions.

Discussion

The most prominent feature of this series is the great increase of fatality rate with increasing age of the patient. This has been noted previously by many workers both in this country and in America, but little attention has been focused on the underlying reasons for it. It is conceivable that the older patients may die more readily either because the ageing organism becomes less adaptable or because local changes which predispose to massive haemorrhage may develop in the ulcer as a result of chronicity. Analysis of the present series shows that the length of history among patients with proved or probable chronic peptic ulcer has no bearing on the expectation of death, which seems to be related to general changes in the body consequent upon age. This conclusion is supported by other findings. Thus recurrent bleeding after admission to hospital occurs very little more frequently in the older than in the younger age groups. About the same proportion of young and old patients require massive blood transfusion; but, whereas the younger patients receiving massive transfusion mostly live, the older ones mostly die.

It would be convenient if we were able to compare this finding with the fatality of haemorrhage occurring from other causes, but there is no common cause of massive haemorrhage occurring over a wide age group. We have therefore been unable to seek confirmation along these lines. However, the general bodily changes induced by haemorrhage are somewhat similar to those occurring in "shock," and it is therefore of interest to examine the prognosis of perforated peptic ulcer in relation to age. Table XI, which has been compiled from the records of the Radcliffe Infirmary, shows that perforation of peptic ulcer produces a fatality rate which climbs steeply with advancing age.

It is unlikely that the local conditions in perforated ulcers can account for the great difference in prognosis between young and old patients. The marked increase in fatality rate with advancing years is therefore presumably due to changes in the whole organism. The similarity between these findings and those in haematemesis reinforces our previous conclusion that in haematemesis the poor prognosis in later life is mainly due to general bodily changes and not to local conditions.

TABLE XI.—Fatality Rate of Perforated Ulcer by Age Groups

Age Group	No. of Cases	No. Died	% Died
<30 ..	18	1	5.6
30-39 ..	34	1	2.9
40-49 ..	48	10	20.8
50-59 ..	41	12	29.2
60-69 ..	23	7	30.5
70+ ..	9	3	33.3
Total ..	173	34	19.7

Haematemesis and perforation are the commonest major complications of chronic peptic ulcer, and both are dangerous to life if they occur in middle age or later. It is natural to speculate whether patients approaching middle age with a chronic peptic ulcer should be treated by partial gastrectomy largely as a prophylactic measure. In order to arrive at a decision we must be able to weigh the risk of elective partial gastrectomy against the chance of dying in the future from haematemesis or perforation of a chronic ulcer. On the one hand, the operative fatality rate of partial gastrectomy is known to be about 5% or less in patients under 50. On the other, there appears to be no precise knowledge of the chance of developing either of these complications. With this serious omission in our knowledge it is consequently impossible to reach any valid conclusion.

Summary

Among 305 cases of haematemesis admitted to the Radcliffe Infirmary as emergencies during the period 1938-47 there were 58 (19%) deaths.

Of these patients 208 had a history of proved or probable chronic peptic ulcer. The fatality rate among them was also 19%.

Both for the whole series and for the group with chronic peptic ulcer age was the most important factor influencing prognosis. The fatality rate rose steeply in middle age.

Among patients with chronic peptic ulcer the length of ulcer history had little bearing on immediate prognosis.

The frequency of recurrent bleeding was about the same in old and young patients, and about the same proportion received massive blood transfusions.

These findings suggest that general bodily changes, and not local conditions in the ulcer, are mainly responsible for the poor prognosis in later life.

We wish to thank Mr. J. Baxter and Miss Merry, of the Records Department, Radcliffe Infirmary, for their assistance, and Professor L. J. Wills and Dr. A. M. Cooke for their helpful criticism.

REFERENCES

- Aitken, R. S. (1934). *Lancet*, 1, 839.
 Avery Jones, F. (1947). *British Medical Journal*, 2, 441, 477.
 Babey, A. M., and Hurst, A. F. (1936). *Guy's Hosp. Rep.*, 86, 129.
 Burger, G., and Harifall, S. J. (1934). *Ibid.*, 84, 197.
 Chiesman, W. E. (1932). *Lancet*, 2, 722.
 Cullinan, E. R., and Price, R. K. (1932). *St Bart's Hosp. Rep.*, 65, 185.
 Hellier, F. F. (1934). *Lancet*, 2, 1271.
 Smith, D. (1945). *Glasg. med. J.*, 144, 129.

PUNCH PROSTATECTOMY

BY

H. T. COX, M.A., M.D., F.R.C.S.Ed.

Visiting Surgeon, Withington Hospital, Manchester

Punch prostatectomy is a subtotal prostatectomy carried out through the urethra, thus avoiding an abdominal incision. Any paper that refers to the mortality rate for prostatectomy, by whatever method, must offer particular and precise information on at least the following points: the age and type of patient, the indications for prostatectomy, the number of permanent ambulatory suprapubic cystostomies, and whether those cases admitted with retention were subjected to early or late prostatectomy. These points largely determine mortality rates, and a low mortality rate in any series that omits particular reference to them carries no conviction; it merely reflects an accepted view that the present-day hazards of abdominal surgery in good or in moderately good risks are not high.

The mortality rate is known to be lower for private than for hospital patients. "This is due to the fact that the average hospital case is a notoriously bad risk, having neglected himself until complete retention or renal failure forces him to seek advice, whereas the private patient presents himself at an earlier and more favourable stage of the disease" (Kenneth Walker, 1933).

One may add a further and notable distinction—namely, that between municipal and voluntary hospital patients, a series of the former being heavily overweighted by physical wrecks with advanced degenerative changes and a physiological age well in advance of their calendar age. Until recent months this series has been composed entirely of municipal patients.

The safety of punch prostatectomy allows it to be performed in preference to suprapubic cystostomy, so that no permanent suprapubic cystostomies in ambulatory patients have been carried out in this series. The indications for

operation and the age of the patients are given in the accompanying Table. The routine treatment for cases admitted with retention of urine is decompression and drainage by urethral catheter, the patient being kept ambulatory during both procedures, followed by early punch prostatectomy. Complete bed-rest is unnecessary and detrimental. It should be emphasized that any statistical survey favours abdominal prostatectomy, as patients who present too great a risk for abdominal prostatectomy are accepted or transferred to the clinic for punch prostatectomy. In the Table no attempt has been made to separate the good from the bad risks—and many were the worst possible—or simple from malignant prostates. Many of the latter had widespread spinal metastases at the time of operation.

400 Cases of Prostatic Obstruction, Simple and Malignant, Treated by Punch Prostatectomy

Age Group	Cases	Age Group	Cases
30-39	2	60-69	158
40-49	10	70-79	140
50-59	66	80-89	24

Indications for Prostatectomy

(1) Retention:	(2) Dysuria, including haematuria	132
Acute	169	
Chronic I*	81	
Chronic II*	3	
Mixed	1	
Total	254	
	(3) Permanent suprapubic cystostomy	14

* Chronic I and chronic II cases are those with or without urinary symptoms respectively.

Mortality Rate

First 100	15%	Third 100	2%
Second 100	9%	Fourth 100	4%

One patient aged 36, with a previous retention at the age of 31, was found to be suffering from prostatic cysts, which were successfully resected. One hundred patients were resected with the diathermy loop before this instrument was discarded in favour of the punch instrument.

One case of *post-operative stricture* at the external meatus was rapidly cured by meatotomy and bougies. There was one case of *post-operative incontinence*.

Associated vesical lesions consisted of calculi, 4; calculi and diverticula, 2; diverticula, 2; carcinoma, 1. In two cases a diverticulectomy had to be carried out.

Raised blood-urea was encountered in 27 cases before operation, as follows: 200-250 mg. per 100 ml. in 2 patients, 150-200 mg. in 3 patients, 100-150 mg. in 8 patients, and 60-100 mg. in 14 patients. Most of these raised figures fell to normal with urethral drainage immediately before operation. There were two deaths, both in the last group. The results of preliminary urethral drainage in these cases of chronic retention do not suggest that this method should be discarded in favour of prostatectomy with the bladder undecompressed.

Raised blood-pressure estimations.—Systolic blood pressures of 200 mm. Hg or over were recorded in 43 cases. These readings were taken on the operating table immediately before operation without preceding ephedrine, and were in a few cases higher by 10-20 mm. than the resting pressures taken in bed. The highest pressure taken would not record on the 260 mm. Hg sphygmomanometer.

Mortality Rates.—The mortality rate of 15% for the first hundred is unduly high and is not likely to be repeated. It was due to a number of causes. The cases were then nursed in a chronic ward with all that this implies in a municipal hospital. The patients operated on represented in a high percentage the rejects and failures of abdominal prostatectomy—a resident or semi-resident population of aged men, some with high infected residual urines who were catheterized intermittently and others who returned to hospital at regular intervals to have phosphatic concretions

removed from their suprapubic tubes. In addition there was a varied pathological group, also of shocking risks: one patient had been bedridden for ten years with syringomyelia before developing definite symptoms of prostatic obstruction. Lack of experience with the punch instrument contributed to the mortality rate in the first hundred and to a lesser degree in the second hundred. Of the two patients dying in the third hundred, one, aged 75, had been catheterized eight times before admission and the second was aged 82. After operation the latter patient, in a moment of mental weakness and using a razor that bore excellent testimony to the standards of the Sheffield Cutlers, performed a very radical amputation of his penis and scrotum.

The relevant details of the four deaths in the last hundred are as follows: at age 67, from advanced prostatic carcinoma; at age 65, a patient with paralysis agitans, death from pulmonary embolus—the only one in the series; at age 75, transferred with suprapubic cystostomy for punch prostatectomy, emaciation extreme: at age 75, a patient catheterized six times before admission.

External Urethrotomy.—In eight cases the calibre of the urethra was so small that the instrument had to be inserted through a small urethral incision.

Prostatic Carcinoma.—There were 55 cases (approximately 14%). Of these, 51 were treated by punch prostatectomy and the diagnosis was pathologically confirmed. In the remaining four the clinical or pathological signs or the response to oestrogen therapy left no doubt about the diagnosis. As the result of rectal and radiological examination, acid serum phosphatase estimation, and posterior urethroscopy, the pre-operative diagnosis was unmistakable in 48 out of the 51 cases. The proportion of occult prostatic carcinoma was therefore under 1%. One patient died of heart failure; the remaining two, on oestrogen therapy, are still alive without evidence of a recurrence six years and three years after resection. One further fact is worthy of comment. In dealing with a moderate-sized or large malignant prostate which is hard and nodular on rectal examination the amount of tissue removed at operation before the capsule is exposed is often surprisingly small. Rectal examination after such an adequate resection exposing the capsular fibres almost invariably reveals no change whatever in the hard nodular feel. This clearly shows that the greater part of the malignant tissue is outside the capsule. As it is very rare for the maximum size of a malignant growth to be elsewhere than at its point of origin—apart, of course, from metastases—this finding is evidence that this type of carcinoma has a very high incidence of origin from the posterior lobe.

Chronic Retention.—The cases of chronic retention have been classified into groups I and II, the former with urinary symptoms, the latter without. The clinical impression derived from these cases is that, with equal degrees of a substantial renal impairment as represented by the blood-urea estimation, the prognosis is worse in group II than in group I. This is an expected finding, as group II cases tend to be more chronic than group I, and the prognosis clearly depends on the length of time the blood urea has been raised as well as the height of the rise. Sudden emptying of the bladder in late group II cases may without doubt be fatal. I believe that these cases should be treated by a very slow decompression. The urinary output for 24 hours is measured—it may be normal—and this figure forms the basis for the decompression. The decompression is started by withdrawing from the bladder in 24 hours a volume of urine which exceeds this figure by 4 oz. (114 ml.); the bladder is therefore initially being decompressed at the rate of 4 oz. a day—a rate that may have to be increased later. This method is, of course, applicable only to group II cases.

Results of Follow-up

Punch prostatectomy, being a subtotal prostatectomy, is associated with a small recurrence rate, which in the hands of an expert employing the operation in nearly 100% of cases should be less than 3-4%. Abdominal prostatectomy, however, is not free from recurrence rate, six patients in this series having previously undergone abdominal prostatectomy. Too short a time has elapsed for an adequate statistical follow-up of the recurrence rate, but a clinical impression of the results of punch prostatectomy was obtained by sending for consecutive patients so that 100 attended for personal examination, the last patient having been operated on 12 months previously.

Of these 100 patients, 11 of whom were in their 80's, the urine was crystal-clear in 86, hazy in 11, and turbid in 3. Of the three patients with turbid urine one, aged 72, had undergone four previous bladder operations elsewhere for prostatic obstruction and bladder diverticulum, resulting in a suprapubic sinus and heavily infected urine. The sinus closed after punch prostatectomy. The second, aged 64, was admitted with a perforated duodenal ulcer and developed persistent urinary retention after operation. A severe urethritis complicated his catheter drainage and necessitated a suprapubic cystostomy. No aetiological factor was present in the third patient: he was symptom-free, with a nocturnal frequency of one. He stated that normally his urine was clear.

Nocturnal micturition was nil in 33 patients, once in 30 patients, twice in 25 patients, and more than twice in 12 patients. This latter group of 12 is composed as follows: 3 patients, two to three times; 4, three times; 2, three to four times; 2, four times; 1, six times.

One patient was aged 83 and 7 were in their 70's; 2 patients had malignant prostates; 3 had hypertension with systolic blood pressures of 250, 240, and 220 mm. Hg; 4 spent thirteen hours in bed, and many drank fluid during the night. One patient, a restless facile 79 whose nocturnal frequency was six, drank more than a quart of fluid during the night.

In this aged, or bad-risk, group the standard of judging post-operative results clearly differs from that obtaining in the fitter group. The former patients stay in bed longer, frequently drink fluid during the night, are more intolerant or restless, and show a high incidence of raised blood pressure, cerebral arteriosclerosis, myocarditis, and polyuria. For these patients to have survived operation with a good urinary stream must be judged a satisfactory result. Most of them would formerly have been considered unfit for prostatectomy and would have been treated by permanent suprapubic cystostomy.

Status of Punch Prostatectomy

Punch prostatectomy is no new surgical adventure. In the Mayo Clinic, where the operation is carried out in almost 100% of cases of prostatic obstruction, over 14,000 cases have been treated by punch prostatectomy since 1933. It can be safely said, therefore, that this operation has successfully withstood the tests of time and experience, so that the wave of enthusiasm that so often sweeps a new operation beyond its established limits has had time to recede.

The outstanding impression after 400 cases of punch prostatectomy is without question the greater safety of this operation as compared with abdominal prostatectomy. At least four patients successfully resected were so dyspnoeic that they could not lie flat either during or after the operation.

Case Record.—A patient, aged 80, was admitted in 1947 with prostatic dysuria and cystitis. The blood urea was normal;

symptoms improved on penicillin and sulphamezathine, and therefore operation was not advised. He was readmitted 12 months later with incapacitating symptoms and a rising blood urea: no improvement occurred on penicillin and sulphamezathine. Punch prostatectomy was carried out under low spinal analgesia without a suprapubic cystostomy when his blood urea was 120 mg. per 100 ml. Convalescence was satisfactory; his blood urea returned to normal.

Operation on the worst risks indisputably provides the best test of safety. If an operation is safer for bad risks it is also safer for good risks. Five factors contribute to this safety: the operation is carried out under one of the safest of anaesthetics—a low spinal; the operation can be terminated at any point of time dictated by the patient's condition; it is a closed prostatectomy; an abdominal operation with all its well-known sequelae can be avoided; and there is a smooth, rapid, and ambulatory convalescence. The day after operation an average poor risk is on light diet and usually walks some 30 to 60 yards in one or two stages. Punch prostatectomy has reduced to a minimum operative trauma and therefore the operative mortality rate.

Apart from the route of access, punch prostatectomy possesses at least two distinguishing features. First, as the prostate is removed in portions the operation time varies directly with the size of the prostate; secondly, it is a highly specialized procedure requiring a long period of training. Failure to realize the importance of these two points may lead to some disillusionment. The operation time must not exceed three-quarters to one hour: a surgeon with little experience of this work may remove some 15 to 20 g. in this time. If the prostate is large (80-100 g.) the patient will at this rate of resection require multiple operations for an adequate removal, and if he is fit enough to survive these multiple operations will certainly develop a severe cystitis or pyelonephritis. Experience with the operation, however, increases both the speed and the safety of resection. The largest weight of tissue I have resected, in an orderly fashion with due care and time for adequate haemostasis, is 84 g. in one hour. This brings the majority of cases of prostatic obstruction, in one or two stages, well within the range of transurethral surgery. It has been estimated that in only 7% of cases does the prostatic weight exceed 100 g.

The textbook indications for punch prostatectomy are for prostatic obstruction due to fibrous, malignant, and small adenomatous glands and for prostate obstruction in bad surgical risks. The weak point in this classification lies in its confusion of clinical with pathological types, as it is quite clear that bad surgical risks, to whatever age group they belong, often have not only fibrous, malignant, and small adenomatous prostates but large prostates as well. A bad surgical risk, a large or difficult prostate, and an inexperienced resectionist constitute a lethal combination. The old idea that normal micturition can be restored for any length of time, or even restored at all, by "guttering" the prostate or by removing a few grammes of obstructing tissue is, I believe, quite wrong. Removal of the middle lobe in a trilobed enlargement may allow the lateral lobes to fall together and perpetuate the obstruction, and a further incomplete removal of one lateral lobe allows the opposite lobe to swing over and the obstruction may still be inadequately relieved. The removal of prostatic tissue in these bad surgical risks with large prostates must be substantial but need not be subtotal.

The indications for punch prostatectomy are, I believe best given in terms of the size of the prostate and the experience of the surgeon; in other words, with great competence it is the operation of choice in the great majority of all cases of prostatic obstruction; with limited competence, some 15%. The occasional outsize prostate should be

treated by abdominal prostatectomy. The status of the operation is therefore not a fixed one. Furthermore, any relative contraindication to abdominal surgery—i.e., obesity or a bad chest—constitutes an important indication for transurethral surgery. In this series 99% of all cases were treated by punch prostatectomy.

Discussion

Although punch prostatectomy has reduced mortality rates to a minimum, outstanding problems still clearly exist. Those that derive from a chronically distended bladder occupy a foremost place, the most serious being a bilateral pyelonephritis due to penicillin-resisting organisms superimposed on kidneys already damaged by prolonged back pressure.

With the outstanding exception of Wardill's work at Newcastle-upon-Tyne, the opinions expressed in this country on punch prostatectomy on the whole have either been unfavourable or have unjustifiably restricted the scope of the operation. This may well be due to technical inexperience. John L. Emmett, of the Mayo Clinic, in a most helpful personal letter in reply to the question of the number of operations at which a surgeon should assist before being allowed to carry out a punch prostatectomy himself, states: "This question is very difficult to answer for the reason that the manual dexterity of individuals differs so greatly. I think, however, that a man should have had experience in at least a couple of hundred cases before he can consider himself fairly well trained."

So far, little mention has been made of what to the patient is the most attractive feature of the procedure—namely, the absence of an abdominal operation. Elderly patients show a well-founded aversion to an abdominal operation, many in this series having at first refused prostatectomy on the assumption that it meant a "cutting" operation. The popular appeal of this operation is based on sound clinical experience. It is perhaps not out of place to emphasize the fact that bad-risk patients with mild dysuria and a low residual urine require a period of observation before operation is considered. Indications for operations in this group must be clear and beyond dispute.

Conclusion

The outstanding impression is the safety of punch prostatectomy and its freedom from post-operative incapacity. It is applicable to the majority of cases of prostatic obstruction. For the aged bad risk group it is in a class by itself.

In highly specialized work the surgeon is very much in the hands of his theatre and ward staff. In both these respects I have so far been particularly fortunate.

REFERENCE

- Walker, K. (1933). *The Enlarged Prostate and Prostatic Obstruction* 2nd ed., p. 210.

The Ministry of Health points out that patients in hospital for any length of time may accumulate substantial sums by way of benefit or pension from the Ministry of National Insurance or National Assistance Board. These sums, together with any cash handed over by the patient on admission, should be banked and a separate banking account maintained if necessary. A separate ledger account should be kept at the hospital for each patient who has money to his credit in this account and debited as cash or its equivalent is issued to the patient or purchases made on his behalf. Payments can also be made to relatives out of the account at the written request of the patient. In the case of mental patients for whom no officer has been appointed to act in accordance with paragraph 4 of H.M.C.(48)24, B.G.(48)22, a certificate should also be obtained from a medical officer that the patient understands the nature of the transaction. Any interest accrued to the patient's bank account may be placed to the credit of the committee's or board's endowment account for the benefit of patients' amenities generally. The accounts relating to these transactions should be under the control of the chief financial officer and should be submitted to the auditor.

OSTEITIS FIBROSA DISSEMINATA

BY

D. J. MacRAE, M.B., F.R.C.S.Ed.

Late Surgical Specialist, R.A.F.V.R.

Osteitis fibrosa disseminata is a regional fibrocystic disease of bone with distinct and characteristic features. Its aetiology is obscure. No familial or hereditary tendency has been noted (Lichtenstein, 1938), but its segmental distribution suggests that it may have its origin in a congenital abnormality (Adams *et al.*, 1940). The condition may be a sequela of icterus gravis neonatorum in which the liver fails to store and utilize vitamins (Braid, 1932, 1939). An embryological defect, with an associated endocrine condition (Albright, *et al.*, 1937), and an abnormality in the region of the hypothalamus or walls of the third ventricle (Shallard, 1940) are also postulated as causes. The common features of the disease, the bone changes, may be the response of bone marrow to various stimuli—inflammatory, neoplastic, metabolic, or simple mechanical (Freund and Meffert, 1936). Trauma is common in childhood, and perhaps is too often present in the patient's history to be only of accidental importance; yet the disease cannot be produced experimentally by trauma (Freund and Meffert). Local bone changes, starting in childhood from various centres in the same bone, may be due to osteoclastic absorption and hydropic degeneration of the fibrous bone marrow as a consequence of the augmentation of pressure due to impaired venous flow (Freund and Meffert).

Symptoms and Signs

The condition first makes itself evident in childhood or adolescence, usually by fracture or bony deformity, and no extraskkeletal changes may be found. Braid observed from birth an infant who showed typical bone changes at the age of 2 years, and a second child who had the first of a series of fractures at the age of 1½. Both these patients suffered from icterus gravis neonatorum, and Braid states that at the age of 2½ years her female patient showed enlargement of the breasts and had a menstrual period, which lasted nine days. McClune reported bone changes in a 1-year-old infant, who also had icterus gravis neonatorum, in whom menstruation began at the age of 3½ years, and who was sexually mature at 4. Cutaneous pigmentation was seen in all three patients. There is no difference in the frequency of the sex incidence of the disease (Adams *et al.*, 1940); but endocrine dysfunction occurs typically in the female, and Albright described a further seven patients, four of whom were females, with the syndrome of osteitis fibrosa disseminata, areas of pigmentation, and sexual and somatic precocity.

Sex abnormalities in males are usually absent, although one case is recorded in which there was atrophy of the testes without any changes in the secondary sex characteristics. The general health is not affected and pain is conspicuously absent.

The Bone Changes

The bone lesions are the cardinal and sometimes the only features, and are responsible for the deformities and fractures which may be the first sign of the condition. Any of the skeletal bones may show the disease, but it is commonest in the lower limbs, where the ilium, femur, and tibia are most often affected. Bowing of the extremities is well marked, as in patients reported by Braid (1932, 1939) and by Murray *et al.* (1946); and kyphosis and

anterior bowing of the sternum have been described by Braid.

Braid also noted that in her original patient the bone disease did not attack the epiphyses, and it has since been found that they are constantly and characteristically spared, but the diaphyses are involved to a variable degree. Typical of the disease, too, is its regional distribution in bone, some bones showing patchy decalcification and others being completely normal. Deformities may also occur in the skull in the form of bony swellings, as in the case recorded below, or there may be asymmetry of the face (Coleman, 1939); tallness, due to delayed union of bone, is described by Shallard. The cystic areas of the affected bone vary greatly in size and density, and spontaneous fracture usually takes place through the site of a large cyst. These cystic areas, states Coleman, are clean-cut and involve the medulla and cortex, in some regions expanding the shaft of the bone and everywhere entirely replacing the normal bony architecture, with areas of increased density either associated with the cysts or appearing as irregular speckling; the cortex may be eroded as thin as paper. Freund and Mcffert state that the internal moulding and resorption, instead of leading to the formation of lamellar bone, produces fibrous bone marrow and fibrous, porotic, spongy bone. The cortex is thin and expanded, owing to the encroachment on its endosteal surface, the periosteum playing no part in the pathology.

Macroscopically, the marrow spaces are wide and are filled with a yellow, white, or grey fibrous tissue, and the cavities with fluid of gelatinous material, forming true cysts or merely spaces filled with fibrous tissue (Adams *et al.*, 1940). Microscopically, dense fibrous-tissue cells replace normal bone and form irregular trabeculation throughout; osteoid tissue is common and indicates bone regeneration, which is occurring simultaneously with bone destruction; the cystic cavities are lined with compact fibrous tissue, and nests of foam cells can be seen (Adams *et al.*, 1940). Conclusive diagnosis of the different forms of non-generalized osteodystrophy is not always possible, however, from examination of a few slides.

The skull often shows osseous defects. Marked thickening of the base of the skull is characteristic, while the vault has a finely granular appearance. Shallard (1940) states that hyperostosis is most evident at the base of the skull, and that the mastoid cells and accessory sinuses may be completely obliterated by dense bone. In the vault the bone changes resemble those of early Paget's disease, with its bony thickening, multiple areas of rarefaction, and preservation of the inner table. Cystic rarefaction of the occipital protuberance is described by Garlock (1938).

Other Changes

Cutaneous pigmentation is not always present, but it has been recorded in so many cases as to suggest that it has a common exciting factor with the bony pathology. It may occur anywhere in the body, including the scalp, where it may be missed at examination (Albright); if the skull is involved in the bony pathology its distribution may be bilateral. The serum calcium and blood phosphorus are normal, but the plasma phosphatase level may be raised. The blood count is normal. Urine calcium excretion is normal.

Prognosis and Treatment.—The prognosis is relatively favourable; but multiple fractures and skeletal deformity are prone to produce serious incapacity. It is generally slow, and the course is benign. Treatment is confined to preservation of function and, if necessary, to correction of deformities.

Case Report

The patient, a male cine-projectionist, aged 25, had spent five years in the R.A.F., the last 3½ years overseas. His only complaint was: "My mother states that the lump on the back of my head has increased in size."

He had been employed as an electrician during his Service career and was carrying out routine duties, which included P.T., drills, and parades, but no strenuous course or heavy lifting. During the whole of his Service years he had not had any illness other than occasional colds in the head and influenza.

Previous History.—The patient's mother writes: "The lump on his head first became apparent at the age of 10 years. The right side of the head, at the back, appeared to be developing faster than the left side. A bulge appeared a year or two later on the left side of the forehead. He had a bad fall downstairs when 4 years of age, and also in childhood had bronchitis, otherwise he was always healthy, with no aches or pains. When he returned recently after 3½ years overseas, the lump at the back of the head seemed to have gone further down and to have spread across the top of the back of his neck to the left side. I am definite that the lump was only on the right side before, and was about a quarter its present size and going only half-way down on to the neck." There is also a history of fracture of the right humerus at the age of 15, brought about by very slight trauma. The patient was sitting at a table with other children playing a game which involved placing the elbows on the table, crossing the arms, and pushing the apposed hands of their playmates. It was merely this light pressure, applied by a girl, which fractured his arm, and he remembers at the time being struck by the fact. At the hospital at which he was treated no mention was made of any other complication when the fracture was radiographed. The bone healed in six weeks, and he then continued with his work as a cine-projectionist. He has never suffered from headaches or from ear or eye trouble. He has one sister, who is alive and well, but no brothers; his father and mother are also alive and well. There is no similar trouble in any member of the family.

On examination the patient looked fit and well; height 5 ft. 8 in. (1.73 m.), tongue clean. The teeth, except the lower incisors, canines, and first premolars, were removed five years ago for caries. Nothing abnormal was found in heart, lungs, or genitalia. The left frontal region protruded forward, causing slight left exophthalmos. Protrusion was also present over the whole of the occipital bone to the size of half a melon, more pronounced on the right side. The tumours were hard to the touch. No abnormal swelling or deformity was seen in limbs.

Clinical Findings

A radiograph of the skull revealed a large fibrocystic tumour over the whole of the occipital bone (Fig. 1). Both parietal bones show areas of decalcification and the outer table is raised in places with blister formation, and in other areas there is hyperostosis. The frontal bones show spotty decalcification and there is a fibrocystic swelling in the left frontal bone, with

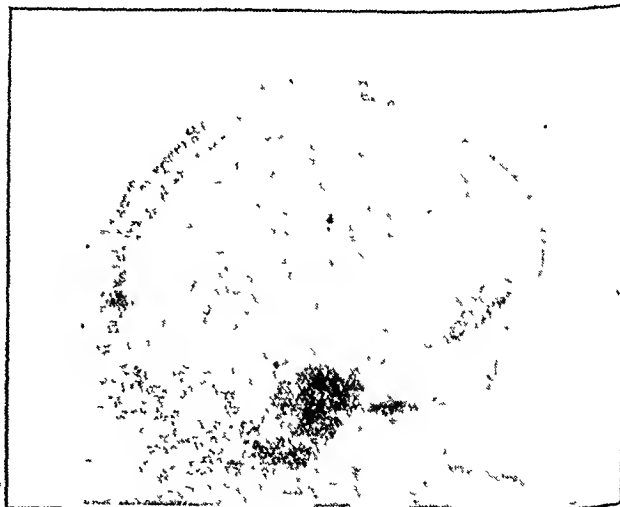


FIG. 1

distortion of the left frontal sinus. The sphenoidal sinus is almost completely occluded by a tumour mass, and the mastoid air cells are obliterated. The inner skull table is normal. Radiographs revealed fibrocystic disease of the shaft and lower end of the humerus, with some cyst formation and trabeculation (Fig. 2). The cortical bone is seen to be eroded, and is especially thin at the junction of the middle and lower thirds of the shaft, where the bone is slightly expanded. All other bones are normal.

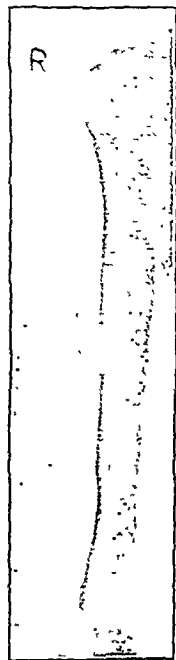


FIG. 2.

Radiography of the abdomen disclosed considerable calcification of abdominal lymph glands. No renal calculi or gall-bladder calculi were seen; the dye test was normal. Vision is 6/6 in both eyes, and the hearing normal.

Blood Findings.—June 3, 1946: red cells, 5,880,000 per c.mm.; white cells, 8,600 per c.mm. (neutrophil polymorphs 76%, lymphocytes 18%, monocytes 6%). June 17: serum calcium, 12 mg. per 100 ml.; blood inorganic phosphorus, 1.3 mg. per 100 ml.; plasma alkaline phosphatase, 18 King-Armstrong units; blood cholesterol, 200 mg. per 100 ml. July 2: serum calcium, 12 mg. per 100 ml.; blood inorganic phosphorus, 3.8 mg. per 100 ml.; plasma alkaline phosphatase, 14 King-Armstrong units. (Rapid rise of inorganic phosphorus noted.) Aug. 9: serum calcium, 10 mg. per 100 ml.; blood inorganic phosphorus, 2.6 mg. per 100 ml.; plasma alkaline phosphatase, 6.75 King-Armstrong units. (All estimations checked owing to variation from previous readings.)

Urinary System.—June 3: reaction, alkaline; albumin, sugar, and protein (Bence-Jones method), nil. Aug. 9: blood urea, 32 mg. per 100 ml.; urea clearance, first hour 64% of normal, second hour 84% of normal (indicating only fairly good kidney function.) Urine calcium with known diet was within the range of normal. Faeces calcium, with known diet, also normal.

Discussion

Osteitis fibrosa disseminata has been described under a varied nomenclature, such as polyostotic fibrous dysplasia, osteodystrophia fibrosa unilateralis, osteitis fibrosa localisata, osteodystrophia fibrosa cystica generalisata, multifocal osteitis fibrosa, fibrous osteodystrophy, regional fibrocystic disease (Horwitz and Cantarow, 1939).

The possibility that icterus gravis neonatorum is a predisposing cause of osteitis fibrosa disseminata is suggested by Braid and elaborated by her in her record of two cases. McClune also reports this association. But whether the resulting bone changes are due to liver damage with consequent loss in vitamins, as Braid suggests, or whether the jaundice produces its effects elsewhere—as it does, for example, in the basal nuclei—are interesting speculations, as is the part played by haemolysis and anti-agglutinins on various organs. Braid states that Buchbinder and Kern produced rarefaction and cortical thinning and relatively wide medullary spaces and cysts in bones of puppies in which they had procured an obstructive jaundice; and they also brought evidence to show that there is some alteration in parathyroid function in obstructive jaundice. Braid, using the rabbit test in one of her patients, was, however, unable to demonstrate an excess of parathormone in the blood.

The blood changes in osteitis fibrosa disseminata frequently show a conspicuous alteration in the plasma phosphatase, which is often raised, while the blood calcium is

at the upper limit of normal. Periodic variation in the phosphatase level in the same patient, as reported by Braid, by Garlock (1938), and in the above case record, would also seem to be typical of this disease. Smith and Maizel state that a high plasma phosphatase is found in active rickets and is probably derived from hypertrophic cartilage cells and osteoblasts, which Robinson has shown to be the source of the enzyme, the phosphatase level slowly falling to normal with healing of the disease. They state that in scurvy, on the other hand, the plasma phosphatase is low, since the picture is one of cessation of bone growth and ossification is in abeyance—the phosphatase rising, however, with treatment of the condition and calcification of the haemorrhages, finally falling to normal with the absorption of these calcified areas. It could therefore be submitted that raised and normal plasma-phosphatase readings coincide with, and are respectively indicative of, active and quiescent phases of the disease.

The difficulty in distinguishing the disseminated form of osteitis fibrosa from the generalized osteitis fibrosa cystica of Recklinghausen is a very real one, and Shallard instances many patients in whom exploration of the neck proved negative. In Recklinghausen's disease there is an osteoporosis of the whole skeleton, with cyst and bone-tumour formation, a raised serum calcium, lowered blood phosphorus, a raised plasma phosphatase, and an excess of urine calcium, with possible stone formation and an association of the condition with an adenoma of the parathyroid gland. Non-typical cases of Recklinghausen's disease have also been reported; Weissenbach *et al.* (1939) state that parathyroid adenomata are not always present. Decort *et al.* (1942) found a hypocalcaemia, with normal, and later raised, readings for plasma phosphatase; and Marti (1938) records a case which was cured after the removal of a normal parathyroid. That the disease may become quiescent is recorded by Pagniez *et al.* (1938), and Ostling (1939) reports a spontaneous cure in another patient. Neither the blood chemistry nor the parathyroid changes would thus appear to be constant, and the condition may be quiescent at the time of examination. It is therefore essentially the extent of the bone changes and the age of the patient which are the diagnostic features. The fact that a raised blood calcium is not found in osteitis fibrosa disseminata, with its more localized bone changes, suggests that there is no adenoma of the parathyroid, and it may be surmised that the difference between the two conditions is that produced by minor or major disturbances of the parathyroid.

In both diseases there arises the question of the exciting factor of the abnormal parathyroid metabolism. That other endocrine glands can affect bone pathology is shown, for example, by the arrest of the bone changes in osteomalacia following removal of the ovaries; it may also be surmised that the temporary hormonal imbalance of the climacteric, which sometimes has a marked effect on the endocrines controlling carbohydrate metabolism, may also upset normal parathyroid activity and cause the bone changes found in Paget's disease. The anterior part of the pituitary gland is closely connected with normal growth of bone, and the association of Albright's syndrome with osteitis fibrosa disseminata points to this area as the seat of the trouble in this disease. There is no evidence about the cause of the parathyroid abnormality in Recklinghausen's disease—whether it is primary in the gland itself, as suggested by the cure which follows removal of the adenoma, or whether it is merely a more catastrophic alteration of parathormone balance in an older patient.

The skull changes in the case here reported have several points of interest. They form a prominent feature of the

disease and are more pronounced than those in cases previously recorded, and both base and vault are involved. The exophthalmos of the left eye is due to the frontal-bone growth displacing it forward; Albright described a similar instance. No involvement of the inner table of the skull is seen and the pituitary fossa appears to be normal. The cyst-like spaces and trabeculation and expansions of the occipital region and the "blister" appearance on the surface of the parietal bones show the results of an active phase of the disease. The hyperostosis in the vault is similar to that of early Paget's disease; while the solid replacement of the mastoid cells and the surface growth in the sphenoidal air sinus would seem to conform to the osteitis fibrosa of the creeping periostotic type of leontiasis ossium described by Lawford Knaggs. Had the disease in the present case involved the maxillary sinuses and, more typically, the facial bones, it might have been considered a definite example of leontiasis ossium. Cases of leontiasis ossium with involvement of other skeletal bones have been described ("Osteitis Fibrosa Generalisata as a Complication of Leontiasis Ossium and Coxa Vera": *Sei-I-Kai M.J.*, abstract section, Dec., 1936, 55, 1).

Finally, it may be thought that, instead of the fibrocystic diseases of bone being classified according to the region involved and the extent of the bone changes, many of them may be regarded as part of an abnormal parathyroid activity induced by alterations in the factors governing its metabolism and with trauma or vascular conditions playing a localizing part.

Summary

A case of osteitis fibrosa disseminata showing involvement of the skull and the right humerus and associated with certain blood changes is reported. It is suggested: (a) that the condition is one of endocrine abnormality in which the parathyroid hormone is dissociated from the normal endocrine balance; (b) that abnormality in the region of the pituitary or hypothalamus is the exciting cause and this may be due to haemolytic disease of the newborn; and (c) that the fibrocystic diseases of bone may be interrelated and their causal factors found in the different influences affecting parathyroid metabolism.

Previous history of icterus gravis neonatorum may be sought and a check made of the maternal history. Prolonged observation of the patient may reveal that the fibrocystic diseases of bone have periods of recrudescence and intermission.

I wish to thank Air Vice-Marshal Sir Andrew Grant, Director-General, Medical Services, for permission to publish the records of this case.

BIBLIOGRAPHY

- Adams, C. O., et al. (1940). *Surg. Gynec. Obstet.*, 71, 22.
 Albright, F., et al. (1937). *New Eng. J. Med.*, 216, 727.
 Braid, F. (1932). *Arch. Dis. Child.*, 7, 313.
 — (1939). *Ibid.*, 14, 181.
 Coleman, M. (1939). *Brit. J. Surg.*, 26, 705.
 Decort, J., et al. (1942). *Bull. mém. Soc. méd. Hôp., Paris*, 58, 201.
 Freund, E., and Meffert, C. B. (1936). *Surg. Gynec. Obstet.*, 62, 541.
 Garlock, J. H. (1938). *Ann. Surg.*, 108, 347.
 Gorham, L. W., et al. (1942). *Clinics*, 1, 358.
 Hodges, P. C., et al. (1941). In *Diagnostic Roentgenology*, edited by R. Golden. Thomas Nelson, New York.
 Horwitz, T., and Caniarow, A. (1939). *Arch. intern. Med.*, 64, 280.
 Lichtenstein, L. (1938). *Arch. Surg.*, 36, 874.
 — and Jaffe, H. L. (1942). *Arch. Path.*, 33, 777.
 Marti, T. (1938). *Leon chir.*, 35, 138.
 Murray, R. C., et al. (1946). *Brit. J. Surg.*, 34, 48.
 Neller, J. L. (1941). *Amer. J. Dis. Child.*, 61, 590.
 Östling, K. (1939). *Acta chir. scand.*, 83, 225.
 Pagniez, P., et al. (1938). *Bull. mém. Soc. méd. Hôp., Paris*, 54, 733.
 Robson, K., and Todd, W. (1939). *Lancet*, 1, 377.
 Shallard, B. T. (1940). *J. Aust.*, 1, 558.
 Summerfeldt, P., and Brown, J. (1939). *Amer. J. Dis. Child.*, 57, 90.
 Weissenbach, R. J., et al. (1939). *Med.*, 47, 260.

OCCUPATIONAL DISEASES OF THE LENS AND RETINA*

BY

JOSEPH MINTON, F.R.C.S.

Ophthalmic Surgeon to the Hampstead General Hospital, Queen Elizabeth's Hospital for Children, the West End Hospital for Nervous Diseases, and the London Jewish Hospital

This paper deals only with the diseases of the lens and retina that occur amongst glass and furnace workers, welders, and others exposed to excessive radiation at their work.

Radiant Energy and its Effects on the Eye

The visible rays occupy only a small portion of the radiation spectrum. The whole range of electro-magnetic radiation extends from the long electro-magnetic waves used in wireless and industrial high-voltage currents to the short gamma rays emitted from radium, uranium, and also during nuclear disintegration of atoms. Next to the electro-magnetic waves are the infra-red rays, which are generated by heated bodies (metal, glass, etc.) and are a source of danger to the eyes in foundries, glass factories, etc.

The long infra-red rays are mostly absorbed by the cornea. The short infra-red rays are transmitted through the cornea and are absorbed by the lens; a small part of these rays, however, reach the retina. The infra-red rays when absorbed by the tissues of the eye cause an increased activity in the tissue cells, and with it an overheating of the tissues. The cornea, which is air-cooled, suffers from no ill effects. The lens, on the other hand, when overheated through absorption of the short infra-red rays, undergoes marked changes, resulting in the formation of cataract. This form of "heat cataract" is found amongst glass-blowers, chain-makers, and foundry and furnace workers. The iris and ciliary body also absorb a good deal of the short infra-red rays; the heat generated in these tissues, however, is lost to the circulating aqueous.

The visible rays of the sun pass through all the media of the eye and on reaching the retina set up a series of biochemical changes which the brain interprets as vision. An excessive exposure of the eye to the sun rays may cause pathological changes in the eye.

The short and the long ultra-violet rays are absorbed by the cornea and the ocular conjunctiva, and only a very small amount of ultra-violet rays reaches the aqueous and the lens. The short ultra-violet rays set up biochemical changes in the conjunctiva and the cornea which manifest themselves "after a latent period" of several hours as a conjunctivitis or a keratitis. These ultra-violet rays are present in high quantities in welding arcs (gas and electric welding), and are responsible for the "arc eye" which is extremely common amongst welders.

The x rays and gamma rays are of very short wavelength; they penetrate the tissues of the eye and have a direct action on the lens, causing the formation of a cataract. Vascular changes are also set up in the iris and the ciliary body.

Occupational Eye Diseases due to Radiant Energy

In the past glass-workers have been known to develop cataract. In glass-bottle making the finisher was exposed to the undiminished glare of the furnace or tank of molten glass. The infra-red rays emitted by the molten glass were

*Abstract of Hunterian Lecture given to the Royal College of Surgeons in June, 1947. It was also read at the International Conference of Ophthalmology, London, 1947.

absorbed by the lens, and after many years the glass-workers developed typical "heat cataract." Investigations by Dr. Robinson and Sir Thomas Legge in 1908 showed that 20% of glass-workers had lens changes. These investigations have led the Government authorities to recognize "glass-blowers' cataract" as an occupational disease, and it is now scheduled as such under the British Workmen's Compensation Act, 1929. The recognition of this eye disease and the discovery that it is due to infra-red rays (heat rays), and not as previously thought to the ultra-violet rays, have led to further investigations into the means of its prevention.

Physicists found that glass to which metallic oxides are added can absorb about 90% of heat radiation. This glass, which is dark green, should be used in goggles and protective screens. Many glass-workers still use dark blue glasses which do not absorb a great deal of infra-red radiation.

Protection of the workers is best achieved by using machines which incorporate protective measures. This guiding principle inspired the inventors of the modern machines which are used in the making of glass bottles. The machine automatically sucks up the molten glass, blows the glass, and delivers the bottles at the rate of 40 a minute. The use of these machines is responsible for the great drop in the incidence of cataract amongst glass-workers. In Great Britain during the period 1939-45 only 27 cases of cataract were notified in the glass industry to the Ministry of Labour. In the year 1945 only one new case of cataract was notified. These figures were supplied to me by Dr. Merewether, Chief Medical Inspector of Factories in Great Britain, by the kind permission of the Ministry of Social Insurance. These figures should be compared with those of "glass-blowers' cataract" found by Dr. Robinson 40 years ago.

"Heat Cataract" in Metal Industries

Investigations carried out by ophthalmologists in many countries have now fully established the fact that workers in various metal industries, whose eyes are exposed to the heat from molten or red-hot metal, develop cataract. In Great Britain cataract caused by "exposure to rays from molten or red-hot metal" is now scheduled as an industrial disease.

In the years 1939-45 there were 131 compensation cases of cataract in the metal industry, while in the glass industry there were only 27 cases. In 1945 there were 16 cases of cataract in the metal industry, and only one case in the glass industry.

Evidently very little is being done in the metal industry to prevent the development of "heat cataract." I have visited several foundries in and around London, and have found that the eyes of the furnacemen and foundrymen were exposed to the heat of the molten metal. No eye protection was used by them. In some foundries electric furnaces are used, and the workers looking after these furnaces inspect the molten metal for very short periods only; but the furnacemen looking after gas-heated furnaces are exposed to the heat of the molten metal for many hours a day without any eye protection. Only through adoption of efficient means of protection of the workers' eyes will the number of cataract cases in metal industries diminish.

Chain-makers' Cataract

In Staffordshire there are about 1,200 people working at chain-making, hand forging of chains. In 1921 Dr. Roberts, ophthalmologist of that district, reported that "heat cataract" is common among chain-makers. Since that date a number of cases of "chain-makers'

cataract" have been reported by many other observers.

The workmen do not seek advice until their vision has become poor. At the age of 50 or over, by which time the chain-maker has been at his trade for some 35 years, lens changes typical of "heat cataract" often occur. It is interesting to note that the lens changes progress even if the chain-maker leaves his trade.

Dr. Lloyd Johnstone, ophthalmologist in Staffordshire, has seen 50 new cases of "chain-makers' cataract" during the past 10 years. The workmen are often advised to use dark glasses or goggles provided with "inflex glass" at their work, but they always claim that they cannot work with glasses, and it is very difficult to persuade them to do so while their sight is good.

Eye Hazards in Electric and Gas Welding

The most common types of welding used in industry are gas and electric welding. In gas welding oxygen or acetylene is used. Acetylene produces one of the hottest flames (6,000° F.—3,315° C.); oxygen welding reaches a temperature of 4,000° F. (2,204° C.).

All welders have at some time suffered from "arc eye," or "welders' flash." This condition is due to the exposure of the unprotected eye to the ultra-violet radiation of the arc in gas welding or electric welding. The welder is exposed to the radiation of his own work and to the reflected radiation from neighbouring workers. On examination one finds a conjunctivitis with an occasional superficial keratitis. The extent of the corneal involvement will depend on the length of the exposure to the arc and on the intensity of the radiation. The acute symptoms usually last one to two days. Repeated exposures to the arc produce a chronic blepharo-conjunctivitis with a chronic keratitis. The presence of the latter condition is often missed. A careful examination of the patient with a slit-lamp microscope will in such cases show the presence of multiple corneal erosions which stain with fluorescein.

The great heat generated by the welding arc is the source of intense infra-red radiation. Some of this radiation is absorbed by the eye and transformed into heat energy. Although most of this energy is absorbed by the cornea and conjunctiva, some of it (4 to 6%) may be absorbed by the lens. The lens cannot lose heat as easily as other parts of the eye and serious injury of the lens may follow.

Opinions are divided about the frequency of cataract among welders. However, many observers claim that lens opacities of the same type as have already been described occurring among furnacemen are to be found in elderly welders. Welders who may be suffering from some general disease or those whose state of nutrition is poor are liable to greater damage of the lens as a result of such physical factors as infra-red radiation. Eye injuries due to infra-red rays will go on occurring until better protective equipment is provided for the welders.

Retinal Injuries from Infra-red Radiation

Retinal injuries among welders are rare, but a number have been recorded. In these cases the central part of the retina shows definite changes. They may vary from a slight haziness of the macula to a pronounced oedema. The patients usually complain of a partial loss of vision, they may be aware of seeing a black spot in the centre of vision of one or both eyes, and their central vision may be very poor. Cases of mild oedema of the macula may fully recover; on the other hand, severe burns of the macula have led to a complete or partial loss of central vision. Ophthalmoscopic examination of the eyes many months after such an injury may show no macular changes, or a slight granular

appearance of the macula may be seen. In severe cases a "retinal hole" may be found at the macula.

I recently saw two men who were suffering from retinal burns from the welding arc. These patients were shown at the Congress of the Ophthalmological Society of the United Kingdom in March, 1947. Dr. White's patient was a fitter who was working 6 feet (1.83 metres) away from the welding arc. He had no eye protection when the arc was struck. A few days later he complained of blurred vision of one eye. He was seen a few weeks after the accident, and he then had a typical oedema of the macula, which later subsided. I saw him several months after the accident, and he then had an excavation (a hole) at the macula of one eye. The other patient, shown by Dr. Spence Meighan, was a welder. He attended at the Glasgow Eye Infirmary on March 16, 1945. He then complained of blurred vision of the right eye. His eyes were exposed to a flash from electric welding three days earlier. He had an oedema of the right macula. The vision of the right eye was 6/9. The left retina was normal; vision was 6/5. The oedema of the right macula subsided within a few weeks. The vision improved to 6/6. He now shows a fine pigmented disturbance at the right macula, and he has a small absolute scotoma at the point of fixation.

The retinal burns described above are largely produced by infra-red radiation of the welding arc. Investigations on the transparency of the ocular media to the radiation of various wavelengths have shown that 12% of the infra-red radiation of the welding arc reaches the retina of the unprotected eye.

Eye Injuries due to High-voltage Electric Currents

Burns of the body by high-tension electric currents are known to be sometimes followed by the formation of cataract in one or both eyes. A number of such cataracts have been reported by ophthalmologists. Such injuries occur in high-power electric stations where electricity is either produced or distributed.

The rarer type of injury to the retina may occur when a workman's eyes are exposed to a sudden electric flash from a high-voltage electric current. The following two cases illustrate the salient points of "electric eye injuries"

Case 1

An electrical fitter aged 39 was working in a trench on Jan. 27, 1946, repairing switch gear in a transformer substation. The voltage of the electric current in this station was 6,600. As a result of a short-circuit he was severely burnt; he was pulled out from the trench in an unconscious state and was admitted to hospital, where he remained unconscious for six hours. He was suffering from severe burns of the right side of the face, the right side of the scalp, and the right arm. He was away from work for three months. A week after his return to work he noticed a slight mistiness of vision of the right eye. He was then examined at an eye hospital, where he was found to be suffering from lens opacities of the right eye.

I examined him for the first time in March, 1947, fourteen months after the accident, and found the following: *Right eye:* Vision 6/24. The cornea and iris were normal. The slit-lamp microscope showed a dense central opacity in the anterior lens capsule and the underlying lens cortex. The peripheral parts of the anterior lens surface showed faint opacities, as though a veil was spread over the lens surface. The posterior cortex of the lens showed early changes. *Left eye:* This was normal in all respects and the vision was 6/5.

I examined him again in October, 1947, and he then told me that since August the vision of the left eye was not as clear as it used to be. Slit-lamp microscope drawings were made of both eyes. The left lens showed hundreds of small opacities on the anterior surface of the lens. The optical section drawing showed these opacities to be confined to the anterior lens capsule. The vision of the left eye was still 6/6. The drawing

of the right eye showed that the central lens opacities had become much denser. The optical section drawing also showed a pronounced thickening of the central part of the anterior lens capsule.

The outstanding features of this case are: (1) The right lens developed "an electric flash" cataract three months after the injury. (2) The left lens remained clear for eighteen months and then, about twenty months after the injury, it began to show lens opacities. These will most probably increase and will eventually cause the loss of vision of this eye.

Similar cataracts have also been reported in people who were struck by lightning. The causation of the "electric cataract" has never been satisfactorily explained. It is most probably due to chemical changes in the ciliary body of the eye and the lens capsule during the passage of the high-tension electric current through the body.

"Electric flash cataract," as a result of an exposure of the workman's eye to a powerful electric flash, is rare, but a few cases have been reported in the past. Retinal injuries from electrical flashes are much more common. The following case illustrates this condition.

Case 2

A man aged 25 was working on Nov. 29, 1946, on a switch gear of an electric generator. A short-circuit in the switch gear caused a powerful electric flash. He suffered from no general ill effects; he was not burnt. Three days later his left eye was slightly red and painful and he could not see with it. He was examined four days after the exposure to the electric flash. The vision of the left eye was then reduced to perception of light. The cornea, iris, and lens were normal. The central part of the left retina was oedematous. There were no retinal haemorrhages or exudates. The right eye was normal and the vision of this eye was 6/5.

A few weeks after the accident the vision of the left eye began to improve and the retinal oedema gradually subsided. He was away from work for three months. One year after the accident the vision of the left eye was 6/9, the oedema of the left central retinal area had subsided, and the macula had a granular appearance with a few pigmented dots.

These retinal changes resulting from electric flashes have been attributed by various observers to the infra-red radiation and to the intense visible light rays. It is impossible to state which of those rays are primarily responsible for the damage to the retina. The intensity of the light from a short-circuit has been estimated to be equal to the light of 150,000 candles; it is therefore probable that the photo-chemical changes produced by this intense light play an important part in producing the retinal changes.

Industrial Uses of X Rays and Radioactive Substances

X rays are used nowadays in many industrial processes—for example, in the examination of metals, micas, rubber products, textiles, etc.

The recent research on atomic energy demands a vast expansion of the work of extracting uranium and other radioactive substances from minerals. Great care must be taken to protect these workers from the dangerous effects of radioactive substances. If such care is not taken we shall soon read reports about severe anaemias and cataract of the eyes among the workers in these industries.

The Ministry of Health has sent a circular to local authorities and medical officers of health pointing out that two short films—one on diphtheria immunization and the other on burning and scalding accidents to children—may be borrowed free from the National Screen Service, Wallace House, 113, Wardour Street, London, W.1, if a cinema manager will include them in his programmes. They have been sent out before, but in some cases have been cut from the newsreel for various reasons. When asking for the films, three weeks' notice should be given of the date when the cinema manager has agreed to show them. They will be sent direct to the cinema

FREQUENCY OF PENICILLIN-RESISTANT STAPHYLOCOCCI

BY

A. VOUREKA, M.D.

AND

W. HOWARD HUGHES, M.D.

(From the Wright-Fleming Institute of Microbiology, St. Mary's Hospital, London, W.2)

Because of the large number of strains which are now grossly resistant to penicillin statements have been made that the drug is losing its value in staphylococcal infections. There was reason to believe that the number of resistant strains had been exaggerated, so an investigation was undertaken to ascertain the sensitivity to penicillin of staphylococci taken at random from out-patients.

The patients were those attending our asthma clinic and they were not at that time suffering from obvious staphylococcal infections. There was no risk of cross-infection, as they were swabbed on their first attendance and came from widely separated areas of the country. The strains were collected between January and June, 1948.

Swabs were taken from the anterior nares and cultivated on blood agar from which a number of single colonies were selected from each positive swab. By the appearance of the colonies and by the presence or absence of haemolysis and of coagulase production, 315 distinct strains were selected from 241 patients. Of these, 191 were albus, 121 aureus, and 3 citreus. There were 185 coagulase-positive strains and 119 coagulase-negative (11 strains were not tested). All were tested for sensitivity by the ditch-plate method as originally described by Fleming and Allison (1922). The strains to be tested were streaked on either side of the ditch and compared with the standard Oxford strain planted at the same time. A strength of 10 units of penicillin per ml. was used in the ditch. After overnight incubation the zone of inhibition between the edge of the ditch and the edge of the growth was measured with callipers. The results obtained are shown in Table I.

TABLE I.—Resistance to Penicillin of Staphylococci Taken at Random

No. of Strains	Distance of Inhibition from Penicillin Ditch	Remarks
Standard Oxford strain	16 mm. (average of all plates)	Standard control
55 73 75	10 mm. Standard \pm 1 mm. " \pm 2 mm.	Regarded as the same as control
1 2 1	" + 3 mm. " + 4 mm. " + 6 mm.	More sensitive
29 30 16 13 4	" - 3 mm. " - 4 mm. " - 5 mm. " - 6 mm. " - 7 mm.	Less sensitive
26	" - over 7 mm.	Provisionally classed as resistant

Penicillinase Production

On these figures, 26 strains may be provisionally classed as resistant; 24 of these were tested for their power to produce penicillinase. The method employed was as follows:

The resistant strains were again planted on a ditch plate, similar to the one used before, with 10 units of penicillin per ml. of agar in the ditch. On each side of, and as close as possible to, the resistant strains streaks of the standard Oxford staphylococcus were planted. At some distance a similar streak of the standard Oxford staphylococcus was planted as a control. Whenever the resistant strains produced penicillinase the ditch end of the Oxford staphylococcus streak had

a slanted instead of a straight edge, with the protruding point nearer to the streak of the resistant staphylococcus. The streak was noticed to encroach on the zone of inhibition as incubation continued, creeping gradually nearer to the ditch.

It was thus found that 11 strains produced penicillinase and 13 did not.

Titration of Resistant Strains

Of these 26 apparently resistant strains, 16 grew to within 2 mm. of the ditch and were regarded as definitely resistant, but it was decided to see exactly what concentration of penicillin would be tolerated by the remaining 10 strains which showed zones of inhibition of from 3 to 8 mm. from the ditch. The 10 strains were subcultured a few weeks after isolation, but unfortunately one failed to grow.

In testing the surviving nine strains dilutions of penicillin in broth from 12.5 units per ml. to 0.02 unit per ml. were used. The amount of the inoculum was 100 c.mm. of a 24-hour broth culture to 5 ml. of broth. The results are given in Table II. These show that of the 26 strains pro-

TABLE II.—Titration of Partly Resistant Strains

Strain	Inhibition on Plate		Concentration Inhibiting (Units/ml.)	Concentration Not Inhibiting (Units/ml.)
	At Time of Isolation	At Time of Titration		
1	Standard - 11 mm.	No inhibition	Not inhibited by 12.5	—
2 and 3 ..	" - 13 mm.	Standard - 13 mm.	12.5	6.25
4 and 5 ..	" - 12 mm.	" - 13 mm.		
6	" - 9 mm.	" - 10 mm.	1.56	0.78
7	" - 8 mm.	" - 10 mm.		
8	" - 10 mm.	" - 8 mm.	0.78	0.39
9	" - 10 mm.	" - 7 mm.	0.39	0.19
Standard staphylococcus	" - 11 mm.	" - 1 mm.	0.09	0.045
	" - 13 mm.	" - 2 mm.	0.045	0.02

visionally classed as resistant, one was sensitive to 0.5 unit per ml. and two to 1 unit. Two strains had recovered their sensitivity to penicillin and one had apparently become more resistant.

If we take resistance to 1 unit per ml. as our arbitrary standard of a "resistant" staphylococcus, we have only 24 resistant strains out of 315 (including the two strains which in a few weeks acquired sensitivity and the one which died out)—that is, 7.6%. These 24 strains had the following characters:

Colour			Coagulase Test		Not Tested
Aureus	Albus	Citreus	+	-	
12	11	1	14	7	3

The proportion of resistant strains appears to be independent of whether the strains are aureus or albus, or coagulase-positive or coagulase-negative.

Summary

In a survey of 315 distinct strains of staphylococci, only 7.6% were found to be resistant to 1 unit of penicillin.

REFERENCE

Fleming, A., and Allison, V. D. (1922). *Proc. roy. Soc. B.*, 94, 142.

Housing associations provide residential accommodation for old people, and, though receiving financial help from local authorities, they retain the character of voluntary organizations. The National Old People's Welfare Committee has issued a useful pamphlet called "Why Housing Associations?" on how to start them, what their scope is, and who can help those interested in them. It is obtainable from the National Council of Social Service, 26, Bedford Square, London, W.C.1, for 6d.

Medical Memorandum

Creeping Eruption and Intestinal Strongyloidiasis

It is felt that, following observations taken over a period of three years, enough evidence has been accumulated to warrant the publication of a preliminary note on what appears to be a hitherto undescribed association between infestation with *Strongyloides stercoralis* acquired in the Far East and the condition of creeping eruption (larva migrans).

Creeping eruption resulting from the exposure of the unprotected skin of man to mature filariform larvae of canine, feline, and human hookworms in moist shaded soil contaminated by the infected faeces of dogs, cats, or man is well recognized by such authorities as Becker and Obermayer (1947), Belding (1942), Craig and Faust (1945), Faust (1939), Manson-Bahr (1945), National Research Council (1945), Stitt (1942), and Stitt, Clough, and Branham (1948). In the vast majority of cases, however, the skin lesions have mainly affected the hands and feet; in one case the migrating larva was observed wandering over the hand for as long as twenty-four years.

Stitt (1942, p. 1521) states: "Sandground (1939) describes a personal experience of 55 days of irritation, often infuriating, which followed on the spilling on the finger of infected larvae of *A. braziliense* and of a *Strongyloides* species, both obtained from the faeces of the cat. There were intermissions followed by reappearance of symptoms. A piece of skin was cut. The epidermal tunnels were empty, but the larva was found coiled in the corium 1.5 mm. from the surface." The reader is left with the presumption that the larva was that of *A. braziliense*.

In January, 1946, during a routine clinical examination of a patient admitted to the tropical diseases unit of Queen Mary's Hospital, Roehampton, it was noted that he had a tortuous linear urticarial weal affecting his buttock, starting near the anus and extending upwards towards the iliac crest. It was intensely itchy and progressed at a rate which was later found to vary from two to four inches (5-10 cm. an hour). This rate of progress is much in excess of that of the hitherto described forms of creeping eruption, which vary from a fraction of an inch to several inches in twenty-four hours. The patient was an ex-prisoner-of-war from the Far East and had worked on the Burma-Siam railway. Investigation showed him to be suffering from both ankylostomiasis and strongyloidiasis, but despite the successful treatment of the ankylostomiasis the creeping eruption persisted, as also did the strongyloidiasis.

It was subsequently noted without exception in a series of several hundred cases that this type of creeping eruption—i.e., a tortuous or serpiginous linear urticarial weal—occurred only in ex-prisoners-of-war from the Far East, and that they had been held in captivity in grossly insanitary conditions in Burma and Siam, with one case from Java. Their blood picture showed an eosinophilia varying from 10 to 25%, with a total white cell count often within normal limits giving absolute eosinophil counts of 700 to 2,000 per c.mm.

Apart from less than 2% of all cases of creeping eruption in which no helminth ova or larvae could be found on repeated microscopy, including after emigration and by concentration methods, all the cases have been associated with the finding of larvae of *S. stercoralis* in the faeces. In cases in which there was multiple helminth infestation the creeping eruption has persisted to date despite the eradication of all helminths other than *S. stercoralis*.

Specimens of larvae obtained from the faeces of these cases submitted to Professor Buckley, D.Sc., professor of helminthology at the London School of Hygiene and Tropical Medicine, for his opinion have been shown by him to differ in no way from the type species *S. stercoralis* (Bavay, 1876). He did state, however, in a personal communication, that some of the larvae examined were rather more mature in the cases associated with creeping eruption. Professor Buckley attempted to infect

himself with fully matured larvae from one of these cases, but fortunately, in view of their resistance to treatment, the attempt was unsuccessful. The creeping eruption begins in most cases in close proximity to the anus; it may extend downwards, affecting the upper third of the thigh, but has never been observed below this. It also affects the buttocks and the posterior and lateral aspects of the body as far upwards as the shoulders, but has not extended into the arms beyond the axillary folds. Anteriorly it occurs over the lower half of the abdomen, not affecting the external genitalia, and in some few cases the anterior surface of the chest has shown the characteristic lesions. It causes considerable itching and irritation.

Definite proof of the causation of the creeping eruption by wandering larvae of *S. stercoralis* is still lacking, as owing to the rapid rate of progress of the linear urticarial weal and its tortuous course the removal of a sufficiently large area of skin to include the postulated larva would be unjustifiable. Presumptive proof is also lacking, as it has been impossible as yet to find any method of treatment which will eradicate the intestinal strongyloidiasis. Gentian violet, hexylresorcinol, antimonials such as sodium stibogluconate, lithium antimony thiomalate, and "hetrazan" (1-diethylcarbonyl-4-methyl piperazine hydrochloride) have all proved uniformly unsuccessful.

Fortunately the skin irritation has been found to be amenable to symptomatic treatment with the antihistamine group of drugs.

It is hoped at a later date to publish a description in full detail of this condition.

I am indebted to Dr. J. F. E. Prideaux, C.B.E., Director-General of Medical Services, Ministry of Pensions, for kind permission to publish this memorandum. I would also like to make due acknowledgment of the very considerable help I have received from Dr. R. A. Gordon Smith, whose careful case histories and clinical examination played no small part in the establishment of this clinical association; to Drs. Mackenzie Douglas and C. C. Chesterman for much helpful advice; and to Professor Buckley for the kind interest he has shown and for his work on the morphological details.

J. P. CAPLAN, M.B., B.Ch., D.T.M.

Ministry of Pensions Tropical Diseases Unit,
Queen Mary's Hospital, Roehampton.

REFERENCES

- Becker, S. W., and Obermayer, M. E. (1947). *Modern Dermatology and Syphilology*, 2nd ed., p. 573. Philadelphia.
- Belding, D. L. (1942). *Textbook of Clinical Parasitology*, p. 295. New York.
- Craig, C. F., and Faust, E. C. (1945). *Clinical Parasitology*, 4th ed., p. 313. Philadelphia.
- Faust, E. C. (1939). *Human Helminthology*, 2nd ed., p. 421. Philadelphia.
- Manson-Bahr, P. (1945). *Manson's Tropical Diseases*, 12th ed., p. 803. London.
- National Research Council (1945). *Manual of Tropical Medicine*, p. 321. Philadelphia.
- Stitt, E. R. (1942). *Diagnosis, Prevention and Treatment of Tropical Diseases*, 6th ed., 2, 1260, ed. R. F. Strong. Philadelphia.
- , Clough, P. W., and Branham, S. E. (1948). *Practical Bacteriology, Hematology, and Parasitology*, 10th ed., p. 603. Philadelphia.

The Ministry of National Insurance states that every employee is responsible for telling his employer of any accident he may suffer at work. This is one of the provisions of regulations made under the Industrial Injuries Act. The employee's notification to the employer may be oral or in writing. To facilitate this part of the procedure certain employers are required to keep readily accessible an accident book in which, if the employee chooses, he may enter the particulars required by the regulations. These are his full name, address, and occupation; date and time of the accident; the place where it happened; the cause and nature of the injury; and the name, address, and occupation of the person giving notice if it is not the injured person. The obligation to keep an accident book applies to every employer who normally employs, at the same time, ten or more people on or about the same premises in connexion with a trade or business, as well as to every owner or occupier, who is an employer, of any mine or quarry or of any premises subject to the Factories Act, 1937. If an accident occurs an employer is also responsible for investigating the circumstances of it and for noting any discrepancies in the facts. If the employee makes a claim under the Industrial Injuries Act the employer will be asked by the local National Insurance Office for a report on the circumstances found by him.

Reviews

SPEECH THERAPY

Twentieth Century Speech and Voice Correction. Edited by Emil Froeschels, M.D. (Pp. 321. No price given.) New York: Philosophical Library.

In spite of its somewhat popular title and startling binding in scarlet and blue this book contains much sound and scientific matter of considerable interest to the neurologist, psychiatrist, and speech therapist. Eighteen contributors have written sections in addition to Dr. Froeschels.

The first chapter is on the anatomy and physiology of the vocal apparatus and also the development of speech in the child, but the author does not describe the central mechanisms of speech. With regard to aphasia, he maintains that the "speech-pathologist cannot agree with many psychologists that there is little or no cerebral localization of speech function, nor can he accept exact anatomical localization." In general, it seems that he should follow the lead of the psychologist in admitting that certain areas subserve certain linguistic functions more than others but that the entire brain is needed for normal speech activity. The suggested classification of aphasic manifestations is rather complicated but includes the more generally accepted forms; this section is presented mainly from the viewpoint of the speech therapist and contains sound practical advice on the treatment of the aphasic patient.

The chapter on absent or delayed development of speech, "alalia," as it is here termed, seems to be unduly involved and does not sufficiently emphasize the congenital mental deficiency (amentia) that is often found. For the condition of word or language deafness, which in Britain is often referred to as "congenital auditory imperception," the term "psychic deafness," used by Heller, has been adopted. This designation is somewhat misleading, for it might well include hysterical deafness—an objection that is admitted. The difficulties of diagnosis between the various forms of apparent deafness in children are well appreciated. Although there is no doubt that audiometry is the most exact method of determining hearing loss, its application to young children up to six or eight years old has not proved very satisfactory because of the degree of active mental co-operation required of the patient. The author of this section states that "to date there has been no approach other than a differential diagnosis" in cases of "psychic deafness" (or auditory imperception). She would be unaware that a fair amount of work continues to be done in Britain not only in differential diagnosis but also in therapy by those interested in the treatment of speech disorders.

Discussing the controversial question of the aetiology of stuttering or stammering, the writer rejects the theory of "handedness" and considers the condition to be a psychoneurosis. Other sections of the work include one on "dyslalia" and two especially useful chapters on (1) speech therapy in cases of cleft palate and (2) voice training after laryngectomy. While some chapters are eminently readable, others can be regarded as suitable only for reference.

C. WORSTER-DROUGHT.

OCCUPATIONAL THERAPY

Principles of Occupational Therapy. Edited by Helen S. Willard, B.A., O.T.R., and Clare S. Spackman, B.S., M.S.inEd., O.T.R., with 19 collaborators. (Pp. 416; 46 illustrations. 25s.) Philadelphia and London: J. B. Lippincott Company. 1948.

Occupational therapy is defined as any activity, mental or physical, medically prescribed and professionally guided to help a patient recover from disease or injury. It shortens convalescence and improves the degree of recovery through techniques (well described in this book) which attack inactivity and idleness on the part of the patient. The authors' description of the ideal organization of a hospital department of occupational therapy may well inspire physiotherapists in Great Britain to demand better accommodation and equipment and a more important place in the hospital hierarchy. They ably

advocate the need for medical men to give initial instructions and follow up the cases regularly during treatment to assess progress. Every therapist is taught that occupational therapy must be medically prescribed, but every doctor is not. How often does the physician or surgeon in this country, or in the U.S.A. for that matter, give detailed instructions, or even any instructions, to the occupational therapist? As well as the diagnosis, the views of the doctor responsible for the patient are necessary on matters such as the mental or temperamental characteristics of the patient, his special aptitudes or interests, and the duration and frequency of work to be undertaken. Those sections of the book on the treatment of special disabilities—mental illness, paediatric diseases, trauma, paralysis of various types, arthritis, blindness, and tuberculosis—will be of wide interest and help to physiotherapists. The variety of individual experience ably presented makes this volume a valuable contribution to the subject.

DONALD STEWART.

BERGEY'S MANUAL

Bergey's Manual of Determinative Bacteriology. By Robert S. Breed, E. G. D. Murray, and A. Parker Hitchens, assisted by Sixty Contributors. Sixth edition. (Pp. 1,529. £4 2s. 6d.) London: Baillière, Tindall and Cox. 1948.

The medical bacteriologist who finds himself discussing a problem of bacterial classification and nomenclature is soon likely to discover that the criteria which he regards as important may be very different from those considered valuable by his colleagues in allied sciences. For example, the clinical pathologist and the veterinary bacteriologist may think of coliform bacilli in terms of potential pathogenicity and may take the view that antigenic structure is the most promising criterion for classification; the water bacteriologist is interested in the organisms as an index of faecal pollution and prefers to define strains in terms of the most rapid and reliable biochemical test; the public health bacteriologist is concerned with both viewpoints and also with that of the dairy bacteriologist, whose problem may be the identification of coliform organisms in milk in relation to their sources and effects; and, further, there is the scientist who would classify the organisms on the evidence of genetic relation with other species. It is not surprising therefore that each of these workers is apt to disregard the broader aspects and to adopt a classification satisfactory for his own limited day-to-day problems. Be that as it may, it is clearly desirable that the name applied by one should be understood by all, that there should be agreement on methods of naming, and that a complete list of existing names should be available for consultation before new genus or species names are proposed. As a book of reference in these respects, *Bergey's Manual of Determinative Bacteriology* is unrivalled.

The last edition of the *Manual* appeared in 1939. The new edition is bulkier, and, since the text is rearranged in double columns, it contains much more material. The book is the work of the three editors, assisted by sixty expert contributors who have been responsible for individual sections. In general, the criteria used in classification are morphology, biochemical characters, and to some extent pathogenicity. A first reaction to some of the more formidable lists—for instance, the 148 species of *Pseudomonas*—is to ask whether all those species are really necessary, but further perusal reveals that some of them are pathogens of codfish and caterpillars, gladioli and Gila monsters, about which the medical bacteriologist can hardly pass judgment. Rather one must be grateful to the authors for their wisdom in consigning to appendices very many names of organisms appearing in the literature but rejected because they are identical with recognized species, or inadequately described, or no longer available for full study. The relegation of much larger numbers of names to the appendices is a welcome feature of the new edition. In one genus this results in the recognition of less than a quarter of the species appearing in the previous edition, and there is no doubt that drastic pruning of other sections on these lines would greatly increase the value of the book.

Few in Britain will quarrel with the main classification into families, and some of the generic changes, such as the disappearance of *Eberthella*, will be welcomed. Other genera,

from hospital to auxiliary hospital or convalescent depot. The mean stay in the E.M.S. hospitals was about 25% higher than in military hospitals. Analysis of the hospital records at home demonstrated that in about 1 of every 8 primary operations for hernia the original condition reappeared within 12 months, that the fatality rate for perforated peptic ulcer was about 6%, that gastric ulcer was about twice as apt to perforate as was duodenal, and that no less than 50% of cases of internal derangement of the knee were the result of football. There were striking and significant differences in respect of infestation by *P. capitis* among intakes of A.T.S. in different parts of the country. Scotland had much higher rates than England, while the rate in Northern Ireland (65% of the intakes in 1944) was indeed spectacular.

Among the causes of wastage in the Middle East during 1943-4 diseases of the ear, nose, and throat were outstanding. In Italy more than one-quarter of the men admitted to hospital for the treatment of disease were suffering from malaria or venereal disease. Battle casualties and accidental injuries made up one-quarter and one-tenth of the total man-day wastage respectively. The mean duration of stay in hospital and convalescent depot was about 3½ weeks for disease, 4 weeks for accidental injury, and 7 weeks for battle casualty. Psychiatric disorders were relatively far less common both in Iceland and the Faroes than in the United Kingdom. In one and the same theatre of war Indians and Africans were less liable to diphtheria and more liable to tuberculosis than troops of European stock. Canadians and New Zealanders were specially prone to infective hepatitis, Indians to malaria and to eye diseases, Africans to dysentery and pneumonia, and Europeans to diseases of the ear, nose, and throat. The case fatality of enteric fever, tuberculosis, and typhus was relatively high among the Africans, that of tuberculosis relatively high among the Indians. Cerebrospinal fever was less fatal among African than among United Kingdom troops.

An analysis of the figures relating to the initial stages of the assault upon Europe showed that trunk wounds caused more deaths than any other type of wound, that head and neck wounds, as would be expected, were relatively important causes of death, that under 1% of arm wounds proved fatal, that leg injuries or multiple wounds accounted for nearly two-thirds of the long-term hospital cases, that nearly 30% of the casualties evacuated had multiple wounds, that about 5% of the injured received more than four wounds, that 15% of single wounds involved bones, that 90% of all wounds were due to either shells, mortar bombs, or gunshot in equal proportion, that about 80% of gunshot wounds were single injuries, and that even in battle much of the treatment given by surgical units was for injuries not due to enemy action.

It is, of course, impossible to do more than attempt to attract the attention of as many as possible to this report, which deserves the careful study of those who recognize the value of the information disclosed by statistics in the shaping of policy and in the assessment of the results of therapeutic trial. That the work of the Army medical statistician in war was appreciated is shown by the fact

that at the end of the war this statistical mechanism was continued by the creation of the post of honorary consultant in Army medical statistics and by the absorption of a rump of the Directorate of Medical (Statistical) Research into the Directorate of Hygiene.

MORTALITY OF BLEEDING PEPTIC ULCER

The mortality of haematemesis and melaena from bleeding peptic ulcer has been a subject of interest and debate for many years. In the early part of this century the mortality was not excessive. The cases reported by Bulmer¹ for 1902 to 1917 showed a mortality of 7%. During this period there were many cases of acute ulcers in young women and the mortality was low. This type of ulcer became less frequent, and to-day not more than 5% of admissions for haematemesis occur in women under 40, compared with nearly 50% forty or so years ago. From 1920 to 1930 the decline of ulcer in young women was associated with a marked increase in chronic ulcer in men, and this, as Tidy² has shown, was reflected in the rise in national deaths from ulcer in men over 40. These changes in the sex and age distribution of acute and chronic ulcers probably accounted for the much higher mortality from haematemesis from bleeding peptic ulcer reported in this country in the nineteen-thirties. Most hospital figures³⁻⁷ then showed a fatality rate ranging from 13% to 25%. It seemed probable that the institution of liberal feeding by Meulengraet⁸ in 1935 and the large blood transfusions introduced at the same time by Marriott and Kekwick¹¹ would greatly improve the prognosis. This hope was substantiated by many short series of cases published in support of liberal feeding and by the experience of Meulengraet in Denmark.

Geographical differences of ulcer distribution make it difficult to compare series from different countries, and it is safer to study figures from one country only. Two comprehensive investigations in Britain have, indeed, recently shown a substantial decrease in mortality from bleeding ulcer. Smith¹¹ in 1945 reported a 6% mortality among 180 cases treated in Glasgow, and Avery Jones¹² two years ago reported 8% of deaths among 615 cases treated in a district hospital in North-west London. Unfortunately, three further series show that there has not been a uniform fall in mortality. For example, Baker¹³ reported 576 cases with 77 deaths (13.4%) over a six-year period, 1940-5, from Birmingham. Tanner¹⁴ had 62 deaths (10.5%) among 586 admissions to a South London hospital between 1941 and 1948. In this issue Lewin and Truelove present a valuable analysis of 305 cases of bleeding peptic ulcer admitted to the Radcliffe Infirmary as emergencies during the period 1938-47, with 58 (19%) deaths.

¹ *Lancet*, 1927, 2, 169.

² *British Medical Journal*, 1944, 1, 677.

³ Chiesman, W. E., *Lancet*, 1932, 2, 722.

⁴ Cullinan, E. R., and Price, R. K., *St Bart's Hosp. Rep.*, 1932, 65, 183.

⁵ Burger, G., and Hartfall, S. J., *Guy's Hosp. Rep.*, 1934, 184, 197.

⁶ Heller, F. F., *Lancet*, 1934, 2, 1271.

⁷ Aitken, R. S., *Ibid.*, 1934, 1, 839.

⁸ *Ibid.*, 1935, 2, 1220.

⁹ *British Medical Journal*, 1936, 1, 204.

¹⁰ *Lancet*, 1935, 1, 977.

¹¹ *Glasg. med. J.*, 1945, 144, 129.

¹² *British Medical Journal*, 1947, 2, 441, 477.

¹³ *Guy's Hosp. Rep.*, 1947, 96, 1.

¹⁴ *British Medical Journal*, 1949, 1, 110.

¹⁵ Hurst, A. F., and Babey, A. M., *Guy's Hosp. Rep.*, 1936, 86, 129.

It is difficult to compare different series, and the many fallacies have been discussed by Avery Jones. It is noteworthy that in the three recent series^{11 12 15} with the lowest mortality the cases were under the continuous care of those who recorded the results of treatment. But the more important consideration must be the age distribution of the series. Lewin and Truelove demonstrate very clearly the great increase in mortality with advancing years, the fatality rate of the over-fifties being about five times as great as that of the under-fifties. Over the age of 60 the risk of haemorrhage increases greatly, as might be expected. Lewin and Truelove found that, contrary to general belief, a previous episode of bleeding does not increase the fatality rate. They were also unable to show that a long history of ulcer symptoms heightens the risk, which is correlated with the age of the patient.

In a comparison of different series, particularly when assessing therapy, it is essential to allow for varying age distribution. Thus, the low mortality of Smith's cases cannot, without further analysis, support his arguments against transfusion. In his series 12% of patients were over 60, compared with 29% in the Oxford series. The high mortality from Birmingham and Oxford leaves no grounds for complacency with medical treatment, and more information is urgently needed on modern experience with surgery for this emergency. Avery Jones's experience showed that the mortality was particularly high among patients over middle age with chronic ulcer and who had recurrent haemorrhage after admission to hospital: in this group there was a mortality of over 50% under medical treatment, and here there should be opportunity for surgery.

Cases may be conveniently classified on admission into two groups. First are those with probable chronic ulcer; they should have a history of recurrent dyspepsia of moderate severity, with recent pain for at least three weeks and, possibly, with previous x-ray or other evidence of ulcer. Approximately two-thirds of these cases have no further haemorrhage after admission to hospital, but some may need subsequent elective surgery. The remaining one-third will have brisk recurrent haemorrhage; it is in this group particularly that surgery may prove of the greatest value for patients over 45. The second main group are those with an acute lesion. Though they may have had a long history of dyspepsia it has usually been slight, and there has seldom been pain for more than two weeks; indeed, pain has often been absent. About three-quarters of these cases have no subsequent bleeding after admission, but the remaining quarter may bleed briskly and repeatedly. Nevertheless, with adequate transfusion the mortality remains low, and it is improbable that surgery has much to offer other than the exclusion of a rare diagnosis such as leiomyoma. Lewin and Truelove use a similar grouping for their series, and for assessing the role of surgery the probable clinical diagnosis on admission would be of greater value to others than results based on the final diagnosis. Sporadic surgery for haematemesis tends to be disappointing, as operation has often been reserved for patients with protracted bleeding. The present need is for the results of surgery based on a clear-cut policy with well-organized arrangements for co-operation between the physicians and surgeons. The recent experience of

Tanner¹⁴ is most encouraging, but his surgical data need presenting in greater detail. In view of the high proportion of cases over 60 (38%) his fatality rate of 10.5% for the whole series is not excessive. His last 60 admissions include 35 subjected to emergency operation, with only two deaths.

PUBLIC HEALTH SALARIES

At a time when remuneration of general practitioners, consultants, and specialists has been the subject of much controversy, discussion, and negotiation, the B.M.A. has not overlooked the salaries of that important group of medical men and women employed whole-time in the public health service. There has been considerable delay in tackling this problem because of the attitude of the Associations of Local Authorities. For some months now efforts have been made to begin through the Whitley machinery a much-needed review of the situation. At the meeting of the Council on Jan. 12¹ the Council decided to inform the Minister of Health of "the serious unrest and dissatisfaction among members of the public health service occasioned by the continued delay in opening negotiations on the new scales and conditions of service." The Council also decided that if by Feb. 28 negotiations had not begun through the Whitley machinery advertisements from local authorities would not be accepted by this *Journal* unless the salaries in the public health service conformed with the Association's proposals for the new scales. These new scales were given in the *Supplement* of Jan. 29. It should be emphasized that the new scales included a betterment factor of 20%. But this factor has not been accepted by the Association, and when negotiations are started it will be related to the betterment factor for other sections of the profession now being discussed with the Ministry of Health.

The present dispute is concerned only with the salaries of those employed whole-time in the public health service, who are now remunerated according to the terms laid down in the Askwith Memorandum. For example, under the Askwith scale the highest minimum salary that a medical officer of health in an area with a population of 100,000 can earn is £1,300, and the scale does not fix annual increments or a maximum salary. Under the Association's provisional proposal (provisional because the betterment factor of 20% is not accepted) the minimum salary would be £1,920, with annual increments of £120 up to the maximum salary of £2,400. The Associations of Local Authorities no doubt fear that if the salaries of their whole-time medical officers are increased they will have to face similar demands from other professional groups employed by them. The medical profession will not, however, accept this as an excuse for underpayment of medical officers. Nor can there be any sound reason for refusal on the part of the Associations of Local Authorities to open negotiations through the Whitley machinery, especially as this course of action is approved by the Ministry of Health. Until these negotiations are opened advertisements for vacancies in the public health service will be refused by the *Journal*, and in this we have the co-operation of the *Lancet*, *Public*

Health, and the *Medical Officer*, which have agreed on a similar line of action.

No one has yet computed the economic benefits to this country which have resulted over the past 100 years from the activities in the finest public health service in the world of men and women who have worked for a small enough financial reward. It is but bare justice that their modest claims should be met—and met promptly.

THE INHERITANCE OF ACHONDROPLASIA

The work of the Institute of Human Genetics of the University of Copenhagen was described in this *Journal* a few months ago.¹ Most of the monographs published by the Institute appeared during the war and so did not become known in this country until it was over. In a recent annotation² we discussed Andreassen's monograph on haemophilia in Denmark, and in the present annotation the third volume of the series, a study of chondrodystrophic dwarfs in Denmark by E. Trier Mörch,³ is reviewed. As in the study on haemophilia, an attempt was made to trace and examine every living achondroplastic dwarf in Denmark: 86 were found, and it is believed that the survey was in all probability complete or almost complete. In addition information was obtained about 22 recently dead subjects. The main purpose of the work was to elucidate the genetics of the condition, but there is much of clinical and general interest also, and the literature has been carefully surveyed; 442 references are given. The author has made use of historical records, and a number of famous portraits are reproduced. He describes achondroplasia in other animals and gives a full clinical and pathological description of the condition in man. In the course of the survey many deformed persons who turned out not to be achondroplastic dwarfs were brought to the author; the result is a particularly useful chapter on differential diagnosis. A review of the literature showed that while conception and pregnancy in the achondroplastic woman are normal the chances of obtaining a living child following vaginal delivery are very small and the risks to the mother are considerable; cesarean section, however, gives good results.

It had previously been assumed by a number of writers that the condition was due to a dominant gene with a high mutation rate, giving a considerable proportion of sporadic cases. Until the completion of Mörch's work, however, this opinion did not rest on very sure foundations and was indeed denied by some. Mörch comes to the clear conclusion that there is a very high mutation rate—1 in 10,000 in terms of individuals, or 1 in 20,000 in terms of chromosomes. He also concludes from maternity hospital records that 80% of the affected children die during the first year of life. If they survive this period their expectation of life is not abnormally short, though their reproductive rate is less than that of normal individuals. The consequence is that the majority of achondroplastic dwarfs are the result of a mutation in one or other parent and so are the first to be affected in their family group. Of the 108 dwarfs studied there were 90 sporadic cases and 18, belonging to eight sibships, in which the gene had been received from a similarly affected parent. There was no instance of transmission through more than two generations, though transmission through three and even four has been occasionally reported.

There are two important tests that must be applied before sporadic cases can be accepted as due to mutation. Such

persons, when they in turn have children, must, if the gene is dominant, have affected and normal children in equal proportions. In glioma of the retina, for instance, this requirement is not in all probability fulfilled; but the sporadic chondrodystrophic dwarfs in Mörch's series have had 10 affected and 17 normal children—sufficiently close to the expected ratio. The second test is that sporadic cases if due to mutation must not have any greater proportion of more distant relatives affected than ordinary normal people selected at random. If they have, this would point to occasional manifestation and the skipping of generations rather than to mutation. Again the Danish material passes the test; Mörch could not find a single affected individual among the more distant relatives of any sporadic case. There was one curious finding: the average age of the parents of sporadically occurring dwarfs was significantly higher than in the population generally. Mörch attributes this to a rise in mutation rate with age. This may well be so, but until similar findings are reported in other conditions the association with parental age should probably be regarded as somewhat weakening the evidence. Nevertheless this fine study makes the inheritance of achondroplasia sufficiently clear to enable the clinician to give unequivocal advice to patients. There is a 50% chance that any child of an achondroplastic dwarf, man or woman, with or without a family history of the condition, will be similarly affected. A normal couple who have had an achondroplastic child can be assured that the chance that a subsequent child will be affected is no greater than the 1 in 10,000 or so of any random normal pregnancy.

MODE OF ACTION OF INSULIN

Some metabolic processes are precisely adjusted by the action of hormones, and in a recent review of the mechanism of action of insulin Professor F. G. Young¹ has shown that the two key processes are the enhancement of the activity of liver phosphorylase and of hexokinase. The former of these enzymes catalyses the reaction in which glucose-1-phosphate is converted to hepatic glycogen. This reaction appears to take place when the blood sugar is raised, and, provided the blood sugar is not allowed to fall below the "liver threshold" of 90–110 mg. per 100 ml, insulin promotes the formation of hepatic glycogen. Glycogen then becomes available in the liver for the supply of glucose to the heart and brain or of glycogen to the muscles when required. The action of insulin on the hexokinase system is perhaps even more important. Preliminary phosphorylation to glucose-6-phosphate is necessary before glucose can enter the metabolic cycle. The reaction requires the addition of free energy and is catalysed by hexokinase. Cori and his colleagues² have shown that *in vitro* activity of hexokinase is inhibited by certain unstable pituitary extracts or extracts of the adrenal cortex. This influence is counteracted by insulin. Furthermore, insulin does not increase the activity of hexokinase derived from normal animals, though it does increase that of hexokinase derived from diabetic animals. The balancing mechanism is therefore a delicate one. The extreme "sensitivity" to insulin of the patient with hypopituitarism or of the diabetic with Addison's disease is not explained by this effect. Young suggests that in the case of the hypophysectomized animal the readily produced insulin hypoglycaemia may be due to enhancement of the phosphorylase mechanism.

Some authorities do not consider that insulin stimulates the oxidation of glucose directly. Nevertheless it is

¹ *British Medical Journal*, 1948, 1, 651.

² *Ibid.*, 1948, 1, 697.

³ *Opera ex Domo Biologiae Hereditariae Humanae Universitatis Hafniensis*, Vol. 3, Copenhagen, Ejnar Munksgaard, 1941.

¹ *Sci. Progr.*, 1948, 36, 13.

² *J. biol. Chem.*, 1947, 168, 583.

³ *J. Amer. med. Ass.*, 1946, 132, 373.

probable that the hexokinase mechanism facilitates oxidation indirectly, the glucose-6-phosphate undergoing conversion to pyruvic acid, which is oxidized in the tricarboxylic acid cycle of Krebs. Another important effect indirectly produced by insulin is the abolition of ketosis. Recent evidence suggests that fatty acids are broken down by oxidative fission into two-carbon atom fragments, which may undergo oxidation in the liver or, failing this, condensation to the ketone, acetoacetic acid. To a lesser extent this ketone can be produced by oxidation of four-carbon fragments of the fatty acid, and either the two-carbon fragments or acetoacetic acid can be incorporated in the tricarboxylic acid cycle and oxidized. The initiation of this cycle depends on the utilization of carbohydrate. Failure to bring about oxidation of fat derivatives in this way and the absence of carbohydrate utilization in the muscles are necessarily followed by increased combustion of ketone bodies. This combustion in the muscles can apparently take place only in the presence of large quantities of blood ketone, and this accounts for the severe ketosis. It has long been suspected that insulin catalyses the conversion of glucose to fat, and Stetten³ has proved this by the use of the isotope technique. Young shows clearly that this is quite in harmony with the well-known rise in the respiratory quotient that occurs after the administration of insulin to a diabetic.

OSTEOID OSTEOMA

Osteoid osteoma was first described as a clinical entity by Jaffe¹ in 1935; previously lesions which would now be recognized as osteoid osteoma had been reported under other names. The disease attacks males more frequently than females, the ratio being greater than two to one. It occurs mainly in adolescents and young adults, though the youngest patient on record was 3 and the oldest 51. The bones chiefly affected are the tibia, femur, astragalus, humerus, and vertebrae. The commonest symptom is pain, which is vague and intermittent at first, but later increases in severity and is often present at night. Precisely localized tenderness and thickening are the most obvious physical findings, and occasionally an effusion may occur in the adjacent joint. When the spine is affected localized back pain, increased muscle spasm, and secondary scoliosis occur. There are no blood changes, and the patients are afebrile. Radiography reveals the lesion as a rounded area of reduced density surrounded by sclerotic bone, but the bone may be so sclerotic that the central area cannot be seen on the radiograph. Excision of the lesion produces permanent and complete relief. The nidus, when exposed by operation, consists of a brownish or greyish mass of vascular connective tissue. Microscopic examination of this material shows cellular fibrous tissue containing multinucleated giant cells, associated with many irregular trabeculae of osteoid tissue. This latter tissue is irregularly calcified. Reporting thirty cases of osteoid osteoma Sherman² makes the point that it is likely that the lesion heals spontaneously, because in patients over the age of 30 the disease has been reported on only eight occasions.

The aetiology of the condition is still in doubt. The argument for trauma is not convincing, since few patients give a definite history of injury. Brown and Ghormley,³ in fact, deny the existence of osteoid osteoma, regarding it as "chronic inflammatory tissue." Brailsford⁴ in 1942 presented several cases with radiographs which were similar to those of osteoid osteoma. *Staphylococcus albus* was cultured from three of these cases, and he regarded the lesions as chronic subperiosteal abscesses. Against the

infection theory it is argued that these patients have no fever, leucocytosis, or other systemic manifestation, and that the organisms which are grown from the lesions have in the main been contaminants; in five cases guinea-pigs were inoculated, with negative results. Wassermann, Kahn, and tuberculin tests have all proved to be negative. Jaffe considers the lesion to be a benign neoplasm, and the constancy of the pathological findings supports this view. Tissue typical of an osteoid osteoma is not encountered in proved abscesses. The condition is not related to any activity of the haematopoietic tissue. Osteoid osteomas are small; they rarely exceed one centimetre in diameter. There is no record of their occurrence in the scapula, clavicle, or cranium, and only once has an osteoid osteoma been reported in an epiphysis. The nature of this condition is still obscure, and no dogmatic statement can be made about its origin.

ACADEMIC SALARIES

New salary scales for professors, lecturers, and readers in medical schools and in dental schools were the subject of a written reply by Sir Stafford Cripps to questions which were put to him on Feb. 28 by Sir Ernest Graham-Little and Mr. Somerville Hastings. Both the University Grants Committee and the Committee of Vice-Chancellors and Principals have had under consideration the effect of the Spens Report on the Remuneration of Consultants and Specialists on the salaries of medical and dental staffs at the universities. Both committees have been seriously concerned about the effect on staffing and recruitment of the disparity between the present academic scales and the rates of remuneration proposed for consultants and specialists by the Spens Committee. The proposals they put forward have been accepted by the Chancellor of the Exchequer, and the University Grants Committee has therefore written to the Vice-Chancellors indicating the revised general limits of salaries in the medical and dental schools for which supplementary grants will be made in the current quinquennium. Determination of the salaries of individual members of the staff will continue to be entirely within the discretion of the universities, but provision will be made in the estimate for the financial year 1949-50 to allow of supplementary grants being made for the purpose of readjusting salaries within the proposed limits.

The revised salaries for full-time clinical posts, which are to be paid from a date not earlier than April of this year, are: professors, £2,250 to £2,750 a year; lecturers, £600 to maxima of £1,500 to £2,000 a year, or in the case of lecturers holding posts of special responsibility, such as a headship of independent departments, £2,500 a year; salaries for readers will be within the range of the maxima for lecturers. For full-time preclinical posts the revised salaries will be paid from a date not earlier than Oct. 1 of this year and will be: professors, £2,000 to £2,500 a year; lecturers, rising from £600 to maxima ranging from £1,200 to £1,800 a year; readers, salaries within the range of the maxima for lecturers. It will be for the universities to decide in borderline cases whether particular posts should be treated as clinical or preclinical: for example, the University Grants Committee would regard it as reasonable if certain posts in the departments of pathology and bacteriology were treated as clinical posts.

Professor H. P. Himsworth, M.D., F.R.C.P., will deliver the Oliver-Sbarpey Lectures before the Royal College of Physicians of London (Pall Mall East, S.W.) on Tuesday and Thursday, March 15 and 17, at 5 p.m. His subject is "The Syndrome of Diabetes Mellitus."

¹ Arch. Surg., 1935, 31, 799.

² J. Bone Jt Surg., 1947, 29, 918.

³ Surgery, 1943, 14, 541.

⁴ Brit. J. Radiol., 1942, 15, 313.

THE Rh FACTOR

BY

ALEXANDER S. WIENER, M.D., F.A.C.P.

I was very interested in the review (*Journal*, Oct. 2, 1948, p. 650) of the excellent monograph *The Rh Blood Groups and their Clinical Effects*, by P. L. Mollison, A. E. Mourant, and R. R. Race, as I had just completed reading that publication myself. This fine outline of the present status of the rhesus blood factors is clearly written and gives much useful information. However, it contains a number of errors of omission and commission, and the purpose of this paper is to point them out in view of any further editions that may be planned.

In Chapter I, which deals with the heredity of the Rh-Hr blood types, the discussion is unfortunately limited practically exclusively to the linkage theory sponsored by Fisher and Race, while the theory of multiple alleles sponsored by me is hardly mentioned at all. When discussing the linkage theory, moreover, the writers fail to point out that this theory, which is usually ascribed to Fisher, was actually first discussed by me in 1942. I found that the distribution of the Rh types differed markedly from the equilibrium values to be expected if heredity is determined by distinct pairs of Rh-Hr genes, either linked or independent, rather than by a simple series of allelic genes. (These calculations have recently been confirmed and extended by Rife.) Therefore I discarded the theory of linked genes in favour of the theory of multiple alleles. The monograph, too, fails to mention that the theory of multiple alleles is supported by the studies of myself and my collaborators, as well as those of Chown and Race himself, on families comprising more than 2,000 children. The theory is also supported by statistical studies on the distribution of the Rh types in the general population, as calculated with the aid of the following formulae (not including the rare genes r and R^2) published by me in 1944:

$$r = \sqrt{rh} \quad (1)$$

$$r' = \sqrt{rb' + rh} - \sqrt{rh} \quad (2)$$

$$r'' = \sqrt{rh'' + rh} - \sqrt{rh} \quad (3)$$

$$R^0 = \sqrt{Rb_0 + rh} - \sqrt{rh} \quad (4)$$

$$R^1 = \sqrt{Rh_1 + rh' + Rh_0 + rh} - \sqrt{Rh_0 + rh} - \sqrt{rh' + rh} + \sqrt{rb} \quad (5)$$

$$R^2 = \sqrt{Rh_2 + rh'' + Rh_0 + rh} - \sqrt{Rh_0 + rh} - \sqrt{rh'' + rh} + \sqrt{rb} \quad (6)$$

theory of multiple alleles receives support from the fact the sum of the gene frequencies calculated with the aid of these formulae closely approximates to 100%.

One of the main objections to the linkage theory is its use as a basis for an elaborate and unnecessary duplicate system of nomenclature for the Rh-Hr types. Thus the linkage theory sponsored by Fisher and Race, for which there is no substantial evidence, in contrast to the theory of multiple alleles, not only is not original with these workers but has caused them to introduce a cumbersome system of notations which has served only to confuse the subject. For example, the following formulae for "chromosome" frequencies are given by Race in the monograph, being attributed to Fisher as of 1946:

$$cde = \sqrt{(-+--)} \quad (7)$$

$$Cde = \sqrt{(-+--)+(+--+)+(+---)} - \sqrt{(-+--)} \quad (8)$$

$$cdE = \sqrt{(-+--)+(-++-)} - \sqrt{(-+--)} \quad (9)$$

These formulae resemble closely formulae (1) to (6) given above, though expressed in less comprehensible hieroglyphics. Another disadvantage of this nomenclature, which Race himself admits on page 10, is that the C-D-E notations are "somewhat cumbersome to use in speech." The advantages of the simple name "type rh" for triple Rh-negative blood as compared with the designations used by Race—namely, "group -+--" and sometimes "group ---+"—are too

patent to require discussion. In Race's notations it is absolutely essential to specify the arrangements of the antisera, since four symbols can be arranged in as many as 24 different ways. Therefore Race has to resort to the use of the "short-hand" symbols R_1 , R_2 , r , etc., which are merely an adaptation of my original Rh-Hr notations. Thus those who insist on using the C-D-E notations are compelled to be familiar with two nomenclatures, while those who use the Rh-Hr notations get along very well with one. Moreover, in Table III Race himself finds that the Fisher-Race method of guessing genotypes entails errors as large as 49%, while I have shown that my own notations for the Rh-Hr phenotypes and genotypes avoid any error.

The monograph quite properly gives full credit to Levine and his collaborators for their pioneer work in demonstrating the role of iso-immunization to the Rh factor in the pathogenesis of erythroblastosis. It should have been mentioned, however, that the phenomenon of iso-immunization in pregnancy had been demonstrated previously by Jonsson in 1936 in the case of the A and B factors. Moreover, the concept of iso-immunization in relation to the pathogenesis of erythroblastosis was first advanced by Darrow in 1938, but this worker thought that foetal haemoglobin was the antigen responsible. Levine correctly demonstrated that Rh was the antigen usually at fault, but incorrectly ascribed the effect to Rh agglutinins. Following the independent discovery by myself and Race of the Rh blocking antibody, I demonstrated that blocking antibodies readily traverse the placental barrier, while agglutinins are effectively held back by the intact placenta, so that the blocking antibodies, or as they are also known the glutinins, are the real culprits in producing the disease, not the agglutinins.

When discussing exchange transfusion the excellent umbilical catheter method of Diamond is described in detail, but the saphenous-vein-radial-artery method of Wiener and Wexler is completely ignored even though this was proposed earlier and has been widely used with great success. The umbilical-catheter method has a popular attraction because of its seeming simplicity. However, there have been technical failures with this method even in the hands of experts, who then had to resort to the radial-artery method, which can always be used regardless of the age of the baby. Moreover, while there has been no operative mortality ascribable to the radial-artery technique, there have been occasional deaths following the blind umbilical-catheter method, due not only to air embolism but also to thrombosis and even haemorrhage into the abdominal cavity. In the monograph no mention is made of the fact that, regardless of the method used, one must take care to avoid the possibility of serious shock or even death from hypocalcaemia, which may be induced by the relatively rapid introduction of large amounts of citrate, especially when massive exchange transfusions are done. This complication can easily be avoided by repeated careful injection of 10% calcium gluconate in doses of 1 ml. each time 100 ml. of blood is administered to the infant.

In the section dealing with the difference between properties of behaviour of univalent and of bivalent antibodies it is rather surprising to find no mention made of my concepts of agglutination and conglutination. Moreover, there is no reference to my work proving that univalent antibodies pass through the placenta easily while bivalent antibodies do not—an observation of considerable importance not only for the pathogenesis of erythroblastosis but also for immunology in general. The term "albumin agglutinin" does not seem satisfactory, because it is based on a purely artificial though ingenious *in vitro* test with no counterpart *in vivo*. If the term "albumin agglutinin" is to be considered acceptable then why not "acacia agglutinin" or "plasma agglutinin" or "anti-human globulin agglutinin"? The terms "glutinin" and "univalent antibody" are free from such objections. As I have demonstrated, the univalent antibodies, after passing through the placenta, coat the foetal red cells, and clumping occurs only in the presence of a third component, conglutinin, found in normal plasma. Conglutinin has been shown to be a colloidal aggregate of plasma proteins which is related to or identical with X protein, and is analogous in many respects to complement. As shown by me and confirmed by Witebsky, the plasma of the foetus *in utero* is deficient in

conglutinin, which, however, matures rather rapidly after birth, thus accounting for the frequently delayed onset of signs and symptoms of the disease. Indeed, the main purpose of exchange transfusion is to remove the baby's coated red cells before they can clump by intravascular conglutination in order to avoid irreversible organic damage which could result from blockage of the circulation. Molison's statement on page 34 that icterus gravis is probably due indirectly to the primary damage to the baby's red cells is a partial admission of the correctness of these views, and at least does not subscribe to the theory held by many workers that the antibodies act directly on the tissue cells, which were supposed to possess Rh antigen.

With regard to the question of nomenclature it is especially important to review the evidence available at once, because the recent U.S. Government ruling that the C-D-E notations must be included in parentheses after the standard Rh-Hr notations when labelling antiserum has forcibly brought the newer notations to the attention of technicians who had been perfectly content with the original, simpler notations. If the C-D-E protagonists have any real evidence in support of the linkage theory now is the time to present it if they sincerely believe that they are on the right side.

In this connexion the rather extensively cited single exception to the multiple-allele theory found by Glass is merely an illegitimate child, and at any rate, observations on a single case can hardly affect conclusions based on the far more extensive studies carried out by me and my collaborators. If bona-fide exceptions are ever found to the multiple-allele theory, where the possibility of technical errors and illegitimacy are ruled out, then one must consider the more plausible possibility of mutation rather than invoke the highly improbable concept of crossing over between tightly linked genes; and no doubt there must be still other possibilities of which we are not aware in the present state of scientific knowledge. While, after Levine's discovery of the first Hr factor, it should have been possible to predict the existence of three Hr factors on the basis of the theory of multiple allelic genes as well as the theory of linked gene triplets, Fisher deserves great credit for his keen insight, which led him to predict the existence of hr¹ and Hr, several years before they were finally found.

In conclusion, the various objections which have been raised by C-D-E workers against the original Rh-Hr notations have now all been answered without difficulty. It is now time for the C-D-E protagonists to answer the criticisms of their nomenclature or to abandon their stubborn position for the good of the subject.

ANALGESIA IN CHILDBIRTH

PRIVATE MEMBER'S BILL

Mr. Peter Thorneycroft, M.P., who will introduce into the House of Commons on March 4 a private member's Bill intended to ensure that all midwives are trained in the latest methods of analgesia and are provided with the necessary apparatus for giving it, described the provisions of the Bill at a press conference organized by the National Birthday Trust Fund.

The Bill, which consists of nine clauses, provides that, after three years from its passing, a woman who has not received instruction in accordance with rules framed by the Central Midwives Board in the administration of analgesics to women in childbirth shall not be allowed to practise as a midwife; further, that a woman who may have received such instruction but has not also received such further instruction as may be prescribed by rules framed from time to time by the Board shall not be allowed to practise.

It is declared to be the duty of every local health authority to secure the provision of means to enable midwives so instructed and employed under the National Health Service Act (Part III, Section 23) to administer analgesics to women who desire them. The local health authority is also to ensure that sufficient approved apparatus, facilities for transport, and supplies of drugs are provided and are at all times available for midwives. Those having control or management of a hospital or maternity home are also required to provide such apparatus and drugs. The right of the midwife to administer analgesics is stated in Clause 5, which runs:

"Any certified midwife who has received such instruction in the administration of analgesics to women in childbirth as may from time to time be prescribed by rules framed by the Board shall be entitled to administer, in accordance with any rules framed and any method approved from time to time by the Board, an analgesic to any woman who desires it during childbirth."

It was stated at the press conference that present arrangements for giving this relief varied very greatly from one area to another. Ample provision existed in some places, while in others arrangements were almost non-existent. It was felt that the Bill raised no issue of party politics, and was one in which all women would be interested. The National Birthday Trust Fund, which had worked for twenty-one years for the right of the mother to have relief if she desired it, and if there was no medical reason why she should not receive it, was strongly supporting the Bill, and believed that if it was passed into law it would not be long before all women, whether confined in hospital or at home, would be able to ask for and obtain analgesia.

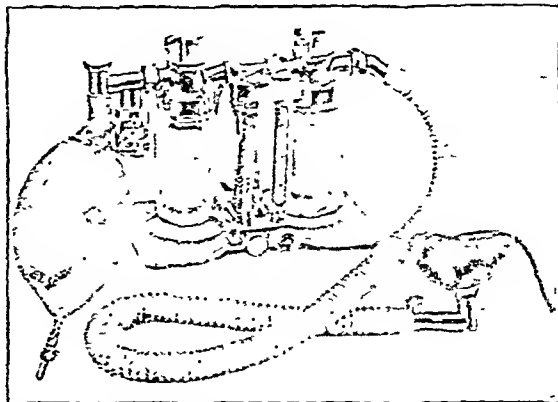
Lady Rhys-Williams stated that a survey made recently by the Trust Fund revealed that analgesia was given to only 52% of women confined in hospital. Of the 17,000 practising midwives, 7,000 were qualified to give gas-and-air analgesia, and the Bill looked forward to advances in anaesthesia and provided for refresher courses for midwives. Lady Rhys-Williams also said that "trilene" might shortly be approved for use by midwives.

The Bill contains penal clauses whereby midwives giving analgesia without the prescribed instruction will be liable on summary conviction to a penalty not exceeding £10, and to a further penalty of the same amount for each day on which the offence continues after conviction. There are similar penalties for the managers of hospitals or nursing-homes who fail to make the required provision.

Preparations and Appliances

A SIMPLE PORTABLE ANAESTHETIC APPARATUS

Wing Commander R. L. SOPER, senior specialist in anaesthetics, R.A.F., writes: There is a real need for a simple portable apparatus designed primarily for the non-specialist anaesthetist. The one here illustrated operates normally as a gas-and-oxygen apparatus, to which either or other vapours can be added by means of two Thornton vaporizers. If desired, by means of an air-inlet valve it will act as a simple draw-over



apparatus for trilene-air or ether-air (see the description by Dr. Marrett, *Journal*, 1942, 1, 643). Rebreathing is readily obtained with either technique. The weight of the complete unit is just over 12 lb.

I would like to thank Mr. R. W. Avery for his assistance with the original design, and Mr. E. P. Childerhouse, of Medical and Industrial Equipment, Ltd. (the makers), for help in producing the apparatus.

Reports of Societies

PREVENTIVE PSYCHIATRY

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on Feb. 7, under the chairmanship of Sir ALLEN DALEY, "Preventive Psychiatry" was discussed.

Dr. W. S. MACLAY, Senior Medical Commissioner of the Board of Control, in a brief introduction mentioned one or two projects which were developing. One was the World Federation for Mental Health, which came into existence following the International Congress held in London last August. Another development was the out-patient clinics, which had multiplied since the Mental Treatment Act, 1930, and now numbered 250 for adults and 120 for child guidance, but many more were needed. In 1941 the first disablement rehabilitation officers were appointed. The Ministry of Labour had recognized the value of a liaison between the organization for getting back into industry persons suffering from psychiatric disability and the mental hospitals, out-patient clinics, and social centres which also existed to help them. Dr. Maclay also mentioned the provisions of the new Criminal Justice Act, especially from the point of view of the prevention of delinquency, and of the National Health Service Act.

Dr. A. TORRIE said that the prevention of psychiatric illness in the Army should start with the recruiting board. Now that the Pulheems system had been introduced he hoped there would be far fewer breakdowns, but the system must be applied with wisdom and discretion. (The Pulheems system was the subject of the opening article in the *Journal* of Jan. 15, p. 83.)

In the early stages of life in the Army instruction should be given in the general principles of mental health. Good leadership and good relations were essential to preventive psychiatry, and the influence which could be exercised by the padre should not be overlooked. The same was true of the industrial community. Here he considered that the family doctor was the key man in prevention, but the help of the clergy, social workers, and of all who were in positions of supervision, including the junior foreman, was to be desired.

Child Guidance

Dr. EMMANUEL MILLER said that child guidance was no new thing. The claim of psycho-analysis was primarily that disturbances in childhood producing neurosis, psychosis, and behaviour disorders lay somewhere in the child-parent relationship. Dr. Miller instanced the question of suckling and its periodicity, and the effect of artificial feeding, and discussed the assistance which psychiatrists and psychologists could give at the mothercraft level. What could the psychiatrist do to help prospective and nursing mothers to understand the significance of the maternal role? Could the psychiatrist come in at that level and make a woman understand the difference between the biological function of maternity and the psychological function of motherliness? Almost any woman could be a mother, relatively few could be motherly. Again, with regard to sex interest and conduct, was there a technique of sex instruction which psychiatrists ought to formulate and hand over to educationists and parents?

What would be the effect of prophylactic psychiatry directed towards the child upon the ultimate incidence of neurosis and psychosis and the like in the adult community? On the theory that all such disorders were produced during the formative months and early years of child life it might be supposed that if it were possible to treat all the childhood difficulties in the community there would presently arise a race of adults free from these disturbances. He could not believe that that would be true. With every phase of mental growth and development new factors entered into the life of the individual. There were new factors at puberty, for example, and also in adult life. No foolproof protection could be obtained by treating children alone. Child psychiatry had the power to produce techniques and methods of handling which would materially reduce adult disturbances, but it would be rash at this stage to say that it had the power to filter them off completely.

Mental Stress in the Future

Dr. C. P. BLACKER asked the audience to consider what kind of mental stress was likely to develop in the future. He discerned two recent trends. A Population Investigation report which would be published shortly would call attention to diminished fertility; increasing use of birth control, especially the use of appliance methods; increasing awareness of the difference between planned and unplanned pregnancies and between wanted and unwanted children; an increasing tendency for couples to plan the size of their families at marriage; and the diminishing size of planned families. This meant a diminution in the numbers of unwanted children. If there was a general movement in favour of small planned families the problem of the future would not be the neglected child but the spoilt child. Parallel with this, the new educational service promised secondary education for all children, which would effect equalization of educational opportunities. Most parents would hope that their sons would be enabled to practise in the professions, and questions would arise about how entry into the professions should be regulated. There would be disappointment for the great majority of boys and girls who, though educated to the same level as the successful ones, would not be eligible for the coveted jobs.

Thus a new mental health problem would arise. On the one hand there would be the wanted child, the object of great solicitude, and on the other there would be a system whereby the aspirations kindled in such children would be thwarted. That was the new problem that would trouble the next generation of psychiatrists. It would mean new stresses, in some ways more troublesome and more provocative of neurosis than the old. The door would be opened much more widely to a self-regarding attitude in which jealousy would take a larger place than it had done in the more happy-go-lucky forms of society to which most of us had been accustomed.

GRANULOMATA OF THE LARGE INTESTINE

A meeting of the Section of Proctology of the Royal Society of Medicine was held on Feb. 9, Mr. C. NAUNTON MORGAN presiding, for a discussion on the subject of granulomata of the large intestine.

Actinomycosis of Rectum and Colon

Mr. ZACHARY COPE said that actinomycosis involving the colon and rectum was a rare condition. In nine cases out of ten it was the anaerobic organism which was concerned, although in many textbooks there was still confusion on this point. He had been able to collect only six cases of actinomycosis of the colon, and in five of these it was excised under the impression that the actual pathological lesion was a carcinoma. Actinomycosis of the rectum, of which he had collected accounts of 40 cases, brought many diagnostic puzzles to the surgeon. The cases could be divided into primary and secondary, "secondary" meaning the invasion of the rectum from above. The diagnosis of primary rectal actinomycosis could be made with certainty only by detection of the fungus in the discharge. The condition might easily simulate malignancy, tuberculosis, or any other chronic inflammation of the rectum. Prognosis had been unfavourable, and although the patient might seem to be cured it was necessary to watch for a year or two before cure could be pronounced with certainty; recurrences sometimes appeared after a long interval.

Secondary actinomycosis usually spread down from the appendix, sometimes from the stomach. A few cases had resulted from perforation of a gastric ulcer, which allowed the organism to escape into the peritoneal cavity and so into the rectum. Symptoms were not characteristic. There might be pus, mucopus, or mucus in the stools, diarrhoea and constipation, suppuration, obstruction of the large bowel, abdominal distension, piles, or fistulae. Sigmoidoscopy was not of much use except in rare cases. He believed that there must be more of these cases than was commonly supposed. In treating patients suffering from actinomycosis in the pelvis up to half a million units of penicillin a day, carried on for many weeks, should be given. It was important to give large doses and to keep up

the administration week after week until the patient was free from symptoms.

Crohn's Disease

Professor G. HADFIELD said that there was still complete ignorance about the cause of Crohn's disease, and possible for that reason its treatment remained uncertain and unsatisfactory. So far as he knew there was no pathological evidence which justified any conclusion regarding its exact aetiology. In an earlier study he and others concluded that during the initial period the intestinal lesion was able completely to repair itself, and that the later manifestations of the disease were secondary and possibly non-specific complications. That view was founded largely on the pathological evidence afforded by the relatively early cases.

The speaker showed lantern slides of a number of specimens, including the irreparable stage of the "cobble-stone ileum". He also exhibited a diagram illustrating the probable origin and progress of this disease, beginning with a submucous lymphadenoma and then, after the local oedema had reached its maximum, with progressive ulceration and secondary infection increasingly dominating the picture and going on to obstruction and fistulae. He quoted the results, published in 1945 of Garlock and Crohn

	Cases	Post-operative Deaths	Recurrences
Ileo-colostomy, transection and exclusion of lesion	65	0%	13.8%
Primary resection	55	16%	19.5%
Ileo-colostomy, exclusion of lesion followed by resection	25	12%	36.3%

In the 25 cases in the third group it was reported that the lesion and resected loop almost invariably showed advanced healing and little or no inflammation. Unless there was extensive ulceration the initial bowel lesion would repair itself if placed in conditions of complete physiological rest.

Amoebic Granuloma

Mr. R. W. NEVIN said that the importance of intestinal amoebiasis to the surgeon was that the condition might simulate almost any abdominal lesion and if an operation was carried out in unrecognized and unsuspected cases the mortality was very high. It had been stated that this condition was one for surgical diagnosis and medical treatment. Granulomata were most commonly found either in the caecal or the recto-sigmoid region. The condition was very easily confused with carcinoma. Mistakes were frequently made in diagnosis unless this condition was kept in mind. *Entamoeba histolytica* might be demonstrated in the stools or a typical lesion might be shown. On treatment with emetine the granulomata usually disappeared, leaving little scar tissue. The ultimate difficulty in diagnosis lay in the fact that a granuloma and a carcinoma might exist together in the same patient at the same time. The speaker cited some of his personal cases. Among them was a woman, aged 46, who had never been out of the country. She presented symptoms typical of carcinoma of the rectum, in the upper third of which, on examination, a firm fibrous mass was felt. Proctoscopy and sigmoidoscopy revealed no ulcers or abnormalities other than the palpable lesion. A specimen was taken and was returned as granulation tissue. Stools were searched for amoeba, but none were found. After giving emetine, however, amoeba did appear, and under further treatment the mass disappeared completely.

Individuals with latent or chronic amoebiasis would usually have a secondary anaemia and appear to be in chronic ill-health. It was generally held that a majority of persons suffering from amoebiasis did not present dysenteric symptoms. In about one-third of all cases there were demonstrable lesions which could be seen with the sigmoidoscope.

If all other methods of diagnosis failed, the therapeutic test could be applied. A course of emetine should be given and its effect observed. This might give absolute proof by the production of amoebae in the stools or the relief of symptoms and signs. Treatment was by means of the appropriate anti-amoebic drugs. If this failed in a suspected case, resection might be undertaken and further medical treatment given.

ASSOCIATION OF CLINICAL PATHOLOGISTS

SCIENTIFIC MEETING

The 41st scientific meeting of the Association of Clinical Pathologists was held at Westminster Hospital on Jan. 27, 28, and 29, with Professor R. J. V. PULVERTAFT in the chair.

Dr. F. B. SMITH, in his presidential address, discussed what appeared to be a new syndrome of atypical (septicaemic) tuberculosis with agranulocytosis. He described four adult cases with pyrexia, purpura, and agranulocytosis. Although there was heavy blood-borne bacterial infection as evidenced by dense colonies of mycobacteria in the liver, spleen, and the few lymph nodes found at necropsy, yet there was no histological change typical of tuberculosis and no clear primary focus.

Dr. C. W. TAYLOR described the various virilizing tumours of the ovary and said they fell into two groups: (1) arrhenoblastoma with structures of testicular type (differentiated or embryonic); and (2) lipid-cell tumours of the so-called adrenal-like type. He showed how removal of the tumour resulted in regression of masculinization and a return to a normal menstrual cycle in one month. In two cases full-term pregnancy subsequently occurred followed by lactation. He considered it unwise to accept the virilizing lipid-cell tumour as of heterotopic adrenal origin. Dr. H. R. MAYOR reviewed the series of changes occurring in fat embolism of the brain with large numbers of intravascular fat plugs.

Gastro-enteritis

On Friday Dr. C. GILES described an investigation into the coliform flora in gastro-enteritis. He said that the type of *Bact. coli* was isolated from 94.7% of the faeces of 207 cases of gastro-enteritis, whereas it was only found in 1.8% of 721 controls. Antibody titres were raised in 60% of 41 cases and in only 1.2% of controls. In 55 necropsies the organism was found almost constantly in the gastro-intestinal tract and was isolated occasionally from the mesenteric lymph nodes, the liver, and the spleen. Feeding experiments were unsuccessful except with 10 newborn guinea-pigs; five of these developed diarrhoea and three died, with findings at necropsy similar to those in infants dying from gastro-enteritis.

Dr. JOAN TAYLOR, who had also found such strains (called by her D.433) in sporadic outbreaks of gastro-enteritis, was still sceptical about their pathogenicity.

Dr. GEORGINA M. BONSER had observed in collaboration with Professor M. J. Stewart a series of 57 melanin-forming epidermal tumours. These tumours were classified histologically as squamous papillomas (21), benign calcified epitheliomas (2), and basal-cell (28) and squamous (6) cancers. They were to be distinguished from the true benign and malignant melanomata, which were accepted as being of neurogenic origin. They tended to appear in age groups over 50 years, and to occur more commonly on the face and neck than on the trunk and extremities. There was usually a long history, but they did not metastasize. These tumours were not more malignant than their non-melanin-forming counterparts and responded to the same type of treatment.

Dr. J. HOOGLSTRATEN had compared the *in vitro* growth of leukaemic cells in the serum of a healthy person and in the serum of the leukaemic patient. He said that immature leukaemic cells, although incapable of differentiation *in vivo*, would differentiate or mature *in vitro* when grown in normal human or animal plasma. Fresh blood or plasma transfusions might produce temporary haematological and clinical improvement and even diminution in the size of the enlarged lymph nodes and spleen; reconstituted dried plasma did not have this effect. Leukaemic cells were therefore cultured experimentally, and he showed that these immature myeloblasts and myelocytes were capable of a degree of differentiation *in vitro* resembling that of normal leukopoietic cells, but with the same rate of proliferation and extent of differentiation whether grown in leukaemic or in normal serum. Normal plasma therefore did not exert its influence directly on leukaemic cells but possibly through an intermediary mechanism or another tissue.

Dr. M. C. G. ISRAËLS put forward a strong plea for agreement on the nomenclature of blood and marrow cells. There

was already a measure of agreement in terminology for the white cell series, but the position of the red cell series had been further complicated by the proposals of the American committee, which wished to include the hybrid terms "rubriblast," "rubricyte," "metarubricyte," etc.; the megaloblast was to be called "pernicious anaemia type rubricyte."

It was generally agreed by subsequent speakers that the terms now in use in this country were acceptable and that what was really required to avoid confusion was a standardized description of the cells which were called proerythroblasts, megaloblasts, and normoblasts. It was announced that the association had set up a committee on haematology.

Anaesthetic Deaths

A formal discussion on anaesthetic deaths was opened by Dr. KEITH SIMPSON, who spoke of the group of people who had a slender hold on life and were killed by trivial accidents and stresses. Dr. R. D. TEARE discussed curare and myanescin in this connexion, and Dr. F. E. CAMPS described the pathology of deaths from anoxia. Dr. G. S. W. ORGANE gave the anaesthetist's point of view and suggested that the pathologist was not the best person to investigate anaesthetic deaths, as there was little gross change. He pleaded for an investigation by anaesthetists, who were in a better position to ascertain what procedures had been adopted and whether any fault in technique could be found, so that the administrator could be guided, rather than reprimanded by a coroner. Dr. C. D. COGSWELL, coroner for the county of Middlesex, and himself a doctor and anaesthetist, said that the coroner was not apportioning blame but merely holding an inquiry into the relevant events leading up to an anaesthetic death. Others who took part in the discussion were Professor R. R. MACINTOSH, Dr. I. W. MAGILL, and Dr. W. R. HEDDY.

On Saturday, with Dr. C. J. C. BRITTON in the chair, Dr. J. MURRAY and Drs. E. N. ALLOTT and C. A. HOLMAN described their methods of investigating foetal haemolytic disease with special reference to prevention and treatment. In the discussion which followed, Sir LEONARD PARSONS congratulated the speakers on their results. He showed how the mortality had dropped in the best hands from 50% to about 10%. Dr. W. WEINER reviewed some cases of leukaemia in which he had used replacement transfusion. He had produced some clinical improvement, which was, however, only temporary. Subsequent speakers doubted the wisdom of transfusion in leukaemia, especially in children.

With Professor N. F. MACLAGAN in the chair the final session opened by Dr. M. HYNES, who described his experimental work on the normal iron reserves in man. This was done by keeping a man until his rate of regeneration of haemoglobin reached a constant level. The daily absorption of iron from the food in excess of that normally required to replace effete red cells was calculated by the different rates of regeneration of haemoglobin when 6.5 ml. and 20 ml. of blood, respectively, were withdrawn daily after exhaustion of the iron reserves.

Professor E. C. DODDS, after discussing the nomenclature used in steroid chemistry, went on to give an account of the modern method. Almost any woman could give steroids. He mentioned the motherly. Again, with regard to colleagues that many diseases, was there a technique of sex steroid pattern of psychiatrists ought to formulate and hand on the claim that the and parents?

What would be the effect of prophylactic steroids isolated from towards the child upon the ultimate incidence analyses should psychosis and the like in the adult community and of other that all such disorders were produced during the first months and early years of child life it might be possible if it were possible to treat all the childhood disturbances. community there would presently arise a race of fools from these disturbances. He could not believe that it would be true. With every phase of mental growth and development new factors entered into the life of the individual. At the meeting new factors at puberty, for example, and also, in Feb. 18, when foolproof protection could be obtained by means of subperitoneal alone. Child psychiatry had the power to prevent the thirty-second and methods of handling which would be quietly in a cinema disturbances, but it would be rash at the iliac fossa. On admission the power to filter them off completely. The uterus was displaced

to the left by a mass at the right side which, on exploration, was found to be a haematoma of the broad ligament. A large-bore rubber drainage tube was inserted extraperitoneally into the haematoma. The patient had a stormy convalescence, during which signs of toxæmia of pregnancy became evident and a stillborn macerated foetus was expelled on the second day. Mr. S. BENDER described a case of appendicitis during pregnancy in which the foetus survived a series of major complications, and Dr. T. REDMAN read a short paper entitled "Descent of the Foetal Head in Late Pregnancy and Labour." Mr. P. MALPAS discussed the limited use of vaginal packing for the treatment of uterine haemorrhage following caesarean section for placenta praevia.

TREATING THE AGED SICK AT HOME

The Medical Society for the Care of the Elderly met at St. Heli Hospital, Carshalton, on Jan. 25. Dr. E. B. BROOKE, medical superintendent of the hospital, read a paper on the domiciliary treatment of the aged sick.

The number of requests for admission to hospital, Dr. Brooke said, was so great that the formation of a waiting-list was misleading to prospective patients. It raised unwarranted hopes of a bed, hopes doomed to disappointment from the start. There were beds in the hospital, but no staff to care for additional cases. Part-time nurses or W.V.S. personnel could not do night duty, even if they helped by day. In fact, the only place where it was possible for these patients to get attendance at night was in their own homes. Since it was not possible to treat them in hospital, the aim must be to bring hospital facilities to the home.

Faced with this problem, his first step was to send a geriatric social worker to see those elderly patients he had been asked to admit but could not accommodate. The first difficulty had been that of providing suitable meals for patients who had nobody to cook for them. To meet this situation his hospital management committee had convened a meeting of representatives of all county health services, the county social welfare services, at the assistance board, with general practitioners from the local executive council. As a consequence of this meeting a standing liaison committee was formed to put into effect the recommendations of the B.M.A. Committee on the Care and Treatment of the Elderly and Infirm.

It was found that transport would be necessary to bring sitting and lying patients up to the hospital for out-patient examination and physiotherapy. A hot meals service was instituted by the W.V.S. This was the "meals on wheels" service. As a laundry service for patients' dirty linen had been established using the hospital as a headquarters for collection and delivery. Routine contacts were made with district nurses, the home help service, Red Cross workers, the W.V.S., occupational therapy teachers, and finally those who were willing to shop for the sick and to visit them from time to time. In many cases it was found possible to arrange for a service of "patient-watchers" among neighbours. This scheme was possible only where the co-operation of the general practitioner was forthcoming. The motto was, "Everything possible short of admission to hospital."

At present the system was in its infancy, but during the first three months of its life it had helped 100 patients who could not otherwise be cared for at home yet who could not be admitted to hospital. The visits of the geriatric social work had been most useful in deciding the priority of cases for late admission. As a general rule two types of cases were given priority: those who could benefit by medical treatment within a short time, and those who were very ill under unsuitable home conditions. It was claimed that the service given by the system, however imperfect, was better than allowing patients to remain at home without such assistance, or than putting the names on a meaningless waiting-list.

The Ministry of Health has prepared the *Handbook for General Dental Practitioners* for the guidance of dentists taking part in the National Health Service. It describes the provisions of the N.H. Act and of the regulations up to November, 1948, as they apply to dentists. Copies have been sent to local executive councils for distribution to dentists on their lists.

Correspondence

Classical Caesarean Section

SIR,—The remarkable thing about the correspondence on classical caesarean section, the lower-segment operation, and rupture of the uterus (Sept. 25, 1948, p. 602, Oct. 16, 1948, p. 722, *et seq.*) is that it should take place at all. It is twenty-eight years since Eardley Holland and Munro Kerr introduced the lower-segment operation in this country, and about the same time since Beck, of Brooklyn, and DeLee, of Chicago, popularized it in America. Prior to that the essentials of modern technique had been well established by several Continental obstetricians. In a few years that followed the superiority of the operation became manifest, and the position now reached (or so one had supposed) when caesarean section means the lower-segment operation unless otherwise stated.

With many of the points raised by your correspondents I entirely agree; no operation, however good, is applicable to every case irrespective of the particular conditions present. What the conditions are that occasionally prohibit the use of the lower-segment technique have been clearly summarized by Mr. C. Scott Russell (Oct. 16, 1948, p. 722)—almost the only champion of the lower-segment operation in this correspondence. So far so good, but what disturbs me is that the many letters have collectively conveyed an impression that the contraindications to the lower-segment section are so many and the difficulties are so great as to make it more or less a "stunt" operation. Those surgeons who still routinely employ the classical operation are thus confirmed in their complacency. This attitude I deplore, and for the following reasons.

Although the mortality rate for all types of caesarean section is now remarkably low, there is, so far as I know, no large series of consecutive cases (500 or more) which can show a mortality rate of under 1% *save those in which the lower-segment technique was used* (for example, the 0.4% mortality rate reported by Free).

The abdominal incision for the lower-segment operation is relatively small and is sub-umbilical; consequently there is seldom any exposure of the intestines. Theoretically this should lessen post-operative complications, and in practice I believe it does. Patients who have had the lower-segment operation generally make a quicker and easier recovery than do those in the other group, and the testimony of women who have experienced both operations is often eloquent on this point. After the classical operation the intestine sometimes adheres to the abdominal scar or, oftener, to the scar in the uterus. Obstruction is then a possibility, and may occur early by the involuting uterus dragging a loop of ileum down into the pelvis. This complication does not occur after the lower-segment operation.

It is generally stated that 4% of "classical" scars rupture in subsequent pregnancies (this figure would undoubtedly be higher if abdominal section were not so often again employed before the onset of labour). With the lower-segment technique the risk of rupture is greatly lessened. The uterus is incised in a part that is inert and which can therefore heal quietly and soundly. Firmness of the scar is further ensured by reinforcing the suture line by a layer of fascia or a fold of uterine muscle—a procedure that is impossible in the case of the other operation. Finally, it is unlikely that the placenta will become implanted over the scar in a subsequent pregnancy—a happening which it is generally supposed strongly predisposes to rupture.

Because of these facts rupture of a lower-segment scar is an unusual event and is estimated to occur in only 0.25% of cases. On this reckoning the risk of rupture is therefore only one-sixteenth of the risk associated with the classical operation. Convincing evidence of the increased safety is also found when the uterus is examined at a subsequent operation. It is seldom indeed that the "classical" scar does *not* show, in the emptied uterus, as a long, deep furrow, whereas the lower-segment scar is only rarely identifiable—far less does it show as a weakened area.

The slight delay in extracting the foetus is sometimes cited as a point against the lower-segment operation, and it is alleged

that the establishment of foetal respiration may be delayed by the relatively large amount of anaesthetic which the foetus absorbs. This difficulty, if it exists, is largely overcome by the careful choice and competent administration of the anaesthetic.

So convinced am I that the classical caesarean section is now superseded that I should be disturbed if I heard that any friend of mine had been subjected (without good reason) to that operation. And if at some subsequent pregnancy she had the misfortune to suffer a rupture of her uterus my thoughts would be bitter as well as sad.

I was once asked by an emioet gynaecologist what type of operation was being employed in my country. When I answered, "Usually the classical operation," he shook his head sadly and replied, "I cannot understand the mentality of anyone who still uses the classical section." That was eighteen years ago; how much more forceful his words have now become.—I am, etc.,

Oxford

J. C. CHASSAR MOIR.

REFERENCE

¹ *Amer. J. Obstet. Gynec.*, 1945, 49, 401.

Spinal Anaesthesia for Caesarean Section

SIR,—If an anaesthetic technique is popular with some and condemned as dangerous by others, it means either that some are lucky when they have no trouble or that the others are violating some sound principle of anaesthetics. Many gynaecologists regard spinal analgesia in caesarean section as a procedure fraught with danger of sudden death to the mother, a danger which cannot be predicted in any particular case and about which nothing can be done. Some believe there may be biochemical changes, subtle enough to be indefinable, in pregnant women which make them liable to collapse under spinal anaesthesia. There are indeed sudden deaths in these circumstances, but I believe they are subject to a straightforward explanation and that they are preventable.

A spinal anaesthetic for a moderately high abdominal operation inevitably paralyses the nerve supply to the lower intercostal muscles, so that the lower and mobile part of the chest wall is temporarily put out of action. A full-term uterus splints the diaphragm, and the effect of this is increased by the Trendelenburg position and surgical packs. All that remains is for the surgeon's assistant to lean on the patient's chest to complete the insult to her respiratory mechanism. Even without this last there is a probability of collapse from anoxia if the patient is breathing air only. If she breathes oxygen, or there is means to inflate her with it, I believe the maternal risks are no greater than with other means of pain relief for this operation.

I am prepared to advance what I believe to be cogent arguments in favour of the trouble all being due to respiratory embarrassment, but at this stage I feel it is more profitable to end with a warning—but on behalf of the foetus. Contraction of the uterus is a notable feature of spinal analgesia, and it appears to increase with the passing of the minutes: time therefore must not be wasted. On one occasion I gave a spinal anaesthetic for a caesarean section because of placenta praevia. After the injection the diagnosis was confirmed by surgeon and assistants and the operation thus delayed some 30 minutes. Before the injection the foetal heart sounds gave no cause for alarm, but when the uterus was exposed some 50 minutes later it was tightly contracted, firmly gripping the foetus, which was found to be dead. On another occasion, with a different gynaecologist, there was a delay of some 20 minutes before the operation commenced, and my colleague, before opening the uterus, commented that so tightly was it applied that it almost revealed the sex of the foetus. In this case the infant was little the worse for the experience.—I am, etc.,

Oxford

R. R. MACINTOSH.

Vitamin E in Heart Disease

SIR,—In the *Sunday Express* of Feb. 20, 1949, "Doctor M.P." writes an article under the heading "A medical discovery 'as great as insulin.'" He discusses the use of alphatocopherol (vitamin E) in heart disease and states that this drug "has been proved in my view as a doctor to show miraculous results in angina pectoris, in certain kidney diseases, and in

... Buerger's disease." He further asserts that its discovery is "officially recognized and proclaimed as one of the most beneficent in medicine since the introduction of insulin in 1922." He proceeds to upbraid the Ministry of Health for refusing to arrange for the import of "Vita E," which is being manufactured in Toronto.

Since Vogelsang, Shute, and Shute¹ published a series of articles on the use of vitamin E in heart disease, in which they claimed marked improvement in cases of angina pectoris and rheumatic and hypertensive heart disease, several workers in different countries have reported their failure to confirm these findings. Baer and his colleagues² found only questionable improvement in 6 out of 22 patients with congestive failure, angina pectoris, or hypertensive heart disease. In 11 similar cases Levy and Boas³ found no clinical evidence to warrant the use of vitamin E. From a controlled study of 22 cases Makinson and his colleagues⁴ concluded that vitamin E is of no therapeutic value in the routine treatment of angina pectoris. Gram and Schmidt⁵ found no improvement in 63 out of 80 patients with heart disease (mainly arteriosclerotic) treated with vitamin E. Ball⁶ found definite improvement in only 2 out of 10 cases of angina pectoris. Furthermore, not a single favourable report on any controlled observation of vitamin E in heart disease could be found. No controls were used in the series treated by the Shutes.

I should like, therefore, to make a strong protest against these observations of "Doctor-M.P." in a national newspaper. As a result of his article patients will undoubtedly harass their doctors to give them vitamin E. If they can get this drug their faith in it may result in some temporary improvement, as so often happens in cases of angina pectoris. But to buoy up the hopes of the many sufferers from heart disease with such dubious evidence is surely quite unjustified. From the reports already quoted the assertion that vitamin E is officially considered a great discovery is completely without foundation. In a panel discussion on cardiac therapy at the 1947 meeting of the American Medical Association⁷ it was stated that vitamin E is of no value in coronary heart disease, hypertension, or rheumatic heart disease.

There might be a case for even further controlled experiments on alpha-tocopherol (obtained either in this country or from Canada). But there is no case for presenting vitamin E to the public as a great medical discovery for the treatment of heart disease.—I am, etc.,

London, N.W.10

K. P. BALL.

REFERENCES

- ¹ *Med. Rec.*, N.Y., 1947, 160, 21, 91, 163, 230, 279.
- ² *Amer. J. med. Sci.*, 1948, 215, 542.
- ³ *Ann. intern. Med.*, 1948, 28, 1117.
- ⁴ *Lancet*, 1948, 1, 102.
- ⁵ *Nord. Med.*, 1948, 37, 32.
- ⁶ *Lancet*, 1948, 1, 116.
- ⁷ *J. Amer. med. Ass.*, 1948, 138, 1031.

Nuffield Hospitals Trust

SIR,—The annotation (Feb. 19, p. 318) covering the recent report on the work of the Nuffield Provincial Hospitals Trust includes one curious and, I must suppose, unintentionally inaccurate sentence. This reads as follows:

"Among other projects supported by the Trust, always with a view to the better co-ordination of hospital services, the most noteworthy was the setting aside of £100,000 for the creation of the first professorship and Institute of Social Medicine in Great Britain—at Oxford under Professor J. A. Ryle."

The Chair and Institute at Oxford have never, of course, been concerned in any way with the co-ordination of hospital services. The purposes of the Institute, as laid down in the Resolution of the Trustees (1942), are as follows:

- (a) To investigate the influence of social, genetic, environmental, and domestic factors on the incidence of human disease and disability.
- (b) To seek and promote measures, other than those usually employed in the practice of remedial medicine, for the protection of the individual and of the community against such forces as interfere with the full development and maintenance of man's mental and physical capacity.
- (c) If required by the University to do so, to make provision in the Institute for the instruction in Social Medicine of students and practitioners of medicine approved by the Board of the Faculty of Medicine in the University of Oxford.

During the six years following its inauguration I hope that the academic activities of the Institute, including the publication of some 50 papers by members of the scientific staff, have sufficiently established its claim to be working towards the fulfilment of these purposes. Medical economies and administration, much though they stand in need of careful study, are not within our terms of reference.—I am, etc.,

Oxford.

JOHN A. RYLE.

* Professor Ryle is right. The error arose through the fact that in the report of the Nuffield Provincial Hospitals Trust the work of the Institute of Social Medicine was described in a section headed, "Some Projects Supported by the Trust Towards the Better Co-ordination of Hospital Services."—Ed., *B.M.J.*

Illness in General Practice

SIR,—The interesting article by Dr. John Pemberton (Feb. 19, p. 306) would have been more interesting and informative if he had carried the analysis of his data a step further. Neglecting the two categories accidents and obstetrics in Table IV, a statistical examination of the variability of diagnoses supplied by the seven doctors reveals discrepancies of a size that can hardly be ascribed to chance.

The difference between the average number of diagnoses in each category and that of the individual doctors can be expressed as follows:

Doctor	χ^2 Test	Contribution by:
A	44.16	Cardiovascular disease in excess 38.4
B	44.78	Cardiovascular disease in excess 29.4
C	11.51	Deficiency in mental ill-health 7.25
		Deficiency in cardiovascular disease 8.2
D	4.72	Insignificant difference
E	9.72	Rheumatism in excess 8.35
F & G	13.97	Equal spread over categories
H	11.54	Deficiency in mental ill-health 9.3

The χ^2 value of 9.5 signifies a difference expected only once in 20 samples, while a value of 13.3 is expected only once in 100 samples. There are two possible explanations of these differences: (1) age groups or social or geographical influences affecting the various practices; and (2) variations in the judgments of the doctors concerned.—I am, etc.,

Sheffield.

E. J. G. BRADFORD.

Pulheems

SIR,—With reference to "Surgeon-Lieutenant's" letter (Feb. 5, p. 244) I am not in a position to comment on the application of the Pulheems system in the Royal Navy, with which the writer's letter appears largely to deal, but I can clarify the situation slightly in so far as the Army's application is concerned.

I agree with "Surgeon-Lieutenant" that in Service life it would be more valuable to fit the man's duties to his previous occupation, and this in fact is the duty of the personnel selection officer in the Army. With regard to the length of time Pulheems examination takes, "Surgeon-Lieutenant" will agree that Pulheems is merely a new method of recording findings on medical examination, and, if the doctor examining the patient knows the system of medical classification he is going to use, the additional time taken to record the findings in accordance with Pulheems is no greater than with any other system.

All entrants to the Services are examined by the civilian medical board of the Ministry of Labour and National Service, whose examination is complete. These boards consist of four medical officers, one chairman, and one orderly, and the boards are able to complete the examination of 20 men in 2½ hours (Supplement, Feb. 12, p. 74). On these medical boards lies the responsibility to certify that the individual entering the Service is fit for service.

This being the case, the first examination of all new entrants to the Army is merely a verification of the findings of the civilian medical board, taking into account their medical report and the history given by the individual regarding the period which has elapsed since the civilian board examined him. The finding of the medical officer in this instance is taken as the individual's initial Pulheems assessment, and after a period not exceeding four months the individual is again examined and given a Service Pulheems assessment, which is based on the

The Delicious Nourishing, Energising Vitamin Food

for Infants, Children & Adults
at all Seasons

BY providing a valuable nutritive element and vitamins in a delicious form, Vimaltol offers special advantages everyday to the physician. With delightfully pleasant orange flavour Vimaltol is readily acceptable to every patient.

Vimaltol is made from specially prepared malt extract which is high in protein content, and one of the best sources of Vitamin B₁ and Riboflavin. It is also an important source of Vitamin A and D. It is also fortified with additional vitamins and mineral salts and is deliciously flavoured with orange juice.

Vimaltol is fortified to contain in each fluid ounce (28.35 g.) 1000 units of Vitamin D, also 0.3 milligrammes of Vitamin B₁ (P.P. vitamin) and 4.2 units of Vitamin A in a palatable form.

Vimaltol is an important therapeutic agent in the treatment of certain essential deficiencies of vitamins in the diet, such as those resulting in abnormal growth, e.g. in the development of the maintenance of the general resistance against infection.

Vimaltol is described with advantage in the following references:

VIMALTOL

1 lb. for clinical trial on request

42, Upper Circular Road, S.W. 6, LONDON, W. 6
DER. LTD., Grosvenor Sq. London W. 1

The
established
advantages
of...



'MEDINAL' is readily absorbed and exerts its hypnotic effect for about 6 to 8 hours, whereas many other compounds, being of shorter action, do not provide unbroken sleep. Unlike the longer-acting barbiturates, 'Medinal' does not produce "hangover" effects. Safe and free from unpleasant side reactions, a valuable means of treating insomnia and nervous tension is thus provided.



Powder: ½ oz. and 1 oz.
Tablets: 5 or 7½ grain,
10, 100 and 250

A new approach to the relief of pain

TETRAETHYLAMMONIUM salts were found in 1945 to block the transmission of nerve impulses through the autonomic ganglia, and they have been employed diagnostically in selecting patients for sympathectomy suffering from peripheral vascular disease.

Tetraethylammonium Bromide may be used therapeutically to give relief from pain in peripheral vascular disorders, causalgia and post-herpetic neuralgia.

Injection of T.E.A.B.-Boots Supplied as a 10 per cent. solution for intravenous or intramuscular injection :—Boxes of 12 x 1 c.c. and 12 x 5 c.c. ampoules.

Tetraethylammonium Bromide-Boots

Literature and further information on request to the Medical Department

BOOTS PURE DRUG CO. LTD., NOTTINGHAM





terms of  **TONIC** value

The value of a tonic cannot be measured in simple numerical units. But the essential features of such a preparation can be placed under well-defined functional headings . . . *restoration, formation and protection.* Syrup Minadex is well equipped to fulfil these functions. Iron, calcium and other minerals comprise the stimulatory and formative elements of Minadex. The vitamins A & D of Minadex are valuable in a protective sense. Combined in an orange-flavoured syrup enjoyable even to the most fastidious patient, these factors restore lost appetite and hasten the return to full health.



In 6 oz and 12 oz bottles

Each fluid ounce contains : Vitamin A 18,000 i.u. Vitamin D 3,000 i.u. Iron and ammonium citrate 13½ grains. Calcium glycerophosphate 2 grains, potassium, sodium, and manganese glycerophosphates; copper sulphate.

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX. BYRON 3484

Painless INTRAMUSCULAR INJECTIONS

e.g. of PENICILLIN, LIVER EXTRACTS,
ARSENO-BENZOLS, BISMUTH, etc.

Many substances create some pain on Intramuscular Injection. Novutox injected at the same time will prevent this pain.

Most substances are compatible with Novutox, which is also non-destructible to penicillin during the time that the latter is undergoing absorption.

Mixtures with Novutox should be made
immediately before use ONLY.

NOVUTOX
Self-Sterilising
Local Anaesthetic

Each cc of Novutox 2% contains 0.02 gm. ethocaine hcl., 0.00002 gm. epinephrine and 0.00002 gm. capryl hydrocupreinotoxin hcl. Other strengths of Novutox contain these elements (with or without epinephrine) in varying proportions.

PHARMACEUTICAL MANUFACTURING CO. LTD.
THE LABORATORIES, CHELTENHAM, GLOS.

For the
'bilious' or 'liverish'
patient

Dehydrocholin B.D.H. is dehydrocholic acid, the most active and least toxic of the bile acids. It is highly effective in aiding the digestion and absorption of foodstuffs, particularly fats, and it promotes the secretion of bile, thus exerting a twofold action. Dehydrocholin B.D.H. is effective by mouth and is indicated particularly for the treatment of 'bilious' or 'liverish' conditions.

Available in tablets each containing
0.25 gramme.

**DEHYDROCHOLIN
B.D.H.**

Details of dosage and other relevant information on request
MEDICAL DEPARTMENT

THE BRITISH DRUG HOUSES LTD. LONDON N1
TEL: CLERKENWELL 3000 GRAMS: TETRADOME TELEX LONDON
Dhyd E/22

findings on examination and on the experience of the individual during his period of training by both the medical officer and the training officer. Army experience shows that both these examinations can be carried out quite adequately allowing 10-15 minutes per man.

The other point which is, I think, relevant is the fact that 90% of Service intakes are fit men who can be dealt with very quickly, leaving more time for the remaining 10% who are not so fit. The time taken to examine a man will depend on the purposes behind the examination and the object of it and may vary from 5 minutes to 30 or even 40 minutes, depending on what the doctor is looking for and what he finds.

If "Surgeon-Lieutenant" cares to study the instructions and literature available on the grading system of classification formerly used by the Ministry of Labour and National Service, also by the Royal Navy and the Royal Air Force, and the old medical category system used by the Army, he will not doubt realize why I have said that Pulheims goes a long way towards unifying and rationalizing our standards and towards improving our clinical appreciation of physical and mental health—I am, etc.,

London, S.W.1.

R. T. FLETCHER
Major, R.A.M.C.

Oral Reactions to Penicillin

SIR,—In a paper carrying the above title, recently published in this *Journal*, Dr. W. G. Cross (Jan. 29, p. 171) quotes among others a paper by Ellinger and Shattock (Oct. 26, 1946, p. 611). Dr. Cross states that Ellinger and Shattock had described the oral reaction to penicillin—i.e., a slaty discoloration of the tongue following local application—"as largely one of nicotinamide deficiency." Ellinger and Shattock reported the case of a woman who had previously shown clinical signs of nicotinamide deficiency, and who developed pellagroid symptoms after local treatment of the mouth with penicillin, particularly of the central and peripheral nervous systems, and simultaneously a slaty discoloration of the tongue, unknown in human, but common in canine, nicotinamide deficiency. It was possible to repeat in the same person the precipitation of pellagroid conditions, as well as discoloration of the tongue, by renewed local application of penicillin and to investigate simultaneously the urinary elimination of nicotinamide metabolites. The latter were found to be diminished during penicillin application, thus confirming the presence of nicotinamide deficiency. The authors stated, contrary to the quotation of Dr. Cross, that probably "the changes observed are partly due to a local effect of the drug on the tongue," and that "the local effect causing the darkening of the tongue has still to be investigated."

Cross claims in the summary of his paper that "neither nicotinamide deficiency nor . . . is responsible for the oral reactions." We do not know on what evidence this statement is based. He does not mention examination of the elimination of nicotinamide derivatives, the only reliable basis for the diagnosis of a nicotinamide deficiency. If, as it seems, his statement is based on the fact that the inclusion of the totally inadequate amount of 2 mg. of nicotinamide in the penicillin tablets did not prevent the development of darkening of the tongue, then his statement is inconclusive. When for some reason or other the nicotinamide-releasing intestinal bacteria are out of action about 100 mg. of nicotinamide daily for several days is needed to prevent, and 200-500 mg. daily to cure, a nicotinamide deficiency.—We are, etc.,

P. ELLINGER.
F. MACKENZIE SHATTOCK.

London S.W.1

Epilepsy and Foetal Behaviour

SIR,—I have hesitated to reply to Dr. Thomas D. Power's question under this title (Jan. 29, p. 197) because I have not sufficient knowledge of physiology and, in particular, the work of Coghill and Barcroft on primitive behaviour. With this reservation, however, I must say that the theory that an epileptic fit is a reversion to a foetal level of nervous function does not appeal to me. The epileptic convulsion is not explainable solely by the release of lower functions, but must include also pathological overactivity of cortical neurones. Furthermore, behaviour in a fit is not always "total," but may be exquisitely localized.

Finally, it is not correct to describe movements in a fit as spastic, as this is a term which applies to a state of muscle tone and not to movements.—I am, etc.,

Newcastle-upon-Tyne

F. J. NATTRASS

Approach to the Frontal Lobe

SIR,—Psychosurgery is certainly not without its faults and cannot be defended as a perfect type of psychiatric treatment, but it should not be the subject of seemingly ill-informed attacks such as the counterblast by Dr. P. Glees (Jan. 29, p. 193).

The "new access" recommended by Freeman is in fact explored as an experimental approach by Fiamherli, who published his results in 1937. After careful anatomical studies indicating that a type of transorbital lobotomy did in fact sever the thalamic connexions of areas 9 and 10, as in the more conventional topectomy operation, Freeman began to direct a series of transorbital lobotomies in 1946.

The "predictable results" for which Dr. Glees asks may be shown by the preliminary report of Jones and Shanklin¹ and by Freeman's² comments on a series of 100 cases. Favourable response was claimed in one-third of the schizophrenics and one-half of the involutional cases. The "serious consequences" feared by Dr. Glees can be stated more explicitly—two cases in the series showed complications, and the absence of "unfavourable personality symptoms noted after prefrontal lobotomy" is commented on.

The "indications for a lobotomy operation" are admittedly not yet as clear as one could wish, but the field is not altogether untilled. May I refer Dr. Glees to Kalinowsky and Scarff,³ *The Selection of Psychiatric Cases for Prefrontal Lobotomy*, or the U.S. Veterans Administration publication, *Criteria to Guide in Selection of Patients for Prefrontal Leukotomy*? If those do not sufficiently represent "a united effort of research and clinical observation" Dr. Glees should try the sixth report of the Group for the Advancement of Psychiatry, *Research on Prefrontal Lobotomy*, or perhaps he will be better pleased with *The Human Frontal Lobe*, which represents the observations of a medical-surgical scientific group of 96 collaborators.—I am, etc.,

Ilkley, Yorks

MAX VALENTINE.

REFERENCES

- ¹ *Northw. Med. Seattle*, 1948, 47, 421.
- ² *Dis. Neurol. Psychiat.*, 1948, 16, 398.
- ³ *Amer. J. Psychiat.*, 1948, 105, 81.
- ⁴ Lewis, N. D. C., *ibid.*, 1948, 105, 151.

Fibrositis

SIR,—The letter of Dr. J. H. Milner (Nov. 27, 1948, p. 955) forces me to continue a fruitless discussion reluctantly. Naturally I could in my letters only mention the fundamental conception of diminished blood flow leading to hypoxia in the myalgic spots, which, I added, might be caused either by vasoconstriction or vasodilatation. I stressed that the details of the theory are given in a special paper the publication of which I am sorry to say has been delayed.

Dr. Milner, now following Dr. Cyriax, postulates a host of pathological processes of a purely theoretical nature for fibrositis. If not psychogenic or imaginary the processes are in the cervical spine, and he mentions the results of prolonged degenerative processes or a more severe single trauma, giving way of the disk, approximation of the vertebral bodies, marginal flipping, osteophytes, etc. For these assumptions not a shadow of positive evidence is adduced. On purely theoretical grounds it is postulated that root lesion is present in primary fibrositis.

The assumptions put forward do not stand a logical analysis. First, the symptoms and signs of fibrositis do not correspond to a spinal-root lesion. Secondly, it is a fact that "fibrositis" can be cured by injection of procaine into each myalgic spot—this could not be possible if it were caused by a root lesion. Lastly, Dr. Milner suggests "that fatty herniae may occasionally be the result of fatty degeneration of muscles and their fasciae," a view which runs counter to the fundamental conceptions and findings of modern pathology and which will make R. Virchow turn in his grave. He claims that his views "harmonize with proven first principles." One must ask, What are these principles?—I am, etc.,

London N.W.11

M. G. GOOD

Whittier Tuberculosis?

SIR,—The airing of a subject, even so big and complicated as one as the present position of combating tuberculosis, in your correspondence columns is most helpful. May I reiterate some of the points I tried to make in my previous letter?

(1) Complications will be clarified by bearing broad principles in mind, for sometimes these are forgotten in a maze of "directives" and a multiplication of officers, clerks, forms, and regulations.

(2) Regulations and "directives" should lessen and not increase overlapping.

(3) In any disease, and especially in dealing with tuberculosis, the interplay of cause and effect, of prevention and treatment, must be grasped. But the recognition of such interplay should prevent individual doctors and their assistants from attempting to encompass too much. They must be guarded against trying to do too many jobs.

The Lancashire team without doubt pursued a straight path, trod a well-paved road up to "the crossroads." The road now may not be so straight and well paved. Much new ground has to be covered. For example, mass radiology must be developed in ways recent experience has taught us. B.C.G. vaccination should be extensively used. Dr. G. Lissant Cox, especially if ever vigilant to observe the points I have mentioned above, can still help.

There is a dangerous trend to-day—namely, belief in and exaltation of supermen. Whether such be chairmen of important advisory committees, or paymasters-general in big regions, or others in high positions, we must be careful not to count them as godlike Führers. Fortunately in our fight it is the prowess of the individuals in the fighting line which counts for success, as Dr. W. H. Tattersall has indicated in his letter (Feb. 19, p. 322).

I was perhaps to blame for reference to an unimportant detail in my last letter. But it appeared to me and many of my friends that my fellow Liverpudlian, Dr. Lissant Cox (apparently all the best people were born in Liverpool! But what has that got to do with the argument?), did not help clear thinking by misusing the word "directive," which until a few years ago was used only as an adjective, by saying a disease can merge into a directive. He could have expressed his meaning, I think, more clearly. And it was rather unnecessary to bring out what surely everyone working on tuberculosis in England knows—that public health committees have been eroded by regional boards. This has been observed even here privileged to live "in a far corner of a minor county." am, etc.,

Sundesley, Norfolk.

S. VERE PEARSON.

Unusual Case of Twins

SIR,—The case here recorded occurred by a coincidence on the day of publication of an account by Drs. J. H. Young and F. E. Cull (Oct. 16, 1948, p. 713) of an unusual case of twins. The unusual sequence of events during labour is of interest in both cases.

A multigravida, aged 31, attending the antenatal clinic during the 37th week of pregnancy, was diagnosed as having twins. She had had normal deliveries of living children in 1942, 1944, and 1946. Her health had been good throughout the existing pregnancy. X-ray examination confirmed the presence of twins, showing one child lying as a breech presentation with the back to the right, the other as a transverse occupying the fundus uteri with the head to the left. At 38 weeks the foetal presentations were diagnosed by palpation as a vertex and a breech, both presenting parts lying above the pelvic brim.

Labour began on Oct. 15, at 1 a.m., the patient having reached full term. She was admitted to hospital at 11 a.m. on the same day. On examination the foetal positions were diagnosed as L.O.A. and R.S.A. respectively. Pains were strong, and at 1.45 p.m. a vaginal examination showed the os to be fully dilated, the vertex low, and the position an L.O.A. The membranes were ruptured during the examination. The first child was delivered normally at 2.40 p.m. and cried well. At 3.15 p.m. a vaginal examination was made with a view to rupturing the second bag of membranes, but no membranes could be felt. The breech was low and the position an R.S.A. At 3.25 p.m. the second infant was born as a breech completely enclosed in an apparently unruptured caul. The edge of the placenta appeared on the left side when the child was born as far as the scapulae, and the placenta was expelled complete with the rest of the

ovum. On rupturing the caul to free the child it was noticed that there were two layers of membranes over the child's face, the more superficial layer being found to consist of part of the membranes of the first child. There appeared to be little or no amniotic fluid inside the caul, suggesting that a small invisible rupture had occurred early and explaining the difficulty of feeling the membranes on vaginal examination.

At 3.30 p.m. signs of separation of the first child's placenta were recognized. On expulsion it was found to be complete except that a portion of the membranes was torn away from one side, corresponding to that found over the second child's face.

The infants were both live males and were dissimilar in appearance. The first weighed 5 lb. 4 oz. (2.4 kg.) and its placenta 18 oz. (530 g.). The second child weighed 6 lb. 2½ oz. (2.8 kg.) and its placenta 21 oz. (594 g.).

A summary of the course of events in this labour will serve to emphasize the points of interest: (1) Normal birth of the first child as a vertex. (2) Extrusion of the complete ovum containing the second child together with a portion of the first child's membranes. (3) The expulsion of the first child's placenta after the second child's birth, with part of the membranes missing.

I should like to express my gratitude to Mr. Albert Davis and to Dr. S. G. Chapman for their kind advice and permission to publish this report.

—I am, etc.,

London, S.W.10.

J. F. T. ALLISON.

Treatment of Varicose Veins

SIR,—Professor A. M. Boyd and Mr. D. J. Robertson published an article in the *Journal* on varicose veins, mentioning particularly recurrences after treatment and the risks of giving retrograde injections during the operation of saphenous ligation. This warning was substantiated by phlebographic studies carried out by injecting radio-opaque material at the fossa ovalis and at the knee. As the material was shown by x-ray to enter the deep veins, particularly in the thigh, it was considered dangerous to give an injection of sclerosant for fear of causing deep-vein thrombosis. The danger was greater in the thigh than in the leg.

Atlas also stated that retrograde injection was hazardous and should not be done. On reading this latter article I did a series of phlebograms to find out what happened to material given as a retrograde injection. I found that material injected into the long saphenous vein entered the deep system whether the injection was given retrogradely from the fossa ovalis and knee or from below upwards at the ankle. A deeper shadow was obtained in the leg than in the thigh. My conclusion was that retrograde injection from the fossa ovalis was safer than from the knee, because the opaque material was diluted and swept away more rapidly in the thigh than in the leg. Both my findings and my conclusions were the very reverse of those of Professor Boyd and Mr. Robertson.

I am not suggesting that I am right and they are wrong, or vice versa—phlebograms are very tricky things. I am suggesting that such conflicting evidence should keep our minds open on this problem. We have not proved very much, for we knew beforehand that the blood goes from the superficial to the deep veins, and the position of the main communicating veins has been known for a long time. I certainly feel that no case has been established for abandoning retrograde injections.

This is such a useful ally to ligations—one or more—that it should be continued; but it should be used with care and skill. Standard massive doses of strong sclerosants should be abandoned, and minimal amounts of minimal strength solutions consistent with obtaining thrombosis should be used. The quantities and strengths to be used vary with each patient and are arrived at by experience. It is safe to say, for instance, that using "ethamolin" one is never justified in injecting greater than half-strength, while in the majority of cases one-third strength is sufficient. Let us not abandon so useful a form of treatment on insufficient evidence of its danger, but rather let us find out how to use it safely.—I am, etc.,

Sydney, Australia

C. H. WICKHAM LAWES.

REFERENCES

- ¹ *British Medical Journal*, 1947, 2, 452.
- ² *Surg. Gynec. Obstet.*, 1943, 77, 136.

Anæsthetic Problems

SIR,—I have followed with close interest the correspondence on two anaesthetic problems. First, the question of spinal anaesthesia for caesarean section. It is of course a satisfactory method in selected cases and in expert hands. Two important points are to control any drop in blood pressure and to ensure oxygenation of the patient. Indications for its use are nowadays fewer with the use of *d*-tubocurarine and light general anaesthesia with cyclopropane or ether in a closed circuit. Excellent operative conditions are achieved with good relaxation of the uterus; the baby is active and the mother is very well post-operatively.

Secondly, the use of surface analgesics in endoscopic examinations. At the gynaecological clinic at the Royal Sussex County Hospital we have for the past three years been using *d*-tubocurarine and sodium thiopentone with excellent results and, considering the poor condition of most of the patients, with very little anxiety. Here again adequate oxygenation is absolutely necessary. I have no doubt that from the patient's point of view this type of anaesthesia is far preferable to local. They are mostly awake within ten to fifteen minutes of the examination.—I am, etc.

Hove, Sussex

J. H. CRAWFORD

Temperature Recording

SIR,—We all rely so much on clinical thermometer that its accuracy is a matter of extreme importance; therefore the communication of Professor Alan Moncrieff and Dr B. J. Hussey entitled "Temperature Recording in Sick Children" (Dec. 4, 1948, p. 972) and your annotation on "Temperature Recording" (p. 991) are welcome and timely.

One definite advance has been made in clinical thermometry during the past ten or fifteen years. No one believes now that a half-minute thermometer gives a correct temperature if placed in the axilla for half a minute. It was not always so. To get an accurate temperature in the axilla the skin should be dry and nothing should interfere with the closest possible approximation of the sides of the axilla. No dressing-gown, nightgown, or pyjama must interfere with this approximation. For five, ten, fifteen, or twenty minutes the thermometer must remain *in situ*, until the temperature in the axilla equals or at least closely approximates to the temperature of the body. It is impossible to say how long that may take. Clearly, if the surface of the body is cold or if the patient is emaciated it will take a longer time than if he were warmly covered up in bed or well nourished.

For quick and accurate thermometry the rectum is the one place in which a half-minute thermometer will give an accurate record in half a minute. Two points must, however, be observed: the bulb of the thermometer must be in the rectum, and the patient must be at rest for at least half an hour before the temperature is taken. If taken immediately after exercise a temperature of 101° F. (38.3° C.) may be found in a perfectly healthy person.

This letter would probably never have been written but for a statement in the last paragraph of the annotation: "Frequently insufficient care is taken in the length of time a thermometer should be left in position; at least two minutes for a half-minute thermometer." Such a procedure will rarely, if ever, give an accurate body temperature in either the axilla, the groin, or the mouth. The mention of two minutes, even if qualified by "at least," is, I think, most unfortunate, and I deeply regret the suggestion of such a time limit.—I am, etc.,

Dublin

ALFRED R. PARSONS.

SIR,—Now that the seasonal outbreak of correspondence on the subject of temperature recording has occurred, may I add my contribution? A clinical thermometer bearing the N.P.L. (National Physical Laboratory) monogram can be relied upon to measure accurately the temperature of anything in contact with the bulb within the limits (0.2° F.) stated in the certificate and in the time stated. To suggest that it takes longer is derogatory to that institution.

The reason why a thermometer may not record the true temperature of that part of the body into which it is inserted until

some minutes after the time etched on the thermometer is that a cold thermometer chills the tissues with which it is in contact, and these may take some minutes to regain their original temperature. The thermometer will accurately record at the half-minute (or whatever the particular time may be) the temperature of the chilled tissues. The length of time that it takes, therefore, to record the true body temperature will depend mainly on how cold the thermometer is to start with, and this naturally varies on different occasions.

A simple method of measuring the true sublingual temperature in just a trifle longer than the time stated on the thermometer is to place the bulb under the tongue on one side for a quarter of a minute, and then, without removing it from the mouth, to place the bulb under the other side of the tongue for the requisite half-minute or so. By placing it on one side first, the temperature of the mercury in the bulb is brought to within a degree or two of the true sublingual temperature. There is then no chilling effect on the tissues when it is placed on the other side. By this means a patient's temperature may be accurately recorded in three-quarters of a minute, instead of the ten minutes suggested by some of your correspondents.—I am, etc.,

London, S E 22

BERNARD FREEDMAN.

Proguanil in the Sudan

SIR,—In contrast to the rather disappointing results described by Dr. E. S. Walls (July 24, 1948, p. 225) of the use of proguanil ("paludrine") as a malaria prophylactic in Sierra Leone, I have found it extremely satisfactory in this district of the Southern Sudan.

The opportunities for estimating the value of a prophylactic drug are considerable in this area, for malaria is hyperendemic, with *P. falciparum* as the predominant parasite, and not only do many officials live in houses which are not mosquito-proofed (many such as myself prefer not to be hemmed in with mosquito wiring) but most spend a great deal of their time trekking in the forests, where the chances of being bitten by infected mosquitoes are great.

For the last two years I have carefully observed the results of various regimes of proguanil administered to British officials and Northern Sudanese Arabs under my care. The latter arrive in the area without any immunity to the local strains and appear to be as susceptible to malarial attacks as the British, though the severity of the attacks is often lessened—due no doubt to the non-specific resistance they have acquired by their experiences of the disease in the north. I have reached the conclusion that if proguanil in a dosage of 350 mg. or more per week is taken regularly (the easiest arrangement to remember is half a tablet at breakfast each morning) then the chances of acquiring an attack of malarial fever, in this district at least, are very small indeed. My conclusions are supported by the following figures.

Of 14 European adults taking three or more tablets of proguanil per week, two attacks of short-term fever (of unknown origin, but possibly malarial) were seen in an aggregate of 103 man-months at risk. Of four Northern Sudanese adults living in my compound and taking three tablets per week under my continuous supervision, two cases of short-term fever (again of unknown origin, but conceivably malarial) were seen in an aggregate of 21 man-months. In none of these cases were the fevers typical of malaria, and the blood films were negative.

By contrast, among 32 Northern Sudanese—who had in fact been issued with mepacrine, but few of whom took it except when they felt fever coming on—169 cases of "fever" occurred in an aggregate of 156 man-months at risk. The last figures are the result of a questionnaire and may be slightly exaggerated, for though I saw many of these cases, some with positive slides, most were self-treated with the mepacrine issued for prophylaxis and did not report to hospital. I feel, however, that it is near the truth.

Used in the treatment of M.T. malaria proguanil has been disappointing. In the recommended dosage of 100 mg. thrice daily for ten days it is certainly inferior to mepacrine or quinine as regards the rapidity with which the fever is reduced, and I have even seen positive blood films on the 5th day of such a regime. I have not at any time seen ill effects attributable to the drug itself.

It has been known for many years that malaria differs in different parts of the world. It differs in severity, clinical

manifestations, and in its reactions to various methods of treatment. Is it therefore surprising that the different strains should differ in their susceptibility to suppression or true causal prophylaxis by proguanil? Is it not rather more surprising that manufacturers of antimalarial drugs should confidently draw conclusions and issue instructions which they apparently intend to be of world-wide application when these are so often based on experiences in limited parts of the globe? At a time when many are leaving the home country to seek new lives abroad, your columns can help to teach the valuable lesson that advice on matters of protection against endemic diseases is best obtained from those with local experience, and that generalized advice may be misleading or inadequate.—I am, etc.,

LI RANGU, Sudan.

P. H. ABBOTT.

POINTS FROM LETTERS

Treatment of Simple Ganglion

Mr. H. J. NIGHTINGALE (Milford-on-Sea, Hants) writes: The correspondence on the treatment of ganglion reminds me of a method, not so far advocated in your columns, which I found in a surgical textbook some years ago. The author, whose name I have forgotten, prided himself on writing a book on surgery for the first time in English instead of Latin; he flourished in the reign of William and Mary. His methods for emergency surgery such as strangulated hernia were often excellent, and he even anticipated Lister by his repeated advice to wash the wound during the operation with spirits of wine. But when he came to the treatment of ganglion his surgical instinct was overcome by the older principles of magic. He advised first of all the family-Bible method (thus confirming your correspondent's idea that this technique dates from the days of Queen Anne), wisely suggesting that the force used should not be enough to break the bone. If this failed, he recommended binding on with plaster a piece of one of the heavy metals, "best of all a lead bullet that has killed one of the larger animals, such as a stag." But magic had its limitations even for him, and he mentions only to condemn in his more scientific days "such barbarous ideas as 'bringing the sufferer in contact with the hand of a corpse.'"

Penicillin Sensitivity

Dr. H. H. MARGULIES (London, N.W.2) writes: With reference to the recent frequent correspondence on the subject of penicillin sensitivity, I think that the following case may be of general interest. A boy aged 11 years, slightly plethoric, developed acute tonsillitis with a temperature of 102° F. (38.9° C.). I gave him 500,000 i.u. of oral penicillin daily for four days, and the condition has cleared completely. The boy was never given penicillin before. Fourteen days later the boy started to complain of pains in his wrists and ankles, and again shot up a temperature of 100° F. (37.8° C.). I found nothing abnormal on examination till two days later, when he developed a severe urticaria over the whole body coupled with considerable, very painful swellings in the joints of both elbows, hands, knees, and feet. He was given large doses of "benadryl" and aspirin, but the condition did not start subsiding till nine days later. It took over three weeks to clear completely, and the boy has still shown after seven weeks a tendency to urticarial weals on the slightest injury.

Classical Caesarean Section

Dr. C. UHMA (London, W.3) writes: In his letter (Feb. 5, p. 242) on the interesting problem of caesarean section Dr. Tim Boland does not state the type of case under his treatment. To judge whether the classical caesarean operation was rightly chosen it is very essential to know which followed—hysterectomy or myomectomy. In the first case it makes no difference if the lower-segment operation or the classical one was performed. In the second case it would be preferable, in my opinion, to perform the lower-segment operation after removing the fibroid as a whole than to make another incision for the classical section and so to extend the injuries to the uterus which was left.

Causes of Rib Fracture

Dr. A. H. MICHAEL-PHILLIPS (Littleborough, Lanes) writes: I am prompted by recent articles in the *Journal* to record the following. About two years ago I was called to visit a young woman of about 35 years of age who had severe pain in the left side. She had been out earlier that day with her young man, and on rising from the bank on which they had been sitting she felt something snap, "like a twig." She experienced a sudden sharp pain in her left chest and got home with difficulty. It seemed too slight a degree of trauma, but x-ray examination confirmed the diagnosis of a fracture of the left 7th rib.

Obituary

SIR WILLIAM HALE-WHITE, K.B.E., M.D., F.R.C.P.

Sir William Hale-White, who died at his home in Oxford on Feb. 26 at the age of 91, was well known as a clinician and teacher and as the author of a famous textbook. He was on the staff of Guy's Hospital for thirty-four years.

William Hale-White was born on Nov. 7, 1857, in London. His father, William Hale White, was a distinguished nineteenth-century writer who used the pseudonym "Mark Rutherford." Hale-White entered Guy's Hospital Medical School in 1875. He graduated M.B. with honours in medicine in 1879, and proceeded M.D. a year later. After qualifying, he was resident in Guy's Hospital as a house-physician, and was subsequently resident medical officer at the Evelina Hospital for Children. In 1881 he became demonstrator in anatomy at Guy's, and continued this work until 1885, when he was appointed assistant physician. He then took over the lectureship in materia medica, pharmacology, and therapeutics, and continued to hold this post until 1899, when he became lecturer in medicine.

It was in 1892 that the first edition of *Materia Medica, Pharmacy, Pharmacology, and Therapeutics* appeared. Its success was deserved, and it is still in demand. The twenty-sixth edition was published in 1944. A more elaborate work was the *Textbook of Pharmacology and Therapeutics* which Hale-White edited in 1901. Another book, *Common Affections of the Liver*, published in 1908, embodied his considerable experience of this subject as a clinician and as a teacher.

Hale-White was elected F.R.C.P. in 1888, and he was one of the examiners for the College for eight years. He was also censor, councillor, Croonian lecturer in 1897, and Harveian orator in 1927. His four Croonian lectures were concerned with the means by which the temperature of the body is maintained in health and disease. This was a subject to which Hale-White had for many years paid special attention. He had taken part in a discussion on pyrexia and its treatment at the Bristol Meeting of the British Medical Association in 1894, and had previously published papers in the *Journal of Physiology* "on a method of obtaining the specific heat of certain warm-blooded animals." The Harveian oration, "Bacon, Gilbert, and Harvey," was a consideration of the influence which men around Harvey might have had in encouraging him to investigate by experimental observation rather than by deduction from the opinions of previous workers.

During the 1914-18 war Hale-White was a brevet-colonel and consulting physician to a number of war hospitals and a member of the Final Medical Appeal Board. He was also chairman of Queen Mary's Royal Naval Hospital, Southend. In 1919, after twenty-nine years as physician to Guy's Hospital, he retired and was made consulting physician. In the same year he was created K.B.E. He was president of the Medical Society of London in the following year, and president of the Royal Society of Medicine in 1922-3. For many years he was treasurer of the Association of Physicians of Great Britain and Ireland, and much of the success of the Society, of which he was president in 1930-1, was due to his work for it.

Hale-White was much sought after by universities as an examiner first in materia medica and subsequently in medicine. He wrote many papers for *Guy's Hospital Reports* and for other medical journals. He was responsible for several articles in *Allbutt's System of Medicine* and in *French's Index of Differential Diagnosis*. After his retirement from practice



(Press Portrait Bureau)

Hale-White devoted himself to the study of medical history. He completed a short biography of Laennec in 1923, and in 1935 his *Great Doctors of the Nineteenth Century* was published. There followed in 1938 his book on Keats.

He married, in 1886, Edith Jane, daughter of Alfred D. Fripp, the artist, and sister of the late Sir Alfred Fripp, a colleague of Hale-White's at Guy's Hospital. She died on Nov. 30, 1945. Their only son is a physician in London, and to him the sympathy of many colleagues and friends will be extended.

Dr. FRANK PHILIP GILBERT DE SMIDT, who was 58 years of age, died at his home in Nairobi, Kenya, on May 19, 1948, after a long illness bravely borne. He was formerly officer in charge of the bacteriological section of the Medical Research Laboratory, Nairobi, and bacteriologist to Kenya. He was born near Capetown, and was educated in England at Brighton College and then at the London Hospital, where he qualified in 1916. After a period of active service in the first world war he took the D.P.H. and became a research worker in bacteriology for the Food Investigation Board of the Department of Industrial and Scientific Research. Later he held the post of assistant director of the clinical laboratory at the Manchester Royal Infirmary, and subsequently that of pathologist to the Brompton Hospital for Consumption. He then joined the colonial medical service and went to Kenya in 1926 to take up his appointment at the Medical Research Laboratory, Nairobi. There he carried out research on many subjects, notably on plague, pneumonia, and rabies. The vaccines which he prepared were used throughout East and Central Africa. He was the author of a number of papers on bacteriological subjects, and he was widely esteemed by his co-workers in the same field. After ten years in Kenya he was invalided out of the service, and during his remaining years he occupied himself as a member of the Rationalist Press Association of Great Britain and the Rationalist Association of Australia. Dr. de Smidt leaves a widow and a daughter, who is also a doctor.—A. E. R.

Dr. ELAYEDATH ACHYUTA MENON, who died on Sept. 7, 1948, at Irinjalkuda, Cochin State, was born in 1888, qualified in 1912, and served in Mesopotamia during the 1914-18 war. After a period as resident medical officer at the Rajah Sir Ramaswamy Mudaliar Lying-in Hospital, he came to this country and took the Edinburgh F.R.C.S. in 1927 before going out to the Tanjore and Royapuram medical schools, where he was lecturer in operative surgery. He was appointed professor of obstetrics and gynaecology at the Madras Medical College, and later he became assistant superintendent of the Women and Children's Hospital. Soon after completing his work there he took the M.R.C.O.G. From 1936 to 1944 he was professor of obstetrics and gynaecology at the Andhra Medical College, and he was on the staff of the King George Hospital at Vizagapatam.

Dr. EDWARD SEYMOUR CHAPMAN died on Jan. 14 at the age of 69 after a brief illness. He graduated M.B., Ch.B. at Glasgow in 1901, and in 1905 gained his doctorate with honours and won the Bellahouston Gold Medal. After holding resident posts at the Western Infirmary he was for two and a half years assistant physician at the Belvidere Fever Hospital, Glasgow. Chapman then went to the Hertford British Hospital in Paris for some four years, and he took the Edinburgh F.R.C.S. in 1911. After a short period in Southbourne, he came to Scarborough in the summer of 1914. In the first world war he was in the R.A.M.C. for five years, serving in Malta and India, and he became divisional surgeon specialist in Lahore. During his service he suffered a fracture of the skull which caused him much pain and illness on his return to civilian life. When he returned to Scarborough in 1919 Dr. Chapman was appointed to the staff of Scarborough Hospital, and was honorary physician there until he retired in 1938, when he became honorary consulting physician. For twenty-seven years he was the medical officer in charge of the venereal disease clinic in Scarborough. He was also appointed medical officer to the Royal Northern Sea Bathing Infirmary, Scarborough, in 1929, and he still held this position at the time of his death. For twenty years he had been a part-time referee for the Ministry of Health, chairman of the Scarborough National Service Medical Board, a member of the Disablement Advisory Committee, and medical examiner for the Civil Service Commission and for the Ministry of Education. In July, 1946, he was appointed master of the Dr. Smart's Homes at Scarborough. Dr. Chapman had always been a most active, loyal, and enthusiastic member of the B.M.A. He served on many committees, and was honorary secretary of the Scarborough Division from 1928. He was chairman of the Division in 1932-3, and

president of the Yorkshire Branch in 1946-7. All who knew Chapman realized his worth as a doctor and as a man. His capabilities were such that he enjoyed the respect of both patients and colleagues. He was a man of great integrity, and performed many good deeds quietly and unostentatiously. Scarborough has lost a good doctor in every sense of the word, and the public have lost a friend, counsellor, and physician whose place it will be difficult to fill. Dr. Chapman is survived by a widow, to whom the sympathy of all his friends and colleagues will be extended.—C. E. W.

Dr. URBAN MARKS died suddenly in his surgery at Swansea on Feb. 4 at the age of 68. He came to Swansea as house-surgeon to the Swansea Hospital forty-two years ago, and soon afterwards started in general practice in the town. He very soon built up a large panel practice. He was from the beginning an active member of the B.M.A. and became secretary and later chairman of the local Division. He was a founder member of the Swansea Public Medical Service, one of the first to be formed in the country, and was its chairman for many years. Dr. Marks was on the out-patient staff of the hospital for twenty-five years, being made honorary consulting physician on his retirement three years ago. He was actively concerned with hospital administration during the whole of this period. He was secretary and then chairman of the hospital medical staff, and he was also chairman of the Swansea Panel Committee. In 1941 he was appointed a member of the Medical Planning Committee of the B.M.A. For some years he had been a member of the old Swansea Board of Guardians, and he took an active interest in the St. John Ambulance Brigade. He was its commissioner in Swansea for twenty-six years. He became a Knight of Grace of the Order, and a member of the Ambulance Committee for Wales. During the recent war he was honorary medical officer to the Llwynderw Military Convalescent Hospital, of which his wife was the matron. During the 1914-18 war he had served as a captain, R.A.M.C., in Mesopotamia. Dr. Marks worked at high pressure during the whole of his career, and devoted a large part of his life to the administrative side of medicine. He was never happier than when attending a meeting of his fellow practitioners. He died, as he would have wished, in harness. He leaves a widow and a son and daughter, both married.—W. H. T.

Dr. JAMES JOHN GALBRAITH died suddenly at Dingwall on Feb. 1 at the age of 71. He came from an old Highland family and was educated at Blair Lodge, Polmont. As an undergraduate at Edinburgh University he was one of the outstanding students of his year, and he graduated with honours in 1899. For some time he worked under Professor E. Sharpey-Schafer as Crichton Research Scholar in Physiology, and it was probably then that he decided to specialize in the study of tuberculosis, to the elimination of which in the Highlands he was to devote the better part of a lifetime. Before returning to his home county he first held appointments at the Royal Victoria Hospital, Edinburgh, and was later medical superintendent at the Ochil Hills Sanatorium. During this period he was one of the band of pioneers led by the late Sir Robert Philip, and it was common knowledge that he was held in very high esteem by his chief in their crusade against tuberculosis. If he had so desired Dr. Galbraith could probably have remained at Edinburgh and pursued an academic career, but his longing to be of service in his own part of the country was a deciding factor. In 1909 he started to practise at Dingwall, and in 1920 the opportunity to enter the public health service arose, and he became tuberculosis officer to the county of Ross and Cromarty. In 1931 he succeeded Dr. W. Maclean as M.O.H., an appointment which he held until his retirement in 1939. Public health in Ross-shire owes a great debt to those two men. They not only were eminently competent but possessed the personal qualities which enabled them to overcome difficulties which would have been insuperable to lesser men. Their fight against superstition and prejudice was just as exacting as the struggle against more tangible problems. Apart from his profession Dr. Galbraith had a wide range of interests, and was a scholar in the true sense of the word. He was recognized as one of the foremost authorities on Celtic culture in the country. His prolific writings included monographs on sculptured stones, Highland music, and clan history. In 1938 he was elected a chieftain of the Gaelic Society of Inverness, and in 1939 was made its chief. He was a staunch supporter of youth, and at the time of his death he was president of both the Ross-Sutherland Rugby F.C. and the Ross County Cricket Club. Dr. Galbraith commanded great respect for his wide culture, practical knowledge, and enthusiasm for life. He was revered all over the Highlands, and Scotland is the poorer by his death.—R. P.

Dr. WILLIAM GEORGE HARNETT died suddenly at his home at Hadley, Barnet, at the age of 68 on Feb. 9. The son of Dr. W. J. Harnett, he graduated at Dublin in 1905, and after house appointments at Southampton, the Royal Western Ophthalmic Hospital, and the City of London Hospital for Diseases of the Chest he joined his father in practice in Barnet. He served in the R.A.M.C. in the 1914-18 war in France and Salonika, and he was taken prisoner in the spring of 1918. For thirty-eight years he had been the medical superintendent of the Barnet Isolation Hospital, retiring only last month when the hospital became a maternity unit. For thirty years he had been the divisional surgeon to the Metropolitan Police at Barnet, an office which his father had held for the previous twenty-six years. Dr. Harnett had been for several years chairman of the medical staff of the Victoria Hospital, Barnet, and he served on the general committee of the same hospital. He gave many years of service as secretary of the local medical and panel committee for Hertfordshire. He had been a justice of the peace for Hertfordshire and Middlesex for the last three years. The Barnet Division of the B.M.A. had elected him chairman on more than one occasion, and he was a past-president of the Hertfordshire Branch of the B.M.A. During the recent war Dr. Harnett was deputy chairman of a recruiting board and chairman of the Barnet Local Medical War Committee. He had also been a member of the former Hertfordshire Public Assistance Committee and vice-chairman of the board of governors of the Queen Elizabeth's School. In all his activities he gave great service to the public and his colleagues. He had a keen sense of humour and a ready wit, and he was a good after-dinner speaker. He is survived by his widow and one daughter, to both of whom the sympathy of his fellow practitioners will be extended.—N. G. T.

Dr. A. F. Perigal writes: The sudden death of my brother-in-law, George Harnett, the oldest practitioner in Barnet, removes an outstanding personality who will be greatly missed, for though aware of his disability he was ever plucky and cheerful and never allowed it to encroach upon his strict sense of duty. I shall always have pleasant memories of his able and ready help in years gone by when in practice in New Barnet. He was a very genial and good fellow.

Dr. LEANDER JOSEPH JOHN ORPEN died at his home at Alice, Cape Province, South Africa, on Feb. 12, at the age of 72, after a long illness. Born in South Africa, he was educated at Cheltenham and at Keble College, Oxford. He graduated B.M., B.Ch. from Guy's Hospital in 1906, and he took the D.P.H. in 1920. Most of his working life was spent in the Southern Rhodesia Medical Service, and he finally became director of the Pasteur Institute and the public health laboratory at Salisbury. Dr. Orpen was a man of untiring energy, the present efficiency of the services he directed in Rhodesia gely due to his work. He made many contributions to the standing of the aetiology of the dysenteries, and was the to recognize the presence of the brucellosis in Rhodesia. He retired to East London in 1932, but on the outbreak of war he took over the training of medical aides at the South African Native College at Fort Hare. It was due to his foresight and hard work that the present degree of B.Sc.(Hygiene) of the University of South Africa was created to meet the increasing demands for trained African personnel. He retired from active work only last year and was not spared long to enjoy his rest. Dr. Orpen will be remembered by all who came in contact with him for his keen mind and for the high standards he demanded both in his own work and in that of his subordinates and students. Always kindly and approachable, he had no lack of friends, either among his colleagues or among the Africans, to whose welfare he devoted so much of his life.—W. N. T.

Dr. Alexander McConnell Erskine, who was in general practice and also medical officer of health for Goole for forty-four years, graduated not at Belfast, as stated in our notice (Feb. 26, p. 370), but at Dublin. He was a student at the then unchartered Queen's College, Belfast, and subsequently he took the London D.P.H.

Surgeon Rear-Admiral K. A. [Name obscured] and Surgeon Captain C. N. Ratcliffe, R.N., have been [Name obscured] in Honorary Physicians to the King in succession to Surgeon-General Sir Henry E. Y. White, K.C.V.O., O.B.E., and Surgeon-Admiral Sir Henry St. C. Colson, K.C.B., C.B.E., R.N., re-Vice-Admiral who have been placed on the Retired List.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

H. W. A. Baron has been approved at the examination for the M.Chir. degree.

UNIVERSITY OF LONDON

Professor J. D. Boyd, M.D., has been appointed a representative of the University on the governing body of St. George's Hospital.

The recognition of the British Postgraduate Medical Federation as a school of the University has been extended in respect of its facilities at the Institute of Laryngology and Otology for a period of five years in the first instance, from Oct. 1, 1948.

The following have been recognized as teachers of the University in the subjects indicated in parentheses: *Royal Free Hospital School of Medicine*: Dr. Doris Manning-Baker and Dr. Alice M. C. Macpherson (Medicine); Mrs. Muriel E. Sacks (née Landau), F.R.C.S. (Surgery); Miss Beatrice E. Turner, F.R.C.S. (Obstetrics and Gynaecology).

Leicester Royal Infirmary and the North Staffordshire Royal Infirmary, Stoke-on-Trent, have been recognized for the purposes of the Diploma in Clinical Pathology for external students for a period of five years, from September, 1948.

The 1948 Paul Philip Reitlinger Prize of the value of £30 has been awarded to Dr. Sheila Mary Chitty (née Howarth) for her essay on circulatory effects of acute changes in the venous filling pressure of the heart.

The following candidates have been approved at the examination indicated:

ACADEMIC POSTGRADUATE DIPLOMA IN MEDICAL RADIOLOGY (DIAGNOSIS): Part I.—N. N. Blatland, D. J. Chapman, H. Clain, D. Cockcroft, W. E. Craddock, MacK. M. Craig, F. M. Cryer, D. A. N. Drury, I. O. Faiman, F. E. Fraser, K. E. Hodge, F. H. Howarth, K. S. Huque, A. W. R. Jenkins, R. P. C. MacDonald, E. V. M. Medill, D. F. Reynolds, M. G. Scott, W. H. Smith, R. F. Stubbs, W. R. R. Thursfield, C. D. Wilson-Sharp.

UNIVERSITY OF SHEFFIELD

At a meeting of the University Council held on Feb. 18, with Dr. Edward Bramley, Pro-chancellor, in the chair, the following appointments were made: *Senior Lecturer in Physiology*, Q. H. Gibson, M.D., Ph.D. *Honorary Lecturer in Child Health*, R. R. Gordon, M.D., M.R.C.P., D.C.H., D.R.C.O.G. *Assistant Medical Officer to the Student Health Service of the University and to the Nursing Staff Health Service of the United Sheffield Hospitals*, H. R. Worth, M.B., Ch.B.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Royal Faculty of Physicians and Surgeons of Glasgow held on Jan. 10, with Dr. W. R. Snodgrass, President, in the chair, M. B. Schwartz, M.B., was admitted a Fellow of Faculty *qua* Physician, and W. W. Frank, L.R.C.P.&S.Ed., was admitted a Fellow of Faculty *qua* Surgeon.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At a meeting of the Council of the College held on Jan. 29, with the President, Sir William Gilliatt, in the chair, Sir Henry Dale, O.M., G.B.E., F.R.C.P., F.R.S., and Professor J. Heyman, of Stockholm, were elected to the Honorary Fellowship.

The following candidates were elected to the Membership of the College:

G. McG. Barr, A. C. Barthels, D. W. Bentinck, B. Bhattacharya, D. K. Black, Kathleen M. Bower, G. C. Breninall, Muriel Brighton, C. H. Brown, D. P. Cocks, H. J. A. Conte-Mendoza, E. Cope, F. A. L. da Cunha, F. B. Davidson, J. Del. F. Denny, N. S. Devi, C. J. Dewhurst, Kathleen A. D. Drury, J. G. Dumoulin, J. M. Duncan, L. T. El-Badri, B. H. Ellis, H. R. England, I. H. Faris, B. J. Frankenberg, J. S. Fraser, W. K. Frewen, G. B. Gibson, L. S. Glass, Cecilie Greig, E. J. Holloway, C. G. Irwin, W. H. Laird, R. G. Law, L. E. Lotimer, R. L. Lunt, J. C. MacCarroll, J. A. McGhie, J. F. McInerney, R. M. McIntosh, I. D. Macintyre, A. A. McKirdy, A. T. McNeil, J. H. Malony, S. M. Medicine, G. Mitchell, J. E. E. Morgan, N. F. Morris, C. Mukherjee, N. Noble, E. I. Ostrey, A. F. Pearson, H. E. Pellew, D. A. Ranasinghe, B. C. M. Reed, W. A. Robson, E. S. Rogers, J. K. Russell, C. R. Sluming, D. F. Smith, Z. H. Y. Sobani, D. B. Stewart, A. S. Subramani, J. Suchel, Eleanor Tennant, Mary E. Tighe, Mary U. Wilkin, E. O. Williams, E. G. Zacks.

The following candidates from Australia were elected to the Membership of the College:

J. M. Buchanan, S. E. Craig, H. G. Furnell, L. W. Gall, G. T. H. Harris, J. A. Love, H. A. McCredie, H. K. Porter, J. S. Reid, R. B. C. Stevenson, B. M. Sutherland.

The following from New Zealand were awarded the Diploma in Obstetrics:

K. Brasted, A. L. Bryant, F. L. Clark, E. N. S. D'Arcy, E. M. Elder, R. C. Gordon, G. H. Green, R. H. T. Holmden, B. Kahlenberg, M. D. Matich, F. A. H. Neate, K. L. Park, Irene G. Rhodes, H. A. A. Sievely, W. H. C. Teppell.

Medical Notes in Parliament

MILK BILL

Dr. EDITH SUMMERSKILL on Feb. 21 moved the second reading of the Milk (Special Designations) Bill, which had a ready passage through the House of Lords. She said this Bill would have the effect of reducing the incidence of tuberculosis. The first milk regulations had been introduced under the Milk and Dairies (Amendment) Act in 1922. Further regulations were introduced in 1936, but there had been a setback in 1938 when a Bill for establishing areas in which non-designated milk must be pasteurized before sale could not be carried through. In 1943 the Government had issued a White Paper setting out the measures which they proposed to take to ensure that the milk of the country should be of a high quality. Since that time steady progress had been made in clearing up the dairy herds, and since 1944 the number of attested herds had been doubled. This comprised something like 16% of the cattle in the country, but the eradication of animals infected with tuberculosis would take many years.

Eradication must be gradual, and it followed that considerable quantities of non-designated milk would be produced in the years to come. In the interests of the public it was necessary that this milk should be pasteurized before it was sold. Opinion among responsible medical people and health authorities was strongly in favour of pasteurization. A recent estimate by Professor G. S. Wilson put the number of deaths which could be attributed to milk infected by the tubercle bacillus at about 1,500 annually. Many thousands more were crippled. The proportion of deaths was ten times greater in rural areas, where more milk was drunk raw, than in London. The Cattle Diseases Committee estimated that about 40% of dairy cows in this country would react to the tuberculin test and that about 0.5% of milch cows excreted active tubercle in their milk. There were other diseases which the Ministry was anxious to eradicate, and for these also pasteurization was essential. Contagious abortion and mastitis were common, and probably 20% of the cows were infected with the former. Of these, 2% excreted in their milk organisms which in human beings gave rise to undulant fever. The responsibility of the Government in this matter was even greater by reason of the encouragement given to the drinking of milk in schools and through welfare schemes.

The pasteurization of milk if carried out efficiently under proper conditions destroyed all pathogenic organisms. Provision of increased pasteurization facilities did not mean that the cleaning up of the herds was less urgent. Pasteurization did not make poor milk good, but it made all milk safe. At present some 70% of the milk sold for liquid consumption in this country was subject to heat treatment. Professor Wilson, make safe by pasteurization the 30% of milk in this country said pasteurization had practically no effect on the nutritional value of milk.

Dr. Summerskill explained that the Bill, in areas to be specified by the Minister of Food, limited the retail sale of milk to those classes of milk which were sold under a special designation. The restrictions also applied to the supply of milk under the Welfare Foods (Milk) Scheme and the milk in schools scheme, and to the sale or supply of milk to catering establishments, hotels, restaurants, institutions, and schools.

Designations

The approved specially designated milk would be T.T. (certified) milk, a designation which might be changed to T.T. (farm-bottled), T.T. milk, and accredited milk derived from a single herd. By insisting that accredited milk should come only from one herd it would be possible to trace any infected milk. There would in England and Wales be pasteurized milk and sterilized milk. In Scotland there would be certified milk, T.T. milk, standard milk derived from a single herd, pasteurized milk, and sterilized milk. Descriptions of these milks would be set out in the regulations. They were not included in the Bill because it was easier to change regulations than to bring in an amending Bill. Recognition of accredited milk and standard milk and specially designated milks would be restricted to a period of five years from the commencement of the Act. These milks did not reach the standard of safety now expected, but farmers who produced them should be given a reasonable time to grade up their herds to T.T. standard.

Before making orders applying the restrictions to specified areas the Minister would consult with representative bodies in those areas. The statutory instrument would be laid before Parliament forty days before an order was made. The Minister would have power to suspend an order when, for instance, a pasteurization plant broke down. The policy would in the

first place be applied to large urban areas and then extended to rural areas. Before an area was specified a survey would be made of pasteurization facilities available. When they did not suffice for pasteurization of all raw milk sold in the area, producer-retailers of non-designated raw milk would be encouraged to upgrade their milk to T.T. standard or arrange for it to be pasteurized. The first area would probably be specified in a year or eighteen months and the scheme might apply to the country as a whole in five or ten years. The Minister would himself have power to operate heat treatment plant or to arrange for local authorities or other persons to provide plant in any area where facilities were insufficient.

When restrictions imposed by the Bill were in operation revocation of a licence held by a retail distributor in a specified area would mean the closing of his business because he would be unable to sell raw milk. The Bill provided that a warning notice should be given for a first breach of the conditions, and the vendor should be the subject of proceedings only when guilty of a second offence within twelve months.

Mr. HOPKIN MORRIS said the proportion of clean herds in Scotland was about 35%, in Wales about 27%, and in England only about 10%. In Cardiganshire T.T. herds had been brought up to 85%, in Carmarthen to 69%, and in Pembrokeshire to 45%, but the best figure he knew of for an English county was about 27%. He pointed out that under the Bill all milk would have to be bottled where it was treated. Why should the small retailer be able to bottle T.T. milk in safety and yet not be allowed to bottle this other milk?

Mr. SOMERVILLE HASTINGS said the most distressing cases he had seen in a long professional life were those of tuberculous meningitis in children; 50% of such cases were due to the bovine variety of tubercle bacillus and presumably due to drinking milk. Pasteurization could be depended on to give a pure milk supply; 98% of the milk in London was pasteurized, and tubercle bacilli had not been found in it for the last four years.

In Toronto, where milk had been compulsorily pasteurized since 1915, they had not had a single case in ten years of any form of bovine tuberculosis, although 26% of the milk entering that city contained the germs of it. There were other diseases carried by milk. Many epidemics were due to infection of milk by those who handled it. Between 1912 and 1937 there were in Britain 115 epidemics of dysentery, scarlet fever, typhoid, and septic sore throat, involving 14,000 people, which were found to be due to milk. Only by pasteurization could the spread of such diseases through milk be eliminated with certainty. On objections to pasteurization he quoted Professor A. D. Kay, of the National Institute for Research on Dairying, who had written that ordinary controlled commercial pasteurization caused practically no nutritional change in milk.

Mr. STRACHEY, dealing with points made by Dr. HADEN GUEST and others, said that before looking to the question of whether T.T. milk should be pasteurized the Ministry should make safe by pasteurization the 30% of milk in this country which it could not claim to be safe. That was the purpose of the Bill. The effect of pasteurization on milk was known. It reduced the vitamin C content slightly; that was the only ill-effect of pasteurization. The Government was devoting a substantial share of stainless steel, aluminium, and other materials to the provision of extra equipment for the agricultural industry. The point whether those who handled milk should not be medically examined might be considered during the committee stage of the Bill. The Government supported it in principle. Local authorities under the Bill would not have power to enforce cleanliness on farms. Responsibility for important measures of enforcement was granted under the Food and Drugs (Milk and Dairies) Act, 1944. In the autumn of this year responsibility for enforcement of cleanliness on farms would pass from the local authorities to the Ministry of Agriculture. He admitted that the Bill hastened slowly and that five years was a long time in which to tolerate the consequences of the sale of unsafe milk. The Bill at all events made a start with ridding the country of what had been in the nature of a national disgrace.

The Bill was then read a second time.

Foreign Visitors

Asked how he proposed to compensate the State doctors for the services they rendered to foreigners who contributed nothing to the National Health Service, Mr. BEVAN replied on Feb. 17 that separate figures were not available, but the population statistics on which the remuneration of general practitioners was calculated included foreign visitors who had been in the country for 28 days. A doctor attending a foreign visitor received the usual fee for a temporary resident. Figures were not available to show how many foreign visitors had received attention under the National Health Service.

Amending Bill This Session

Mr. GEORGE JEGER asked Mr. Bevan on Feb. 17 whether he could now give any indication when he intended introducing legislation to implement the findings of the Slade Committee on medical partnerships.

Mr. BEVAN said that legislation would be introduced this session.

Remuneration of Consultants

On Feb. 17 Dr. BARNETT STROSS asked when Mr. Bevan would be able to submit his proposals on the terms and conditions of service of hospital staffs; whether he knew that the delay caused hardship to ex-Service full-time consultants, whose remuneration was well below that of many other consultants who were employed part-time on a sessional basis; and whether, while discussions took place, he would consider making a retrospective payment of an interim nature.

Mr. BEVAN could not say when the proposals would be available for publication. He was doing all he could to complete discussions with the profession's representatives. Meanwhile he could not contemplate any additional retrospective payment.

Deaths from Smallpox.—Asked how many deaths from smallpox occurred in England and Wales in 1947 and 1948, and what were the ages, Mr. BEVAN furnished on Feb. 17 these particulars: 15 in 1947 and none in 1948; the ages were—7, 27, 49, 69, 70 (2), 72, 75 (3), 76, 78, 79 (2), and 86.

EPIDEMIOLOGICAL NOTES

Influenza

The number of deaths in the great towns in the week ended Feb. 19 was 158, compared with 94 in the previous week; 87 of these deaths were in London and the south-east. The majority of the deaths (135) occurred in persons over 55, so that there is no sign of any relative increase in the number of deaths in young people. There has been some increase in incidence in London and the south-east, but, generally speaking, the disease seems to be of a mild type.

Discussion of Table

In *England and Wales* there were increases in the notifications of measles 4,641, acute pneumonia 123, scarlet fever 45, and diphtheria 32. There was a decrease in the incidence of whooping-cough 157.

For the third consecutive week there has been a large increase in the notifications of measles. During the week under review the largest rises were: Staffordshire 548, Middlesex 415, Essex 398, Lancashire 373, Southampton 341, Yorkshire West Riding 321, London 313, Glamorganshire 250, Cheshire 217, Warwickshire 141, Somerset 138, Kent 132, Hertfordshire 119, and Shropshire 102. The only important exception to this rising trend of measles was a decrease of 70 in Cheshire.

The rise in the incidence of diphtheria was due to the experience of Lancashire, where the cases rose from 19 to 35; of these 35 cases 17 were notified in Liverpool C.B. The largest decreases in the notifications of whooping-cough were Yorkshire West Riding 37, London 36, and Lancashire 31.

The chief centres of dysentery were Lancashire 23 (Blackburn C.B. 7 and Liverpool C.B. 7) and London 16 (Islington 8). Two cases of acute poliomyelitis were notified in London, Wiltshire, and Warwickshire.

In *Scotland* there were increases in the notifications of scarlet fever 35 and whooping-cough 54 and decreases in the incidence of acute primary pneumonia 35 and measles 31. A fall of 69 in the notifications of acute primary pneumonia occurred in the western area, but in the combined north-eastern and eastern area a rise of 32 was reported.

In *Eire* infectious diseases were more prevalent during the week, and increases were reported in the incidence of whooping-cough 30, measles 23, primary pneumonia 15, and scarlet fever 8; the only decrease was in the notifications of diarrhoea and enteritis 21. These changes were mainly due to the experience of Dublin C.B.

In *Northern Ireland* decreases were recorded in the notifications of measles 34, scarlet fever 13, and whooping-cough 13.

Week Ending February 19

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,333, whooping-cough 3,027, diphtheria 112, measles 19,502, acute pneumonia 1,469, cerebrospinal fever 37, acute poliomyelitis 19, dysentery 104, paratyphoid 9, and typhoid 3.

No. 6

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Feb. 12.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included) (b) London (administrative county) (c) Scotland. (d) Eire. (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease are for: (a) The 126 great towns in England and Wales (including London) (b) London (administrative county). (c) The 16 principal towns in Scotland (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	30	2	17	3	1	54	5	21	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	148	16	32	8	4	211	14	53	17	1
Deaths	2	—	—	—	—	4	—	—	—	—
Dysentery	68	16	19	—	2	164	25	46	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	—	—	2	—	1	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	29	14	6	—	—	51	6	3
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	43	5	10	27	—	46	5	9	24	2
Deaths	—	—	—	3	—	—	—	—	9	—
Measles*	18,441	809	111	123	144	6,179	649	802	107	18
Deaths†	—	—	—	1	—	—	—	2	1	—
Ophthalmia neonatorum	41	6	12	—	—	45	4	19	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	5	—	—	—	—	2	—	1 (B)	—	—
Deaths	—	—	—	—	—	1	—	—	—	—
Pneumonia, influenzal	1,139	78	46	18	21	871	40	15	3	4
Deaths (from influenza)	94	11	24	—	—	16	—	3	—	—
Pneumonia, primary	394	98	391	48	11	268	40	228	25	11
Deaths	—	—	—	14	—	—	—	18	—	—
Poliomyelitis, acute	3	—	—	—	—	4	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	15	2	1	1	—	28	3	3	—	1
Deaths‡	1	—	—	—	—	3	—	—	—	—
Puerperal fever	—	—	4	—	—	—	—	10	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| .. ..	93	4	6	—	2	104	13	8	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,417	104	268	121	37	1,925	150	328	32	46
Deaths†	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	7	—	—	—	—	7	2	—	11	1
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	3,011	212	239	87	71	2,576	193	30	19	—
Deaths	10	—	1	1	—	10	2	—	1	—
Deaths (0-1 year) Infant mortality rate (per 1,000 live births)	341	39	47	27	22	362	49	53	43	14
Deaths (excluding stillbirths) Annual death rate (per 1,000 persons living)	6,926	1247	852	239	163	4,954	749	643	234	142
Live births	7,612	1264	936	403	249	8,193	1382	952	443	249
Annual rate per 1,000 persons living	—	—	18.8	25.0	—	—	—	19.2	27.7	—
Stillbirths	203	26	32	—	—	236	32	28	—	—
Rate per 1,000 total births (including stillborn)	—	—	33	—	—	—	—	29	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

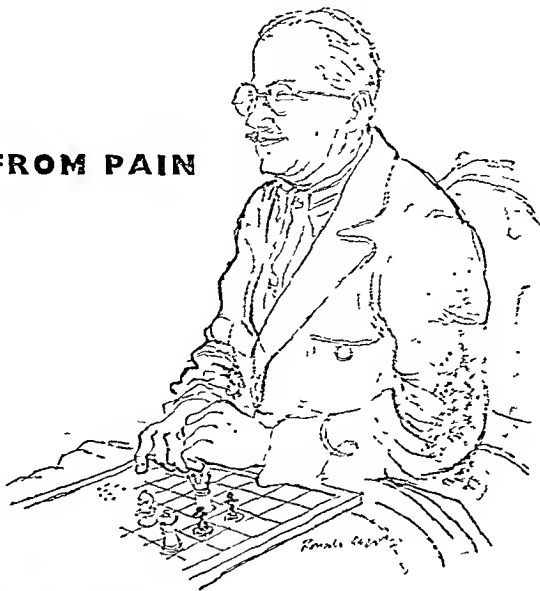
‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

Alert... AND FREE FROM PAIN

When the burden of pain proves too heavy, mental outlook becomes distorted. In such a case the drug of choice is 'Physeptone' which gives satisfactory analgesia while leaving the mind clear.



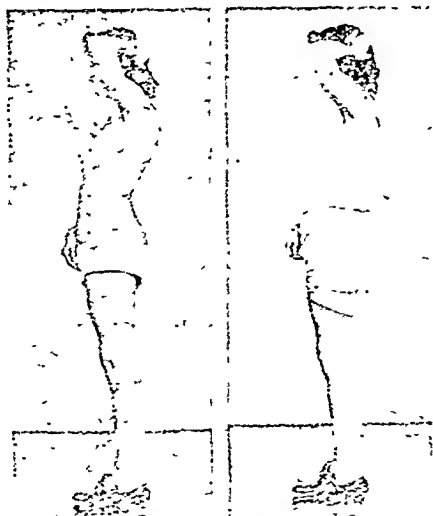
'PHYSEPTONE'

21:2-DIMETHYLAMINO-4,4-DIPHENYLHEPTANE-5-ONE HYDROCHLORIDE

THE ESTABLISHED ANALGESIC



BURROUGHS WELLCOMBE & CO.
(The Wellcome Foundation Ltd.) LONDON



A Protective Measure for the Epileptic

For this patient, the doctor prescribed Spencer as a means of lessening the danger of spinal injury during seizures.

The patient, age 26, is a victim of cerebral palsy of a mixed spastic and tension athetoid type, quadriplegic in distribution and associated with a rather severe convulsive state. Deformities include equinus on the right, severe pronation of the right forearm, and a mild curvature of the spine. Back pain has responded satisfactorily to the support provided by SPENCER.

Spencer Supports are therapeutically effective because: Each Spencer Support is *individually designed, cut and made* for each individual patient.

For further information write to:

SPENCER (BANBURY) LTD.

Consultant Manufacturers of
SURGICAL AND ORTHOPAEDIC SUPPORTS
Banbury Oxfordshire

BEWARE OF IMITATIONS. Spencer (Banbury) Ltd. regret the necessity of issuing warning to beware of copies and imitations. Look for the SPENCER LABEL stitched in the Spencer Support and ensure that it is a genuine Spencer Support and not a so-called copy. Spencer copyright designs are original and distinctive and for more than 25 years have been recognised by the Medical Profession as a symbol of effective control for abdomen, back and breasts.

SUPPLIERS TO HOSPITALS THROUGHOUT THE KINGDOM
UNDER THE NATIONAL HEALTH SERVICE ACTS OF 1946

Trained Fitters available throughout the Kingdom

Copyright: Reproduction in whole or in part is prohibited except with the written permission of S(B) Ltd.

B.M.J. 3/49

PROPAMIDINE CREAM-M&B

A safe and highly effective antiseptic for the prevention of infection in **burns, wounds, cuts and abrasions**

Supplied in
1 oz. tubes and
1 lb. jars



manufactured by **MAY & BAKER LTD**

distributors **PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD. DAGENHAM**

PRURITUS?

ONE OF THE **CPL** ANTIPRURITICS
is always indicated!

FOR

**PRURITUS ANI HÆMOR-
RHOIDS ANAL ECZEMA,
etc. IN BOTH SEXES**

POLYCREST ANTIPRURITIC CREAM

Local fungicidal and bactericidal therapy combined with powerful local anaesthesia.

Active Ingredients:

Phenylhydrag. Nitras B.P. 0.1%
Amethocain Hydrochlor. B.P. 0.5%
Benzocain. B.P. - - - 5.0%

In tubes containing appr. 20 gms. net.

FOR

**PRURITIC CONDITIONS
DUE TO OESTROGEN
DEFICIENCY**

MENOPAX ANTIPRURITIC CREAM

Local oestrogen therapy combined with powerful local anaesthesia.

Active Ingredients:

Stillboest. B.P. - - - 0.1%
Amethocain Hydrochlor. B.P. 0.5%
Benzocain. B.P. - - - 5.0%

Hospital sizes 4 oz. and 8 oz. jars

Literature and Clinical samples will be gladly sent on application to:

CLINICAL PRODUCTS LTD.
RICHMOND, SURREY

IMPORTANT

"C.P.L." Pharmaceutical Products have no official
B.P., B.P.C. or N.(W.)F. "equivalents."



Kaylene-ol

in Upper Respiratory
Infections

The common cold, sinusitis, tonsillitis, and other inflammatory conditions of the nose and throat lead inevitably to the swallowing of infected exudates.

The digestive tract, deranged by toxins, bacteria and fever, is ill-prepared to receive them.

The routine use of Kaylene-ol on these occasions does much to normalise the gastric and intestinal functions, and to nullify the harmful effects of noxious discharges.

DOSAGE: 1 to 4 drachms of KAYLENE-OL night and morning, or preferably 20 minutes before each meal.

Samples and literature on request

KAYLENE



LIMITED

Sole Distributors: **ADSORBENTS, LTD.,**
WATERLOO ROAD, LONDON, N.W.2

Medical News

COMING EVENTS

Rations and Allowances for Diabetics

The Ministry of Food states that, in lieu of their sugar ration and the ordinary allowance of cheese, sufferers from diabetes or illness should receive: Meat: two extra rations a week, cheese 12 oz (340 g) a week, fats 12 oz extra butter/margarine, which can be taken up with the ordinary rations (a) in odd-numbered ration weeks—12 oz butter, 8 oz (226 g) margarine, (b) in even-numbered ration weeks—6 oz (170 g) butter, 12 oz margarine. The amount of cooking fat available to diabetics is equal to that available to the ordinary consumer. Milk (if prescribed): 7 pints (4 litres) a week.

Order of St. John

The following promotions, and appointments to, the variable Order of the Hospital of St. John of Jerusalem have been announced: As Commander (Brother), Lieutenant-General Neil Cantle, C.B., M.C., F.R.C.S. As Officers (Brothers), Drs W. E. Rutle and N. S. B. Vinter. As Associate Serving Brothers, Drs M. N. Oster, J. V. Reuben, J. M. Raphael and J. Cohen, T.D.

Garaging of Cars at B.M.A. House

The large basement garage under the North Wing is now available for the parking of cars between the hours of 9 a.m. and 6 p.m. and 9 a.m. and 1 p.m. on Saturdays. This service is free to members of the Association. The garage is under the management of Messrs G. J. Shaffer, who have installed equipment, which includes crissing and oiling bays, to enable them to provide a valeting service for members' cars at approved charges. Petrol can be obtained in the garage yard. A representative of Messrs Shaffer will attend at their office on the ground floor, Tavistock House South (opposite the B.M.A. Inquiry Room), to assist and advise members. Cars will approach the garage through the main entrance in Tavistock Square and leave by the exit in Burton Street. The centre courtyard at B.M.A. House will be closed to all motor traffic.

Sir Henry Newland Resigns

Sir Henry Newland has announced his resignation as Federal President of the British Medical Association in Australia, reports *The Times* of Feb. 24. He is said to have made the decision when the Federal Government broke off negotiations on the free medicine plan, and to have denied that his action was in any way due to dissension between himself and the Federal Council.

Rheumatism Scheme

The Leeds Regional Hospital Board states that the proposed scheme for the development of a diagnostic treatment and research centre at Harrogate submitted to the Minister by the Board (*Journal*, Jan. 29, p. 188) is of necessity a long-term project. The development of such a centre is therefore likely to be undertaken in very gradual stages. However, the Minister has approved the first stage, which is the purchase by the Board of the White Hart Hotel for £27,500. It is proposed to use accommodation acquired in this way for ambulant patients not needing complete or highly specialized nursing care and attention.

Payment of Sickness Benefit

The Ministry of National Insurance states that payment of sickness benefit may be delayed or lost if people who are sick fail to notify the local National Insurance Office of their incapacity within three days. If for any reason a medical certificate cannot be obtained within the first three days of sickness, a note giving the full name, address, and National Insurance number should be sent by the claimant or, if he cannot send it, by someone on his behalf to the local National Insurance Office informing them of the incapacity. This should be followed up by the first medical certificate as soon as possible and in any case within ten days.

Medical Films

The Swedish Embassy has lent the 16-mm film, "Morning of Life," to the Tavistock Clinic. It deals with the emerging faculties of the infant. The film is silent, runs for about 25 minutes, and has easily understandable Swedish subtitles (a translation is being prepared). It is available, for non-commercial showing only, to medical organizations. Particulars may be obtained from the Tavistock Clinic, 2, Beaumont Street, London, W.1. The Danish Embassy has available a 16-mm copy of Dr. Jarl Wagner Smith's film, "Determination of Intelligence on Rats by Means of the Maze Method." It is a 17-minute silent film with subtitles in English.

Family Planning Association

The Family Planning Association has arranged a medical conference to be held at Guthrie House, 3, Cadogan Gate, Sloane Street, London, S.W., on Saturday, March 12, at 10.30 a.m.

Mental Health Conference

The National Association for Mental Health will hold a Conference on Mental Health at Seymour Hall, Seymour Place, London, W.1, on March 17-18. Sir Wilson Jameson will give the introductory address, medical men taking part include Professor D. R. MacCalman and Professor J. C. Spence. Information may be obtained from the Conference Secretary, 39, Queen Anne Street, London, W.1.

Association of Army Psychiatrists

The sixth reunion of Army psychiatrists will take place at Slater's Restaurant, 18-24, Kensington High Street, London, W., on Saturday, March 19, from 7.30 p.m. to 10.30 p.m. Particulars may be obtained from the honorary secretary, Dr J. C. Penton, The Old Farm House, 1, Gatehill Road, Northwood, Middlesex.

Congress of Climatologists

The first Congress International de Climatisme Social will be held at Villard-de-Lans on March 25-27 under the presidency of Professor Debre. Particulars may be obtained from the secretary, Dr Terrel, Villard-de-Lans, Isere, France. The town has been chosen on account of its unusual climatic qualities and the comparative freedom from tuberculosis there. The chief work of the congress will be to discuss social climatology in France and other countries. It will be in five parts: (1) Reports on general climatic, clinical, and social aspects of medicine will be given by Professors Delore, Bert Rohmer, and Caussade, and others. (2) The problems of social climatology and tuberculosis will be discussed by Professors E. Bernard and Dufourt, and others. (3) Climatology apart from tuberculosis will be discussed by Professors Mounquand, Jeune, and Chaptal, and others. Professors Justin Besançon and C. Debray will give a report on climatology in relation to non-tuberculous adults. Professor Merklen and Dr. Auyaleu will speak on organization and hygiene. (4) Schools, camps, and hygiene administration will be discussed. (5) Contributions on climatology in foreign countries, speakers include Dr. Dermot MacCarthy and others. There will also be an exhibition on education and the care of children.

Rheumatic Diseases

A concentrated week-end course on the rheumatic diseases will be held at the Rheumatism Unit, St. Stephen's Hospital (London County Council), Fulham Road, S.W., on March 26 and 27. The inaugural lecture will be given by Professor Bruce Perry, and other lecturers include Dr. Francis Bach, Dr. Grace Batten, Dr. Philip Ellman, Mr. Timbrell-Fisher, Dr. Blake Patchard, Dr. David Shaw, Dr. A. G. Signy, and Dr. Margaret Snelling.

Bristol Medical Reunion Dinner

The Bristol Medical Reunion Dinner will be held in Bristol on Saturday, April 30. Particulars may be obtained from Dr. Richard Clarke, Harley Lodge, Clifton Down, Clifton, Bristol, 8.

American Society of Medical Technologists

The American Society of Medical Technologists will hold its seventeenth annual convention on June 20-23 at the Hotel Roanoke, in Roanoke, Virginia. Further information may be obtained from Miss Ida L. Reilly, M.T. (A.S.C.P.), Roanoke Hospital Association, Roanoke, Virginia, U.S.A., who is the convention chairman.

APPOINTMENTS

Dr. H. H. Cavendish Fuller has been appointed Chief Medical Officer to the Railway Executive, British Railways.

Dr. Fuller graduated at Edinburgh University in 1912, and proceeded M.D. in 1931. He has had experience of general practice and was medical officer in charge of Malvern College from 1917 to 1930. During that period his appointments included that of medical officer to the Ministry of Pensions in the Malvern area. He was appointed Chief Medical Officer to the G.W.R. in 1930, and in 1931. In March, 1948, he was appointed Medical Officer to the G.W.R.

FULHAM HOSPITAL, St. Dunstan's Road, Hammersmith, W.—Senior Medical Registrar, D. Barratt, M.B., B.S., M.R.C.P. Senior Surgical Registrar, J. L. Temple, F.R.C.S. Part-time Senior Registrar (Ear, Nose, and Throat), J. L. Wakelin, M.R.C.S., L.R.C.P. Part-time Senior Registrar (Gynaecology), S. A. Boyd, M.B., Ch.B., M.R.C.O.G. Junior Medical Registrar, A. W. N. Oakway, M.B., B.Ch. Junior Surgical Registrar, M. L. Graeme, M.B., B.Ch. Casualty Registrar, J. A. Vase, M.B., B.S. HANDEDSON, W. G., M.B., Ch.B., Deputy Resident Physician (Fever), Ham Green Infectious Disease Hospital and Sanatorium, Bristol. WATERFALL, W. B., F.R.C.S., Surgeon, Prince of Wales's Hospital, Plymouth.

SOCIETIES AND LECTURES

Monday

- HUNTERIAN SOCIETY.—At the Mansion House, London, E.C., March 7, 8.30 p.m. "Personal Experiences," Hunterian Oration by Sir Heneage Ogilvie. (Postponed from Feb. 28.)
- INSTITUTE OF LARYNGOLOGY AND OTOTOLOGY, 330-2, Gray's Inn Road, London, W.C.—March 7, 5.15 p.m. "Dermatology as it Concerns the Ear, Nose, and Throat," by Dr. A. C. Roxburgh.
- LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, London, W.C., March 7, 4.45 p.m. "Haem Pigments in Nature," by Professor C. Rimington.
- ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—March 7, 5 p.m. "The Anatomy and Physiology of Bone—Part I," Arnott Demonstration by Dr. F. S. Gorrell.
- MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, London, W.C.—March 7, 9 p.m. "Richard Bright, Before and After," Second Lettsomian Lecture by Dr. Horace Evans.

Tuesday

- CHELSEA CLINICAL SOCIETY.—At South Kensington Hotel, 47, Queen's Gate Terrace, London S.W., March 8, 7 for 7.30 p.m. Annual general meeting. Discussion: "Prefrontal Leucotomy," to be opened by Dr. W. McKissock and Dr. D. Curran.
- INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C., March 8, 5 p.m. "The Dermatophytes," by Dr. I. Muende.
- INSTITUTE OF LARYNGOLOGY AND OTOTOLOGY, 330-2, Gray's Inn Road, London, W.C., March 8, 9.30 a.m. "Non-operative Treatment of Maxillary Sinusitis," by Mr. Myles L. Formby.
- INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., March 8, 11 a.m. "Yaws, Pinta, and Bejel," by Dr. J. C. Hawksley.
- LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, London, W.C., March 8, 5.15 p.m. "Chemoceptor Activity," by Dr. A. Schweitzer.
- MEDICAL SOCIETY OF LONDON.—At Claridge's Hotel, Brook Street, London, W., March 8, 7.30 for 7.45 p.m. 169th Anniversary Dinner.

Wednesday

- INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., March 9, 11 a.m. "Clinic Administration," by Dr. W. N. Mascall.
- ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—March 9, 5 p.m. "The Anatomy of the Tongue in its Relation to Surgery," Arnott Demonstration by Mr. P. H. Michener.
- ROYAL SANITARY INSTITUTE.—At 90, Buckingham Palace Road, London, S.W., March 9, 2.30 p.m. London Sessional Meeting. "The Continuity of the Medical and Social Services in Home and in Hospital." Discussion to be opened by Drs. W. S. Walton and A. B. Williamson.
- SOCIETY OF CHEMICAL INDUSTRY: MICROBIOLOGICAL PANEL OF FOOD GROUP.—At Medical Society of London, 11, Chandos Street, W., March 9, 6.15 p.m. Annual general meeting, 6.30 p.m. "Microbiological Problems in the Production of Pure Water," by Dr. E. Windle Taylor.
- SOCIETY OF PUBLIC ANALYSTS.—At Royal Society, Burlington House, Piccadilly, London, W., March 9, 3.30 p.m. Annual general meeting. Address of the Retiring President, Mr. Lewis Eynon, B.Sc., F.R.I.C.

Thursday

- INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C., March 10, 5 p.m. "Bullous Eruptions," by Dr. L. Forman.
- INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., March 10, 11 a.m. "Prophylaxis in Venereal Disease," by Dr. A. H. Harkness.
- LONDON JEWISH HOSPITAL MEDICAL SOCIETY.—At Trocadero Restaurant, Piccadilly Circus, London, W., March 10. Annual Dinner and Dance.
- LONDON UNIVERSITY.—At Large Lecture Theatre, St. George's Hospital Medical School, Hyde Park Corner, London, S.W., March 10, 4.30 p.m. Lecture-demonstration: "Neurology."
- LONDON: UNIVERSITY COLLEGE.—At St. Thomas's Hospital Medical School, London, S.E., March 10, 5 p.m. "Ionic Exchange and Electrical Activity in Nerve and Muscle." Special University Lecture by Dr. A. L. Hodgkin.
- ROYAL SOCIETY, Burlington House, London, W.—March 10, 4.30 p.m. Lecture on the Work of the National Institute for Medical Research, by Sir Charles Harington, F.R.S.

Friday

- LONDON CHEST HOSPITAL, Victoria Park, E.—March 11, 5 p.m. "General Anaesthesia for Surgery of the Heart," by Dr. Parry Brown.
- ROYAL MEDICAL SOCIETY, 7, Melbourne Place, Edinburgh.—March 11, 8 p.m. Valedictory address by the Senior President.
- ROYAL SANITARY INSTITUTE.—At Municipal Buildings, Southend-on-Sea, March 11, 10.30 a.m. "The Problems Connected with Houseboats as These Concern a Seaside Resort." Symposium by Mr. Archibald Glen, Dr. J. Stevenson Logan, Mr. Reginald A. Drake, and Mr. R. K. Wortley.

SOCIETY OF PUBLIC ANALYSTS: PHYSICAL METHODS GROUP.—At Chemistry Lecture Theatre, Imperial College of Science and Technology, Imperial Institute Road, South Kensington, London, S.W., March 11, 5 p.m. 20th Ordinary Meeting. "Polarographic Analysis." Papers by P. Welford, B.A., A.Inst.P., J. A. Lewis, and J. G. Walter, B.Sc., A.R.I.C.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—At Miller Hospital, Greenwich High Road, London, S.E., March 11, 8.30 p.m. Address by Dr. W. R. Heddy, H.M. Coroner for S.E. London.

Saturday

SOUTH EAST METROPOLITAN REGIONAL TUBERCULOSIS SOCIETY.—At Queen Mary's Hospital, Sidcup, Kent, March 12, 10.30 a.m. "B.C.G.," by Dr. F. R. G. Haff.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

- Brain.—On Feb. 23, 1949, at Chesterfield Nursing Home, Bristol, to Marion, wife of Dr. Russell Brain, of Grantham Road, Kingswood, Bristol, a son.
- Curnock.—On Feb. 19, 1949, at Chingford, to Vera (née Bucknell), wife of Dr. G. H. R. Curnock, a second son—Robert Michael.
- Hore.—On Feb. 18, 1949, at Seabourne Nursing Home, Bournemouth, to Molly (née Bush), wife of Dr. Dennis M. Hare, a daughter.
- Hill.—On Feb. 19, 1949, at Johnstone House, Belfast, to Nancy (née Hinchcliff), wife of William J. C. Hill, M.B., of Portrush, a son.
- Ormsrod.—On Feb. 23, 1949, to Iris, wife of Peter Ormsrod, 61, Calcott Road, N.W., a daughter—Jennifer Anne.
- Skempton.—On Feb. 22, 1949, to Leslie, wife of Ivor P. D. Skempton, M.B., B.S., a third son—Keith.

DEATHS

- Armstrong.—On Feb. 12, 1949, at Ainthorpe House, Danby, Yorks, Cedric Whitfield Armstrong, M.R.C.S., L.R.C.P., aged 63.
- Brook.—On Feb. 16, 1949, at Dunn Street House, Westwell, Kent, George Sandison Brook, M.B.E., M.D., F.R.C.P.Ed., F.R.S.Ed., Commander of the Order of the Crown of Italy (1919), of Greenbanks, St. Saviour, Jersey, C.I., aged 90.
- Brown.—On Feb. 13, 1949, Bessie Brown, M.D., of 29, Ripon Road, Harrogate, aged 44.
- Budd-Budd.—On Feb. 16, 1949, at 15, West Drive, Queen's Park, Brighton, Edward John Budd-Budd, M.R.C.S., L.R.C.P., aged 76.
- Chadburn.—On Feb. 18, 1949, at The Limes, Jacob's Post, Burgess Hill, Sussex, Charles Nugent Chadburn, M.R.C.S., L.R.C.P.
- Coutts.—On Feb. 13, 1949, at Rusland, Spencer Road, Canford Cliffs, Bournemouth, Francis James Henderson Coutts, C.B., M.D., D.P.H., late Senior Medical Officer, Ministry of Health, aged 83.
- Cundell.—On Feb. 18, 1949, at Tadworth, Surrey, Harold Juler Cundell, M.R.C.S., L.R.C.P.
- Davies.—On Feb. 20, 1949, at Hill End Hospital, St. Albans, Thomas Edwin Davies, M.B., Ch.B., late of Oldham Road, Manchester, aged 48.
- De Smidt.—On May 19, 1948, at Nairobi, Kenya, Frank Philip Gilbert de Smidt, M.R.C.S., L.R.C.P., D.P.H., aged 58.
- Dickson.—On Feb. 15, 1949, at Invermac, South Queensferry, George Alexander Dickson, J.P., M.B., C.M.
- Edlin.—On Feb. 23, 1949, at Middlemore House, Levenshulme, Manchester, Herbert Ebenezer Edlin, M.R.C.S., L.R.C.P., aged 86.
- Edwards.—On Feb. 23, 1949, Ivor Charles Edwards, M.D., D.P.H., of 11, The Grove, Keworth, aged 62.
- Ensor.—On Feb. 10, 1949, Cecil Arthur Ensor, M.R.C.S., L.R.C.P., late of Tisbury, Wilts, aged 75.
- Friend.—Recently, Julius Friend, L.S.A., of Leeds, aged 82.
- Garde.—On Feb. 17, 1949, at Ivydell, Flushing, Falmouth, Walter Henry Ormonde Garde, F.R.C.S.Ed., Surgeon Captain R.N., retired, aged 78.
- Gilmore.—On Feb. 19, 1949, at 274, Mauldeth Road West, Charlton-cum-Hardy, Manchester, Eric St. George Gilmore, M.B., Ch.B., aged 54.
- Glasban.—On Feb. 11, 1949, at Dumfriesshire, Alexander Clark Glasban, M.B., Ch.B., of Burnley.
- Greene.—On Feb. 18, 1949, Helen M. Greene, M.D.Brux., of Woods Farm, Chobham, Surrey.
- Hale-White.—On Feb. 26, 1949, at 24, Warrborough Road, Oxford, Sir William Hale-White, K.B.E., M.D., F.R.C.P., aged 91.
- Holmes.—On Feb. 11, 1949, at 2, Staveley Road, Eastbourne, Bernard Willoughby Holmes, M.R.C.S., L.R.C.P.
- Jackson.—On Feb. 20, 1949, Robert William Henry Jackson, M.D., D.P.H., Major R.A.M.C., retired, of Highfield, Caernarvon, North Wales, aged 84.
- Jerram.—On Jan. 21, 1949, in Rhodesia, Ursula Jerram, M.R.C.S., L.R.C.P., D.C.H.
- Johnstone.—On Feb. 22, 1949, at Colinwood, Rhos-on-Sea, Edmund Johnstone, L.S.A., formerly of Clayton, aged 84.
- Klein.—On Feb. 21, 1949, Bruno Klein, M.D., D.P.H., of 60, Approach Road, Cliftonville, Margate, aged 57.
- Laing.—On Feb. 17, 1949, at Lerwick, Arthur Cecil Laing, M.C., Croix de Guerre, M.B., Ch.B., of Levenshulme, Shetland.
- McCullough.—On Feb. 20, 1949, at Queen Elizabeth Hospital, Birmingham, Charles Harold Walker McCullough, M.D., D.P.H., aged 74.
- Moyes.—On Feb. 3, 1949, at Strathmore, Prospect Road, Portstewart, N. Ireland, Alice Elizabeth May Babington Moyes, M.B., Ch.B.Ed., D.P.M., wife of Dr. John M. Moyes.
- Orpen.—On Feb. 12, 1949, at Alice, Cape Province, South Africa, Leander Joseph John Orpen, B.M., B.Ch., D.P.H., aged 72.
- Paxon.—On Feb. 17, 1949, at 30, St. George's Road, London, N., George Ernest Paxon, M.R.C.S., L.R.C.P., L.D.S.
- Porter.—On Feb. 12, 1949, at 65, Morningdale Road, Edinburgh, Frederick Porter, M.B., C.M.Ed.
- Rogerson.—On Feb. 10, 1949, in Baltimore, Cuthbert Harry Rogerson, M.D., F.R.C.P., D.P.M., late Medical Director of the Seton Institute, Baltimore.
- Rosnier.—On Feb. 8, 1949, at 31, Church Avenue, Paula, Malta, Chev. Joseph Gerald Ruggier, M.D., aged 56.
- Somerville.—On Feb. 19, 1949, Edgar Somerville, M.D., F.R.C.S.Ed., of Hartsheath, Newton Abbot, South Devon, formerly of Leek, Staffs., aged 74.
- Tobin.—On Feb. 23, 1949, Joseph Richard Tobin, M.R.C.P.I., formerly of South Australia.
- Wakefield.—On Feb. 23, 1949, at The Gale near Keswick, Cumberland, Arthur William Wakefield, M.D., aged 72.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Tuberculosis in Ex-Servicemen

Q.—Some young men enter the fighting Services apparently fit but come out with pulmonary tuberculosis. Are there any statistics to indicate whether this is "attributable to military service"?

A.—It is not possible to supply the facts requested; the statistics mentioned are not given in the last report of the Chief Medical Officer of the Ministry of Health for 1939-45. In any event, such figures for the fighting Services could not be compared directly with those for similar age groups in the general population. The men in the Services are selected by a medical examination, often including radiography of the chest, and they have a similar examination on discharge. These are bound to reveal some tuberculous lesions which would remain undiscovered in a civilian.

Cases of tuberculosis discovered during or just after a period of military service can be divided into two categories: (1) Those in which the disease is almost certainly attributable. These are comparatively few and include those with a radiologically clear chest on enlistment who have been subjected to definite strain or privation—such as prisoners of war—who are known to have been living in close contact with cases of open tuberculosis. (2) Those in which there is doubt. It is always difficult to estimate the age of a tuberculous lesion, and if no x-ray film was taken on enlistment (or discharge) it is usually impossible to say that the disease did not develop during the period of service. Even if there is no specific cause to which the disease can be attributed the patient can usually plead aggravation by the physical exertion involved in Army life.

The Ministry of Pensions appears to take a lenient view in such cases, and if there is any doubt the patient is usually awarded a pension. As a result some patients whose disease almost certainly developed after discharge from the Services have been given pensions. This generosity has given rise to singular anomalies—for example, a youth conscripted to work in the mines who develops tuberculosis gets no compensation whatever, even though his work has entailed severe physical strain which undoubtedly aggravated the disease.

Angina Pectoris

Q.—A patient aged 45 suffers from severe precordial pain radiating down the right arm which is precipitated by exercise, by emotional upset, and even by turning over in bed. The heart appears normal on examination. The pain is eased by glyceryl trinitrate. What is the diagnosis, and can you recommend any treatment?

A.—The diagnosis is almost certainly angina pectoris, and this is probably due to occlusive coronary atherosclerosis. There are three main lines of treatment for these cases. The first is conservative. This consists in limitation of activity and stress of all kinds, light diet, increased rest, and the intelligent use of trinitroglycerin—as is well known. Secondly, if the patient is incapacitated despite this regimen, methyl or propyl thiouracil may be given in initial doses of 0.2 g. thrice daily in order to reduce the oxygen requirement and hence the work of the heart, and also to diminish the sensitivity of the organism to adrenergic stimuli. Thirdly, if thiouracil fails or is not well tolerated, surgical intervention may be considered, bilateral stellate and upper dorsal ganglionectomy being the operation of choice.

Specialist advice should be sought before embarking on thiouracil therapy and before submitting the patient to sympathectomy. The diagnosis of angina pectoris is by no means always easy, and should be established beyond doubt one way or the other in all cases. By far the best test is to obtain an electrocardiogram immediately after effort of sufficient degree to provoke pain or breathlessness and fatigue. Diagnostic

ischaemic depression of the S-T segment in left ventricular leads or their equivalent (usually ventricular lead and standard lead I) is obtained in about 95% of cases. It cannot be too strongly emphasized that in uncomplicated cases of angina pectoris (due to occlusive coronary disease) there are no abnormal physical signs and the resting electrocardiogram is normal.

Antibody Formation

Q.—Where in the body does the power of immunity reside? If in the blood, does severe or repeated haemorrhage or the frequent donation of blood lessen immunity?

A.—Recent work indicates that the lymph nodes may be the principal site of antibody formation. Once the antibody-producing cells have been stimulated to yield a particular antibody the power to continue production seems to be handed on to daughter cells and a non-specific stimulus may encourage increased output. Thus, in horses producing diphtheria antitoxin the withdrawal of blood may stimulate the manufacture of antibody. It is therefore unlikely that haemorrhage or frequent donation of blood will interfere with antibody production. The only risk is that the patient may suffer temporarily from a degree of anaemia which may lower resistance to infection. If haemoglobin estimations are made frequently in a regular blood donor any tendency to anaemia will be detected and can usually be corrected by a course of iron.

Death from Curare

Q.—What would be the immediate effect of a lethal dose of curare given intramuscularly? Would there be any local reaction at the site of puncture, and how long would it be before death occurred? What would be found at necropsy? Could the cause of death, if unsuspected, be established?

A.—The post-mortem findings in such a case would be those of asphyxia, with no features to distinguish it from asphyxia due to other agents—for example, various other alkaloid poisons. It is unlikely that there would be any local reaction at the site of injection, and it is very unlikely that the precise cause of death would be established by post-mortem examination if the possibility of curare having been injected was unknown and unsuspected. The effects of a lethal dose would begin to be apparent very soon after the injection, and would consist of a progressive paralysis of the voluntary muscles of the body, starting in the limbs, then affecting the head and neck, and ending with paralysis of the respiratory muscles—intercostal, diaphragmatic, and abdominal. With a large lethal dose death might occur about ten minutes after the injection.

Adiposity

Q.—(a) What advice should be given to a young man who is developing a protruding abdomen? There is a family tendency to obesity, and recently during several months in bed he put on a lot of weight. Is some sort of support advisable, and if so, which type? What exercises should be recommended?

(b) Could you advise treatment for an active middle-aged male suffering from adiposity of pituitary distribution, the trunk being the only part of the body affected?

A.—(a) When fat is put on by those with a family tendency to obesity, as in other cases, the abdomen is often the region selected, and the condition is not infrequently accompanied by laxity of the intravertebral ligaments and some lordosis, which increases the prominence of the abdomen. A support is advisable only in the most extreme cases, and several firms make suitable belts; but exercises to increase postural tone, in the first case under the supervision of a physiotherapist, may prove of some help.

(b) As indicated in (a) above, it is common for the trunk to be the part affected and for the limbs, or their distal parts, to escape the adiposity. There is no known hormone which directly reduces adiposity, and treatment is therefore based on (1) low-calorie diet; (2) diuretics, such as ammonium chloride and mersalyl, to counteract the water-retention factor; and (3) "dextedrine" (amphetamine sulphate) or digitalis to reduce appetite. Amphetamine is sometimes used as an adjunct to therapy in cases of adiposity, and appears to act centrally (cerebrum or hypothalamus) on the hunger or appetite-control

mechanism. It is effective in man and in dogs in reducing voluntary food intake, and this action is not influenced by extrinsic denervation of the stomach and intestine. Amphetamine also causes an apparent slight increase in metabolism, probably by inducing restlessness, and similarly increases dissipation of energy, but clinical trials indicate that these are not the major factors. The above results were found in dogs—even to the point of complete anorexia—before there was evidence of excitement, mania, atonia, or other signs. No evidence of habit formation was found in normal adipose patients, but in psychopaths addiction and toxic reactions have been recorded. Digitalis is also sometimes used in obesity to decrease appetite, as this drug can produce anorexia, nausea, and vomiting by local action on the gastric mucosa or on the vagal nerve endings. For details of some of the experimental work on amphetamine see Harris, S. C., Ivy, A. C., and Searle, L. M., *J. Amer. med. Ass.*, 1947, 134, 1468.

Retinal Pigmentation

Q.—I have recently examined the fundi of an elderly man who has deep conjunctival staining of both eyes due to prolonged local application of silver preparations. Both fundi show heavy deposits of pigment over the whole visible retina and I should like to know if it is possible for argyrosis to affect the retina, and, if so, whether the condition is unusual. Where in the literature can references be found?

A.—There are no reports of staining of the fundus in argyrosis from local application of silver nitrate to the conjunctival sac. The cornea may be involved in the staining, but it is unlikely that intraocular lesions would occur. The internal administration of silver nitrate can produce extensive silver staining in skin and mucous membrane, and there is one histological report (Riemer, *Arch. Heilk.*, 1875, 16, 296, 385) of the deposition of silver in the sheath of the optic nerve in a patient who had been taking silver by mouth over many years. Toxic effects such as retrobulbar neuritis have also been described. They are summarized in *Die Wirkung von Arzneimitteln und Giften auf das Auge*, by L. Lewin and H. Guillery, 2nd ed., vol. ii, 746 (Berlin, 1913). There is a more recent account by Ramond (*Bull. Acad. Méd., Paris*, 1946, 130, 275). These observations, however, have no relevance to the point raised in this question. If retinal pigmentation that can be more readily ascribed to established causes of pigmentary changes in the fundus can be excluded in this particular patient the case would be worth following up.

Chemotherapy of Acute Otitis Media

Q.—Is it advisable to use any of the sulphonamides or penicillin to treat acute otitis media before discharge appears or is induced? Does the early use of these drugs predispose to later deafness?

A.—In the early stages it seems safe to give sulphonamides or penicillin, but if the drum is red and bulging from infected fluid under tension symptoms may be obscured. In such a case it is wiser to incise the drum first. If spontaneous rupture has occurred, and particularly in cases of recurrent suppuration through a permanent perforation, chemotherapy seems reasonably safe; but dosage must be adequate, and the administration of the drug should be continued for four or five days. Some cases of deafness following sulphonamide treatment have been reported by Simson Hall (*Proc. Roy. Soc. Med.*, 1944, 37, 749), and were presumed to be due to inadequate dosage.

Abdominal Pregnancy

Q.—Abdominal pregnancy at 5½ months has now been discovered in a case in which three months earlier a misdiagnosis of appendicitis was made at the time when rupture of an ectopic pregnancy must have occurred. The mother and foetus are normal. How long should the pregnancy be allowed to continue, and are there any special dangers to guard against?

A.—The general view is that laparotomy should be undertaken as soon as the diagnosis of abdominal pregnancy is made. But operation should be carried out by an expert, for the anatomical relations within the abdomen are likely to be much disturbed and great skill and gentleness are necessary if serious haemorrhage is to be avoided. Haemorrhage from the placental

site—which may involve any of the abdominal organs—is, indeed, the great danger, and rare judgment is required to decide how best to deal with the placenta and pregnancy sac. Although occasionally the placenta is so situated that maternal blood vessels leading to it can be easily controlled, usually this is not the case, and it is then best to remove the foetus gently with the least possible disturbance of the sac. The umbilical cord is cut short and the placenta and membranes are left inside the abdomen, the abdomen being closed without drainage.

There may be circumstances—for instance, when it might offer the patient her only chance of a live child—in which delay until the child is viable is justified, but they are rare. This course should be followed only after considering the very serious maternal risk involved, and with the fact in mind that the child frequently becomes misshapen by reason of its faulty attitude and position. The older practice of waiting until the patient has had a spurious labour, the child is dead, and the placental vessels have become thrombosed has gone out of favour.

NOTES AND COMMENTS

Leukoplakia and Kraurosis Vulvae.—Dr. ELIZABETH HUNT (London, W.1) writes: Mr. Stanley Way (Jan. 22, p. 164) criticizes my statement (Jan. 1, p. 42) that cancer in association with the eruption known to gynaecologists as leukoplakia vulvae or leukoplakic vulvitis originates on the inner surfaces of the vulva. The grounds for his criticism are that he has seen cases in which both the inner and outer surfaces were affected. It is always possible that a tumour may extend outwards from the initial site if untreated in an early stage. Reports of surgeons (Morris, 1882; Butlin, 1901) of a cancer with leukoplakia vulvae occurs on the mucous surfaces only, not on skin, support my statement, and Blair Bell (1934) states precisely that cancer has never been observed on the extragenital lesions. The skin eruption described by Bonney under the title leukoplakic vulvitis is identical with a variety of lichen planus known to dermatologists as lichen sclerosus. This eruption may occur at any site and may affect mucous surfaces also. I have been unable to trace any record of cancer arising on skin affected by this eruption. The excision of skin affected by this eruption as a prophylactic measure against cancer is not therefore warranted, and one cannot but hope that few women have experienced the ordeal advocated by Taussig for this purpose—i.e., that every case of leukoplakic vulvitis should be treated by surgical excision of the entire vulva, including the perineal and perianal skin if these are involved.

Mr. Stanley Way raises the question of nomenclature. It may be queried whether the substitution of the term "vulvitis" for "dermatitis of the vulva" is justifiable, since it involves labelling an eruption on the perineal and peri-anal skin, or on any other extragenital surface, as "vulvitis." To speak of a leukoplakic dermatitis of the vulva and adjacent surfaces would convey a definite idea and avoid confusion in terminology. The term leukoplakia as applied to skin lesions other than affections of the mucous or muco-cutaneous surfaces occurs only in gynaecological literature. It is an attractive term and popular, for even scabies and warts have been referred to me with this diagnosis. This term was suggested by Schwimmer in 1877 to distinguish whitish lesions on mucous membrane from skin lesions. It is customarily applied to lesions of this nature inside the mouth or on the muco-cutaneous surface of the male genital organ. It would, I believe, make for clarity and greater accuracy in diagnosis if gynaecologists would restrict their use of the term to lesions occurring on the internal surfaces of the vulva.

The Human Touch.—This new play, by J. Lee-Thompson and Dudley Leslie, now running at the Savoy Theatre, is based on the discovery of chloroform anaesthesia by Sir J. Y. Simpson. Though well acted and competently produced, the play itself contains many inaccuracies. Professor James Syme presides over a lunacy board which is convened to certify Dr. Simpson. Simpson, played by Alec Guinness, refers constantly to "chlorry," which is given its full title by Professor Syme when he announces the ruling of the faculty that any practitioner using chloroform will be struck off the *Medical Directory*.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: Athology, Westcent, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: Britmedads, Westcent, London. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, EUSTON 2111. TELEGRAMS: Medisecra, Westcent, London. B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY MARCH 5 1949

THE SECRETARY REPORTS

THE ASSOCIATION AND LOCAL AUTHORITIES

The dispute between the B.M.A. and the associations of local authorities has implications far beyond the Public Health Service. It may be useful to give its background somewhat fully. The Government is committed to the principle of negotiation through Whitley machinery of the terms and conditions of service of those members of the Public Health Service who are covered by the Act. It is an essential part of this Whitley machinery that if agreement is not reached recourse is had to arbitration. It is further agreed that such negotiations should cover not only those medical officers who, because they are employed by county and county borough councils, are within the ambit of the Act, but other medical officers—e.g., medical officers of boroughs, urban district councils, etc.—as well.

Precise proposals for Whitley Council machinery have been put forward and accepted. It was expected that as soon as possible after the appointed day negotiations for new terms and conditions of service for our colleagues in public health would begin. In practice this meant that negotiations could have begun some four or five months ago. Towards the end of last year the associations of local authorities began to raise difficulties. As far as one can gather, their argument was that for the members of the Public Health Service to be dealt with as part of the profession would mean substantial increases in remuneration for its members. Such increases would in turn lead to increases for other professional officers in local government. Faced with the prospect of such widespread increases they challenged the Whitley proposal itself, preferring, it seems, the old method of hard bargaining between local authorities and representatives of the Public Health Service. They have met the Minister of Health on the point, and we surmise that they got short shrift from him.

In fact, he himself anticipated the position when, in the Standing Committee, he said on June 27, 1946, speaking on the national regulation of the remuneration of health workers, that "No doubt it will influence the whole field of local government, and it is rather desirable that that should be so."

In December last the Public Health Committee of the Association, fully aware of the growing disquiet in the Public Health Service, decided that it was justified in bringing pressure upon the associations of local authorities to conform to the Government's policy and to open negotiations through Whitley machinery without further delay. The Council approved, and it passed the following resolution:

"That the Ministry be informed that if negotiations through approved Whitley machinery have not begun by Feb. 28, 1949, advertisements from local authorities will not be accepted by the *British Medical Journal* unless the salaries offered are in conformity with the Association's own proposals for new scales."

At the time of going to press the associations of local authorities have taken no step to open negotiations, with the result that the Council's recommendation comes into operation. From this week we shall accept for publication in the *British Medical Journal* no advertisements which do not conform to the proposals which the Association has made for the revised remuneration of public health officers. What we are asking and are determined to secure is that the negotiations shall open. Once the associations of local authorities open the negotiations the ban will be withdrawn.

In taking this step we have the co-operation of the *Lancet*, the *Medical Officer*, and *Public Health*. We owe a great deal

to the co-operation of the proprietors of these journals. We are particularly indebted to the *Medical Officer* because of the relatively large loss in advertisement revenue which this paper will temporarily sustain.

Fundamentally, the issue is one of the application of the Spens standards to groups of the profession other than those to which the two Spens Reports specifically relate. Medical officers of local authorities are first and foremost members of the medical profession, and only secondarily members of the local government service. It is our duty to secure that their standards of remuneration are appropriately related to the Spens standards whatever difficulties this may bring in its train. It is probably true that the effects of the Spens Reports will be felt not only throughout the medical profession but throughout the professions generally, and particularly by members of the professions who are in the public service. But this is not necessarily a bad thing. In any case we are justified in using all the pressure at our command to secure that the negotiations are opened through the approved machinery for a section of the profession which is suffering substantial hardship at the present time.

Medical Committees

It will be recalled that in answer to the question put to the Minister on the subject of medical committees in April, 1948, he replied in the following terms (*Journal*, April 17, 1948, p. 742):

"The Minister entirely agrees with the system of medical committees in hospitals. But he could not *compel* medical staffs to set them up (nor would the Association presumably wish him to try!). He has already included in his guidance to regional boards and hospital management committees a declaration of the importance which he attaches to the system and asked that every encouragement and facility should be given to it. He also agrees that in teaching hospitals such committees should be representative of all consultants and specialists on the staff, whether they are teachers or not."

"As to the representation of medical committees on boards of governors or hospital management committees, the Minister follows the Act, which requires the latter bodies to include persons appointed after consultation with the senior medical staff of the hospital or hospitals, and the former bodies to include up to one-fifth of their members nominated by the medical and dental teaching staff. In practice, of course, this means that both bodies will include members of the medical committees, with full membership. Moreover, the Minister certainly thinks that consultation should include consultation with the medical committee, where there is one."

In practice, things have not worked out in every area as the Minister expected. In particular the medical staffs of the hospitals under regional hospital boards have expressed dissatisfaction with the methods followed to secure the appointment to hospital management committees of "persons appointed after consultation with the senior medical and dental staff." The view is gaining ground that the one way of ensuring that medical committees are properly recognized and utilized, both in giving advice and in providing proper representation, is by amendment of the Act. The greatness of the voluntary hospital system owes much to the effective medical committee. In association with the boards of governors of teaching hospitals, the hospital management committees, and the regional boards there should be medical bodies representative of and appointed by the medical staffs concerned. Only in this way can it be ensured that the members of hospital staffs will make their most effective contribution to hospital work and play their proper part in the committees concerned with the appointment of the colleagues with whom they will have to work.

National Health Service

DISTRIBUTION OF FUNDS

Central Practitioners Fund

The Ministry of Health states that the Central Practitioners Fund for the period July 5, 1948, to March 31, 1949, will be determined and distributed as though both the civilian population as a whole and the actual numbers on doctors' lists had been the same throughout the period as the figures determined as at Jan. 1, 1949. The Fund will therefore be an amount equal to 18s. a head for 95% of the estimated civilian population of Great Britain as at Dec. 31, 1948. The resulting sum, less a deduction for mileage payments, will be allocated between England and Wales on the one hand, and Scotland on the other, in proportion to the number of persons on doctors' lists at Jan. 1, 1949, plus one-third of the estimated population not on their lists. The allocation to each executive council will be on the same basis.

Central Mileage Fund

The formula governing the distribution of the Central Mileage Fund has not yet been determined for the National Health Service. Meanwhile the distribution among executive councils for the nine months ending March 31 will be in the same proportions as the Central Mileage Fund was distributed among insurance committees under the N.H.I. Act. Executive councils will then distribute the sums in accordance with the mileage schemes in force under the N.H.I. Act, using for the purpose mileages returned by the doctor.

All payments from these funds must be made not later than March 31.

INFLATION OF LISTS

The General Medical Services Committee has considered the problem of inflated lists and has been informed of one area where the number of persons who had signed on was 102%. The committee is anxious that accurate lists in relation to population should be established in all areas as soon as possible, and has set up a subcommittee to investigate the problem. In the meantime the committee has approved the Ministry's suggestion that the number of persons in an executive council area who had signed on should be taken and one-third of the difference between such number and the established population added, the result giving the basic figure for the computation of the local pool; and that the maximum should be 98%, so that any area which showed a higher figure would be brought down to that level.

PRESCRIPTION OF APPLIANCES

LIST AMENDED

The Minister of Health has decided after consultation with the B.M.A. and the Central National Health Service (Chemist-Contractors) Committee that the types of trusses which may be prescribed on Form E.C.10 should be restricted to the following: femoral, inguinal, scrotal, and umbilical. The articles of elastic hosiery which may be so prescribed should be extended to include: leggings, knee stockings, knee leggings, thigh stockings, thigh leggings, and thigh kneecaps. (The list of appliances that general practitioners may prescribe on Form E.C.10 was given in the *Supplement*, Nov. 13, 1948, p. 172.)

Since all chemists do not measure and fit trusses and elastic hosiery, the Ministry suggests that doctors should not include prescriptions for medicines or other appliances on the same prescription form.

Splints of the nature of an elbow- or knee-cage and the Howarth March type of knee splint should be supplied only through the hospital service. In addition, the schedule will be amended to include insufflators, nipple shields, medicated plasters as specified in the Drug Tariff, "stem pessaries," and "fluid ring pessaries"; and to limit inhalers and vaporizers by the proviso "as specified in the Drug Tariff."

Patients requiring renewals of, or repairs to, artificial limbs, invalid tricycles, or wheel-chairs should be asked to communi-

cate with the Chief Regional Officer of the Ministry of Pensions, whose address can be obtained from hospitals, post offices, citizens' advice bureaux, or the local offices of the Ministry of National Insurance.

DELAYED ADMISSION TO HOSPITAL

The Local Medical Committee for the County of London considered at a recent meeting the confidential report of a conference held by representatives of the committee, the Ministry of Health, the Emergency Bed Service, and the Metropolitan Regional Hospital Boards. The committee passed the following resolution:

"That the Committee views with dismay the present unsatisfactory conditions which retard the admission of patients into hospital; and in particular those cases which undoubtedly are acute but with which there is also associated a chronic element, and is deeply concerned by the reports which reach it of many patients who have died whose lives might have been saved had energetic action been taken to secure medical and nursing attention for them at the time when practitioners endeavoured to obtain their admission to hospital."

HOSPITAL ESTIMATES TO BE CUT

The Minister of Health has pointed out to all regional hospital boards and most boards of governors that their estimates of requirements for the year 1949-50 exceed what it is possible to provide, and has asked that they should arrange for a reduction of £9,500,000 from the total sum available for hospital maintenance. It will also be necessary to postpone some capital works which otherwise would have been put in hand. He emphasizes his anxiety that the welfare of the patients should not be affected. Expenditure for this purpose should have priority over any other form of expenditure.

FEE FOR EXAMINING STAFF

A fee not exceeding one guinea is payable for the medical examination of candidates for permanent administrative or clerical appointments under the National Health Service after Jan. 25.

MORE X-RAY FILMS

The Ministry of Health states that the arrangements for ensuring adequate supplies of x-ray films to meet the essential needs of hospitals have been discussed with the Board of Trade. Hospital demands for films have risen steeply since July, 1948, and though the quantity of films distributed in 1948 was 20% greater than in 1947 some shortages have arisen. It is hoped that supplies in 1949 will be at least 25% more than in 1948.

The Ministry believes that this additional provision may not bridge the gap between demand and supply, and emphasizes that all hospitals should be sparing in the use of x-ray films and should refrain from placing orders for more than they require or building up greater stocks than are necessary for normal working.

NO PERMITS FOR RUBBER GLOVES

The Board of Trade announces that the restriction which limited the sale of surgeons' rubber gloves only to those people holding a buying permit ended on Feb. 28. Supplies of these gloves are now sufficient to meet normal demands.

HEARD AT HEADQUARTERS

Test Case

Within the next month or so a test case will be brought on the question of the right of the citizen, while under private medical treatment, to have his prescriptions dispensed within the National Health Service. A patient who was being treated privately was prescribed ephedrine by his doctor, and the prescription was countersigned by a famous consultant. The chemist refused to accept it as an N.H.S. prescription, and the patient is now proceeding in the county court to sue the Minister for the return of 3s. 9d.

Questions Answered

Employing Several Assistants

Q.—*Upon the retirement recently of my partner, whose share I purchased, I was, on July 5, the sole proprietor of a large practice requiring at least two full-time assistants in order to meet N.H.S. requirements. I am informed that this is " frowned upon " by the authorities, and I have been advised to replace the present situation with a partnership arrangement. Until my compensation is paid, or an amount on account—and I do not know when this will be—my commitments in the practice will not permit me to offer a partnership of reasonable proportions without seriously impairing my income. Although my partnerships are "with view" I cannot give an exact undertaking as to date, but may be forced to do something by the authorities. By what portions of the N.H.S. Act and under what regulations are bodies entitled to enforce restrictions upon me in respect of this situation, what are these bodies, and what are their powers in this respect? The area is not "closed" so far as I know.*

A.—The allocation scheme permits a practitioner employing one or more permanent assistants to increase the number of public patients for whom he is responsible by 2,400 in respect of each assistant. It is true that the employment of multiple assistants is frowned upon, and executive councils have powers to refuse a principal an additional assistant unless it is "with view" or he is contemplating taking his present assistant into partnership. There are no powers, however, to compel you to take your present assistants into partnership. It is assumed that you have made a claim for the immediate payment of compensation or a payment on account.

Notification of Puerperal Pyrexia

Q.—*Am I compelled to give further information which is asked for by the county M.O.H. in a case of puerperal pyrexia? This occurred in a private patient within the 21 days, and was notified by me to the M.O.H. on the usual form.*

A.—No obligation on the practitioner exists in a case of puerperal pyrexia other than the notification to the County Medical Officer of Health on the appropriate form.

Fee for Anaesthetic

Q.—*If a patient on my State list elects to have an operation in a private nursing-home several miles outside my area for which I give the anaesthetic and my partner assists, can I charge a fee?*

A.—A fee cannot be charged for the administration of the anaesthetic unless it is itself a specialist service and the doctor is a specialist anaesthetist on the staff of a hospital providing hospital and specialist services. If the nursing-home is outside the doctor's area of practice (as defined in his application for inclusion in the executive council's medical list), the doctor is entitled to be reimbursed for the extra mileage and time spent in travelling.

Travellers Going Abroad

Q.—*(1) Can a fee be claimed for the completion of a detailed questionnaire and full physical examination of a child going abroad in the holidays?*

(2) Can a fee be claimed for the preventive inoculation against typhoid, cholera, tetanus, and yellow fever in the cases of lecturers or people visiting foreign countries on holiday?

A.—(1) Until the Interdepartmental Committee on Certification has reported a practitioner is obliged to render free of charge only those certificates which appear on the detailed circular issued by the Ministry to local executive councils. The examination you have in mind is a medical report, and when demanded by a patient in respect of a child going abroad in the holidays a fee would be admissible.

(2) At present no fee may be charged for the preventive inoculation against these diseases in respect of one of the practitioner's public patients. Detailed negotiations are at present taking place on remuneration for vaccination and immunization.

SCOTTISH COMMITTEE

At a meeting of the Scottish Committee of the B.M.A. at Edinburgh on Feb. 22 intimation was made that the scale of fees negotiated by the committee with the Crown Office with the approval of Council is now in operation. The fees are those in respect of work carried out by members of the profession on behalf of procurators fiscal. Copies of the scale may be obtained from the Scottish Office of the B.M.A.

The committee considered a proposal for the amalgamation of its Highlands and Islands Subcommittee with the Scottish Rural Practitioners Subcommittee. In support of this it was mentioned that the absorption of the old Highlands and Islands scheme into the National Health Service rendered unnecessary the Highlands and Islands Subcommittee, and that the problems of doctors in those areas and the other rural areas of Scotland were essentially the same. In opposition it was pointed out that there were problems outside the field of general practice affecting the Highlands and Islands area, and that in any case problems would remain which were peculiar to the Highlands and Islands.

After further discussion it was agreed that the *status quo* remain and that the respective committees be asked to explore the possibilities of amalgamation.

It was also reported that at a joint meeting of the Highlands and Islands and Rural Practitioners Subcommittees discussion of the present position in regard to dental treatment in the Highlands and Islands and rural areas of Scotland showed that executive councils were dealing with the problems in different ways. Certain councils are remunerating general practitioners when emergency dental services are given, while others consider such dental services to be included in the terms of service of the general practitioners under contract with them. The joint meeting resolved that until an adequate dental service is available in these areas general practitioners giving emergency dental treatment should be remunerated from the local dental pool in accordance with the Dental Service scale of remuneration. The Scottish Committee decided to remit this resolution to the General Medical Services Subcommittee (Scotland).

On the invitation of the Secretary of State for Scotland six representatives were appointed to discuss with him the provision of health centres and in particular the possibilities of developing one or more forms of group practice in suitable areas.

Dr. Grant referred to the discussion which had taken place in the Insurance Acts Subcommittee (Scotland) and in the General Practice Subcommittee of the Scottish Negotiating Committee on the proposed scheme for the training of assistants in Scotland. These bodies had discussed in detail the scheme drawn up by the Ministry of Health for adoption in England and Wales and had made certain suggestions for modifying that scheme in its application to Scotland. These modifications were in the main accepted. In respect of one modification—namely, the selection of "trainer" practitioners by regional selection committees—the Secretary of State had not accepted the proposal that the appointment of general practitioner members of the regional committees should be left in the hands of the local medical committees in the regions, but had retained the right of appointment from nominations made by the individual committees.

The committee endorsed the action taken in respect of the application of the training scheme to Scotland but thought that the question of the method of appointment of general practitioner representatives on the regional selection committees should be reopened with the Department of Health for Scotland with a view to securing that the local medical committees should have the actual power of appointment.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar

Non-County Borough Councils.—Dartford, WallSEND.

Urban District Councils.—Denton, Drayliden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

HEALTH ADVISORY COMMITTEES

APPOINTMENTS BY MR. WOODBURN AND HEALTH SERVICES COUNCIL

The names of the members of the nine Standing Advisory Committees whose duty it will be to advise Mr. Arthur Woodburn, Secretary of State for Scotland, and the Health Services Council on various aspects of the National Health Service are printed below. The Committees have been set up by Mr. Woodburn after consultation with the Council. They are the Medical, Dental, Nursing and Midwifery, and Pharmaceutical Advisory Committees and Advisory Committees on Hospital and Specialist Services, Local Authority Services, General Practitioner Services, Health Services in the Highlands and Islands, and Health Centres.

Each Committee consists partly of members of the Health Services Council appointed by the Council and partly of persons, whether members of the Health Services Council or not, appointed by the Secretary of State after consultation with various representative organizations.

The Committees will advise on the Health Service matters with which they are concerned, both as they think fit and also on any questions that may be referred to them by the Secretary of State. They will report direct to the Secretary of State, but are required to inform the Health Services Council, who may express their views on the matter under consideration.

Medical Advisory Committee

(a) *Members appointed by Secretary of State.*—Dr. D. P. Cuthbertson, director, Rowett Research Institute, Aberdeenshire; Professor T. J. Mackie, professor of bacteriology, Edinburgh.

(b) *Members appointed by Health Services Council.*—Professor Dugald Baird, regius professor of midwifery, Aberdeen; Dr. A. D. Briggs, medical superintendent, Stobhill General Hospital, Glasgow; Professor D. F. Cappell, professor of pathology, Glasgow; Dr. W. G. Clark, M.O.H., Edinburgh; Dr. Mary Esslemont, Aberdeen; Professor G. B. Fleming, formerly professor of medical paediatrics, Glasgow; Dr. G. Matthew Fyfe, M.O.H., Fife; Mr. J. M. Graham, consulting surgeon, Edinburgh Royal Infirmary; Professor Sir David Henderson, professor of psychiatry, Edinburgh; Dr. J. R. Langmuir, chairman, Glasgow Local Medical Committee; Professor J. R. Learmonth, regius professor of clinical surgery and professor of surgery, Edinburgh; Dr. G. MacFeat, Douglas, Lanarkshire, chairman, Scottish Committee of the B.M.A.; Dr. I. H. Maciver, Fort William, member of Northern Regional Hospital Board; Professor J. D. McNee, regius professor of practice of medicine, Glasgow; Dr. A. F. Wilkie Millar, member of Edinburgh Executive Council; Professor T. Ferguson Rodger, professor of psychiatry, Glasgow; Dr. W. D. D. Small, president, Royal College of Physicians, Edinburgh; Professor Sir Sydney Smith, professor of medicine and Dean of the Faculty of Medicine, Edinburgh.

Dental Advisory Committee

(a) *Members appointed by Secretary of State.*—Mr. J. Aitchison, director of studies and Dean of Glasgow Dental Hospital and School; Mr. Hugh Miller Biggs, Glasgow; Mr. J. Campbell, Glasgow; Dr. H. M. Crombie, Aberdeen, representing oral surgery in general hospitals; Mr. Adam Cubie, Glasgow, representing general consultants; Mr. J. Johnston Davidson, dentist, Dundee; Mr. A. P. Husband, Glasgow; Mr. W. Russell Logan, Edinburgh, representing orthodontia; Mr. A. Marshall, Paisley, representing school and other priority services.

(b) *Members appointed by Health Services Council.*—Dr. R. C. Scott Dow, dental practitioner, teacher at Edinburgh Dental Hospital and School and examiner in dental surgery for Royal College of Surgeons, Edinburgh; Mr. James F. Henderson, dental practitioner, Motherwell; Mr. Thomas Rankin, Hamilton, consulting dental specialist to plastic and jaw injury units at Bangour and Ballochmyle.

Nursing and Midwifery Advisory Committee

(a) *Members appointed by Secretary of State.*—Miss M. I. Adams, matron, City Hospital, Edinburgh; Miss P. Bennett,

county nursing superintendent and supervisor of midwives for Midlothian and Peebles; Mrs. K. G. Brown, 1, Albyn Place, Edinburgh; Dr. W. L. Burgess, M.O.H., Dundee; Mr. J. Butler, Lenzie, Glasgow, mental nurse; Miss M. M. Cardno, orthopaedic ward sister, Royal Infirmary, Aberdeen; Miss R. Clarkson, matron, Royal Hospital for Sick Children, Glasgow; Miss I. Dean, matron, Royal Northern Infirmary, Inverness; Miss I. Hamilton, superintendent, Queen's Institute of District Nursing, Scottish Branch; Dr. W. F. T. Haultain, deputy chairman, Central Midwives Board for Scotland; Miss M. C. N. Lamb, assistant secretary, Royal College of Nursing, Scottish Board; Miss A. C. Shirra, lady superintendent, Glasgow Royal Mental Hospital; Lady Thomson, wife of the Lord Justice Clerk.

(b) *Members appointed by Health Services Council.*—Miss J. P. Ferlie, matron, Simpson Memorial Maternity Pavilion, Edinburgh; Miss C. M. Keachie, secretary, Scottish Health Visitors' Association; Miss E. G. Manners, matron, Royal Infirmary, Glasgow.

Pharmaceutical Advisory Committee

(a) *Members appointed by Secretary of State.*—Mr. John Boyd, Edinburgh, manager of Boots Cash Chemists in Scotland; Mr. C. A. Buick, Port Glasgow; Mr. Colin Campbell, manager, Retail Drug Department, S.C.W.S., Ltd., Shieldhall, Glasgow; Mr. P. H. Cartwright, Galashiels; Mr. David Currie, pharmacist at Foresthall Institution, Glasgow, and chairman, Guild of Public Pharmacists; Mr. C. W. Macfarlane, Dundee; Dr. I. M. Macleod, Inverness, member of Drug Accounts Committee; Mr. J. H. Ramsay, Edinburgh; Mr. G. D. Stewart, representative for East of Scotland on the Association of Pharmaceutical Employees.

(b) *Members appointed by Health Services Council.*—Mr. C. G. Drummond, pharmacist, Edinburgh; Dr. D. McCall, Edinburgh, assistant resident secretary, Pharmaceutical Society in Scotland.

(There is one vacancy, the filling of which is under consideration.)

Advisory Committee on Hospital and Specialist Services

(a) *Members appointed by Secretary of State.*—Dr. R. Bailey, Gogarburn Institute, Edinburgh; Mr. J. Brownlee, lay superintendent, Dumfries and Galloway Royal Infirmary; Mr. James McKelvie, member of South-Eastern Regional Hospital Board; Mr. J. MacKenzie, Craig Dunain Hospital, Inverness; Miss Eleanor Stewart, director, Glasgow Maternity and Samaritan Hospitals; Mr. Russell Paton, Edinburgh.

(b) *Members appointed by Health Services Council.*—Professor Dugald Baird; Dr. A. D. Briggs; Professor D. F. Cappell; Dr. R. C. Scott Dow; Lieutenant-Colonel J. C. Dundas, chairman, British Hospitals Association (Scottish Branch); Dr. Mary Esslemont, Aberdeen; Mr. W. F. Ferguson, secretary and treasurer, Edinburgh Royal Infirmary; Professor G. B. Fleming; Mr. J. M. Graham; Professor Sir David Henderson; Professor J. R. Learmonth; Sir H. Broun Lindsay, convener, East Lothian County Council, and chairman of County Councils Association; Dr. D. McCall; Dr. G. MacFeat; Professor J. D. McNee; Miss E. G. Manners; Professor T. Ferguson Rodger; Dr. W. D. D. Small; Professor Sir Sydney Smith; Captain Joseph Steel, director, Crichton Royal Institution, Dumfries; Captain J. P. Younger, director, Stirling Royal Infirmary.

Advisory Committee on Local Authority Services

(a) *Members appointed by Secretary of State.*—Dr. May Baird, chairman of North-Eastern Regional Hospital Board; Dr. J. Dunlop, formerly assistant M.O.H., Glasgow; Mr. J. Graham, convener, West Lothian County Council; Dr. Kate Harrower, Glasgow; Mr. R. P. Ligertwood, chairman, Public Health Committee, Aberdeen County; Provost Michael McGivern, convener, Public Health Committee, Coatbridge; Councillor William Reid, convener, Health Committee, Glasgow Corporation; Miss C. Sinclair, superintendent, Central Training Home, Edinburgh.

(b) *Members appointed by Health Services Council.*—Dr. W. G. Clark; Mr. Alexander Cunningham, member of

Stirling County Council; Miss J. P. Ferlie; Dr. G. Matthew Fyfe; Mr. James F. Henderson, dental practitioner, Motherwell; Miss C. Keachie; Sir H. Brown Lindsay; Mr. John Mann, convener, Lanark County Council; Mr. William O'Neill, member of Dundee Corporation; Professor T. Ferguson Rodger; Captain Joseph Steel; Provost James Young, Kirkcaldy.

Advisory Committee on General Practitioner Services

(a) *Members appointed by Secretary of State.*—Mr. G. G. C. Bain, chairman of Aberdeen City Executive Council; Councillor James Campbell, Edinburgh; Mr. M. B. Jackson, ophthalmic optician, Dunfermline; Mr. R. H. G. McGhee, Glasgow, member of Joint Ophthalmic Services Committee; Dr. E. Neil Reid, M.O.H., Stirling County; Professor W. J. B. Riddell, Glasgow.

(b) *Members appointed by Health Services Council.*—Mr. Alexander Cunningham; Dr. R. C. Scott Dow; Mr. C. G. Drummond; Dr. Mary Esslemont; Mr. James F. Henderson, dental practitioner, Motherwell; Dr. J. R. Langmuir; Dr. D. McCalt; Dr. G. MacFeat; Dr. I. H. Maciver; Dr. A. F. Wilkie Millar; Mr. William O'Neill; Mr. Thomas Rankin; Provost James Young, Kirkcaldy.

Advisory Committee on Health Services in the Highlands and Islands

(a) *Members appointed by Secretary of State.*—Dr. J. R. Anderson, Fortrose, Ross-shire; Mr. J. S. Banks, John o' Groats; Dr. W. N. Gray, Helmsdale, Sutherland; Mr. A. J. C. Hamilton, Inverness; Dr. J. L. Horne, M.O.H., Ross and Cromarty; Provost A. J. Mackenzie, Stornoway; Dr. A. J. Macleod, Lochmaddy, North Uist; Mr. Ian McClure, superintendent, Balfour Hospital, Kirkwall; Councillor Donald Macpherson, Inverness, chairman, Northern Regional Hospital Board; Provost Hugh Ross, Inverness.

(b) *Member appointed by Health Services Council.*—Dr. I. H. Maciver.

Advisory Committee on Health Centres

(a) *Members appointed by Secretary of State.*—Councillor W. P. Earsman, Edinburgh; Dr. D. Dale Logan, Newmains, Lanarkshire; Dr. John Winning, house surgeon and physician, Southern General Hospital, Glasgow.

(b) *Members appointed by Health Services Council.*—Dr. W. G. Clark; Mr. C. G. Drummond; Miss C. Keachie; Professor J. R. Learmonth; Mr. John Mann; Dr. A. F. Wilkie Millar; Mr. Thomas Rankin; Dr. W. D. D. Small; Professor Sir Sydney Smith.

Medical Ethics

Breaches of Confidence

Since the National Health Service started many doctors have been asked to give information about patients which, if disclosed, might amount to a breach of professional secrecy. It is an ethical tenet of the profession that medical men shall not voluntarily divulge to anyone, without the consent of the patient, information obtained in their professional relationship with their patients. Various certificates and forms of inquiry which pass through lay hands give ample opportunities for violation of this principle.

The Central Ethical Committee is anxious lest medical men, already deluged with a bewildering variety of official forms, lose sight of this principle and think that any form with an official appearance must be filled in. Any information which includes the identity of the patient should be given only with his consent. However, these ethical obligations are subject to the requirements of the law.

Scottish Headquarters

The telephone number of the Scottish Office of the B.M.A. has been changed to Edinburgh 33531, 33532, and 33533.

Correspondence

The Supplementary Estimates

SIR,—In the leading article on the Health Service entitled "Medical Economics" on Feb. 17, 1949, *The Times* stated that the Government had seriously underestimated the cost of the dental and ophthalmic services but that last July no one else had any better guess to offer. This statement is quite untrue, because any ophthalmic surgeon or optician could have told the Government that it was not possible to run a supplementary service on £2 million a year, and, more than that, many of us did tell the public.

I spoke at a meeting at Epsom on the Health Service in May, 1948, and my opponent was Mr. Somerville Hastings, M.P. I suggested to the audience that the Health Service would cost the taxpayer at least £250 million—a statement which Mr. Somerville Hastings contradicted, as he said the estimate was £150 million. I explained that I had given this higher figure because the Supplementary Ophthalmic Service at £2 million had been very seriously underestimated, and I gave as my reason the fact that in 1947 about 4,000,000 pairs of spectacles had been sold to the public, and it seemed unlikely that in 1948-9 fewer pairs would be supplied free. The average cost, with the examination fee and wholesale price of the spectacles, must work out at somewhere about £4 per pair. The rest was merely simple arithmetic for those *au fait* with the subject.

As many of us explained at the Representative Meeting, no single preparation had been made for the Health Service before it came in, and the resulting chaos is typical of all Socialist planning.—I am, etc.,

Camberley, Surrey,

LESLIE HARTLEY.

Representation of Tuberculosis Workers

SIR,—I have been instructed to reply to the letter from Drs. D. P. Sutherland and N. J. England (*Supplement*, Feb. 5, p. 63). Dr. Sutherland knows that the North-Western Tuberculosis Society has not been well supported in the past by the Liverpool Region, and therefore its officers are from Manchester and areas remote from here, who do not know our local problems. The representatives of the North-Western on the Joint Tuberculosis Council report to the Society, but the opinion of members is not sought before decisions are reached.

As the J.T.C. has asked to be represented on the Negotiating Committee, the other members of the committee will presume that this representative claims to speak for the doctors working in tuberculosis. When he is not representative of many of these workers, he has no right to make such a claim. The British Tuberculosis Association would have a better claim, but then again an inadequate one.

The J.T.C. has done good work in the past, but it is now trying to do work for which it is not suited, and if it is to do this new work it should be representative of regions and not of societies.—I am, etc.,

WILLIAM D. GRAY,
Hon. Sec., Liverpool Region
Tuberculosis Society.

Income of General Practitioners

SIR,—In your leading article of Nov. 13, 1948 (p. 864), you state that before the war the total professional incomes of general practitioners in England and Wales and Scotland added together amounted to rather more than £28 million, and that the total remuneration available now was approximately £45 million.

Dr. Charles Hill, in his letter to every member of the profession (*Supplement*, Oct. 23, 1948, p. 145), states as follows: "Before the war the total professional incomes of general practitioners in England, Wales, and Scotland added together amounted to rather more than £28 million. The total remuneration provided under the N.H.S. Acts for general practitioners is approximately £45 million."

You will doubtless appreciate that you have made two different statements, as Dr. Hill restricts the £45 million to the National Health Service alone, excluding any money earned in private practice. You cannot both be right. If Dr. Hill is not simply indulging in statistical fantasy then surely the medical men of this country should indeed be

affluent, and it is hard to understand all these distressed cries that are reaching your *Journal* at the present time. Many letters, indeed, suggest that the B.M.A. would have been well advised to concentrate upon finance rather than upon principles. Do you not now agree that if, having agreed and reaffirmed certain vital principles for the good of medicine, we had only had the stability and encouragement to stick to those principles the profession would not be in the deplorable position in which it finds itself to-day?—I am, etc.,

Bournemouth

E. DOUGLAS GRANGER.

* * The Secretary of the Association states: Professor Bradford Hill estimated the aggregate general-practitioner income before the war at rather more than £28 million. The sum now being distributed among general practitioners in the Service for the care of public patients is approximately £45 million. This sum is regarded as inadequate in total for the reasons set out in full in the Report of the General Medical Services Committee (*Supplement*, Feb. 19, pp. 83-5). If individual doctors are to be appropriately paid for their work there are needed first an adequate sum and secondly a fair distribution.

Salaries of Medical Research Workers

SIR,—We welcome the initiative shown by the Association of Scientific Workers in drawing up a memorandum on the salary of the research worker. We agree that the discrepancies between the rates of pay of research workers and clinical specialists is not only unjust to the former but also makes recruiting of research workers difficult. The threat of a drift of those already in research to more remunerative clinical appointments is real and must be avoided if we are to maintain and advance our international position in medicine. While we welcome the recommendation to increase the salaries of research workers, we disagree that research workers of any grade should have to accept a salary less than their colleagues in the clinical specialties, whether the difference is 10%, 20%, or any other figure. Such a proposal is tantamount to admitting that research is so much less important to society than clinical practice.

In the past, two main arguments have been used to limit the salaries of research workers. The first is that research is a vocation, and the second that research workers miss the "hurly-burly" of clinical work. In our opinion these arguments are illacious. If research workers were paid equally with other specialists there would be no economic limitation to the attraction of the best men into research. Furthermore, many research workers do not live in "ivory towers"; most of them have as active a life as clinicians, and many of them have a certain degree of clinical responsibility. We consider that some of the recommendations for the grading of workers in research may give rise to anomalies. We feel that nobody entering upon a research career should have to lose financially, and the salary of the research trainee should be adjusted to take this into account. On completion of a preliminary training period of twelve months or so he should be graded as a specialist registrar and be paid the corresponding salary. If the research worker is considered capable of continuing his work after a period of three to four years he should be accorded specialist status.

We should like to emphasize the necessity of according full specialist status to research workers at that stage in their career when, had they been engaged in purely clinical work, they would be regarded as specialist—i.e., about the age of 32, as mentioned in the Spens Report. We wish to avoid the anomaly of grossly underpaid research workers of considerable experience. The principle of equality of pay would allow easy transfer of a clinical specialist to full research work in his own specialty, and make use of the research capacity of a large number of clinical specialists.

The recommendation in the A.Sc.W. memorandum that administrative responsibility should be considered in the grading of those at present engaged in research is unwise and may encourage too close a parallel with the Civil Service system. The value of administrative ability is not denied, and where a research worker's duties involve additional administrative and organization work—e.g., director of department—he should receive additional remuneration. We agree with the memorandum in that non-medically qualified medical research workers should be paid on the same scale as the medically

qualified. We would welcome the opinions of other research workers on this issue.—We are, etc.,

BIRMINGHAM RESEARCH WORKERS.

* * The Council at its last meeting decided to set up a special committee to consider the best methods of securing the application of the recommendations of the Spens Committee to all full-time medically qualified salaried workers not remunerated through the National Health Service. Further details are given in the report of the proceedings of Council of Feb. 16.—Ed., B.M.J.

"Royal College of General Practitioners"

SIR,—For discussion and opinion a new Royal College to be called the Royal College of General Practitioners is suggested as an urgent need. Correspondence columns have for some time shown strong feeling that never have the interests of G.P.s been so mismanaged or neglected as in recent years. Influence, status, and material prosperity, it is complained, are waning. The advent of the new National Health Service has intensified this. Hundreds of doctors, allegedly, have been caused much financial and mental distress. For this the Ministry of Health has had chief blame.

Members of the B.M.A. and public, recent signs show, are gradually realizing the blame to be unjust. From evidence slowly emerging it would seem that few if any circumstances now causing hardship need have arisen had the facts (before July 5) been properly put for consideration or even, in some cases, revealed. In some instances terms offered by the Ministry but refused as unjust, are now realized as generous. A new approach to the Ministry, and from a new source, seems indicated. Where hardships are caused by unsound advice or poor judgment it scarcely seems sensible to ask the same advisers to get one out of these difficulties. Moreover, it seems a little hard on the advisers themselves.

For surgeons, physicians, and, more recently, gynaecologists Royal Colleges are considered necessary. Yet G.P.s are a far larger class. Their problems and difficulties, more varied and numerous, can often be estimated and remedied only by G.P.s. With the ever-increasing interests of physicians and surgeons, their two Colleges, it is now widely felt, have more than enough to do for their own. They can have but little time for and less knowledge of the needs of G.P.s.

The "Terms of Service" meeting at B.M.A. House (Jan. 27) was an interesting experience. It made one doubt, however, if we, the audience, or those on the platform had learnt much from recent events. More than ever did the need for the Royal College here advocated seem urgent. Unfortunately, written questions, the only ones permitted at the meeting, were too numerous for the subject of this letter, put down by me, to be reached. The G.P. is frequently referred to as the backbone and vitals of medicine. Here, by supporting the proposal of this letter, is opportunity to all ranks of the profession to give the lie to a sardonic rejoinder oft repeated that the G.P. is only so acclaimed where druggery and ill-paid work are to be done.—I am, etc.,

London, W.2.

P. K. MURPHY.

Shortage of Hospital Beds

SIR,—In case some should take it seriously, may I answer Dr. A. Fry's criticism (*Supplement*, Feb. 12, p. 79) of hospitals in general? The unfortunate facts which he enumerates have, I believe, explanations other than those offered. Whereas he implies that medical attendances have not significantly increased among general practitioners, this is not so at many hospitals, where appointments in some special departments have doubled during the past six months.

The delay in the examination of the patient described, who was awaiting eye and E.N.T. appointments, might not be unconnected with the acknowledged heavy demand for free reading-glasses and hearing-aids.

I wonder whether the fracture quoted was due to a secondary hypernephroma? Surely pain can be relieved in a patient's own home?

The elderly man with pneumonia certainly required admission to hospital, but it must be remembered that the bed shortage which involved his refusal has often been increased by previous admissions of somewhat similar cases. I refer to those who become bedridden and who are blessed with relatives who

are unwilling to have them home again after their recovery from acute illness. Thus they remain in hospital and take a bed for perhaps a dozen or more acute cases previously released by death. A healthier and happier health service will not be arrived at by describing hard-worked hospital staffs as cynical and without human feeling—I am etc
J N 10 F MEADE

SIR—I would be most grateful if you would kindly allow me a little space to support wholeheartedly Dr A Frew (*Supplement* Feb 12, p 79) when he complains bitterly of the shocking shortage of hospital beds and the difficulty of getting urgent cases into hospital. I can only say from my own recent experience that it is practically impossible to admit even the most urgent medical cases into hospital. When phoning the Emergency Bed Service—a splendid institution without blame—one usually gets the refreshing reply, "I am very sorry, Sir, but it will be almost impossible to get your patient into hospital to-day. I will try my best and phone the hospitals."

The other night I had to wait for more than two hours to get the reply from the EBS that nine hospitals in the London and Middlesex area were unable to admit a most urgent medical case of mine.

To ease this deplorable situation may I offer to the Minister of Health, free of charge, the suggestion to advise his nationalized hospitals to report every day, morning and evening, to the EBS the number of beds available (classified as surgical, medical, and children's beds). This would facilitate matters greatly and would enable the EBS, without losing most valuable time, to arrange the immediate admittance of the patient, avoiding countless inquiries about vacancies—I am etc,
London N 3

H SIMON

Reflections on N.H.S.

SIR—Dr R W Cockshut in his article "Reflections on N.H.S." (*Supplement* Jan 29 p 46) states that three years ago the B.M.A. agreed to a comprehensive 100% service administered by the Ministry of Health. I would venture to suggest that this statement is not quite accurate. Representatives who were present at the May, 1945, S.R.M. will remember that the meeting was only persuaded to accept a 100% service provided that ample safeguards are introduced to ensure that any member of the community, whatever his income, should be entitled to obtain his medical service in part or in whole privately, as for example by grant in aid provisions. Is it now convenient to forget that proviso?

Are we to forget that, time and again, resolutions have been carried by the Representative Body with the object of preventing the penalization of the private patient and the doctor who wishes to treat him? Why does the Council now allow these resolutions to be forgotten? If it intended them to be put into effect, surely it would never have recommended the profession to enter the N.H.S. last July? All the B.M.A. seems to care about now is the remuneration of doctors in the N.H.S. If it wishes to retain in its membership those of us who are opposed to a State monopoly of medicine it would do well to remember that some of us still believe in the principles for which our Australian colleagues are prepared to fight.

Some of us also remember that when the original questionnaire was distributed during the war we were never given the opportunity of saying if we wished to be paid on a 'fee-for-service' basis. Why? Perhaps our planners never really wished private practice to survive the onslaught of State medicine. I am Sir, still a fighter, and wish our Australian friends good luck. May they stand firm!—I am, etc
Dorking Surrey

CYRIL E BEARE

Future Aims

SIR—As one of the present generation of medical students I was interested to read Dr John Frew's suggestions (*Supplement*, Jan 29, p 53) for our education in a new scale of values to teach us a new attitude to the National Health Service. One or two ideas particularly took my fancy—for instance that one of the ways of proving loyalty to the Service (so loudly protested by Dr Frew to be his aim) is to raise a new generation of "rebels" that will wreck the scheme 'as it should be wrecked'. Or again, that a good way to win back public support and

respect, and indeed our own self-respect, would be to use intensive propaganda in papers and periodicals and in flaring posters on hoardings and in every doctor's surgery to make the public despise (amongst a lot of other things that Dr Frew thinks despicable) the Service, however efficient we can make it.

I can see the public giving its support and respect to a body of responsible people behaving thus—on the one hand working and accepting payment under the Scheme because, according to Dr Frew's own confession, they were lured into it by monetary considerations, and on the other training their successors and inciting their patients by propaganda to wreck a nation-wide scheme enacted by Parliament.

But perhaps the most charming idea is that the B.M.A. should hire and pay generously poets, artists, philosophers, and [believe it or not] 'travellers and mountaineers to preach to our successors that there are nobler and greater values than the monetary ones for which we have sold our "freedom"'. Travellers and mountaineers paid generously to preach how little value money has—I think that the suggestion should be passed to the deans of all the medical schools, and questions on ethics (with particular reference to climbing in the Alps) should be included in the final M.B. papers.

But taking Dr Frew's last point seriously, may I suggest to him that people who form any opinions at all about "values" do not like being preached at, however eminent and well-qualified the preacher may be, preferring rather to decide for themselves what these values are, especially if the preachers, as would be the case were they chosen by Dr Frew, were selected not for their achievements but because their view of these highly debatable 'greater values' coincided with that of such unbending partisans as Dr Frew?—I am, etc,
London W 1

P MESTITT

Supplementary Ophthalmic Services

SIR—Mr S Black states in his letter to you (*Supplement* Feb 12, p 78) that 85% of all cases are seen by ophthalmic (sight testing) opticians. This seems to me an exaggerated claim put in for propaganda purposes and should be substantiated by some sort of proof. If his figure is even approximately correct it is another reason why it would be very foolish to attempt to lessen the cost of the Service by cutting down the fee payable to the ophthalmic medical practitioner, who must be getting an infinitesimal share of the total expenditure.

The whole point of my letter (*Supplement*, Jan 22, p 40) was to stress the need for more ophthalmic surgeons and to point out that lowering of fees would have a fatal effect on recruitment. We all want to see the permanent scheme established successfully as soon as possible, but this cannot be done with the numbers available at present. When the permanent scheme does come into force we will also need all the opticians that Mr Black and his organization can produce, and under skilled supervision they will be able to practise their art and do very well within its limitations.

As to Dr J H Austin (*Supplement*, Feb 12, p 78), I am not quite clear what his point of view is. I have had nearly thirty years' experience of out-patient hospital work and I am well aware of its limitations and frustrations. If one did personally do one's share of refractions at short periods one was backed by more or less competent assistant sight-testers who were nurses or other trained persons, and if the symptoms suggested a lack of muscle balance or the like it could be investigated under supervision, and the surgeon had the whole picture—mental, physical, and refractive—before him to enable him to prescribe glasses or otherwise. Does Dr Austin think this could be done equally well by an optician?

It has been pointed out to me that Mr Bevan has very little interest in the quality of his medical service, and is only interested in the quantity. This is where the medical profession must take its stand—and do so now—I am, etc,
Brixham Devon

CECIL B F TREV

SIR—Mr S Black (*Supplement* Feb 12, p 78) makes great play in the Press of the need for a thorough examination taking half an hour in each case where a patient comes for refraction. His latest letter to your *Journal* stresses the need for full examination of the binocular apparatus, from which I would presume that he means examination on the synoptophore, Hess

chart, and binocular fields of vision, etc. Since he has at no time defined what he means by an adequate examination of the eye, I think it is essential that he should do so, so that we may know what he is talking about. Obviously a routine performance of a multitude of tests is of no value itself unless the examiner has some clinical acumen, and unnecessary testing merely confuses and alarms the patient.

The fact that 85% of the population is examined by opticians proves nothing in itself, but one might deduce from it that there is a great need for more ophthalmologists.—I am, etc.,

Farnborough, Hants.

P. L. ALLEN.

POINTS FROM LETTERS

Basic Salary

Dr. KENNETH MCFAYOYAN (London, S.E.24) writes: According to the report of the Metropolitan Counties Branch in the *Supplement* of Feb. 5 (p. 55) Dr. Hill was asked, Why was a means test required in the allocation of basic salary? He is stated to have replied, "It was felt that a man who demanded this higher rate of remuneration from the local pool should prove justification." Apparently this answer was accepted without further discussion. It is amazing what one can get away with from a platform. The man, in demanding the basic salary, is only exercising his right on the basis of the contract under which he entered the Service. Dr. Hill's answer proves justification neither for the breach of contract nor for the introduction of a means test—i.e., reference to other sources of income, which have nothing to do with the man's professional earnings and less than nothing to do with the terms of the contract under which he joined the Service.

Certificates for Corsets

Dr. J. V. L. GRANT (Tamworth, Staffs) writes: The whole medical profession in general practice is irritated beyond endurance by the maddening demands of their women patients for certificates for corsets. This evening a woman of 76 of small physique came into my consulting-room and asked for a certificate to take to the woman agent of a corset firm, which I refused, explaining that she had no medical or surgical ailment. She was very annoyed and loudly informed all the people in my crowded waiting-room that I had actually refused her a certificate for corsets. Doubtless she will now take herself elsewhere. As each case honestly refused means five to ten minutes' exasperating argument and a dissatisfied patient, is it surprising that we perhaps prefer to certify the existence of an imaginary severe gastro- or visceroptosis? . . .

H.M. Forces Appointments

INDIAN MEDICAL SERVICE

Colonel J. Rodger, O.B.E., M.C., has retired.

Lieutenant-Colonel A. E. Kingston, O.B.E., has retired and has been granted the honorary rank of Colonel.

Lieutenant-Colonel G. R. M. Apsey and Major (War Substantive Lieutenant-Colonel) G. B. Jackson, C.B.E., have retired but continue to be borne on the Special List (ex-Indian Army) British Army while employed with the Pakistan Armed Forces.

Lieutenant-Colonels R. T. Hicks, O.B.E., H. H. Elliott, C.I.E., M.B.E., M.C., G. K. Graham, O.B.E., and G. P. F. Bower have retired.

Majors (War Substantive Lieutenant-Colonels) C. B. Jones, F. R. Cawthorn, O.B.E., and R. D. Scriven, M.C., have retired and have been granted the honorary rank of Colonel.

Majors M. C. L. Smith, V. D. Gordon, R. Y. Taylor, and J. Ford-Thomson have retired and have been granted the honorary rank of Lieutenant-Colonel.

Major M. L. A. Steel, M.B.E., has retired.

COLONIAL MEDICAL SERVICE

The following appointments have been announced: D. M. N. Jones, M.B., D.P.H., Medical Officer, Uganda; A. J. Brown, M.R.C.S., Medical Officer (Out Islands), Bahamas; W. F. Cooper, M.B., D.P.H., Port Medical Officer, Aden; J. Kotowski, M.B., Medical Officer, Falkland Islands; E. Michalski, M.B., Medical Officer (District Services), Trinidad; J. M. Cruikshank, M.D., D.P.H., Director of Medical Services, Fiji, and Inspector-General of the South Pacific Health Service; J. H. Pottinger, M.B., D.T.M. & H., D.P.H., Assistant Director of Medical Services, Nigeria; L. P. Youngfao, M.B., Senior Medical Officer, British Honduras; L. A. M. McShine, F.R.C.S., Medical Officer, Grade B, Trinidad; E. A. Renner, M.B., Assistant Director of Medical Services, Sierra Leone; W. D. Silver, M.B., F.R.C.P., Senior Lecturer on Pathology, University College, Ibadan, Nigeria.

Association Notices

Diary of Central Meetings

MARCH

- 8 Tues. Central Ethical Committee, 2 p.m.
- 9 Wed. Publishing Subcommittee, 11 a.m.
- 10 Thurs. Planning Subcommittee, 11 a.m.
- 11 Fri. Public Health Committee, 2 p.m.
- 16 Wed. Committee on Constitutional Position of Association, 2 p.m.
- 17 Thurs. Drafting Subcommittee, 2 p.m.
- 22 Tues. Committee on the Postgraduate Education of General Practitioners, 2 p.m.
- 23 Wed. Council, 10 a.m.
- 24 Thurs. Ethical Rules Subcommittee, 12.15 p.m.
- 29 Tues. Special Representative Meeting, 10 a.m.
- 30 Wed. Special Representative Meeting, 10 a.m.

APRIL

- 4 Mon. Joint Committee of B.M.A. and National Veterinary Medical Association, 2 p.m.

Branch and Division Meetings to be Held

The following meetings have been arranged for consideration of (a) Report of Council on the Constitutional Position of the Association, and/or (b) Report of Council on Remuneration of General Practitioners in the National Health Service, and/or (c) Instruction of Representatives to Special Representative Meetings on March 29 and 30:

BARNSELY DIVISION.—At Queen's Hotel, Barnsley, Sunday, March 13, 3.30 p.m.

BRADFORD DIVISION.—At Royal Infirmary, Bradford, Wednesday, March 9, 8.15 p.m.

CAMBRIDGE AND HUNTINGDON DIVISION.—At Addenbrooke's Hospital, Cambridge, Saturday, March 12, 2.30 p.m. Annual general meeting.

CONSETT DIVISION.—At Commercial Hotel, Consett, Friday, March 11, 7.45 p.m.

GOOLE AND SELBY DIVISION.—At The Lodge, Snaith, Sunday, March 13, 3.30 p.m.

LEEDS DIVISION.—At Medical School, Leeds, Wednesday, March 9, 8.15 p.m.

SHEFFIELD DIVISION.—At Royal Victoria Hotel, Sheffield, Sunday, March 13, 7.30 p.m. All medical practitioners in the area of the Division are invited.

SUNDERLAND DIVISION.—At Royal Infirmary, Sunderland, Sunday, March 6, 3 p.m.

CHESTERFIELD DIVISION.—At Out-patient Department, Chesterfield Royal Hospital, Friday, March 11, 8.45 p.m. B.M.A. Lecture by Professor A. Haddow: "Biochemistry and the Control of Cancer."

DORSET DIVISION.—At the Old Shire Hall, Dorchester, Friday, March 11, 8.30 p.m. B.M.A. Lecture by Mr. Geoffrey Keynes: "The Thymus Gland and Myasthenia Gravis." The lecture will be illustrated with a coloured film.

GUILDFORD DIVISION.—At Royal Surrey County Hospital, Guildford, Tuesday, March 8, 8.30 p.m. Address by Mr. Anthony Green: "Radiotherapy" (with film).

LEWISHAM DIVISION.—At St. John's Hospital, Morden Hill, Lewisham, London, S.E., Monday, March 7, 8.30 p.m. Mr. John Hawkins: Gynaecological and Obstetric Quiz.

NORTH BEDFORDSHIRE DIVISION.—At Bedford County Hospital, Friday, March 11, 8.30 p.m. Lantern lecture by Professor J. M. Smellie: "Infections in Infancy—Their Type, Incidence, Diagnosis, and Treatment."

NORTH OF ENGLAND BRANCH.—At Royal Victoria Infirmary, Newcastle-upon-Tyne, Thursday, March 10, 7.15 p.m. Clinical demonstration by Mr. C. Dudfield Rose: "On Ulcers." 8.45 p.m. Address by Mr. W. Lyle Stewart: "Medical and Veterinary Science—Some Dietetic and Infective Diseases of Common Interest."

PLYMOUTH DIVISION.—At South Devon and East Cornwall Hospital, Plymouth, Friday, March 11, 8.30 p.m. B.M.A. Lecture by Professor Lambert Rogers: "Sciatica."

ROCHESTER, CHATHAM AND GILLINGHAM DIVISION.—At St. Bartholomew's Hospital, Rochester, Thursday, March 10, 8.30 p.m. Clinical meeting. Lecture by Dr. Geoffrey Bourne: "The Diagnosis of Congenital Heart Disease."

SOUTH-WEST ESSEX DIVISION.—At Clinic Hall, Thorpe Coombe Maternity Hospital, Walthamstow, E., Wednesday, March 9, 8.30 p.m. Lecture by Mr. D. F. Ellison Nash: "Genito-urinary Disorders in Children."

TUNBRIDGE WELLS DIVISION.—At Kent and Sussex Hospital, Wednesday, March 9, 8.15 p.m. Dr. H. S. Banks: "Various Meningococcal Disease Syndromes."

WESTMINSTER AND HOLBORN DIVISION.—Joint meeting with Chelsea and Fulham and Kensington and Hammersmith Divisions at Postgraduate Medical School of the Royal Cancer Hospital, 24, Onslow Gardens, Fulham, S.W., Wednesday, March 9, 8.30 p.m. Mr. W. A. Mill: "Cancer of the Nose and Throat." Open to all medical practitioners in the area of the Divisions.

PARALYTIC POLIOMYELITIS

THE EARLY SYMPTOMS AND THE EFFECT OF PHYSICAL ACTIVITY
ON THE COURSE OF THE DISEASE

BY

W. RITCHIE RUSSELL, M.D., F.R.C.P., F.R.C.P.Ed.

Neurologist to the Radcliffe Infirmary, Oxford

Attempts to describe the early symptoms and signs of poliomyelitis present considerable difficulties, as the disease may show in many different ways. There are some excellent descriptions of the clinical features of the disease in the literature (e.g., Peabody, Draper, and Dochez, 1912), but recent epidemics have provided many more patients in the older age groups, and these can give a more detailed day-to-day account of their symptoms than has generally been available in the past. This paper is based on the careful questioning of 100 patients (59 males and 41 females) who were convalescent from poliomyelitis, and who were old enough to give a good account of their early symptoms. The number of pure bulbar cases is small, as these patients were often either unfit to be questioned or, having been discharged home after a short period of convalescence, no longer available. The method of recording the features of each case has been described (Russell, 1947), and specially prepared "Paramount" punch-cards were used for further analysis of the material.

The age groups were: under 11, 8 cases; 11-15, 21; 16-20, 17; 21-25, 20; over 25 years, 34.

The onset of the illness was in Great Britain in 85 cases, and in the remaining 15 in West Africa, the Middle East, or the Far East. Of the British cases 83 occurred during the 1947 epidemic, chiefly in the latter half of the outbreak.

Pattern of the Disease

In cases of paralytic poliomyelitis there may be three stages of the disease: the prodromal, the pre-paralytic, and the paralytic stages.

1. *The prodromal stage* is seen in less than half the cases, and precedes the pre-paralytic stage by several days. It consists of a brief and often slight illness lasting one or two days. Fever, sore throat, headache, or nasal catarrh are common symptoms. In most cases there is nothing specific about this stage of the disease, but in a few patients the symptoms of the prodromal stage resemble the spinal symptoms of the pre-paralytic stage.

2. *The pre-paralytic stage* is the acute and critical period of the disease. The virus is now multiplying in the central nervous system, and the battle to decide the fate of the spinal-cord cells is probably over before paralysis is detected. Spinal or meningeal symptoms develop and are often accompanied by fever, malaise, nausea, or vomiting. Pains in the spine, trunk, or limbs (spinal symptoms) are of special diagnostic value, while on examination the neck is stiff and the cerebrospinal fluid shows a marked increase of cells. Many examples of these symptoms are given below, but it must be emphasized that, though the appearance of spinal symptoms is very common, the severity of these symptoms is remarkably variable, and indeed the pains may be so slight that the robust patient considers them

to be negligible. The pre-paralytic stage usually begins abruptly, and in the 100 cases studied 89 had an abrupt onset. These can conveniently be referred to as "typical" cases. The cases described as "atypical" are those in which the onset was indefinite or in which prodromal symptoms appeared to merge into the pre-paralytic. In some cases the pre-paralytic stage appears in two phases with an interval of perhaps one or two days, during which time the patient feels he has recovered from the worst of the illness. In both these phases the spinal symptoms are often prominent.

3. *The Paralytic Stage.*—A remarkable feature of the paralytic stage is that the patient sometimes feels that he is better and that the illness is passing off, when paralysis appears. In other cases, however, severe limb pains, muscle spasm, and fever continue for many days.

Abortive cases are those in which no paralysis appears. There may merely be a short prodromal stage with perhaps sore throat and fever, or there may, on the other hand, be a pre-paralytic stage with spinal pains and characteristic changes in the cerebrospinal fluid. When there is only a prodromal stage the diagnosis of poliomyelitis virus infection can be little more than a guess, but when a typical pre-paralytic stage develops the diagnosis can often be made on clinical grounds with some confidence even though no paralysis occurs.

Prodromal Stage

As has been pointed out, the prodromal stage of the disease usually consists of a brief non-specific illness. In 34 of the 84 "typical" cases there were prodromal symptoms, usually lasting for one to three days and preceding the onset of spinal symptoms by an average of about five days. These symptoms often consist of a period of malaise with perhaps some fever, sore throat, headache, or cold in the head.

Short Prodromal Illness in a "Typical" Case

Case 1 (2).* Schoolgirl aged 17. *Days 1 and 2.*—Sore throat with slight anorexia. Continued to attend school. *Days 3-7.*—Felt well; school as usual. *Day 8.*—Lumbar pain; continued school. *Day 9.*—Lumbar pain less severe in the forenoon. Ballet-dancing for 1½ hours. Lumbar pain worse in the evening, spreading to abdomen. *Day 10.*—Pains worse in back, trunk, neck, and head. Some nausea. Motored 140 miles and felt very ill. *Day 11.*—Pains less severe, but some pain in thighs; fever; restless and sleepless. Trunk muscles became paralysed, and there was weakness of the thighs and left arm.

Three months later there was severe paralysis of the abdominal and trunk muscles.

*The case notes are numbered seriatim and also according to the numbers in the records.

The occasional appearance of neurological symptoms in the prodromal stage is of special interest, as they suggest some invasion of the central nervous system by the virus even at this early stage.

Case with Neurological Symptoms in the Prodromal Stage

Case 2 (64). Female aged 38. Days 1-3:—Hyperaesthesia of skin of the abdomen. Day 4:—Hyperaesthesia continued; she felt well, and did an exceptionally heavy day's work in the house. Day 5:—Acute onset of pain in head and back, fever ($102^{\circ}\text{F.} = 38.9^{\circ}\text{C.}$) and irritability; continued housework all day. Day 6:—Symptoms continued. Stayed in bed for half the day. Day 7:—Left leg became paralysed.

A month later there was still severe paralysis of the left thigh and trunk muscles. (See also Case 16.)

Pre-paralytic Stage

In considering the symptoms of the pre-paralytic stage of the disease it must first be emphasized that neither the severity of symptoms during the pre-paralytic stage nor the degree of change in the cerebrospinal fluid gives any indication of the severity of ensuing paralysis.

Severe Pre-paralytic Symptoms but no Paralysis

Case 3 (28).—Schoolboy aged 12. No prodromal symptoms. Day 1:—Slight headache on waking, but he went to school and played football. That evening he developed severe headache and spinal pains in the dorsal and cervical regions. He vomited and was restless and sleepless that night. Day 2:—The symptoms continued. His neck was stiff and his temperature 100°F. (37.8°C.). His body and all his limbs were painful. He was admitted to hospital. Day 3:—The cerebrospinal fluid contained 73 cells per c.mm. and 45 mg. of protein per 100 ml.

Complete recovery ensued without paralysis.

As has been pointed out, the pre-paralytic stage is the most critical period of the illness, and it is only in this stage that any serious attempt can be made to recognize the disease before the onset of paralysis. Spinal or meningeal pains are especially important in diagnosis: they were reported in 95 of the 100 cases, and are analysed in Table I. This table shows that though several spinal

TABLE I.—Analysis of the Spinal or Meningeal Pains as they Appeared in the 95 Cases which Reported these Pains during the Pre-paralytic Stage

Pains in	Head	Neck	Back (Lumbar or Dorsal)	Back (Sacral)	Shoulders or Scapular Region	Chest or Abdomen	Thighs or Legs
Head	64	40	32	8	11	15	15
Neck		57	27	10	9	12	15
Back (lumbar or dorsal)			52	11	7	12	18
Back (sacral)				23	4	9	11
Shoulders or scapular region					13	4	4
Chest or abdomen						24	15
Thighs or legs							31

symptoms are common no one of them appears in more than two-thirds of the cases.

Pains in the Head

There is nothing specific about the headache when it occurs except that it is rarely intolerable, as it may be, for example, in meningitis: it may consist more of a soreness at the back of the head which is part of a spinal neck pain. Pain in the head appeared on the first day of the pre-paralytic stage in 45 of the 100 cases. In a few instances severe throbbing frontal pain was reported, but generally the headache was relatively insignificant. Study of the head pains may be of value in differential diagnosis, in that a patient who has spinal rigidity without severe headache is unlikely to be suffering from meningitis. Occa-

sionally pain in the head may appear without any of the more common spinal pains, as in the following case. This record also provides an example in which the onset of the pre-paralytic stage was vague and indefinite.

Indefinite Onset of Pre-paralytic Phase with Fever and Headache but No Spinal Pains

Case 4 (39). Male student aged 19. Days 1-3:—General malaise; felt progressively more "fed-up." Day 4:—Went for a cross-country run (four miles) to try to "work off" his malaise. He did not run easily, getting home with a struggle. Day 5:—Attended lectures; no marked symptoms. Day 6:—Fever and headache. Walked with difficulty 200 yds. to tell a relative he was ill; returned to bed. Day 7:—During the night he felt ill and weak when he got up for a drink. In the morning he was helped to the lavatory, but collapsed on the floor. This was the last time he walked.

Paralysis was almost complete and permanent in both lower limbs and lower trunk.

Spinal Pains

The spinal pains and paraesthesiae provide by far the most characteristic clinical features of the pre-paralytic stage. They were reported in 95 of the 100 cases. They often present features which are highly specific and of considerable interest. The severity of these pains varies greatly, as the following examples show. They are often localized, and may have a segmental distribution. The severity of the pain bears no relation to the severity of ultimate paralysis, but the site of pain at the onset of the pre-paralytic stage often corresponds to the site of maximum paralysis. For example, in the present series there were 15 cases of paralytic poliomyelitis in which pains in the thighs occurred on the first day of the pre-paralytic stage. In all but one of these, a bulbar case, the paralysis was maximum in, or more often confined to, the lower limbs

Severe Spinal Pain Preceding Severe Paralysis

Case 5 (50). Lieutenant in the R.N.V.R. aged 23. Day 1:—After normal duties as a barrack guard officer and a little cricket practice he developed pain in the neck at about 6 p.m. He slept badly that night. Day 2:—The pain in the neck became more severe, and in addition he developed severe sacral pain. This latter symptom made it impossible for him to rest in comfort. The buttocks were hyperaesthetic, so that he could not bear to sit or lie on his back. He went by car to report sick, but his back was so stiff that he had difficulty in getting into the car. He returned to his billet and went to bed, but could not rest; he got out of bed every hour or so to walk about for ten minutes in an unsuccessful attempt to obtain relief. He was sleepless and restless all night, moving continually while in bed in an attempt to get ease. Day 3:—Restlessness continued, and he felt very ill. He was removed to hospital in the evening, by which time his legs were rapidly becoming paralysed. There was almost complete and permanent paralysis of all muscles of the lower limbs and severe weakness of abdominal and lower spinal muscles. The upper limb were very slightly affected.

Severe Spinal Pain Preceding Slight Paralysis

Case 6 (25).—Housewife aged 30. Day 1:—Usual household duties. She felt very tired after a half-hour walk in the afternoon. In the evening she developed sacral pain and also pain in the right lower abdomen when walking. Day 2:—She stayed in bed. The sacral pain became severe and caused great restlessness. Pain in the neck developed. Day 3:—After a sleepless night the sacral and cervical pains were severe. She vomited frequently in the evening, which necessitated her getting out of bed every half-hour or so. The restlessness also made her feel she would like to get up and move about. Day 4:—No change. Day 5:—Pains less severe, but there developed paresis of the trunk, left thigh, and left leg muscles. Satisfactory recovery occurred during convalescence in all the affected muscles.

A history of pain in the neck is difficult to distinguish from stiffness, and the symptom is often more accurately described as a painful stiffness.

Neck Pain in the Pre-paralytic Stage Causing Difficulty with Diagnosis

Case 7 (35)—Male cinema operator aged 16. **Day 1**—Slight headache in the morning. Work as usual. About 8 p.m. there developed aching pain in the neck which made him disinclined to move his head. **Day 2**—After sleeping badly the pain in the neck continued; headache returned with some pain in the scapular region. Some vomiting and anorexia also occurred. He rested at home and went to a hospital out-patient department at 6 p.m. Here his neck and spine were examined at length, and he was told to return next day for x-ray examination. **Day 3**—He visited hospital, where he was again examined at length, and finally the x-ray examination was cancelled, and a lumbar puncture established the diagnosis. He had now developed such sacral pains that he was unable to lie on his back. He was admitted to hospital that evening, and by then there was paresis of the trunk and left thigh.

Six weeks later there was still paralysis of the muscles supplied by the upper dorsal cord, especially the intercostals. The limbs were not affected.

Neck Pain and Stiffness in Pre-paralytic Phase Followed by Paralysis of Neck Muscles

Case 8 (7)—Schoolgirl aged 11. **Day 1**—Developed pain and stiffness in neck, but felt quite well. **Days 2 and 3**—Pain gradually became worse. She continued to attend school, but got into trouble for not working well. She was obliged to hold her neck stiffly. Her father rubbed her neck and wrapped it up with a scarf. **Day 4**—Neck pain continued, also some fever, and she felt miserable. Attended school as usual. **Day 5**—Stayed in bed, and this relieved the neck pain. **Day 6**—Paralysis of neck muscles.

A month later there was almost complete paralysis of neck muscles; no weakness elsewhere.

Pains in Chest, Abdomen, or Thighs

Pains in the chest and abdomen may cause considerable diagnostic difficulty. Some characteristics which these pains may exhibit are apparent in the following records:

Pain in Chest as the Principal Early Pre-paralytic Symptom

Case 9 (10)—Male surveyor aged 43. **Day 1**—Having suffered from a sore throat for the previous eight days, he now developed a girdle sensation around his chest, which became tender to touch. **Day 2**—Chest pain continued, with fever, restlessness, and sleeplessness. **Day 3**—Vomiting and anorexia also experienced. **Day 4**—Pain in back and legs added to symptoms. Developed weakness of the right arm, trunk muscles, and right thigh.

Ten days later the muscular weakness was slight and recovering rapidly.

Pain in Chest as an Early Pre-paralytic Symptom

Case 10 (34)—A nurse, aged 21, who had been nursing cases of poliomyelitis (night duty) for a month. **Day 1**—About mid-day she developed bilateral chest pain, which was aggravated by a deep breath and was associated with hyperaesthesia: she could not bear the touch of bedclothes on her chest. She went on duty in the evening, but was sent to bed about 10 p.m. **Day 2**—Chest pain ceased and was replaced by severe frontal aching pain in the head and later by severe sacral pain, both of which continued for three weeks after paresis developed. **Day 3**—Pain in the front of thighs on moving. **Day 4**—Neck stiff. Weakness developed in left arm, trunk, left thigh, and left leg.

All the affected muscles recovered well within two months.

Severe Abdominal Pain as a Pre-paralytic Symptom

Case 11 (15)—Schoolgirl aged 10. **Day 1**—Sent home from school with sore throat, fever, and headache. Went to bed. **Day 3**—Felt well. **Day 4**—Got up, but was put to bed again

on Day 5 as she looked tired. **Day 6**—Pains in thighs and back. **Day 8**—Developed unbearable pain in lower abdomen, back, and thighs. Rolling about in agony. Severe vomiting. **Day 9**—Pains abated. Weakness of thighs and legs appeared, but this was not severe, and had largely recovered within three weeks.

Pain in Trunk on Movement as a Pre-paralytic Symptom

Case 12 (3)—Male machinist aged 25. **Day 1**—Slight stiffness in back and pain in the head. Did a heavy day's work. **Day 2**—Ditto. **Day 3**—Headache worse, and severe pain developed in thighs and a sharp pain in the left side of the chest each time he stepped forward with the left leg. Left leg also ached. **Day 4**—Vomiting added to the above symptoms. Weakness of abdominal muscles developed. **Day 5**—Pains ceased, but weakness spread to the thighs and legs.

A month later the left quadriceps was completely paralysed; all the other muscles affected were improving.

Discomfort in Chest and Abdominal Pain as Pre-paralytic Symptoms

Case 13 (44)—Schoolboy aged 16. **Day 1**—Feeling of constriction in the chest on taking a deep breath. Ran 100 yds race. **Day 2**—Pain in right iliac region on bending while playing a rackets match. **Day 3**—Above symptoms continued. Some malaise. Ran a half-mile race not so well as he expected. **Day 4**—Severe headache and pain in neck developed; fever, restlessness, and sleeplessness. School in morning. Tennis for half an hour; then reported sick for the first time and was sent to bed. That night he developed rapidly spreading severe paralysis, especially of lower limbs and trunk. A respirator was required for two weeks.

The permanent disability in this case was severe.

Pain in Thighs as a Pre-paralytic Symptom

Case 14 (48)—Accountant aged 27. **Days 1-4**—Malaise and slight fever. **Day 5**—Office work as usual. Slight sore throat; temperature normal. At night developed severe pains in both thighs. Walked about for some hours at night to get relief. **Day 6**—Thigh pains ceased. Temperature 102° F. (38.9° C.). Visited a friend and had difficulty in climbing stairs. Cycled one mile. Sat in a chair for some hours talking to a friend while his legs were gradually becoming paralysed. **Day 7**—Stayed in bed. By the evening he was completely paralysed from the chest downwards, and this complete paralysis of the lower limbs was permanent.

Spinal Paraesthesia as an Early Symptom

Case 15 (45)—Female clerk aged 29. **Day 1**—Nasal catarrh for past six days. Now developed pain in the back of the neck and a sensation like "cold water running down the spine." Work in office as usual. **Day 2**—Same symptoms, with vomiting and fever in addition. Rest at home, but she went out to visit doctor. **Day 3**—Symptoms less severe, resting at home. **Day 4**—Felt well; no pain now, but weakness of left arm developed.

A month later the left deltoid was still completely paralysed, but other affected muscles were recovering slowly.

Other Pre-paralytic Symptoms

Vertigo and a visual abnormality due to jerky movements of the eyes may appear early in the pre-paralytic phase when, as Bodian (1948) has shown, the virus is already in the brain-stem. Vomiting is common but seldom severe. It was reported in 29 of the 100 cases.

Nasal discharge, sore throat, diarrhoea, or constipation may occur in the pre-paralytic phase, but, being non-specific, these symptoms are usually of little value in early diagnosis.

Phases in the Pre-paralytic Stage

Several variations in the course of the disease occur which are most easily described by brief case reports. In some

instances it is difficult to ascertain whether or not the prodromal stage is merging with the pre-paralytic stage.

In the pre-paralytic stage of "typical" cases spinal symptoms usually become increasingly severe for two or three days, after which time paralysis appears and the spinal symptoms often subside quickly. In some cases, however, the course of the pre-paralytic stage is erratic and may consist of two or more phases, as in the following examples.

Case 16 (68).—Schoolboy, aged 12, attending a scout camp. *Day 1:*—Frontal headache and a pain over the anterior aspects of both thighs—"like a wire brush being pressed into the flesh." Tired and sleepy. *Days 2 and 3:*—Felt well, but noticed that running about brought back the pain in his head and thighs. Took part in all camp activities. *Day 4:*—Returned home, but still felt unusually tired. Average physical activity. *Day 7:*—Severe pains developed in head, thighs, and knees. He went to bed early, but was awakened at 9 p.m. by a nightmare to find the pains were worse than ever, and there was also abdominal pain. *Day 8:*—Pains continued. Vomiting, retention of urine, and fever—101.4° F. (38.55° C.). Severe paralysis of the left leg and thigh developed.

Case 17 (6).—Schoolboy aged 12. *Day 1:*—Pain in back of neck and back of knees; malaise and shivery feeling. Fever about 101° F. (38.3° C.). In bed for two days. *Day 3:*—Got up, but pyrexia returned. Returned to bed, where he remained for four days. *Days 10-14:*—Living very quietly at home. *Day 16:*—Resumed school. *Day 18:*—Played rugby football match. *Day 19 (evening):*—Headache and slight vomiting. Temperature 100° F. (37.8° C.). Went to bed. *Day 20:*—Developed pain in back of neck. *Day 21:*—Pains worse; also pain in dorsal spine. Girdle hyperalgesia and retention of urine. The cerebrospinal fluid contained 502 polymorphs, 280 lymphocytes, and 14 endothelial cells per c.mm., and there was 80 mg. of protein per 100 ml. *Day 22:*—Symptoms subsided. Temperature became normal, and no paralysis developed.

Case 18 (79).—Housewife, aged 30, two months pregnant. *Day 1:*—Mild neck stiffness. *Days 2-4:*—Felt well; usual housework. *Day 5:*—Lumbo-sacral pain and worsening of vomiting of pregnancy. *Days 6 and 7:*—Felt better, though vomiting continued. *Day 8:*—Lumbo-sacral pain recurred with greater severity, and there was also pain and stiffness of the neck and pains in both lower limbs. Temperature about 100.4° F. (38° C.). *Day 9:*—Symptoms continued. *Day 10:*—Cerebrospinal fluid contained 124 polymorphs and 117 lymphocytes per c.mm. and 75 mg. of protein per 100 ml. *Day 11:*—Paralysis of lower limbs trunk, and diaphragm. Respirator required.

This patient died later of pulmonary collapse.

Spread of Paralysis in Two Phases

Case 19 (1).—Housewife aged 33. *Day 1:*—Developed neck pain in the evening. *Day 2:*—Pains also in both shoulders. Some housework. *Day 3:*—Pains worse. Severe headache, restlessness, sleeplessness, and fever. Got up and went to see doctor. *Days 4 and 5:*—Symptoms continued. *Day 6:*—Paralysis of right shoulder and arm. Symptoms subsided. *Days 7 and 8:*—Felt well, but was restless. *Day 9:*—Improvement continued. Got up to have bed made; malaise and vomiting that evening. *Day 10:*—Paralysis spread to involve right thigh, right leg, and right intercostal muscles.

Another remarkable feature of the pre-paralytic stage occasionally observed is that the patient's symptoms may appear to be abating at the time the paralysis develops.

Abrupt Onset of Pre-paralytic Phase. Symptoms Subjectively Subsiding when Paralysis of Nearly all Muscles Developed

Case 20 (29).—Female factory-worker aged 21. *Day 1:*—Wakened with pain in the neck, back, and head. Worked all day in the factory; the journey to work involved travelling for an hour each way. She vomited and noticed something peculiar about her eyes; she thought she might be getting infantile paralysis. *Day 2:*—Slept well but still had pain in the neck, back, and head. She got up and walked (15 minutes) to see her doctor, who told her she had a chill, so she returned

home, went to bed, and took castor oil. *Day 3:*—Pains less severe. She remained in bed, and felt rather better. In the evening some friends called, and she sat up in bed talking to them for four hours (6 to 10 p.m.). Within an hour of her friends' leaving she noticed weakness of her limbs. *Day 4:*—By early morning she was totally paralysed and her respirations were failing; when she reached hospital she was severely cyanosed and was at once placed in a respirator. Ten weeks later there was very little recovery, and she was still unable to breathe without the respirator.

Thieffry (1947) has also drawn attention recently to paralysis occurring in some cases after the fever of the pre-paralytic stage has returned to normal.

Atypical Cases

The cases which show no definite onset of the spinal or meningeal symptoms may be conveniently termed "atypical" cases. There were 11 of this type among the 100 cases studied here. The onset of the pre-paralytic phase may appear indefinite when prodromal catarrhal symptoms merge into the spinal symptoms without the usual interval—see Case 9. The day of onset is also uncertain when the spinal symptoms are at first vague (see Cases 4 and 13), or they may continue for so many days before paralysis develops that the pattern of the disease is altered.

Prolonged Pre-paralytic Stage with Indefinite Onset

Case 21 (41).—Housewife aged 28. *Days 1 and 2:*—Tenderness of lower ribs for two days; no pain. *Days 3 and 4:*—Tenderness of upper abdomen for two days; no pain. *Days 5-7:*—Tenderness of lumbar spine for three days. Very light work. *Day 8:*—Tender on the anterior aspect of the right leg for two days. Very light work. *Day 9:*—In the morning sacral pain and stiffness developed. In the evening slight jerks of the right leg occurred with some pain in the leg. *Days 10 and 11:*—Sacral pain continued and slight fever developed.

The sacral pain continued until *Day 17*. The neck was stiff on admission to hospital on *Day 13*. On *Day 15* the cerebrospinal fluid contained 115 cells per c.mm. (10% polymorphs) and 70 mg. of protein per 100 ml. No paralysis developed except perhaps a transient slight paresis of the right leg.

Case 22 (77).—General practitioner aged 38. *Day 1:*—Malaise and headache in the evening. *Day 2:*—Rested at home. *Day 3:*—Listless and shivery; resumed practice. *Day 4:*—No change. *Day 5:*—Strenuous walk over the hills to "shake off" his malaise. *Days 6 and 7:*—Continued his practice, though symptoms persisted. *Day 8:*—Forced to go to bed with fever, severe frontal headache, and pain and stiffness of the neck. *Day 9:*—Excruciating sacral pain added to symptoms. *Day 10:*—Weakness of right arm and leg and, later, respiration. *Day 11:*—Respirator required; nearly all muscles paralysed. *Day 12:*—Died.

Discussion of Stages and Phases

Examination of these widely varying case records leads to certain conclusions. (1) Prodromal symptoms are usually non-specific, but sometimes they include spinal symptoms of a type suggesting that the virus is already in the spinal cord. (2) The symptoms of the pre-paralytic stage usually begin abruptly, get worse for 2, 3, or more days, and culminate in paralysis. Subjectively the patient may feel better when paralysis develops. (3) During the pre-paralytic stage the symptoms may abate and the patient feel that he has recovered from the illness, though the symptoms recur more violently and lead to paralysis. (4) Occasionally the paralysis may appear in two distinct phases, with an interval of several days between the first and second. (5) Whether there are two or more phases to the pre-paralytic stage each phase usually has spinal symptoms of the same type as occur in cases with only one pre-paralytic phase.

The pre-paralytic stage of poliomyelitis is therefore a highly critical time for the patient. Here the battle with

the invading virus reaches its climax. The amount of spinal cord damage must to a large extent be determined at this stage before paralysis actually supervenes. There is clinical evidence from the occurrence of spinal symptoms that in some cases this struggle is already being fought within the central nervous system during the prodromal stage. Experimental studies support this possibility, as Horstmann (1948) has pointed out.

The two or more phases which may occur in the pre-paralytic stage suggest that the body may appear to conquer its foe, but after apparent victory something "goes wrong"; the virus triumphs at the second assault and paralysis results. The sudden triumph by the virus and its simultaneous appearance throughout nearly all parts of the spinal cord and brain-stem is a puzzling feature of experimental poliomyelitis.

According to Bodian (1948) the virus reaches its maximum concentration in the spinal cord twenty-four hours before paralysis, and as the paralysis is advancing the concentration of the virus drops rapidly. Experimental infections do not, however, often run a biphasic course, and one can only speculate on the likely concentrations of virus in the spinal cord at the various stages of a human case with a biphasic pre-paralytic stage.

Effect of Physical Activity on Motor Neurone Vulnerability to the Virus

In the literature of poliomyelitis there are many reports regarding cases in which violent physical exertion appeared to precipitate a severe or fatal paralysis or in which the muscles specially exercised were those most paralysed. Reference to these cases is made by Levinson *et al.* (1945), who have also made observations on the effect of fatigue and cold in increasing the amount of paralysis in monkeys infected with the virus.

In a preliminary report on the present study (Russell, 1947) the effect of exercise upon the final paralysis was examined statistically, and it was shown that the continuance of even moderate physical activity in the pre-paralytic stage is dangerous. Hargreaves (1948) has to a large extent confirmed these observations.

If physical activity has this important influence on the course of the disease it might show its influence in one of three ways: (1) Physical activity might bring on the acute pre-paralytic phase in a patient who would otherwise have an abortive attack with no more than prodromal symptoms or perhaps no noticeable symptoms at all. (2) Physical activity after the onset of pre-paralytic symptoms might increase the risk or indeed determine the amount and site of paralysis. (3) Physical activity after the subsidence of a first phase of the pre-paralytic stage might lead to a recurrence of the meningeal symptoms and thus increase the danger of paralysis.

Excessive Physical Activity Preceding Pre-paralytic Stage

With regard to the first of these possibilities a study of the case records suggests that excessive physical activity may sometimes play a part in deciding the onset of the dangerous pre-paralytic stage. The evidence of this consists merely in a history of extra physical activity within twenty-four hours of the onset of the pre-paralytic stage in 17 of the 100 cases.

The correlation of physical activity with this particular aspect of the disease is difficult to handle statistically, but the following cases certainly suggest that violent physical exertion may sometimes be a factor which determines that a prodromal illness or latent infection will not remain abortive but will develop the spinal symptoms of the pre-paralytic stage with the consequent danger of paralysis.

This possible effect of physical activity in precipitating the pre-paralytic stage of the disease must be clearly distinguished from the effect of physical activity *during* the pre-paralytic stage on the severity of paralysis. This latter aspect can be handled with confidence statistically, and will be referred to later.

Special Physical Activity in Prodromal Stage Followed Within 24 Hours by Acute Spinal Symptoms and Later by Paralysis

*Case 23 (89).—*Airman aged 33. *Day 1.*—Headache and sore throat; off duty for one day. *Days 2-6.*—Felt well. *Day 7.*—After usual work played rugby football. *Day 8.*—Severe pain in spine and chest with fever. Continued work. *Day 9.*—Severe paralysis of all muscles of the lower limbs and lower trunk.

*Case 24 (91).—*Airman aged 22. *Days 1 and 2.*—Sore throat and headache. Quiet days on board ship. *Day 3.*—Ashore walking round all day. In evening developed sacral pain. *Day 7.*—Paralysis of abdominal muscles and thighs.

*Case 25 (84).—*Airman aged 23. *Day 1.*—Cold in head and sore throat for two days. *Days 3-9.*—Tired, but weather very hot. *Day 10.*—Very hard badminton match. In evening developed fever and pain in head and neck. *Day 13.*—Severe paralysis of both upper limbs.

*Case 26 (71).—*Schoolboy aged 14. Had cold for three or four days. A week later he played rugby football, and on the night following developed pain in the back and a few days later slight abdominal paralysis.

There are four further examples of this type among the group of "typical" cases with prodromal symptoms.

There are also nine among the "typical" cases *without* prodromal symptoms in which the pre-paralytic stage with spinal symptoms was immediately (within two to twenty-four hours) preceded by some special physical activity as in the following examples.

Special Physical Activity Immediately Preceding Spinal Symptoms in "Typical" Cases with No Reported Prodromal Symptoms

*Case 3 (28).—*Male aged 12. Football six hours before onset. *Case 19 (1).—*Female aged 33. Six hours spent washing for a school, extra to usual work, eight hours before onset.

*Case 27 (4).—*Male aged 13. Long run (several miles) soon after beginning of school term, sixteen hours before onset.

*Case 28 (86).—*Male aged 22. Tennis tournament all day twenty-four hours before onset. Yachting six hours before onset.

*Case 29 (94).—*Male aged 21. Tennis tournament twenty-four hours before onset.

*Case 30 (90).—*Male aged 28. Playing squash-rackets three hours before onset.

Physical Activity During the Pre-paralytic Phase and its Influence on the Severity of Paralysis

In order to correlate the possible effect of physical activity during the pre-paralytic stage with the severity of paralysis a method of scoring has been used for both the amount of physical activity and the severity of paralysis (Russell, 1947).

In Table II the days of the disease are numbered backwards from the day paralysis appeared (P-1, P-2, P-3,

TABLE II.—Physical Activity on the Days Preceding Paralysis Compared in Cases Developing (1) Slight, (2) Moderate or Severe Paralysis

Severity of Paralysis	No. of Patients in Each Group who Undertook Moderate or Severe Physical Activity During Each of the Four Days Preceding Paralysis (P-1, P-2, P-3, P-4)			
	P-1	P-2	P-3	P-4
Slight (33 cases)	0	6 (18%)	11 (33%)	18 (54%)
Moderate or severe (59 cases)	14 (23%)	35 (59%)	51 (86%)	53 (90%)

and P-4). The cases are divided into two groups: (1) slight paralysis—good recovery expected; (2) moderate or severe paralysis—permanent disability expected. The proportion of cases in each group which continued physical activity during these four days is shown. It is obvious that non-paralytic cases cannot be included in this table.

Another method of investigating this matter is by numbering the days of the disease from the onset of the pre-paralytic stage; but this can only be done in the "typical" cases with an abrupt onset of spinal symptoms. In Table III

TABLE III.—Comparison, in "Typical" Cases Only, Between the Severity of Paralysis and the Amount of Physical Activity after the Onset of the Pre-paralytic Stage

Amount of Physical Activity After Onset of Pre-paralytic Stage	Permanent Paralysis		
	Slight or None	Moderate	Severe or Fatal
Nil or slight for less than 24 hours ..	30	6	2
Moderate or severe for less than 24 hours ..	6	9	7
Slight, moderate, or severe for more than 24 hours	2	12	15
Totals	38	27	24

the ultimate severity of paralysis in the typical cases is compared with the amount of exercise continued after the start of the pre-paralytic stage.

Both Tables I and II show a remarkable and highly significant increase of severe paralysis in association with a continuance of physical activity in the days preceding paralysis.

The question naturally arises why certain patients continue average or severe activities after the onset of symptoms. As has already been emphasized, these symptoms may be quite slight, but there is certainly no evidence to suggest that those patients destined for severe paralysis have less disturbing pre-paralytic symptoms than have the slight cases. The question cannot be answered with great confidence, but my impression is that often those who continue physical activity after the symptoms begin either are relatively insensitive to pain or have more than the average courage or incentive to continue work or play in spite of illness. There is certainly no doubt that many of those most severely crippled have a remarkable strength of character and great powers of endurance. It has been said that the disease picks out the best child of the family.

Many young children pay little attention to bodily pains, and this may explain an apparent absence of spinal pain in some infants developing poliomyelitis.

The Effect of Trauma

There are a few reported cases of poliomyelitis in which local trauma appeared to determine the site of maximum paralysis (see Levinson *et al.*, 1945). In such a case, for example, poliomyelitis occurring soon after an arm fracture would lead to paralysis affecting chiefly the fractured arm. This type of case, infrequent though it is, raises the possibility either that peripheral trauma provides the virus with easy access to the neurones or that it modifies the physiology of the spinal cord cells of the segments concerned in such a way as to make them more vulnerable to the virus.

Experimental studies on these lines provide much food for thought. Hurst (1930) found that injection of the virus into the sciatic nerve led to paralysis beginning in the same leg only if the nerve is deliberately injured by the injecting needle. In such an experiment the paralysis develops without the preceding fever noticed in other forms of experimental infection (e.g., intracerebral). Infection was prevented if the injected nerve was excised within twenty-

four hours of injection. Howe and Bodian (1942) found that section of nerve roots some days before infection protected the corresponding nerve cells from attack by the virus. German and Trask (1938) injected virus into denervated skin caused by section of anterior and posterior roots, denervation of a skin flap, or denervation of a whole lower limb from the mid-thigh level. They found that not only did the disease caused by injection into denervated skin develop with the normal pattern, but that the animals infected after these operations were more vulnerable and developed more severe paralysis than the controls. The limbs on the side of the operation were usually affected first. From these experiments it was clear that, though the virus did not have any nerves along which to travel, it reached the spinal cord just as quickly as in the controls, and apparently found that the previous operations had increased the vulnerability of the spinal cord cells in the appropriate segments.

These observations necessitate reconsideration of the theory that the virus travels principally via the neurones. This theory is based on a number of studies. Hurst's work on the sciatic nerve has just been referred to. In the tragic accidents with poliomyelitis "vaccine" reported by Leake (1935) the arm inoculated was always the first to be paralysed. After intracerebral inoculation of the virus paralysis appears first in the contralateral limbs (Jungeblut and Spring, 1930).

Though these observations are generally held to indicate neuronal transmission of the virus, it is also possible that this pattern of spread is due not to the trauma providing neuronal access but to the trauma modifying the physiology and increasing the vulnerability of the spinal cord cells with which the traumatized area is in anatomical neuronal connexion.

The following case records may be relevant to this problem.

T.A.B. Inoculation on Right Arm. Acute Illness 7 Days Later. Paralysis of Right Arm

Case 31 (12).—A newly conscripted soldier aged 18. Day 1:—A T.A.B. inoculation was given by subcutaneous injection on the outer side of the right upper arm. The arm was stiff for two days, but he did not feel well during the week following, so he rested most of the time. Day 7:—In the evening a painful stiffness of the neck and scapular region developed. There was also anorexia. Day 8:—Headache and fever (103° F.=39.4° C.) were added to symptoms. Day 9:—The cerebrospinal fluid contained 133 white cells per c.mm. and 75 mg. of protein per 100 ml. Day 10:—Paralysis of right deltoid, biceps, and triceps. No other muscles were affected.

Severe Paralysis of Lower Limbs and Trunk 10 Days After Several Intramuscular Injections in Buttocks

Case 32 (101).—Schoolgirl aged 10. Day 1:—Severe earache, for which she was given intramuscular injections of penicillin into the buttocks every four hours for three days. Day 8:—Felt tired and had a slight headache on waking. Though her temperature was normal at lunch-time it was raised a little by the evening. Slight activity during the forenoon; then went to bed. Day 9:—Slight sore throat added to symptoms. In bed all day. Day 10:—Felt quite well. In bed all day except that she got up to motor home—one hour's run. Day 11:—Developed moderately severe pains in both thighs. In bed all day. Day 12:—Severe paralysis of both lower limbs and lower trunk muscles. This was still very severe two months later.

(Her brother also had pains in the thighs at about the same time, but did not develop paralysis.)

If these two examples record anything more than a remarkable coincidence then they suggest that at a certain early stage of virus infection even the trauma of an

injection will increase the vulnerability of that part of the spinal cord which supplies the site of injection. The well-recognized effect of tonsillectomy on increasing the liability to bulbar palsy may act in the same way (Horstmann, 1948).

Type of Physical Activity Related to Site of Paralysis

There have been many reported instances of the paralysis of poliomyelitis being worse in those muscles which were most exercised at the onset of the illness. Table IV gives

TABLE IV—*Poliomyelitis. Comparison Between Type of Exercise and Permanent Paralysis*

Case No.	Day of Exercise in Relation to Day of Onset of Pre-paralytic Stage (D) and to Day of Paralysis (P)		Type of Exercise	Site and Severity of Paralysis (Slight +, Moderate ++, Severe +++)
	D	P		
13 (44)	3	-1	Half-mile race	Lower limbs + + +
4 (35)	-1	-3	Four-mile race	Trunk + + + Lower limbs + + + L. arm + + + R. leg and thigh only + + +
(52)	1	-1	Schoolboy playing organ for 1 hour R. leg: special strain	R. upper limb + + + L. leg + + + Abdomen + + + Intercostals + + + R. shoulder + + + R. thigh + + + R. arm and hand only + + +
70)	1	-1	Throwing chain with R. arm (surveyor)	
(51)	3	-1	Severe asthma	
183.	1	-3	Playing piano for 1½ hours. R. hand, special strain in the right clavical	
17 (6)	1, 2, 3	-2, -1	Milkman—on feet all day	Trunk and thighs + + + Less +
(35)	1 to 7	-7 to -1	Heavy-truck driving	Both lower limbs + + + Universal severe paralysis; respirator: died 3 months later
(9)	1, 2	-1, -2	Heavy training, carrying machine-guns uphill 6 hours before paralysis	

Cases in which the muscles used most during the pre-paralytic stage were most severely paralysed.

several examples of this correlation between the type of physical activity and the site of maximum paralysis, and thus provides further evidence regarding the harmful effect of physical activity.

Conclusions

These observations help to consolidate views held by many experienced physicians: first, that the pre-paralytic stage of poliomyelitis, though variable, can often be recognized correctly; and, secondly, that physical activity at the onset of the disease is dangerous.

The tables which illustrate this paper indicate that *complete physical quiet from the onset of symptoms will seldom fail to prevent serious paralysis, while strenuous or even moderate physical activity at this stage is highly dangerous.* On theoretical grounds, therefore, it should be possible to prevent many of the grave cases which occur. For example, those who have the care of children, especially at holiday camps and schools, should learn of the ways in which the disease can present. Sports meetings and special athletic contests should, if possible, be held outside the season for poliomyelitis. During an epidemic physical activity should not be exhausting, and should be avoided entirely during minor illnesses. The dangerous idea that symptoms may be "worked off" by exercise should be countered emphatically.

During the acute stage of the disease perhaps the chief aim in treatment should be to maintain for the patient a state of mental and physical quiet. He should be surrounded by an atmosphere of calm and confident efficiency. Sedatives and analgesics are often essential, but little information is available on what are the best sedatives to use in this disease. Probably all sedatives are safe in moderate doses, but patients in the acute stage of the disease must,

especially if on sedative treatment, be watched carefully lest respiratory paralysis develop during sleep.

The not uncommon need to rest the muscles of respiration should be kept in mind. Slight respiratory weakness leads to alarm and sleeplessness. Weakness of coughing is an early sign. This can often be relieved by using the artificial respirator for a short time, but in mild cases a lung inflator is particularly valuable, and is less worrying to the patient. A lung inflator* can be used to give highly effective artificial respiration for a period of hours if necessary, and should be at hand in all cases of paralytic poliomyelitis during the acute stage of the disease. In respirator cases a lung inflator is especially valuable, as it enables artificial respiration to be fully maintained when the patient is removed from the respirator for nursing and other purposes.

Summary

In 100 cases of poliomyelitis the early symptoms have been studied in detail.

The prodromal stage, when present, consists usually of a brief non-specific illness, but neurological symptoms occasionally appear even at this early stage.

The pre-paralytic stage is the most critical period of the disease. Spinal symptoms in "typical" cases begin abruptly, and occurred in 95 of the 100 cases. They are of great value in diagnosis, but are very variable as regards both type and severity.

Two or more phases of the pre-paralytic stage may appear, and paralysis may spread in two or more stages. The spinal symptoms may subside before paralysis develops.

In "atypical" cases the onset of the pre-paralytic stage is vague, and the symptoms of a prodromal stage may appear to merge into the pre-paralytic stage.

An unusual amount of physical activity immediately preceded the pre-paralytic stage in 14 of the 100 cases.

Complete physical rest in bed from the onset of the pre-paralytic stage greatly reduces the danger of severe paralysis. Severe physical activity at this stage is almost suicidal, while the continuance of even average physical activity is dangerous.

The possible effect of trauma in localizing the disease is considered.

During an epidemic physical activity should be avoided entirely in minor illnesses. The highly dangerous belief that malaise and other vague symptoms should be "worked off" by exercise requires correction.

I am greatly indebted to Drs. R. J. Porter, George Smyth, and Elias-Jones, who between them contributed 34 carefully documented records towards this series of cases. Many have allowed me to study the cases under their care, and in this connexion I am especially grateful to Dr. W. H. Kelleher, Dr. A. Joe, and the Medical Officer of Health for Oxford. Dr. P. M. Daniel, Professor Ryle, and Dr. Allan McFarlane have each given me most valuable criticism of the manuscript. Dr. Weston Hurst has given me much helpful information.

REFERENCES

- Bodian, D. (1948). *Bull. Johns Hopk. Hosp.*, 83, 1.
 German, W. J., and Trask, J. D. (1938). *J. exp. Med.*, 68, 125.
 Hargreaves, E. R. (1945). *British Medical Journal*, 2, 1021.
 Horstmann, D. M. (1948). *Lancet*, 1, 273.
 Howe, H. A., and Bodian, D. (1942). *Neural Mechanisms in Poliomyelitis*. New York.
 Hurst, E. W. (1930). *J. Path. Bact.*, 33, 1133.
 Jungeblut, C. W., and Spring, W. J. (1930). *Proc. Soc. exp. Biol., N.Y.*, 27, 1076.
 Leake, J. P. (1935). *J. Amer. med. Ass.*, 105, 2152.
 Levinson, S. O., Milzer, A., and Lewin, P. (1945). *Amer. J. Hyg.*, 42, 204.
 Peabody, F. W., Draper, G., and Dochez, A. R. (1912). *A Clinical Study of Acute Poliomyelitis*. Monogr. Rockefeller Inst. Med. Research No. 4. New York.
 Russell, W. R. (1947). *British Medical Journal*, 2, 1023.
 Thieffry, S. (1947). *Le Diagnostic de la Paralyse Infantile*. Doin, Paris.

*The Oxford inflator (Medical and Industrial Equipment, Ltd.) as described in the *Lancet*, 1939, 1, 206.

THE MIND AND THE SKIN

BY

I. B. SNEDDON, M.B., M.R.C.P.

Physician to the Skin Department, United Sheffield Hospitals

In 1884 Jonathan Hutchinson started a series of lectures with the following sentences: "Our forefathers, who knew far less about the detail of pathology than we do, attached far more importance to such matters as temperament and diathesis. They were accustomed to prescribe for a man's temperament; we think only of his disease, and turn aside with weariness from classifications of diathesis in which the physicians of an older day delighted. Although to a large extent this change of sentiment has been the result of advance in knowledge, yet I think it might easily be shown that it has gone too far, and that we now neglect unwisely the study of those differences between man and man of which, for the most part, physiology takes no cognizance, but which may yet prove of much importance in modifying the processes of disease."

That extract is as true to-day as it was 65 years ago. That the skin can portray emotions and give a picture of man's temperament is often overlooked. Ingram in 1933 pointed out that permanent changes can occur in the skin as a result of emotional changes, but it is only recently that this has been generally accepted, and there still exists rock-like opposition in some quarters.

Few would deny that certain emotions are displayed for all to see in the changing responses of the skin. The blush of shame, the flush of anger, the pallor of fear, are commonplace examples of this phenomenon. It is impossible to practise dermatology without realizing that these dynamic changes may produce a permanent change in the skin. However, it is extremely difficult to prove this to the outside observer. Professor Witts (1948) said, "How easy it is to avèr that mental ideas or states can be converted into physical disease processes as they can be converted into phobias or hysterical paralyses, but how difficult it is to prove it or to demonstrate the mechanism!"

It is becoming more and more apparent that the onset of any given disease is a result of the interplay of many factors; hereditary predisposition, allergy, bacterial infection, immunity, and mental conflicts all play a part. It is most important that skin disease should be classed as a derangement of the whole body, and not just as an inflamed patch of skin. The mind plays a large part in the production of some of the common skin diseases, but I do not want to give you the impression that I think that all skin disease is produced by derangement of the mind or that if an adequate organic cause can be found it should be neglected.

Here is a brief classification of the skin conditions in which the psychogenic factor plays some part in the causation:

Group 1.—Dermatoses Always Psychic in Origin.—(a) Delusion of parasitosis (acarophobia) and other obsessional states. (b) Dermatitis factitia. (c) Neurotic excoriations. (d) Trichotillomania.

Group 2.—Dermatoses with a Large Psychogenic Factor.—(a) Neurodermatitis. (b) Pruritus ani and vulvae. (c) Atopic eczema. (d) Nummular eczema. (e) Rosacea.

Group 3.—Dermatoses Sometimes Precipitated by Psychogenic Factors.—(a) Urticaria. (b) Hyperhidrosis. (c) Cheiropompholyx. (d) Seborrhoeic dermatitis. (e) Psoriasis. (f) Alopecia areata.

Group 1

The cases in this group are of interest in that their aetiology is accepted by most people without much argument.

On the whole they are rarities, and therefore I do not want to give much space to them. They include:

(a) *Delusion of Parasitosis, or Acarophobia.*—This usually occurs in an elderly person living alone who complains that he or she is infested with imaginary mites which run about his or her body. An old lady who came to me not long ago stated that she had three separate colonies, all different colours, living beneath her toe-nails, in her umbilicus, and in her hair. She produced a screw of paper in which were bits of dust, skin, scales, etc., which she stated were the mites. Her main reason for coming was that she thought people in church could see them and were talking about her. On examination her skin showed no abnormality, though in some cases excoriations are present, as there is often an associated senile pruritus. Her belief of infestation was a delusion, and this was part of an involutional melancholia. Other psychoses may give rise to these delusions, among them toxic states, schizophrenia, and arteriosclerotic paranoia. In this group psychiatric treatment is the only thing possible, and I believe my old lady was helped by electric convulsion therapy.

(b) *Dermatitis Factitia.*—These skin lesions are self-inflicted and can be diagnosed by the bizarre characters, which do not fit in with any common dermatosis. Occasionally the lesions are produced consciously for gain, as by the man who wishes to be invalided from the Services or who aggravates an industrial dermatitis to continue to draw compensation. Most commonly, however, the lesions occur in women with a hysterical personality who desire sympathy. Occasionally no apparent reasonable cause can be found, and then it seems to be a true psychosis.

I remember very well a woman who ulcerated one leg until it had to be removed; she then started on the other. Fig. 1 shows a typical factitious lesion in a girl of 16. No cause for her action was found by the psychiatrist.



FIG. 1.—Photograph of girl with dermatitis factitia.

Even when confronted with evidence that the lesion heals when covered by an occlusive dressing it is rare to get a confession, and I think psychiatrists agree that these cases are most difficult to cure.

(c) Closely allied to dermatitis factitia are those rare cases of neurotic excoriations that are usually a result of some trivial organic skin disease which is perpetuated in hysterical individuals by constant scratching.

(d) *Trichotillomania.*—The habit of pulling out hair is most commonly seen in children of nervous temperament and in mental defectives.

Group 2

In this group—comprising the dermatoses in which the psychogenic factors play a predominant part—are those patients who crowd the out-patient departments and surgeries. These cases occur in individuals who are born with a constitutional inadequacy of the nervous system. They belong to the same group as those seen in other departments of medicine, with nervous dyspepsia, effort syndromes, irritable colons, anxiety headaches, and the other innumerable psychosomatic syndromes. The fact that they develop a skin abnormality rather than one of the other manifestations seems in many cases to be a matter of chance or rather opportunism.

Neurodermatitis

If one takes the common itching syndrome neurodermatitis, there is often an organic precipitating cause, and then the irritable nervous make-up takes over and perpetuates the condition. A typical example follows.

Case 1.—A woman aged 50, obsessively house-proud and a chronic worrier, had brought up her only daughter to be a bit above the neighbours and was intensely proud of her. Some six months before she attended the out-patient department her



FIG. 2.—Case 1, showing band of neurodermatitis on the neck.

find herself scratching. She had always prided herself on her good skin and keeping clean, and the fact that she had this skin lesion, which other people could see, increased her anxiety, and she ceased to meet her friends, as she was ashamed. It was at this stage that she attended hospital. On examination the clinical lesion was a band of lichenified papules with an excoriated surface on the back of her neck (Fig. 2). The lichenification was evidence of long-continued rubbing, and the localized lesion with clear-cut edges was typical of probably the most common psychodermatosis—localized neurodermatitis. It was apparent that there must have been some psychogenic cause, and with only a little encouragement she gave us the whole story.

Here one can see the three main factors: (1) constitutional make-up, (2) acute emotional tension, and (3) an organic lesion—the boil; this led to the production of the lesion, the presence of which caused even more anxiety.

The great majority of these cases of dry localized neurodermatitis have some recent increase in nervous tension on the constitutional nervous state which Becker (1932) called "neuro-circulatory instability." Favourite sites for the lesions are the occiput and nape of the neck, behind the ears, the eyelids, the antecubital fossae, the backs of the arms, the inner side of the thigh, and the vulva and perianal regions.

On the whole the personality type which develops neurodermatitis is the hard-working, over-conscientious, meticulous, overclean, yet aggressive obsessional persons to whom life is a stern battle relieved by a few light touches and who bottle up their emotions.

Stokes (1940) has named this personality the "tension frame of mind," and I think it very apt. These people have an inborn feeling of inadequacy. Their lives are governed by the conflict of "I must" with "I can't" and "I don't want to." These are the women who are aggravatingly house-proud, who boast of never sitting down, who—if advised to stay in bed—say, "Oh, I couldn't rest for a minute." It is a state of diseased conscience. These are the people who love being martyrs, the trouble-borrowers. This temperament plus precipitating increase in anxiety leads to neurodermatitis. Two further examples follow.

Case 2.—A woman aged 29 was just such a personality. For two years she nursed her mother in her last illness. The following year she nursed her father in his last illness. After that she became depressed, unable to concentrate, and prone to attacks of weeping for no apparent reason. Then she began to scratch the back of her neck, producing the condition shown in Fig. 3.

Case 3.—A grinder aged 25 was injured two years previously when a grindstone exploded. He was afraid to return to his job, and developed a "nervous breakdown" and headaches. However, he did return, and in a few months began to scratch his right thigh. On examination he was obviously jumpy, had hyperidrosis of the hands, and admitted that he was scared stiff of his job. There was a large area of neurodermatitis on

his right thigh. He clearly understood the explanation of his symptoms, and recovered when his occupation was changed.

While localized neurodermatitis is more common in women, it does occur in men, and I have recently seen it in a boy of 6 who started to scratch when another child was born in the family.

In some cases the site of itching is in the region of an organic lesion, but in many there seems to be no such localizing factor.

In these cases the undue tendency to scratch is grafted on to one of the quite usual physiological scratching areas of the body. Very often the normal person scratches the back of the head when faced with a problem. Many of us, I am sure, have felt an itch in the region of the anus. Most people itch when they see skin patients at first. The severity of the itch depends on the degree of awareness or attention to the itch. The strength of the feeling will vary from time to time. To take an example from the pain sense: if we are prepared for a blow the resulting sensation will be painful. If we, however, sustain a blow on the football field it may not be noticed at the time and the bruise be found later.

In these individuals the sense of awareness of their own feelings is tuned up to a high pitch, and just as the effort-syndrome case can feel his heart beating so the individual with the tendency to neurodermatitis senses an irritation which the normal person would not. I have rather laboured this point because I feel it is so important to try to explain the transference of emotional tension into irritation.

Pruritus

Pruritus ani and vulvae forms a problem which can be explained reasonably well on those grounds. I think the types of cases of pruritus ani vary with the clinic to which they are sent, a higher proportion due to organic diseases being seen in the surgical and gynaecological out-patient departments. Certainly 50% of the cases seen in the skin out-patient department are of psychogenic origin, although a fair proportion of these patients did have some slight organic disease which drew their attention to the part.

Unlike the psychiatrists, I do not think that irritation of the anus and vulva always has some deep dark sexual significance, but both these areas are prone to trivial infections, tears in the mucosa, etc., which may start a pruritus if the individual is at the time facing some conflict in his or her life. Here I would like to give two brief examples.

Case 4.—A man aged 50, a hard-worked executive in a big works, had always had hyperidrosis of the natal cleft. During a spell of hot weather this caused some maceration of the skin. At that time he was overworked and worried and was suffering from insomnia. He found that, while lying in bed awake at night, he began to scratch the lesion. Ointments of various kinds gave him only temporary relief. He was an obsessional personality, ultra-clean, and when he came to see me he gave a detailed description of his anus and perineum which showed that he had been studying the matter closely. On examination the perianal skin showed lichenification and excoriation. Under



FIG. 3.—Case 2, showing localized patch of neurodermatitis on the neck.

treatment by reassurance and explanation, plus sedation, he ceased to have trouble. Here a trivial organic lesion in an obsessional personality under some strain became converted into a chronic pruritus ani.

Case 5.—An attractive and well-dressed woman aged 36 came to me complaining of pruritus vulvae. This dated from the time she found out that her husband had been unfaithful to her. Even though I could do nothing about her domestic life, an explanation of how the pruritus was caused, plus x-ray treatment and sedation, managed to cure her symptoms.

Occasionally one meets a case of localized pruritus where a search for a psychogenic factor appears completely negative. Sometimes these cases can be explained on a purely habit-scratching basis. These patients start to scratch a trivial organic lesion, and this becomes converted into a conditioned reflex rather similar to nail-biting. Any slight impulse from the site calls forth the desire to scratch, and eventually a patch of lichenified irritable skin results. An interruption of the vicious circle by local antipruritics and self-control by the patient may lead to a cure.

Lastly, there is a very small group—and I am sure that it is a very small group—who derive some erotic pleasure from scratching. In my experience this commonly occurs in young men, and the psychiatric explanation given for this is that the scratching is a form of masturbation. This group is incurable by the usual methods, and even with expert psychiatric treatment such as analysis success is unusual.

Eczema

Now to turn to the part played by the mind in eczema. All are familiar with the picture of infantile eczema which at a later stage develops into the flexural prurigo so classically described by Besnier in 1892. Here the constitutional tendency to eczema is inherited, and there is a close association between eczema and the other hypersensitive allergic states—asthma and hay-fever. All these diseases are evidence that the individual has inherited epithelium which is hypersensitive. The intelligence of the group is above average. Rogerson (1934) found an intelligence of 110–115 on the Binet scale. The normal average is 89.

The trigger which starts the eczema in infancy is usually organic. Cold winds, a strong soap, vaccination, an attack of gastro-enteritis, an allergic reaction to some food, a napkin rash, impetigo, and scabies can all precipitate an attack. Once the eczema has started the restless make-up of the child perpetuates the condition by rubbing and scratching. Taken at this stage the condition is primarily organic.

However, in many cases psychological factors are grafted on, and it is these which lead to the transition into Besnier's prurigo. In the majority of cases the parents are themselves anxious and excitable individuals, and the sight of their infant, often an only or a first-born child, tearing his skin to pieces and sleeping little at night completely demoralizes the home—as well it might. The mother tries ointment after ointment, fusses over the child's diet, prevents him playing with other children, and constantly attempts to stop him scratching. The child then becomes the pivot of the family and more and more demands care and attention, until he clings constantly to his mother. The continual thwarting of the child's activities leads to a rise in his mental tension. This leads to yet more irritation and scratching.

It is most striking that if the child is taken out of this environment he rapidly improves. As a generalization, all cases of infantile eczema can be cured quite rapidly in hospital or even in convalescent homes. That this might be due to removal from allergens is a criticism which has to be met in ascribing the trouble to psychogenic influence.

However, relapse may occur whilst in hospital after a visit from the parents.

Removal of the child from the home gives the distracted and sleepless parents a chance to recover. The prevention of a recurrence, which may happen within a few hours of his return home, depends on the treatment of the parents. They should be reassured that the disease is not fatal, that it is nothing to be ashamed of, and that, if they will develop a more detached attitude to the problem and allow the child to go his own way even if this means watching him scratch, it will recover. The child should be allowed outside activities and to take up a normal life as soon as possible. By this handling of cases the continuation of the condition into adult life can in most cases be prevented.

The tendency to eczema, however, lasts into adult life, and if this group have to face situations which increase emotional tension relapses will occur. I have one patient, a solicitor, who produces an outbreak of eczema after a week-end staying with his mother-in-law, whom he detests. Other cases recur if married life becomes impossible.

Rosacea

Rosacea is a permanent dilatation of the skin vessels of the nose, cheeks, forehead, and chin, associated with a papular and pustular eruption which is a sequel to the chronic dilatation. This dilatation may be caused in various ways. Exposure to wind and weather, dyspepsia, ovarian disease, and exposure to heat as in furnace-workers are responsible in some cases, but by far the commonest cause is reflex blushing of emotional origin. After many years of emotional blushing the vessels become permanently dilated, and later the papules and pustules form. At a later stage the eyes may be involved in the process, with the onset of keratitis.

Rosacea is essentially a dynamic process, exacerbation and remission occurring in a very short time. Exposure to a hot room, drinking hot drinks, and acute worry can all produce exacerbation. Klaber and Wittkower (1939) found that 35 out of 50 rosacea patients described themselves as quiet, reserved, and serious-minded. As children they disliked parties and meeting strangers. They were bashful, and any attempt to force them to appear in solo performances of any kind filled them with terror. They were obstinate and sullen if attacked. Rarely did they display any temper. He described the condition as showing undue social anxiety. With the background of this personality any acute emotional crisis is apt to produce rosacea. A typical example is the following:

The patient was a female shop assistant aged 35 who described herself as shy and who blushed easily on speaking to anyone. She was solitary, loved reading, had only one or two women friends, and hated meeting strangers. A year before I saw her she had had the first affair of her life with a married man. This she ended because she felt so ashamed. She was very upset at giving up this friendship, and lost interest in life. Shortly afterwards rosacea developed.

Here one can see the personality and the precipitating crisis associated with shame.

Group 3

The third group of skin conditions in which the mind plays a part are those in which only occasionally is the mental side a factor. In this group are included skin reactions such as urticaria, seborrhoeic dermatitis and psoriasis, hyperidrosis, cheiropompholyx, and alopecia areata.

So far I have been unable to produce scientific evidence that the mind can produce a skin lesion. It has all been the "I had a case" evidence. In dealing with urticaria one is on firmer ground. Grant, Pearson, and Comeau

(1936) described a series of cases of urticaria in which attacks were brought on by emotion, heat, and cold. After the most exhaustive tests they proved fairly conclusively that the urticarial reaction in these patients depended on the peripheral nerves being intact; they believed the stimulus to be along these nerves and to be of cholinergic parasympathetic type.

The mechanism was that acetylcholine was released at the nerve-endings, and that this led to the formation of histamine, which produced the urticaria. In these cases attacks could be brought on by injecting carbachol and aborted by giving atropine. Peculiarly enough, some research done in 1947 on the nettle proved that a nettle sting acted not by releasing formic acid but by injecting acetylcholine and histamine, so that even the naturally produced nettle-rash falls into line with Grant, Pearson, and Comeau's work.

Further confirmation of the power of the mind to produce urticaria and even bleeding was given by Moody (1948), who described urticarial reactions occurring in a patient undergoing narco-analysis and reliving incidents of her past, in which she had been beaten by a sadistic parent. On recalling particular incidents, urticarial weals appeared on the original sites of the injuries.

The easiest way to regard seborrhoeic dermatitis and psoriasis is to look on them as skin reactions which are inborn and which may be precipitated in many ways—by trauma, by infection, and occasionally by mental stress. It was not uncommon to see men who on entering the Services developed seborrhoeic dermatitis which lasted all the time until they were invalided and then cleared rapidly without treatment. Psoriasis occasionally becomes generalized after emotional shocks.

The onset of alopecia areata is often related to unhappiness, though in a great many cases, particularly in children, no psychogenic factor can be discovered.

Just how much bearing the mind has on the onset of allergic and contact dermatitis it is difficult to assess. I feel that in some cases the hyperexcitability of the tissues, which allows them to become sensitized, may well be a result of anxiety. I remember the case of a woman who was unhappily married to a husband of another religion. She hated going to gatherings of his relatives, and on these occasions her face became flushed and irritable. I thought at first that the eruption was entirely psychogenic, but to make sure I patch-tested her to her lipstick, which she also applied to her cheeks as rouge. She gave a violently positive reaction, and cessation of its use led to clearing of the rash. She had been using the lipstick for years, and it may well be that unless she had been acutely unhappy she would not have become sensitized.

Local hyperhidrosis is often a result of chronic anxiety. Cases occurred more often in the Services than in civilian practice.

Cheirpompholyx is a dangerous subject to discuss, as the causes are innumerable, but now and again one comes across a case with an obvious psychogenic background which can be cured by reassurance and explanation. Any case of cheirpompholyx for which no other cause can be found should be investigated for the presence of psychogenic influences.

I have been most impressed by the stories obtained from these patients with psychogenic backgrounds. It is not necessary to make up fears and difficult situations for them. Usually their life situations are such that it is not surprising to find them breaking down in one way or another.

Treatment

The most important feature is to realize that the handling of the psychodermatoses differs in no way from that of

other psychosomatic disease. These patients are constitutionally less able to face life's problems than the average run of humanity, and are not persons with only an inflamed patch of skin.

A firm but kindly sympathetic approach is necessary, and it takes time to extract the life story and the salient problems which have led up to the onset of the dermatosis. It is impossible to gain the patients' confidence with other people—particularly relatives—present, and it may not be until the second or third interview that they will unburden themselves.

After the diagnosis has been made—and I hope that I have shown in what types of cases the psychogenic causes may be suspected—symptomatic treatment may be started. General sedation with small doses of phenobarbitone, local antipruritics—but here I must stress the need for simple agents not likely to sensitize the skin—and x-ray therapy, which is the most powerful antipruritic, will all help to alleviate the symptoms.

After the first few days, when the irritation lessens, the patient will accept more readily the doctor's reassurance that he knows what is the matter, and will be prepared to listen to a simple explanation of how a tense nervous state has led to the present condition. Even if the social conditions and environment remain impossible, as so many of them do, symptoms can be relieved.

However, relapse is likely unless something more can be done. In Sheffield we have an almoner whose main duty is solving the problems which beset these patients. She helps by arranging holidays for the housewife who has reached cracking point and home helps for those who cannot leave small infants. Sometimes she can find other accommodation for those who have to live with "in-laws," and alternative occupations for those who have unconventional work. She obtains legal advice for those for whom a divorce seems the only way out, and, above all, she remains a friend to whom those in trouble can come and pour out their day-to-day worries.

In the short time that it has been in existence the almoner service has produced more permanent cures than all our ointments and magic rays. However, the person who should be really fitted to carry out the correct treatment is the family doctor. He has the facts of the family life at his finger-tips, we have to drag them out painfully. It is the family doctor who, if he can recognize that the skin condition which has brought Mrs. X to his surgery is really repressed indignation because she has an impossible husband, is the best person to give reassurance and advice.

There are, of course, incurables—the patients who trade on illness, those not intelligent enough to listen to advice and who cannot gain insight into their problems, and those who are so constitutionally inadequate that no one can help them. However, the incurables form only a small percentage, and I hope I have made my point that the psychodermatoses are a very real group among skin diseases and that a great deal can be done for those suffering from them.

REFERENCES

- Becker, S. W. (1932) *Arch. Derm. Syph., Chicago* 25, 665.
 Besnier, E. (1892) *Ann. Derm. Syph., Paris* 3, 634.
 Grant, R. T., Pearson, R. S., Bruce, and Comeau, W. J. (1936) *Clin. Sci.* 2, 253.
 Hutchinson, J. (1834) *The Pedigree of Disease*, London. Quoted by J. A. Ryle in *The Natural History of Disease*. Oxford University Press, 1948.
 Inerary, J. T. (1933) *Lancet*, 1, 889.
 Klaber, R., and Witkower, E. (1939) *Brit. J. Derm.* 51, 505.
 Moedv, R. L. (1948) *Lancet*, 1, 964.
 Roeveron, C. H. (1934) *Brit. J. Derm.* 46, 368.
 Stokes, J. H. (1940) *Arch. Derm. Syph., Chicago* 42, 780.
 Wills, L. J. (1948) *British Medical Journal*, 2, 458.

TREATMENT OF SKIN LESIONS CAUSED BY MUSTARD GAS

BY

D. C. SINCLAIR, M.A., M.D.

(From the Department of Anatomy, University of Oxford)

On the basis of clinical observations Chiesman (1944) and Davis (1944) published some general remarks on the treatment of skin burns caused by mustard gas. However, no study of the results of treatment under field conditions has appeared since the reports of the 1914-18 war casualties (Soltau and Elliott, 1923). The present paper deals with the treatment of a series of men exposed to mustard gas in the Tropics while living under an approximation to field conditions.

Material and Methods

Between 1943 and 1945 observations were made on 438 healthy young men exposed to mustard gas under tropical conditions—320 were exposed to mustard vapour and 118 to contamination by liquid mustard. Dressings were changed daily, and no attempt was made to maintain strict asepsis. The materials and methods used for treatment were purposely restricted to those readily available to any medical officer in the field. All applications were made on gauze or plain surgical lint and were kept in place by a bandage, since adhesive plaster did not adhere properly and gave rise to local irritation.

The lesions treated ranged from small superficial abrasion-like areas to large deep ulcers. Of the vapour cases 75 suffered nothing more than an erythema, and in only 154 of the remaining 245 did breaches of the continuity of the skin develop (Table I). Raw surfaces occurred

TABLE I.—Lesions Available for Treatment

Type of Case	Volunteers			Regional Raw Surfaces		
	No. Exposed	No. Treated	No. with Breaches of Skin	Total	No. Treated	No. of "Whole-thickness" Burns
Vapour ..	320	104	154	495	234	1
Liquid ..	118	83	79	254	68	18
Total ..	438	187	233	749	302	19

in 79 men exposed to liquid mustard, and 18 "whole-thickness" burns were distributed among nine of these men. The term "regional raw surfaces" in Table I refers to arbitrarily defined regions (Sinclair, 1948b) in which one or more breaches of surface continuity occurred, without regard to the number of these breaches. It will be noted that only 302 out of 749 regional raw surfaces received treatment: this figure includes all the whole-thickness burns and most of those lesions occurring in the 30 subjects who were admitted to hospital. In the remaining men 447 unselected regional raw surfaces received no treatment of any kind beyond the evacuation of vesicles, and were used as controls.

The irregularity and delay in development of mustard burns (Sinclair, 1948b) make it impossible to evaluate the effect of treatment unless the development of an exactly similar untreated burn in the same area of the opposite side of the same man can be observed. This requirement is seldom satisfied in mustard-gas burns. Further, in this series strict supervision of treatment was impossible. For these reasons no valid comparison can be made of the effect of the various treatments used on the development, course, and healing of the burns. However, sufficient

detailed information was obtained to enable a general clinical appraisal of treatment to be made.

General Treatment

Pain was controlled by acetylsalicylic acid, phenacetin, bromide and chloral, or hyoscine hydrobromide. In the worst cases, particularly those with severe burns of the genitalia, $\frac{1}{4}$ gr. (16 mg.) of morphine three times daily was necessary.

The treatment of systemic poisoning (Sinclair, 1948a) was purely symptomatic and unsatisfactory. Nausea and vomiting were unrelieved by either alkaline mixtures or sedatives. Alkali was, however, useful in alleviating abdominal pain when given in full doses after meals. The typical severe headache was unaffected by acetylsalicylic acid, phenacetin, and ergotamine.

Education formed a very necessary part of the treatment, owing to the prevalence of superstitious ideas about mustard gas. In two cases anxiety states developed, necessitating continued reassurance.

Local Treatment

Desquamation.—The onset of desquamation or exfoliation in any part was usually accompanied by considerable irritation, itching, and stinging pain. These symptoms were greatly aggravated by scratching, which took place in many cases while the men were asleep. For this reason it was occasionally necessary to apply a dressing to areas of severe desquamation. The treatment of choice was the inunction of zinc cream (A.P.F.) (anhydrous wool fat, 3; olive oil, 3; zinc oxide, 4; lime water, 4).

Raw Surfaces.—These were the result either of desquamation or of vesication. Vesicles were swabbed with weak "dettol" solution and pricked with a sterile needle to collapse down the vesicle roof. Subsequent re-evacuation was practised as necessary. Any blisters 1 cm.² or less in floor area were left without treatment of any kind (Table II). The treatments used for raw surfaces included the

TABLE II.—Liquid Burns: Treatment of Raw Surfaces by Area

Approximate Size of Raw Surface	No. of Lesions	No. Treated	Percentage Treated
0-1 cm. ²	81	0	0
1-10 cm. ²	192	19	10
10-100 cm. ²	55	36	65
Over 100 cm. ²	16	13	81

following: amyl salicylate, sulphonamide preparations (sulphanilamide powder and sulphathiazole powder), greasy preparations (zinc cream (A.P.F.), vaselined gauze, and acriflavine emulsion (B.P.)), and dyes (triple dye and 1 in 1,000 aqueous acriflavine).

Amyl Salicylate.—The drawbacks of amyl salicylate as a treatment for mustard burns are several. It is too irritant to apply to the scrotum by the ordinary method (Ministry of Health, 1942; Chiesman, 1944), and in vapour cases the scrotum is the region most commonly affected (Sinclair, 1948b). It cannot be applied to any area for longer than three or four days without causing pain (Ministry of Health, 1942; Cullumbine and Sinclair, 1942), it has an objectionable and persistent smell (Stewart, 1937), and it clings to the fingers, dressings, and bedclothes. It does not bring about more rapid healing (Cullumbine and Sinclair, 1942; Davis, 1944), and in the present series burns treated with it tended to be rather more painful than burns treated by other methods. "Hypersensitivity" to amyl salicylate has been reported (Stewart, 1937). In consequence of these objections, amyl salicylate has now fallen into disuse (War Office, 1944).

Sulphonamide Preparations.—In view of the effect of absorbed mustard derivatives in depressing leucocyte formation it is clear that the application of sulphonamides to any large mustard burn calls for considerable caution (Chiesman, 1944; Sinclair,

1944). Many lesions treated with local sulphonamides in this series became slightly irritated and inflamed; it should, however, be noted that micronized sulphonamides were not available.

Greasy Preparations.—The outstanding feature of this group of treatments was the comfort of the lesions so treated. Zinc cream (A.P.F.) was the most successful and, under local conditions, the most readily available in bulk. These preparations also enabled quick and relatively painless changes of dressing to be made. This factor was particularly important in the case of burns of the genitalia.

Dyes.—Triple dye was extensively used for small raw surfaces. The dye was applied as a paint, two or three coats being given at each dressing, and the burn was then left completely uncovered. Patients preferred this treatment to the inconvenience of a dressing and bandage, and burns so treated were very comfortable and quickly ceased discharging. It should be noted that no attempt was made to tan the raw surface. Owing to the difficulty of obtaining strict asepsis at the time of application, tanning should be used sparingly under field conditions (Cullumbine and Sinclair, 1942; War Office, 1944; Chiesman, 1944; Davis, 1944). Acriflavine solution, 1 in 1,000 in water, was also used, but was not nearly so satisfactory.

Untreated Controls.—The untreated lesions appeared to be as comfortable and certainly healed as rapidly as the treated burns of comparable severity. The pressure and friction of clothing, except in the case of burns of the scrotum, did not give rise to undue discomfort, and the lesions dried up rather more quickly than in cases where treatment was applied.

Treatment of Genital Lesions.—For lesions of the genitalia the most comfortable and convenient application was vaselined gauze. In hospital cases a daily tepid saline bath also relieved pain and irritation to a marked degree. All dressings applied to burns of the scrotum in ambulant cases were conveniently retained in position by an elastic suspensory bandage. The value of these bandages cannot be over-emphasized. The elastic support relieved the tension and dragging pain resulting from the presence of oedema fluid, and the friction of the clothing over the large, tender, raw scrotum was much reduced. Men with extensive deep burns, sometimes involving half the scrotal surface, were thus enabled to remain ambulant.

Complications

Dysuria.—Four cases with extensive raw surfaces on the glans penis suffered from intensely painful micturition, which was to a certain extent relieved by coating the burn heavily with vaseline. Ulceration of the meatus (Mackintosh, 1920) did not occur in this series.

Priapism.—In two vapour cases in which the penis was extensively burned, frequent, prolonged, and extremely painful priapism occurred, usually at night, during the first two weeks of treatment. Large doses of bromide and other sedatives were without prophylactic effect, and the only measure which afforded relief was an immediate cold saline bath.

Sepsis.—The presence of infection in any lesion was assessed as "slight" (some seropurulent discharge but no other local signs), "moderate" (frank pus present), or "severe" (frank pus, with local tenderness, inflammation of surrounding skin, and regional adenitis). The results of this classification are seen in Table III. The overall regional

infection rate was 32 out of 749 (4.3%), and the infection rate was higher (9.4%) in the case of liquid burns than in the vapour series (1.6%). Many of these infections were, however, of very little clinical importance, and Table III shows that in only 10 (1.3%) cases could infection be described as more than trivial. It is also interesting to note that sepsis became established while local treatment was being applied in 17 out of the 302 cases which received treatment—an infection rate of 5.6%. The infection rate in cases receiving no treatment was 3.4%.

Adenitis.—In four infected cases there was a regional adenitis throughout the period of infection. In eight other vapour cases, however, a regional adenitis appeared without any sign of local inflammation. The affected glands were rubbery, discrete, and not tender. These cases have not been considered under the heading of sepsis, since the absence of tenderness and pain, of any constitutional symptoms, of lymphangitis, and of any clinical evidence of infection in the drainage area was a noticeable feature.

Sloughs.—In the series of liquid burns small sloughs appeared in various situations in two subjects but separated rapidly; they were accompanied by slight sepsis. In the vapour series, however, it was a striking fact that slough formation, which occurred in six men, was confined to the prepuce. In the worst case gross annular sloughing occurred on the fifteenth day and did not completely separate until the thirtieth day.

Discussion

The mustard burn is not a specific and peculiar lesion, but is simply the response of the skin to a slowly acting tissue injurant (Sinclair, 1948b). It is therefore most unlikely that any specific treatment will be found for established mustard lesions, and in consequence it is permissible to treat such burns exactly as thermal burns, according to the personal preference of the operator. Koontz (1944), as a result of animal studies, concludes that "there is no major difference, either qualitative or quantitative, between heat burns and mustard burns of equal intensity," and points out that the same methods of treatment should therefore be applicable to both. Davis (1944) concludes that "almost any of the generally accepted techniques of burn treatment" may be used for mustard burns in man. Insufficient attention has been paid in the past to difficulties of assessment, and specific treatments—for example, amyl salicylate—have been recommended for mustard burns on inadequate grounds.

The healing-time of mustard burns is not greatly influenced by the type of therapeutic agent employed (Cullumbine and Sinclair, 1942; Davis, 1944), and there is no evidence that any of the treatments applied in the present series achieved significantly better results than could be expected in the absence of local treatment. There remain, however, the factors of comfort, ease of application, availability, cost, etc., to be considered. Bearing in mind these considerations, it may be said that for the irritation caused by desquamation of the skin zinc cream (A.P.F.) was useful. For the raw surfaces, which constituted the most important feature of these cases, zinc cream and vaselined gauze were the best of the treatments investigated, while triple dye paint was extremely useful for minor lesions of this type and when a dressing could not conveniently be retained in position. For scrotal burns the suspensory bandage was invaluable, and in hospital cases saline baths were found very comforting.

There is a widespread opinion that mustard burns are especially liable to infection. Chiesman (1944) states that "they are slow to heal, prone to sepsis, and respond badly to any form of tanning." There is, however, no evidence to show that a series of human experimental thermal burns

TABLE III.—Incidence of Sepsis

Type of Case	No. of Regional Raw Surfaces	No. of Regional Raw Surfaces Infected				No. of Infections Classified as More than Trivial
		Slight	Moderate	Severe	Total	
Vapour ..	495	6	1	1	8	2
Liquid ..	254	16	5	3	24	8
Total ..	749	22	6	4	32	10

is any less liable to infection than a series of mustard burns of similar intensity and distribution. Nor has it been shown that under these circumstances the thermal burns would heal any more quickly than the mustard burns. Until such an investigation has been made it is begging the question to hold that the mustard burn is specially prone to sepsis and slow to heal.

Summary

An account is given of some observations made on the treatment of a series of skin burns caused by mustard gas under tropical conditions. It was not possible to make any accurately controlled investigation, but it appeared that no local treatment achieved better results than could be expected in untreated burns.

On the basis of factors such as comfort, convenience, expense, etc., zinc cream (A.P.F.) and vaselined gauze were the best of the treatments investigated for breaches of skin continuity. Triple dye, used as a paint, was valuable for treating small superficial lesions.

Suspensory bandages were of great value in the treatment of scrotal burns.

There was a comparatively low incidence of sepsis, in spite of the fact that the burns were treated under an approximation to field conditions.

There is no reason to suppose that mustard burns behave any differently from thermal burns in regard to their healing or liability to infection.

The kindness of the Australian Chemical Defence Board in permitting publication of the work carried out under its direction is gratefully acknowledged. Permission to publish has also been received from the chief scientist, Ministry of Supply.

I should like also to record my indebtedness to Mr. J. W. Legge and to the numerous colleagues who assisted in the application, supervision, and assessment of the treatments investigated.

REFERENCES

- Chiesman, W. E. (1944). *British Medical Journal*, 2, 109.
Cullumbine, H., and Sinclair, D. C. (1942). Unpublished work.
Davis, M. I. J. (1944). *J. Amer. med. Ass.*, 126, 209.
Kooniz, A. R. (1944). *Arch. Surg.*, 48, 284.
Mackintosh, J. M. (1920). "The Clinical Aspects of Mustard Poisoning." Glasgow University M.D. thesis.
Ministry of Health (1942). E.M.S. Instructions, Part I: Medical Treatment and Special Centres. Supplement 43. H.M.S.O., London.
Sinclair, D. C. (1944). Unpublished work.
— (1948a). *British Medical Journal*, 2, 290.
— (1948b). *Brit. J. Derm. Syph.* In press.
Solau, A. B., and Elliott, T. R. (1912). *Official History of the Great War: Medical Services: Diseases of the War*, vol. II. H.M.S.O., London.
Stewart, R. L. (1937). *British Medical Journal*, 1, 380.
War Office (1944). *Army Medical Department Bulletin*, No. 31. London.

INCIDENCE OF DIABETES MELLITUS IN CHILDREN AND NEED FOR HOSTELS

BY

P. HENDERSON, M.D., D.P.H.

Medical Officer, Ministry of Education

In an annotation in the *British Medical Journal* of Feb. 7, 1948 (p. 261), it was stated that "the incidence of diabetes is unknown, although some idea of its prevalence can be obtained from the mortality returns." Lawrence (1944) wrote: "Diabetes has been recorded in infants of a few months, but is very rare under 6 years of age." In America several surveys have been made. Joslin (1946) quoted the findings of the National Health Survey of 2,500,000 persons, carried out under the auspices of the United States Public Health Service in 1935-6, when it was found that in the age group 0-14 years one child in every 2,500 was a diabetic: the incidence was the same for boys and girls, and

for all age groups was 0.37% of the total population (adults and children). Wilkerson and Krall (1947) reported the results of a thorough investigation into the incidence of the disease in Oxford, Mass. Of the 4,983 inhabitants 3,516 had their blood and urine tested. After allowing for the 29.4% of the town's citizens who had not been tested it was estimated that 1.7% of the population had diabetes.

Joslin (1946) also mentioned that the mortality rate from diabetes in the U.S.A. in 1943 was 27.1 per 100,000 of the population; in England and Wales in 1944 it was 9.6 per 100,000. The much lower diabetes death rate in England and Wales supports the view that the incidence of the disease is considerably less in these islands than it is in the U.S.A.

Present Investigation

In the absence of up-to-date information about the extent of diabetes in children in this country it was decided to make a survey, during the period February-June, 1948, in the following areas: Bristol, Birmingham, Birkenhead, Wallasey, Liverpool, Bootle, Salford, Manchester, Bradford, Leeds, Newcastle-upon-Tyne, Sheffield, Norwich, Ipswich, Great Yarmouth, Cambridge, Norfolk, Isle of Ely, Cambridgeshire, and East and West Suffolk.

All the school medical officers (who were, with one exception, also medical officers of health), the professors of child health, and all the hospitals in these areas likely to have child patients with diabetes were approached for information. The physicians of 32 hospitals co-operated: only one hospital ignored the requests made to it.

All lists of children supplied by the hospitals were cross-checked against the lists held by the school medical officers and the medical officers of infant welfare clinics to avoid duplication of names and to ensure that children not living in these areas were excluded, since many of the hospitals had patients from a wide countryside and from districts not included in this survey.

Size of Population Sampled.—The 16 cities and towns and the five counties selected for this inquiry had a total child population under 16 years of age of 1,307,000; there were about 750,000 school-children, being between one-sixth and one-seventh of the total school population of England and Wales: the rate was broadly similar for urban and rural children. Table I gives the number and age distribution of the children.

TABLE I.—Age Distribution

Age	Urban	Mainly Rural	Total
0-4 ..	470,000	70,000	540,000
5-9 ..	386,000	50,000	436,000
10-15 ..	290,000	41,000	331,000
Total	1,146,000	161,000	1,307,000

TABLE II.—Incidence of Diabetes in Sample Population

Age	No. of Children with Diabetes		
	Boys	Girls	Total
0-4 ..	1	2	3 (1 in 180,000)
5-9 ..	28	28	56 (1 in 8,000)
10-15 ..	70	54	124 (1 in 3,000)
Total ..	99	84	183 (1 in 7,000)

Of the 180 school-children (Table II) 145 (1 in 5,000) lived in urban areas, and 35 (1 in 3,000) lived in mainly rural areas. If the sample can be taken as representative of the child population then the estimated number of diabetic school-children in England and Wales is 1,200 (1 in every 4,000-5,000).

Number of Diabetic Children in Need of Hostel Treatment

Several of the physicians who provided information expressed the opinion that diabetic children should remain at home and not be sent to hostels. One expressed the view of several when he wrote: "All diabetic children should be brought up to lead normal lives with other children, and I find that this is possible with nearly all of them." Another wrote: "I do feel that on the whole children suffer more by being moved from their home environment than they gain by going to live in a hostel." Others, however, considered that hostels were essential for a small minority of diabetic children; one gave the history of a girl aged 12 who spent most of her life in two hospitals, having been admitted to each alternately in diabetic coma. Another child, who was not receiving the treatment prescribed, was found to have a mother who did not understand the instructions given to her as "she was deaf and otherwise peculiar."

An interesting finding was the greater demand for hostels for children from rural areas. Table III gives the number and age distribution of the children in the sample population who were recommended for admission to a hostel.

TABLE III.—Children Recommended for Admission to Hostel

Age	Boys	Girls	Total
0-4	1	—	1 (1 in 500,000)
5-9	4	3	7 (1 in 60,000)
10-15	7	6	13 (1 in 25,000)
Total	12	9	21 (1 in 60,000)

Of these 21 children seven were already in a hostel or hospital. Thus in this series one diabetic child in every nine was recommended for a hostel. On these figures there is need for hostels for at least 130 diabetic children in England and Wales. The survey also showed that in mainly rural areas one school-child in every 13,000, and in urban areas one in every 50,000, should be in a hostel for diabetics. The main reason for the greater need for hostels for rural children is the lack of specialist treatment facilities within easy reach of their homes. The difference in the incidence of diabetes between the urban and rural population was not sufficient to explain the great disparity in the proportion of school-children recommended for a hostel in these two groups.

Since September, 1939, the London Education Authority has maintained a diabetic unit for 60 boys and girls at its large residential school at Hutton, Essex. On the average, only about 16 of the 60 are London children, giving a rate of one child per 20,000 of the London school population. In view of the effects of the war on London homes it was to be expected that more London diabetic children would require hostel accommodation than children in provincial cities and towns. Of the 16 London children living in Hutton during the period of this inquiry eight were fatherless, motherless, or had parents who were separated.

Allowing for the higher rate of hostel provision required for London and rural children, rather more than 130 places are needed. On the basis of the present investigation hostels for 130-150 diabetic children should be provided for a school population of about 5,000,000. In addition to the 60 places at Hutton a second hostel for 30 diabetic boys and girls was opened at Deal by the Church of England Children's Society in January, 1949. There are prospects of a third hostel for about 30 children being opened in 1949.

Anyone having doubts about the value of a hostel for a minority of diabetic children should visit Hutton. There the boys and girls are taught the diabetic way of life; they test their own urine and, under supervision, inject their own

insulin. They are supervised by a trained nursing staff, and a specialist physician visits fortnightly. They lead as free and as normal a life as any child in a public boarding school. Their out-of-school life is full of variety. They take part in any physical activity or game that they choose and they all learn to swim in the school swimming-bath. Most are allowed home for the usual school holidays. In early summer they all go to camp for a fortnight at the seaside. They grow up into self-reliant men and women, fully capable of leading happy and useful lives. Unfortunately, some parents are so foolish that they prematurely withdraw their children from the hostel. Whittaker (1948) reported the deaths of five children who had been removed from Hutton against advice. And in this country in 1945, according to the Registrar-General (1945), 51 children under 15 years of age died from diabetes. These melancholy figures represent a yearly wastage of young lives that could be reduced considerably if adequate hostel facilities were available.

Summary

Of 1,307,000 children under 16 years of age (being from one-sixth to one-seventh of the total child population under 16 years of age in England and Wales) living in 16 English cities and towns and five counties, 183 (1 in 7,000) were known to have diabetes. Of the 180 school-children, 145 (1 in 5,000) lived in urban areas and 35 (1 in 3,000) in mainly rural areas. An incidence rate of 1 in 7,000 is only about one-third of that (1 in 2,500) found in 1935-6 in the survey sponsored by the U.S. Public Health Service.

The incidence rose sharply from 1 in 180,000 for children under 5 years to 1 in 8,000 for children 5-9 years and to 1 in 3,000 for children aged 10-15 years.

About one diabetic child in nine was recommended for a hostel. In the mainly rural areas one school-child in every 13,000, and in the cities and towns one in every 50,000, was considered suitable for a hostel; in London the rate was 1 in 20,000. The higher London figure was at least partly due to the effects of the last war, since half the total number of the London children were fatherless, motherless, or had parents who were separated. The high rural rate was mainly due to the absence of specialist treatment facilities within easy reach of the children's homes.

Allowing for the greater need for hostels for diabetic children in London and the rural areas, this survey revealed the need for hostels for 130-150 children under 16 years of age in England and Wales with a school population of about 5,000,000. At the time of this investigation there was hostel accommodation for only 60 diabetic children in the London County Council's School at Hutton. A second hostel for 30 children was opened in Deal in January, 1949, by the Church of England Children's Society, and there are prospects of a third hostel being opened during 1949.

I gratefully acknowledge the help given to me by the school medical officers of the areas mentioned in this article and by the professors of child health, physicians, almoners, and secretaries of the hospitals in these areas who so willingly supplied me with information.

REFERENCES

- Joslin, E. P. (1946). *The Treatment of Diabetes Mellitus*, p. 33. London.
 Lawrence, R. D. (1944). *The Diabetic Life*, p. 127. London.
 Registrar-General (1945). *Statistical Review of E. & W., Part 1*, Medical, p. 119. London.
 Whittaker, H. (1948). *Brit. med. Students' J.*, 2, 14.
 Wilkerson, H. L. C., and Krall, L. P. (1947). *J. Amer. med. Ass.*, 135, 209.

The Minister of Health and Local Government of Northern Ireland stated recently that plans are on foot to provide this year 200 additional beds for tuberculosis sufferers in Northern Ireland. The Minister added that he would further consider a suggestion that the Government should make representations to the proper authorities towards making arrangements for the treatment in Swiss hospitals of patients suffering from tuberculosis in view of the present shortage of beds in Northern Ireland.

SIMULTANEOUS EMBOLISM IN BOTH ARMS

BY

J. V. FIDDIAN, M.D.

Surgeon to the District Infirmary, Ashton-under-Lyne

We read a good deal about arterial embolism of the limbs these days, but it must be a somewhat rare occurrence, for I have had to wait twenty-nine years as a surgeon at a hospital of two hundred mainly surgical beds to see my first case. But, as if to make up for this delay, my case when it did appear presented me with simultaneous embolism of both axillary arteries. How rare this is I have not been able to discover. The surgical literature at my disposal does not record a single case.

Case History

The patient, a railway worker aged 69, had a Syme's amputation of his right foot in 1915 after an accident on the line. The stump has served him well, his only complaint being the usual one with Syme's amputations—that the foot tended to work round in internal rotation so that the toe struck his other foot in walking.

Four months before admission to hospital an ulcer developed over the external malleolus. It was very painful and gradually extended in spite of rest in bed, "elastoplast" bandaging, ultra-violet irradiation, and a variety of dressings, including penicillin. On admission he was seen to be a healthy-looking man. His past health record was good: he had not attended his panel doctor for twenty years. His blood pressure was 130/80, his urine was free from sugar and albumin, and his Wassermann reaction was negative. The radial artery was thickened, however, and capillary circulation at the extremities was slower than normal. A diagnosis of arteriosclerotic circulatory defect was made, and he was advised to have the limb amputated below the knee.

On June 24, 1947, I amputated the leg 4 in. (10 cm.) below the tibial tubercle under thiopentone-gas-oxygen-ether given by Dr. John Moore. The reduced size of the lumen of the tibial arteries was noticed. Healing was retarded by the poor nutrition of the flaps. There was no inflammatory or febrile reaction, but when the stitches were removed on the twelfth day there was considerable failure of union. Healing proceeded very gradually. His general condition was good and he was free from pain. He got about the ward in a wheeled chair and later on crutches.

On Sept. 12, at 5.30 p.m., he went out on crutches to the toilet and while there felt tingling in both wrists and "came over faint." He walked back to his bed on his crutches with assistance. The tingling increased and numbness developed in his hands. A little later he complained of pain in both upper arms. When I saw him at 6.30 he was not greatly distressed, but said the use had gone out of both his arms. They were cold and blue. He could move his fingers slightly. No radial pulse could be felt on either side. Pulsation was present in the brachial artery to about 1 in. (2.5 cm.) above the humeral artery. There was no pulsation on the right below the axilla, and the third part of the axillary artery was pulsating.

At 7.30, using brachial plexus block analgesia, I exposed the site of the embolism in the right axillary artery and, controlling the pulsating artery by a loop of tape held up by a haemostat, incised the non-pulsating area immediately below. A clot some 3 in. (7.5 cm.) long was extracted and a small rubber catheter was passed down the artery and suction applied by a syringe; in this way several more pieces of clot were obtained, and a stream of 2% citrate solution was injected. The arm was then massaged in an upward direction and finally the artery was closed by a single continuous suture of No. 2 nylon with a very fine needle. The adventitia was stripped from the artery above the incision and the tape was then relaxed. Pulsation could immediately be felt at the elbow. Others in the theatre said they could feel the radial pulse. The wound was closed and dressed and the patient given a cup of tea and a

cigarette. After an interval of half an hour a similar proceeding was carried out at the lower end of the left brachia artery. A bifurcated clot which had filled the lower part of the brachial artery and the upper 2 in. (5 cm.) of both radial and ulnar arteries was extracted with forceps. Directly the artery was closed and the tape released full volume was restored in the radial pulse.

In view of the different fate which befell the arms I reviewed my technique to discover if possible what determined failure on the right and success on the left. Differences of procedure were as follows:

Right	Left
Operation two hours earlier	Operation two hours later
Incision in non-pulsating artery	Incision in pulsating artery
Denudation of vessel not so satisfactorily performed	Very thorough denudation of vessel
Injection of heparin had not been given, through delay in obtaining it.	Injection of heparin before starting operation.

Whatever the cause, and I am inclined to blame the inadequate denervation of the right artery, the subsequent fate of the two limbs was strikingly different. By the next morning the left arm was of normal appearance and all movements of the wrist and fingers could be obtained, and with considerable power. Radial pulsation was of normal volume. Subsequent progress was uneventful. The wound healed by first intention and the arm has remained in full function ever since. The right arm was discoloured and cold from the elbow downwards. Pulsation could be felt in the brachial artery down to the elbow. Capillary circulation could be shown to about 2 in. (5 cm.) below the elbow. No radial pulse could be felt. Heparin was pushed, and the arm was kept exposed to cool air.

A masseuse visited him several times a day to give light effleurage and the skin was kept as sterile as possible by rubbing with spirit. 125,000 units of penicillin were given thrice daily. The colour remained the blue of a bruise and no improvement in capillary circulation could be seen, but the patient said he could feel life in the forearm nearly to the wrist and could make some slight movement of one or two fingers. After nineteen days massive vesication appeared and I amputated at the lower third of the upper arm. He has made a good recovery, uses his left arm normally, and is busy trying to walk on his new artificial leg.

KETONURIA IN A CHILD WITH CIRRHOSIS OF THE LIVER

BY

G. T. RUTHERFOORD, M.B., B.S.

Late Resident Medical Officer, Southampton Children's Hospital

The interest of the following case lies in the fact that a child with cirrhosis of the liver had ketonuria as the chief sign. The cirrhosis was unsuspected during life. The initial illness, characterized by constipation and abdominal distension, was apparently not related to the liver disease.

Case Report

In November, 1945, a boy aged 2½ was admitted to the Southampton Children's Hospital with severe constipation and abdominal distension. The condition was diagnosed as Hirschsprung's disease. A barium enema shortly after admission revealed a mild degree of megacolon; another, two months later, showed no abnormality. During the next eighteen months the boy was seen regularly in the out-patient department. He remained in fair health, though persistent constipation necessitated the regular use of aperients and occasional enemata.

In January, 1948, when aged 4 years 10 months, he was re-admitted. He had been well until the day before admission when he had had a convulsion. A further convulsion occurred a few hours later, this being followed by a third on the morning of admission, since when he had been comatose. On examination he was found to be unconscious, slightly cyanosed, and

breathing rapidly and deeply. There was slight neck rigidity. The abdomen was not distended, and rectal examination was negative. The urine contained a large quantity of acetone. Gerhardt's test for diacetic acid was also positive. Sugar was absent. Consciousness returned a few hours after admission. Next day a purulent nasal discharge, pharyngitis, and cough were noted. Radiographs of the chest and examination of the cerebrospinal fluid revealed no abnormality. The blood-sugar level was not estimated. A few days later, following a course of a sulphonamide, recovery appeared to be complete.

After leaving hospital he was noticed always to be listless and easily tired, though well enough to attend school for some weeks. In April, 1948, he was in bed for a week with pyrexia, vomiting, and diarrhoea. His parents remarked that at times he became excessively thirsty, and had an inordinate liking for salt. Apart from a distaste for sweet things, his appetite, though poor, was normal.

In July, 1948, he was again readmitted. A convulsion, preceded by severe abdominal pain, had begun a few hours previously, since when he had been unconscious. On examination he was found to be unconscious and slightly cyanosed, but was breathing normally. No other abnormal physical signs were elicited. The urine contained large quantities of acetone and diacetic acid. No sugar was detected. A sample of blood (taken on admission) showed a blood-sugar level of 35 mg. per 100 ml. A few hours after admission he was conscious and rational and was drinking glucose-water freely. His condition, however, deteriorated. During the night there were two convulsions, and vomiting became frequent. Twenty-four hours after admission he died in a third convulsion.

Post-mortem Findings.—Development normal; nutrition fair; no jaundice. **Lungs.**—Bulky and emphysematous; distended with air anteriorly and cover heart; some petechial haemorrhages on posterior surface; normal appearance on section. **Heart.**—Many large subpericardial haemorrhages. **Spleen.**—Much enlarged; weight, 4½ oz. (135 g.); Malpighian bodies prominent. **Liver.**—Small; weight, 1 lb. 4½ oz. (580 g.); surface coarsely roughened; on section, coarse cirrhosis and early nodular hypertrophy. **Pancreas.**—Normal. **Kidneys.**—Cortex swollen, showing toxic changes. **Colon and other organs.**—Normal.

Histology.—**Liver.**—Portal cirrhosis of nodular type; the portal tracts show excess of fibrous tissue, and heavy infiltration by lymphocytes and a few eosinophils; the liver lobules are very irregular in size and shape; the sinusoids are full of red cells, indicating acute passive congestion. **Pancreas.**—Normal. **Kidneys.**—Marked congestion of the medulla and cortex and of glomeruli; cloudy swelling of tubules.

Comment

It may be inferred that the first attack of convulsions, which ceased spontaneously and did not recur for five months, was hypoglycaemic in origin and was precipitated by a mild infection of the upper respiratory tract.

The low level of the blood sugar was no doubt due to the liver disease (Hartmann and Jaudon, 1937), and was probably the cause of death. Hypoglycaemia has been observed in the last stages of cirrhosis (Peters and van Slyke, 1946; Halbertsma, 1932). In this case, however, the absence of ascites, jaundice, and wasting shows that the disease was hardly in the last stage. Moreover, there had been recovery from the previous attack. Peters *et al.* point out that the hypoglycaemia of liver disease characteristically appears at the end of a considerable period after meals, and that often it is preceded by alimentary hyperglycaemia.

My thanks are due to Dr. H. Oakley White for permission to publish this case; to Dr. H. H. Gleave for the post-mortem examination, results of pathological and histological investigations, and comments; and to Dr. G. Ormiston for helpful criticism and advice.

REFERENCES

- Halbertsma, T. (1932). *Z. Kinderheilk.*, 53, 295.
Hartmann, A. F., and Jaudon, J. C. (1937). *J. Pediatr.*, 11, 1.
Peters, J. P., and van Slyke, D. D. (1946). *Quantitative Clinical Chemistry*, 2nd ed., vol. 1, p. 344. Baltimore.

Medical Memoranda

Spontaneous Subarachnoid Haemorrhage in Infancy due to Angioma of the Cerebellum

The rarity of spontaneous subarachnoid haemorrhage in infancy and the nature of the pathology of this case prompt its presentation for publication.

CASE HISTORY

The patient, a male infant, was the only child of healthy parents and had been born at full term by a normal labour. The neonatal course was uneventful, and he progressed well in all respects up to the age of 3½ months. Then suddenly one afternoon, while being dressed by his mother, he had a convulsion and became semicomatose. He remained in this state, punctuated by recurring generalized fits, until his admission to hospital some hours later. There was no history of any antecedent illness, and the family history revealed nothing of note.

On admission his temperature was 104° F. (40° C.). His condition was that of a resistant stupor. The head was held turned towards the right shoulder and there was conjugate deviation of the eyes to the right. A capillary naevus 3 cm. in diameter was noticed over the left occipital region, and a small capillary naevus was present on the right upper eyelid. The fontanelle was not bulging, but it felt spongy. The head circumference was 17 in. (42.5 cm.). The pupils were of normal shape and reacted to light; no abnormality was seen in the fundi. The head deviation made the assessment of any nuchal rigidity difficult, but there was no spasticity or obvious paralysis of any of the limbs. The heart rate was markedly irregular, tachycardia and bradycardia alternating in an inconsistent manner. No other abnormality was found. Lumbar puncture produced 6 ml. of evenly blood-stained C.S.F.; the supernatant fluid was yellow.

Thiopentone per rectum and chloral hydrate were given to control the fits, and 500 mg. of ascorbic acid and 10 mg. of "synkavit" were injected intramuscularly every six hours. Oesophageal feeding was used. No significant change in his condition occurred until two days later, when oedema of the eyelids, right-sided facial spasm, and spasticity of all limbs were noted. A lumbar puncture, done four days after the onset of the illness, again showed a blood-stained C.S.F.

The next day saw considerable improvement in the clinical condition. The fits had ceased, the temperature was almost normal, and the patient was able to take feeds from a bottle. By the ninth day the palpebral oedema had subsided, the deviation of head and eyes and spasticity had relaxed, the temperature was normal, and he was taking notice and feeding eagerly.

This satisfactory state continued for three days. Then his temperature suddenly rose to 104° F. (40° C.), subsequently reaching 107° F. (41.7° C.). No abnormal physical signs were found except for a slight reddening of the left ear-drum. Microscopical examination of the urine and an x-ray film of the chest showed no abnormality. Lumbar puncture produced a clear C.S.F. with a high chloride content (860 mg. per 100 ml.).

A left myringotomy was performed, but no pus was obtained. Hyperpyrexia (107° F.; 41.7° C.) persisted until his death in coma two days later.

Post-mortem Examination.—There was some pooling of blood in the subarachnoid space in the posterior fossa, together with blood-pigment staining. A venous plexus was present over the surface of the left cerebellar hemisphere and one of the vessels had ruptured, the aperture being filled with blood clot. In the substance of the left cerebellar hemisphere there was a vascular neoplasm 3 cm. in diameter, with haemorrhage into it and into the surrounding brain tissue. The left choroid plexus was thrombosed. No tumour was found in any other part of the nervous system and no cysts or tumours in any other organ. The middle ears were healthy and no other disease process was found.

Histological Examination (Professor J. Gough).—"The sections of cerebellum show a haemangioblastoma. In parts there are cellular tissues with ill-developed blood spaces; elsewhere there are cavernous spaces. There is surrounding gliosis and evidence of old and recent haemorrhage, resulting in the formation of haemosiderin and haematoidin. Intense macrophage activity is present."

This case is interesting in that the subarachnoid bleeding occurred abruptly in an apparently healthy infant aged 3½ months, and in the association between two capillary-naevi in the head area and a venous plexus over the surface of the left cerebellar hemisphere with a haemangioblastoma in its substance. The sequence of events is thought to have been, first, rupture of one of the veins of the plexus overlying the cerebellum, producing subarachnoid haemorrhage, then an

interval of quiescence leading up to the final and fatal haemorrhage in the substance of the cerebellum containing the haemangioblastoma.

We wish to thank Mr. Melbourne Thomas for permission to publish this case; and we are indebted to Dr. D. C. Taylor and Professor J. Gough for the post-mortem examination and the histological report.

P. T. BRAY, M.B., M.R.C.P., D.C.H., B.Sc.,
Assistant Paediatrician.

W. DAVIES, M.R.C.S., L.R.C.P., D.C.H.,
Resident Medical Officer.
East Glamorgan County Hospital.

Case of Rupture of Left Lower-Lobe Bronchus with Recovery

Traumatic rupture of the bronchus is a rare condition, and is seldom diagnosed. Many of the cases are fatal, as they are associated with severe crushing injuries of the chest. Kinsella and Johnstrud (1947) reported 38 cases. In the following case the rupture occurred without any fracture of the ribs, though presumably the chest must have been compressed, possibly by the motor-cycle falling on it.

CASE HISTORY

A man aged 24 met with a motor-cycle accident in December, 1946, and sustained concussion, multiple abrasions, and a fracture of the right humerus. He was admitted to the City General Hospital, Sheffield, where he recovered fairly quickly; he was discharged towards the end of January. In February, 1947, he became ill, left lower-lobe pulmonary pneumonia being diagnosed, and was re-admitted to hospital. He recovered on sulphonamide therapy, and was discharged. One year later he again became ill, beginning with a rigor and pain in the lower part of the left side of his chest. This lasted a few days, after which he got up and went about but did not feel very well. He had aches in various parts of his body, felt feverish, and had a fairly severe headache most of the time.

He was sent to the Royal Infirmary, Sheffield, as a case of pneumonia. He once more settled down, and his temperature became normal; an x-ray film, however, revealed a collapse of the left lower lobe. I was asked to see him, and after bronchoscopy and bronchography at the City General Hospital I diagnosed a probable



rupture of the left lower-lobe bronchus. The bronchogram showed failure of the left lower lobe to fill, and the bronchoscopy failed to disclose any evidence of entry to the lower lobe. The upper-lobe bronchus was rotated downwards, and the bronchoscope could be introduced into it quite easily. Lobectomy was advised and was carried out at the City General Hospital.

At operation it was found that the left lower-lobe bronchus had been torn partly across, and had only fibrous tissue on one wall, but there was some cartilage still in continuity with the main left bronchus. There was no passage between the lower lobe and the main bronchus, and it was therefore not necessary to suture the bronchus. The man made an uninterrupted recovery and was discharged a fortnight after operation.

The left lower lobe was completely bronchiectatic and the bronchi were filled with an albumin-like substance, apparently inspissated

mucus. It coagulated with formalin. Pus was not found in any of the bronchi, and the infection seemed to have died down.

The accompanying illustration shows the appearance of the specimen.

I am indebted to my chief assistant, Miss Slessor, for performing the bronchoscopy and for the bronchogram.

A. W. FAWCETT, F.R.C.S.

REFERENCE

Kinsella, T. J., and Johnstrud, L. W. (1947) *J. thorac. Surg.*, 16, 571.

A Case of Spontaneous Rupture of the Uterus

In view of the comparative rarity of this condition the following case seems worthy of record.

CASE REPORT

A married woman was admitted at term at 2.45 a.m. She had been delivered fifteen months previously, with forceps, of a living child of 8 lb. 4 oz. (3.74 kg.). Post-natal examinations made on two occasions by a member of the consultant staff revealed no injury to the cervix or the vagina. Apart from retention of urine and slight rise of temperature, the puerperium was uneventful.

The present pregnancy had been normal. Labour had begun at 12.45 a.m. with a show and contractions which were one in three minutes on admission. On examination the presentation was L.O.A. with the head in mid-cavity. The membranes ruptured at 3.15 a.m. and the cervix was fully dilated at 3.45 a.m. At 4.50 the head was visible but was progressing very slowly, and the foetal heart became weak and irregular. Five minutes later a particularly strong contraction was felt, after which no further contractions were observed. The patient complained of a dull ache in the abdomen, but her pulse and colour remained normal. On examination the abdomen was slightly tender and a group of limbs were felt very easily; the umbilicus, but the uterus appeared of uniform thickness above and below this point. The foetal heart was inaudible.

The history suggested a ruptured uterus, but in view of the absence of shock or haemorrhage it was decided that the foetus should be delivered. Pitocin was given immediately before. Under anaesthesia the head was found in an anterior position with little caput or moulding and a foetus was delivered without difficulty, although the subpubic angle was rather narrow. It was stillborn and weighed 7 lb. 15 oz. (3.6 kg.). The cord was traced up the vagina in the peritoneal cavity through a tear in the lower segment and cervix. The uterus lay above and was well contracted. There was little haemorrhage and the patient's general condition was satisfactory.

At laparotomy a vertical tear was found in the lower segment extending through the cervix into the anterior vaginal wall about 4½ in. (11.25 cm.). This was repaired in two layers. The patient became very shocked at the end of the operation, and an intravenous transfusion of 2 pints (1.14 litres) of Group O blood was given. After a prophylactic course of sulphadiazine and penicillin an uninterrupted recovery followed.

On discharge, on the nineteenth day, the vagina and cervix were healing satisfactorily. Two months after delivery the anterior vaginal wall was almost healed and the cervix completely healed.

COMMENT

This case is one of spontaneous rupture of the uterus in the course of a rapid labour with strong contractions. Rupture occurred when the head was still descending, though more slowly than earlier in the second stage. There was no evidence of disproportion, since the head was well flexed in an occiput anterior position with little caput or moulding, the foetus being also smaller than the first baby. No sign of weakness or injury of the birth canal was found after the first confinement. The lower segment was not unduly thinned at laparotomy. The obvious explanation would appear to be that the magnitude of the contractions caused the tension in the uterus to rise at such a rate that it ruptured before the tension could be released by downward movement and delivery of the head.

The case is also remarkable for the lack of constitutional disturbance associated with a tear 4½ in. long involving the lower segment, cervix, and anterior vaginal wall, there being no clinical evidence of shock till the close of the laparotomy nearly four hours after the time of rupture. The tear was situated almost in the midline, thereby avoiding the large vessels, which may offer at least some partial explanation of these facts.

I wish to thank Mr. A. R. Lister for performing the laparotomy for advice on the conduct of the case, and for criticisms of this report.

G. B. CHAMBERLAIN, M.B., B.S., D.R.C.O.G.,
Resident Medical Officer, York Maternity Hospital.

Reviews

BIOCHEMISTRY REVIEW

Annual Review of Biochemistry. Editor, J. Murray Luck; Associate Editors, Hubert S. Loring and Gordon Mackinnay. Volume XVII. (Pp. 801. \$6.00 or £1 16s.) California: Annual Reviews, Inc. London: H. K. Lewis and Company. 1948.

The *Annual Reviews* began, with the *Annual Review of Biochemistry*, as a luxury, but have now become a necessity, even though more and more specialized volumes are published each year. The literature is growing at such a pace that though reviewers have been asked by the editors to screen the literature more and more severely, and if need be to review but a fraction of the papers published in the preceding year or biennium, recent volumes of the *Annual Review of Biochemistry* have approached or exceeded 800 pages. The decision has therefore been taken to institute a new review, and in 1950 it is proposed to start an *Annual Volume of Plant Physiology*. While such a high degree of specialization is to be regretted from some points of view, those who are working in specialized fields of research realize its inevitability.

The present volume contains reviews on the following subjects: Biological Oxidations and Reductions, by H. Weil-Malherbe. Nonoxidative Enzymes, by J. B. Sumner. Chemistry of the Carbohydrates, by D. A. Prins and R. W. Jeanloz. The Chemistry of the Immunopolysaccharides, by W. N. Haworth and M. Stacey. X-ray Crystallographic Studies of Compounds of Biochemical Interest, by D. Crowfoot. Chemistry of the Lipids, by J. Folch-Pi and W. M. Sperry. The Chemistry of the Proteins and Amino Acids, by K. O. Pedersen. Nucleo-proteins, Nucleic Acids, and Related Substances, by E. Chargaff and E. Vischer. Carbohydrate Metabolism, by B. Vennesland. Lipid Metabolism, by I. L. Chaikoff and C. Eotenman. The Metabolism of Proteins and Amino Acids, by J. B. Allison. The Metabolism of Drugs and Toxic Substances, by O. Bodansky. Clinical Applications of Biochemistry, by L. J. Zeldis and S. C. Madden. Biochemistry of the Hormones, by T. F. Gallagher. The Vitamins, by B. L. Oser. Clinical Aspects of Vitamins, by T. D. Spies. The Biochemistry of Carcinogenesis, by H. P. Rusch and G. A. LePage. Biochemistry of the Natural Pigments, by E. Lederer. The Terpenes (in relation to the Biology of Genus *Pinus*), by N. T. Mirov. The Alkaloids, by R. F. Dawson. Photosynthesis, by E. C. Wassink. Mineral Nutrition of Plants, by H. Burström. Plant Hormones, by P. W. Zimmerman and A. E. Hitchcock. Bacterial Metabolism, by I. C. Gunsalus. The Chemistry of Penicillin, by E. Chain. Ruminant Digestion, by S. R. Elsdon and A. T. Phillipson. Physiological Aspects of Genetics, by G. W. Beadle.

Many of these follow the usual lines, although the authors treat their subjects very differently. In the review on clinical applications of biochemistry Zeldis and Madden discuss serum potassium phosphatases, blood iodine, electrophoresis, liver function studies, and porphyrins. The article on the chemistry of penicillin by E. Chain is of exceptional clarity and will interest the chemistry-minded medical man who wishes to have some idea of this rather complicated matter. Perusal of this article will yield ample understanding of the delays there have been in providing a satisfactory synthesis of the naturally occurring penicillins. Among reviews of topical importance that on ruminant digestion by Elsdon and Phillipson brings together much material that has been developed by the late Sir Joseph Barcroft and his group at Cambridge in relation to the earlier and contemporary observations. This is a most interesting field of study which, although it may have little direct application to human digestion, may nevertheless be of growing importance in the "Malthusian" world which we now appear to inhabit. The article on the physiological aspects of genetics by G. W. Beadle is reprinted from Vol. X, 1948, of the *Annual Review of Physiology* and deals with what may be regarded as the experimental descendant, particularly in regard to micro-organisms, of the work on naturally occurring "inborn errors of metabolism" pursued by Garrod and others many years ago.

The biochemist cannot afford to be without the *Annual Reviews of Biochemistry*, and specialists in other fields of

activity find the yearly volume an invaluable reference book. The non-specialist will find much of interest to read within the 800 or so pages of the current volume, and it is to be hoped that he will close the book with the impression that biochemistry is perhaps not such a difficult and complicated subject as is sometimes believed.

F. G. YOUNG.

TUBERCULOSIS DISCUSSED

Tuberculosis. A Discussion of Phthisiogenesis, Immunology, Pathologic Physiology, Diagnosis, and Treatment. By Francis Marion Pottenger, A.M., M.D., LL.D., F.A.C.P. (Pp. 597; illustrated. £3.) London: Henry Kimpton. 1948.

The author of this long and diffuse book presents in discursive style his views on the "phthisiogenesis, immunology, pathologic physiology, diagnosis, and treatment" of tuberculosis, with especial reference to pulmonary tuberculosis. Dr. Pottenger has strong views on many controversial topics and puts them forcefully. He regards primary infection as valuable in creating specific protection, and accordingly he is a keen advocate of B.C.G. vaccination. His approach to therapy is enthusiastic, and his optimism must have been a valuable therapeutic aid for his patients. He is convinced of the continued value of physical examination of the chest in the diagnosis of pulmonary tuberculosis, but emphasizes that for the non-specialist the "clinical history, examination of the sputum for tubercle bacilli, and the x ray" are the important factors. He devotes a chapter to the treatment of pulmonary tuberculosis by tuberculin, though he admits that he considers the evidence for its value in pulmonary tuberculosis not so impressive as in some other forms of the disease, that its value cannot be proved by controls, and that he cannot claim that the beneficial effects he has observed are due to the tuberculin, since he applies "rest, open air, nutritious food, sunlight, pneumothorax, optimism, and other factors" in addition.

These remarks may serve to indicate the very personal views which are expressed in the book. Based as they are on a lifetime of experience and study of tuberculosis, they will ensure that the book can be dipped into with interest by specialists. It may be doubted, however, whether the likelihood of obtaining from it a reliable background of accepted modern views is sufficient to justify the student's perusing its approximately 600,000 words.

J. G. SCADDING.

D.D.T. FOR MOSQUITOES

Malaria, Filariasis, and Yellow Fever in British Guiana. By George Giglioli, M.D.Sc., M.R.C.P., D.T.M.&H.Eng. (Pp. 226; illustrated. No price.) British Guiana: Mosquito Control Service Medical Department. 1948.

The subtitle of *Malaria, Filariasis and Yellow Fever in British Guiana* is "Control by residual D.D.T. methods with special reference to the progress made in eradicating *A. darlingi* and *Aedes aegypti* from the settled coastlands." The reason why three major diseases are discussed together is that all are conveyed by mosquitoes and therefore all are now open to successful attack through D.D.T. Further, since the possibility of attacking anopheline mosquitoes with a residual insecticide in the home rather than through antilarval measures in the field has become one of the major measures in anti-malaria work, it has increasingly meant that measures against malaria can be combined with those against all insect-borne disease transmitted in the home. The area considered is largely given over to sugar-cane cultivation, and the conditions, as is evident from the photographs accompanying the work, would clearly be impossible to deal with by drainage or the usual type of antilarval operations, since for cultivation purposes the land is largely under water. Hence D.D.T. has been used, causing drastic reduction in the total domestic mosquito population, without any modification in the hydrological conditions, which have remained what they always were.

The operations were carried out by the Mosquito Control Service working in collaboration with staff from the British Guiana Sugar Producers' Association. The materials used, spraying equipment, dosage, and other technique, as also the organization, costs, and results, are all clearly described.

Malaria was the chief disease, being highly endemic, and it therefore received first attention. But filariasis was also important and the appearance of yellow fever always a possibility, so that operations included action against *C. fatigans* and *Aedes aegypti*. It is interesting to note that the use of D.D.T. is far from being a purely routine matter with no call on the results of research, and the author expressly notes, if success is to be attained, the absolute necessity of close research into the habits of the adult, just as antilarval operations require research into the selective breeding habits of the different species.

S. R. CHRISTOPHERS.

PREFERENCE JUDGMENTS

Experimentelle Trichdiagnostik (Experimental Diagnosis of Impulsive Disorders). By L. Szondi. (Pp. 308. 68 Swiss francs.) Berne: Medizinischer Verlag Hans Huber.

The author of this somewhat formidable work is concerned to introduce a new psychodiagnostic method, obviously inspired by the Rorschach technique. The material consists of six sets of eight full-face photographs of various types of psychopathic individual, and is provided with the volume. Each set is presented in turn to the subject, who is required to indicate which of the individuals portrayed he finds most attractive and which most distasteful. The preference judgments thus obtained are recorded as a profile from which, it is claimed, certain conclusions of psychodiagnostic import can be drawn. The bulk of the volume consists in a description of the profiles made by a variety of psychotic and psychoneurotic individuals and an attempt to interpret them in the light of the author's reading of contemporary psychopathology.

It appears rather unlikely that Dr. Szondi's method will commend itself to clinical psychologists in this country. Although the analysis of preference judgments is a matter of some psychological interest, especially in so far as it may furnish a clue to the operation of deep-seated unconscious tendencies, the existing findings are too slight to justify the elaborate interpretations which Dr. Szondi puts on them. His test photographs, too, are so antiquated and repellent as to deter all but the most hardy and humourless of psychometrists. From the theoretical standpoint, the book appears to contribute little that is new to our understanding of personality, normal or deranged. It is turgid, verbose, and representative of the worst aspects of neo-Freudian psychopathology. One may fervently hope that the "Szondi test" will not become the focus of yet another esoteric cult in the psychological fraternity.

O. L. ZANGWILL.

HORMONES AND BEHAVIOUR

Hormones and Behaviour. A Survey of Interrelationships between Endocrine Secretions and Patterns of Overt Response. By Frank A. Beach. Foreword by Earl T. Engle. (Pp. 368. \$6.50.) New York: Paul B. Hoeber, Inc. London: Hamish Hamilton. 1948.

The author of this painstaking book gathers into one volume an almost staggering amount of information about the effects of the endocrine glands on the behaviour of fishes, amphibians, reptiles, birds, the lower mammals, and the primates, including man. If the last receives less attention than he himself would consider to be his fair share, that is his own fault in failing to control scientifically his experiments on himself and in degrading too often the proper study recommended by Pope into an improper study. Courtship, mating, bisexuality, oviposition, parturition, parental behaviour, migration, aggression, territorial defence, the acquisition of learning, metamorphosis, metabolism, are all fully considered—considered but not discussed, for the weakness of the book lies in its paucity of critical discussion of the results reported.

But if we are inclined to condemn this book as a scissors-and-paste compilation we have at once the author's reply: "Most books, it seems to me, develop in one of two ways . . . the second type . . . has a well-defined function to fulfil. Its role is not the exposition of a thesis, but the supplying of a body of facts and references. It is not a living organism but an inanimate tool and as a tool it may play a useful and important part." Not "may"—"will."

RAYMOND GREENE.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Essen und Wissen. By H. Bircher-Rey. 2nd ed. (Pp. 203. No price.) Zurich: Rascher. 1948.

A book on dietetics intended for laymen as well as medical men.

Histopathology of the Peripheral and Central Nervous Systems. By G. B. Hlassin, M.D. 3rd ed. revised. (Pp. 612. \$8.50.) Chicago: The Author. 1948.

A textbook with illustrations and extensive bibliographies.

Subacute Bacterial Endocarditis. By E. Libman, M.D., and C. K. Friedberg, M.D. 2nd ed. (Pp. 113. 21s.) New York and London: Geoffrey Cumberlege. 1948.

A review in the light of recent knowledge; reprinted from the *Oxford Loose-Leaf Medicine*.

Change of Life in Women. By Medica. (Pp. 76. 5s.) London: Deisle, Ltd. 1948.

A simply written account for women by a medical practitioner.

A Surgeon's Domain. By B. M. Bernheim, M.D. (Pp. 217. 9s. 6d.) Kingswood, Surrey: The World's Work (1913), Ltd. 1949. Reminiscences and opinions of the Associate Professor of Surgery at Johns Hopkins Medical School.

Zinc Ions in Ear, Nose, and Throat Work. By A. R. Friel, M.D., F.R.C.S.I. (Pp. 59. 5s. 6d.) Bristol: John Wright. London: Simpkin Marshall. 1948.

An account of zinc electrolysis and ionization.

Children in Need. By M. Schmideberg, M.D. (Pp. 196. 12s. 6d.) London: George Allen and Unwin. 1948.

The author describes psychiatric and social methods of treating difficult children and their parents.

The Structure of Medicine and its Place Among the Sciences. By F. M. R. Walshe, M.D., D.Sc., F.R.C.P., F.R.S. (Pp. 26. 1s. 6d.) Edinburgh: E. and S. Livingstone. 1948.

The 1948 Harveian Oration.

Handbook of Surgery. By E. C. Mekié, M.B., Ch.B., F.R.C.S.Ed., F.I.C.S., and I. Mackenzie, M.B.E., M.B., Ch.B., F.R.C.S.Ed. 2nd ed. (Pp. 764. 20s.) Edinburgh: E. and S. Livingstone. 1949.

Intended particularly for medical students; the text has been extensively revised for this edition.

The Scotsman's Food. By A. H. Kitchin, M.B., and R. Passmore, M.A., D.M., F.R.S.Ed. (Pp. 86. 3s. 6d.) Edinburgh: E. and S. Livingstone. 1949.

A historical introduction to modern food administration.

Psychological Medicine. By D. Curran, M.B., F.R.C.P., D.P.M.; and the late E. Guttman, M.D., M.R.C.P. 3rd ed. (Pp. 249. 12s. 6d.) Edinburgh: E. and S. Livingstone. 1949.

A practical guide for the non-specialist.

Introductory Botany. By A. Nelson, B.Sc., Ph.D., D.Sc. (Pp. 479. 22s. 6d.) Edinburgh: E. and S. Livingstone. 1949.

A textbook for medical students.

The Story of Human Birth. By A. F. Guttmacher, M.D. (Pp. 201. 7s. 6d.) London: Sigma Books. 1949.

An account for the layman.

Bacterial Metabolism. By M. Stephenson, Sc.D., F.R.S. 3rd ed. (Pp. 398. 30s.) London: Longmans, Green and Co. 1949.

A description of the essential chemical processes accompanying the life of bacteria. (Dr. Stephenson died in December, 1948.)

Neurological Anatomy in Relation to Clinical Medicine. By A. Brodal. (Pp. 496. 42s.) Oxford: Geoffrey Cumberlege. 1948.

A textbook for clinical neurologists by the Professor of Anatomy, Oslo University.

A Handbook for the Assistant Nurse. By M. E. Swire, S.R.N., S.C.M. (Pp. 308. 10s. 6d.) London: Baillière, Tindall and Cox. 1949.

A textbook intended to cover the syllabus for assistant nurses.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY MARCH 19 1949

THE KING'S HEALTH

Over the last four months occasional bulletins from his medical advisers have kept the public informed of the state of the King's health. The medical profession in Britain shared to the full the anxiety felt by all his subjects when the first bulletin was issued in November and the relief that followed the better news contained in later bulletins. The medical profession has been aware of the kind of problem that would be presented to the King's advisers, and the bulletin issued on March 8 did not, therefore, come as a surprise. This bulletin stated that the King's general health continued to be excellent. It went on to describe how the circulation had been satisfactorily restored in the left leg but was still obstructed in the right leg. The King accepted the advice that lumbar sympathectomy should be undertaken with a view to improving the blood supply to the right foot, and the operation was performed on March 12.

The medical profession will join with the rest of the country in heartfelt sympathy for the King and a loyal wish that the operation will bring his Majesty relief and comfort.

SYMPATHECTOMY IN PERIPHERAL VASCULAR DISEASE

Knowledge of the sympathetic nervous system has been acquired slowly. Galen described the sympathetic chains arising within the skull, but the first correct anatomical description was published by Petit only in 1727. There were gradual additions to anatomical knowledge over the next two centuries, but there was no true understanding of the functions of the autonomic nervous system until the brilliant researches of Gaskell and Langley.¹ The first surgical attack on the sympathetic system accompanied the publication of these physiological investigations, but the early operations were ill-conceived. The earliest operations were performed in cases of epilepsy in 1889 by Alexander.² Ten years later Jaboulay treated patients with toxic goitre by cervical sympathectomy, but his results, like Alexander's, were poor, and interest in this branch of surgery waned. The modern application of sympathetic surgery to the treatment of peripheral vascular disease may be said to have started with the periarterial sympathectomies of Leriche,³ but the results were evanescent and uncertain. The trial of ramisection and ganglionectomy in the treatment of peripheral vasospastic disorders followed the discoveries made accidentally by Hunter⁴ and Royle,⁵ who were treating cases of paralysis. Since then a great deal of work has been done on this subject, but even now we remain in ignorance of many

apparently simple and straightforward matters. Sympathectomy is now widely employed in the treatment of peripheral vascular disease, and it may be useful to review the present position.

Sympathectomy remains the most satisfactory method of treatment in Raynaud's disease proper, although it is indicated only in a minority of cases. Before advising operation the diagnosis must be established with certainty, and the degree of disability and the severity of the disease in the individual case must be carefully considered. Operative treatment is especially indicated when increasingly severe attacks are occurring with each fresh spell of cold weather; in moderately advanced cases without ulceration or scleroderma; and in late cases with painful superficial ulcers. Recurrence is more likely in the latter cases, and they may then develop scleroderma, which, in the absence of sweating following sympathectomy, may sorely handicap the patient. In the upper extremity sympathectomy gives complete and permanent relief in rather more than 10% of cases; incomplete relief in some 50%; and no relief or but transient relief in the remainder. The results obtained seem to depend on the completeness of the operation and the stage of the disease. Failure has been ascribed to incomplete operation, anatomical variations, regeneration of nerve fibres, and the sensitization to adrenaline. There has been a disinclination to accept the possibility of nerve regeneration, although it has been shown that this is the most likely factor.^{6,7} The new pathways so formed are probably functionally inferior to the original ones.⁷ The much more satisfactory results obtained in arterial disease in the lower limbs, the operation being preganglionic, led to the abandonment of the old anterior cervico-thoracic sympathectomy for arterial disease in the upper limbs. This operation was supplanted by what was believed to be an essentially preganglionic operation performed through a posterior approach, and early reports suggested that this procedure was an improvement on the former operation. However, more recent work has revealed a considerable gap in our detailed knowledge of the exact ganglia in which the relay occurs of those sympathetic fibres destined for the arm. The expected advantages of the new operation have not been entirely realized, and doubt has arisen about whether these various operations are pre- or post-ganglionic. Furthermore it would seem that it is possible to perform an equally effective though slightly less extensive operation through the more simple anterior approach.

Apart from Raynaud's disease sympathectomy is also of value in the treatment of certain other vasospastic conditions. In the few cases of acrocyanosis which warrant sympathectomy the results are usually better than in Raynaud's disease. The cold and paralysed limb which may result from anterior poliomyelitis is greatly benefited by sympathectomy. In cases of post-traumatic (Sudeck's) osteoporosis associated with a Raynaud-like phenomenon

¹ *The Treatment of Epilepsy*, 1889. Edinburgh: Y. D. Pentland.

² *Lyon chir.*, 1913, 10, 378.

³ *Surg. Gynec. Obstet.*, 1924, 39, 721.

⁴ *Med. J. Aust.*, 1924, 1, 77.

⁵ Haxton, H. A. *Brit. J. Surg.*, 1947, 35, 69.

⁶ Simmons, H. T., and Sheehan, D., *ibid.*, 1939, 27, 234.

⁷ Barrett, H., and Hamilton, G. T. C., *Lancet*, 1948, 1, 441.

⁸ *St. Bart's Hosp. Reports*, 1938, 71, 151.

⁹ *Lancet*, 1948, 2, 717.

¹⁰ *Proc. R. Soc. Med.*, 1946, 39, 458.

the operation is absolutely contraindicated. There is also little evidence to support its application to the treatment of chronic ulcers of the leg or of venous insufficiency following thrombophlebitis.

The value of sympathectomy in the treatment of organic arterial disease depends on a number of factors. The majority of arteriosclerotic subjects are old, their expectation of life is limited, and the risks of operation are greater. Even so lumbar ganglionectomy may be of distinct value in some of these cases. The operation is best reserved for patients under 60 and for cases showing good response to vasomotor tests; and there should be no ulceration or gangrene and an apparently sound myocardium. Lumbar ganglionectomy relieves rest pain, alleviates claudication in some cases, and it improves the blood supply to the muscles and to the toes. The abolition of sweating is also of value in preventing excessive cooling of the limb. Although as a general rule the operation will prove of less value in a patient with an absent popliteal pulse it is impossible to be dogmatic about this, and successes have been recorded in some of the most unpromising cases, the prognosis being better in those cases of popliteal block with a warm foot. It would seem likely that the legs are better able to stand up to minor trauma and the insult of further arterial occlusion after sympathectomy, and the surgeon should not be too readily influenced by the clinical state of the pulses, basing his assessment rather on the results of vasomotor tests.

Lumbar ganglionectomy is of value in many cases of thromboangiitis obliterans, although it would not seem to have any significant effect upon the general course of the disease. The risks of operation are slight in the younger age groups affected by this disease, and it is worth doing almost anything which will improve the circulation. The operation is contraindicated, however, in cases with severe arterial insufficiency and gangrene of the digits. The best results are seen in those cases with mild rest pain, minimal ulceration, and a slowly progressive disease. In both arteriosclerosis and thromboangiitis obliterans it is clear that success is dependent on the number of arteries capable of undergoing dilatation and unaffected by gross disease. Total blockage of the popliteal artery will not prevent the recovery of reasonable function so long as there is a good collateral circulation and the progression of the arterial changes is slow. The prognosis will also be influenced by the ability of the patient to live within the limits imposed by his disease. In thromboangiitis obliterans Boyd⁸ differentiated between proximal and distal types of disease and suggested that the prognosis is better in the latter cases. This has been confirmed in the follow-up of a recent series published by Kinmonth⁹; it should be stressed, however, that such subdivision of cases may sometimes be fallacious, because a number of the so-called "proximal" cases may also have some undetected damage to the distal vessels.

Finally, it is necessary to consider the application of sympathectomy to the treatment of acute arterial conditions. In wounds of the peripheral arteries it was suggested that a suitable sympathectomy performed at the time of the primary operation might open up the collateral circulation and obviate reflex vasospasm. This is an appealing argument which has been strongly supported by

Boyd,¹⁰ but it has not found general favour; and it would seem easier to treat such cases by paravertebral sympathetic block should sympathetic interruption be considered desirable. Similar arguments apply in the case of ligation of the major arteries, where the procedure is of possible value, and also in arterial embolism, although in these cases the condition of the patient would usually suggest paravertebral block in preference to sympathectomy.

REMUNERATION OF SPECIALISTS

The Ministry of Health has at last issued its proposed terms and conditions of service for consultants and specialists in the National Health Service. The proposals have been drawn up after preliminary discussions with the Joint Committee of Consultants and Specialists, but do not represent final agreement. They are published in this week's *Supplement* for the information of the profession, and after the various professional bodies have examined the proposals the Joint Committee will put its considered views before the Ministry.

The report of the Spens Committee on the remuneration of consultants and specialists was published nearly a year ago, and since July, 1948, consultants and specialists have been anxiously awaiting the Ministry's interpretation of this. The task of the Spens Committee was to determine the range of total professional remuneration which should be applied to consultants and specialists in any publicly organized hospital and specialist service. The Committee, in determining this, had to take into account financial expectations in the past, and also "the desirability of maintaining the proper social and economic status of specialist practice and its power to attract a suitable type of recruit, having regard to other forms of medical practice." The recommendations of the Spens Committee were made in terms of the 1939 value of money, and the Report emphasizes as strongly as possible that adjustments necessary "should have direct regard not only to estimates of the change in the value of money but to the increases which have in fact taken place since 1939 in incomes both in the medical and in other professions." In this connexion we may note the Chorley Committee's proposals for remunerating higher Civil Servants, which have been accepted by the Government. The salaries of permanent secretaries and deputy secretaries in Government Departments have been increased by 50% above the salaries of these officers in 1939. It is not unfair to assume from this that the Government regards 50% as a reasonable betterment factor.

For staff specialists the Spens Report recommended that incomes should range from £1,500 to £5,000 a year. The upper limit of this range was to be secured for 4% of consultants and specialists by the addition of a special award of £2,500. Staff specialists appointed at the age of 32 were to receive a starting salary (that is, for a whole-time appointment) of £1,500 a year, rising by annual increments over eight years until at the age of 40 a salary of £2,500 a year would be reached. After the age of 40 consultants and specialists would be eligible for the special awards. In addition to the award for the 4% there were to be awards of £1,500 for 10% and £500 for 20% of consultants and

specialists. If we compare with the Spens recommendations the Ministry's present proposals, which are to be referred to the various bodies and committees which represent consultants and specialists, we see that the basic salary range for consultants and specialists is now £1,700 at the age of 32, rising to £2,750 a year at the age of 40. The latter figure in this basic salary range is the maximum accepted by Sir Stafford Cripps for full-time clinical professors.¹ The increase over the Spens figure is 13% at the start and 10% at the finish. If allowance is made for the 8% which is the contribution of the Government to superannuation it is seen that a betterment factor of 22% is applied to the starting salary, and of 19% to the salary reached at the age of 40. The special awards remain as they are. On the Ministry's present proposals 4% of all consultants and specialists, on the assumption of whole-time employment, would receive an annual income of £5,250. It is as well to recall that these awards are open also to those who serve part-time in the consultant and specialist service, adjusted in proportion to the income they earn as part-time workers. Whole-time clinical professors, lecturers, and readers are to be paid the salaries recommended by the University Grants Committee to the Chancellor of the Exchequer; in addition they will get appropriate expenses for hospital work and also be eligible for the distinction awards. Those who hold part-time clinical teaching posts will receive remuneration in recognition of their teaching duties. As the cost of living for the middle and professional classes has risen by 85% since 1939 consultants and specialists are as unlikely as general practitioners to be content with a betterment factor which is 22% or lower at different points in the range of incomes recommended. Consultants and general practitioners have made joint representation on the betterment factor, and the B.M.A. has put to the Ministry of Health a request for a factor of 70% to be applied to the gross remuneration of general practitioners. Pending the results of the negotiations on this the medical profession will not fail to keep in mind the increase of the salaries of senior Civil Servants by 50% over what they received in 1939.

Although the Spens Committee was appointed to consider the remuneration of consultants and specialists it felt that it could not ignore that of potential specialists. Grouping these into three grades of medical practitioners whose training extended approximately from one to seven years after qualification, the Spens Report recommended a range of income for trainee specialists of from £600 to £1,200 a year in 1939 values of money. The Ministry of Health's proposed range is from £670 to £1,300 a year. Within this range the betterment factor varies between 20% and 17%. It is true that these proposals cannot be exactly compared with those, for example, of the Chorley Committee. But on the basis of this, and also on that of the Ministry's betterment factor of 34% for the general practitioners' gross remuneration in 1946 when the cost of living was up by 45%, now that the cost of living is increased by 85% for professional classes the case for a betterment factor of between 50% to 60% is indisputable on the Government's own reasoning.

The Ministry of Health has put forward new proposals for the remuneration of junior house officers, ranging from

£350 to £450 a year for non-residential posts. For junior hospital medical officers who have held house appointments but are not trainee specialists a salary range of £700 to £1,000 a year (non-residential) is recommended; while for senior hospital medical officers undertaking clinical duties but "not of staff specialist status" the non-residential rate of payment is from £1,300 to £1,750 a year. Medical and deputy medical superintendents in general will be paid for clinical work according to their grading as specialists or senior hospital medical officers, and the Ministry's objective is to reduce to a minimum the time spent by medical staff on administrative duties.

The Ministry of Health document contains a number of detailed proposals for those working part-time in the Service and for domiciliary visits. On the basis of 11 half-days the method of assessing the remuneration is the same as that recommended in the Spens Report. In estimation of the number of half-days the time spent on travelling as consultant adviser to the Board and on visits to cottage hospitals will be included, but not, it may be noted, the time occupied in attending committees—already a heavy burden on those connected with hospitals. Some light relief is provided by the statement that part-time consultants and specialists will not be required to "clock in." Specialists who have no contract with the hospital board but may be called in because of their "unusual experience or interest" will be paid at the rate of 5 guineas a visit—"including any operative work, etc." No doubt those representing consultants will be at pains to define "any operative work" and also the all-embracing "etc." It would be rash to assume that a specialist with "unusual experience" would be eager to undertake "any operative work," not to mention "etc.," for a fee of 5 guineas. The fee for a consultant on a domiciliary visit is 4 guineas, with an additional 2 guineas for such procedures as the use of a portable x-ray apparatus, and 4 guineas for an obstetric operation. The maximum remuneration to be allowed for domiciliary visits is 200 guineas in any quarter or 800 guineas in any year. It is possible that this restriction is intended to prevent the possible abuse of the Service by patients who would demand a specialist's opinion on the slightest provocation; nevertheless, in some areas such a restriction might be to the detriment of the community.

There is space here to touch only on a few of the many other points in the Ministry of Health's proposals. It may be noted that in his contract of service a specialist will be given no fixed period of tenure. There are detailed regulations on such matters as holidays and sick leave; for example, no allowance will be paid to anyone who suffers an accident from "active participation in sport as a profession." This encouragement to the amateur in sport is to be welcomed; but apparently if the amateur who is injured can be accused of "contributory negligence" he will not receive financial sympathy. What group of arbiters is to decide that a man who breaks a bone playing rugby has done this through negligence? If a specialist in the Service is off duty because of ill-health he may be required to be examined by a doctor nominated by the

¹ *British Medical Journal*, 1949, 1, 403.

employing authority. Apparently free choice of doctor is to be denied to a specialist in these circumstances—a curious paradox. Again, an employing authority may take action on receipt of a report that the sick specialist "has been guilty of conduct prejudicial to his recovery." These kinds of proposals seem, in effect, to treat specialists and consultants as if they were irresponsible school-boys, and are informed with that lack of imagination which kindly critics see as one of the attributes of a Civil Servant. When it comes to expenses, for example, we note excessive caution in the requirement that a specialist will be able to recover car-parking fees only on production of a voucher. The mileage allowance is not likely to be accepted without considerable protest.

It is unfortunate that there has been such delay in the issue of the Ministry of Health's proposals. They will have to be closely scrutinized by the various bodies concerned; the views of these bodies will have to be collated and classified by the Joint Committee, whose task it will then be to thrash the matter out on behalf of consultants and specialists with the Ministry of Health. Just how long this will take it is not possible to say, but before everything has been settled consultants and specialists will have spent nearly a year in the Service without knowing exactly what their terms and conditions of service are to be. Apart from the many questions of detail which will have to be looked into closely the one matter of overriding importance is the size of the betterment factor. Government, Parliament, and people have demanded the National Health Service, and, having succeeded in obtaining it, they cannot escape their obligation to pay adequately the men and women who with some reluctance have agreed to work in it.

PARALYTIC POLIOMYELITIS

During the epidemic of poliomyelitis which occurred in this country in 1947 an effort was made to reassure the public by pointing out that few patients developed severe paralysis. McAlpine and his colleagues¹ found that only 26 out of 60 proved cases had paralysis of any kind; of these not more than one-third could be regarded as sufficiently severe for the residual paralysis to affect the patients' future. Although these figures have been widely quoted the fear of the disease is still out of proportion to its social significance. A large epidemic having now occurred, it

comes probable that as in the U.S.A. and Australia there will be recurring epidemics of poliomyelitis in this country, and the effect of reassuring statements is likely to decrease still further. So far no prophylaxis for this disease is available, and the principal measures that can be taken to prevent its spread are early diagnosis and subsequent isolation of all cases. A watch over all contacts for the development of any symptoms is an obvious corollary, but this may be impossible with the present number of doctors. For isolation to be really effective diagnosis must be made in the prodromal or pre-paralytic stage.

In a paper appearing elsewhere in this issue Dr. Ritchie Russell surveys the natural history of paralytic poliomyelitis and analyses the findings in 100 patients. These were all old enough to be questioned in detail—only eight being under 11 years of age. In this way he was able accurately to assess the day-to-day development. Like previous observers Dr. Ritchie Russell describes three stages of the disease—the prodromal, the pre-paralytic, and the paralytic. He found symptoms of the prodromal stage in fewer than half the cases, whereas McAlpine found such symptoms in about 70% of his patients. In any event the signs of a "cold," such as nasal catarrh, sore throat, mild pyrexia, and malaise, are so unspecific that it is questionable whether the diagnosis can be more than guessed at at this time. During an epidemic it is much easier to suspect the condition, but at such a time the diagnosis is made too frequently. Kelleher² found that in only half of 170 cases admitted as poliomyelitis could the diagnosis be confirmed, and McAlpine reported 44 cases out of 104 admissions. This erring on the safe side is to be encouraged so long as hospital beds are available.

The pre-paralytic stage must be regarded as the acute and critical period of the illness. Dr. W. Ritchie Russell argues that at this time the virus is multiplying in the central nervous system and the fate of spinal cells is being decided. The characteristic spinal and limb pains, fever, and malaise now develop. Unfortunately the symptoms and signs may be very slight, and the more robust the patient the easier it is for minor manifestations to be disregarded. Clinicians have already drawn attention to two points: (1) that pains are often greatest in the region which will be most severely paralysed; and (2) that great physical activity in the pre-paralytic stage of the illness is associated with severe paralysis. Dr. Ritchie Russell is now able to confirm these clinical impressions by statistical analysis. He goes even further and produces case records which clearly suggest that physical activity might bring on the acute pre-paralytic phase in a patient who would otherwise have an abortive attack with no more than prodromal symptoms or perhaps no noticeable symptoms at all. In the pre-paralytic stage activity will increase not only the severity but also the extent of the paralysis. It is clear, therefore, that the patients most likely to be affected are those who struggle courageously but mistakenly during that early phase of their illness. These, as Dr. Ritchie Russell points out, are frequently those with the greatest powers of physical and mental endurance or, like the mother of young children, those who are most anxious not to be ill.

From this account it follows that the physiological state of the neurone is a most important factor in deciding its resistance to the virus. The histo-pathological studies of Scheinker³ suggest how this may occur. He studied the whole nervous system in six cases of poliomyelitis and found a widespread inflammation of the tissues associated with localized parenchymatous destruction of motor elements. The latter is the well-recognized and frequently described lesion of the disease. He then showed that these two responses are independent—the former being a response to invasion, the latter demonstrating the specific lethal effect of the virus on neurones. Once the nervous system is invaded it is questionable whether anything can

¹ *British Medical Journal* 1947 2, 1019.

² *Proc. R. Soc. Med.*, 1947, 40, 931.

³ *Arch. Neurol. Psychiat.*, Chicago, 1947, 57, 565.

be done to modify the general response: this must depend on the strain of the infecting virus, the size of the infecting dose, and the presence of any immunity acquired in previous subclinical infections. The phase of cell damage, however, can perhaps be modified by altering the physiological state in and around the neurone. Fatigue, cold, and trauma in the tissues supplied by the motor cells appear to be the most important circumstances which can be controlled; their presence appears to increase the paralysis and influences perhaps how far it spreads. It is therefore essential that complete rest should be enforced throughout the disease, and particularly in the early stages. Any attempt to "work off" the symptoms is condemned, and all school doctors, matrons, and camp medical officers must be made aware of this. Further, unnecessary trauma, such as injections and inoculations that are not vital, should be avoided.

When an epidemic occurs it is probable that hospital beds for acute cases can always be mobilized in sufficient numbers. Some patients are bound to develop severe paralysis even when the greatest care is taken, and difficulty arises when the time comes for them to be moved from the hospitals to which they were admitted. The regional hospital boards, when making their plans for the rehabilitation of patients suffering from prolonged illness, should make early and adequate provision for these patients. They require careful handling at all stages of convalescence and later industrial retraining under medical supervision.

PSYCHIATRIC INDICATIONS FOR ABORTION

Changes in the law relating to abortion were introduced in the new Swiss penal code which came into force in 1942. Article 120 permits abortion only in those cases where danger to the mother's life or great danger of suffering and lasting impairment of her health cannot otherwise be avoided. Thus the admissible psychiatric indications for abortion come within a compass closely corresponding to what holds in Britain. Abortion on eugenic, racial, or criminal grounds is expressly forbidden in the Swiss code, and Professor Glaus, of Zurich, who has recently reviewed the implications of the new law, thinks that many physicians will regret that the admissibility of an abortion is entirely unaffected by whether or not a healthy child is to be expected or whether or not the pregnancy is the result of rape or incest. In this country the practice is to take a slightly wider view than that now permitted by Swiss law: though there is no acceptable eugenic indication for abortion, yet if a pregnancy were the result of rape the fact could be cited in support of a view, reached on other grounds, that the mother's mental health would probably be damaged by allowing the pregnancy to continue.

Social grounds for abortion have never been admitted in this country, but before the introduction of the new penal code for the whole of Switzerland it was permissible in the Canton of Zurich to take such grounds into account. Glaus suggests that now these indications are excluded social agencies ought to be able to help the mother to such an extent that abortion should not have to be considered, and he believes that Switzerland has not far to go to reach such an ideal state. This would also seem to be true of this country now that family allowances, maternity benefit, and a comprehensive health service are all available.

Nevertheless the over-prolific family will continue to suffer hardship, and for this the Swiss provide the remedy of sterilization; this operation is as yet carried out only in very exceptional cases in Britain, nearly always for a purely medical indication.

In his discussion of admissible psychiatric grounds for abortion Glaus makes a number of comments which are of interest to doctors in this country. Danger to life will arise almost only through the risk of suicide, and this danger will be better overcome as a rule by admission to hospital than by interruption of pregnancy. In Britain admission to hospital is not always so easily arranged, and some patients who have suicidal tendencies but yet are hardly certifiable because of a lack of other evidence of mental disorder may not accept voluntary treatment. In such cases it is often difficult to decide whether abortion is justifiable. Danger to health of the most definite kind arises most commonly in psychotic patients. Nevertheless Glaus believes that adequate grounds for abortion will be very rare in manic-depressive patients, and will be present in schizophrenics only when a previous pregnancy has released a psychotic episode or where an existing schizophrenia is, under direct observation, being worsened by the pregnancy. In epilepsy the question of abortion will be decided by whether or not the fits become more frequent or severe during the pregnancy. Affective psychoses released by pregnancy in mentally retarded and defective patients not infrequently have a very doubtful prognosis and are an adequate indication for abortion. In neurotic reactions arising from the conflict situation Glaus believes that abortion should be considered only in exceptionally serious cases, where social measures are likely to be ineffective and where the personality is of a kind particularly sensitive to psychological stresses and with small power of resistance or adaptation. Few patients would fall into this class. Emotionally distressed women who are refused abortion may later recover completely.

The Swiss law states in definite terms that there must be great danger of severe and lasting impairment of health. In Britain we have not the guidance of a precisely formulated law, clinical practice being governed to a considerable extent by precedent and by public opinion on what is ethical. At present most psychiatrists would admit as adequate reason for abortion a serious risk of damage to maternal health, even if that impairment of health would not be irremediable. This implies a considerably greater latitude than is given in Switzerland, where some may consider the law already allows sufficient scope. It may be that a somewhat wider use of sterilization in women who are unfitted to bear and to rear children would reduce the number of occasions when difficult decisions have to be taken about the therapeutic termination of pregnancy.

AUSTRALIA'S DECLINING BIRTH RATE

The recent emigration of a large number of Britons to Australia reminds us that with a population of little over seven million in a territory of three million square miles Australia has good reason to be troubled by a fall in the birth rate. A few years ago, when the decline became manifest, the Federal Government sought the help of the National Health and Medical Research Council at Canberra. The Council then began an inquiry into the incidence of primary sterility in both males and females; the extent of the practice of contraception; the causes of miscarriages, stillbirths, and neonatal deaths; the influence of medical, surgical, gynaecological, or obstetric conditions on the birth

¹ The National Health and Medical Research Council. *Report of the Committee of Inquiry into the Medical Aspects of the Decline of the Birth Rate. Special Report Series No. 4.* Canberra. 1943.

rate; and the part played by nutrition in successful child-bearing. The facilities available for the investigation of primary sterility were found inadequate to provide a basis for any statement on the subject, although, since the first inquiries were made in 1944, a number of clinics have started work. Details of the inquiry into contraception have already been published. Of the sample of women studied, over 60% admitted the use of contraceptives, and it was found that this did reduce the pregnancy rate compared with the rate for women who did not use contraceptives.

Another report¹ has now been issued which discusses the effect of nutrition upon the course and results of pregnancy and the causes of stillbirth and neonatal mortality. Of the pregnancies investigated 18.6% terminated either in stillbirth or miscarriage. The expert committee took the pre-natal clinics of the Women's Hospitals at Sydney and Melbourne as offering material for inquiry into the nutrition of the expectant mothers and into the influence of medical conditions on pregnancy and parturition. While a relatively large number of women attending the clinics showed initially a marked degree of anaemia, this did not seem to bear any relation to their diet. Nutrition played an important part in the development of the toxæmias of pregnancy, the incidence being much higher among those whose diet during pregnancy was unbalanced. It was also shown that a well-balanced diet predisposed to more efficient lactation. But the investigators reached the conclusion that the level of pre-natal nutrition in Australia is not an important factor in predisposing towards the occurrence of stillbirth, neonatal death, or foetal abnormality. No correlation could be found between the diet during pregnancy and the maternal gain in weight, trend of haemoglobin levels, intercurrent diseases, complications during labour, infections during the puerperium, or the birth weight or growth curve of the infants. This result, of course, is at variance with the findings in other countries, and the reason given is that in Australia the proportion of "poor diets" is much smaller than that obtaining in surveys published elsewhere. The patients on whom the study was made were ordinary hospital patients, but they must have come from socio-economic groups much above those of the women concerned in similar records in recent years in Toronto or in Aberdeen.

Prematurity is given as the most important single cause of neonatal deaths and to a lesser degree of stillbirths. It is urged that measures be taken to investigate the causes of prematurity for which at present there is no apparent explanation. Attention is drawn also to the inadequacy of the prevailing definitions of the premature baby. Other recommendations call for increased facilities for prenatal care, the investigation of haemoglobin levels of pregnant women, and indeed of all women capable of childbearing, the registration of all stillbirths, and a post-mortem study in every case of infant death. The setting up of special hospitals for the care of premature infants in each capital and in the large country centres is also advocated.

Australia is in advance of Great Britain and of Canada in her figures for infant mortality. The Australian figure for 1945 was 31.3 per thousand births; the figure for England and Wales for the same year was 46. But Australia was beaten by New Zealand in this respect, and therefore feels that in some way it is still lagging behind in the application of improved methods of care. It is asked whether it is possible that, in the zeal for improving maternal mortality, the welfare of the offspring has been overlooked. But in maternal mortality Australia has not reached the level of this country. The maternal death rate in England and Wales in 1945 was 1.80 per thousand births and in Australia it was 2.13. The neonatal mortality seems

to be the most obstinate factor in both countries, though in England and Wales during the last five years it has declined from 25.2 per thousand to 22.7, and in Australia, too, there has been a steady improvement during the same quinquennium.

CARDIAC PAIN IN WOMEN

Effort angina and coronary thrombosis are less common in women than in men, though with the passage of time the preponderance of men appears to be decreasing. Thus Mackenzie¹ in 1923 found a ratio of 7 men to 1 woman with angina of effort, and in 1928 Parkinson and Bedford² found only 7 women in 100 cases of coronary thrombosis. But in 1943 figures supplied by the Toronto Health Department³ indicated a 2 to 1 ratio of men to women. Changes in sex incidence, as with changes in the frequency of coronary thrombosis as a whole, are difficult to establish, but it does seem clear that cardiac pain of all kinds is much more frequent in men, though the difference becomes less as age advances. It is also well established that effort angina is a particularly rare occurrence in women unless associated with hypertension. These views are confirmed by Summers,⁴ who found only three patients under 40 years of age in a series of 87 cases of angina of effort occurring in women, 84% of whom had hypertension. The three patients under 40 had diseases other than coronary sclerosis which could account for the pain—two had anaemia and one aortic incompetence. If a woman with a normal blood pressure has chest pain suggesting angina of effort, such a diagnosis must be made with reserve and a search made for some structural change other than coronary disease. Angina depending on anaemia—and there is no doubt this may be the sole cause of the symptom—while rare, is of particular importance, since cure of the anaemia may completely relieve the pain. The reason why men are affected so much oftener than women has never been explained. Summers was unable to find any connexion between smoking and alcohol and angina in his female patients, or with occupation, but McCormick thought that the increase in tobacco consumption by women might be responsible for the apparent recent change in the sex incidence.

THE DAWSON WILLIAMS MEMORIAL

The Dawson Williams Memorial Fund was established by voluntary subscription in 1928 to commemorate Sir Dawson Williams, who was Editor of the *British Medical Journal* from 1898 to 1928. The object of the Fund is to award a prize every two years or at longer intervals in recognition of work done in paediatrics. The last award was made in 1938 to Professor (now Sir) Leonard Parsons for his researches into diseases in children. No award was made during the war years, and the trustees of the Fund have now made two awards for 1948—to Professor Alan Moncrieff for his work for child health, and to Professor J. C. Spence for his researches in diseases of children—a prize of 60 guineas being given to each recipient. The Fund is administered by the following trustees: The Presidents of the Royal College of Physicians of London, the Royal College of Surgeons of England, the British Medical Association, the Royal Society of Medicine, and the Section for Disease in Children of the Royal Society of Medicine, and the Editor of the *British Medical Journal*.

¹ *Angina Pectoris*, 1923, Oxford University Press, London.

² *Lancet*, 1928, 1, 4.

³ McCormick, W. J., *Un. med. Can.*, 1945, 74, 1205.

⁴ *Brit. Heart J.*, 1948, 10, 4.

THE ECONOMICAL USE OF THE HOSPITAL BED AND OF THE NURSE*

BY

E. B. BROOKE, M.B., M.R.C.P., D.P.H.

Medical Superintendent, St. Helier Hospital

AND

J. P. WETENHALL

Secretary, British Hospitals Association

Much of the content of this memorandum is not new matter. We have, however, deliberately attempted to incorporate a brief reference to the more important aspects which bear directly on the problem of the shortage of nurses. We have done this because we are strongly of the opinion that this problem is not resolvable by piecemeal approach, and that its solution depends upon a simultaneous attack on all its various angles as revealed in a survey which must of necessity be wide.

Although the qualitative and quantitative needs of the nursing profession have already received consideration [see the memorandum on 'Recruitment and Training of Nurses,' submitted to the Ministry of Health jointly by the B.M.A., the B.H.A., and the Medical Superintendents' Society (Part II, Paras. 5-10)—and Addendum by the B.H.A.] it is in connexion with the quantitative aspect that the wider survey is essential.

First the unwelcome fact must be realized that the supply of nurses, actual and potential, if used as hitherto, is and will remain inadequate on account of the woman-power position, as is starkly evidenced by official statistics. In consequence it becomes imperative to view the problem of nurse-shortage not only from the aspects of recruitment and training but also from other closely related aspects, in particular the economical use of the nurse and of the hospital bed. It is convenient first to consider the latter factor.

A. Economical Use of the Hospital Bed

The Nature and Purpose of a Hospital.—There may have been an undue tendency to regard a hospital as primarily a place which provides beds for the reception of the sick—with the specialist and ancillary services as an aid to diagnosis and treatment *after* admission—and so to measure the scope and importance of the individual hospital in terms of beds. The consultative and therapeutic facilities in out-patient departments—which, with a few notable exceptions, have been confined to the erstwhile voluntary hospitals—have not been sufficiently developed as one of several means of affording some relief on bed pressure and also as a means of extending the scope of the work of a particular hospital. We stress the importance of relieving bed pressure not only because a vast growth in the number of available hospital beds is unlikely within the next decade but also because the mere addition of beds itself aggravates the problem of the shortage of nurses without necessarily securing the more efficient provision of hospital treatment. This part of our survey is therefore concerned with any measures which, without undue inconvenience to the patient, can be employed to secure a more economical use of hospital beds at present available.

Out-Patient Departments.—While avoiding extremes, it is possible to regard a hospital more as a polyclinic with beds than as a ward-nucleus with ancillary departments. This approach paves the way to greater discrimination in the selection of patients for admission to wards for acute cases, as contrasted with admissions to a hospital bed of some kind or other. A general extension of consultative and therapeutic out-patient facilities to the hospitals that do not at present possess them is therefore a first step towards avoidance of the admission of patients to a hospital bed in default of other facilities for treatment. The out-patient department also provides the services for determining what type of accommodation

is appropriate where admission is necessary, and is therefore a twofold factor in promoting the economical use of the existing beddage. Even if health centres were ultimately developed along lines which included much of the consultative specialist service at present available only in hospital out-patient departments, the latter would still be necessary, partly as a screen to determine the nature of the accommodation appropriate to the individual patient and partly to provide out-patient treatment in relief of beds.

Short-stay Hostels, Recovery Annexes, or Convalescent Hospitals, and Provision of Various Kinds for the Chronic Sick and for the Elderly and Infirm.—In respect of these three items as aids to the economical usage of "acute" hospital beds, to avoid repetition we would only refer with general agreement to the B.M.A. memoranda "The Care of the Elderly and Infirm" and "The Right Patient in the Right Bed." In particular, we think that in a variety of cases much more use could be made of the patient's own home if appropriate procedures for care, visiting, and supervision were thought out and applied. The services of the voluntary worker could be especially useful in this field. For instance, in the neighbourhood of the St. Helier group of hospitals a "meals on wheels" service for chronic invalids in their own homes has been started by the W.V.S. This domiciliary scheme, with the backing of district nurses and home helps, is reproducing in the home many of the facilities normally available only to hospital in-patients. It is hoped soon to include a laundry service, and already, with the aid of transport, much that the hospital has to offer, both of consultative advice and of treatment, is being made available to these patients without ever admitting them to its wards. We would lay great emphasis on the need for utilizing to the full all such resources as may protect the acute hospital bed from use for other than its proper purpose.

Administrative Procedure of Admission to Beds.—The economical use of beds (i.e., avoidance of wastage by non-occupation between discharges and admissions and by overlengthy stay) is largely dependent on efficient administrative arrangements for admissions, and on the existence of sound contacts between the administration and the clinicians in charge of beds. Regional bed bureaux perform a most useful function in dealing with emergencies; but admissions, or acceptance of responsibility for alternative arrangements, should normally be undertaken at management committee (or where necessary at component unit) level, and thus the group would be imbued with a sense of its responsibility to the sick in the geographical area which it is intended to serve.

The Hospital Group.—It may well be that the principle of grouping provides the National Health Service with its greatest opportunity for improvement in hospital resources. The initial grouping of hospitals—to enable the Service to operate on the appointed day—was necessarily undertaken at short notice. It is therefore reasonable to hope that the groupings themselves, and the purposes for which beds may have been initially allocated, may be subject to review and readjustment in the light of experience. Since one at least of the purposes of grouping hospitals is to provide an integrated and more comprehensive service, it follows that the group must within itself provide, *inter alia*, suitable alternative accommodation for patients requiring admission but not admission to an acute ward.

For example, it may be possible to increase the output from the group as a whole by the provision, even from its existing resources, of beds in recovery annexes or convalescent hospitals so as to make the fullest possible use of the specially equipped and staffed acute beds. Or, again, it may prove necessary to supply a group with ancillary accommodation—e.g., of hospital-recovery type—at present non-existent. And, yet again, the question of invalid settlements and long-stay annexes for the chronic sick and of their contiguity to one or more of the well-equipped hospitals in the group requires urgent consideration and solution. Underlying all such considerations is the necessity on the one hand to have regard to the convenience of the patient—e.g., by avoidance of long journeys and of undue separation from relations—and on the other hand to facilitate continuity of medical supervision of his case.

The group can in our view greatly increase not only its total output but even its range of service if individual clinical departments have a balanced complement of acute and recovery (or long-stay) beds—not necessarily all within the same curtilage

*This memorandum was originally prepared for, and is now under consideration by, the B.M.A. Committee on Nursing, of which the joint authors are members.

—to meet their particular requirements. This is supported by experience gained in the thoracic unit at St. Helier Hospital.

Nurse-Staffing for the Hospital Group.—A further consideration in the matter of grouping which is of fundamental importance in connexion with the nursing problem is that the group must be of such size and be so arranged that it is reasonably self-contained for its purpose, but able to regard itself as one entity. Each group should therefore provide its own nurse-training school. Since the formation of a particular group may be much affected by local conditions it would be unwise to dogmatize on such matters as maximum size. What does matter—and in particular from the point of view of nurse-staffing—is that the group should be a close-knit body with a strong *esprit de corps* and a full sense, both at its centre and throughout its components, of a common duty to the neighbourhood which it serves. This set-up will facilitate the circulation of the nursing staff throughout the component units of the group in a manner comparable with the established practice of posting from one ward to another in the same hospital.

Where a group is centred round a "special" hospital the position regarding its nurse-training school must remain as dealt with in Paras. 22-23 (Part III) of the memorandum on "Recruitment and Training of Nurses." Where for some reason a group is not self-contained interworking between contiguous groups may be necessary, particularly for certain types of specialized investigation and treatment; but such interworking should *not* involve the transfer of nursing staff from one group to another.

The higher output obtainable from the acute wards by greater selectivity of admission, the provision of recovery annexes, etc., would, generally speaking, involve an increase in the nursing staff of the acute wards which in some cases would be substantial. This need for more staff in one section may, however, be more than offset by economies in nurse-staffing in other directions, as shown in Section B below.

B. Economical Use of the Nurse

This part of our memorandum deals with a more difficult aspect of the problem, and one which is more open to controversy. We therefore approach it from the point of view of exploration.

The Nature of Nursing

It is impossible to approach the matter of the economical use of the nurse without some agreed conception of the essential nature of the nurse's work. No definition has so far been offered in reply to the questions so often asked recently on precisely what nursing is and what is the function of the nurse.

Without attempting a precise definition we would suggest that nursing comprises two main and distinct functions: one is to minister to the patient's comfort; the other is to assist the doctor in safeguarding the patient and in the progress of the case. It is on this conception of nursing that we base the considerations which we venture to submit below. Nor is this basis merely hypothetical, since it accords with actuality. To illustrate the point, at one side of the scale there are untold numbers of infirm and sick people who are daily nursed in their own homes by relations or friends. The services thus rendered relate, though not exclusively, to requirements connected with the patient's comfort. This contrasts with the other side of the scale, where the highest degrees of nursing skill are called for.

It follows, therefore, that the division of nursing function as between comfort and skill enables nursing requirements themselves to be subdivided into those of skilled nursing and unskilled nursing. It therefore becomes possible to consider in practical terms how waste of skilled nursing can be avoided by ensuring that it is applied only where required and that full use is made of unskilled nursing wherever appropriate.

Is it possible, as a primary step towards the economical use of the skilled nurse, to approach the problem of nursing staff in the wards—no matter what their type—in such a way that the highest degree of nursing skill is combined with the unskilled devotion met in the home? In our view this is possible, and is indeed inevitable; but its achievement depends upon factors which may involve a reorientation of view and may even

be regarded by many as revolutionary. For example, the skilled nurse will need to have a greater realization of the two-sided nature of her work. One side, of course, is the exercise of her skill on a particular patient requiring it; the second side is the avoidance of wasting her time on duties which fall within the competence of others not possessing her skill. This involves a conscious realization of her nursing duty as a supervisor of unskilled nursing and is the starting-point in the economy of effort, since unless she is trained in the art of delegation the skilled nurse cannot make the greatest or the most effective use of her own training and experience.

These considerations apply strictly to economy of skilled practical bedside nursing and are not intended to refer to ward administration or to imply the up-grading of a staff nurse into a junior ward-sister.

Nursing Aides

It being established that the skilled nurse must herself exercise a discretion regarding which of her patients require more of her personal attention and which require less, there follows the need to provide her with appropriate personnel to whom she can delegate. Under no circumstances must the nursing aide be confused with the domestic or semi-domestic ward worker. His or her alignment should, on the contrary, be intrinsically with the ward nursing team. A proper—even safe—use of the nursing aide cannot, however, be made unless the right type of recruit is attracted to the work (quite as much a question of status as of pay), and unless the general orbit of the aides' duties is clearly demarcated and they receive adequate encouragement and a short preliminary training. Actual experience of their satisfactory use appears to have been obtained by hospitals that have seriously addressed themselves to the experiment.

Non-Nursing Duties

We have avoided referring to matters of smaller moment, obvious though they are in themselves: for example, elimination of the practice of employing nurses on non-nursing duties, such as chaperonage and certain administrative work. We would, however, make passing reference to the importance of a memorandum by King Edward's Hospital Fund (*Lancet*, Aug. 14, 1948, p. 266) on the loss from hospitals of newly trained staff, and to their plea for the employment of suitably trained non-nursing personnel in the public health nursing field wherever possible.

Conclusion

The idea that a person without a nursing qualification should be allowed, either nominally or actually, to undertake any form of nursing duty may at first glance be distasteful to many. At the risk of repetition, however, we would once again stress the fact that, on account of the woman-power position alone, nursing requirements cannot be met unless measures of this kind are studied, evolved, and implemented. It is sheer necessity that is the spur. Surely it is better to make a virtue of necessity and to solve the problem by its frank realization.

Summary

The problem of nurse-shortage can be solved only by multilateral approach.

Two aspects of this problem which have as yet not received due attention are the economical use of the nurse and the economical use of the hospital bed.

The economical use of the hospital bed can be achieved by: (a) the conception of a hospital as a polyclinic with beds rather than as a ward-nucleus with ancillary facilities; (b) economy in the use of beds in well-equipped hospitals by a greater selectivity of admissions; (c) the provision of a balanced bed complement—within the group—e.g., acute, recovery, and long-stay; (d) the provision of short-stay hostels in conjunction with out-patient departments; (e) the provision of various kinds of accommodation for the chronic sick of all ages and for the elderly and infirm; (f) efficient administrative procedure for admissions to avoid wastage of beds.

The group must form one entity, as this is essential to: (a) *esprit de corps*; (b) nurse-training and staffing; (c) its shouldering of responsibility for the sick in its area.

The economical use of the nurse may be achieved by: (a) recognition of the fact that not all nursing is skilled nursing; (b) recognition that the duties of all skilled nurses should include a supervisory function; (c) provision of appropriate personnel to whom unskilled nursing can be delegated under supervision; (d) recognition of the importance both of the training and of the status of the nursing aide.

As official woman-power statistics show, the problem of nurse-shortage demands a fresh outlook if it is not to remain intractable.

THE KING'S HEALTH

OPERATION FOR LUMBAR SYMPATHECTOMY

The following bulletin was issued from Buckingham Palace on March 8:

The King's general health continues to be excellent.

In the left leg the flow of blood has been restored in the main arteries to a satisfactory degree.

In the right leg the main artery is still obstructed and the circulation is being carried on, less efficiently than in the left leg, through a collateral circulation.

With a view to improving the blood supply to the right foot, and to safeguard this for the future, we have advised His Majesty that the operation of lumbar sympathectomy should be performed on the right side. The King has accepted this advice and the operation will be performed at an early date.

MAURICE CASSIDY. J. R. LEARMONTH.
THOMAS DUNHILL. J. PATERSON ROSS.
HORACE EVANS. JOHN WEIR.

On Saturday, March 12, the next bulletin stated:

The operation of lumbar sympathectomy was performed on the King at 10 a.m. His Majesty's condition is entirely satisfactory.

MAURICE CASSIDY. C. J. LONGLAND.
THOMAS DUNHILL. J. PATERSON ROSS.
HORACE EVANS. A. J. SLESSOR.
JOHN GILLIES. JOHN WEIR.
J. R. LEARMONTH.

A further bulletin, issued on Saturday evening, read:

The King has had a restful day. Temperature, pulse, and respiration rate have not varied from normal, and His Majesty's recovery from the operation is proceeding smoothly.

MAURICE CASSIDY. J. R. LEARMONTH.
THOMAS DUNHILL. J. PATERSON ROSS.
HORACE EVANS. JOHN WEIR.
JOHN GILLIES.

A bulletin issued on Sunday morning stated:

During the night the King has had periods of sleep. Temperature, pulse, and respiration are normal. His Majesty's condition and progress are those usual after lumbar sympathectomy.

MAURICE CASSIDY. J. R. LEARMONTH.
THOMAS DUNHILL. J. PATERSON ROSS.
HORACE EVANS. JOHN WEIR.
JOHN GILLIES.

Further bulletins issued on March 14 and 15 confirmed that the King's general condition remains satisfactory.

It is understood that the operation was performed by Professor J. R. Learmonth, professor of surgery at Edinburgh University, with Professor J. Paterson Ross, professor of surgery at London University. The anaesthetist was Dr. John Gillies, director of the department of anaesthetics at the Royal Infirmary, Edinburgh. Professor Learmonth had the assistance of Dr. A. J. Slessor, medical superintendent and assistant surgeon to the Western General Hospital, Edinburgh, and Professor Ross was assisted by Dr. C. J. Longland, first assistant in the surgical professorial unit of St. Bartholomew's hospital.

Professor Learmonth remained at the Palace throughout Saturday night and Sunday.

TUBERCULOSIS IN ENGLAND AND WALES

MINISTRY STATEMENT

A recent statement issued by the Ministry of Health points out that the present situation regarding tuberculosis in England and Wales needs to be judged against the background of the progress made during the period between the two world wars. Between 1918 and 1939 the number of deaths from all forms of tuberculosis fell from about 58,000 in 1918 to about 25,600 in 1939. Then in 1940 and 1941 the number of deaths rose to over 28,000. This increase, however, was checked, and the figures for 1942, 1943, and 1944 were approximately 25,500, 25,600, and 24,100. The fall continued in 1945 and 1946, when deaths numbered 23,955 and 22,847, respectively, rising slightly in 1947 to 23,550.

These mortality figures are the most reliable criterion of the trend of tuberculosis, as against the numbers of notifications of the disease, which are not necessarily an accurate reflection of its incidence. It is observed, however, that the numbers of deaths in the war years, unexpectedly favourable though they were, were higher than they would have been if the pre-war rate of decline had continued; the number of notifications rose above and still remains above the pre-war level. In 1918 the total number of formal notifications was about 90,000; in 1938, about 50,000; and it has since been as follows:

1939	..	46,000	1944	..	54,000
1940	..	46,600	1945	..	52,000
1941	..	51,000	1946	..	51,300
1942	..	52,600	1947	..	51,700
1943	..	54,000			

The relation between respiratory and non-respiratory types of tuberculosis, which hitherto has shown no substantial deviation from year to year (although such a factor as increasing pasteurization of milk may materially affect the incidence of non-respiratory tuberculosis as time goes on), may be gauged from the fact that in 1947, of the total of 23,549 deaths, 20,156 were due to respiratory tuberculosis.

The admission of patients to tuberculosis institutions for treatment with reasonable promptness continues to present a serious problem. The reason for this is not the lack of sufficient accommodation but the persisting shortage of nurses. The number of patients under institutional treatment at June 30, 1948, was about 29,200, while the number on the waiting-lists for such treatment was about 9,000. The number of new patients who came on the registers of tuberculosis dispensaries in the quarter ended June 30, 1948, was about 13,000.

Developments in the Tuberculosis Service

The introduction in 1942 of mass miniature radiography to detect respiratory tuberculosis in its earlier stages constituted an important advance. Owing to the wartime limitations on the production of the apparatus and on the availability of medical man-power it has been possible to provide these mass radiography units only gradually in selected areas of the country. By Dec. 31, 1948, there were 37 of these units in operation in England and Wales, and the Ministry itself operates one at a fixed centre in London as a training and research unit. By June 30, 1948, about 2,500,000 persons had been examined, of whom approximately 94% were found normal at the time of examination. The number of cases in which clinical investigation following evidence of abnormality in the miniature film led to diagnosis of active tuberculous conditions was approximately 9,564, or between 3 and 4 per 1,000 of all the persons examined.

Under the National Health Service Act the responsibility for the tuberculosis treatment services—namely, institutional and out-patient services, including the mass radiography service—passed on July 5, 1948, from county and county borough councils to the regional hospital boards, though the local authorities remain responsible as the local health authorities under the Act for the preventive and care and after-care work in relation to tuberculosis.

Under the National Assistance Act, persons who suffer a loss of income in order to undergo treatment for respiratory tuberculosis and need financial help over and above such statutory

payments as national insurance benefit and family allowances are able to obtain this through the National Assistance Board. The main object of this assistance is to afford a reasonable standard of maintenance for the patient and his dependants during the period of treatment so as to encourage the sufferer, for both his own and the community's sake, to give up work to undergo early treatment.

Nova et Vetera

HOW DID SCIENCE BEGIN?

Many must wonder why medical historians continue to pour out investigations of the writings of Vesalius. They must often ask, "Are they not coming to an end of Vesalius?" The simple answer is "No." This review of Professors Saunders and O'Malley's book* may explain why this is so.

It is quite obvious now to us all that the value of any theory concerning natural events or objects rests on facts established by observation and on their adequate presentation. But, strange as it may seem, this was by no means evident before the seventeenth century, when Francis Bacon and René Descartes delivered their messages. Till then men were educated in the scholastic tradition. This taught them that, in matters of the world of the senses, having made sure of the premises, they might safely reason therefrom for an indefinite time and—provided of course that they had made no error of logic—they might then return again to the world of the senses and safely apply the conclusions that they had reached.

One reason why they thought along such lines was that they conceived the world of the senses to be much simpler than we now know it to be. Another reason was that they did not realize how extremely difficult it is to be sure of the premises. But for these reasons, among others, research into the supposedly simple scheme of Nature afforded little temptation to men of subtle minds. These naturally preferred the infinite possibilities of theological, ethical, philosophic, or linguistic discussion. They considered it a less worthy vocation to investigate the realm of things than the realm of thought. Perhaps they were right. But it is certainly true that not only does research in the world of things yield more rapid and more tangible results, but also that history has shown that it has profoundly influenced our conception of the world of thought.

Now this "scientific" view did not occur suddenly to the men of the seventeenth century. On the contrary, for at least a hundred years before Bacon and Descartes there had been men who were feeling their way in that direction and yet failing to express their conclusions with clearness or to apply them with any considerable success. But in this matter 1543 was an *annus mirabilis*, for within a few days of each other the aged Copernicus (1473–1543) sent out his treatise *On the Circulations of the Celestial Spheres* and the youthful Vesalius (1514–64) issued his magnificent folio *On the Workings of the Human Body*. These are the two foundation works of modern science. The outlook of Vesalius, under by 41 years, is the more modern of the two. Though intellectually enmeshed in the difficulties which the lack of a clearly formulated scientific method had woven, as our authors truly say, he produced a great work of research in the modern sense. Anything that helps to explain how this came about is thus significant not only for medical history but also for the history of science and, even more, for history itself, since science has been a major factor in the moulding of the modern world.

It is therefore extremely important to trace, completely and exactly, all the processes—mental, social, personal, political—by or through which Vesalius, starting as a scholastic, became a scientific inquirer. He is the ideal subject for the investiga-

tion of the beginnings of science. The materials exist, but their elucidation presents very special technical difficulties. With the nature of these we are not immediately concerned, but no one has made more significant contributions to their solution than Professors Saunders and O'Malley. They would be the first to allow that it must be many years before the problems with which they deal are finally resolved. The obstacles are far greater than earlier writers on Vesalius imagined, and very much more work is needed before the embryology of the inductive method can be set forth at all adequately. This book completes a stage in this task—a stage which its authors are uniquely equipped to accomplish. They have done a real service both to history and to the understanding of the evolution of the modern mind.

The earliest works of Vesalius are an edition of a work on anatomy by one of his teachers and a set of anatomical diagrams. Both appeared in 1538, and show him as a fairly typical scholastic, basing his views chiefly on his teacher's Latin translations of Greek texts of Galen. But in the *Bloodletting Letter* of 1539, which Professors O'Malley and Saunders now translate, edit, and annotate, he advances a little on the scholastic position. Here he asks a first tentative question, "Whether the method of anatomy could corroborate speculation." This letter is therefore transitional, occupying the period of the scientific adolescence of Vesalius, bridging the interval between the frankly Galenic anatomy of his earlier recension of Guinter's *Institutiones Anatomicae* (1538) and the *Fabrica* (1543), the first positive achievement of modern science.

In the history of modern science the study of structure necessarily preceded that of function. Vesalius was without the illumination that came with Harvey's disclosure of the circulation in 1628. His *Letter* of 1539 is based on the error, derived from Galen, that the venous system is independent of the arterial and receives no contribution from it. This view was the basis of a practice of venesection which, though developed by him on a more correct anatomy than that of his predecessors is physiologically as ill-founded as was theirs. Nevertheless Professors Saunders and O'Malley have been able to elucidate many incidental references in the course of this *Letter* that concern the activities and personal relations of Vesalius. These throw light on the central problem of his mental evolution. Our knowledge of the life and thought of Vesalius, and with it our conception of the growth of the "scientific idea," have thus been significantly forwarded by this important and ably drafted little monograph.

CHARLES SINGER.

Reports of Societies

HEALTH CENTRES

A meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine, held on March 7, was devoted to a discussion on "Health Centres." Sir ALLEN DALEY presided. A model and plans of the projected L.C.C. Woodberry Down Health Centre were exhibited. This was the centre described in our issue of Jan. 29 (p. 191).

Architectural Considerations

Mr. W. T. DURNFORD, F.R.I.B.A., of the Architects' Department, L.C.C., said that the general plan in London was eventually to have a health centre to every two neighbourhood units, a unit comprising a population of from 6,000 to 10,000. When the scheme was completed no resident in the county of London would be living further than one mile from a health centre. One difficult architectural consideration was the number of floors which should be planned. Medical practitioners were anxious to be "in on the ground floor," but so were all the other services—which was impossible. Another planning question was whether the approach to the centre should be by single entrance from a large central space or by a separate entrance for each unit in the centre. At Woodberry Down the latter method had been chosen.

* *Andreas Vesalius Bruxellensis. The Bloodletting Letter of 1539. An annotated Translation and Study of the Evolution of Vesalius's Scientific Development.* By John B. de C. M. Saunders, F.R.C.S., and Charles Donald O'Malley. Limited Edition. (Pp. 94. 21s.) London: Wm. Heinemann Medical Books.

It had been decided to place the doctors' and dentists' units on the main frontage of the building with access from the chief traffic road. This might have the disadvantage of traffic noises, but these could be minimized by the use of double windows, by setting back the building from the road, and by judicious tree planting. Parking facilities for patients' cars and garage space for the cars of doctors were a necessity. The six general practitioner suites were on the ground floor and were approached by corridors from the main entrance. The temptation to make a single large waiting-room had been resisted, and there would be small individual waiting-rooms for the patients of each doctor. These rooms would each accommodate about twenty patients, the planning being on the assumption that the number of registered patients per doctor might stabilize at 2,500, and allowance was also made for a certain number of private patients. The superficial area of the consulting room was 168 sq. ft. and opening from it would be an examination-room equipped with couch and lavatory basin. The patients would be able to leave without returning to the waiting room.

Other features of the Woodberry Down building would include an isolation room on the ground floor. On the first floor there would be a minor operations room, a room for ophthalmic treatment and a room in which the doctors could carry out any of the simpler pathological investigations without the attendance of a pathologist. There would be two dental surgeries from which access would be obtained to x-ray apparatus elsewhere. A small drug store was provided for the immediate needs of the unit, but not for dispensing practitioners' prescriptions. A lecture hall of 800 sq. ft. was planned. A foot clinic would be included, with its own small waiting-room and a room for examinations. A suite would be devoted to ultra violet light therapy, and there would be a unit for orthopaedic and remedial exercises and a child-guidance clinic. There would also be common-rooms for the staff. The cost of the Woodberry Down centre was expected to be 5s. 6d. per cu. ft. (leaving out furniture and movable equipment), or £3.10s. per sq. ft. of area.

Value of Partnership

Dr A. TALBOT ROGERS, chairman of the Health Centre Committee of the B.M.A. and vice chairman of the Health Centre Subcommittee of the Central Health Services Council, said that the B.M.A. Committee had been set up with the idea of trying to discover what experience had shown to be the most satisfactory form of medical practice. In the course of a survey a large number of doctors practising under different conditions had been interviewed. The best type of practice was held to be a partnership practice conducted from a communal surgery. Such a system gave the doctors opportunity for consultation with each other, it stimulated friendly competition, it enabled the more experienced practitioner to help the younger man and at the same time it enabled the young man straight from the medical school to rejuvenate some of his elders. This combination of three or four or perhaps half a dozen doctors working together had enabled such doctors to provide an increased number of consultation hours; it also gave the patients a choice of doctor, if they wished, for different illnesses or different members of their family. The partners were also able to cover the temporary absence of any of them without the introduction of a strange doctor.

It was found that partnerships on the whole were better equipped (instruments, books, etc.). Moreover, an amicable working partnership did attract patients. If an extra partner were taken in on account of the large amount of work it was soon found that the overplus of work was absorbed and that the number of patients grew. The partnership system was not unpopular to say the least of it, among patients. Further, it made it possible economically to use a greater amount of auxiliary and secretarial help.

During the last thirty years there had been a separation between the service of the general practitioner and the preventive services of the local health authority. It was desired to reintegrate those two sides of medical practice. The health centre would include provision for maternity and child welfare service, the school medical service, etc. It was a little problematical whether the midwives could also work from there. It

was desired to make the centres as little institutional as possible. Too great a modelling of the health centres on the lines of the local authority clinic would be enough to upset the relationship. Therefore he welcomed the idea that each doctor should have his own suite and that there should not be one large common waiting hall. He doubted whether the health centre would furnish a good opportunity for the health education of the public. As he saw it, the patients coming to these health centres to see their own doctors were unlikely to be coming regularly, and therefore there would be little opportunity for the use of such methods as a series of posters leading one to another. Moreover, they would alter the atmosphere of the whole place, making it like an exhibition hall. Lectures might be given to invited groups, but not ordinarily to the patients waiting to see their doctors.

So far as the diagnostic facilities, particularly pathological and radiological, were concerned, he thought that these should be provided not at health centres but at hospitals. If easy access to hospitals could be provided it was better that such diagnostic facilities should be available there. Again, on the question of physiotherapy, the setting up of such a unit at Woodberry Down might mean some wastage of staff. The physiotherapy department was better placed at the hospital. He hoped that the health centre might be used for the education of young practitioners and medical students.

Doctors Working Together

Dr FRANK GRAY, secretary of the London Local Medical Committee, who was introduced as "a specialist in general practice," explained that he was speaking only for himself and not for his committee. He believed that in a new departure of this kind they must learn as they went along. They would undoubtedly learn from their mistakes and from their successes—if they had any. The men and women who worked at the centre were more important than the bricks and mortar. It was rather a pity that in their discussion that evening they had started with the building. Was it wise to force doctors into a building prepared for them? Was it not better to build the edifice around the doctors?

The natural starting point was a number of doctors working together. What followed from that conception? To his mind it was essential that doctors should work in partnership. Supposing they did not work in partnership, what about the new patient? The health centres themselves, with their "chromium plating and platinum blondes," would attract patients. Patients would come and say, "I want to join the health centre," and when asked, "Which doctor do you want?" they would not be able to say. If the doctors were in partnership that did not matter. Then what about the surgery hours if the doctors were not in partnership? Would each of them stay on until the other fellow had gone home? How was any one doctor to express the views of his colleagues to the local health authority on the running of the centre unless they were all in partnership? Even angels might be tempted to put their own preferences before those of their colleagues in such circumstances.

As for the use of space, it was possible, said Dr Gray, that the era of unlimited spending might not last for ever. If that was so the question of the use of space would have to be considered much more closely. At present, with great respect to the L.C.C., the idea seemed to be not only one room for each individual doctor but one room for each individual whatever function he was performing. Somebody would ask one day, "Is all this building really necessary?" It meant unlimited money, a pre-Service mentality, and vested interests, but unlimited money would not last for ever, the pre-Service mentality would die out in the course of years and as regards vested interests the larger vested interests in sale and purchase had been abolished, so that it was not unreasonable to suppose that the smaller also might be faithfully dealt with. Supposing this was not a public enterprise, but just a partnership of several doctors in a large surgery, was it supposed for a moment that they would go in for all these rooms? They would share the consulting-room. They would not all want to be there at the same time. What did they do in Harley Street?

Then he thought they must not lose sight of the advantages of the doctor's private house. They might not know what to do

in this new set-up, but they did know what not to do—namely, not to imitate the hospital out-patient department. It would be very nice to have an appointments system. The room could then be smaller and cosier still, but in general practice that system would not work. As one who had worked in a general practice for some time, he knew that they got a large number of patients who always wanted their own particular doctor, but a number also did not want or need a particular doctor, they just came for the certificate. In a partnership that was easy to arrange; without a partnership it would be an appalling difficulty.

He could not resist a word on physiotherapy. Physiotherapy was the best method devised for the activation of neurosis. They did not want it. He noticed also that at Woodberry Down there was to be a nice little apartment for the night-duty doctor. What was the idea of a night-duty doctor at a health centre? Why have one? The only useful purpose would be for night consultations. If it was a case of being called out at night it would be just as well to summon the doctor by telephone from his home a mile away as from his bedroom a few hundred yards away in the same building. Patients who attended at the health centre were not usually the people who wanted attendance during the night, and, as for accidents, these were best dealt with at the hospital. He could not see any reason for the night-duty doctor. What was wanted was a really intelligent night caretaker who would be able to put a messenger in touch with the doctor direct.

General Discussion

Dr. C. O. S. B. BROOKE (Finsbury Health Centre) said that his experience in Finsbury was that the physiotherapy clinic did not stimulate neurosis and it had a great value, particularly in relation to the aged and infirm. A few years ago, in discussing health centres, the accent was on positive health, whatever that might mean, but now it appeared that such centres were for curative medicine. They ought to be called "general practitioner centres." It had been assumed that patients would be ready to go a mile to the health centre, but that was optimistic. In London people were not willing to go quite as far as one mile. There was no part of Finsbury which was as much as one mile away from the health centre, but they had difficulty in getting people to attend from the remote parts of the borough. Previously he had had experience in County Antrim, and he found less difficulty in getting people to go 20 or 30 miles to their county town than in getting Finsbury patients to go to University College Hospital.

Dr. H. C. BOYDE (West Ham) noted that there was lacking in the present discussion any sense of urgency. Nobody appeared to realize that in the Health Service the machine was creaking in many of its joints, and the resulting strain was being borne fundamentally by the men in general practice. Whatever difficulties there might be in hospital organization, the simple fact concerning the general practitioner was that he had now more difficulty than ever before in getting his patients into hospital. He believed that there could be no improvement in the quality of general practice without a health centre. In West Ham they had worked out a plan for a health centre with six doctors, two dentists, a number of nurses, a physiotherapist, and certain technicians. The problem was to get them all together.

The "physiology" must come first and the "anatomy" afterwards. The West Ham scheme, which planned to place the health centre in an adapted building and brought in the administrative side of local health authority services, including maternity services, home nursing, a minor laboratory, and some elementary ancillary facilities such as a chiropodist, was estimated to cost £15,000. It had been fully endorsed by the general practitioners, the local executive council, the medical officer of health, and the borough architect, but the Ministry had turned it down on the flippant ground, as they thought it, that it would use 40 tons of steel. They were now submitting revised plans, according to which only six tons of steel would be needed, and it was hoped to start in three months from now.

Dr. J. A. SCOTT (L.C.C.) pointed out that it was the local authority which provided the "anatomy" and somebody else who provided the "physiology," and he rather thought that

any "physiological" proposition would be refused unless there were already a "skeleton" fit for the work. It was necessary therefore to think about the building and to try to make a reasonable framework and equipment.

The PRESIDENT said that the question of a pharmacy at the health centre was one of considerable difficulty. At Woodberry Down there appeared to be a number of chemists' shops in the vicinity, and it was thought that if there was a dispensary at the health centre with people queuing up it would rather suggest the out-patient idea. On the question of the night doctor he wondered whether the doctors working at the centre would be prepared to live, as Dr. Gray had suggested, only a mile away.

Dr. GRAY, in reply, said that Woodberry Down was an excellent "pilot model." If a start had been made with a health centre in London it might have damned the movement in the whole country. As for the night doctor, he thought the doctor should not live more than one or two miles away from the centre, and the executive council should discourage doctors living at a greater distance.

Dr. ROGERS said they all agreed that they did need prototypes like Woodberry Down. He also pointed out the great advantage to that hardworking member of the doctor's practice—namely, the doctor's wife—in having her home uninvaded and the work of the practice transferred to a centre.

Mr. DURNFORD said there was nothing "flippant" in turning down a scheme which took 40 tons of steel. It was not realized how extraordinarily scarce were building materials and labour. Adaptations were in the long run much more costly and took more time than new buildings and were seldom satisfactory. It was better to concentrate on a smaller number of new buildings than on a large number of adaptations.

WOODBERRY DOWN HEALTH CENTRE

On Wednesday, March 16, at 11 a.m., Mr. Aneurin Bevan cut the first sod of the site of the Woodberry Down Health Centre at Stoke Newington. The new centre is to cost £187,275. It will be the first of its kind in London, and the first in the whole country to be approved by the Minister of Health. Under one roof there will be ante- and post-natal clinics, a child-welfare clinic, a school treatment centre, other local health services, and general practitioner and dental services.

Five units will be accommodated: a medical practitioners' and dental surgeons' unit, a school health unit, a child-welfare unit, an antenatal unit, and a remedial exercises and child-guidance unit.

The L.C.C. will staff the centre with receptionists, dental technicians, and others, and the London Executive Council will arrange for the attendance of general practitioners and dental surgeons. The L.C.C. will also staff the clinics and the school treatment centre. Doctors and dentists attending the centre will, with the L.C.C. divisional medical officer, form a professional committee to organize the general medical and dental services and to make recommendations to the body responsible for running the centre as a whole—the L.C.C. Divisional Health Committee. To the east of the health centre a day nursery is to be built.

The Ministry of Health announces that a working party has been appointed to investigate the timings of dental operations. The working party has been asked to ascertain the average chairside time taken by general dental practitioners in England, Wales, and Scotland (1) in the National Health Service and (2) in private practice to complete each of the types of dental treatment set out in Part I of the First Schedule to the National Health Service (General Dental Services) Fees Regulations, 1948, excluding any items for which it is impracticable to establish an average time—e.g., orthodontic treatment. The working party consists of: Mr. William Penman (chairman), a past president of the Institute of Actuaries; Mr. A. Macgregor, L.D.S.F.P.S.; Mr. S. Donald Cox, of the British Dental Association; Mr. J. Lauer, L.D.S.R.C.S., of the Public Dental Service Association; and Mr. A. H. Condy, of the Incorporated Dental Society. Dentists selected by the chairman will be invited to assist in the investigation.

Correspondence

Occupational Diseases of the Lens and Retina

SIR.—It was on Nov. 13, 1902, nearly forty-seven years ago, that Dr. William Robinson read his paper on "Bottle-finishers' Cataract" at a meeting of the Northumberland and Durham Medical Society in Newcastle-upon-Tyne. The paper, with an illustration, was published in the journal of the Society the following year. I remember the occasion so, well, and was disturbed that this original communication should have received such a lukewarm reception. William Robinson was then a practitioner-surgeon in Sunderland on the staff of the Eye Infirmary of that town, as well as the General Hospital, and was remarkable in that he had obtained his F.R.C.S.(Eng.) while in general practice in what was then a remote country township in Durham. Shortly afterwards he migrated to Sunderland.—I am, etc.,

Taplow, Bucks.

G. GREY TURNER.

Pain in Childbirth

SIR.—The publication of the report of the Medical Women's Federation on pain in childbirth (*Journal*, Feb. 26, p. 333) comes at an opportune time. The important point that I want to emphasize is the large number of such cases where chloroform was used, when 194 out of the 222 medical mothers who received it "found it perfect." Chloroform has been in general use in maternity work for 100 years. I can vouch personally for its use for 50 years—(1) when in charge of a large hospital maternity district; (2) in a large single-handed maternity general practice; (3) when in charge for years of the teaching of anaesthesia in the same hospital; (4) when the maternity ward was opened; (5) as a specialist giving many such anaesthetics in ordinary and abnormal cases for many obstetricians in their private work in and around London; and (6) finally in the country for a large scattered rural practice.

Personally, I have not met any difficulties. I was co-opted on the Committee of the Royal College of Obstetricians and Gynaecologists after I had given the College a registered fool-proof Junker which, in the hands of unqualified people, was considered by the Committee as "reasonably safe." This safety Junker was registered, as the measurements had to be carefully complied with, and Mr. Charles King did this at my request before presentation to the R.C.O.G. for trial.

Recently Dr. John Gillies, of Edinburgh, wrote a paper for *Anaesthesia* giving most interesting figures of the use of CHCl₃ in Scotland. Experimentally I saw in the U.S.A., in 1923, auricular and ventricular fibrillation produced in tracheotomized dogs with their hearts exposed, and was much impressed with the large amount of CHCl₃ needed to produce it. I was not impressed with McKesson's N₂O anaesthesia, even when given by himself. Why, then, was CHCl₃ condemned by the R.C.O.G. for use in a fool-proof machine? Simply on evidence of delayed CHCl₃ poisoning in three inexcusable cases, and in one fatal case, when 120 minims (7 ml.) of CHCl₃ was given in a single dose on a mask! (6 glass capsules=2 drachms.) Analgesia is not fully understood, far too large doses are used, and it is possible to control the dose and limit the time of inhalation mechanically.

At the Annual Meeting of the B.M.A. at Cambridge last July, when I was President of the Section of Anaesthetics, we held a most successful combined meeting with the gynaecologists on analgesia. I was able to keep the discussion an open one. I was pleased to hear many people admitting the use of CHCl₃, which is more than they did at Oxford in 1936, although I knew they were constantly using it. Then it was only when my old friend Beckwith Whitehouse (who was in the chair) called upon me towards the end of the meeting, and by previous arrangement, that CHCl₃ was even mentioned.

Trilene is still *sub judice*, but the preliminary communications read at Cambridge by the two research scholars of the Association of Anaesthetists working at Guy's gave promise of useful information to come.

This is a plea for the better understanding of CHCl₃, analgesia and its teaching to the untrained, with proper safeguards.—I am, etc.,

Petworth, Sussex.

Z. MENNELL.

SIR.—As a midwife, may I comment on the report of the Medical Women's Federation as printed in the *Journal* of Feb. 26 (p. 333)?

(1) The very high proportion of specialist obstetricians booked for deliveries (i.e., 318 out of 425) is obviously not representative of the country as a whole. This would not matter if the result of booking this type of accoucheur had not produced an abnormal number of forceps deliveries for apparently unknown causes. (It is tempting to suggest possible reasons.)

(2) These instrumental deliveries surely affect the number and types of anaesthetics administered. The handling of an apparently normal case resulting in a forceps delivery could equally affect the mother's desire for "more anaesthetic."

(3) I doubt if such detailed accurate information can be obtained ten years after the event.

(4) 69% of perineal tears among the primiparae is dismissed as "the situation . . . is on the whole satisfactory." I can imagine no midwife considering such a total so complacently.

My conclusion is that a far more useful result, combining detailed knowledge of drugs used and the conduct of the labour with a more widespread and normal engagement of accoucheurs, could be obtained if a similar questionnaire could be sent to all married midwives who have had children within the last five years.—I am, etc.,

London, N.6.

N. C. GILBERT.

SIR.—As you say in your leading article (Feb. 26, p. 356), some disquieting facts emerge from the report of the Medical Women's Federation on the relief of pain in childbirth, published in the same issue at p. 333. These medical women presumably selected their medical attendants for their confinements with especial discrimination, and over two-thirds of them were attended by obstetric specialists. And yet the report shows that they had a forceps rate as high as 27% for first births, perineal repair was required in no less than 43% of normal deliveries, and there is still an astonishing addiction to chloroform as an anaesthetic. Are these the same obstetric specialists who are trying to persuade us that the general practitioner is not fitted to undertake normal midwifery?—I am, etc.,

Wivenhoe, Essex.

WALTER RADCLIFFE.

Painless Childbirth—A Suggestion

SIR.—Nearly thirty years ago, owing to a succession of fatalities under anaesthesia, reported to a Board of which I was a member, I commenced a tentative investigation in search of a safe anaesthetic. Various unsaturated hydrocarbons, chloro-derivatives, and ethers were tested on myself, those not commercially obtainable being prepared by me in the department. The investigation had unfortunately to be abandoned, and opportunity to continue it was not found before my retreat. Of the substances tried, propylene pleased me most: 15% in 35% oxygen produced loss of consciousness; 12% did not; 34% caused intoxication in one minute and loss of consciousness in three minutes. No ill-effects were experienced. The lower homologue, ethylene, required 60% concentration with 40% oxygen to produce unconsciousness; only 35% of the less saturated acetylene was necessary; both were more effective than 80% nitrous oxide with 20% oxygen. It is necessary to emphasize that the propylene must be pure. Inhalation of the next higher homologue (a mixture of two butylenes), prepared without sufficient care, produced serious effects. The unsaturated hydrocarbon series stopped at the butylene stage, for one of the many isomers of amylene, the next homologous series, had been used (under the name pental) for some time previously as an inhalation anaesthetic, and apparently without decided untoward actions. Theoretically, it should be more toxic than propylene. Work on the polymethylenes was contemplated, but their preparation in a pure form was beyond the resources of the department. One of them, cyclopropane, has since been introduced into practice. Propylene has similar properties to it, but it will, I think,

be found to be safer and more pliable in administration. It can be given with an excess of oxygen, and a luxur supply of oxygen is a desideratum in anaesthesia. Thirteen minutes after commencing the inhalation of 12% propylene with 32% oxygen I am reported as having complained of a slight feeling of oxygen want.

The most serious objection to a mixture of propylene and oxygen for amateur administration is its inflammability. The addition of a small amount of a chloro-derivative such as chloroform, or, perhaps better, methylene dichloride, which, notwithstanding statements to the contrary, is less toxic when pure than is chloroform, might counteract this fault. Such a mixture could easily be put up in small bombs of definite capacity, similar to those used for CO₂, which could be released into a large rubber bag containing a prescribed volume of oxygen mixture to give the concentration of anaesthetic which may have been found to be safe and effective for the conditions required. A mouth-piece is much preferable to a face-piece, and the uncomfortable nasal clips used in my experiments might be replaced by cotton-wool plugs in the nares. The required apparatus should be easily portable, especially if small oxygen bombs could be supplied. To anyone sufficiently interested to investigate these possibilities I offer myself as an experimental animal.—I am, etc.,

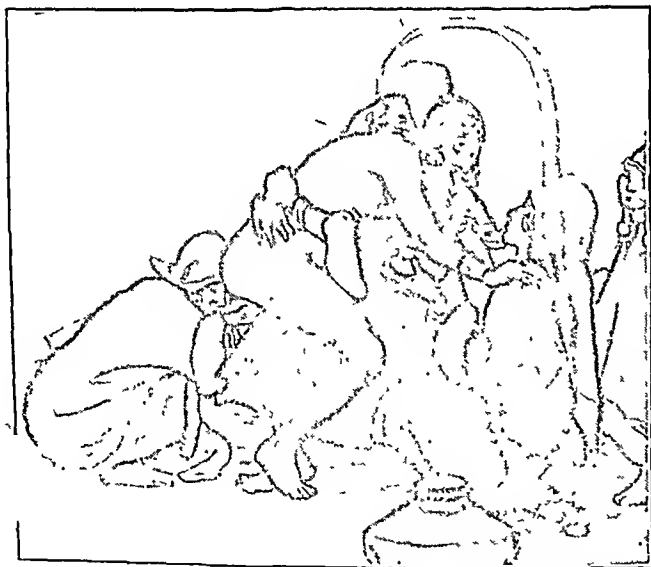
Burley-in-Wharfedale Yorks

C. R. MARSHALL.

Primitive Midwifery

SIR,—I think this may prove of interest. It is an extract from a letter written to me a few years ago by Dr. Marian Smythe, then in charge of the Elizabeth Newman Hospital in Kashmir, in answer to questions I had written to her.

"I had an interesting experience last year. I was in a village and was called out to a house where a woman was in labour, a primipara, fully dilated, with rather funnel-shaped pelvis, membranes ruptured. Foetal heart very irregular and rapid and very hard pains. As there was no sign of advancing—head wedged firmly in the pelvis with a narrow outlet—I said, 'Only forceps will get that out,' and sent to our camp for them and chloroform, meanwhile *samjaoling* (lecturing) the relations. They were very *jungly* and implored me



to wait and brought in a village *dai* (hereditary midwife). I have tried to draw a rough picture of what happened. The kneeling one is putting her finger down the patient's throat to produce vomiting. The squatting one is, I suppose, pulling the outlet open, though she wouldn't tell me or let me look, and was very shocked by my questions and said it was '*Sharm hungkat*' (shame). The seated lady is clasping the abdomen with all her strength. Between them they produced the child in ten minutes, stillborn, before my forceps arrived.

"I suppose they have been doing this since the days of Abraham (viz., Genesis xxx. 3; Exodus i. 16). This is the only time I have seen this, and my questions here elicit nothing of the sort from city *dais*, so I gather it is only in villages they do it now. This was in one of the Sindh valley villages up the mountain near Wozil Bridge, pretty remote from civilization."

The indigenous midwives are such by caste and have picked up the knowledge they possess from their mothers. They are very reticent about their practices, but do craniotomies with a sharpened stick and extract with a piece of string, and they rely largely on change of posture during labour and the use of salt pushed into the vagina to heal the wounds they have made. To clean their hands before making an examination I have seen them rub them on the floor; in most cases this is of earth beaten down hard.—I am, etc.,

London, N.W.11.

KATHLEEN VAUGHAN

Oral Reactions to Penicillin

SIR,—In reply to the letter by Drs. P. Ellinger and F. Mackenzie Shattock (March 5, p. 411), I regret attributing to them the statement made in my paper (Jan. 29, p. 171) that the oral reaction was largely one of nicotinamide deficiency. I was perhaps misled by the suggestion in their summary that symptoms disappeared after the discontinuance of the drugs and the administration of nicotinic acid.

In the cases I examined no examination of the elimination of nicotinamide derivatives was made. Those patients receiving penicillin tablets containing 6 mg. of nicotinamide received a total of about 60-90 mg. of nicotinamide a day. On the other hand, no cases under treatment with penicillin exhibited clinical manifestations of nicotinamide deficiency, and discoloured tongue following prolonged (4-5 days) treatment with local oral penicillin is common. The explanation for these discoloured tongues suggested by Dr. N. Gohar (Feb. 26, p. 367)—pigmentation due to saprophytic fungi—appears a likely one, and worth further investigation.—I am, etc.,

London, W.C.1.

W. G. CROSS.

Fish Poisoning

SIR,—The annotation in the *Journal* of Feb. 19 (p. 317), concerning poisoning after eating fish from localities in which surplus war material had been dumped, recalls to mind a happening in Egypt during the late war. Food poisoning after eating fish from Lake Timsah, on the Suez Canal, occurred in the Ismailia area. I do not know the symptoms in humans but it was alleged that the fish concerned caused paralysis when fed to cats. It was thought at the time that there was some connexion between the outbreak and the numerous mines and bombs which had been dropped in the canal and lake.—I am, etc.,

Birmingham, 3.

B. R. SANDIFORD.

Hunterian Oration

SIR,—It is a matter of regret that Mr. H. S. Souttar in his recent lecture (*Journal*, March 5, p. 379) saw fit to make certain statements liable to give offence to the countrymen of John Hunter. It is historically inaccurate to state that the Highland army pillaged Glasgow and invaded England in a destroying horde. No army ever entered hostile territory and did less damage. He has evidently become confused with "Butcher Cumberland" and the English army, who established "an all-time-high" for murder, arson, pillage, and destruction. His comparison, too, of Highland barbarity and Afghan civilization is likewise unfortunate. Actually, in the 1741 period the Highlands were enjoying under Macdonald, Mackay and MacIntyre a literary efflorescence unparalleled in Europe. A Hunterian lecturer should be meticulously accurate.—I am, etc.,

Oban.

ATHOLL ROBERTSON.

Tuberculous Meningitis

SIR,—Drs. J. Rubie and A. F. Mohun show again in their excellent article on tuberculous meningitis (Feb. 26, p. 338) how much the success of streptomycin treatment depends on early diagnosis, which, of course, is most difficult in the young child. For him the diagnosis is still very gloomy. Could not the general practitioner and the clinic doctor help by making much wider use of a reliable tuberculin skin test? Professor W. S. Craig (Aug. 21, 1948, p. 374) states that the prodromal stage of (usually) two to three weeks may extend to two months, and that it is "characterized by symptoms which individually appear to have no serious import but collectively reflect considerable and to some extent increasing

physical and emotional debility." When the doctor is consulted at that point and finds no definite physical signs he may well be tempted to prescribe in the first resort a simple tonic or vitamin preparation.

At this stage surely the routine employment of a test such as the Mantoux or the multiple pressure test is very desirable. If it is negative, tuberculous meningitis is a most unlikely diagnosis; if it is positive, further investigations are definitely indicated; and in either case the doctor will have obtained for his records information which will be useful to refer to on later occasions. It is admitted, of course, that the test will very commonly give a negative result in such cases, but is not the chance of very occasionally spotting an early case of tuberculous meningitis, or of other active tuberculous infection, well worth the trouble which this procedure involves?—I am, etc.

Oxford.

W. G. HARDING.

SIR.—Tuberculous meningitis, once a hopeless condition, is now accessible to treatment, as has again been shown by Drs. J. Rubie and A. F. Mohun (Feb. 26, p. 338). However encouraging this is, I would like to point out that most of the articles dealing with the treatment of tuberculous meningitis fail to represent clearly some facts which have an important bearing upon the results.

It is generally agreed that the results are less favourable the younger the children are, especially in the first three years of life. Out of 54 cases (Rubie and Mohun) 18 survived (33%). Table VIII shows that there was only one survivor out of the 17 cases (32%) in the age group under 3 years. 94% of all survivors were older than 3 years.

As a matter of fact, tuberculous meningitis occurs chiefly in early childhood. Out of 163 cases of our observation 94 (57.3%) were under 3 years and 121 (73.7%) were under 5 years. Furthermore, the younger the child is the less characteristic are the symptoms and the more difficult the early diagnosis. Among 76 thoroughly analysed cases there were only 8 (10.5%) which showed the typical clinical course as described in textbooks. The skull is not yet entirely solidified in early childhood, and the intracranial pressure, which is so much responsible for the clinical features, does not rise so much and so early as in older individuals.

The age incidence, therefore, is all-important when assessing the practical results of treatment. This statement does in no way diminish the great achievement, which is already so obvious, in the combat against tuberculous meningitis. It is rather meant to put more accent upon the relation between age and the disease when treated with modern methods, and to show that the less favourably responding young children represent the vast majority of cases.—I am, etc.,

Watford.

S. ENGEL.

Fibrositis

SIR.—Dr. R. O. Adamson (Nov. 27, 1948, p. 956) has stated that in Stockman's book entitled *Rheumatism and Arthritis*, Edinburgh, 1920, there is "ample and clear proof of the reality of fibrositis." I have not read Stockman's book since I was in London eleven years ago, and I am unable to obtain it in this country. I am therefore not in a position to comment on Stockman's work, but I would refer Dr. Adamson to the *American Journal of Pathology* (1946, 22, 121). In discussing the pathology of fibrositis Steiner, Freund, Liechtenritt, and Maun state:

"Hench, declaring the fibrositic nodules as the 'signposts of the disease,' emphasized the disappointing results following biopsy. He found little or no histological abnormality. Other observers (Collins, Slocumb, Buckley) agreed that the structural changes in fibrositic lesions are meagre. The pathological findings in 'fibrositis' as first described by Stockman—namely, numerous fibroblasts, serous or serofibrinous exudate, and thickening of walls of the small blood vessels and nerve sheaths—were considered by Collins as unimportant. Collins emphasized the absence of cellular infiltration as the only important fact in Stockman's investigation."

It would therefore seem that Stockman did not prove the existence of fibrositis, and that later investigations show the existence of this condition to be even more doubtful than was formerly believed.—I am, etc.,

ML Hawthorn, Western Australia

JAMES H. YOUNG.

Penicillin in Influenza

SIR.—The present outbreak of influenza, though mild, is completely incapacitating. It is of interest, therefore, that the attack can be cut short by massive doses of penicillin. In a series of twelve cases given a dosage of 750,000 to 1,000,000 units four-hourly, the temperature fell to normal in less than twenty-four hours. A parallel control series showed no such rapid remittance of fever. It is generally considered that the virus is insensitive to penicillin. But with this dosage, and the probable raising of the blood-penicillin level to 7 or 10 units per ml., it is possible that the strain infecting this country at the moment is susceptible to such chemotherapy.

In any case it would appear to be worth extensive trial.—I am, etc.,

London, W.1.

NEVIL LEYTON.

Penicillin and the Infected Hand

SIR.—May I draw the attention of the author of your leading article (Jan. 29, p. 187) to a contribution of mine (*Edinb. med. J.*, 1945, 52, 469) which was one of the first after the original paper by Lady Florey and Dr. Williams? Mr. Barclay, in his paper in the same issue of the *B.M.J.* (Jan. 29, p. 175), refers to it, and through his courtesy I was previously aware of the interesting investigation which he was conducting.

In different types of hand infection I contrasted the results of treatment by control methods and by penicillin cream and found no difference whatever. In comparable types these figures were the same as the figures for local penicillin in the series of Lady Florey and Dr. Williams, but much better than their control figures.

In acute suppurative tenosynovitis these writers recorded an important advance by showing that local penicillin treatment could permit of a movable finger, but the limitation of the method was that full movement at the interphalangeal joints was not recovered when pus was present in the tendon sheath. In my own series of cases of tenosynovitis I too obtained some good results with penicillin cream. As penicillin became less scarce, however, the continuous intramuscular drip was used without local penicillin with such success that, out of twenty-five cases full movement was restored in twelve and a very good range in seven. Included in this series were six cases involving the radial and/or ulnar bursae, without a single bad result.

In view of these results it is difficult to understand why, in your leading article, the virtue of local penicillin is so much exaggerated while the value of systemic penicillin is so grudgingly conceded. Systemic penicillin allows the minimum disturbance of the infected part, is the ideal method of treating the more extensive infections, and controls spread in a way not otherwise possible.

In attempting to assess the value of a new remedy such as penicillin it is important to appreciate what were the results prior to it, and it is necessary to assume adequate surgical supervision in all instances, since bad surgery will vitiate any proper comparison. Before the advent of penicillin what types of hand infection did badly no matter how great the degree of surgical skill? Acute suppurative tenosynovitis gave almost uniformly bad results, the outcome being the loss of interphalangeal movement or else amputation of the finger; involvement of the radial or ulnar bursa was a serious condition, carrying the risk of severe loss of function. Acute suppurative arthritis in the great majority of cases gave rise to a stiff joint or else necessitated amputation of the finger. A severe confluent type of lymphangitis due to *Str. haemolyticus*, besides being dangerous to life or causing a long illness, was capable of producing most serious crippling; sulphonamides did not by any means control all infections of this nature. In these three severe types of infection systemic penicillin has proved of immense value and has completely changed the prognosis. I am sorry, however, that Mr. Barclay's series did not include more cases of this severe nature.

As a complete contrast the other common types of hand infection could not be considered deforming or crippling in the absence of severe complications. Perfect recovery was attainable in a high proportion of cases by good surgery alone, and bad results were usually quite needless. Penicillin cannot be expected to produce any great improvement in these, and Mr. Barclay's results are thus understandable. Systemic penicillin, however, has shown its value by some improvement in the time of healing, a satisfactory control of spread of infection, and the avoidance of complications.

Before the use of systemic penicillin there was a rather rare type of spreading or gangrenous infection, usually associated with constitutional factors such as old age, heart disease, and diabetes. In my paper I referred to the fact that these cases invariably did badly with any form of local treatment, but, as Mr. Barclay shows, systemic penicillin, by controlling the original infection quickly, may now be able to prevent this condition.

In any type of infection necrosis is the principal cause of retarded healing and disability, and I noted how it can be traced to such errors as lack of early attention to wounds, too early incision of an area of cellulitis or lymphangitis, prolonged application of hot fomentations, too much reliance on sulphonamides when incisions were called for, and the making of incisions without adequate surgical facilities. These errors are preventable, but, until they can be overcome by adequate methods of education and organization, the results of hand infections are unlikely to show any further spectacular improvement. The great value of systemic penicillin has been established, and further advances in its use will be concerned with new preparations and easier methods of administration.—I am, etc.,

Edinburgh.

J. F. CURR.

Osteitis Fibrosa Disseminata

SIR,—I have read with much interest the paper by Mr. D. J. MacRae carrying the above title (March 5, p. 389). As he quotes freely from papers published by me,^{1,2} in which I drew attention to the association of severe neonatal jaundice and the development of osteitis fibrosa cystica, I should like to comment on that point, and, in the light of present knowledge, to correct the idea that the Rh factor was implicated.

Among the published cases of osteitis fibrosa cystica, in addition to my two cases, one recorded by McCune and Bruch³ and two by Summerfeldt and Brown⁴ had a similar history of severe and prolonged jaundice in the newborn period. At that time the role of iso-immunization in the production of icterus gravis neonatorum, and the importance of the study of the Rh factor in the differentiation of the different types of that condition, were unknown. Recently, in my two cases, the Rh factor has been examined, and in each case the mother has been found to be Rh-positive. They cannot be classed, therefore, as cases of "haemolytic disease of the newborn," although the fact that they suffered from "icterus gravis"—severe jaundice—of unknown aetiology remains.

Mr. MacRae suggests that the bone disorder may be due to disturbance of parathyroid function, and relates that to the neonatal jaundice. It has been established that kernicterus may result from neonatal jaundice of varying aetiology, and the possibility of a resulting lesion of the central nervous system being responsible for the endocrine disturbance leading to the precocious puberty which occurs in some of the patients suffering from osteitis fibrosa cystica was discussed in my paper. All my evidence, however—absence of hypercalcaemia and hypercalcuria, a positive calcium balance, and a negative rabbit test for the presence of parathormone in the blood—was against implication of the parathyroids in the production of the bone changes—I am, etc.,

Birmingham

FRANCES BRAID.

REFERENCES

- ¹ Braid, F. (1932) *Arch. Dis. Childh.*, 7, 313.
- ² — (1939). *Ibid.*, 14, 181.
- ³ McCune, D. J., and Bruch, H. (1937). *Amer. J. Dis. Childh.*, 54, 806.
- ⁴ Summerfeldt, P., and Brown, A. (1939). *Ibid.*, 57, 90.

Ocular Filariasis

SIR,—The following case is of interest because of its unusual occurrence in this country. On Aug. 20, 1947, a man aged 30 attended Oxford Eye Hospital with a worm moving under the lower bulbar conjunctiva of his right eye. He had been resident in West Africa for nine months prior to returning to U.K. in February, 1946, and within a month of his return he began to have Calabar swellings that caused him very little discomfort. The last of these had been under the skin of the left lower lid, then the nose, then the right side of the face, this last occurring the day before the subconjunctival signs.

On examination, a worm was seen to be moving slowly and snakelike under the lower bulbar conjunctiva of his right eye. During an hour's observation it completely disappeared twice. The patient was only conscious of very slight local irritation. Under 4% cocaine drops, which seemed to have no effect on it during the minute of application, the worm was removed intact through a small incision in the conjunctiva by easing it out over the closed blades of blunt-pointed conjunctival scissors and lifting it away with non-toothed forceps. It made no effort

to go deeper during this procedure, but became very active after removal, in air and in saline. The eosinophilia was 40% of a total W.B.C. of 11,000. No microfilariae were found in the peripheral blood about that time. About seven weeks later another subconjunctival worm appeared, spending most of the day in view. The patient was then in another part of the country, and the worm was not removed. He has subsequently had a course of stibamine glucoside. Calabar swellings are continuing, but are becoming less frequent (one every three or four weeks instead of one or two every week).

The worm was identified by Professor J. J. C. Buckley as an immature male *Loa loa*.

The maximum time that could have elapsed between the first possible infestation and the appearance of Calabar swellings was ten months. Duke-Elder¹ cites one year as the shortest period recorded. According to Connal² the shortest period recorded in Europeans is three months, and four, seven, and nine months were recorded by him.

I should like to make acknowledgment to Professor J. J. C. Buckley, Professor of Helminthology, London School of Hygiene and Tropical Medicine, for his identification of the specimen, and to Mr. Victor Purvis, Oxford Eye Hospital, surgeon in charge of the case.

—I am, etc.,

St. Andrews.

W. G. BRIDGES.

REFERENCES

- ¹ Duke-Elder, Sir W. S., *Textbook of Ophthalmology*, Vol. 2. London, 1955.
- ² Connal, A., *Nigeria, Annual Medical and Sanitary Report for the Year 1923*. Appendix 1, pp. 1-29.

Treatment of Varicose Veins

SIR,—Mr. C. H. Wickham Lawes's temperate and valuable letter (March 5, p. 412) recording his phlebographic studies discloses once more the surgeon's uncasiness of mind about this business of sclerosant injections. And well that it is so—for varicose veins, left alone or with no other treatment than bandage or stocking, have carried no mortality; whereas injection alone, or as ally to ligation, has—and, I assert, will. And who dares counter with the sop that varicose veins may become so harsh an affliction of man's estate on earth as to warrant the risk of death in seeking its relief?

I hope you will permit a personal note. I was at one time exponent and advocate of the sclerosant injection treatment, all the more readily following Sicard, for I had already observed the "sclerosing," thrombosing effect of my injection of quinine into the lower-leg varicose vein of a male patient down with malignant malaria. I even accepted the preposterous claim that the "venitis" provoked by the chemical sclerosant differed from other phlebitis in that the thrombus resulting from this venitis was safely fixed to the vein and the other kind was not. Further, that the clinical proof of success was manifest in a firm, hard thrombus following injection, promising fibrosis of the vein—the fibrous cord, once a vein, being eventually absorbed.

Far too many, and I for one, uncritically saw here a rational, simple, and safe treatment and an instant escape from barbarous guess, slash, and stitch operations for varicose veins, with their seldom successful and always unsightly results. I (not alone) found by biopsies after injection that the thrombus was invaded by mononuclear cells, deriving apparently from the vein endothelium and fixing it to the endothelium, and I (not alone) thought that these mononuclear cells, dubbed fibroblasts, were converting the vein into the desired solid fibrous cord. Later on, after the disappointing and almost constant discovery that when examined six months and more after injection by far the majority of injected, firmly thrombosed veins had recanalized, biopsy studies were again undertaken, as occasion served, over a period of years.

These studies revealed that the invading mononuclear cells from the endothelium were phagocytes in effect, digesting and removing clot. The process was a slow one: in one case I found the thrombus riddled with mononuclear cells and firmly adherent to a sector of the vein's lumen nine months after injection, and in many cases recanalization was proceeding six months after injection. Clearly no follow-up was of value less than nine months after injection; furthermore, the clinical course and the findings of biopsy gave the same results in cases of spontaneous (non-injected) thrombophlebitis of varicose veins. The conclusion was inescapable: that a firm hard thrombosis promised eventual recanalization, not obliteration. On the other hand, I observed (but seldom), following injection of smaller varicose veins, a severe phlebitis, periphlebitis, and cellulitis—acute pain ending rather suddenly after a day or less—in this very unlike the usual injected vein. The affected vein was doughy to palpation, and after twenty-four hours not tender to digital pressure. Biopsy discovered intense inflammatory reaction in the adventitia.

enclosing small areas of extravasated blood, scanty, small round cell infiltration of the vein wall and little or no endothelial cell invasion of clot which lay unattached in the lumen of a vein killed by destruction of its nutrient vessels—a viper venom effect. I could scarce conclude but that successful injection must destroy nutrient vessels, necrose veins, produce an unanchored clot and clinically a soft rather painless thrombophlebitis—a success fraught with danger to the patient.

Fatal accident after injection has been rare, because with injection alone necrosis of the vein occurs only in the smaller superficial veins and that rarely. I is not disputed that injection sometimes has a chain effect—the consequent thrombophlebitis spreading with unexpected speed and violence—and even restarting with even severity after apparent cessation. That ligation and its consequent venous stasis may magnify venously the inflaming, thrombotic effect of injection—nor disputable that should it occur, a deep thrombosed vein of which the vessel wall cannot send anchoring cells into its contained clot would constitute a lively danger to its carrier. We can all agree with Mr. William Lawes that “we knew beforehand that the blood goes from the superficial to the deep veins, and the position of the main communicating veins has been known for a long time.”

Massive doses of strogo sclerosants should be abandoned. With great respect, I suggest to him that should he, as all to his phlebographic studies, take advantage (as I have done) of the frequent occurrence of varicose veins in both legs of the same patient to perform ligations and injections (retrograde or otherwise) in one leg and heat only in the other leg (what better control could there be?), he will—I am confident of it—find that his injections of “minimal amounts of minimal strength” have had no effect other than to give extra pain and a longer convalescence. Success will be found to depend only on the number and sites of his “ligations.”

Sclerosant injection is a dangerous ally, or a useless one. It keeps a place in treatment only because of too short a time of follow up, lack of controls, and incomplete knowledge of what it may do. A varicose vein the whole of it, can be extirpated by resection, or avulsion of varying lengths, through incisions one quarter to one third of an inch in length (0.6–0.8 cm) at selected and previously indelibly marked sites along its course. These incisions, if made parallel with the elastic fibres in the skin, gave very little and require no suture. After a thousand varicose vein legs thus treated I can give the assurance that this operation carries no risk to the patient, who can get up and about immediately on recovery from the anaesthetic, it can often be carried out under local analgesia. There is no pain, cosmetic results are excellent, and if the whole vein is extirpated (sometimes difficult to ensure this) there is, of course, no recurrence—I am, etc.

London W 1

H. M. HANSCHALL

Carcinoma of Cervix

SIR—I have read with interest Mr. W. Sampson Handley's reply (Jan. 22, p. 156) to my letter, but I am afraid his correspondent has misled him into certain inaccuracies which can easily be corrected. First, Kikuyu circumcision is complete not partial as Mr. Sampson Handley states. By this I mean that the whole of the glans penis, including the corona and the sulcus round it is fully exposed and is fully visible without retracting any tissue. There is no spur of preputial tissue on each side of the fraenum. The fraenum is removed when the operation is performed. The spur of tissue is at the end of the shaft of the penis on the posterior aspect. This spur can give no harbour for the “mixed bacterial flora” which according to Mr. Sampson Handley (Nov. 22, 1947, p. 841) flourish beneath the prepuce and may cause carcinoma of the cervix in females. I have myself examined and treated several thousand Kikuyu males with venereal disease so I am in a position to know about this matter.

If carcinoma of the cervix is due to the mixed bacterial flora as Mr. Sampson Handley suggests surely it would make no difference if the male was circumcised at puberty (as in the Kikuyu or Fijian) or in infancy (as in Jews). In neither case would mixed bacterial flora be able to flourish beneath the prepuce as they do in the uncircumcised. Mr. Sampson Handley speaks of the complex mixture of circumcised and uncircumcised tribes in East Africa and very boldly states this is not an area where unequivocal evidence on this matter can be obtained. This may be true of the towns but it is quite untrue of this district which is in the centre of the Kikuyu Reserve and far from any town. It is from this district that all my cases of carcinoma of the cervix come.

Except for a handful of Indian traders and European officials and missionaries no race other than the Kikuyu is allowed to live in the Kikuyu Reserve, nor do they—the Kikuyu see to that. I have spent a good many years in this district and I have never known a Kikuyu woman from this district marry a man who was not a Kikuyu. Some of my cases of carcinoma of the cervix have spent all their lives in places where the only adult uncircumcised males for 25 miles (40 km) in any direction are European missionaries—men whose morals are above question.

In conclusion, the difference in the incidence of carcinoma of the cervix in different races must, I think, be put down to some racial factor which we do not as yet fully understand, not to the circumcision rate in the males of the race—I am, etc.

Fort Hill, Kenya

E. MALCOLM CLARK

Spontaneous Amputation of Cervix

SIR—The interesting case of spontaneous amputation of the cervix which Dr. W. Arnott reported in his letter (Jan. 22, p. 157) induces me to recall an identical case described by me and Dr. Zielinski in 1946.¹ During a rather prolonged labour in a primigravida aged 36, a plum coloured swollen cervix, attached only by a narrow strip of tissue to the vaginal wall, was delivered before the foetal head. The detached cervix was of a saucer shape 4½ in (11.4 cm) in diameter and 1 in (2.5 cm) in its thickest spot. The external edges corresponding to the line where the detachment occurred, were as thin as paper. The position of the os, 1 in (2.5 cm) in diameter, was eccentric. The rest of the second and third stages of labour and the puerperium were uneventful. Further observation of the patient was not possible owing to her departure from this country.

At the time when this case was described there were 17 cases of spontaneous detachment reported in the literature and also 21 cases of detachment in which some obstetrical operations were performed. De Costa² gives the following statistics which throw some light on the causation—namely in 100% there was head presentation, in 100% premature rupture of the membranes occurred, in 100% the labours were prolonged, 88% occurred in primiparae, in 58% the age was over 36. The fact that in the majority of cases with interference the Champetier de Ribes bag was used indicates that the cervix did not dilate. It may be concluded that the expansion and thinning of the lower uterine segment above the cervix, undilated for some organic reason, leads to the detachment of the cervix—I am, etc.,

London W 3

C. UHMA

REFERENCES

- 1 J. Polish Army Med. Corps 1946, 37, 67.
- 2 De Costa, E. J., *Amer. J. Obstet. Gynec.*, 1933, 25, 557.

Transmission of T. Duttoni

SIR—I was very interested to read Dr. R. B. Heisch's paper (Jan. 1, p. 17) on “The Human Louse in Transmission of *T. duttoni* in Nature.” When I was stationed at Mazabuka, Northern Rhodesia in 1938 seven cases of relapsing fever occurred in the local prison, of these three were among detained persons who lived in a building infested with *O. moubata*. The remaining four were convicted prisoners who were confined in the gaol, a building made of burnt brick with inside walls lime washed and painted with tar on the lower portion, the floor was cement and the roof corrugated iron. Repeated search failed to reveal any ticks, but the prisoners' blankets were found to be infested with lice. I have no record of how long the prisoners had been in gaol before becoming ill but I remember it was clear at the time that the relapsing fever in each case must have been contracted while a prisoner and not while detained. As far as I can remember, the blankets and the clothing of all occupants of the gaol were disinfected and no further cases of relapsing fever occurred.

In my 1938 Annual Report for Mazabuka I commented “the possibility has to be borne in mind that this disease among the prisoners is louse-borne.” The Director of Medical Services Northern Rhodesia in his Annual Report¹ for 1938 for the Territory, mentioned the Mazabuka findings and said, referring to relapsing fever “The first suggestion so far as I am aware, that this disease in Northern Rhodesia is ever

other than tick-borne, occurs in the 1938 report by the Medical Officer, Mazabuka."

In view of Dr. Heisch's report on the finding of *T. duttoni* in lice from Africans ill with relapsing fever I thought it would be of interest to place on record my experience, as it would appear that transmission by lice of Central African tick-borne relapsing fever is not only possible but does in fact occur in nature.—I am, etc.,

Broken Hill, Northern Rhodesia.

E. A. BEET.

REFERENCE

¹ Northern Rhodesia (1939) *Medical Report on Health and Sanitary Conditions for the Year 1938*, p. 6. Government Printer, Lusaka.

III Children Remember

SIR.—Ann is now convalescent, an intelligent and charming little person of 11 years. But when, soon after admission to hospital with subacute rheumatism, she developed a fulminant attack of chorea we had little time or inclination to notice how pretty she was, for we wondered if ever we were going to calm her restless, never-ending involuntary movements. They were distressing to watch, the more so because overnight she had lost her speech completely. From time to time her jerky movements were punctuated by a weird and piercing scream—surely, we thought, something purely reflex and unconscious.

Not for twenty-nine weary and worrying days did she recover sufficiently to regain her speech. At first she could utter only short, simple phrases, but four days later she was speaking normally again. We had thought that she was too far gone at the height of the illness to be conscious of what was going on around her, but we were wrong. During the whole twenty-nine days when she could not speak she remembers and can recount vividly a host of trivial incidents. One day her daddy and her aunt came to visit her. She recalls her aunt slipping away quietly and saying to her father, "I'd better go out first in case we upset her." Once, hearing her father's voice whispering outside the nearby door of the ward, she managed to point to the door and so make the nurse bring him in.

She has vivid recollections of the visits of the various doctors; she used to get upset because she imagined that they regarded her as a stubborn little girl when she did not answer them. She remembers the actual word "chorea" being mentioned. From something her father let fall in her hearing she realized that he thought (as indeed he did at one period) that she would not get better.

The screaming noises were her attempts to tell us something. For example, on Christmas Day she had no presents. She realized that this was to prevent her getting excited (in actual fact we never thought that she was "with us" sufficiently to appreciate the significance of the day), but she was none the less disappointed, and she says that she tried to tell the nurses that she wanted to go home by pointing to the window and trying to utter the word "home." They, alas, saw only a purposeless movement and heard a shrill cry. She remembers crying over her aches, which (she tells us) were brought on by sudden noises and also by the light over her bed. Added to her other troubles, her joints were very painful, and although the nurses hurt her when they moved her she could find no way to tell them.

Now, however, Ann is convalescent, and can tell us these things. This she does with an engaging grin. To us it is a salutary lesson that patients who are desperately ill may take in far more than the ordinary observer suspects.—I am, etc.,

Liverpool Royal Infirmary.

J. STUART JONES.

Aftercare of the Hospital Patient

SIR.—I was naturally interested in the annotation in the *Journal* of Feb. 16 (p. 358). The Cardiff scheme, using health visitors, dated from 1944; it began with diabetes and afterwards was extended to peptic cases. As a municipal scheme it was convenient to start it with ex-municipal-hospital patients, but for diabetes the advantages are now available to patients from all hospitals in the area, and some are even referred by general practitioners. The work of the health visitors is supervised by a consultant physician from the diabetic clinic of the Cardiff United Hospitals, who is paid on a sessional basis by the local health authority.

On the suggestion of the Cardiff paediatrician, Dr. A. G. Watkins, the benefit of the follow-up is now to be conferred upon infants and children. Two health visitors, with special

aptitude and liking for the work, will visit the children's wards and learn about difficult cases which have to be followed up afterwards. These two might either themselves follow up or explain the details to the district health visitors, who in turn will follow up. It is hoped that the introduction of this system will prevent the readmission to hospital of many cases, especially difficult infant feeding cases.

Only the "hold-up" over the consultant service generally has prevented the aftercare work in Cardiff through health visitors already including cardiac patients and asthmatic patients as well as the categories mentioned.

There is no conflict between health visitors and hospital almoners in Cardiff, but on principle I would take leave to doubt the ability of almoners anywhere to undertake some important aspects of the work. In dealing with diabetes the health visitor gives considerable technical instruction—e.g., as to use of syringes, testing urine, and diet. It is difficult to believe that anyone such as an almoner without the basic nursing training possessed by a health visitor could undertake this work, and if she cannot it is necessary to have her duplicate the visit of the health visitor just for "social case-work"?

In this age of clichés we are faced with yet another before which we are expected to fall back in awe. There is a mysterious "something" about this cliché which some use to assert a kind of superiority of the social-science diplomat over the better-experienced and far-longer-trained health visitor.—I am, etc.,

Cardiff.

J. GREENWOOD WILSON.

Milk Standards

SIR.—Recent parliamentary debates and letters to the medical press have again drawn attention to the dangers still existing from the spread of bovine tuberculosis by milk. As far as know, the general attitude of the medical profession, and on forcibly voiced by the British Medical Association, is that pasteurization provides sufficient safeguard to milk supplies. This is undoubtedly true as far as it goes, but it must be acknowledged that pasteurization is only a means by which risks to health resulting from earlier errors in production can be minimized. It has always seemed to me undesirable that the public should be expected to drink dead or devitalize microbes of any sort. In emergency, many have drunk previously contaminated water sterilized by boiling, but this is not a practice to be advocated except at such times.

There seems little doubt that the advocacy of pasteurization and its actual practice have seriously retarded fundamental improvements in the standards of milk production in this country, because the tendency has been to produce large quantities of indifferent quality subsequently rendered safe by pasteurization. It is disquieting that only 13.9% of the milk producing cattle in this country are known to be tuberculosis free; happily, the number is increasing. Somehow the idea of tuberculin testing of herds has not caught on in Great Britain to the extent it has in the United States of America, where the possession of untested milking animals is unthinkable. In pre-war days there was a feeling that tuberculin tested cattle only belonged to cranks or gentlemen farmers whatever the latter term means. Most farmers, naturally, were not interested in anything which raised their costs, with the public only interested in cheap food. Little attempt has been made to educate public opinion in the need for considering the quality of milk available and that it must be sold at an economic price. The mass of the population in Great Britain is, of course, so urban-minded that for many milk is something from a bottle, and whether it has a good fat content or is contaminated does not worry them, whereas in the United States, traditionally, the population is much better informed about such matters. The efforts by the Ministry of Agriculture to increase the number of licensed tuberculin-tested cattle on attested herds in Great Britain is to be welcomed, but I doubt whether this commendable effort will be as successful as it might be until the oft-quoted statement, "Of course, you doctors advocate pasteurization," can be denounced forcibly by positive action on the part of the British Medical Association to stimulate an increase in the number of tested animals.

In the advocacy of positive health—the modern theme dominating, or which should dominate, current medical

practice—much can be done to convince milk producers of the need for improvements in the technique. It is not enough to know that cows are tuberculin-tested and that milking stands are surrounded by a four-foot dado of cement, when udder cloths are roughly washed in water which may be little better than dilute liquid manure. In this matter of udder cleaning undue reliance is still placed on antiseptics, which may be useful provided they have time to act; how much better it would be if a point like this were more widely known.

In many matters finance still has to govern policy. If money be available much can be done to improve dairies and other buildings, many of which are a century or more old, which they look. They look old, and they have not been replaced because for the past seventy-odd years all farming—and this includes the production of dairy products—has been of no particular interest to the community as a whole; whether the present signs of a reawakening interest will be more than temporary time will show. Unrestricted imports of food damaged farming permanently in the past and may do so again. Whether present endeavours to re-establish British agriculture will be successful on a long-term basis and automatically raise the standard of milk production would seem to depend upon the farming community realizing that popular interest in them is deep-seated and not simply one of expediency. Memories of the past are long. Until all dairy cattle can be tested and culled it is obvious that during the transitional period pasteurization must continue. This should be looked upon purely as a temporary measure, to be discarded as rapidly as possible—I am, etc.,

London, W.I.

W. R. THROWER.

Temperature Recording

SIR.—Further to the very interesting article by Professor Alan Moncrieff and Dr. B. J. Hussey (Dec. 4, 1948, p. 972) and the ensuing correspondence, may I be allowed to add a few remarks which may be considered of practical interest?

My remarks concern that most awkward age for temperature recording—namely, from 1–3 years. The child is then too young to be trusted with a thermometer under the tongue and too old to tolerate a rectal thermometer with nonchalance (I have ignored the axillary and groin methods as being inaccurate and time-consuming). This age period incidentally provides the bulk of child patients in a busy general practice, and it is from time-saving considerations only, without, I maintain, sacrificing accuracy, that I put forward this method of temperature recording, which I have been using for the last few months.

The technique is quite simple. One directs the bulb of the thermometer gently along the floor of the right cheek between the gum margin and the cheek until the bulb can be felt protruding by a finger laid gently over the outer side of the cheek. The thermometer is steadied with the right hand, the bulb pressed into the buccal sulcus, and the mercury can be watched as it rises. The points I wish to make are as follows:

- (1) If the child is feverish the mercury can be seen to rise within a few seconds only to its maximum. After all, one does not necessarily need to know the exact temperature to a tenth of a degree or so, but the state of illness of the child. The rapidity of the rise of the mercury gives this indication, together with one's other simultaneous clinical findings, such as the pulse rate and general appearance of the child.
- (2) The child rarely, if ever, objects to this method. It never seems to taste the antiseptic in which the instrument is carried, as it does in the sublingual method. Any objection can usually be dispelled by telling the child to "smoke a cigarette like daddy does."
- (3) The mouth can be gently closed by one's free left hand whilst the temperature is being taken.
- (4) I have used this method now in several hundred cases and have never run the slightest risk of the instrument being bitten.

Of course this method would be unsuitable for the more leisurely atmosphere of a hospital ward, but I have found it an invaluable time-saver in the present measles epidemic in this town (when one is asked casually to see sometimes five or six children in one house), without in the least, I feel, leaving one with the impression that one's work has been inaccurate and that the patient has suffered thereby.—I am, etc.,

S. R. SAUNDERS.

Southampton

Obituary

JOHN MCGIBBON, M.B., F.R.C.P.Ed., F.R.C.O.G.

Professor John McGibbon, who died suddenly at Crieff on March 5, had been professor of obstetrics at the University of Witwatersrand before being appointed to the chair of midwifery at St. Andrews University.

John McGibbon was born in Edinburgh in 1876, and graduated M.B., Ch.B. at Edinburgh University in 1898. It was intended that he should assist his father in carrying on a large general practice in the city with a view to taking over the practice at a later date. This intention was not fulfilled, for, after a period as house-surgeon at the Royal Maternity Hospital of Edinburgh, McGibbon became interested in midwifery and gynaecology, and when he later received a gynaecological and obstetrical appointment in the city he decided to give up general practice and devote himself entirely to this specialty. He was appointed to the chair of obstetrics at the University of Witwatersrand, in Johannesburg, in 1922, and in 1928 was recalled to Scotland to occupy the chair of midwifery at St. Andrews University. At the same time he became obstetrician and gynaecologist to Dundee Royal Infirmary. In the following year he became one of the foundation fellows of what was then the British College of Obstetricians and Gynaecologists. Unfortunately his tenure of the chair at St. Andrews was interrupted by ill-health, and he was unable to devote as much of his abundant energy to its duties as he would have liked. He did recover sufficiently, however, to carry on the duties of the chair for another two years after his formal retirement in 1938, so that arrangements could be made to appoint his successor.

Professor McGibbon was a most popular examiner both with colleagues and students and seemed thoroughly to enjoy taking part in examinations. After he had acted as an examiner at practically all the Scottish universities, and on finally retiring from the chair at St. Andrews, he applied for appointment as an examiner to the University of London and carried out this duty for a number of years. For the last few years Professor McGibbon had lived in Crieff, and he was not well enough to take part in medical activities or mix with his colleagues and friends in Edinburgh and Dundee.

He is survived by his widow, a daughter, and a son, who is one of the radiologists at the Royal Infirmary, Edinburgh. To all his family the sympathy of many friends and colleagues will be extended.

ETHEL VAUGHAN-SAWYER, M.D.

Dr. Ethel Vaughan-Sawyer, who died at Mount Vernon Hospital on March 9, was born in 1868 and was the daughter of Cedric Vaughan, J.P., of Millom, Cumberland. After early education at Lausanne and University College, London, she entered the Royal Free Hospital in 1891. She won many prizes as a student, and graduated M.B., B.S. in 1896, proceeding M.D. two years later. After working at Camberwell Infirmary as assistant medical officer, Dr. Vaughan was appointed pathologist to the Royal Free Hospital and worked there from 1899.

Mrs. Scharlieb, afterwards Dame Mary, was at that time senior gynaecological physician to the Royal Free Hospital and the first woman to hold such a position on the staff of a London teaching hospital. In 1902 Ethel Vaughan was appointed assistant physician for diseases of women and assistant obstetrician. When Mrs. Scharlieb retired in 1908 Miss Vaughan succeeded her and was also lecturer in gynaecology in the University of London until 1929, when she was made consulting gynaecologist to the Royal Free Hospital. On her marriage to Captain Henry Sawyer, of the Indian Army, Ethel Vaughan took the name of Vaughan-Sawyer. Her married life was extremely happy and she never ceased to mourn her husband's death in action in 1914. There was one daughter of the marriage, but unfortunately she died. An attack of glaucoma compelled Mrs. Vaughan-Sawyer's retirement from the hospital and from active surgery in 1928, and in spite of

remissions her eyesight gradually failed until she was completely blind for the last ten years of her life. She taught herself Braille and continued to live in her house in Harley Street until the last two years, which she spent in a home where she was happy and received every care.

Many generations of students of the Royal Free Hospital will remember Mrs. Vaughan-Sawyer. She was a vivid personality, an excellent diagnostician, and a meticulously careful surgeon. She was particularly successful in the performance of Wertheim's hysterectomy for cancer of the cervix. In those days "follow-up" clinics for cancer patients were relatively rare, but her cases were seen at regular intervals after operation. Mrs. Vaughan-Sawyer's kindness and generosity were unbounded, both to her patients and to her old students and residents whenever they needed help of any kind. Her great success both in hospital and private practice, apart from her surgical skill, was due to the great interest she took in the lives of her patients. "Tottie," as she was affectionately called, loved the pleasures of life—good food, good wine, an evening playing bridge, and, though often casually and always unfashionably dressed, she delighted in seeing people smartly and expensively attired. She was an entertaining conversationalist, with a characteristic chuckle.

In spite of her family griefs and her progressive ill-health, Dr. Vaughan-Sawyer still managed to enjoy the company of her many friends. Even within two weeks of her death from a recurrence of malignant disease, and while completely paraplegic, she was able to say with almost her old sparkle: "You know, I've had a wonderful life, and am still thrilled when I think about it." It is this aspect of her personality that will live longest in the memory of those who admired her so much.

A. W. WAKEFIELD, M.D.

Dr. Arthur Wakefield, who died at his home in Keswick on Feb. 23 at the age of 72, had led a life of stirring adventure and strenuous endeavour. He was born in Kendal in 1876, a son of the late William Wakefield, of the Wakefield and Crewdson banking house. He was educated at Sedburgh School and at Trinity College. At Cambridge he got a "half-blue" for cycling, boxed as a middleweight against Oxford, and rowed "head of the river." He served as a trooper throughout the South African War. In 1904, when he captained the London Hospital rugby team, he took the L.R.C.P. and M.R.C.S., and he won the United Hospitals heavyweight boxing championship. In that year, too, he put up a mountain-climbing record, ascending Sca Fell Pike, Helvellyn, Skiddaw, and most of the highest intervening peaks, in a little over 22 hours—a record which was not beaten until 1920. In 1905 he graduated M.B., B.C., proceeding M.D. in 1909.

From 1908 to 1914 Dr. Wakefield was medical officer to the Royal National Mission to Deep Sea Fishermen in Labrador and Newfoundland, working with the famous "Grenfell of Labrador." He was organizer and captain of the Labrador Unit of the Legion of Frontiersmen, and in the 1914-18 war he served in the Newfoundland Regiment, R.A.M.C., and was mentioned in dispatches. After the war there followed a spell as surgeon to the Canadian Pacific Railway. Finally, in 1923, he settled as a general practitioner in Keswick with his wife, who was president of the National Council of Women. He was, among many other things, medical officer of the Keswick Home during the recent war.

As a mountaineer that Dr. Wakefield will be best remembered. In common with many members of Everest expeditions, he learnt his climbing in Lakeland, and was initiated by the pioneer brothers, George and Ashley Abraham, of Keswick. With his outstanding rock-climbing ability, great physical strength, medical knowledge, good comradeship, courage, and dogged persistence, he was a most useful member of the 1922 Everest Expedition, when Finch and Geoffrey Bruce reached a height of 27,300 ft. and blazed the trail followed by later parties. He was a member of the Alpine Club, and in 1923-5 president of the Fell and Rock Climbing Club. Dr. Wakefield, although a man of great charm and friendliness, was a severe disciplinarian, deeply religious, and a strict sabbatarian. On one occasion the Abraham brothers induced him to join them one Sunday on an early and difficult ascent of the Devil's Kitchen in Wales. This he enjoyed vastly, but with some mis-

givings apparently,¹ for when he said good night he remarked, "I am going to make my peace with my Maker, but I somehow feel that, under such temptation, He will not be deeply offended." Although many of his contemporaries have gone ahead, many still survive who have the happiest memories of his kindly and helpful friendship, his warm good nature, and his splendid example.

Dr. J. Macdonald writes: Dr. Wakefield was widely known, and was held in respect and esteem by all who knew him. He was always ready to help and always giving of his best, sparing no effort. "No matter how strait the gate, how charged with punishment the scroll," he would go on where his duty lay. His unfailing comradeship endeared him as a friend, and his great courage and determination commanded respect. He was an active member of the B.M.A., being at one time chairman of the local branch and in 1934-5 president of the Border Counties Branch. He was a man of wide interests and extensive experience. Among local and other activities he was at one time president of the British Legion. Unfortunately his later years were marred by a crippling arthritis, but his magnificent spirit remained unimpaired. Undaunted by failing health, he pursued his course to the last, and died in the midst of his activities. Sincere sympathy is extended to his widow, two sons, and daughter.

Dr. GEORGE ALEXANDER DICKSON, West Lothian's oldest physician, died on Feb. 15, at the age of 77, after almost fifty years in practice in South Queensferry. Dr. Dickson graduated M.B., C.M. at Edinburgh University in 1894, and continued his studies in Vienna. He held resident posts in the Edinburgh City Hospital and the Rosslynlee Mental Hospital. After several assistantships he settled in South Queensferry, where he remained in active practice till only a few weeks before his death. He was a loyal and active member of the B.M.A., and was chairman of the Lothians Division from 1923 to 1925. His sound judgment and experience were valued by his colleagues at all the medical meetings he attended. He was a justice of the peace for the county of West Lothian, and in 1946 he was given the freedom of the Royal Burgh of South Queensferry in recognition of his public services. On the occasion of his jubilee in medicine, in 1944, he was presented with a testimonial and a silver salver from his colleagues. Dr. Dickson was highly respected by patients, fellow practitioners, and all who knew him for his kindly, genial disposition and his constant unselfishness and devotion to duty. To those who knew him more intimately he was a staunch friend, and he will be greatly missed in West Lothian. His wife died twelve years ago. He leaves a son and daughter, the latter a member of the medical profession, and to both of them the sympathy of all his colleagues will be extended.—A.S.

Medico-Legal

A HUSBAND'S SULKS

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

A recent unusual case on cruelty caused the Court of Appeal some trouble.¹ From the very early stages of an otherwise happy marriage a wife found that her husband was subject from time to time to fits of depression. He would remain morose, sullen, and silent, and would not speak to her sometimes for as long as ten days. This caused her distress and affected her health. The husband knew quite well that his attitude towards her in these moods had a bad effect, and the couple tried to co-operate to cure him, but in vain. At length she told him that unless his manner towards her improved there would have to be a separation. He agreed that he must try to do better, and for the rest of his leave from Germany he behaved very well, and the couple had one of their happiest times since marriage.

His next leave, six months later, started well but quickly deteriorated, and for the latter part of it he ignored her completely, even in the presence of other people. The judge found her story true, held that the facts amounted to cruelty, and granted her a divorce. The husband appealed to the Court of Appeal, which was constituted with the president of the Divorce

¹ *Lauder v. Lauder*, 1949, 1 All E.R. 76.

very -
 longing to know how
 as well as could be
 and to some
 we are looking
 again

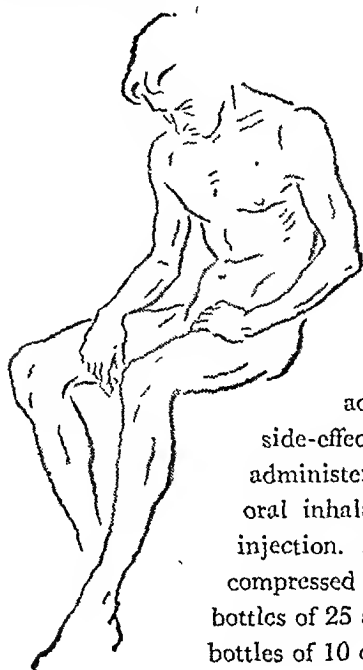
'everything seems to go wrong . . .'

How often you hear it in your surgery! People today, harassed and run down, find themselves unable to contend with all the small irritations and minor mishaps of life.

Livogen is invaluable in all cases of nervous depression, reduced vitality and general debility. It restores vitality rationally, by supplementing the normal resources of the body. It is a balanced composition of liquid extract of liver B.P., extract of yeast, vitamin B₁ and nicotinic acid. Bottles of 4 and 16 fluid ounces are available as well as bottles of 80 fluid ounces for dispensing. Literature is available to medical men on request.

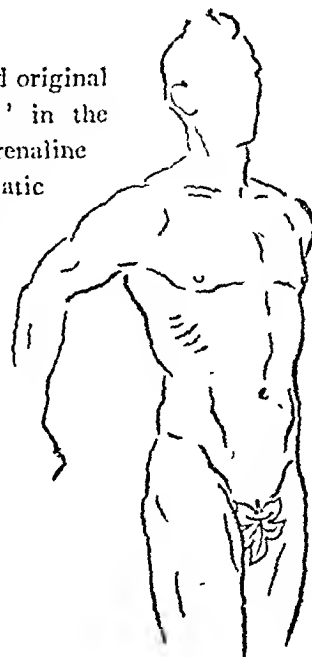
LIVOGEN Trade Mark

MEDICAL DEPARTMENT
 THE BRITISH DRUG HOUSES LTD. LONDON N.1
 TELEPHONE: CLERKENWELL 3000 TELEGRAMS: TETRADOME TELEX LONDON



AT THE FIRST GASP

Clinical experience has amply confirmed original reports on the value of 'Neo-Epinine' in the treatment of bronchial asthma. Equal to adrenaline and superior to ephedrine in anti-asthmatic activity, it is relatively free from the undesirable side-effects of both these drugs. 'Neo-Epinine' is administered simply, either sublingually or by oral inhalation, thereby avoiding the necessity for injection. Issued for sublingual administration as compressed products each containing 20 mgm., in bottles of 25 and 100; and as 1 per cent Spray Solution in bottles of 10 c.c.



'NEO-EPININE'

ISOPROPYL^{nor}ADRENALINE SULPHATE



BURROUGHS WELLCOME & CO. (The Wellcome Foundation Ltd.) LONDON

SPARKLING CLEANLINESS

Radiographers know that they are assured of exceptional latitude, sparkling cleanliness and excellent contrast when they use Ensign STANDARD X-ray film. The difficulties of chest radiography are manifold. Geometrical distortion by the size of the tube focus, physiological movement and grain of the intensifying screen make the use of Ensign Standard essential. Standard Exposure times can be varied without impairing the high quality of the finished radiograph. Ensign STANDARD is a film of normal speed that will give you the finest possible definition even when dark room conditions are not too favourable.

Ensign

STANDARD

X-RAY FILM

Distributors

Barnet Ensign Ross Ltd., Fulbourne Road, Walthamstow,
London, E.17

SKIN AFFECTIONS

AND NUTRITION

The condition of the skin is known to be closely connected with the state of nutrition; for example, skin affections accompany certain vitamin deficiency diseases. An adequate intake of B vitamins is regarded as essential for the maintenance of a healthy skin.

In the treatment of skin complaints associated with a vitamin B complex deficiency, many physicians prefer to administer the vitamins in a natural form, rather than as synthetic vitamin supplements. For this reason Marmite is frequently prescribed; it contains not only riboflavin (1.5 mg. per oz.) and nicotinic acid (16.5 mg. per oz.), but also pyridoxin, pantothenic acid, choline, biotin and folic acid.

MARMITE
yeast extract

Jars: 1-oz. 8d., 2-oz. 1/1, 4-oz. 2/-, 8-oz. 3/3, 16-oz. 5/9

Obtainable from Chemists and Grocers

Special terms for packs for hospitals, welfare centres and schools

THE MARMITE FOOD EXTRACT CO. LT
35 Seething Lane London, E

493

Literature on application

Court, Lord Merriman, at its head, and Mr. Justice Pearce, another divorce judge, as one of its members. The third member was Lord Justice Singleton, who disclaims wide experience of divorce matters.

Findings on Appeal

The president said that the trial judge had fully appreciated the necessity for the two essential elements in a charge of cruelty: something that could be called misconduct by the husband coupled with danger, actual or apprehended, to the mental health of the wife. There was abundant evidence to enable the judge to come to the conclusion that the cumulative effect of the husband's conduct was having a serious effect on the wife's nervous and emotional stability. Sulking was not a new ingredient in cruelty, said the president, although no case turning directly on it seemed to have been reported. More than once he had in the course of trying a divorce petition committed himself to the statement that he could imagine no course of conduct more calculated to be destructive of married life than persistent and deliberate sulking. To "send a wife to Coventry" for ten days on end certainly amounted to cruelty, and the suggestion that the husband's action was involuntary was sheer rubbish. When he was pulled up by the wife or her mother he would behave better for a few days. He was not unable to control his temperament, and many of these incidents were brought about by resistance of the wife to the imposition of his will on hers. He had caused her two miscarriages by bullying her by the threat of sulks into going to church when she did not feel well enough. The president therefore found that she should have her divorce.

Mr. Justice Pearce agreed. He had no doubt that the husband's conduct amounted to cruelty in law, and thought the trial judge had taken the fullest advantage of seeing and hearing the witnesses. Even assuming that the husband had no intention of being cruel, his intentional acts had amounted in the view of the trial judge to cruelty. It would be unfortunate if the court were to refuse its protection on the ground that the injury to the wife's health was caused only by the subtle weapon of sulking.

Lord Justice Singleton, on the other hand, saw no evidence that the husband was either tyrannical or domineering. He was not satisfied that there was a deliberate course of conduct of a kind to cause reasonable apprehension of danger to health. He thought there must be something more than moods, and that the husband, though inconsiderate at times, had not been guilty of cruelty in law as his lordship understood the meaning of the word. There were faults on both sides, and he thought she could have done more; they were both difficult people, and he did not think that the legislature, in the word "cruelty," had intended to include what had been proved in this case. The appeal was, however, decided by the view of the majority.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on Feb. 26 the following degrees were conferred:

D.M.—M. A. Partridge, A. P. Meiklejohn, G. Gordon, J. A. L. Leeming.
B.M.—V. J. E. Davies.

* In absence.

UNIVERSITY OF CAMBRIDGE

Dr. G. R. E. Naylar has been reappointed University Demonstrator in Pathology for five years from Oct. 1.

The *Cambridge University Reporter* dated March 9, 1949, contains a report of the Faculty Board of Medicine on the regulations for degrees in medicine and surgery. The Board recommends that the regulations (*Ordnances*, p. 374) be rescinded and replaced by the regulations set out in the schedule to its report, published in the same issue of the *Reporter*.

UNIVERSITY OF ABERDEEN

William Malcolm Millar, M.D., lecturer in mental health in the University, has been appointed to the Chair of Mental Health in succession to Professor D. R. MacCalman, now Nuffield Professor of Psychiatry in the University of Leeds.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A meeting of the Council of the College was held on March 10, with Lord Webb-Johnson, President, in the chair.

Hunterian Professorships were awarded to Professor C. F. M. Saint (South Africa) and Professor Robert I. Harris (Toronto).

Professor W. E. Gye was elected an emeritus professor of the College as from the date of his retirement from the Directorship of the Imperial Cancer Research Fund.

A Leverhulme Scholarship was awarded to Mr. W. J. Dempster, of the British Postgraduate Medical School.

Mr. L. E. C. Norbury was reappointed as the representative of the College on the Council of Queen's Institute of District Nursing.

Diplomas in Public Health were granted jointly with the Royal College of Physicians of London to P. L. Karney and D. F. van Zwanenberg.

The following hospitals were recognized in respect of the Resident Surgical post required of candidates for the Final Fellowship Examination: R.A.F. Hospital, Ely, 1st and 2nd House Surgeons (General); 1st and 2nd House Surgeons (Orthopaedic); R.A.F. Hospital, Halton, 1st and 2nd House Surgeons (General), 1st and 2nd House Surgeons (Orthopaedic); Warwick Hospital, Registrar to Ear, Nose, and Throat Department.

CONJOINT BOARD IN SCOTLAND

The following candidates, having passed the final examination, have been admitted L.R.C.P.Ed., L.R.C.S.Ed., L.R.F.P.&S.Glas.:

Abd-El-Rahman Azzam, Elspeth V. Beveridge, Mahala M. Beveridge, A. Carlos, Elizabeth Carwardine, J. C. Cassaglia, S. H. Curry, S. B. Davies, I. M. Downie, K. A. H. Fermie, W. O'C. FitzPatrick, R. M. Gaze, J. Govan, J. G. Hart, Mary M. Hay, Lysbeth R. Hurwich, Margaret J. G. Jamieson, J. H. Kennedy, J. J. O'B. Lavery, J. Leonard, D. W. Lyon, G. J. McCann, Sushil Mallick, J. C. Marshall, H. P. P. Morris, J. S. Nelson, J. Ryan, S. Schlifka, J. G. Sheehy, I. Tandatnick, F. Whyte, H. N. R. Wilson, N. W. Wilson, M. Wotherspoon, J. C. Wright.

Medical Notes in Parliament

NATIONAL HEALTH SERVICE

Consultants and Specialists Awards Committee

Sir HUGH LUCAS-TOOTH on Feb. 28 asked the Minister of Health what remuneration he had in mind for the chairman and members of the National Awards Committee set up on the recommendation of the Spens Report on the remuneration of consultants and specialists.

Mr. BEVAN said that the chairman of the Awards Committee was being paid a salary of 3,000 guineas for the first year, 2,500 guineas for the second, and 2,000 guineas for the third. Those members of the committee who were retired received a fee of 7 guineas for each day given to the work of the committee.

Foreigners and Temporary Residents

Colonel STODDART-SCOTT inquired on March 10 whether it had been decided upon what principles doctors in the National Health Service were to be paid for the treatment of temporary residents, visitors, holidaymakers, foreigners, and patients not on the doctor's list.

Mr. BEVAN replied that he was still discussing with the profession the principles on which such payments should be made in future. The total amount of these payments depended on the number of persons involved and was a charge on the central pool for the remuneration of general medical practitioners. He had agreed with the profession that payment in respect of the period July 5 to Dec. 31, 1948, should broadly be on the same basis as under the National Health Insurance arrangements.

Answering a further question, Mr. Bevan said these payments in respect of the period July 5 to Dec. 31, 1948, would be made on March 31. Payments were necessarily made in arrears and payment in respect of the period Jan. 1 to March 31 this year would be made on June 30.

Diphtheria Immunization

In 1947 approximately 478,000 children under 5 and 111,000 from 5 to 14 received inoculations against diphtheria under local authority arrangements in England and Wales.

Returns from authorities in England and Wales for 1947 showed that 1,287 cases of diphtheria and 16 deaths occurred among immunized children, as compared with 2,654 cases and 182 deaths among children who were not immunized.

Petrol for Doctors.—Mr. NIALL MACPHERSON on March 3 asked the Minister of Fuel and Power the functions of British Medical Association liaison officers in relation to his department, and suggested that the applications of country doctors for more petrol were being refused. Mr. ROBENS replied that the liaison officers appointed by

the British Medical Association were available for consultation by the regional petroleum officer on any matter affecting an application by a doctor for an allowance of petrol. Doctors themselves could also ask the medical liaison officer to support their application. The appointments were unpaid and no cost fell on the Treasury. Regional petroleum officers had standing instructions to allow doctors sufficient petrol to meet their essential requirements. Mr. Robens was not aware that reasonable applications were being refused, but promised to review any cases brought to his notice by Mr. Macpherson. The regional petroleum officer had the advice of the medical liaison officer nominated by the British Medical Association. The standing instruction to regional petroleum officers was not to set any limit to the amount of petrol a doctor required in the legitimate work of looking after his patients. Mr. Robens added that a medical liaison officer of the standing appointed by the B.M.A. would know something of doctors' requirements and be a good adviser.

Doctors Redistributed.—Mr. BEVAN said on March 3, in answer to Mr. KERNAN, that the total number of general practitioners on the medical list at July 5, 1948, was 18,165; 661 other practitioners had been admitted since then and approximately the same number had left for a variety of reasons. He had no information on the average salaries earned by doctors in that period. Certain payments were made to doctors outside the National Health Service Act. More general practitioners were taking part in the scheme than the Government had estimated at the beginning. There was a surplus of doctors in some places, and as they redistributed themselves there ought to be adequate doctors for all.

EPIDEMIOLOGICAL NOTES

Influenza

There were 259 deaths in the great towns in the week ended March 5, compared with 251 in the previous week. Sunderland 7 (12) and South Shields 5 (6) had fewer deaths than in the preceding week, but there were more deaths in Bradford 11 (3), Leeds 8 (4), and Manchester 23 (16). Deaths in Greater London were about the same 89 (85). In each case the figure in parentheses is that for the preceding week. In certain places—for example, Salford and Leeds—the incidence has been high but the disease has been of a mild type. Nearly all the isolations of virus have been of virus A, which was prevalent on the Continent, but virus B has been isolated from material obtained from two outbreaks in public schools.

Discussion of Table

In England and Wales there were increases in the notifications of measles 553 and acute pneumonia 138. There were decreases in the incidence of scarlet fever 71 and dysentery 25.

The largest increases in the notifications of measles were Devonshire 197, Sussex 181, Staffordshire 138, Warwickshire 112, and Somerset 102; the largest decreases were Southampton 450, Lancashire 218, Yorkshire West Riding 210, and Gloucestershire 135. The only appreciable changes in the local incidence of scarlet fever were decreases in Lancashire 48 and Yorkshire West Riding 25. A small rise in the incidence of acute pneumonia was recorded in most areas of the country.

The decline in the notifications of dysentery was due to decreases in London from 29 to 11 and in Surrey from 12 to 1. Of the 79 cases of dysentery 41 were notified in Lancashire (Liverpool C.B. 24, Manchester C.B. 6, and Oldham C.B. 5).

In Scotland infectious diseases were less prevalent during the week. The only rise in notifications was 39 for measles; the falls included acute primary pneumonia 55, whooping-cough 14, and scarlet fever 12. Notifications of dysentery fell by 16 in Edinburgh, but there was a rise of 10 in Glasgow. The fall in the incidence of scarlet fever was contributed by the western area, while in the eastern and south-eastern areas a small rise was reported.

In Eire a decline of 31 in the notifications of measles and a decrease of 20 for whooping-cough were reported. In Dublin C.B. a decrease was recorded in the notifications of measles 22, scarlet fever 12, and whooping-cough 10. In the country, excluding county boroughs, the notifications of whooping-cough rose from 9 to 39.

In Northern Ireland the notifications of whooping-cough increased by 50; the largest local rise was 31 in County Tyrone. Notifications of measles showed a decrease of 18 in County Antrim, and a rise of 12 in County Tyrone.

Week Ending March 5

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,189, whooping-cough 2,653, diphtheria 10, measles 18,619, acute pneumonia 1,500, cerebrospinal fever 33, acute poliomyelitis 9, dysentery 65, paratyphoid 5, and typhoid 1.

No 8

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Feb. 26.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (n) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (n) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	46	4	22	2	3	31	2	15	6	1
Deaths	2	—	—	—	—	—	—	1	—	—
Diphtheria	119	13	25	3	5	173	13	38	11	8
Deaths	2	—	—	—	—	1	—	—	—	—
Dysentery	79	11	27	—	—	145	12	65	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica ..	3	—	—	—	—	—	—	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	23	9	5	—	—	46	8	2
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years ..	—	—	—	33	—	—	—	—	21	—
Deaths	34	3	7	5	2	59	8	10	5	1
Measles*	20,055	831	173	120	145	7,312	932	732	136	35
Deaths†	—	—	—	—	1	—	—	2	—	—
Ophthalmia neonatorum ..	59	3	11	1	1	47	1	9	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	7	—	3(B)	—	—	3	—	—	—	1(B)
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza ..	1,607	131	57	13	24	732	37	8	12	3
Deaths (from influenza)‡ ..	251	40	17	—	1	20	3	—	—	1
Pneumonia, primary	466	105	303	40	11	274	41	276	37	6
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-encephalitis, acute ..	4	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	10	1	3	1	—	24	5	1	3	—
Deaths§	2	—	—	—	—	3	—	—	—	—
Puerperal fever	—	—	8	—	—	—	—	10	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| .. ..	111	8	13	—	1	95	5	10	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,262	67	192	108	37	1,710	81	357	26	46
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	4	—	1	—	1	—	—	1	15	1
Deaths	1	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	3,045	195	245	83	117	2,631	158	47	37	17
Deaths	8	—	2	1	—	8	—	—	—	—
Deaths (0-1 year)	344	41	48	28	17	430	58	59	27	11
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	6,682	1,129	741	172	152	5,569	908	634	201	119
Annual death rate (per 1,000 persons living) ..	—	—	14.9	10.7	—	—	—	12.8	12.6	—
Live births	7,921	1,273	921	475	234	5,784	1,493	1,051	383	258
Annual rate per 1,000 persons living	—	—	18.5	29.4	—	—	—	21.2	24.0	—
Stillbirths	185	25	25	—	—	215	20	34	—	—
Rate per 1,000 total births (including stillborn)	—	—	26	—	—	—	—	31	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

Medical News

Professor Grey Turner

Professor G. Grey Turner has been elected an Honorary Foreign Member of La Société de Chirurgie de Lyon.

Lord Boyd Orr

Sir John Boyd Orr, M.D. F.R.S., who was raised to the Peerage in the New Year Honours, has assumed the name, style, and title of Baron Boyd Orr of Brechin Mearns in the County of Angus.

West Herts and Watford Centenary Dinner

The West Herts Medical Society was formed at the Rose and Crown Hotel, Watford, on March 11, 1849. For many years the society remained essentially a dining club, but gradually, as its membership increased, meetings for the discussion of medical topics took pride of place and the dinners became of less importance. The Watford Medical Society was formed in 1896, and in 1912 the two societies amalgamated under the title "West Herts and Watford Medical Society". At the centenary dinner, which was held on Friday, March 11, the toast of the society was proposed by Dr F. M. R. Walshe, F.R.S., and the president, Dr J. W. C. Leech, replied. The health of the guests was proposed by Dr F. J. Aldridge, Lord Moran, P.R.C.P., and Sir William Gilliatt, P.R.C.O.G., replied. Lord Webb-Johnson should have replied, but was unfortunately unable to attend the dinner. Among the many guests were Sir Lionel Whitby, President of the British Medical Association, and Dr H. Guy Dain, Chairman of Council. In the course of the evening tribute was paid to the work of Dr C. Herbert Hall, who was one of the founder members of the Watford Medical Society and its first honorary secretary. He has continued to act as honorary secretary for a period of 55 years.

Medical Society of London

The 169th anniversary dinner of the Medical Society of London was held on March 8 with the President, Dr T. Jenner Hoskin, in the chair. In proposing the health of the Society, Mr Bernard Darwin, who was the principal guest, compared real medicine with golfing medicine, drawing the moral that one should not overdo the cure. In reply, Dr Jenner Hoskin said that the society had been founded in 1773, its membership being made up of 30 physicians, 10 surgeons, and 10 apothecaries. To begin with the society had found its presidents among physicians, but lately physicians and surgeons had alternated in this office. It had been in its present home at 11, Chandos Street, since 1871, and now had a well-furnished council chamber as a result of the treasurer's activities. In toasting the visitors, Mr E. W. Ruches welcomed Mr Darwin as a clubbable man. His great-great grandfather, Erasmus Darwin, had lived at the time the Medical Society of London was founded. In responding for the visitors, Lord Moran replied in a felicitous speech which caught the atmosphere of the evening.

Wills

Dr Charles Henry Milburn, O.B.E., of Harrogate, left £13,076. Apart from a few small bequests, he left the residue to his daughter for life, and on her death half to King's College, Newcastle upon Tyne, for a scholarship in medical jurisprudence for students born in Northumberland, Durham, or Yorkshire, and half to the British Medical Association for medical jurisprudence and forensic medicine prizes for registered medical practitioners. Professor Bertram Arthur Lloyd of Birmingham, left £19,808. He made a number of bequests, and left the residue in trust to his wife for life, with remainder as to half to the Royal College of Surgeons and half to the Cavendish Research Laboratory, Cambridge.

COMING EVENTS

Ophthalmological Congress

The annual congress of the Ophthalmological Society of the United Kingdom will be held at the Royal Society of Medicine (1 Wimpole Street, London W.) on Thursday, Friday and Saturday, March 11 and April 1 and 2. The programme is as follows: March 11, 9.45 a.m. Presidential address by Mr F. A. Juler (1) "Some Points in the Operation for Acute Glaucoma" and (2) "Some Reflections on Refraction" followed by the presentation of the Bowman medals and a paper by Mr D. N. Matthews on "The Technique of Plastic Operations in the Neighbourhood of the Orbit". 11.30 a.m. Mr J. R. Wheeler, "The Reduction of Intra-ocular Tension by Curare, Retrobulbar Procaine and Diisopropyl Fluorophosphate". 12 noon, annual general meeting. 2 p.m., Dr Macdonald Critchley, "The Problem of Awareness or Non-awareness of Visual Field Defects". 2.30 p.m. Dr Critchley, "Cerebral Metamorphosis". 3 p.m., Mr Eugene Wolff, "Notes on Normal and Pathological Ocular Pigment". 3.30 p.m., Dr E. Hartmann,

"The Clinical Estimation of Pressure in the Retinal Arteries". 4 p.m., Dr S. P. Meadows, "Internal Carotid Artery Aneurysms". 7.30 for 8 p.m., annual dinner of the society at Grosvenor House, Park Lane, London, W. (tickets 30s. each, inclusive of gratuities but exclusive of wines). April 1, 9.30 a.m., discussion on "Corneal Grafting" to be opened by Professor A. Franceschetti, Mr J. W. Tudor Thomas, Professor G. P. Sourdille, Mr B. W. Rycroft, and Mr D. P. Choyce. 2 p.m., pictorial demonstration of short cases. April 2, 9.30 a.m., Mr W. J. Wellwood Ferguson and Dr Alastair G. Macgregor, "Congenital Total Colour Blindness, with Otosclerosis and Hypertension as Associated Hereditary Abnormalities". 10 a.m., Dr A. C. Copper, "The Measurement of the Retrobulbar Resistance (Orbitonometry) in the Clinic". 10.30 a.m., Dr G. Karpe, "Clinical Electoretinography". 11 a.m., Mr J. Pike, "Some Problems in Ophthalmic Dispensing". 11.30 a.m., Dr J. Berkson, "Retinal Arteriole Spasm in Toxaemia of Pregnancy". 2.0 p.m., annual general meeting of the Faculty of Ophthalmologists at the Royal College of Surgeons of England, Lincoln's Inn Fields, London W.C. Further information may be obtained from the honorary secretary, the Hon G. J. O. Bridgeman, F.R.C.S. 45, Lincoln's Inn Fields, London, W.C.2.

Society of Anaesthetists of the South western Region

The Society of Anaesthetists of the South western Region has arranged meetings to be held at Taunton on April 1 and 2, and at Plymouth on July 1 and 2. Anaesthetists from other areas will be welcome, and those wishing to attend should communicate with the honorary secretary, Dr G. L. Feneley, Axon Lodge, 8, Parry's Lane, Bristol, 9.

Reunion Dinner

A reunion dinner of C.M.F./M.E.F. physicians will be held at Simpson's Restaurant, 100, Strand, London, W.C. on Saturday, April 2, with Dr E. R. Cullinan in the chair. All interested should communicate with the honorary secretary, Dr Arthur Willcox, 66 Harley Street, London, W.1.

Chesterfield Medal Examination in Dermatology

The Chesterfield Medal examination in dermatology will be held at St John's Hospital for Diseases of the Skin, 5, Lisle Street, London, W.C., on Monday, Tuesday, and Friday, April 4, 5 and 8. Full particulars may be obtained on application to the dean of the Institute of Dermatology at the hospital.

International Medical Congresses

A General Constituent Assembly for the foundation of the Permanent Council for the Co-ordination of International Congresses of Medical Sciences will be held in Brussels from April 4 to April 9. This Conference is sponsored jointly by Unesco and WHO. More than 50 representatives of various international medical organizations will attend the Conference, which will be presided over by Professor J. Maisin to whom communications can be addressed at 141, Rue Belhard, Brussels.

Empire Rheumatism Council

The Empire Rheumatism Council has arranged a week-end course to be held at the Apothecaries' Hall, Black Friars Lane, Queen Victoria Street, London, E.C., on Friday, Saturday, and Sunday, April 8, 9 and 10, with the following programme: April 8, 4.30 p.m., Sir Adolphe Abrahams, "Rheumatism—A Symptom in Clinical Diagnosis". 5.30 p.m., Dr George Graham, "Gout". April 9, 10 a.m., Dr W. S. C. Copeman, "Non-articular Rheumatism". 11.15 a.m., Dr Philip Ellman, "Rheumatoid Disease—Its Systemic Manifestations". 2 p.m., Dr Bernard Schlesinger, "Acute Rheumatism". 3 p.m., Dr Hugh Burt, "Spondylitis". 4.30 p.m., Dr J. J. R. Duthe, "Fundamental Principles in the Treatment of Arthritis". April 10, 10 a.m., Dr F. S. Cooke, "Physical Methods in the Treatment of Rheumatic Diseases". 11.15 a.m., Mr J. C. R. Hindenach, "Orthopaedic Aspects of the Rheumatic Diseases". The fee for the course is £2 2s., and entries (limited to 100) must reach the general secretary of the Council Tavistock House North, Tavistock Square, London, W.C.1, at least one week before the course opens.

SOCIETIES AND LECTURES

Friday

BRITISH INSTITUTE OF RADIOLOGY—(1) At Royal College of Surgeons of England, Lincoln's Inn Fields, London W.C. March 15, 2.15 p.m., Joint meeting with Faculty of Radiologists and Radio logical Section, Royal Society of Medicine. "Tumours of the Kidney" by Professors R. A. Willis and A. S. Johnston. (2) At 32, Welbeck Street, London W., March 18, 5 p.m., Meeting of medical members. (3) At Royal Society of Medicine, 1 Wimpole Street, London W., March 18, 8.15 p.m., Continuation of joint meeting "Tumours of the Kidney" by Messrs Twinnston Higgins, R. Omer Ward and Miss M. D. Snelling.

Cadell.—Recently, Nevil Pottow Cadell L R C P & S Ed L R F P S G Ias of Foxlease Keymer Hassocks Sussex aged 88

Cole.—On Feb 28 1949 at Albany Georgia, U S A, Thomas Matthew Cole, L R C P & S Ed L R F P S G Ias

Copstone.—On Feb 28 1949, at Le Châtel Gorcy, Jersey, William Drake Copstone B Ch, aged 69

Davies.—Recently Katharine Chavis Davies L R C P & S Ed L R F P S G Ias of Upper Northgate Street Chester

French.—On March 5, 1949 at Ranmore, Burgh Heath, Surrey, Ronald Edgar French M D

Ker Gibson.—On March 3 1949 at Cambridge Military Hospital Aldershot, Arthur William Ker Gibson L R C P & S Ed L R F P S G Ias, Lieutenant-Colonel R A M C retired

Lang.—On March 7, 1949 at Marchwood Bathgate, West Lothian John Finlayson Lang M D

McGibbon.—On March 5, 1949, at Medwyn Sauchie Road, Crieff John McGibbon M B, Ch B F R C P E d, F R C O G Emeritus Professor of Midwifery and Gynaecology, Dundee Medical School, University of St Andrews

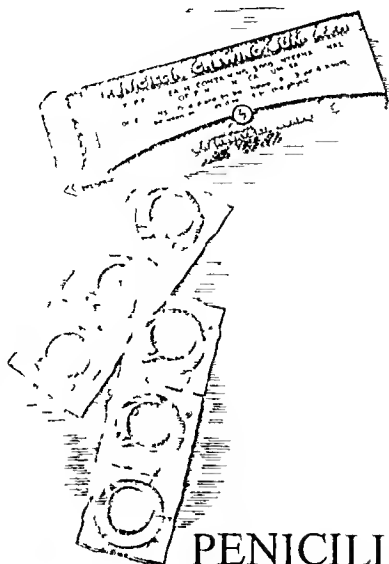
Meade.—On March 5, 1949 at a Harrogate nursing home, Warren Meade M R C S L R C P, formerly of Southsea aged 74

Pearson.—On March 2 1949 at Hitchin Hospital Beatrice Mary Pearson (née Knowles) M D aged 76

Slater.—On March 9 1949 at Overdale Dean Row, Wilmslow, Cheshire Harry Slater, M B Ch B

West.—On March 6 1949, at Fleet Hampshire John Weir West, C B, C M G C B E M Ch L D Major General late R A M C

Wynne.—On March 7 1949 at Melai Northiam Sussex, Walter Wynne M B Ch M aged 81



for prolonged local medication

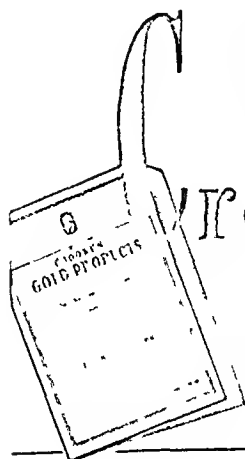
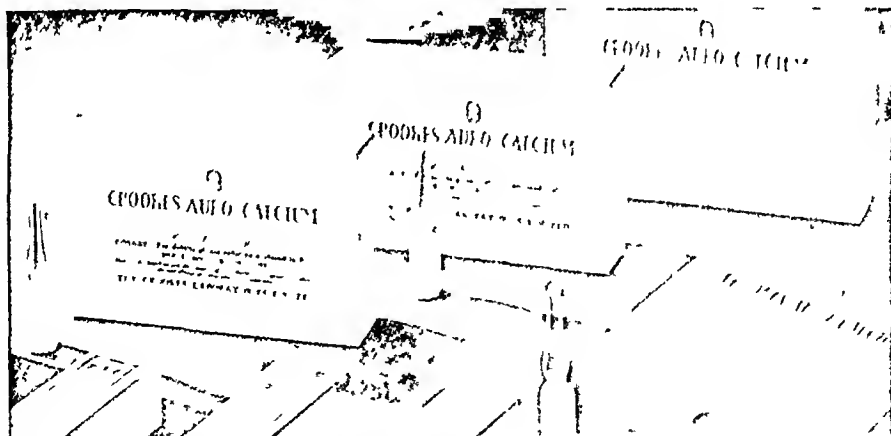
Penicillin Chewing Gum A&H presents penicillin incorporated in a base predominantly mint-flavoured and designed to maintain the potency of the medicament.

When chewed slowly it provides an effective concentration of penicillin in the mouth for three to four hours. It is thus the preparation of choice in the treatment of Vincent's infection, tonsillitis and other infections due to penicillin-sensitive organisms within the buccal cavity.

PENICILLIN CHEWING GUM A&H

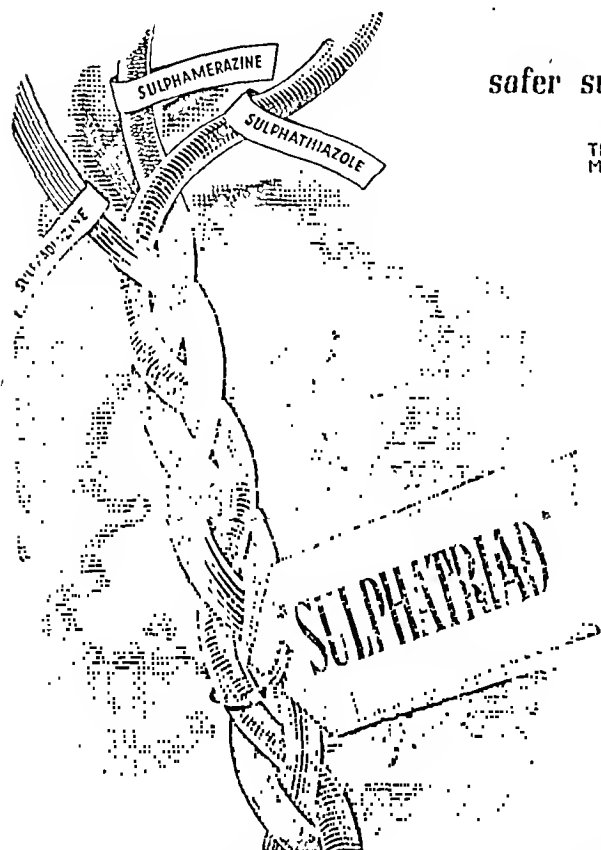
In packets of six pieces, each piece containing 5,000 i.u. penicillin (calcium salt)

ALLEN & HAMBURYS, LTD. LONDON E.C.2



Crookes AURO-CALCIUM

The calcium salt of aurothiomalic acid (Auro-Calcium) is finding an ever increasing use and is now widely recognised as a substantial contribution to chrysotherapy. The demand for the booklet "Crookes Gold Products" has necessitated a still further edition (the 4th), available on application.



safer sulphonamide therapy with

TRADE MARK **'SULPHATRIAD'** BRAND
compound sulphonamide tablets

sulphathiazole	..	0.185 gramme
sulphadiazine	..	0.185 gramme
sulphamerazine	..	0.130 gramme

Since the solubility in the urine of each of the constituents of 'Sulphatriad' is not affected by the presence of the other two, the risk of crystalluria during the treatment with this combination of sulphonamides is greatly reduced.

'Sulphatriad' may be employed whenever chemotherapy with sulphonamides is indicated and is available in containers of 25, 100 and 500 x 0.5 gramme tablets.



Manufactured by

MAY & BAKER LTD

distributors

PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD., DAGENHAM



An Ideal Stand-by in **WASTING DISEASES**

TO replace the tissue wastage and decrease in energy associated with wasting diseases is a problem often rendered more difficult by the fact that there is frequently an associated anorexia and enfeeblement of the digestive and assimilative processes.

'Ovaltine' has proved to be the ideal stand-by in many such cases, because it is an energising and reconstructive nutrient, complete in all essential food elements. It is almost invariably well tolerated even by disordered stomachs and is practically completely absorbed into the blood stream.

The unique dietetic value of 'Ovaltine' is derived from its content of important food substances—milk, eggs, malt extract, cocoa and soya.

OVALTINE

A. WANDER Ltd., Manufacturing Chemists

42, Upper Grosvenor Street, Grosvenor Square, London, W.1

Laboratories, Farms and Factory: King's Langley, Herts.

M339

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Pertussis Prophylaxis and Treatment

Q.—What are the current views on the prophylaxis of pertussis by means of (a) pertussis vaccine, (b) combined diphtheria and pertussis vaccine, (c) gamma globulin prepared from hyperimmune serum. My experience of (a) has been unsatisfactory, and I feel that something more active should be available for treatment of this condition, particularly in infancy. If (b) is reliable should it not be made available at child-welfare clinics? In my area no mention of the combined therapy has been made at the local clinic.

A.—(a) Distinction must be made between the use of pertussis vaccine for the protection of a susceptible child and for the treatment of a case. Prophylactic injections of pertussis vaccine in young children have given variable results, probably because of variation in antigenic potency, which until recently could not be assayed in a suitable experimental animal as, for example diphtheria toxoid is. Lately intranasal instillation or intracerebral inoculation has proved suitable for infecting mice with relatively small doses of *Haemophilus pertussis* and it is hoped that assessment of the protective value of pertussis vaccine in mice may give some guidance to its prophylactic value in children. Pertussis vaccine given early in the infection in small doses at frequent intervals has been claimed, particularly by Danish doctors, to abort or ameliorate an attack of pertussis. Injections of vaccine later in the disease have no beneficial effect and may even aggravate the condition.

(b) When combined diphtheria toxoid and pertussis vaccine produce an antibody response as good as, or better than, the reagents used singly. If both are good antigens, combined vaccination has obvious administrative advantages. Unfortunately there is still uncertainty about the efficacy of pertussis vaccine and the combination of a good and a poor antigen might bring the good antigen into disrepute. Until, therefore, we are satisfied that pertussis vaccine will give reasonably good protection it may be wiser to use these two prophylactics separately. Another difficulty is that protection against pertussis should be given as early in infancy as possible, say at 2 to 3 months of age, since the infection is not uncommon and often severe in the first year of life. Diphtheria on the other hand, is relatively rare in infants so that diphtheria immunization is usually given at 9 to 12 months, when the child's antibody response seems to be better than in the first few months of life. Combined diphtheria toxoid and pertussis vaccine is available commercially, but the decision about its use in child-welfare clinics rests with the medical officer of health and his health committee.

(c) Gamma globulin prepared from hyperimmune serum is not available in this country, but American experience with large repeated doses (two or three injections of 20 ml) of unconcentrated hyperimmune serum suggests that it is reasonably effective in protecting household contacts intimately exposed to infection.

Konsuloff Pregnancy Test

Q.—Can you give me any information about the Konsuloff test for pregnancy? I am not interested in precise details of the technique but would like to know the species of frog used and the site of injection, also the physiological explanation of the relation of the pituitary to skin colour, and if this has any counterpart in the human.

A.—The test was first described in 1934 by Konsuloff,¹ of Sofia who found that the melanophore hormone is increased in amount in pregnancy and excreted in the urine. In his original experiments he used *Melanosaurus* the urine being added to the water in the tank and absorbed through the fish's gills. A darkening of colour was noticed in twenty minutes, but as the fish themselves produce a melanophore hormone the

results were unreliable. *Rana esculenta* were used for subsequent experiments. After being submitted to hypophysectomy the frog is allowed to recover for two weeks, and may then be used repeatedly for testing. Injection of 2.5 ml of urine is made into the dorsal lymph sac, a control frog is given an injection of urine from a non-pregnant woman. A maximum olive-green colour with dark-brown flecks is obtained in two hours. In a later paper Konsuloff² concludes that the test is diagnostic for pregnancy.

Zondek³ isolated a melanophore hormone from the intermediate lobe of the pituitary. This hormone, which he called intermedin, stimulates the expansion of chromophores in cold blooded animals, but appears not to have a corresponding effect in man. The adrenaline content of the adrenal may be reduced by intermedin, but this finding has been doubted. It should be added that Zondek failed to confirm that there is an increase in the amount of this hormone in the urine during pregnancy.

REFERENCES

- 1 Konsuloff S (1934a) *Klin. Wschr.*, 13 490
- 2 — (1934b) *Ibid.*, 13 776
- 3 Zondek B (1935) *Glandular Physiology and Therapy*, p 135, American Medical Association.

Undulant Fever and Milk Regulations

Q.—A case of undulant fever has recently occurred in this district, and the patient is supplied with milk from the same herd as is my household. At present all our milk is being boiled. Should we take any other precautions? Is the public health authority charged with any duties in connexion with the herd?

A.—The inquirer should certainly continue to boil the milk until he hears that it is being pasteurized. Under Article 18 of the Milk and Dairies Regulations the local medical officer of health has power to stop the sale of milk if it has caused illness in man or is known to be infected. Unfortunately it is difficult to prove that any one case was due to a particular supply, and it takes several weeks to prove that any particular sample was infected, also the intermittency of the disease in cattle sometimes results in a series of negative samples being obtained following strong suspicion of infectivity. If the local authority is unable to prove its case it may be required to pay a farmer or dairyman full compensation for his losses. The effect is, in practice, that it is very difficult to stop a milk supply, however strongly suspected of causing undulant fever in man, if the farmer or dairyman is not willing voluntarily to do this or to arrange for pasteurization.

Cup Arthroplasty

Q.—Is the operation of arthroplasty for osteoarthritis of the hip, with the use of a 'cup,' now considered worth while? If it is successful how long is it likely to remain so and in what proportion of cases? In those cases in which the improvement is not maintained, what is likely to happen and in how many years?

A.—Experience has shown that in carefully selected cases the operation of "cup" or "mould" arthroplasty is well worth while. One factor that is essential to success is the full and intelligent co-operation of the patient in carrying out the arduous course of post-operative exercises, which calls for a high degree of pertinacity. Similarly, the surgeon must be prepared to exercise a close personal supervision during all stages of the treatment. Patients who are grossly overweight, flabby or excitable are unsuitable subjects for the operation. A further factor that has an important bearing on the prognosis is the nature of the disability for which treatment is sought in osteoarthritis of degenerative or traumatic origin: the outlook is good, but in "infective" conditions, such as ankylosing spondylitis and rheumatoid arthritis, it is poor. In brief, the type of case in which cup arthroplasty achieves its greatest usefulness is that of bilateral osteoarthritis of the hips in an otherwise vigorous, intelligent, and co-operative patient.

When the operation is successful there are grounds for hoping that the result will be lasting; but our knowledge on this point will not be complete until really long-term reviews of large series of operations become available. In the most favourable cases steady improvement continues for two years or more, and later deterioration does not occur. Satisfactory function is

known to have been maintained for over ten years. But good results are, unfortunately, not to be expected in every case—perhaps in not much more than two-thirds of them at the present time, taken by and large. Early failure may be due to inadequate surgical technique, inefficient after-treatment, or lack of co-operation by the patient. Unsatisfactory late results may be associated with persistent pain or with progressive decrease in the range of movement. Again, this may sometimes be attributed to errors of technique; but other factors, not completely under the control of the surgeon, may be responsible; thus in ankylosing spondylitis re-ankylosis round the cup has often occurred, and even in more favourable conditions, such as osteoarthritis, there may be much new bone formation which limits movement. In other cases there has been subluxation of the cup, or occasionally absorption of the femoral neck with "settling" of the cup. In most of the unsuccessful results evidence of failure has been present at a relatively early stage, certainly within the first two years.

Falling Hair

Q.—(a) Are female glandular preparations ever beneficial in the treatment of falling hair of the scalp? If so, how are they given? (b) Is oestrogen of any use in the treatment of premature loss of hair in otherwise healthy young men? If so, how is it administered, and are there any contraindications?

A.—(a) From an endocrinological point of view we have the following basic evidence. Loss of hair of the scalp occurs normally in a large proportion of virile men in the third and fourth decades, or later, and it also occurs in virilism in females, when there is a known excess of androgens, from which it is concluded that androgens increase facial and body hair but decrease scalp hair. On the other hand, eunuchs and eunuchoids tend to retain their scalp hair throughout life. In Simmonds's disease in women, in which there is a great decrease in androgens and oestrogens, and the hair becomes thin and its lustre and colour, oestrogens are potent in restoring more normal condition of the scalp hair (Simpson, S. L., *R. Soc. Med.*, 1948, 12, 192). Oestrogens may be given by mouth, injection, or implantation, and can be used by minution. Scalp hair is also lost in myxoedema and restored by thyroid. The writer has no experience of the use of female glandular preparations in idiopathic baldness in the absence of endocrinopathy. They are not effective in alopecia.

(b) The remarks in (a) above are applicable to this question, and the probable answer is in the negative. The effect of oestrogens in adequate dosage in the male is to produce involution or atrophy of the testes, loss of libido, and gynecomastia. These effects are spontaneously reversible if therapy is not unduly prolonged. Their production is justified in the treatment of a condition such as carcinoma of the prostate.

Stilboestrol and Dienoestrol

Q.—What are the inorganic constituents in tablets of stilboestrol and of dienioestrol?

A.—In tablets of stilboestrol and of dienioestrol there are no inorganic constituents. Some lactose is, however, usually present as a diluent.

Retroversion of the Uterus

Q.—What treatment is recommended for a 27-year-old multipara with a retroverted uterus? If there are no symptoms, is it advisable to leave the condition untreated and warn the patient to report immediately she becomes pregnant?

A.—No treatment is indicated if the patient is free from symptoms, but in the event of her becoming pregnant she should be asked to return for examination before the twelfth week. This is to make sure that the uterus corrects its position spontaneously; if it has not done so by the tenth to twelfth week it should be manipulated into anteversion and maintained in that position by a suitable pessary. Some authorities say that, provided the patient never lets her bladder get overfilled, the uterus always corrects itself and there is no need for any treatment even in pregnancy. Nevertheless, impaction does occur, and there is a good deal of evidence that abortion is more likely, so it seems wise to take no chances, particularly as restoring the position of the uterus at the tenth week is such an easy manoeuvre.

Subarachnoid Haemorrhage

Q.—Some months ago a female patient had a subarachnoid haemorrhage from which she recovered. It has now been suggested that she should submit to a tying-off of the artery. Is this operation often undertaken, which artery is most often concerned, and what are the results?

A.—In the absence of gross cardiovascular disease, subarachnoid haemorrhage is most frequently due to a congenital intracranial aneurysm. Before carotid ligation is undertaken the case should be investigated by carotid angiography on each side. If the angiograms show no lesion there are several possibilities: (1) there is no aneurysm; (2) there is an aneurysm which is not fed by the internal carotid artery (for example, an aneurysm of the vertebral or basilar artery or one of their branches); (3) there is an aneurysm on the internal carotid system which has filled with clot. If the angiograms reveal an aneurysm and it is already eight weeks or more since the original subarachnoid haemorrhage, the risk of further intracranial haemorrhage is probably about 20%, though the figures on which this estimate is based are not large. If the aneurysm lies below the level of the anterior clinoid processes it is best treated by carotid ligation after an angiographic test has demonstrated that both cerebral hemispheres can be adequately supplied from the carotid system of the opposite side. It is safer to ligate the common carotid than the internal carotid, though in patients in the younger age groups in whom angiography has demonstrated an adequate collateral circulation from the opposite side the latter operation carries little risk. So far as is known to date carotid ligation is effective in preventing further attacks of haemorrhage. In some cases the angiograms will show not an aneurysm but an angiomatous malformation of the central hemisphere as the cause of the subarachnoid haemorrhage. For this condition carotid ligation is useless.

Boeck's Sarcoidosis

Q.—What are the microscopical appearances of lymph nodes affected with Boeck's sarcoidosis, and what are the prognosis and treatment in this condition?

A.—There is usually a well-defined mass of endothelioid cells with little or no tendency to caseation or calcification and few or no giant cells and no surrounding reaction. A diagnosis cannot, however, be made on histological appearances alone. Treatment is by calciferol in a dosage of 100,000 to 150,000 i.u. daily over long periods, but care must be exercised and biochemical control is desirable. Disturbances of calcium metabolism and of renal function may occur. Prognosis is good; in the majority of cases the disease resolves or becomes stationary.

NOTES AND COMMENTS

Home-cured Tobacco and Amblyopia.—Dr. A. E. BURROUGHS (Osvestry) writes: With reference to the question headed "Home-cured Tobacco and Amblyopia" ("Any Questions?" Jan. 22, p. 163), most of the tobacco amblyopia patients I have seen in a long ophthalmic experience have been pipe smokers over 60 years of age, and retired—therefore having time on their hands, and not much to do, so smoking to excess. I have not seen more than two cases of amblyopia in men smoking only cigars. With regard to home-cured tobacco, the midribs of the leaves should always be removed, and if the dried leaves be then soaked in several changes of water nearly all the nicotine is dissolved out. This soaking does not affect the taste of the tobacco.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Any Questions*. *Westcent*, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads*, *Westcent*, London. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. TELEPHONE: EUSTON 2111. TELEGRAMS: *Medusccra*, *Westcent*, London. B.M.A. SCOTTISH OFFICE: 7, Drumshough Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY MARCH 19 1949

THE SECRETARY REPORTS

PROPOSED TERMS FOR HOSPITAL STAFFS

The proposed terms and conditions of service for hospital medical and dental staffs just issued by the Ministry are published in full in the following pages. The object of these notes is not to comment on the proposals but to draw attention to some of the more important points and to their implications. These notes are in no way a substitute for the full and detailed scheme of proposals which should be studied by every consultant and specialist as well as by other hospital officers.

The scales of remuneration proposed by the Government are, of course, based on the scales recommended by the Specialist Spens Committee. Two adjustments are made in the conversion of the Spens proposals to the Ministry's proposals. Roughly speaking, a betterment factor of 20% is added, and then a deduction of 8% is made in respect of the Government contribution to superannuation (to compound these two figures an increase of approximately 11% is needed). In fact, the betterment which has been applied varies from 18.8% to 22.4% in the case of specialists and from 17% to 20.5% in the case of trainee specialists. The rates of remuneration are to be retrospective to July 5, 1948, for those who were in the hospital service on that date. The incremental date for such officers is July 5, the first increment being due on July 5, 1949.

Specialists

Once a practitioner is recognized and appointed as a specialist his salary proceeds automatically by incremental stages to the maximum of £2,750 (non-residential). Specialists taken over on the appointed day will be placed at the level on the scale which they would have reached had the Service been operating throughout their specialist career. Allowance can be made for service with H.M. Forces. There is no definition of a specialist. The effect of this is that the decision by a board of governors or a regional hospital board to appoint a practitioner to a specialist post on a hospital staff confers specialist status. To this extent the number of specialists is controlled by the establishment of specialist posts as well as by the fitness of an applicant to fill such a post.

Special Awards

It appears that the Ministry accepts the recommendation of the Spens Committee that 4% of all specialists in the Service should receive additional remuneration of £2,500 per annum, 10% additional remuneration of £1,500 per annum, and 20% additional remuneration of £500 per annum, though it is not clear what significance should be attached to the words in para. 1(b) of the Ministry document: "... having regard to the desirability that 4% of all specialists ..." The special awards will be subject to superannuation, so carrying the Government contribution of 8%, but no betterment as such is paid on them. As superannuation is applied to the special awards it is inferred that they will continue until the age of retirement.

Trainee Specialists

The Trainee Specialist section needs no amplification except to stress that promotion from one grade to another will not be automatic, each grade demanding a distinct level of ability and experience.

House Officers

The rates for house officers of £350, £400, and £450 per annum are subject to a deduction of £100 a year for residential emoluments, each post being tenable for six months.

Hospital Medical Officers

The grades of Junior Hospital Medical Officer and Senior Hospital Medical Officer were not the subject of specific recommendations in the Spens Report. The junior grade is for posts of lesser responsibility in hospital including, no doubt, senior resident posts not graded as trainee specialist posts. Senior Hospital Medical Officers, on the other hand, are defined as senior officers performing clinical duties who are not of specialist status and not trainees, a scale of £1,300 per annum at the age of 32, rising by annual increments of £50 to £1,750 (non-residential), being recommended. This scale, unlike the Junior Hospital Medical Officer scale, will be used—by the application of a formula—for part-time as well as whole-time hospital posts. Presumably this grade will be used for certain practitioners whose hospitals were taken over on the appointed day but who are not graded as specialists. For example, it may include former whole-time officers in the municipal hospital service, some medical officers of infectious diseases, tuberculosis, and venereal disease services, and members of former voluntary hospital staffs not graded as specialists. It is understood that it is intended that this group shall decline in dimensions as the years proceed. The application of the Spens formula (see below) to part-time members of hospital staffs not graded as specialists yet continuing with their hospital work at the age of 41 will result for most such practitioners in an annual payment per weekly half-day worked of approximately £200 a year. The decision whether a practitioner on a hospital staff is of specialist status or not will be a matter for boards to determine on the advice of Review Committees now at work. It is significant that, to the extent to which such practitioners are graded as Senior Hospital Officers and not as specialists, to that extent will the aggregate number of special awards decrease, for the number is directly related to the number of specialists.

Medical Superintendents and Deputy Medical Superintendents

Further consideration is promised of the position of medical superintendents of mental hospitals and mental deficiency institutions. For the rest, some medical superintendents and deputies will no doubt be graded as specialists. Those so graded will be remunerated as specialists for the proportion of their time they devote to their specialty and as administrative staff for the proportion of their time which they devote to administration. The one qualification to this is where the proportion of time devoted to administrative duties is small, in which case the specialist remuneration will obtain. In other cases the effect of this proposal in the case of the specialist administrator devoting more than a small proportion of his time to administration is that his remuneration will be less than the specialist level and so may be less than that of practitioners on his staff devoting the whole of their time to their specialty. There is a scale for hospital administrative staff which in effect is the scale applied to secretaries of hospital management committees. This is a range of remuneration between £580 and £1,700, the appropriate place in the range being determined on a points system related to such factors as the number of beds. This is the scale which is to be applied to medical superintendents engaged wholly in administration, subject to the proviso that those who were transferred under Section 68 of the Act and who were receiving salaries better than those now introduced are entitled to retain their previous salaries on a personal basis for so long as they remain in the same appointment or another appointment of the same or greater responsibility as the one they held at the appointed day. As new medical superintendents engaged whole-time in administration are appointed, their remuneration will be on the scale applicable to the lay secretaries of hospital management committees.

Part-time Specialist Appointments

There is to be no clocking in and clocking out. Before the permanent contract is entered into an assessment will be made

of the amount of time necessary to perform the duties attaching to the post, this time assessment taking into account practically all varieties of service as well as travelling time. But it will exclude time spent in emergency calls to patients in beds in the charge of the specialist (except where any exceptionally heavy liability to recurring emergency work of this sort is anticipated). It will also exclude the time spent in committee work or in the care of private patients and any domiciliary visiting for which separate fees are payable. The additional sum completed, it will be divided by $3\frac{1}{2}$ hours to give the number of notional half-days, the specialist being given the benefit of "the marginal overlaps." If, in the case of an individual specialist, the number is x , his remuneration will be

$$\frac{x}{11} + \frac{\frac{1}{2}x}{11} \text{ or } \frac{x}{11} + \frac{\frac{1}{2}(11-x)}{11},$$

whichever is the less, of the appropriate whole-time salary. In other words, the specialist calculated as doing x sessions a week will get x elevenths of the annual salary applicable to him plus one-quarter of the resultant figure except where the number of sessions is high, in which case the element of addition is shaded down so as to keep the remuneration of a part-time officer less than that of a whole-time officer. An overriding maximum of $9\frac{1}{2}$ elevenths is applied to all part-time officers, though this maximum does not include payments for exceptional consultations for a board with whom the practitioner is not in contract, payments for work as locum, and payments for domiciliary visits. A similar formula is applied to those graded as senior hospital medical officers.

There are provisions in paragraph 5(c) of the proposals for additional payment for exceptional consultations for specialists, retired consultants, and general practitioners. There is provision for paying a locum at the rate of 5 guineas per half-day during a specialist's temporary absence where other arrangements cannot be made.

Boards are given discretion, with the Minister's consent, to offer a higher rate of part-time remuneration in special circumstances.

Domiciliary Visits

In general the rate is £4 4s. per consultation, with an additional £2 2s. where an operative procedure, other than an obstetric one, is undertaken or where the specialist uses his own electrocardiograph or portable x-ray apparatus; there is an additional fee of £4 4s. for an obstetric operation. An additional £1 1s. will be paid for a journey of over 20 and up to 40 miles radius, £2 2s. for a journey of over 40 and up to 60 miles radius, and so on, with an additional £1 1s. for every 20 miles. The maximum remuneration for domiciliary visiting, apart from travelling and additional mileage payments, is 200 guineas in any quarter or 800 guineas in any year, whichever the specialist prefers. No special payment is to be made to whole-time specialists for domiciliary work.

General Practitioner Staffs

There are special sections devoted to the remuneration of general practitioners on the staffs of hospitals in that capacity and to general practitioners employed at hospitals (paragraphs 8 and 9).

Tenure of Post

There is no fixed tenure of post to be specified in the contract. The board is the body which appoints and the body which terminates an appointment. There is no statement of the reasons for which a board can properly terminate an appointment. Where a board is proceeding to terminate an appointment of a specialist he is entitled to send a full statement to the Minister, who would, after consulting the board, place the case before a professional committee (consisting of representatives of the Ministry and representatives of the profession, under the chairmanship of the Chief Medical Officer) for their advice. In the light of the advice of this professional committee the Minister will confirm the termination of service, or direct reinstatement, or arrange some other solution. This procedure is to be completed before the board's decision to terminate the appointment is carried into effect.

Strictly speaking, there is no right of appeal conferred on the practitioner; nor does the document say that a board can dismiss only with the permission of the Minister. Once the

board is in process of terminating an appointment, the specialist affected can invite the Minister to intervene. But it seems the process of dismissing must have begun.

Leave

On the subject of annual leave, compassionate leave, and sick leave there can be no substitute for a meticulous scrutiny of the details of the Ministry's document (paragraph 16).

Expenses

The general principle is laid down that travelling, subsistence, and other expenses are to be paid to meet the actual disbursements of practitioners and not to be regarded as a source of emolument or reckoned for pension purposes. Some more important points are as follows:

(a) Officers will be classified as regular users or casual users, according to whether their annual official mileage is estimated to exceed 2,000 miles or not.

(b) The regular user, whatever the horsepower of his car, will be paid an annual allowance of £52, with 3½d. a mile in addition.

(c) Casual users will receive no annual allowance but will be paid 7½d. a mile for the first 3,120 miles per year and 3½d. a mile thereafter.

(d) Where an officer uses a private motor-car in circumstances where travelling by a public service would be appropriate, the mileage allowed to him is 1½d. a mile, irrespective of the type of vehicle.

(e) Subsistence allowances are at one rate if the practitioner's remuneration is £760 a year or more and at another rate if the practitioner is receiving less than £760 a year.

Medical Examination on Appointment

The passing of a medical examination is a condition of appointment of all officers within the scope of the N.H.S. superannuation scheme, other than those who are transferred under the Act. The superannuation scheme itself makes no provision for a medical examination. Nor has there been any suggestion yet of a medical examination for those entering the general practitioner service.

It will be observed from the wording of paragraph 18 of the Ministry's document that the passing of a medical examination is a condition of appointment, as distinct from a condition of entry to the superannuation scheme. In practice this will mean that, on obtaining a registrable qualification and seeking a post as junior house officer, a practitioner will be required to satisfy an examining doctor that he is "free from any physical defect or disease which now impairs his capacity satisfactorily to undertake the duties of the post for which he is a candidate." This is not without the danger, however small, that a practitioner may find himself on the *Medical Register* without the possibility of obtaining house appointments or any other posts in the hospital service.

Appendices

Appendix A deals with the subject of remuneration of whole-time clinical posts in medical and dental schools and part-time clinical teaching posts. In the case of the latter, no rates of remuneration are given, it being stated that they will be remunerated by the university or school in recognition of their teaching duties "at a rate which appears to the university or school to be appropriate to those duties."

In Appendix B there are listed the services which are within the scope of the hospital and specialist services and those which are not. Included among those which are not within the scope, and for which, therefore, remuneration may be received, are examinations and reports required by employers on employees, reports required in connexion with legal actions, examinations and reports for coroners, life insurance reports, certificates under the Blind Persons Act, attendance at court hearings as medical witnesses, lectures given to nurses, and services as members of medical boards.

Appendix C describes what comes within the ambit of "study" leave, which incidentally cannot be claimed as a right, defining different kinds of leave with pay or expenses, with pay but without expenses, and without pay or expenses. It deals generally with the question of payment of expenses, imposing maxima which regional hospital boards and boards of governors are required to observe.

National Health Service

PROPOSED TERMS AND CONDITIONS OF SERVICE OF HOSPITAL MEDICAL AND DENTAL STAFF

NOTES. (a) *The terms and conditions of service set out in this document apply to England and Wales. They apply also to Scotland subject to minor adjustments to meet different circumstances in that country.*

(b) *All salary scales will apply equally to men and women, and uniformly throughout England, Wales, and Scotland.*

(c) *Under the National Health Service Superannuation Scheme, over and above any salary specified in this document the employing authority will be paying a contribution equal to 8% of the salary into the superannuation fund. The employee's contribution (6%) will be deducted from remuneration.*

1. Specialists

(a) Main Scale for Staff Specialists at Hospitals, including Dental Specialists

(1) Specialists appointed at age 32:

£1,700 + £125-£2,075 × £150-£2,375 × £125-£2,750 per annum non-residential.

(2) Specialists appointed at age 31 or earlier to start at £1,550 or £1,400 respectively.

(3) Specialists first appointed after age 32:

the hospital authority to be able to fix the starting salary at any of the four next incremental points in the scale,

(i) by reason of age, special experience, and qualifications,

(ii) by reason of age alone, where seniority has been lost because of service with H.M. Forces,

provided that the starting salary shall in no case be higher than the specialist would receive on age alone.

(b) Special Distinction Awards

An Advisory Committee on Awards for Consultants and Specialists has been set up to advise the Minister of Health and the Secretary of State for Scotland which specialists engaged in the National Health Service should receive awards for professional distinction, having regard to the desirability that 4% of all specialists in the Service should receive the highest award (£2,500 per annum in addition to the "basic salary"), a further 10% should receive the second award (£1,500 per annum), and a further 20% the third award (£500 per annum). These awards will be paid as an element of remuneration additional to the main scale and will be superannuable.

2. Trainee Specialist Grades (including Dental)

(a) *Grade 3* (as defined in the Spens Report on the Remuneration of Specialists: posts obtained normally not less than one year after registration and held normally for one year only):

£670 per annum non-residential.

(b) *Grade 2* (posts obtained normally not less than two years after registration and held normally for two years):

£775 per annum non-residential in the first year;

£890 per annum non-residential in the second and any subsequent years.

(c) *Grade 1* (posts obtained normally not less than four years after registration and held normally for three years):

£1,000 per annum non-residential in the first year;

£1,100 per annum non-residential in the second year;

£1,200 per annum non-residential in the third year;

£1,300 per annum non-residential in any subsequent years.

NOTES: Trainee specialists not to proceed from one grade to another by automatic promotion. Each grade of post demands a distinct level of ability and experience. A trainee specialist in a lower grade to be considered on merit, along with other applicants, for a vacancy in a higher grade.

A trainee specialist holding an appointment in Grade 1 and subsequently appointed to a Grade 2 post to be paid the higher salary appropriate to Grade 2 (i.e., £890 per annum) whilst he holds the post in that grade.

3. Other Non-Specialist Grades

(a) Junior House Officer (including Dental):

£350 per annum non-residential for the first post held;

£400 per annum non-residential for the second post held;

£450 per annum non-residential for the third and any subsequent post held;

with, in each case, a deduction of £100 per annum in respect of residential emoluments. Each post to be tenable for six months.

The Minister will be prepared to authorize, in exceptional circumstances, salaries up to £50 per annum higher than the standard rates specified above where a post cannot be filled otherwise.

(b) *Junior Hospital Medical Officers*, who have held house appointments but who are not trainee specialists, and who have less responsibility than other hospital officers of non-specialist status:

£700 (for an officer appointed not less than two years after registration) × £50-£1,000 per annum non-residential.

(c) *Senior Hospital Medical Officers*—senior officers performing clinical duties who are not of staff specialist status but are not trainees:

£1,300 per annum (at age 32) × £50-£1,750 (non-residential),

the position on this scale to be determined by age (subject to paragraph 10(b) below).

(d) Medical Superintendents and Deputy Medical Superintendents

The objective will be to reduce to a minimum the time to be given by medical staff to administrative duties, and to enable them to devote their energies to clinical work in their appropriate grade. Subject to further consideration in the case of mental hospitals and mental deficiency institutions, medical superintendents and deputies to be remunerated for clinical work as specialists or senior hospital medical officers according to their grading; for administrative work, to be remunerated at the appropriate rate for hospital administrative staff; where, however, a whole-time officer is engaged almost wholly in clinical work and gives only a small proportion of time to administrative duties, his appropriate clinical remuneration not to be affected.

4. Transferred Officers

Officers who were transferred under Section 63 of the National Health Service Act, 1946, and who immediately before July 5, 1948, were receiving salaries better than those now introduced, to be entitled to retain their previous salary on a personal basis for so long as they remain in the same appointment or another appointment of the same or greater responsibility as the one they held at the appointed day; but otherwise to conform to the new rates of remuneration on taking up a new appointment or on promotion.

5. Part-time Appointments, etc.

(a) Part-time Specialist Appointments

Before offering a part-time specialist appointment the board to assess in terms of hours per week what is the average amount of time required by an average practitioner to perform the duties attaching to the post. In assessing the average amount of time to perform the duties attached to the post, to take into account

out-patient clinics, ward rounds, operating sessions, laboratory work, and so on in their hospitals, including occasional visits to outlying hospitals for consultation, diagnosis or operative work. Also to include time given, e.g., as consultant adviser to the board on special branches of the service or by way of "pastoral visits" to cottage hospitals; and time necessarily spent in travelling from home or private consulting-room (whichever is the nearer) to the hospital or hospitals served (unless the journey is one which he would undertake irrespective of his work for the board). To exclude time spent in emergency calls to patients in the beds in their charge (except where any exceptionally heavy liability to recurring emergency work of this sort is anticipated), or in committee work, or in care of private patients in pay-beds or as out-patients. Also to exclude domiciliary visiting, for which special fees are payable (see paragraph 6 below).

The object is to express this aggregate number of hours per week as a number of notional "half-days" per week. It will not be necessary at any time to "clock in" the actual number of hours worked on any particular day or in any particular week by any particular specialist—the number of "half-days" is merely the means of expressing the duties attaching to the post in terms which enable remuneration to be calculated without meticulous adjustments up or down from time to time.

To arrive at the number of notional "half-days" from the aggregate of hours so assessed, the total to be divided by $3\frac{1}{2}$, the specialist being given the benefit of the marginal overlaps. In other words, the relation of "half-days" to hours to be as follows:

No. of hours weekly	No. of notional half-days on which salary will be reckoned
Up to $3\frac{1}{2}$	1
Over $3\frac{1}{2}$ and up to 7	2
" 7 " " " $10\frac{1}{2}$	3
" $10\frac{1}{2}$ " " " 14	4
" 14 " " " $17\frac{1}{2}$	5
" $17\frac{1}{2}$ " " " 21	6
" 21 " " " $24\frac{1}{2}$	7
" $24\frac{1}{2}$ " " " 28	8
" 28	9

The part-time salary to be determined by applying to the number of half-days calculated in this way the formula recommended in the Spens Report on the Remuneration of Consultants and Specialists, i.e., the part-time salary to be the following proportion of the whole-time salary appropriate to the specialist:

$$\frac{\text{number of half-days}}{11} + \frac{\text{one-quarter of number of half-days}}{11}$$

$$\text{or}$$

$$\frac{\text{number of half-days}}{11} + \frac{\text{one-quarter of } (11 - \text{number of half-days})}{11}$$

whichever is the less, subject to the maximum referred to in (e) below.

[Example of application of above:

A physician divides his time as follows:

Work	Estimate of time required by an average practitioner	Total weekly time (in hours)
Out-patient clinics	2 hrs. weekly + $\frac{1}{2}$ hour's travelling in each case*	$4\frac{1}{2}$
"Pastoral visits" to cottage hospitals	One day of seven hours fortnightly, including travelling*	$3\frac{1}{2}$
Irregular hospital visits	2 hours weekly, including travelling*	2
Charge of beds	9 hours weekly, + $\frac{1}{2}$ hour's travelling daily for 6 days*	12
Adviser to Board 8 hours monthly	.. .. .	2
	Total	24
		= 7 "half days"

For this the physician would receive eight-elevenths of the appropriate whole-time remuneration, i.e., $\frac{7}{11} + \frac{(11-7)}{44} = \frac{8}{11}$.

(b) Part-time appointments as Senior Hospital Medical Officer

The above formula for arriving at part-time salaries to be applied to all part-time appointments as Senior Hospital Medical Officer.

*Travelling time would of course depend on the particular circumstances of the individual concerned.

(c) Exceptional consultations

Specialists, who have no contract with the board, but who are called in exceptionally to hospitals or clinics for a special visit (e.g., because of their unusual experience or interest) to be paid at the rate of 5 guineas per visit (including any operative work, etc.).

As a normal practice, retired consultants to be offered honorary (unpaid) appointments in respect of exceptional calls on their services of this kind which would give them in return the right to use private pay-beds from time to time (see paragraph 13 below).

A general practitioner not on the staff of a hospital but called in exceptionally to render a specific service in emergency to be paid at the rate of £2 per visit, unless he is debarred from accepting remuneration by his terms of service under Part IV of the Act.

(d) Locum tenens arrangements

Normally, leave periods to be covered by the normal contract of service providing for practitioners to deputize for each other. Payment at the rate of 5 guineas per half-day, however, to be made to a locum engaged by a board during a specialist's temporary absence when it is impossible to arrange for his work to be adequately performed by other members of the board's staff within the terms of their contract of service.

A locum engaged by a hospital authority during the temporary absence in similar circumstances of a general practitioner holding an appointment of the kind described in paragraph 8(b) below to be paid at the rate of $3\frac{1}{2}$ guineas per half-day.

(e) Maximum remuneration for part-time appointments

The maximum remuneration for part-time appointments to be $9\frac{1}{2}$ elevenths of the whole-time salary appropriate to the grade.

This maximum not to include payments made to a specialist in respect of exceptional consultations performed for a board with whom he is not in contract; payments made in respect of work as locum tenens; and payments for domiciliary visits, referred to in paragraph 6 below.

Where a specialist holds part-time appointments with more than one board, which together are not equivalent to a whole-time appointment, this maximum to apply to the aggregate remuneration from all the boards concerned.

(f) In special circumstances a board, with the Minister's consent in each case, to have discretion to offer a higher rate of part-time remuneration than that normally applicable.

6. Domiciliary Visits

(a) Payment to be made separately for domiciliary visits by part-time specialists, but no additional payment for whole-time specialists (the basis being that the whole-time duties will be adjusted to include domiciliary visiting where required). Payment to be on the following basis:

Fee for consultation, 4 guineas, with an additional fee of

(1) 2 guineas where any operative procedure other than obstetric is undertaken or where the specialist uses his own electrocardiograph or portable x-ray apparatus;

(2) 4 guineas for an obstetric operation;

the additional fee of 2 guineas or 4 guineas to be payable once only in respect of each patient for the current illness.

(b) Boards to make payments, additional to the fee for the visit and to the normal travelling and subsistence expenses, of 1 guinea for a journey of over 20 and up to 40 miles radius, 2 guineas for a journey of over 40 and up to 60 miles radius, and so on, with an additional guinea for every 20 miles.

(c) Maximum remuneration under this head (excluding travelling and subsistence allowances and additional mileage payment) to be 200 guineas in any quarter or 800 guineas in any year, whichever the specialist prefers.

7. Clinical Specialists engaged in Teaching

See Appendix A.

8. General Practitioners on the Staffs of Hospitals in that capacity (part-time)

(a) General practitioner hospitals (cottage hospitals)

Remuneration in respect of services rendered other than those paid for by the executive council: the hospital management committee to create a staff fund by making a payment of £25 per annum for each bed (other than private pay-beds) occupied on the average in the hospital, the fund to be shared among the general practitioner staff as they may themselves determine.

It is expected that general practitioner hospitals should have an open staff.

(b) Part-time medical officers of convalescent homes or other types of hospital where no other rate is appropriate

£175 per annum per weekly "half-day" up to a maximum of £1,575 per annum, the "half-days" being assessed as in paragraph 5(a) above.

9. General Dental Practitioners employed at Hospitals

£150 per annum per weekly "half-day" up to a maximum of £1,350 per annum, the "half-days" being assessed as in paragraph 5(a) above.

Where there is no general dental practitioner on the staff of a general practitioner hospital the general dental practitioners of the district to be allowed at the discretion of the hospital management committee to have their patients admitted to the hospital where in-patient treatment is necessary. No contract need be entered into for this purpose as the dentist is remunerated by the executive council.

10. Determination of Salaries payable from July 5, 1948

(a) Specialists

The boards, in carrying out their review of existing staff, to ascertain the age of each specialist and the date on which he first accepted a staff appointment with full clinical responsibility. Assuming there has been no break in service, the salary payable from July 5, 1948, to be the salary which the officer would have been receiving on that date had the above system of remuneration been in operation since the date of his first appointment. In the case of specialists who were first appointed after age 32, the boards, in determining what their starting salaries would have been, to exercise their discretion as they would have exercised it had they been the appointing authority (see paragraph 1(a) (3) above).

(b) Senior Hospital Medical Officers

Boards or hospital management committees to have discretion to decide at which point in the salary scale for senior hospital medical officers existing staff should start, provided that the starting salary shall in no case be higher than that which the officer would receive were his position on the scale determined by age alone.

(c) Junior Hospital Medical Officers

Existing staff in the junior hospital medical officer grade who immediately before July 5, 1948, were receiving less than the minimum remuneration for the grade to start at the minimum of the salary scale; and those who were receiving more than the minimum to enter the scale at the salary they were receiving immediately before July 5, 1948, rounded off, at the discretion of the board or management committee, to the next incremental point in the new scale.

11. Incremental Dates

In the case of officers holding appointments at July 4, 1948, the incremental date to be July 5; in the case of new appointments or promotions, the date on which the new post was entered into.

12. Private Practice and Retention of Fees

See Appendix B.

13. Retiring Age

When an officer reaches age 65 his regular contract to come to an end, provided that

(a) the board may, with his consent, extend his contract of service (or offer a modified contract) for one year or any less period, and so from time to time until age 70, or

(b) the board may allow him an honorary contract as indicated in paragraph 5(c) above.

These ages to be reduced in respect of practitioners who are "mental health officers" under the Superannuation Regulations.

14. Tenure of Post

No fixed period of tenure to be specified in the contract of service of a specialist. Where a specialist felt that his appointment was being unfairly terminated by a board, to be entitled to send a full statement of the facts to the Minister, who would obtain the written views of the board concerned and place the case before a professional committee (consisting of representatives of the Ministry and representatives of the profession, under the chairmanship of the Chief Medical Officer) for their advice. The committee to have discretion to interview both parties if they thought fit. In the light of their advice the Minister to confirm the termination of services, or direct reinstatement, or arrange some third solution agreeable to the parties concerned, such as re-employment in a different post. This procedure to be completed before the board's decision to terminate the specialist's services was carried into effect.

15. Residential Emoluments

The above rates are non-residential. Where an officer is provided with residential or other emoluments by the hospital (i.e., the officer's main hospital), a reasonable inclusive charge to be fixed by the hospital management committee (or board of governors) for the accommodation or other emoluments (including meals), except that the charge for house officers to be a fixed rate of £100 per annum (see paragraph 3(c) above).

16. Leave

(a) Annual Holiday Leave

Officers in receipt of salaries of less than £1,000: at the rate of 4 weeks per annum (in addition to statutory and general national holidays or days in lieu).

Officers in receipt of salaries of £1,000 or more: at the rate of 6 weeks per annum (in addition to statutory and other general national holidays or days in lieu).

In the case of officers performing part-time services, leave entitlement to be based not on the actual salary but on the corresponding whole-time salary rate.

Absence for such purposes as attendance at court, etc., not to be taken into account for the purposes of annual leave.

The annual leave year to run from April 1 to March 31. New entrants to the service to be entitled to annual leave proportionate to the completed months of service during the year of entry, and thereafter on the normal scale.

(b) Compassionate leave, and any special leave other than "study" leave as defined in Appendix C

Leave without pay (normally not counting either for increment or pension) to be granted at the discretion of the board.

Leave with pay to be granted by the board with the approval of the Minister.

(c) Sick Leave

(1) Scale of Allowances

An officer absent from duty owing to illness, injury, or other disability to be entitled to receive an allowance in accordance with the following scale:

During the first year of service:

One month's full pay and (after completing four months' service) two months' half pay.

During the second year of service:

Two months' full pay and two months' half pay.

During the third year of service:

Three months' full pay and three months' half pay.

During the fourth to sixth years of service:

Four months' full pay and four months' half pay.

During the seventh to tenth years of service:

Five months' full pay and five months' half pay.

After completing ten years of service:

Six months' full pay and six months' half pay.

The board to have discretion to extend the application of the foregoing scale in an exceptional case.

(2) Calculation of Allowance

(a) The rate of allowance and the period for which it is to be paid in respect of any period of absence due to illness to be ascertained by deducting from the period of benefit appropriate to his service on the first day of his absence the aggregate of the periods of absence due to illness during the twelve months immediately preceding the first day of absence.

(b) For the purpose of ascertaining the appropriate period of benefit under Clause (1), all periods of service (without any break of twelve months) under any employing authority from whom hospitals have been transferred, any employing authority constituted under the National Health Service Act, or any local authority, in the Civil Service or the teaching service, or on national service (on call-up), or in any other service approved by the Minister for the purposes of Regulation 46(4) of the National Health Service (Superannuation) Regulations, 1947, to be aggregated, provided that if the officer was not in the service of any such authority during the twelve months immediately preceding the date on which his present employment commenced the service prior to that date to be disregarded.

(c) The allowance made to an officer during absence on sick leave when added to—

(i) the amount of sickness benefit receivable under the National Insurance Act, 1946,

(ii) the amount of injury benefit receivable under the National Insurance (Industrial Injuries) Act, 1946,

(iii) compensation payments under the Workmen's Compensation Acts where the right to compensation arises in respect of an accident sustained before July 5, 1948,

(iv) any element in compensation payments under the Employers' Liability Acts or under Common Law which is attributable to immediate loss of wages, and

(v) any amount received as a treatment allowance from the Ministry of Pensions,

not to exceed the officer's normal monthly salary, and the sick leave allowance to be restricted accordingly where necessary.

(d) The benefits to be taken into account under (c) (i)-(v) above to be those for the officer's own incapacity, including allowances for adult and child dependants.

(e) Where a married woman has exercised her option not to be insured under the National Insurance Act, no deduction to be made from her normal sick leave allowance during ordinary absence on sick leave, as she will not be receiving sickness benefit.

(f) For the purpose of this clause, twenty-six working days to be deemed to be equivalent to "one month."

(3) Conditions

(a) An officer who is prevented by his illness from reporting for duty to notify immediately the officer prescribed for this purpose by the employing authority. If his absence continues after the third day to submit forthwith a medical certificate as to the nature and probable duration of the illness. Thereafter medical certificates to be submitted at intervals of seven days or at such longer intervals as in any case may be decided by the employing authority. On his returning to duty, the officer to submit a medical certificate of fitness if required.

(b) An officer entering a hospital or similar institution to submit a medical certificate on entry and on discharge in substitution for periodical certificates.

(c) A case of a serious character, in which a period of sick leave on full pay in excess of the period of benefit under Clause (1) would, by relieving anxiety, materially assist a recovery of health, to receive special consideration by the employing authority.

(d) An allowance not to be paid in a case of accident due to active participation in sport as a profession nor in a case in

which contributory negligence is proved, unless the employing authority by resolution decide otherwise.

(e) A period of absence due to injury sustained by an officer in the actual discharge of his duty and without his own default not to be recorded for the purposes of this scheme.

(f) An officer who has received an allowance under this scheme in respect of a period of disability and recovers damages in respect of the disability to advise the employing authority forthwith, and the employing authority to be able, if they consider it equitable, to require the officer to refund a sum equal to the aggregate of the allowances paid to him during the period of disability or such part thereof as is deemed appropriate, but not exceeding the amount of the damages recovered, and, in that event, the period covered by the sum refunded not to be recorded for the purposes of this scheme.

(g) The employing authority to be able at any time to require an officer who is unable to perform his duties as a consequence of illness to submit to an examination by a medical practitioner nominated by the authority. Any expense incurred in connexion with such examination to be met by the authority.

(h) The provisions of this scheme to cease to apply to an officer on the termination of his employment whether by reason of permanent ill-health or infirmity of mind or body or by reason of age, but without prejudice to the right of an officer whose employment is terminated by reason of permanent ill-health or infirmity to receive the period of notice provided by his contract of service.

(i) If it is reported to the employing authority that an officer has failed to observe the conditions of this scheme or has been guilty of conduct prejudicial to his recovery and the authority is satisfied that there is substance in the report, the payment of the allowance to be suspended until the authority has made a decision thereon, provided that before making a decision the employing authority shall advise the officer of the terms of the report and shall afford him an opportunity of submitting his observations thereon and of appearing, or being represented, before the authority or its appropriate committee. If the employing authority decide that the officer has failed without reasonable excuse to observe the conditions of the scheme or has been guilty of conduct prejudicial to his recovery, then the officer to forfeit his right to any further payment of allowance in respect of that period of absence.

(4) Contact with a Case of Notifiable Disease

This scheme not to apply to an officer who is required to absent himself from duty following contact with a case of notifiable disease. In such a case the period of absence to be regarded as special leave with full pay.

17. Expenses

(a) General

Travelling, subsistence, and other expenses to be paid to meet actual disbursements of officers engaged in the service of the board and not to be regarded as a source of emolument or reckoned as such for purposes of pension.

In preparing claims officers to indicate adequately the nature of the expenses involved; claims to be submitted normally at intervals of not more than one month, and as soon as possible after the end of the period to which the claim relates.

(b) Travelling Expenses

Travelling expenses to be paid by the board for any journey in the board's service, provided that

(i) in the case of a *whole-time officer*, expenses incurred in travelling between his place of residence and the hospital where his principal duties lie not to be allowed except as indicated in (d) below.

(ii) in the case of a *part-time officer*, travelling between his private consulting-room or place of residence and any hospital where he is employed, whichever is the less, to be regarded as a journey in the board's service, provided that no expenses should be allowed for any such journey or part of such journey which would have been undertaken by the officer irrespective of his employment with the board.

(iii) expenses incurred in travelling from holiday leave to duty or vice versa not to be allowed unless the officer was recalled for special reasons.

(iv) taxi or cab fares to be payable only in cases of urgency or in other cases in which transport is reasonably required and an adequate public service is not available, but where these conditions are not fulfilled an officer using a taxi or cab to be entitled to claim the sum he would have been paid had he travelled by public service vehicle.

(v) an officer making an overnight journey by rail and engaging sleeping car accommodation to receive the cost, but any subsistence allowance payable to him for that night to be reduced by one-third.

Rates

(1) Except where a private car is used, the sum paid not to exceed the amount disbursed, e.g., if the practitioner is entitled to travel 1st class but in fact takes a 3rd class ticket he can only claim 3rd class fare.

(2) First class fares to whole-time officers with salaries of £760 and over, and part-time officers of corresponding status.

(c) Car allowances

Officers, whether whole-time or part-time, to be classified as "regular users" or "casual users" according to whether their annual official regular mileage is estimated to exceed 2,000 miles or not.

All regular users of motor-cars, of whatever horse-power, to be paid an annual allowance of £52 and 3½d. per mile. The annual allowance to be paid by quarterly instalments in advance. The mileage allowance to be paid monthly or quarterly. The annual allowance to continue during absences on annual leave or sick leave or whilst the car is out of use being repaired or overhauled, except that where any one period of non-user exceeds two months the sum of £4 6s. 8d. to be deducted for each complete month after the first (e.g., if a car is out of use for 3½ months, £8 13s. 4d. should be deducted from the allowance).

If at the end of the year it is found that an officer who has been treated as a regular user has not completed 2,000 miles, he should not be called upon to repay any part of the annual allowance. This does not preclude review and reclassification of any officer at any time where appropriate.

Casual users to receive no annual allowance, but to be paid 7½d. a mile for the first 3,120 miles a year and 3½d. a mile thereafter.

Where a "regular user" has contracts with more than one board which require him to make a claim to more than one board, the board with whom he has his main contract to be responsible for paying the annual allowance of £52 and for verifying from time to time from the other boards concerned that the officer is still a regular user, all the boards concerned to pay 3½d. a mile for actual mileage in the claims appropriate to them.

If an officer uses a private motor vehicle in circumstances where travel by a public service would be appropriate, a mileage allowance of 1½d. a mile to be payable irrespective of the type of vehicle.

Where other officers, or members of an employing authority, are conveyed in the same vehicle on the business of the National Health Service, and where fares by a public service would otherwise be payable, an allowance of ½d. a mile for each passenger to be payable.

The "allowance year" for the purpose of car allowance to be regarded as the year to March 31. In the first year in which an officer is authorized to use his car, a proportionate reduction of the 3,120 miles or adjustment of the annual allowance (as the case may be) to be made.

In this paragraph and paragraph (b) above, "public service" refers to railways, steamships, omnibuses, and tramways.

(d) Payment of Mileage Allowances to whole-time officers for journeys from home to the hospital where principal duties lie

Where a whole-time officer travels from his home to the main hospital either before and/or after an official journey, travels direct from his home to the place visited, or returns direct from that place to his home, mileage allowance to be payable for the whole distance travelled, subject to a maximum based on the return journey from the officer's main hospital to the place visited plus 20 miles.

Ordinary mileage allowance to be paid for the distance equal to the return journey between the officer's main hospital and the place visited. The additional twenty miles to be paid for as follows:

(i) If the officer is the holder of a current season ticket for travelling between his home and hospital—at the appropriate rate as detailed above.

(ii) If the officer is not a season-ticket holder—the appropriate rates less 1½d. a mile.

(e) Garage Expenses, Tolls and Ferries

An officer using his private motor-car for official travelling to be repaid any charges necessarily incurred for tolls and ferries, and, subject to the production of vouchers, for parking fees, and to be granted a flat rate allowance for garaging of 2s. a night if he is necessarily absent overnight in circumstances which entitle him to night subsistence allowance.

(f) Subsistence Allowances

(1) For officers in receipt of a salary of £760 per annum or over:

(i) An allowance not exceeding 30/- to be payable in respect of each night when the officer is necessarily absent from his home or main hospital on the business of the employing authority. The allowance to be reduced to 25/6 a night after the first seven nights at one place and to be further reduced after 28 nights if the stay extends beyond that period.

(ii) A night allowance to be deemed to cover a single period of absence of 24 hours.

(iii) A day allowance in respect of duties not involving a night's absence to be payable at the rate of 3/6 when an officer is necessarily absent from his home or main hospital for more than five hours but not more than eight hours, and at the rate of 8/4 when his absence exceeds eight hours.

(2) For officers in receipt of a salary of less than £760 per annum the following rates to be substituted for those in (1) above:

(i) A night allowance of 24/- (18/- after the first seven nights and up to a maximum of 28 nights in one place).

(ii) A day allowance of 2/6 for an absence of more than five hours and less than eight hours, and of 6/- for an absence exceeding eight hours.

(3) Payment of the allowances in (1) and (2) above to be subject to the following overriding provisos:

(a) day allowance not to be paid in respect of any period spent at a hospital as part of the normal duties of the officer concerned;

(b) night allowance not to be paid in respect of any period during which accommodation is provided without charge at a hospital; and

(c) day allowance not to be paid for any period during which subsistence is provided without charge at a hospital.

(4) Any meals taken by an officer at a hospital in the course of his normal duties to be charged for.

(g) Postage, etc.

Boards to reimburse any expenditure necessarily incurred by an officer on postage of telephone calls in the service of the board, through the periodical claim for travelling and subsistence.

(h) Conferences, Visiting, etc.

See Appendix C on "Study Leave, Conferences, etc."

18. Medical Examination on Appointment

The passing of a medical examination to be a condition of appointment of all officers within the scope of the National Health Service Superannuation Scheme, other than those who are transferred under the National Health Service Act. The fee for examination to be paid by the appointing authority.

The examining doctor to be asked to certify that the candidate is "free from any physical defect or disease which now impairs his capacity satisfactorily to undertake the duties of the post for which he is a candidate."

APPENDIX A

Clinical Specialists engaged in Teaching of Medical or Dental Students

1. *Whole-time Clinical Posts in Medical or Dental Schools*

As already announced by the Chancellor of the Exchequer, the rates of salary to which the University Grants Committee will have regard in making grants to universities are as follows (operating from April 1, 1949):

Professors: Within the range of £2,250 to £2,750.

Lecturers: £600 to a maximum within the range of £1,500 to £2,000 (or £2,500 for posts carrying special responsibility).

Readers: Within the range of £1,500 to £2,000 (or £2,500 for posts carrying special responsibility).

In addition, holders of these posts to hold an honorary (unpaid) appointment with the appropriate hospital board or boards, but to receive from the board payment of appropriate expenses, like other specialists, for hospital work. Also to be eligible for distinction awards, the additional remuneration being paid by the university or school and reimbursed to them by the board.

NOTE: Where exceptionally teachers (including part-time clinical professors or heads of university clinical departments) devote a large portion of their time to university work, to be paid the relevant proportion of the whole-time salary and distinction award by the same method as their whole-time colleagues.

2. *Part-time Clinical Teaching Posts*

Specialists performing teaching duties concomitantly with, or separately from, their clinical work to be remunerated by hospital boards like other specialists (including distinction awards and expenses) but in addition to be remunerated by the university or school in recognition of their teaching duties at a rate which appears to the university or school to be appropriate to those duties.

APPENDIX B

Private Practice and Retention of Fees

1. *Private Practice*

Whole-time officers not to be entitled to enter into arrangements with private patients under Section 5(2) of the Act to undertake private practice. The contract of a whole-time officer normally to provide that he may be called on to treat patients occupying Section 5 beds without additional remuneration. A part-time officer to be able to agree with a board that he will treat patients in Section 5 accommodation, in return for remuneration by the board, without charging the patients a private fee for his professional services.

2. *Payments for Professional Services not within the scope of the Hospital and Specialist Service*

N.B.—Before determining the entitlement of officers to retain payment for such services it has been necessary to consider, in the light of the Minister's statutory responsibilities under the Act, the wider question of payments from outside sources to hospitals and/or to members of hospital and medical staffs for the rendering of medical reports on patients who are receiving treatment, and or the examination, diagnosis and rendering of reports on persons referred to hospitals for these purposes only.

(a) All work of this kind to be divided into the following two categories:

Category I: work which may properly be regarded as within the scope of the hospital and specialist services provided under Section 3 of the Act; and

Category II: work which cannot be regarded as within the scope of the service but which may for convenience be done at hospitals or by members of hospital medical staff,

in accordance with the principles indicated and illustrated by reference to examples in the schedule attached to this appendix.

(b) Services which are in the first of these categories to be available free of charge to any person reasonably requiring them. Members of hospital medical staffs to be permitted to provide services which are in the second category at hospitals or elsewhere, where in the opinion of the board or committee their provision would not interfere with other hospital activities or with the proper discharge of the hospital duties of the officers

concerned; but services in this category to be available to persons requiring them (including Government Departments) only on payment of appropriate charges. Where hospital laboratory or radiological facilities are used, such charges represent two elements: (a) payment for professional services and (b) payment of hospital costs. Where hospital laboratory or radiological facilities are not required, no charge to be made for the use of hospital premises, payment being in respect of professional services only.

(c) Whether the practitioner concerned be a whole-time or a part-time officer, all charges in respect of professional services to be retained by him or remitted to him by the board or committee according as the money is received by the practitioner himself or (as is expected to be the more convenient course when the work is done in hospital) by the board or committee.

(d) Where hospital laboratory or radiological facilities are used, one-third of whatever payment is made for the item of service provided to be retained by or remitted to the board or committee, in respect of hospital costs.

SCHEDULE

Category I: Work which is within the scope of the Hospital and Specialist Services provided under Section 3 of the Act

(a) Examination and diagnosis and the furnishing of any report reasonably required in connexion therewith on a person referred to the hospital and specialist service for this purpose from a medical source for a second expert medical opinion is regarded as within the diagnostic service which it is the Minister's duty to provide. Examples are:

(i) examination and report on a person referred by a medical board of the Ministry of Pensions;

(ii) examination and report on a person referred under the National Insurance (Industrial Injuries) Act, 1946, by a regional medical officer of the Ministry of National Insurance or by a medical board or medical appeal tribunal for the purposes of that Act;

(iii) examination and report on a person referred by a medical referee appointed under the Workmen's Compensation Act, 1925, or under a scheme certified under Section 31 of that Act;

(iv) examination and report on a person referred by a medical recruiting board of the Ministry of Labour and National Service;

(v) examination and report on a person referred by a medical interviewing committee set up by the Ministry of Health to advise disablement resettlement officers of the Ministry of Labour and National Service on the working capacity of disabled persons;

(vi) examinations and reports on members of H.M. Forces or their families referred by medical officers of His Majesty's Forces who are treating them;

(vii) examinations and reports on patients referred (in connexion with treatment) by medical officers of education authorities or local health authorities. (N.B.—Reports required on employees by these authorities in their capacity as employers are included in category II(a)(iii) below.)

(b) X-ray examination of any person resorting to or referred to a mass radiography unit, and the furnishing of a report, if required, of the result of such examination, to be undertaken as part of the diagnostic service provided under Section 3 of the Act.

(c) Examinations and the furnishing of written reports on the mental or physical condition of offenders referred by courts under Sections 24 and 26 of the Criminal Justice Act, 1948, to be undertaken as part of the diagnostic service provided under Section 3 of the Act.

(d) The furnishing of a report to a patient who is under treatment at the time when the report is asked for, or with his consent to an interested third party, when the information required can be given without a special examination of the patient by reference to hospital records or from knowledge acquired in the course of attendance on the patient, is regarded as work which arises directly out of the provision of treatment under Part II of the Act. Such work is therefore within the scope of the hospital service. (N.B.—If a special examination of the patient is required, or the information

requested cannot be given readily from knowledge of the case, the work would fall within category II below.)

The following are examples of reports or certificates which it would normally be possible to provide without special examination of the patient:

(i) progress reports required by the Ministry of Pensions on a pensioner who is receiving hospital treatment;

(ii) reports required by employers (including Government Departments and local authorities) on employees who are receiving treatment (e.g., reports required in connexion with sick leave, superannuation or retirement questions, etc.). (Employees who are not receiving treatment are referred to under category II(a)(iii) below);

(iii) the "first" certificate of the cremation certificates required by relatives, where the deceased had been receiving hospital treatment. (N.B.—The "first" certificate would normally be given by the practitioner who had attended the patient in hospital, and would not involve a special examination. For the "second" certificate see (a)(x) of category II below.)

Category II: Work which is not within the scope of the Hospital and Specialist Services provided under Section 3 of the Act

(a) The following are examples of examinations, reports, etc., which, when they do not fulfil any of the conditions referred to in paragraphs (a), (b), (c) and (d) in category I above, are outside the scope of the hospital and specialist service:

(i) any report on a patient not under treatment at the time the report is asked for, or any report involving special examination of the patient other than those in (a), (b), (c) of category I;

(ii) x-ray examinations and reports for prospective emigrants;

(iii) examinations and reports on candidates for admission to training colleges for teachers;

(iv) examinations and reports required by employers (including Government Departments and local authorities) on employees or prospective employees. (N.B.—These would, therefore, normally be in category II where the employees or prospective employees were not receiving hospital treatment but were referred to hospitals or to members of hospital medical staffs specially for the purpose of examination and report.)

(v) examinations and reports on private citizens in connexion with legal actions;

(vi) examinations and reports for coroners;

(vii) examinations required for life insurance purposes;

(viii) certificates required under the Blind Persons' Act;

(ix) attendance at court hearings as medical witnesses;

(x) the "second" certificate of the cremation certificates required by relatives, where the deceased had been receiving hospital treatment. (N.B.—The "second" certificate would not be given by the practitioner who had been attending the patient. For the "first" certificate see (d)(iii) of category I.)

(b) Other work in this category includes:

(i) lectures given by members of hospital medical staffs to nurses, etc., or to the lay public;

(ii) services performed by members of hospital medical staffs for Government Departments as members of medical boards;

(iii) general practitioner services given by a hospital medical officer under Part IV of the Act to members of the hospital staff who are on his "list."

APPENDIX C

"Study" Leave, Conferences, etc.

"Study" leave (as defined in this appendix) to be granted in accordance with the following scheme. The scheme to be provisional and subject to reconsideration when experience has been gained of its operation.

General Rules

1. Study leave must be for the purposes of study (including research), teaching, examining, taking examinations, visiting clinics, or attending meetings or conferences of a wholly scientific or clinical character.

2. Where the purpose of study leave is to enable the officer to undertake work for which he will receive fees (e.g., teaching and examining) the leave should normally be without pay or expenses.

3. Where study leave is granted with pay the officer must not undertake any remunerative work without the special permission of the leave-granting authority.

4. Study leave cannot be claimed as a right.

5. Study leave can be added to periods of ordinary leave.

A. For short periods, i.e., not exceeding 7 days. (Normally such study leave would be granted for periods of 1 or 2 days, but in exceptional cases leave up to 7 days may be granted.)

1. Without pay or expenses—at the discretion of the hospital management committee or board of governors.

2. With pay but without expenses—at the discretion of the regional hospital board or board of governors, though authority may be delegated to a hospital management committee.

3. With pay and expenses—at the discretion of the regional hospital board or board of governors, subject to the rules governing the payment of expenses.

B. For periods exceeding 7 days but not exceeding 3 months (13 weeks).

1. Without pay or expenses—at the discretion of the regional hospital board or board of governors.

2. With pay but without expenses—at the discretion of the regional hospital board or board of governors.

(a) Any period of such study leave in excess of 3 weeks will involve a surrender of one day's ordinary leave for every additional day of study leave granted, e.g., an absence of 5 weeks will involve the surrender of one week's ordinary leave; a period of 9 weeks' leave will involve the surrender of 3 weeks' ordinary leave.

(b) For this purpose ordinary leave, not exceeding 3 weeks in all, may be carried forward from the immediately preceding leave year.

3. With pay and expenses—at the discretion of the regional hospital board or board of governors, subject to the foregoing and the rules governing the payment of expenses.

NOTE: (a) Not more than one period of leave under B 2 or 3 may be granted to one officer in any one leave year.

(b) Where an officer is employed by more than one board the leave must be approved by all the boards concerned.

C. For periods exceeding 3 months (13 weeks).

1. Without pay or expenses—at the discretion of the regional hospital board or board of governors.

2. With pay but without expenses } to be referred to

3. With pay and expenses } Ministry for decision.

II. Payment of Expenses

1. Where officers are teaching, examining, attending meetings or conferences or visiting clinics, etc., at the instruction of the regional hospital board or board of governors, no question of study leave arises, and expenses will be paid in the usual way and at the usual rates. Expenses in connexion with taking examinations (fees, travelling, subsistence) will not be paid.

2. Where officers have applied for study leave with pay for any of the normal reasons and the board is of opinion that the leave is of advantage to the service, the cost of travelling and/or subsistence may be defrayed wholly or in part at the usual rates.

3. While it is desired to give regional hospital boards and boards of governors the maximum amount of discretion in the granting of study leave, it is nevertheless necessary to obtain a fairly uniform policy in the matter of defraying expenses. For this purpose boards should limit their annual expenditure within the budgets already approved under both heads (i.e., 1 and 2) as follows:

Teaching hospitals—

(a) Undergraduate—£800-£1,200 according to size and circumstances.

(b) Postgraduate—up to £1,200 according to size and circumstances.

Regional hospital boards (including hospital management committees in the region)—

(a) Oxford and Cambridge	.. ..	£1,200
(b) Newcastle Leeds Sheffield Liverpool Bristol Wales	}	£1,600
(c) Metropolitan regions Manchester Birmingham	}	£2,000

(a) Where the expenditure of a board for the year 1949-50 is likely to exceed the total stated, and it is not possible to meet the additional cost from "free moneys" at the disposal of the board, application should be made for permission to increase the amount allocated within the budget for these purposes.

(b) The foregoing estimates relate to expenditure on behalf of medical and dental officers.

(c) Regional hospital boards and boards of governors may combine to defray the total or part cost of an officer's travelling or other expenses.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-County Borough Councils.—Dartford, Wallsend.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

Correspondence

Selfish Attitude

SIR,—As one of the "Bevan Boys" may I be permitted to express my view on the fight we have with the executive councils and the local medical committees, with whom the former work in consultation?

It is very regrettable that in our profession we should find members who do not practise the charitable virtue of "live and let live." Many of us have known to our sorrow the tyranny with which some local medical committees act, sometimes supported unnecessarily by executive councils in refusing an application from a doctor. In some instances there are doctors in the area with a number of patients on their lists exceeding the maximum number permitted by the Act, yet an executive council will support such selfish local medical committee to say that the area is sufficiently or over-doctored.

Unfortunately sometimes the applicant is ignorant of the reason for his being refused permission. The official intimation in my case was worded that my application had not been supported by the — executive council. This ignorance of the reason is a handicap for the doctor, for it makes an appeal difficult. In my case, accidentally, which was fortunate, I got to know the reason. The profession may be surprised to learn that it was chiefly the nightmare of the possibility of having to pay the dreaded basic salary to help set a new doctor—called an outsider—on his way.

It was with particular satisfaction, therefore, that one read in the *Supplement* of Feb. 19 (p. 85) that an authority like Dr. H. Guy Dain publicly administered a timely reproof to those selfish doctors. We read in the Press how doctors bemoan their long and arduous hours of work since July 5, 1948, but, let a new doctor attempt to go to such an area, suddenly these tired, opulent, ready-to-drop doctors will discover that they still have reserve energy to put up resistance against a newcomer. If this selfish attitude were allowed to assert itself unchecked it is sure to make co-operation and good relations impossible in our profession.

May I submit the following suggestions to the Association on behalf of the "Bevan Boy" doctors? (1) That the doctor

applying to an executive council be notified of the time, place, and date at which his application will be considered, so that he can avail himself, if he so desires, of the opportunity of learning at first hand how the decision was arrived at; alternatively, that the Medical Practices Committee be asked to inform such a doctor of the grounds of his being refused permission. This obviously will enable the doctor to know how to prepare his appeal. (2) That executive councils be required to give accurate and full facts as are available at the material time to any doctor making inquiries about an area.

It is desirable that the executive councils should be not only strictly impartial, but manifestly so.—I am, etc.,
Lancashire.

E. A. SHANU.

Graduated Capitation Fee

SIR,—The present suggested scheme of capitation fee for G.P.s does not take into consideration the principles that more experienced practitioners should be paid more than inexperienced practitioners, and that young active men can work longer hours or at a more rapid rate than the more elderly. I feel that insufficient attention has been paid to these problems and that sliding scales for different patients on the same doctor's list and mileage allowances to rural practitioners are but patches to prevent the newly launched Service from sinking.

The normal expectation of years in general practice is probably 40—e.g., from age 25 to 65. No man of 65 should be forced to work as hard after 40 years' general practice as he did at 25, but until a new system of payment is introduced economic circumstances will compel him to do so. This could be solved by the following method: (1) Have a basic capitation fee of, say, xs. (2) For every year after registration add 1/40 of xs. (3) Maintain the present limit of lists of 4,000 up to the age of 50 and thereafter scale it down to 2,000

Age of G.P.	Maximum No. on List	Capitation Fee in Shillings	Income in Shillings
25	4,000	x	4,000x
35	4,000	x + 10/40 x	5,000x
45	4,000	x + 20/40 x	6,000x
55	3,000	x + 30/40 x	5,250x
65	2,000	x + 40/40 x	4,000x

This would help to solve the problem of distribution of doctors. Young and vigorous doctors would be encouraged to work hard in the less popular areas and as they grow older would probably gravitate to the more attractive districts where the increased capitation fee would balance the reduction in their lists. It is also seen from the table that the middle aged G.P. with maximum financial responsibilities, education of family, etc., is more amply rewarded for his experience while the elderly practitioner, by reducing his work to a bare and having a double capitation fee, can remain alive and have a reasonable chance of enjoying his retirement without prematurely sclerosed arteries.—I am, etc.,

Hove, Sussex.

A. MACFARLANE.

Whitley Council Machinery

SIR,—It appears that the local authority associations are still preventing the start of negotiations for members of the Public Health Service. If precise proposals have been put forward and accepted for a Medical Whitley Council, why cannot commence with consideration of salaries of regional hospital board medical officers, and the other public health salaries will follow?

Regional medical officers are committed to the Whitley machinery and to my knowledge no barriers exist to prevent these now being considered. Practically all the medical officers are ex-public-health officials, and it is of interest to note that appointment to regional hospital board posts was invariably at the bottom of the salary scale with no consideration of former placing on local authority scales.

In order to avoid the anomalous situation which has already arisen under the Whitley machinery in adjusting board management salaries to a higher level than regional board officials, prior to even considering the latter, it would appear only correct that, in considering public health salaries, you should start at the "top" and work down. It is cold comfort

to a medical officer transferred to these more responsible regional posts to anticipate that they shall be left behind—like the cat's tail!—I am, etc.,

Dundee.

G. C. TAYLOR.

Sliding Scale Unfair

SIR,—I fail to see the fairness of the suggestion for a sliding scale capitation fee. The doctor with 3,000 to 4,000 N.H.S. patients is probably a keen, hard-working, good, and popular doctor. He cannot be a lazy and bad doctor for so many patients to choose him. The doctor with only 1,000 N.H.S. patients is either a lazy and/or "bad" doctor, or working in an attractive neighbourhood where there are, in consequence, a large number of doctors. Exceptions of course there must be, such as very sparsely populated rural areas, etc.

On entering practice a number of us had to choose a relatively unattractive place where the financial side was good, although the work harder. I fail to see why now we should be paid relatively the same as those living in more attractive places. Most of us have only accepted our old patients on our N.H.S. lists, and to receive more for Mrs. Smith who was in our first 1,000 than Mrs. Jones who was in our fourth 1,000 seems ridiculous. The sliding scale would benefit and encourage the lazy doctor, with the present high taxation. By all means see that the doctor with 2,000 patients has a decent living wage, but see that the doctor with twice as many patients receives twice as much. Taxation will do the "unfair" adjusting!

Let us strive for initiative in our work, avoiding all of us being brought down to the same level; more the work, more the pay—otherwise it cannot be fair.—I am, etc.,

Ely, Cambs.

J. B. BAMFORD.

Cost of the N.H.S.

SIR,—Dr. Ffrangcon Roberts omits to mention in his article on "The Cost of the N.H.S." (*Journal*, Feb. 19, p. 293) certain important aspects of the problem. It must be seen in the light of total Government expenditure, and only then can we decide if the amount of money is being well spent. The Labour Party made promises in 1945 about extending essential social, educational, and health services. But one by one these promises have been excused and reduced in scope. Instead, it seems that it will take a quarter of a century to clear the housing lists, no new schools have been built in the London area, and no health centres are to be built within a reasonable time. This major strategy is of great importance to anyone interested in the purpose of his profession, and discussion about it in the *Journal* is not out of place. The budget these days is entirely one of peace and war arithmetic. The U.N. charter demands that a certain amount of military strength is required for peace. But the £760 million which we intend to spend on arms is far beyond our needs or even our ability. Mr. Bevan's £230 million plus £85 million is dwarfed by this sum, but has carried much more opposition.

One need only take an afternoon stroll in any one of our big cities to see how money is being wasted on unnecessary building, for instance. But we know how desperate are the folk on the housing lists and we know that their basic needs are being put behind the building of a new South Bank of the river and a £12 million aeroplane. No one quarrels with Dr. Roberts's attack on "luxury medicine," but most of your readers can give examples all over the country where a little more essential equipment would make all the difference to a competent service. Cuts in this sort of expenditure must be fought tooth and nail, and the *Journal* could do a great service in publishing details of fact contrasting wastage and needs wherever possible.—I am, etc.,

London, N.W.3.

C. F. HINGSTON.

Supplementary Ophthalmic Service

SIR,—The totalitarian pattern is unfolding—sentence before trial, mass punishment, the deprivation of the many in retaliation for the possible delinquencies of the few. The Minister is to reduce the Supplementary Ophthalmic Service fee from 1½ guineas to 25s. because an investigation carried out on 5% of practitioners in certain areas only revealed that an unspecified number of this 5% had earned more in consulting fees

than was thought seemly, and it had therefore been assumed that the time taken for the consultation had been less than half an hour.

No charge has been made that the work in any instance has been carelessly or indifferently carried out; no allegation has been made that inaccurate prescriptions have been given; and no statement has been made by patients expressing dissatisfaction with their reception, treatment, or the results of such treatment.

In the first place there was no expressed or implied contractual obligation that the actual consultation must be one of half an hour. That may have been in the Minister's mind but was not committed to paper. What was agreed was that the practitioner should give—in his own rooms, using his own equipment, and assisted by his own auxiliaries—to patients under the S.O.S. a consultation, for which the recognized private fee is 3 guineas, for 1½ guineas.

The Minister has not advocated a 'ca' canny policy in any other branch of medicine. In the hospital service, for example, whether in out-patient clinic or operating theatre, the practitioner, in order to implement the Service and to cope with the enormous demands made upon it, must work to capacity. No complaint is made by the authorities, for there he is paid on a sessional basis, and the more patients he deals with the better value he is giving to the Minister.

If too much is being paid to a few practitioners then it might be reasonable to suppose that either individual action could be taken or an arbitrary limit or ceiling could be imposed, as in the cases of dentists, general practice, domiciliary visits, and weekly sessions.

The sequence, however, is clear: the original estimate for ophthalmic services was £2 million; the revised estimate is £12½ million; the Treasury jibs; the Minister quakes; and the unorganized and inarticulate doctor pays.—I am, etc.,

Liverpool.

A. MCKIE REID.

Display of Hearing-aids

SIR,—As an otologist interested in hearing-aids since sitting at the feet of the late Dr. Phyllis Tookey Kerridge, I feel that all medical men will very strongly endorse the words of Mr. O. C. Leadbitter (*Supplement*, Feb. 12, p. 78). Surely it flavours of totalitarianism to forbid hearing-aids made by reputable firms from being demonstrated to patients attending hospital clinics? At these clinics it has been the practice to show and test patients only with those instruments which have been made by firms holding the certificate of ethical trustworthiness issued by the National Institute for the Deaf. Now the Government "Medresco" is available (at the moment in very small numbers, and with questionable efficiency of its mass-produced leads, earpieces, etc.) it seems only fair to patients to allow them the choice of this free aid (when they can get it) or a good proprietary aid where its sale is ethically correct and its financial liabilities fully explained and understood.

This Government should not refuse to allow comparison and competition with its own products, even though it persists in its refusal to allow any financial help towards the purchase of a proprietary article. Everyone will be pleased if the present Minister of Health "kills" the charlatan hearing-aid firms who have waxed rich on wicked advertisements and tricks, but there is no justice in classifying the reputable firms with the bad ones. A grave disservice is done both to the good firms and to the deaf public.

A point about the Medresco which may not be known to all is that this Government-sponsored aid—i.e., financed by public funds—is being sold abroad. The charge is less than that of good "proprietary" aids. In view of the enormous waiting-lists in this country it might be considered justifiable to expect the Government to allow reputable proprietary firms the foreign market, and so hasten the slow delivery of Medresco aids in this country.—I am, etc.,

London, W.1.

IAN G. ROBIN.

Dangerous Drugs Act: Restoration of Authority

The Home Office announces that the authorities granted by the Dangerous Drugs Regulations under the Dangerous Drugs Act, 1920, have been restored to Dr. John Joseph Coghlan.

MARCH

WIGAN DIVISION.—At The Hollies, Wigan Lane, Wigan, Thursday, March 24, 8.15 p.m. Clinical meeting. Lecture by Mr. R. L. Hartley: "Breech Presentation and its Management." To be illustrated by a film.

LONDON SATURDAY MARCH 26 1949

THE PROPAGATION OF MOUSE TUMOURS BY MEANS OF DRIED TISSUE*

BY

W. E. GYE, M.D., F.R.C.P., F.R.S.

Director of the Imperial Cancer Research Fund

My first duty is to say that anything which is new in this lecture is the joint work of my colleagues, Dr. A. M. Begg, Dr. James Craigie, F.R.S., Miss Ida Mann, F.R.C.S., and myself. I have great pleasure in thanking them for their permission to mention researches for which we are all jointly responsible.

Most of us have heard the remark made that too much and too little is known about cancer. We know so much now about starting cancers by physical and chemical means and so much about the chemistry and biochemistry of cancer that the literature has become confused. But we do not yet know the cause of cancer, and of course we cannot, except in early favourable cases, cure it with certainty; and all this appears to be lamentable. Are we quite certain that we have studied carefully enough the work of the pioneers of cancer research—that we have not missed some clue which was clearly revealed forty or more years ago?

A brief survey of the early work of the Imperial Cancer Research Fund, which is representative of the researches of the earliest workers in experimental cancer research, is useful and rewarding.

The work which proved that the familiar animal tumours of mice, rats, and other small mammals are pathologically and biologically of the same nature as tumours of man may be passed over, though even now there are diehards in the ranks of the profession who apparently consider that no work counts unless done on man. Similarly the statistical work of Bashford, the study of the zoological distribution of cancer by Murray, and the variety of histological forms of the disease may for present purposes be neglected. Let us confine our attention for the moment to a consideration of the prime interests of the pioneers like Jensen, Bashford, Ehrlich, Leo Loeb, Borrel, and the many others who helped to lay the foundations of cancer research.

First of all Bashford clearly asked himself the question, What do I mean by the cause of cancer? He knew, like all the medical world of his time, that soot caused an excess of skin cancer in chimney-sweeps, and that coal-tar was responsible for much skin cancer. Indeed, in the famous memorandum on research which Bashford drew up for the Committee of the Fund one of the items specifically mentioned—this was in 1902—was the proposal to test whether Pott's observations on the carcinogenic properties of soot on man applied also to mice. For various reasons this was not carried out; it was left for Passey to do in 1920. As everybody knows, soot does start cancer in mice.

Bashford in his inquiries into the ethnological distribution drew attention to the occurrence of squamous epitheliomas of the abdominal skin of the natives of

India who wear the Kangri basket for warmth. He arrived at the obvious conclusions that long-continued application of heat leads to the occurrence of cancer and, more important still, to the obvious error of the Cohnheim hypothesis of the origin of cancer in cell rests, since, so far as he could determine, cancer of the abdominal skin was confined to those natives who wore the Kangri basket, and it is unlikely that these were the only men who had skin rests in the abdominal wall. He also wrote a great deal about betel-nut chewing and buccal cancer. But to Bashford, as to all the early workers in cancer, soot and tar and Kangri baskets were remote causes of the disease: they promote or precipitate cancer but play no further part.

The First Experimental Tumour

The first tumour produced experimentally was by the application of x rays to the root of the tail of the rat. This was done by Clunet, in France. It is of course only the deliberate application to a small animal of the same process which the pioneers of radium and x rays did unwittingly to themselves in the course of their professional work. Nobody could suppose that the tumour incidence was independent of the x rays; and nobody could believe that the x rays continued to act after the tumour had started or, in the case of the rat, could have any effect on the long succession of tumours in an unlimited series obtained by grafting small pieces in healthy rats. Bashford especially, and the contemporary workers incidentally, always distinguished sharply between what I have usually described as remote or adjuvant causes—chemical, physical, or parasitic—which lead to cancer and the intracellular continuing cause. This continuing cause is related to the pathological nature of cancer and is, in the sense in which we say that the tubercle bacillus is the cause of tuberculosis, the cause of cancer.

But at this point comes the real difficulty of the subject. Bashford and his colleagues could not find anything bacterial or chemical in tumour tissue that could start a new tumour. Any extract, freed of tumour cells, failed to cause the formation of a new tumour; likewise any tumour even partially dried was inactive. The tumours, in Bashford's sense, appeared to be causeless—that is, there was no continuing cause. Any procedure, however mild, which destroyed the life of the cancer cell destroyed all activity of the tumour after its inoculation into an appropriate animal.

Tumour-grafting

These findings corresponded beautifully with the findings of the process of grafting tumours. When a small fragment of a mouse tumour is placed under the skin of another mouse it was found—and this has been confirmed by workers all over the world—that the non-malignant tissues, the blood and lymph vessels and connective tissue

*An Imperial Cancer Research Fund Lecture delivered at the Royal College of Surgeons on March 22.

which constitute the stroma of a tumour, die rapidly; the central cells of the implanted tumour mass die more slowly, the peripheral cells of the graft alone surviving; a new stroma is formed by the new host, and this stroma nourishes the surviving malignant cells, which grow and multiply and form the daughter tumour. Bashford concluded, after a vast amount of work, that "cancer can only be transmitted experimentally by processes which allow of the continued growth of the tumour of one animal in other animals of the same species." He could find no evidence, nor could anybody else, which upset this conclusion, and therefore it appeared to him that it is not permissible to seek for the cause of cancer outside the life processes of the cells.

This naturally led Dr. Murray, Bashford's first assistant, to study cells, normal and malignant, with the greatest care to determine whether there is any difference which might account for the properties of malignant cells. Murray, who had worked for several years with Boveri, was naturally interested in the speculations which might usefully be summarized under the term "mutation," but he could find no evidence which justified any belief or confidence in such speculations. Thus the Fund's scientific staff arrived at the position in 1914 that cancers are, in a phrase familiar at that time, just "personal experiences" with no cause except possibly some intracellular distortion which in our then state of knowledge was undiscoverable. The situation, one of extreme pessimism, is illustrated by Ehrlich's reply to a young man who wished to do cancer research: "I have wasted 15 years of my life in cancer research. Until some fundamental discovery is made revealing the nature of life itself not a step forward will be made in our knowledge of cancer."

The First Chicken Sarcoma

In 1910 there came into the possession of Dr. Peyton Rous, of the Rockefeller Institute, a hen bearing a tumour which histologically was universally diagnosed as a spindle-cell sarcoma. This diagnosis was changed the following year—not by Rous—when Rous proved that cell-free extracts contained an agent which was capable of starting the tumour afresh in appropriate chickens. Here was an entirely new fact. All the laborious efforts of workers to do just this with filtrates of mouse, rat, and guinea-pig tumours had failed. The first chicken sarcoma examined by Rous succeeded, and pathologists and surgeons interested in cancer at once denied the malignant nature of the chicken tumours. The agent which multiplies with the growth of the tumour is now recognized as a virus. Electron-microscope photographs have been taken, and the sizes revealed by such photographs are in fair harmony with sizes deduced from experiments with collodion filters. The virus is more or less spherical and occurs in clumps in the tumour cells.

Now we know of several hundred filterable tumours of the domestic hen. They are of different structures: some, but very few, are simple spindle-cell tumours resembling the Rous sarcoma; others include chondromas, osteochondromas, fibrosarcomas, myxosarcomas, muscle-cell tumours, and so on.

There is one strange character possessed by all these tumours which must be mentioned. When a tumour is propagated by grafting with living cells it is to be expected that the daughter tumour, if derived entirely by growth and multiplication of the implanted malignant cells, would be of the same histological type as the original tumour. With the propagation of tumours by means of cell-free filtrates the new tumour is literally new; it is made up of the host's cells which have been infected by the inoculated virus. But it has universally been found that the inoculated

virus can start a tumour only of the kind from which it is derived. Thus a spindle-cell tumour always gives rise to a spindle-cell tumour, an endothelioma to an endothelioma, and so on. The virus is so specialized in its effects that it represents in itself all the qualities and properties of the cell from which it is derived. Nevertheless, an immune serum made by injecting virus from one tumour will neutralize the viruses from other types of tumour, which indicates a common antigenic element.

Filterable and Non-filterable Tumours

It will clearly be seen from this brief account of various sorts of tumours that there is a fundamental difference of a strange kind between filterable virus tumours and the non-filterable mouse tumours; the tumours of chickens, the adenocarcinoma of the frog, the Shope papilloma of the rabbit, and now the mammary cancers of inbred mice all have a virus as a continuing cause, whilst the vast majority of tumours of the small mammals, and presumably of man, apparently have no continuing cause.

If one dwells exclusively on the non-filterable tumours one is driven to theorize and even to accept almost impossible explanations of cancer and to dismiss the tumours from which a virus can be obtained as a disease *sui generis*. But this cannot be done convincingly; for the filterable tumours of chickens possess all the properties which everybody acknowledges as being those of cancer and none other except this one property of transmissibility with filtrates and dried tissue. Manifestly if mouse tumours which have hitherto resisted such cell-free propagation could be so propagated, and especially if newer methods had to be worked out to achieve this success, the apparent fundamental dichotomy of tumours would disappear and we should then be able to include such tumours among the filterable tumours without any strain in our minds. We should be able to regard tumours in general as being of one sort, as collections of cells carrying an active virus as the intrinsic cause.

My colleagues and I have considered cancer literature very carefully and have come to the conclusion that two facts discovered long ago are possibly the key to the general problem of cancer causation. I shall now deal with these in turn.

Transformation of Stroma of Epithelial Tumours

The first fact is the occurrence of sarcomatous transformation of the stroma of epithelial tumours. This was observed independently by Bashford and Ehrlich, and was worked out by the late Professor Haaland in our laboratories and by the late Dr. Apolant in Ehrlich's laboratory in Frankfurt. It was shown by histological methods that the spindle-cell tumour arises from normal stromal connective-tissue cells and is not, as sometimes happens in animal and human tumours, an alteration in shape and appearance of the epithelial malignant cells. In other words, the epithelial cells influence the normal well-behaved connective-tissue cells, which then assume malignant properties. Either something passes from the malignant cell to the normal cell, or the normal cell just imitates the neighbouring malignant epithelial cell. Can we assume that a virus passes and becomes gradually adapted to the normal cell? This becomes more probable when we consider the frequency of this occurrence in the inbred strains of mice.

It is now common knowledge that by brother-sister mating of selected mice it is possible to get homozygous strains of mice in which 90% or even more of the females develop mammary cancer. When one of these tumours is transplanted in the normal stock of the same strain the graft always takes; transplantation is easy and certain. It

was observed by Dr. Gorer at the Lister Institute in 1937 that transplants of mammary cancers in inbred strains show sarcomatous transformation very readily—in about 70%—whereas in ordinary non-inbred mice it is an infrequent occurrence. We have considered this fact very carefully and have adopted the working hypothesis that the process of inbreeding for cancer is quite different from inbreeding for unit characters such as coat colour; these are incidental to such breeding. We have looked upon the process as a means of selecting the most active or virulent strain of virus, which has now been shown in these tumours. Certainly unless the tumour incidence is carefully watched and a main cancer line is kept the incidence of tumours falls from 90% to 40 or even 20%; and this fall is independent of the brother-sister mating. It is due, as W. S. Murray has proved, to a change in what he calls the "tumour inciter"—i.e., the virus—which presumably loses some of its pathogenicity.

Effect of Cold

The second fact is one which was discovered by Ehrlich and published in 1907. It is this: that cancers, both sarcomas and carcinomas, can be kept at the low temperature of -10°C . for as long as two years, and when transplanted again give rise to the same tumour. With the exception of my late colleague Dr. W. Cramer, all who have repeated the experiment have concluded that the cancer cells have survived this prolonged freezing. Cramer was more cautious, and gave very cogent reasons for his doubts. It must be remembered that cells which are kept at a temperature of -10°C . are not just frozen *en bloc*. This temperature is cold indeed, but its action on cells is disintegrative. Water is turned to ice, but the salts in the cells do not come out with the water until a temperature of -21.1°C . is reached. Thus the internal medium of the cells is a strong solution—15 to 20%—of brine. The cells are "cured" as bacon is "cured"; nevertheless this experience of Ehrlich's has been uniformly, except by Cramer, interpreted as a marvellous example of the resistance of cancer cells to adverse conditions.

Further, it is quite well known that malignant cells which are kept at ice-box temperature, around 0°C ., lose their capacity to start tumours again in a few days' time. The truth is, of course, that the failure of the early workers to find a continuing cause in tumours bit so deeply into the mind that there was no inclination to look at facts dispassionately. Moreover, the experience of histopathologists of the nineteenth century, especially that of Ribbert, had an enormous influence on the thinking of experimental workers.

Reinvestigation

We have reinvestigated the whole subject. The first step was a comparison of the effects of cold on normal tissues. The method lay readily to hand. Several years ago Miss Mann investigated the growth of embryonic tissue in inbred mice. It was already known that embryonic tissue of laboratory stock mice survives for some days in mice which are not inbred; the embryo tissue and the tissues of recipient mice are different antigenically, and those reactions which are set up against foreign proteins come into play very soon and lead to the death and destruction of the implanted embryonic tissue. In homozygous mice in which the tissues are identical chemically no such reactions occur; the embryonic tissue is not resisted, and consequently it grows to form an embryoma which persists practically indefinitely. The cells are at home, and the recipient mice accept them readily. Consequently it is an easy matter to determine whether cold destroys normal embryonic tissue and to prove the effects by simple grafting of such treated tissues into the same homozygous strain.

After prolonged and repeated experiments Miss Mann has proved quite conclusively that normal embryonic tissue is killed after less than an hour's exposure to a temperature of -79°C ., whereas malignant tissues survive such a temperature for a period of more than one year—it may be, so far as we know, indefinitely.

The second stage in the investigation was an examination microscopically of grafts of malignant tissue that had been transplanted into a number of mice which were killed at various intervals from hours to days. This form of investigation is designed to find what happens to the graft, to see whether the tumour which forms after inoculation of refrigerated tumour tissue into appropriate animals is derived from surviving cells—i.e., a continuation of the tumour by growth and division of the original cells—or whether it is a new tumour of the recipient mouse's own tissues. This form of experiment I had already carried out 20 years ago, and the same results were noted in this repetition. With tumours which have been subjected to a temperature of -79°C . the whole mass of implanted tissue shows no normal cells; they stain yellow with picric acid after a sojourn of two days in a mouse, or a structureless pink with eosin; the cells and nuclei are structureless; the mass of necrotic tumour tissue becomes surrounded by reaction tissue, becomes shrunken, and eventually disappears.

With sarcomas the new tumour forms in the capsule of tissue which is derived from the host. Occasionally when refrigeration is very short, a matter of minutes, an obvious malignant cell, best recognized when carcinomas are used, is found in the mass, and from this cell a daughter tumour arises by growth and multiplication of such a surviving cell. This observation, made during the time Cramer was studying the effects of refrigeration, led to a sense of insecurity, especially to one who was Bashford's pupil. The final conclusion we have reached from these studies is that malignant cells, like embryonic cells, are readily killed by extreme cold, but that dead malignant cells are nevertheless capable of starting a new, strictly new, tumour in virtue of the intrinsic virus which they contain. Comparisons with normal tissues and histological studies, however, do not give the certitude which is necessary when the issues are as important as they are in this work.

Tumour Transmission

While some of these researches were in progress Dr. Craigie, with Dr. Begg, studied the effects of extreme division of the tumour tissue and of the action of various diluents on the finely divided tumour tissue.

Normally in cancer laboratories tumour tissue is broken up or emulsified by using fine scissors to make a mince which will pass easily through a needle of very wide bore. This was not good enough for the quantitative work needed in these researches. Dr. Craigie therefore designed and had made in the Fund's workshop a new and improved tissue-mincer by which suspensions of cells in diluents such as distilled water, glucose solutions, glycerin, saline, etc., could be obtained sufficiently finely divided to pass through the finest bore of needle (26 gauge). The results obtained by injection of such fine emulsions of frozen tissue cannot be interpreted simply as being the consequence of survival of cells on freezing. For example, many diluents such as distilled water, 40% glycerin, and 40% glucose which one would expect to be lethal to cells do not prevent tumour formation, and, contrariwise, diluents such as peptone which would not be expected to kill cells on freezing do inhibit tumour growth. The whole matter is difficult and complicated, and is an obvious subject for more research. But it can be stated quite definitely that

long-continued exposure to a low temperature, as long as one year, does not affect the capacity of tumour tissue to start tumours again when injected into appropriate animals. Indeed, since we know from histology that all or nearly all cells—we can never exclude the possibility of one cell escaping microscopical attention—are killed by keeping at a temperature of -79°C ., and also that tumours kept a year are often more active than corresponding fresh tumour tissue, it is in the highest degree improbable that the tumours which form after inoculation of refrigerated tissue are a mere grafting of living cells. They are much more likely to be strictly new tumours brought about by the infective action of the intracellular cause which has hitherto escaped attention.

But on this slightly uncertain note we could not end. We realized, none more definitely, that it was necessary to transmit a tumour with tissue which had been completely dried. To this we therefore turned our attention. During the past 14 years most of the mouse and rat tumours have been dried by one method or another and no success has been obtained in any single experiment. A new apparatus for drying small amounts of tissue, seldom more than a gramme, was designed by Dr. Craigie and made for us by the Glass Printers Company of Harrow. A description of it is in the scientific press. The essential improvement in this apparatus is the absence of any constriction in the path that water vapour must follow and in the power of the "backing pump." With this apparatus we have succeeded in propagating three mouse sarcomas with perfectly dry tissue. The tumours are as follows:

1. A sarcoma which was started in the inbred mice known as C57 Black by injecting about 1 mg. of the pure chemical compound methylcholanthrene. The chemical was injected in 1941; in the early months of 1942 tumours formed. From one of them transplants were made into six normal C57 mice. The tissue inoculated grew in all the mice; from one, a further transplant was made. This process of perpetuating the tumour has now been carried on for seven years; the serial number of tumour is now nearly 200. Thus about 200 transmissions by grafting have been carried out, and during these years the tumour was dried and filtered again and again in attempts to propagate the tumour acellularity. All these attempts failed. Even tissues which were deliberately used before drying was complete and whilst the tissue was still damp failed to give rise to tumours.

2. A sarcoma of the inbred strain R3 which arose by infection of the connective-tissue stroma of a carcinoma. This is the most malignant of our transplantable tumours. It was separated from the carcinoma by rapid transfers by Dr. Ludford. It is made up of spindle cells and multinucleated giant cells; around the tumour there is usually a glairy fluid in which disintegrated cells can usually be found.

3. A sarcoma of the homozygous strain C3H. This again arose during the transplantation of a sporadic mammary carcinoma and was also purified by early transplantation of the carcinoma by Dr. Ludford.

Experimental Results

It is best to take the methylcholanthrene tumour first. It is the least malignant of the three but has been tested most often for transmissibility with cell-free extracts during the past seven years. Even now, using our most efficient drying apparatus, we have so far been unable to obtain active dry material of a tumour fresh from a mouse. To obtain active dry tissue it has been necessary to subject the tissue to the low temperature of -79°C . for five to eight weeks before drying. Even then, as the following table shows, it is not yet possible to obtain regularly active material.

It will be observed that in one experiment of this group only one tumour developed in eight mice, and this did not appear until the 24th day after inoculation. This experience has been found in other experiments. In others again, in which variations have been made in experimental methods,

the results were entirely negative. But as a summary we can affirm quite definitely that it is possible to obtain perfectly dry tumour tissue which will start the tumour afresh.

Expt.	Tumour	Time of Freezing at -79°C .	No. of Mice	No. of Tumours	Time of Appearance
406	C48 in C57 black	35 days	7	6	17 days
G13B	" " "	52 "	18	13	16-31 "
434	" " "	53 "	12	9	16 "
G26	" " "	105 "	8	1	24 "

It is a matter of some importance to propagate tumours in series with dry tissue. This has been started, but owing to the time needed for refrigeration before drying we have succeeded so far only in carrying through two generations; the third generation has only just been tested.

When we come to the much more malignant R3 and C3H sporadic tumours we find that both of these are capable of yielding active dry tissue when fresh tumour is dried. In two successive experiments with the R3 tumour we obtained from dry tissue of fresh tumour (derived originally from frozen material) eight tumours out of ten mice inoculated, tumours appearing 14 to 33 days later; and one tumour out of six mice, the tumour appearing in 14 days. In an experiment with the C3H strain, fresh tumour tissue dried under the optimum conditions attained so far gave six tumours in 12 inoculations, the tumours appearing in 15 to 27 days.

Even with these very malignant tumours of the R3 and C3H strains of mice it has been found that preliminary freezing is helpful. For example, in three successive experiments with the R3 tumour it was found that tissue which had been frozen 28 days gave six tumours in six mice inoculated, the tumours being observed at 11 days; tissue frozen 34 days and then dried gave 10 tumours in 10 inoculated mice, the tumours being palpable in eight days and large on the 13th day; and tissue frozen 75 days, dried, and the dry powdered tissue then inoculated into six mice gave six tumours in 11 days.

We have no proof of numerous possibilities which may happen to tissue which is refrigerated for long periods of time. It is possible that low temperatures denature an inhibitory protein, thus liberating virus and making it available even after drying. The only merit this speculation possesses is that in the filterable tumours of chickens it is possible under favourable circumstances to demonstrate the presence of an inhibitory substance. This has been particularly well shown by J. B. Murphy, of the Rockefeller Institute. We have no complete proof of any of our numerous private speculations on this point; we are content merely to state what is the fact. It is possible that with more perfect methods these difficulties will vanish and speculation will become unnecessary.

At present the only conclusion from the whole work which is of vital and abiding interest is that it is no longer justifiable to put the normally easily filterable tumours of chickens in a separate class and turn a rather scornful eye on them. This work has now brought tumours of mice—average tumours found in all well-equipped cancer laboratories—into the same class. They have, as was to be expected, a continuing cause, and, since the continuing cause of chicken sarcoma is a virus, probably it is viral in nature. We have not yet transmitted other mammalian tumours with dried tissues, nor indeed have we seriously attempted to do so; but we think we are justified in making the contention that the negative results of the past are merely negative and have the value only of negative experience which is the result of imperfect technique. If the pioneers of cancer research, men like Jensen, Ehrlich

Bashford, and many others, had by chance succeeded in transmitting mouse tumours with perfectly dry tissue the situation in cancer-thinking would have been entirely different, and we should have been spared the confused speculations which now dominate cancer research.

There is one final point I wish to refer to—namely, whether viruses are of intrinsic or extrinsic origin. It is now almost the custom to consider the viruses of the filterable tumours as particles of chemical nature made by the infected cells. Indeed, this mode of thinking has now gone so far that the word "virus" has been objected to, though the grounds of objection do not appear to us to be valid. We are not wedded to a word; they may be called anything so far as we are concerned. It is more important to discover perfect ways of getting and handling them, to find out how they act, and to learn if possible how to control them. The problem of discovering the nature of viruses, whether made by cells or of extrinsic origin, is not confined to cancer viruses; it is a part of the general virus problem. There was a time when the bacteriophage was allied to cancer viruses as being a product of the bacterial cell, but that has now passed. The argument concerning biogenesis or abiogenesis of the Pasteur-Bastian period does not interest us, and its repetition now, with viruses taking the place of bacteria, seems to be sterile from the beginning.

Conclusion

The experimental evidence described above points to the conclusion that cancer has a continuing cause and that this, in mammals as in birds, is a virus.

LONG-TERM CARDIAC OBSERVATION OF CHILDREN

BY

R. KEMBALL PRICE, M.D., M.R.C.P.

(From the Cardiac Department, Royal Sussex County Hospital)

The proper assessment of cardiac signs found in a child is of considerable importance to its future. Many children in whom murmurs are heard have no disability, and the greatest danger is that their activities may be restricted and the seeds sown for the development of cardiac neurosis. In rheumatic heart disease a normal school life with games can often be allowed when the disease is inactive, even when valve lesions are known to be present. With the advance of cardiac surgery it is desirable that cases for which it may be necessary should be diagnosed as early and as accurately as possible and submitted for operation at the most suitable time.

The choice of a career which will not need to be changed on account of a disability that is likely to increase should be made before leaving school. It is difficult for one who has done nothing but manual labour to find a sedentary occupation in middle life, and this can be avoided by choosing suitable employment from the start. For these and other reasons there are great advantages in children with cardiac abnormalities being under regular observation at cardiological centres. There are many questions in cardiology which can be settled only by watching patients over a period of years. J. W. Brown (1939) has done much in this way to increase our knowledge of the natural history of congenital heart disease. By similar observation much may be added to our understanding of the course of rheumatic heart disease.

What happens in the years between the acute or sub-acute phase seen in the child and the young woman who is discovered to have mitral stenosis during pregnancy?

Is the development of the stenosis due to recurrent activity of the rheumatic infection, or, once started, does the narrowing progress steadily without evidence of further activity, or are both factors at work? What happens to the innocent murmurs so common in childhood? At what age do they disappear?

A Cardiac Clinic for Children

With these considerations in mind a children's cardiac clinic was started eighteen months ago, and a report of the first 200 cases is here given. Apart from its intrinsic interest, the appreciation of doctors, parents, and, not least, the children themselves is encouraging and makes the clinic a happy one. As an investigation of this kind requires observation over a period of many years it is desirable that the observer should start while young enough to allow continuity of at least twenty years. It is with the idea of encouraging others who may be interested to take up such work that this preliminary report is presented.

The work has been made possible by the willing co-operation of the local school medical authorities. An afternoon is set aside and four to six children are seen by appointment each week. The number attending on each occasion is kept small so that full and unhurried examination may be made. It also means that no one is kept waiting very long—a point which makes them more willing to come again when asked.

Children showing any cardiac abnormality whatsoever at routine school examinations are placed on a list and referred to the clinic. The net is purposely cast wide to include all conditions, ranging from innocent murmurs to serious heart disease. A careful history is taken, followed by clinical examination, electrocardiograms, and cardioscopy. Twelve-lead electrocardiograms consisting of V1-6 and augmented unipolar limb leads in addition to the standard leads are now being taken in all cases, and routine phonocardiograms are to be started shortly.

If the child is very nervous or fretful the blood-pressure reading, electrocardiography, and cardioscopy may be postponed until the next attendance, as it is considered important that its memory of the visit to the cardiac department shall not be unhappy. This greatly facilitates subsequent examination. Teleradiographs are taken in cases showing abnormality on screening. Blood counts and sedimentation rates are done in certain cases. A report is sent to the school medical authorities and to the patient's own doctor. Arrangements are made for re-examination after an interval of six or twelve months or sometimes earlier.

Report of First 200 Cases

The distribution of the 200 cases is shown in Table I. There were 96 boys and 104 girls. It will be seen that approximately 40% had, or were suspected of having,

TABLE I.—Distribution of Cases

Cases with Organic Heart Disease.	
I. Congenital malformations (44):	
Fallot group (one with congenital heart-block)	7
Pulmonary stenosis	10
Ventricular septal defect	6
Patent ductus arteriosus	3
Coarctation of aorta	3
Atrial septal defect	3
Congenital heart-block	1
Observation—congenital heart disease	11
II. Rheumatic Heart Disease (37):	
Mitral stenosis (six with active disease)	21
Mitral stenosis and aortic incompetence	2
Observation—mitral valvular disease or cardiac enlargement	14
Cases without Organic Heart Disease (119):	
Innocent murmurs	96
Physiological third heart sound	5
Depressed sternum	1
Splitting of first heart sound	1
Anæmia	1
Displacement (scoliosis, 1; pulmonary fibrosis, 1)	2
Irregularities (sinus arrhythmia, 1; extrasystoles, 2)	3
No abnormality detected	10

organic heart disease. The remaining 60% are classified under the most prominent feature discovered. Innocent murmurs provide the majority. Many of those with murmurs also showed a third heart sound, but unless the triple rhythm was the only feature cases were not classified under it. Those with organic lesions are divided into congenital malformations and rheumatic heart disease, the former showing a slight predominance.

The "observation" group is useful and may well prove the most important over a long period. In it are placed cases that cannot be passed as normal at the first examination, but in which the signs are so slight that a definite diagnosis of heart disease is not justified. It will be of great interest to see which way these cases develop—whether the suspected abnormalities disappear, or whether a clear pattern of heart disease emerges. The group is also used for cases of congenital heart disease in which the nature of the lesion is obscure. With increasing experience more accurate diagnosis becomes possible and fewer have to be placed in this group, but there will always be a number in which a complete diagnosis cannot be made during life.

CASES WITH HEART DISEASE CONGENITAL MALFORMATIONS

Fallot Group.—Ages ranged from 5 to 16 years. With one exception these seven cases had all been diagnosed as having heart disease in infancy; development was poor and disability varied from moderate to considerable. All showed varying degrees of enlargement on cardioscopy, but the "cœur en sabot" which has been described as characteristic of this condition was seen only twice. Blood pressure tended to be low. The expectation that all such cases will show steadily increasing disability is not supported by follow-up studies. Of six cases, four showed improvement during the first year of observation, one remained the same, and one showed increased disability and was referred for operative treatment. The improvement in two was striking: one who could walk only a few yards when first seen can walk a mile; another who used to squat had not done so for six months and was walking well. Bearing in mind the limited improvement that can be expected from a successful operation, it is desirable that surgical treatment should be reserved for those whose disability is very great and in whom progressive deterioration is occurring.

Pulmonary Stenosis.—In the majority of these ten cases the heart lesion was discovered at examination for some other purpose, and in half of them remained unnoticed until the first routine school examination at the age of 5. Disability was generally slight and physical development fair. Because of the impressively loud murmur there is a tendency to restrict the activities of such children far more than is necessary. Most of these are now playing games happily without symptoms.

Ventricular Septal Defect.—Like the preceding group these children's murmurs were usually discovered accidentally and all but one had been forbidden to play games. Of the six children in this group the only one to complain of shortness of breath was later found to have a mid-diastolic murmur and is really a case of mitral stenosis. Electrocardiograms were normal apart from slight prolongation of the P-R interval in one, and prominent S waves in lead I in two. Screening revealed slight right-sided enlargement in three; the rest were normal. All are now living an ordinary school life.

Patent Ductus Arteriosus.—One of the three cases in this series—a boy aged 9—has no symptoms. He is being watched but not operated upon meantime, as I agree with the view expressed by Benn (1947) that in symptomless cases the risk of operation may be greater than the risk of

bacterial endocarditis or heart failure. The other two cases showed unusual features and are here briefly described.

One of these two patients was a girl aged 13½, the condition of whose heart was first noticed during pneumonia at the age of 4. Subsequently she suffered from recurrent respiratory infections and was often away from school for long periods. At one time she was in hospital for a year, and later attended school for half-days only. She had an over-anxious mother and there is some doubt if all this care was really necessary. Her general condition was poor, and in addition to signs of pulmonary fibrosis there was considerable cardiac enlargement with the typical machinery murmur below the left clavicle. Blood pressure was 160/30 at rest and 170/0 at exercise. In view of her poor general condition and the size of her heart it was thought that there might be some other heart condition as well as the patent ductus. She was therefore seen by Sir John Parkinson, who agreed that operation was advisable, as the prognosis without it was bad and might bring great improvement. She was operated upon at the London Hospital by Mr. Vernon Thompson, who found a short and very wide ductus (8 mm. in length and 11 mm. diameter), which was tied. She made an uninterrupted recovery, and her general condition has since improved greatly. Six months after operation a systolic murmur developed in pulmonary area and has persisted unchanged (six months). Such murmurs are sometimes heard after operation for patent ductus arteriosus, and no satisfactory explanation for them has yet been given. They are not always evidence of recanalization.

The other patient, a girl, had had a patent ductus tied at age of 7 on account of poor physical development. She made a satisfactory recovery and was in excellent health for a year after operation. She then began to get attacks of pain across the sternum, associated with severe dyspnoea and cyanosis. They had no relation to exertion or food, but were associated with a slight rise of temperature. The attacks became more frequent, she lost weight, and her general condition deteriorated. The heart sounds remained closed and electrocardiogram and x-ray film were normal. Blood cultures were negative and there was no evidence of embolism. The attacks were puzzling, but they were considered cardiac in origin and it was thought that bacterial infection must have occurred, possibly in the stump of the ductus. After a few weeks course of penicillin her general condition improved greatly. She has gained weight, and the attacks, though still occurring, are milder and much less frequent.

Coarctation of the Aorta.—It is probable that this condition is very much commoner than has been thought, when it becomes a routine to palpate the femoral artery in all cases showing hypertension or neck pulsation. In more cases will be found. Of the three cases, two, aged 15 and 9, are symptom-free. The third, aged 7, is easily tired and has had cramp in the legs at night for the last two years. Her blood pressure is normal. She was diagnosed by Dr. J. W. Brown at the age of 2½. The Crawford operation of resection of the coarctation and end-to-end anastomosis of the aorta is a severe one, and in symptomless cases the operative risk may well be greater than the danger of rupture of the aorta, bacterial aortitis, or heart failure. A remote risk of the operation may be from weakness at the suture line when atheromatous changes occur in the aorta. For these reasons it would probably be wise to reserve operation for young patients showing symptoms of cardiac embarrassment or ischaemia of the legs, because in them the prognosis without operation is bad enough to warrant the risk.

Atrial Septal Defect.—All three patients were girls. In diagnosis the radiological appearance of enlargement of pulmonary artery, including its right branch, with pulsation of the pulmonary vessels, was found the most useful sign. One had mitral stenosis as well (Lutembacher's syndrome), and she and one other had some shortness of breath on exertion. The third had no symptoms. This condition rarely causes heart failure before adult life and is usually

to be recognized in childhood unless cases with murmurs are examined radiologically.

Observation: Congenital Heart Disease.—In this group of eleven cases are three with loud systolic murmurs internal to the apex. No thrill has been felt, but it is considered probable that they are cases of ventricular septal defect. Two other cases show cardiac enlargement on screening. In another it is probable that the disability is entirely due to bronchitis and that the heart is normal. The remaining five cases are suspected of having pulmonary stenosis, atrial septal defect (2), patent ductus arteriosus, and the Eisenmenger complex. When the diagnosis is considered to be established they will be placed in the appropriate groups.

RHEUMATIC GROUP

This group comprises all the cases of proved and suspected mitral stenosis, those with a history of rheumatic fever or chorea with a noticeable systolic murmur, and those suspected of having active rheumatic infection. No cases of aortic incompetence without mitral stenosis have been seen in this series, though it is expected that in some of the cases of slight cardiac enlargement an early diastolic murmur may be heard on future examination.

Mitral Stenosis.—Of the 21 proved cases of mitral stenosis 13 were girls and 8 boys. Seventeen were between the ages of 10 and 15. Fourteen gave a history of rheumatic fever or chorea. In seven no history suggestive of rheumatic infection could be obtained. The commonest physical sign was a systolic murmur at the apex, which was heard in all. The first heart sound was loud in 15 and mid-diastolic murmurs and presystolic murmurs were heard in 14 and 6 respectively. The diastolic murmurs were always better heard lying than standing, and best when lying on the left side after exercise. On cardioscopy 16 showed enlargement of the left auricle in the right oblique position with barium in the oesophagus. Two others showed slight general enlargement with a straight left border, and three were normal on screening. None had severe disability, and, provided there had been no recent rheumatic activity, they were not restricted beyond what they could do in comfort. Two who had active carditis were admitted to hospital. Another, when apparently well, developed an acute infection with consolidation of the left lower lobe and died in a week.

Of the 13 cases under observation for mitral stenosis 8 are females and 5 males. Seven gave a history of rheumatic fever or chorea and had systolic murmurs with or without a loud first sound. Three had systolic murmurs with cardiac enlargement on x-ray examination. Three others had systolic murmurs only, but of such a character that these could not be passed immediately as innocent murmurs. It should be emphasized that the cases in this group are not restricted in any way whatsoever, but are being watched at intervals of six to twelve months to see how they develop.

CASES WITHOUT HEART DISEASE

These cases are most important, for they are healthy children whose whole lives may be blighted by a mistaken diagnosis of heart disease. A few examples may be quoted.

Girl aged 7; parents told "heart bad" when she was 2 years old. Never allowed games or drill, and spent one day a week in bed.

Girl aged 14. Examined on account of nose-bleeding at 5; told "valvular trouble." Since then had never been allowed games, drill, swimming, or dancing.

Boy aged 14½. Heart examined at 4; no games or drill since.

All these children have healthy hearts and are now playing full games without distress.

Innocent Murmurs.—These account for nearly half the total number of cases. They have been classified and their characteristics described by Evans (1947). The majority are better heard in the reclining posture. They have a soft blowing character and are usually diminished or abolished by deep inspiration. They do not occur early in systole, and a gap can often be detected between the first sound and the murmur. It is hoped that phonocardiography may assist in distinguishing these murmurs more clearly. Table II

TABLE II.—96 Healthy Children with an Innocent Murmur

Type (Evans's Classification)	No.	Boys	Girls	Third Heart Sound Present
Murmur of reclining posture ..	90	54	36	71
Murmur of upright posture ..	4	—	4	1
Parasternal murmur ..	2	1	1	2

shows the great preponderance of murmurs better heard in the reclining posture and the high proportion in which a physiological third sound was heard in such cases.

Triple Rhythm.—A third heart sound was heard in 100 cases. In five it was the only sign. In 83 it occurred in healthy hearts, in 3 with congenital heart disease, and in 14 cases under observation for possible rheumatic or congenital disease. The distribution is shown in Table III.

TABLE III.—100 Cases of Triple Rhythm

Cases without Heart Disease (83):				
Alone .. .. .	..	..	..	5
With innocent murmurs ..	..	..	..	75
With anaemia, scoliosis, and pulmonary fibrosis (1 each ..	..	..	..	3
Cases with Congenital Heart Disease (3):				
Atrial septal defect ..	..	..	..	2
Coarctation of aorta ..	..	..	..	1
Cases under Observation (14):				
For mitral valvular disease ..	..	..	..	8
For congenital heart disease ..	..	..	..	6

Depressed Sternum.—Only one case occurred in this series. Evans (1946) has pointed out that with this deformity the heart may be flattened between the spine and the depressed sternum. This may give rise to a systolic murmur and also give an impression of cardiac enlargement by outward displacement of the apex beat. This apparent cardiac enlargement may be noted on cardioscopy in the antero-posterior position, but the true cause may be suspected from the unusual translucency of the cardiac shadow and be proved by examination in the oblique position. With deeper depression of the sternum the heart may be displaced to the left, causing great displacement of the apex. The condition is harmless, and is important only as a possible cause of unnecessary invalidism.

Splitting of the First Heart Sound.—It is surprising that this was heard only once among 200 children, for it is a common sign. Its importance lies in the fact that it is often mistaken for the presystolic murmur of mitral stenosis. Splitting is best heard in the upright posture over the lower sternum; the first sound is not loud and there is none of the crescendo quality of the true presystolic murmur. It is in fact a simple splitting and not a murmur.

Displacement of the Heart.—Scoliosis is the commonest cause of displacement of the apex beat in children, and when this is outwards it may give rise to a suspicion of cardiac enlargement. The condition is usually recognized by observing that one shoulder is higher than the other. It is most easily seen on screening, when by rotating the patient to correct the deformity the normal size of the heart is apparent.

Other Factors

Blood Pressure.—This was recorded in 180 cases, and the results were examined to see whether there was any striking difference according to age, sex, or the presence of heart disease. The numbers are too small for statistical

analysis, but it was found that in healthy children under the age of 10 the systolic blood pressure was less than 100 mm. Hg in 60% of boys and 30% of girls.

Electrocardiography.—Only standard leads and CR1 were taken in the majority, as twelve-lead cardiograms were not started until late in the series. The more complete records should help in the assessment of right or left ventricular preponderance. It is not proposed to give here a detailed description of the present findings, but two observations can be made. Sinus arrhythmia of a degree easily perceptible to the eye without measurement was seen in 97 out of 195 cases. Of these, 68 out of 117 were in healthy hearts, 14 out of 42 in the congenital group, and 15 out of 36 in the rheumatic group, including three with active carditis. This supports the view that sinus arrhythmia is of no value in helping to determine the condition of the heart.

It has been suggested that a physiological third sound, prominence of the pulmonary artery on cardioscopy, and inversion of the T wave in CR1 may be linked as a triad of physiological right ventricular preponderance. The direction of the T wave in CR1 was therefore studied in 94 cases showing a third heart sound. It was inverted in 12, diphasic (— +) in 32, flat in 1, diphasic (+ —) in 5, upright in 42, and bizarre in 2.

Radiological Examination.—The ease with which the cardiac silhouette can be seen in children contrasts pleasantly with the difficulty so often encountered in obese adults. The child's heart tends to look a little larger in relation to the size of the chest. Cardioscopy is of great assistance in attempting to separate the congenital malformations and in the early diagnosis of mitral stenosis. It is also of value as a check on clinical observation, and in more than one case in this series the appearance of cardiac enlargement led to re-examination, with the discovery of signs that had been missed before.

Restriction and Cardiac Invalidism

The proportion of those whose activities had been restricted on medical advice is shown in Table IV. In those without heart disease it was encouraging to note that

TABLE IV

Group	No.	Activities Restricted on Medical Advice				Total
		No Symptoms	Slight Symptoms	Moderate to Severe Symptoms	Unnecessary Cardiac Invalidism	
Healthy hearts ..	119	29	9	1 (neurosis)	39	39
Congenital ..	44	17	7	7	24	31
Rheumatic ..	37	16	2	8 (6 active)	18	26

although in the first hundred of the series 26 out of 55 had been restricted, in the second hundred only 13 out of 64 had had their activities curtailed. In view of the rapidity with which a cardiac neurosis can develop it is surprising that such a high proportion of those restricted had remained symptom-free. In contrast was a girl, referred on account of an innocent murmur, who complained of shortness of breath for the first time during the fortnight while waiting for an appointment at the cardiac department.

What limitation should be placed upon the activities of children with heart disease is a more controversial subject. All would agree that while any suspicion of active rheumatic infection exists rest should be advised, and in certain cases of congenital heart disease with severe disability there is no choice, for the heart itself imposes limitations. Patients with coarctation of the aorta in which a sudden strain may prove fatal should also have their activities limited.

These cases, however, are in the minority, and there are large numbers of children with gross signs of definite heart disease who have little or no limitation of exercise tolerance. Should they be prevented from enjoying the activities in which they are so keen to take part? On this subject we have the authority of Sir James Mackenzie (1917), who stated: "Children with a heart the efficiency of which is impaired will not injure it by over-exertion. Children are very sensitive to distress provoked by cardiac inefficiency and will themselves abstain without being told. . . I cannot recall a single instance where I could reasonably attribute heart failure to a child's voluntary exertions. The same reasoning applies to the games of boys and girls; when they exert themselves and find pleasure in doing so it may be taken for granted that no harm results."

If this opinion is accepted—and I think it should be—the restriction in all those cases without symptoms or with only minimal symptoms becomes unnecessary, and these children may be allowed to indulge in games, their own feelings being the best guide. It is my opinion that from a cardiac point of view the only valid reasons for stopping a child's normal school activities are active rheumatic infection or disease causing cardiac embarrassment of a degree which makes exertion uncomfortable.

Discussion

The main objectives are that children with heart disease shall lead as full and happy lives as possible, and that no suspicion of heart disease shall be allowed to remain in the minds of those who are healthy. Too often the child with some innocent or benign cardiac condition has been kept from games, drill, swimming, and dancing—in fact all the pleasures of school life. School medical officers may change, and newcomers are chary of questioning the judgment of their predecessors. Once the child has been placed on the restricted list few dare to raise the ban, and it may be treated as an invalid through the whole of its school life. It is not surprising in these circumstances that it grows up neurotic.

It is not advocated that children with severe disability should be driven to undertake activities which they can perform only with difficulty. Even those with impaired efficiency may be able to join in all but the more strenuous forms of competitive sport. The majority of these children who have been deprived of physical exercise in school are most anxious to join in with the others, and in unofficial games are often reported to be above average in the activity they display. They resent bitterly not being allowed to lead a normal life, and their joy at being told that they can do so knows no bounds. It is inevitable that such liberation of children who have been over-protected for years will sometimes cause parents to wonder whether the past restriction has been really necessary. Such difficulties are encountered only in the early months, and disappear when all cases are being referred to a cardiac clinic as soon as an abnormality is noticed and before restriction is instituted.

It might be thought that this work should be confined to centres where all the more specialized investigations such as angiocardiology, kymography, and cardiac catheterization with blood gas analysis, are available. The proportion of cases in which these are necessary for diagnosis is small, and while they add to the observer's interest they are not often essential for the benefit of the patient. It will be agreed that cardiac surgery should be undertaken only at a very few centres, so that a small number of surgeons may acquire the necessary experience to perform these operations with the greatest efficiency. When these special investigations are considered necessary they could be carried out at such a centre before operation. It would

is impossible to provide enough of these highly specialized clinics to examine more than a small proportion of the children with cardiac abnormalities. It should not be difficult, however, to cover the country by a series of centres, so that every child in whom any cardiac abnormality is suspected should have the benefit of examination and supervision by a physician specializing in cardiology. In this way much unnecessary cardiac invalidism would be averted.

Summary

The work of a children's cardiac clinic is described, and a report presented of the first 200 cases seen.

It is suggested that the setting up of similar clinics in areas where they are not already in operation would add to our knowledge and be of great benefit to the children.

I should like to thank Dr. John Matthews, senior school medical officer, Brighton, for his willing co-operation, and Miss V. Amato, radiographer to the department, for her technical assistance.

REFERENCES

- Allen, J. (1947). *Brit. Heart J.*, 9, 283.
Brown, J. W. (1939). *Congenital Heart Disease*. Staples Press, London.
Evans, W. (1946). *Brit. Heart J.*, 8, 162.
— (1947). *Ibid.*, 9, 1.
Jackenzie, J. (1917). *Principles of Diagnosis and Treatment of Heart Affections*, p. 96. Oxf. Med. Publ., London.

HOG-STOMACH EXTRACT AND CASEIN HYDROLYSATE IN PEPTIC ULCER

BY

A. W. KAY, M.D., F.R.C.S.

R. A. JAMIESON, F.R.C.S.

AND

W. E. SMITH, M.A., M.B., Ch.B.

(From the Peptic Ulcer Clinic, Western Infirmary, Glasgow)

It is notoriously difficult to evaluate the results of treatment in a disease such as peptic ulcer which follows an irregular course of relapse and remission. A spontaneous remission (especially if it should last for several weeks) is apt to be falsely attributed to the method of treatment in operation at the time. A system of study has been evolved in this clinic which would seem to avoid such a fallacy. The purpose of this paper is to describe the experimental method used to illustrate its application by reporting an investigation of two forms of treatment recently advocated—namely, the administration of hog-stomach extract and of casein hydrolysate.

Method of Study

The test substance is administered for three months and then withheld for three months, this sequence being repeated without reference to the presence or absence of dyspepsia. By the end of twelve months there are available for comparison two test periods and two control periods, during which (in the absence of benefit from the test substance) relapses can be expected with equal frequency. It is to be noted that relapses normally terminate spontaneously, and consequently the first improvement after the beginning of therapy must be discounted.

There can be little doubt that, in general, relapses tend to be more frequent in winter than in summer, and for this reason it was felt that the clinical trial should cover the period of a full year. The possibility was foreseen that in

the periods between the administration of the test substance the patients might regard themselves as untreated. To minimize this the proposed plan of treatment was explained at the start; partly through this explanation, and partly through conversation with other patients undergoing the same test, the control periods came to be accepted as an integral part of a planned course of treatment. Finally, patients were interviewed at the same intervals of time during the test and control periods so that the records might have the same degree of precision.

All the patients selected for study had radiological evidence of duodenal or gastric ulceration, and in each case the periodicity of relapse and of remission was well defined. Every patient had had symptoms for many years (average 12½ years) and the chance of spontaneous cure was considered to be remote. No change was made in the customary dietary habits of the patients save in one small group treated by intensive casein hydrolysate therapy (see below). Alkalis were permitted when pain was severe.

Hog-stomach Extract

The beneficial effects of feeding human gastric juice from normal subjects to patients with peptic ulcer have been described by Morrison (1945a). In an attempt to explain the prompt relief of symptoms it was suggested that the normal gastric mucosa is capable of elaborating a principle which protects the stomach from self-digestion and peptic ulceration. Developing this hypothesis, Morrison (1945b) was successful in preventing the occurrence of cinchophen ulcers in dogs by feeding them a preparation extracted from the mucosa and submucosa of the hog's stomach and duodenum. This was done with the intention of providing the "protective factor."

We present the results of a clinical trial of "pepsac," a commercial extract of fresh hogs' stomachs, in patients with peptic ulcer.

Dosage.—Pepsac was administered in doses of one tablespoonful (approximately 30 g.) three times a day in any vehicle palatable to the individual. In order to avoid destruction of any thermolabile active principle the temperature of the mixture was not allowed to exceed blood heat.

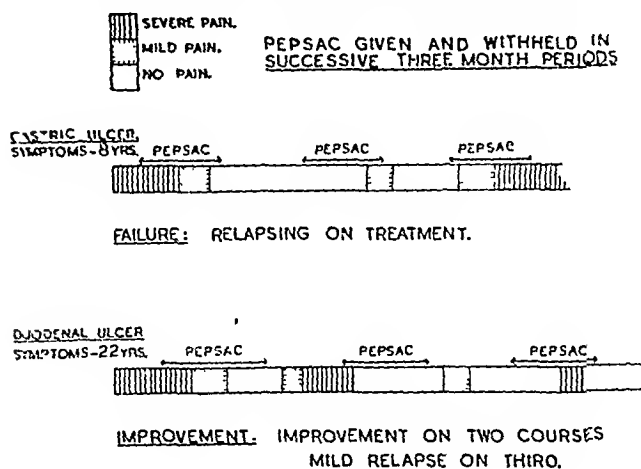
Results.—Observations were made on 41 patients (33 duodenal ulcer, 7 gastric ulcer, 1 stomal ulcer), with the following results:

Incomplete trial	..	..	..	..	8
? Incomplete trial or ? failure	..	..	..	..	7
Failure	..	..	..	..	17
Benefit	..	..	..	..	9

The patients given an incomplete trial include six who could not tolerate the preparation and two who defaulted. Seven patients continued to have severe disability, and the trial was abandoned in favour of in-patient hospital treatment; it is a matter of opinion whether these should be classified under "incomplete trial" or "failure." The 17 patients classed as failures (15 duodenal, 2 gastric) experienced no improvement in either the frequency or the severity of their relapses. In the remaining 9 patients (5 duodenal, 3 gastric, 1 stomal) some degree of benefit was obtained: in four of these the relapses became shorter and the remissions longer, and in five the periodicity was unchanged but the attacks were said to be less severe. The chart provides a diagrammatic representation of the clinical progress in two experiments and illustrates the method of study. During the period of investigation only one patient failed to gain weight.

Comment.—In most cases the addition of pepsac to the diet led to no symptomatic improvement despite a gain

in weight. Although the preparation is clearly nutritious there is no evidence that it contains an anti-ulcer factor.



Cascin Hydrolysate

Co Tui *et al.* (1945, 1946, 1947) found that hyperalimentation, with protein hydrolysate promptly relieved peptic ulcer distress. This benefit was ascribed to the ease with which protein hydrolysate can be assimilated and used for tissue-building, and also to its properties as an antacid.

We present the results of a clinical trial of "casydrol" in patients with peptic ulcer. Casydrol is an enzymic hydrolysate of fat-free whole milk containing approximately equal parts of amino-acids (with polypeptides) and readily assimilable carbohydrate.

Dosage

In one group of patients one heaped tablespoonful of casydrol was given three times a day (approximately 50 g. daily). This amount was considered to be adequate, as our patients regarded casydrol as "medicine" and took it in addition to their normal diet.

In a second group we departed from the method of trial described above in order to repeat the experiments of Co Tui *et al.* (1945). For this purpose seven patients were given casydrol exclusively for seven days. Hourly feeds consisting of four tablespoonfuls of casydrol in warm water were given from 7 a.m. until 9 p.m. The daily intake of casydrol was 600 g., providing a yield of 2,160 calories. On completion of this seven-day intensive course patients were given normal diet with a casydrol feed between meals. For this experiment seven male patients suffering severe duodenal ulcer pain were admitted to hospital. This was considered necessary, as it seemed unlikely that even the conscientious peptic ulcer patient would adhere to hourly feeding of a rather unpalatable mixture in the absence of supervision. Although in hospital, these patients were ambulant for the greater part of each day.

Results

1. Casydrol as a Supplement to Normal Diet.—Casydrol therapy was given to 16 patients (13 duodenal, 3 gastric). Four patients defaulted after six to eight weeks of treatment, during which symptoms had remained unchanged. These patients were regarded as having had an incomplete trial. Ten patients who continued to have pain while on treatment and in whom there was no improvement in the periodicity of relapse and remission were considered to be failures. In two cases a severe relapse was curtailed by the administration of casydrol, but in only one was the remission longer than usual. All patients gained weight

on casydrol therapy, the increase varying between 1½ and 21 lb. (0.68 and 9.53 kg.).

2. Casydrol as Sole Source of Food Nitrogen.—Brief summaries of the seven cases treated by intensive casydrol therapy follow.

Case 1.—Man aged 30. Pain was relieved on the fifth day of treatment, and he remained symptom-free on return to diet plus casydrol. Pain recurred on the 14th day, and he had haematemesis on the 30th day. Weight gain, 2 lb. (0.91 kg.) (Failure.)

Case 2.—Man aged 28. Pain remained unchanged in frequency and in severity at the end of the seven-day course of treatment. Gained 2½ lb. (1.13 kg.). (Failure.)

Case 3.—Man aged 25. Symptom-free after 48 hours' treatment. Dismissed without pain on the eighth day. Weight gain, 1½ lb. (0.68 kg.). (Improvement.)

Case 4.—Man aged 34. Symptom-free on the fifth day of treatment. Severe recurrence on the last day of treatment. Continuous pain for the next six weeks. Gastrectomy advised. Weight gain, 3 lb. (1.36 kg.). (Failure.)

Case 5.—Man aged 42. Very severe pain, unchanged after three days' treatment. Gastrectomy performed for duodenal ulcer. (Failure.)

Case 6.—Man aged 31. Pain still present after treatment but less frequent and less severe. Improvement maintained for six weeks. Weight gain, 4 lb. (1.81 kg.). (? Improvement.)

Case 7.—Man aged 45. Pain unchanged after seven-day course of treatment. Weight gain, 1½ lb. (0.68 kg.). (Failure.)

Comment.—The addition of casydrol to the customary diet led to symptomatic improvement in only two out of 12 patients despite a gain in weight in all. Co Tui reports that in 27 cases with pain as the presenting symptom hyperalimentation with "amigen" and "dextri-maltose" as the sole source of nourishment gave complete relief to 8 patients within 48 hours. We have been unable to confirm these results using casydrol. Casydrol and amigen are both enzymic protein hydrolysates: each gramme of casydrol yields 3.6 calories and each gramme of amigen yields 3.7 calories.

Summary

A method of clinical trial well suited to the evaluation of peptic ulcer therapy is presented.

The results of treating peptic ulcer with a commercial preparation of hog's stomach fail to support the assumption that this substance contains an anti-ulcer factor.

Treatment with a commercial preparation of protein hydrolysate was carried out by giving it as a supplement to ordinary diet or, alternatively, by giving it intensively for a short period as the sole source of nourishment. The patients gained weight, but their dyspepsia did not improve.

We are indebted to Benger's Ltd. and Genatosan Ltd. for providing a generous supply of casydrol and for providing information on its composition.

REFERENCES

- Co Tui (1947). *Rev. Gastroent.*, 14, 108.
- *et al.* (1945). *Gastroenterology*, 5, 5.
- *et al.* (1946). *J. Philippine med. Ass.*, 22, 243.
- Morrison, L. M. (1945a). *Amer. J. digest. Dis.*, 12, 323.
- (1945b). *Ibid.*, 12, 328.

The Ministry of Health states that some management committees have been making a free issue to patients of sweets or tobacco or paying pocket-money in cash in hospitals where this was established practice before the appointed day. Except in mental hospitals and mental deficiency institutions, this should now cease and patients should be expected to pay for tobacco or sweets supplied to them (i.e., bought on their behalf). Patients who have no means of their own (and no pension or benefit from the Ministry of National Insurance) may receive from the National Assistance Board a comforts allowance of 5s. a week, and such cases should, if the patients wish it, be referred to the area officer of the board. The Minister suggests, also, that the committee or board might consider providing for their "free" money sweets—and pocket-money in appropriate cases—for children in their hospitals.

HYPERINSULINISM DUE TO AN ISLET-CELL ADENOMA

A CURE, WITH METABOLIC STUDIES BEFORE AND AFTER OPERATION

BY

W. G. DUNCAN MURRAY, M.B., Ch.B.

(From the Aberdeen Royal Infirmary)

Hyperinsulinism due to an islet-cell adenoma of the pancreas is not a common condition. From 1931, when an operative cure was first recorded by Carr *et al.*, until 1945, only 56 cases of cure had been reported (Walker and Boger, 1945). Some cases have since been recorded, but the diagnosis is occasionally missed simply because the condition is not kept in mind. In many of the published cases the initial diagnosis was wrong and the condition was confused with narcolepsy (Walker and Boger, 1945), cerebral tumour (Womack, Gnagi, and Graham, 1931), and psychosis (Lups, 1944). Sendrail (1947) discussed the history of this condition and gave an exhaustive review of the older literature.

The following case is reported because the history was the key to the diagnosis, and the standardized insulin-tolerance test of Fraser and Smith (1941) was performed. These authors standardized this test for the diagnosis of endocrinological disorders of glucose metabolism. Many writers (Fraser, Maclay, and Mann, 1938; Fraser, Albright, and Smith, 1941; Burtness, Koehler, and Saint, 1941; Sendrail, 1947) have stressed the importance of the response to insulin injection in the diagnosis of hyperinsulinism, but a search of the literature has failed to reveal a case in which the standardized intravenous test has been carried out.

Case History

A 40-year-old housewife was admitted to Aberdeen Royal Infirmary on July 19, 1947, for investigation. The history was obtained from the patient and her husband, both of whom were good witnesses.

Nine months before admission she began to have occasional periods of drowsiness in the mornings and difficulty in waking. These attacks lasted for one to two hours and she was well for the remainder of the day. Her husband noticed a change in her behaviour during the attacks: she often wandered aimlessly about the house and wept for no apparent reason. Retrograde amnesia was occasionally associated with the drowsiness.

The attacks became more frequent, and on one occasion, three months before admission, she suffered from general weakness of the legs and was unable to move her right arm. She was given a whisked egg and milk and quickly recovered. Her physician prescribed amphetamine sulphate, one 5-mg. tablet to be taken at 6 a.m. and another at 8 a.m. She took these daily for eighteen days, and during that time and for two weeks after she was free from symptoms.

Ten days before admission she had a three-hour period of amnesia with automatism. During that time she wandered outside to the washing-house, lit the boiler fire, and did a considerable amount of washing. Her husband found her in a dazed condition, with a burn of her arm and parts of her clothing charred. He took her indoors and revived her by giving her food.

For one week before admission she had periods of drowsiness every morning, but now they were more severe and lasted up to eight hours. During an attack she had never been seen to shake or go stiff, to have incontinence, or to bite her tongue. In addition to the burn she had only once fallen and hurt herself. There had been no personality change apart from the abnormal behaviour during the attacks. At no time had she had the sensation of warmth or sweating associated with the drowsiness. Her appetite, though poor, showed no change, and her weight remained constant.

There was nothing of note in the family and personal histories. She had two healthy children aged 18 and 10 years.

Physical Examination.—The patient was fairly well nourished; height, 5 ft. 3½ in. (161 cm.); weight, 9 st. 7 lb. (60.5 kg.). She was intelligent, but often her actions were of a childish nature. No abnormality was found on physical examination. Her blood pressure was 126/66. There were no masses or tenderness in the abdomen. No signs of hypothyroidism or other endocrine disorder were present. Urinalysis was negative, and neither sugar nor urobilinogen was present.

Special Investigations.—X-ray examination showed no abnormality of the bones of the skull. No abnormal shadows appeared in the abdominal skiagram and no abnormality of the alimentary tract was demonstrated by barium meal. In particular the duodenum was normal. The visual fields were full and the fundi normal. Fasting blood-sugar estimations were carried out from July 21 (Chart 1). The cerebrospinal fluid showed

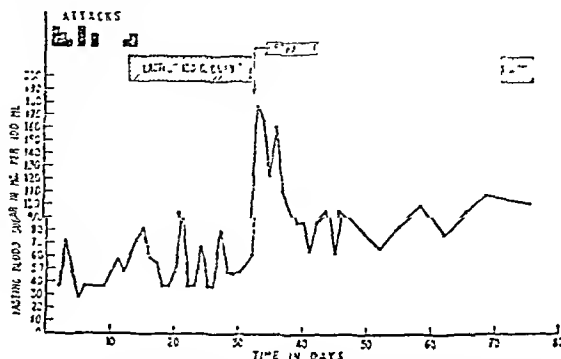


CHART 1.—Fasting blood-sugar levels before and after operation, with incidence of hypoglycaemic attacks.

no abnormality, but the sugar content was 42 mg. per 100 ml., the blood-sugar level at the same time being 100 mg. per 100 ml. The blood Wassermann reaction was negative. Blood examination showed: haemoglobin, 102%; red cells, 5,010,000; colour index, 1.02. The red cells were normal and no macrocytosis was present. Plasma chloride as NaCl was 525 mg. per 100 ml.; plasma cholesterol, 200 mg. per 100 ml. The basal metabolic rate was minus 16.

Description of the Attacks

Spontaneous.—These varied in detail from day to day, but followed the same general pattern. The patient appeared to wake normally, but soon fell into a drowsy condition and appeared to be asleep. She resisted attempts to wake her and would turn away, pull the bedclothes over her head, and curl up in bed. She showed some perseveration and repeated such phrases as "I'm all right," "I'm not asleep," and "Leave me alone." Occasionally when left alone she chattered to herself. Her speech at all times was clear. She would not carry out orders to move arms or legs or to sit up, and at times tended to be negativistic, gripping her eyes tightly when attempts were made to open them. There was no significant change in pulse or blood pressure; skin colour and temperature remained the same and at no time during an attack was sweating a feature. During the more severe attacks twitching of the facial muscles and tremors of the fingers and eyelids were seen. The pupils were dilated and reacted briskly to light. The muscles appeared hypotonic; the muscle reflexes were exaggerated, but muscle clonus could not be elicited, and the plantar responses were flexor. The attacks were quickly terminated by administration of carbohydrate, either by mouth or intravenously, without the patient's knowledge. Retrograde amnesia was present.

Induced.—Only during the insulin-tolerance test were the spontaneous attacks fully reproduced, but in addition sweating and the sensation of warmth were present. There was no retrograde amnesia after the hypoglycaemic attacks that occurred during the glucose-tolerance and insulin-tolerance tests and it was possible to elicit the following symptoms. The most constant of these were increasing frontal headache and blurring of vision. Less severe were the weakness, lassitude, and increasing hunger; the latter was present only in the glucose-tolerance tests, and may have been due to the length of the total fasting

period (eighteen hours with only 50 g. of glucose) or to the fact that meantime other patients were being fed.

Specific Investigations

Glucose-tolerance Tests.—Glucose, 50 g., was given after a twelve-hour fasting period, and blood-sugar estimations were carried out every half-hour for six hours. The blood-sugar

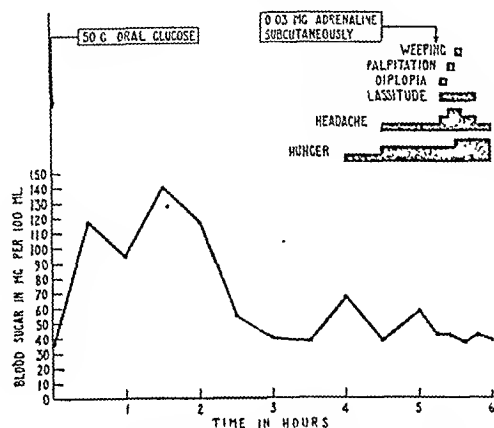


CHART 2.—Glucose-tolerance test before operation.

though the symptoms were aggravated, there was no change in the blood-sugar level (Chart 2).

Insulin-tolerance Test.—This was carried out as recommended by Fraser and Smith (1941). The patient was given extra carbohydrate for four days before the test was carried out. Insulin in the dose of 3.7 units per square metre of body surface was given intravenously and the blood-sugar levels were estimated at intervals (Chart 3). Normally the maximum fall to about 50%

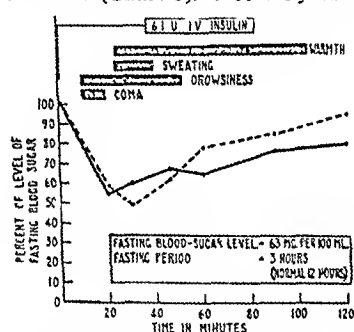


CHART 3.—Insulin-tolerance test before operation. Dotted line shows composite normal from six cases.

higher is the index. **Report**—120th minute sample, 81% of fasting sample (normal=90–110%). Index of hypoglycaemia responsiveness, 449 (normal=470–620). **Interpretation:**—The curve shows hypoglycaemia unresponsiveness. In the absence of evidence of hypopituitarism, adrenocortical insufficiency, liver disease, or marked emaciation from anorexia nervosa this finding is suggestive of hyperinsulinism.

From the history and investigations a clinical diagnosis of organic hyperinsulinism was made and surgical treatment advised.

Operation

On Aug. 20 an operation was performed by Mr. G. Gordon Bruce. Glucose, 50 g., was given at four hours and one hour before operation. The anaesthetic used was nitrous oxide, oxygen, and ether, the latter because it tends to raise the blood-sugar level. The abdomen was opened by a right paramedian incision and the gastro-colic omentum was divided. The stomach was then hooked up by two malleable retractors and the transverse colon displaced downwards, exposing the entire anterior surface of the pancreas. At this point a bluish tumour mass about 2 cm. in diameter immediately became visible, lying slightly to the left of the midline on the lower border of the pancreas near the junction of the tail with the body of the pancreas. This lower border was freed so that the tumour could be held between the finger and thumb, a series of chain

sutures of fine linen was inserted into the pancreas, and the mass was excised by cutting freely into the surrounding tissue. The gap in the pancreas was then sutured and the gastro-colic omentum closed. A soft rubber drain was left *in situ*.

Pathological Report.—"The tumour is 7 mm. in diameter and is embedded in normal pancreatic tissue. There is no true capsule to the tumour, but the surrounding pancreatic tissue is flattened and compressed. The tumour is vascular, and the cells show acinar formation. There is no evidence of malignant change. Special staining methods fail to demonstrate that the tumour cells are of the β cell type. **Diagnosis:**—benign islet-cell adenoma."

Post-operative Progress

There have been no more drowsy attacks, and the patient is well (sixteen months after operation). Immediately after the operation blood-sugar estimations were carried out at approximately four-hourly intervals, and after an initial rise to 187 mg. per 100 ml. and a fall to 162 mg the blood-sugar level rose steadily to a maximum of 197 mg at the twenty-fourth hour, though nothing but sips of water were being given. The hyperglycaemic period lasted four days and was accompanied by slight glycosuria for two days. After four days the fasting blood-sugar level fell to normal (average 86 mg. per 100 ml.). Convalescence was uneventful, apart from a small pancreatic fistula which discharged for five weeks.

Forty days after operation the following tests were carried out:

Glucose-tolerance Test.—This showed a normal response, although at the third hour the blood sugar fell to a low level (Chart 4).

Insulin-tolerance Test (Chart 5). — **Report:**—120th minute sample, 92% of fasting sample. Index of hypoglycaemia responsiveness, 488. **Interpretation:**—Curve shows: insulin resistance (maximum fall in blood sugar delayed beyond thirty minutes after intravenous insulin), and normal hypoglycaemia responsiveness.

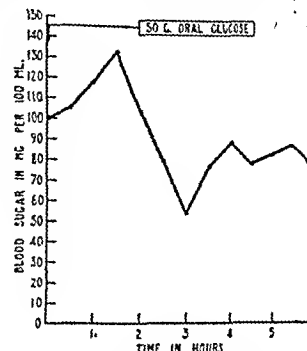


CHART 4.—Glucose-tolerance test after operation.

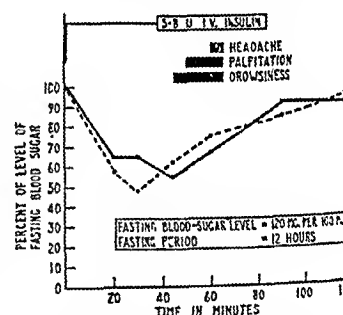


CHART 5.—Insulin-tolerance test after operation. Dotted line shows composite normal from six cases.

Discussion

The present case illustrates the steps by which a diagnosis of organic hyperinsulinism can be arrived at, first by the demonstration that the patient's symptoms are due to spontaneous hypoglycaemia, and then by the elucidation of the special features that distinguish organic hyperinsulinism from other causes of spontaneous hypoglycaemia.

Of the three main causes of spontaneous hypoglycaemia mentioned by Conn (1940)—hepatogenic hypoglycaemia, functional hyperinsulinism or cryptogenic hypoglycaemia (found in persons of unstable personality and almost always associated with psychoneurotic symptoms), and organic hyperinsulinism from an adenoma or carcinoma of islet tissue—the first two could be excluded. There was no clinical evidence of hepatic insufficiency and the glucose-tolerance test did not show the high plateau curve characteristic of liver disease. The intolerance to fasting, with hypoglycaemic blood-sugar levels, the lack of correlation of the attack with previous ingestion of a carbohydrate meal, and the patient's stable personality before the onset of the

present attacks excluded the condition of cryptogenic hypoglycaemia.

The occurrence of hypoglycaemia unresponsiveness in the insulin-tolerance test, with restoration of a normal response after removal of the islet-cell adenoma, indicates a causal relationship and affords confirmation of the suggestion of Fraser, Albright, and Smith (1941) that organic hyperinsulinism would be expected to produce hypoglycaemia unresponsiveness in the insulin-tolerance test.

This case is typical of the cases of islet-cell adenomata already reported and illustrates many points. It shows the successful results of surgery in hyperinsulinism due to islet-cell adenomata. Medical treatment is indicated in cryptogenic hypoglycaemia but is dangerous in organic hyperinsulinism. A high-carbohydrate diet tends to fatten the patient and so makes for a poor operative risk later. Repeated prolonged hypoglycaemic attacks can cause permanent damage to the central nervous system. These tumours show a tendency to become malignant and there should be no delay in attempting operation.

From this case it would appear that the coma, muscular twitches, and altered behaviour—equivalent to Himwich's (1944) cortical and subcortical phases of hypoglycaemia—were due to the low blood-sugar level. The symptoms such as lassitude, headache, and visual disturbances would seem to be due to adrenaline secretion reflexly induced by a sudden fall in the blood-sugar level. The small dose of adrenaline given during the glucose-tolerance test seemed to aggravate the symptoms of hypoglycaemia without altering the blood-sugar level. This case also showed that amphetamine sulphate could temporarily relieve the hypoglycaemic attacks, presumably by raising the blood-sugar level.

A short post-operative period of hyperglycaemia has been found in cases in which blood sugars have been estimated. This would appear to be due to the partial depression of the activity of the normal islets, while the requirements of the body were covered by the adenoma. The insulin resistance after operation may be due to persistence of a high level of the insulin antagonists, such as the glycotropic factor of the anterior pituitary.

Finally, the case illustrates the great importance of accurate differential diagnosis in cases of spontaneous hypoglycaemia, the difficulty of attempting to diagnose hyperinsulinism by the glucose-tolerance test alone unless this is prolonged for several hours, and the value of the insulin-tolerance test in diagnosing organic hyperinsulinism.

Summary

A case of organic hyperinsulinism is reported. The condition was cured by the removal of an islet-cell adenoma. Glucose-tolerance and insulin-tolerance tests were carried out before and after operation. The usefulness of the latter in the differentiation of hyperinsulinism from other causes of hypoglycaemia is emphasized.

I wish to thank Professor John Craig for permission to publish this case, and Professor J. Young and Dr. W. M. Davidson for the pathological report. I am indebted to Dr. Ian A. Anderson for carrying out the insulin-tolerance test and for his help and guidance so freely given.

REFERENCES

- Burness, H. I., Kochler, A. E., and Saint, J. H. (1941). *Ann. intern. Med.*, 14, 1915.
Carr, A. D., Parker, R., Grove, E., Fisher, A. O., and Larimore, J. W. (1931). *J. Amer. med. Ass.*, 96, 1363.
Conn, J. W. (1940). *Ibid.*, 115, 1669.
Fraser, R. W., Albright, F., and Smith, P. H. (1941). *J. clin. Endocrinol.*, 1, 297.
— MacLay, W. S., and Mann, S. A. (1938). *Quart. J. Med.*, n.s., 7, 115.
— and Smith, P. H. (1941). *Ibid.*, n.s., 10, 297.
Himwich, H. E. (1944). *Amer. J. digest. Dis.*, 11, 1.
Lups, S. (1944). *Acta med. scand.*, 117, 261.
Sendrail, M. (1947). *L'Hyperinsulinie*. Masson, Paris.
Walker, H., and Boger, W. P. (1945). *Arch. intern. Med.*, 75, 109.
Womack, N. A., Gnani, W. B., and Graham, E. A. (1931). *J. Amer. med. Ass.*, 97, 831.

RINGWORM OF THE SCALP

TREATMENT BY X-RAY EPILATION WITHOUT SUBSEQUENT LOCAL APPLICATION

BY

F. L. LYDON, M.B., M.R.C.P.

Dermatologist, Ringworm Clinic

T. STEPHANIDES, M.D., D.M.R.D.

Assistant Radiologist

AND

T. M. ROBB, M.R.C.S., L.R.C.P., D.M.R.T.

*Director, X-ray Department
Lambeth Hospital, London*

The many ingenious attempts made by various schools to increase the efficiency of local treatment in cases of tinea capitis have so far been unsuccessful, and the latest report by Brain *et al.* (1948) on the effect of fungicides in penetrating bases, although suggestive, must be evaluated in the light of further experience before we can hope to dispense with epilation by x rays as the method of choice in these cases.

Sequeira, Ingram, and Brain (1947) state that "it must be realized that they [x rays] have no parasitocidal action, but are simply used to remove the hair, after which continuous treatment must be applied to the bald scalp in order to eradicate the fungus before the hair grows." Again, Becker and Obermayer (1947) say: "It is the long period between epilation and regrowth that gives roentgen irradiation a superior advantage over all other methods of epilation, for during this time the surface of the scalp can be rendered antiseptic. . . . After epilation is complete local treatment . . . is carried out vigorously until no evidence of the disease can be found."

It can be seen from the preceding quotations that x-ray epilation is regarded only as ancillary, and that it is the local application of fungicides that really brings about cure. The late Mr. G. Stebbing, Director, X-Ray Department, Lambeth Hospital, however, believed that local treatment was unnecessary, and it has been the policy at the Lambeth Clinic to treat all cases of tinea capitis by the following method.

Method

X-ray epilation is carried out by the four-field technique (four main fields and one subsidiary field), the following factors having been worked out by Dr. L. H. Clark.

Victor KX10 Apparatus.—K.V.P. 100. Half-value layer 1.6 mm. Al. Tube current 7mA. Primary vol. reading 75v. (selector switch—high). F.S.D. 19.5 cm. Open field 16.6 in. (42 cm.) diameter.

Dose.—Four main fields: 500 r skin dose (backscatter factor, 1.24). Subsidiary field: 124 to 160 r according to the size of the patient's head, the average being 142 r. In very small children this, of course, is omitted.

Instructions to Patients.—The patients are simply instructed to wash the scalp with soap and warm water from the fifteenth day after treatment until epilation is complete. A cotton cap is provided by the department, and the patients are advised to make another like it. The patient wears one of these caps while the other is sterilized by boiling on alternate days.

After-care.—Inspection is carried out by the clinic about three weeks later, and thereafter as is considered necessary. Local application of ung. adipis lanae is prescribed to soften

and facilitate the removal of any scabs or scales that may be present. The occurrence of secondary infection is treated on general principles, but these cases were few in this series, which indicates the high standard of the school medical organization in detecting cases at an early stage.

With the factors given above, epilation has always been on the whole satisfactory. Occasionally small tufts of hair have remained in the centre of a well-epilated area or towards the periphery of the scalp. In most cases the hairs are loose and can be easily removed by a pair of forceps. Sometimes, however, these tufts resist extraction, but since infection of these hairs is not present, as shown from the following results, recontamination of the growing hair never follows and they can be ignored. No complications result from therapy except occasional headache and vomiting on the night of treatment, and there were no cases of alopecia, local or general.

Review of Cases

To check the results of treatment carried out on the lines described above, follow-up cards were sent to 103 patients whose epilation dated from eight months and over requesting them to attend the x-ray department for review. These 103 cases comprised: 71 with a laboratory diagnosis of *Microsporon audouini*, 27 with a laboratory diagnosis of ringworm fungus, and 5 diagnosed on clinical grounds and by Wood's light.

Forty-eight of these patients responded in person and were examined by us clinically and by Wood's light. They all proved to be free from infection and their hair and scalp were in excellent condition. Of the remaining 55 patients, 13 had left London and could not be contacted, and 42 were examined at their schools by the courtesy of the medical officer of the S.E. and S.W. divisions, who kindly forwarded reports on the condition of these patients. All without exception were completely well and their hair and scalp were described as being in a healthy state.

From these figures it can be stated that out of 103 patients with ringworm of the scalp who received no treatment other than x-ray epilation 90 (87.37%) showed no signs of relapse after an interval of time ranging from eight to twenty-four months. These 90 were made up as follows: 68 cases of *M. audouini* infection, 19 of ringworm fungus, and 3 diagnosed clinically and by Wood's light. It should be added that as no complaints have been received concerning the other 13 cases it can be assumed on fairly certain grounds that they too have remained free from relapse. This being so, the total percentage of cures may have reached 100.

Time Lost from School.—To date it has been our policy to keep the children away from school for about two to two and a half months, when the new hair showed signs of regrowth. We feel that in view of the above results an earlier return is possible, as the loss of a full term is often a serious handicap to these children. Perhaps, with a good epilation, six weeks would be sufficient in the great majority. Further work will be necessary, however, before a final decision can be taken on this point.

Summary

One hundred and three cases of tinea capitis treated solely by x-ray epilation are reviewed after an interval of eight to twenty-four months.

The results show that local application of fungicides is unnecessary—at least in cases of *M. audouini* infection. It may be added that the fact that the cases were consecutive and were free after the lapse of such an interval is ample justification of the view of the late Mr. G. Stebbing, who held that local

treatment was unnecessary, and that although x rays were not parasitocidal they either had the power to reduce the vitality of the fungus or brought about some tissue change which made it less easy for chance spores remaining to contaminate the new crop of hair.

REFERENCES

- Becker, S. W., and Obermayer, M. E. (1947). *Modern Dermatology and Syphilology*, 2nd ed., p. 501. Philadelphia.
Brain, R. I., et al. (1948). *British Medical Journal*, 1, 723.
Sequeira, J. H., Ingram, J. T., and Brain, R. T. (1947). *Diseases of the Skin*, 5th ed., p. 417. London.

FULMINATING MENINGOCOCCAL SEPTICAEMIA

AN ACCOUNT OF THREE CASES, WITH ONE RECOVERY

BY

PETER TURNER, M.B., B.S.

AND

R. V. DENT, M.B., B.Chir., M.R.C.P.

Resident Physician, General Hospital, Rochford, Essex

Fulminating septicaemia is one of the rarer manifestations of meningococcal infection. It occurred in 24 (3.4%) Banks's (1948) series of 706 cases, and American authors give its incidence as about 1% (Sweet, Dowling, and How 1947).

Though it may be preceded by a few days of mild infection of the upper respiratory tract, the onset is usually sudden, with fever, rapid respirations, and cyanosis, simulating early pneumonia. Petechiae appear within a few hours and quickly enlarge to form purpuric blotches. Peripheral vascular failure occurs early, with a rapid feeble pulse, very low blood pressure. Meningism is absent at first, may appear terminally. In untreated cases death occurs 24–36 hours. Necropsy often reveals adrenal lesions, the striking of which is massive bilateral haemorrhagic destruction (sometimes known as the Waterhouse-Friderichsen syndrome).

Since 1940, reports of successful treatment with sulphamides and adrenal cortical extract have been published. With the additional help of penicillin Banks (1948) believes 50% of cases may recover.

We saw three sporadic cases within a year at a general hospital. One of these recovered.

Case 1

A female laundry worker aged 21 was quite well till 2.30 p.m. on Jan. 27, 1946, when she awoke with pains in her legs, which grew rapidly worse and spread to her whole body. Her throat became sore, and during the morning dark blotches appeared on her trunk and limbs.

She was admitted to hospital at 3.30 p.m., and was seen by a well-built woman, gravely ill. The temperature 102° F. (38.9° C.), pulse 112, and respirations 24. Purpuric blotches involved the face, neck, trunk, and limbs, and also buccal mucous membrane and conjunctivae. The pulse rapid, feeble, and regular. Blood pressure was 75/55. There were no signs of meningism and the urine was normal. White blood cells totalled 15,000 (83% polymorphs). Bleeding clotting times and capillary resistance were normal.

Her condition deteriorated rapidly, the pulse became inextinguishable, and the blood pressure too low for estimation. She sank into a coma, and a trace of neck rigidity was noted. Pupils were irregular and the limbs flaccid. At 5.15 a.m. the cerebrospinal fluid was turbid. Cells numbered 12 (99% polymorphs). Gram-negative intracellular diplococci

were found in deposit. Culture was sterile. She died at 6.40 a.m., 28 hours after the onset.

Necropsy was performed by Dr. D. J. O'Brien five hours after death. Widespread partly confluent intracutaneous haemorrhages from pin-point size to 15 cm. diameter were seen. There was thin pus over both cerebral hemispheres, but not at the base of the brain. Petechiae were present in parietal and visceral pleura, pericardium, and peritoneum. A small fleshy thymus gland was found. The spleen was twice the normal size. The right suprarenal was congested; the left had small haemorrhages in the medulla. No lesion of the muscles was noted.

Microscopical Examination.—The thymus was normal. The adrenals showed congestion of all capillaries but no frank haemorrhage. Cells of outer layers of cortex of both glands appeared necrotic. Diplococci were seen in films of the pus over the brain, and meningococci (Type I) were cultured from the heart blood.

Death was considered to be due to fulminating meningococcal septicaemia.

Case 2

A boy aged 3 was taken ill at midday on Oct. 11, 1946. At 7 p.m. he was febrile and breathless, and was sent to hospital as a case of early pneumonia.

On admission at 10.30 p.m. he looked severely ill, with grey cyanosis. The temperature was 104° F. (40° C.), pulse 160, and respirations 44. There was a trace of neck rigidity. The lungs were normal. A petechial rash was seen on the upper part of the trunk. During the next hour this rash developed with great rapidity until the whole trunk and limbs were covered with purpuric blotches. A clinical diagnosis of fulminating meningococcal septicaemia was made, and courses of penicillin, 30,000 units intramuscularly three-hourly, and oral sulphadiazine, 1 g. followed by 0.5 g. four-hourly, were begun. C.S.F.: crystal-clear; pressure, 120; no cells; protein, 20 mg. per 100 ml.; no organisms seen; culture sterile. Penicillin, 15,000 units, was injected intrathecally.

At 8 a.m. on Oct. 12 his condition was obviously much worse. The temperature was 106° F. (41.1° C.), pulse uncountable, and respirations 72. Blood pressure was too low for estimation. Neck rigidity was definite and Kernig's sign positive. C.S.F.: turbid; pressure, 140; cells, 3,200 per c.mm. (99% polymorphs); protein, 180 mg. per 100 ml.; no organisms seen; culture sterile. Penicillin, 15,000 units, was injected intrathecally. White blood cells numbered 33,000 (polymorphs 80%). Scrapings from a purpuric patch were cultured, but pathogenic organisms were not isolated. It was now thought that acute adrenal insufficiency might well have developed, and though the child appeared moribund it was decided to try the effect of administering adrenal cortical extracts (22 hours after the onset). The possibility of the cellular reaction in the C.S.F. being the result of previous intrathecal penicillin was also considered.

At 10 a.m. desoxycortone acetate, 5 mg., was injected intramuscularly. An intravenous infusion of 5% dextrose in normal saline was set up, and three-hourly intravenous injections were given by the infusion tubing of: 2.5 ml. of "eucortone"; 0.1 ml. of 1 in 1,000 solution of adrenaline hydrochloride; and 0.5 g. of soluble sulphadiazine. At 2 p.m. the temperature was 99.4° F. (37.55° C.), pulse 120, and respirations 48. Very great improvement was obvious. His colour was rosy, the pulse was easily felt, and the blood pressure was 100/60. Mild neck rigidity and Kernig's sign were still present.

On Oct. 14 there was no return of peripheral vascular collapse. A trace of oedema of hands and feet was present, which was considered to be due to excess of adrenal cortical extract and saline. Infusion and eucortone were therefore discontinued, after totals of 4 pints (2.3 litres) and 45 ml., respectively. Sulphadiazine, 0.5 g. three-hourly orally, and intramuscular penicillin were continued. On Oct. 16 progress was satisfactory, with only a trace of neck stiffness. C.S.F.: clear fluid, sterile; pressure, 180; cells, 360 (99% polymorphs); protein, 35 mg. per 100 ml. On Oct. 18 the purpuric patches were fading, but seven of the large ones on the back and

buttocks were sloughing. Chemotherapy was stopped after a total of 1,180,000 units of penicillin and 35 g. of sulphadiazine had been given.

Convalescence was delayed by infection of the sloughed purpuric patches and of the infusion wound, but this responded to a further course of penicillin.

In May, 1947, he was quite normal for his age, the only sequelae being the scars of his infusion wound and sloughs. A radiograph of his abdomen showed no evidence of calcification of the adrenals.

Case 3

A schoolgirl aged 15 was well till Jan. 26, 1947, when she complained of a cold in the head. At bedtime she felt "shivery" and had an aching pain in the right shoulder and arm. At 1.30 a.m. on the 27th she vomited, and at 5.30 a.m. her parents observed her breathing to be rapid and shallow. She talked incoherently in her sleep. At 10.30 a.m. a rash appeared on the face and limbs consisting of "black spots which rapidly enlarged into blotches." At 2 p.m. the temperature was 102° F. (38.9° C.) and respirations were rapid. A purpuric rash was present on the face, neck, and limbs. There was no neck rigidity. Admission to hospital was requested.

On admission at 6 p.m. her temperature was 100° F. (37.8° C.), pulse imperceptible, and respirations 40. She was conscious and rational and complained only of pain in the right shoulder and weakness. Purpuric blotches and petechial spots were seen on the face, neck, arms, and legs, but not on the trunk. The heart sounds were faint—the rate was 140. The blood pressure was unobtainable. The lungs and abdomen were normal. There was dubious neck rigidity, Kernig's sign was not obtained, and the reflexes were absent.

A diagnosis of fulminating meningococcal septicaemia with adrenal haemorrhages was made, and 10 ml. of adrenal cortical extract was injected intramuscularly. Owing to the peripheral vascular collapse it was impossible to administer this intravenously; nor was it possible to obtain blood for culture and biochemical examination. Immediate preparations were made to set up an intravenous saline infusion and to begin therapy with penicillin and sulphadiazine. At 6.45 p.m., however, 20 hours after the onset of the disease, she died, remaining clear-minded to the end.

Necropsy was performed by Dr. Raeburn 20 hours after death. The body was that of a well-developed girl with an extensive purpuric rash on the face, neck, shoulders, arms, and legs. The body was free. The myocardium was pale, soft, and swollen on section. A few petechiae were seen beneath the endocardium. The entire respiratory tract was intensely congested. The mucosa of the trachea and bronchi was bright red. The lungs were markedly congested and semi-airless; minute haemorrhages could be distinguished in the parenchyma. The whole alimentary tract was congested, with numerous subserous petechiae on the stomach and small intestine. The thyroid gland, pancreas, ovaries, and kidneys were all congested. The adrenals were congested, but there was no gross haemorrhage, and the structure of the glands seemed intact. They were no more strikingly congested than the thyroid, pancreas, and kidneys, and less so than the lungs. The thymus was large and fleshy, weighing 42 g. The leptomeninges of both the brain and the spinal cord were hyperaemic, and there was a little fibrinous exudate in the sulci. The brain substance was hyperaemic and slightly oedematous. Blood obtained from the right ventricle was cultured and a profuse growth of meningococci (Type I) was obtained. The same organism was isolated from a swab taken from the sphenoid sinus.

Histological Examination.—The adrenals showed congestion of the vessels, with a number of minute haemorrhages. The spinal cord exhibited changes typical of leptomeningitis. The thymus showed normal glandular tissue, and the kidneys, pituitary, and thyroid congestion only. The lungs showed intense dilatation and congestion of the capillaries with secondary atelectasis.

Death was considered to be due to fulminating meningococcal septicaemia.

Discussion

Banks and McCartney (1942, 1943) classify fulminating meningococcal septicaemia into an encephalitic type, characterized by mental clouding progressing to coma; an adrenal type with purpuric rashes, peripheral vascular failure, and mental clearness; and a mixed type, having some of the features of the other two. Our cases are examples of the pure adrenal type, and the clinical picture is characteristic and easily recognized. Meningococci were not recovered from Case 2, probably owing to the early administration of penicillin and sulphadiazine.

In neither fatal case was there gross destruction of the adrenal glands, though congestion was seen in both and microscopic haemorrhage in one. Williams (1942) noted the absence of gross adrenal lesions in eight out of 17 clinically typical cases, and suggested that adrenal deficiency might not be an important factor in the pathogenesis of the syndrome.

Kinsman, D'Alonzo, and Russi (1946) describe a condition of "tubular degeneration" occurring in two fatal cases, without adrenal haemorrhages. The cortical cells appeared shrunken and fat globules were absent, so that the "cords" of cells usually seen looked like tubes containing fibrinous debris. They suggest that this condition is the result of adrenal exhaustion due to increased demand for the lipoid hormone during the acute infection, and, further, that irreversible damage has not occurred at this stage.

Banks (1948) states that necropsy material from all his fatal cases showed "significant" adrenal lesions. We were impressed by the dramatic improvement which followed intravenous saline and cortical extract in Case 2. Since there was no dehydration and there had been no vomiting, it is difficult to believe that the infusion of 150 ml. of saline alone accounted for this improvement. We were convinced that the cortical extract was responsible. We agree, therefore, with Banks (1948) that, though toxic and other factors may be concerned, there is justification for regarding acute adrenal deficiency as playing a leading part in the pathogenesis of this syndrome and for treating it accordingly.

The thymus gland was found to be persistent in Case 1 and larger than normal in Case 3. In both cases it was of normal microscopical structure. A similar enlargement and persistence have been recorded by Magnusson (1934) and Holmes and Cowan (1945). The rapid course of the illness makes it evident that the enlargement preceded infection and suggests the existence of a constitutional type with a large thymus and small fragile adrenals in whom resistance to meningococcal infection is lower than normal.

When a clinical diagnosis has been made treatment must be immediately instituted for septicaemia, peripheral circulatory failure, and adrenal insufficiency.

Treatment of the Septicaemia.—The meningococcus is susceptible to sulphonamides and to penicillin. It is advisable to employ both in order to control the septicaemia as rapidly and completely as possible. Any sulphonamide can be used, but, owing to the lower risk of producing renal complications, sulphamezathine is probably the drug of choice. A blood level of 15 mg. per 100 ml. should be maintained. The initial doses should be given intravenously, and for a young adult the dosage should be 4 g. immediately and 2 g. four-hourly until facilities for control by estimation of the blood level are available. Penicillin intramuscularly in full doses should be started immediately. Case 2 received 30,000 units three-hourly, but now that penicillin is more readily available much larger doses should be employed—e.g., 250,000 to 500,000 units immediately, followed by 100,000 units three-hourly. Even with such

doses it is hazardous to increase the time interval between injections, as a constant strongly bacteriostatic blood-penicillin level is essential in so serious an illness.

Peripheral Circulatory Failure.—An intravenous infusion of normal saline should be set up immediately. In acute adrenal deficiency the blood volume is reduced and the blood viscosity increased by loss of sodium and water into the tissues and by excretion into the urine. Logically the infusion should therefore be normal saline rather than plasma or whole blood.

Adrenal Deficiency.—Adrenal cortical extract B.P.C., or one of the proprietary preparations such as eucortone or eschatin, should be given intravenously as soon as possible. The initial dose should be 10 ml., and this should be repeated four-hourly until the systolic blood pressure is maintained above 100 mm. Hg. If the extract is not immediately available, desoxycortone acetate can be used in doses of 10 mg. eight-hourly, intramuscularly. Adrenaline hydrochloride, 3 min. (0.2 ml.) subcutaneously, six-hourly, can be given, but it is of doubtful benefit. Ascorbic acid 500 mg. intravenously, twice daily, may be helpful. The adrenals contain much ascorbic acid, but its function is unknown, and its therapeutic use here is empirical. Vitamin K analogue—menaphthone—one 5-mg. ampoule should be given initially to ensure a normal prothrombin level. The order of treatment should be: (1) begin intramuscular penicillin injections; (2) set up an intravenous drip-infusion of normal saline; (3) begin intravenous sulphamezathine, adrenal cortical extracts, and ascorbic acid via the infusion tubing; and (4) give adrenalin hydrochloride and menaphthone.

Summary

Three cases of fulminating meningococcal septicaemia are described. One of them, a child aged 3, recovered after treatment with penicillin, sulphadiazine, and adrenal cortical extracts.

This condition occurs sporadically as well as during epidemics and presents as a severe illness of sudden onset, with a purpuric rash and profound peripheral circulatory failure. In untreated cases death occurs in 24–36 hours.

At necropsy, adrenal lesions are always found. Acute adrenal deficiency is probably a factor in the fatal outcome.

Diagnosis must be made on clinical grounds. Treatment should be started immediately with penicillin, sulphamezathine, intravenous saline, and adrenal cortical extracts, without awaiting laboratory investigations. If it is begun early enough there is a reasonable chance of recovery without sequelae.

We are indebted to Dr. P. Hamill, under whose care these cases were admitted to hospital, for permission to publish this report and for help and encouragement in its preparation.

REFERENCES

- Banks, H. S., and McCartney, J. E. (1942). *Lancet* 1, 219.
 ——— (1943). *Ibid.*, 1, 771.
 Banks, M. C. (1948). *Ibid.*, 2, 635.
 Holmes, J. M., and Cowan, J. M. (1945). *Ibid.*, 1, 13.
 Kinsman, J. M., D'Alonzo, C. A., and Russi, S. (1946). *Arc intern. Med.*, 78, 139.
 Magnusson, J. H. (1934). *Acta paediatr., Stockh.*, 15, 396.
 Sweet, L. K., Dowling, H. F., and Howell, M. J. (1947). *J. Pediatr.* 30, 438.
 Williams, H. (1942). *Med. J. Aust.*, 2, 535.

The Hospital Savings Association announces that Mr. Thom Denman, its general secretary, retired on March 1. His early experience was in the office of a local authority, then on the passing of the National Insurance Act of 1911 he became clerk to an insurance committee. In 1919, seeking the greater freedom and flexibility of a voluntary organization, he joined the late Dr. Gordon D. of Brighton, in founding and organizing the Sussex Provident Scheme. It was from this scheme that he developed the idea of the H.S.A. He was appointed financial secretary on its incorporation in 1922 and from the first has been responsible for all the financial arrangements. In 1939 he became joint secretary and in 1945 general secretary. His successor will be Mr. C. S. Clarke, who joined the staff in 1931 and has been deputy general secretary since 1946.

NOMOGRAMS FOR SLING AND ASSMANN PSYCHROMETERS

B1

J. B. de V. WEIR, M.A., B.Sc., M.B.

(From the Institute of Physiology, University of Glasgow)

In an annotation in the *Journal* (1948, 1, 989) it was suggested that nomograms for use with the Assmann and the sling or whirling psychrometers might be welcomed, as these are the instruments of choice for the measurement of the hygrometric properties of the atmosphere with scientific accuracy. The accompanying nomograms have been designed accordingly

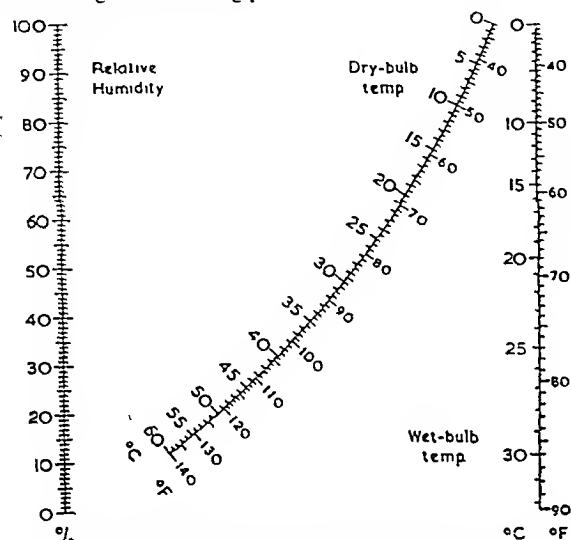


FIG. 1.—Nomogram for finding the relative humidity of the air from the dry-bulb and wet-bulb readings of a ventilated psychrometer

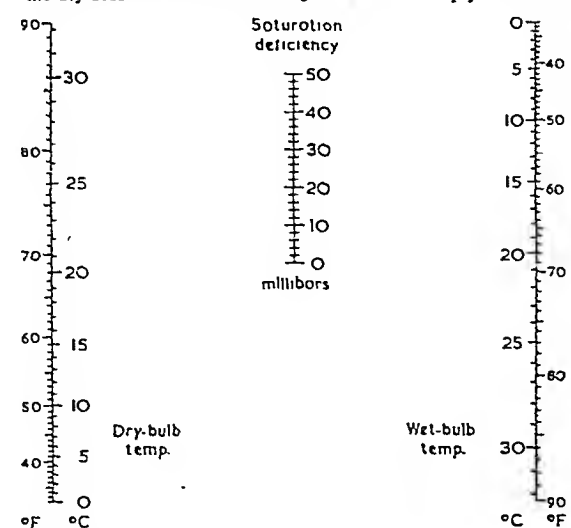


FIG. 2.—Nomogram for finding the drying capacity or saturation deficiency of the air from the dry-bulb and wet-bulb readings of a ventilated psychrometer.

To use the nomograms a stretched thread or a transparent ruler is placed so as to lie on the readings of the dry-bulb and wet-bulb thermometers; the relative humidity and the saturation deficiency can then be read off the appropriate scales.

The depression of the wet-bulb temperature below the dry-bulb temperature is sensitive to the speed of the air passing over the wet bulb for speeds up to five miles per hour, but is practically the same for all speeds beyond this (Meteorological Office, 1940). Bell and Weir (1947) have produced nomograms suitable for use in calm conditions. Ventilated psychrometers such as the Assmann and the sling psychrometer are so arranged that an air speed past the wet bulb of over five m.p.h. is obtained artificially, and so, being independent of the natural air speed, these instruments give the most reliable results.

The hygrometric properties of the atmosphere are of importance in body-temperature regulation, especially under conditions of stress such as exist in the Tropics, in deep mines, and in operating theatres (Wynne, 1947). They are also of special interest to heating and ventilating engineers and to the textile industry.

REFERENCES

- Bell, G. H., and Weir, J. B. de V. (1947). *British Medical Journal*, 2, 174.
 Meteorological Office (1940) Hygrometric tables. H.M. Stationery Office, London.
 Wynne, R. L. (1947). *British Medical Journal*, 1, 525.

[EDITOR'S NOTE.—It has been found impracticable to publish the nomograms here in a size that would make them really useful. They have therefore been separately printed full scale on art paper for those who are interested. Copies may be obtained from the Publishing Manager on application.]

Medical Memoranda

Ligation of the Mandibular (Inferior Dental) Artery

In deep operations on the face and the jaws preliminary ligation of the external carotid artery is not always entirely satisfactory in attaining its objective—that is to say, it does not give one a bloodless field and does not prevent venous and post-operative bleeding from innumerable oozing points; nor does it prevent the formation of a deep haematoma in a closed wound. Admittedly it controls from 50 to 75% of the bleeding, but even a remaining 25% is apt to be not only a great nuisance but a source of danger if it continues post-operatively into the mouth. Particularly is this so in the removal of sections of the mandible involving the ascending ramus.

CASE REPORT

I was faced with this problem recently in a young female patient. X-ray examinations of her lower jaw showed a ragged, eroded cavity in the centre of the bone extending well up into the ascending ramus above the point of entry of the mandibular artery. The bone was distended but there was no surface lesion. It looked malignant, and was getting larger fairly rapidly. (A subsequent pathological report stated that it was a malignant adamantinoma, which is what the clinical evidence and x-ray examination had led us to believe.)

To have obtained good access through the usual curved external incision would have involved an almost certain facial paralysis and a blind groping for the mandibular artery and vein, with a considerable probability of being unable to secure them. It was determined, therefore, to do the major part of the operation from within the mouth, and if possible to ligate the mandibular artery before it entered the lower jaw. I had reason to believe from war experience that this would not only be quite feasible but not too difficult. Search, however, failed to find any record of this ligation having been performed previously. Presumably its short course of an inch (2.5 cm.) or less from the internal maxillary artery to the foramen in the lower jaw has been regarded as inaccessible.

Operative Technique.—Operation was performed on Feb. 25, 1948, under full morphine and hyoscine premedication (Corlette system) and local analgesia (procaine and adrenaline), as follows:

1. Vertical incisions were made in the centre lines of the upper and lower lips to increase the retractability of the angle of the mouth and cheek. This procedure improves visibility and access very considerably and, anatomically and cosmetically, is preferable to a horizontal incision at the angle of the mouth.

2. Insertion of a Davis gag and opening it to the maximum extent produced a dislocation of the jaw, which served to fix it in place and also to bring the inferior dental foramen into the most forward possible position. Most of the operation was then carried out without a gag, but with medial and lateral retraction of the tongue and cheek. No packing was placed in the pharynx; continuous suction was used, and the blood remained a nice bright colour throughout.

3. A vertical incision was made through the muco-periosteum of the jaw; it extended from near the tip of the coronoid process along the crest of the alveolar ridge to the region of the first bicuspid tooth.

4. A short external incision was made along the lower border of the jaw just posterior to the mental foramen.

5. The whole of the periosteum of the jaw was stripped from the bone, except the upper part of the ascending ramus and the region of the inferior dental foramen.

6. With good retraction inwards of the internal pterygoid muscle, local illumination, and blunt dissection, the artery, vein, and nerve entering the bone were soon located, identified, and isolated.

7. A clamp was placed on the whole bundle, silk ligatures were passed above and below and tied, and division was made on removal of the clamp; there was no sign of haemorrhage, and the jaw became visible on its inner aspect right down to the angle.

8. The ascending ramus was then divided partly with a Gigli saw and partly with bone shears, about $\frac{1}{2}$ in. (1.9 cm.) below the condyle.

9. The anterior end of the bone was next divided by a saw-cut posterior to the mental foramen and the section of jaw removed. The dislocation was then reduced without difficulty. This left a fairly dry cavity lined with periosteum.

The patient's recovery was quite placid and painless. She remembers nothing of the operation, during which she slept motionless. Penicillin was given prophylactically for a few days.

In selected cases of surgery involving the ascending ramus of the jaw this procedure may prove useful. Ligation of the nerve as well as the vessels should be sound practice in view of recent experiments by M. P. Chenilleau (*Int. Abstr. Surg.*, 1948, 86, 351), which showed that ligation of nerve-ends in animals prevented the formation of painful neuromas and also of trophic ulcers, particularly if linen thread was used instead of catgut.

I am indebted to my wife for skilful assistance. She was in fact the first to see the vessels at the foramen and to call my attention to the fact: they were even a little further forward and a little higher up than I had anticipated. I had just bypassed them on the lower side.

It is proposed to submit a fuller account of this case, illustrated by radiographs of the subsequent bone graft, for publication at a later date.

H. P. PICKERILL, C.B.E., M.S., F.R.A.C.S.

Wellington, New Zealand.

Heterotopic Pancreatic Tissue in the Ileum Causing Intussusception

Heterotopic pancreatic tissue in the wall of the ileum is rare; records of only thirteen cases can be found in the literature. Fourteen cases in which the pancreatic tissue was present in a diverticulum from the ileum are also recorded. The details of the ileal-wall cases are scanty, but intussusception occurred in three. I record a further case of intussusception caused by heterotopic pancreatic tissue in the ileum.

CASE REPORT

On Feb. 21, 1947, I was asked by Dr. J. W. Wilson, of Stirling, to see a girl aged 9½. At 2 p.m. that day she had been seized by sudden severe abdominal pain so intense as to cause fainting. The pain, colicky in nature, was felt mostly in the central abdomen and was accompanied by continued vomiting. One year previously she had had a similar but less severe attack which passed off in twenty-four hours. Examination showed slight fullness of the upper abdomen and marked tenderness and slight rigidity in the right side of the abdomen; a mass about the size of an orange was palpable to the right of and just below the umbilicus. Immediate operation was advised and the patient was admitted to Stirling Royal Infirmary.

On opening the abdomen some five hours after the onset of symptoms an ileo-ileal intussusception was found some 3 ft. (0.9 m.) up from the ileo-caecal junction. The intussusception was easily reduced. At the apex of the intussusceptum a well-defined plaque of tissue 2 by 1 cm. and some 2 mm. thick was found on the anti-mesenteric border of the bowel. This clearly had excited the intussusception. The plaque was resected, but so much narrowing of the

bowel resulted from suture that it was thought wiser to resect a small segment of the ileum. This was done, and the abdomen was closed after an end-to-end anastomosis. Recovery was uneventful.

Pathological Report.—Dr. W. W. Park, of the Royal College of Physicians Laboratory, Edinburgh, supplied the following report on the specimen: "The specimen consists of a piece of compressed tissue, 2 by 1 cm. Microscopical examination shows: (1) Large masses of well-developed glandular tissue (Fig. 1) lying closely adjacent to the gut wall, and in places growing up to and even into the muscular layers. (2) The tissue is highly differentiated into acinar structures with well-formed ducts and ductules (Fig. 2). The



FIG. 1.—Glandular tissue. ($\times 150$)



FIG. 2.—Glandular tissue. ($\times 400$)

cell type is uniform and moderately large, and there are no mitoses. There is no evidence of malignancy. (3) This type of growth is regarded as a developmental error, hamartomatous in type. Conventionally, tissue of this nature is designated heterotopic pancreatic tissue, although in this case, where there is no sign of any islet tissue it would be more correct to regard it as non-specific developmental overgrowth."

I am indebted to Mr. Stanley Hay, Dr. Park's technical supervisor for the photomicrographs.

A. A. MACKELVIE, M.D., F.R.C.S. Ed.,
Visiting Surgeon, Stirling Royal Infirmary.

BIBLIOGRAPHY

Barron, J. J. De Castro, et al. (1946). *Surg. Gynec. Obstet.*, 82, 527.
Faust, D. B., and Mudgett, C. S. (1940). *Ann. Intern. Med.*, 14, 717.

Reviews

CARDIOGRAPHY

Cardiography. By William Evans, M.D., D.Sc., F.R.C.P. (Pp. 132; illustrated 25s.) London: Butterworth and Co. (Publishers). 1948.

This book gives a fully illustrated account of electrocardiographic abnormalities and of phonocardiographic tracings. Unfortunately the author dismisses the "V" unipolar precordial and limb leads as vectors (p. 2), with which in fact they have nothing at all to do (V stands for voltage). Consequently the reader will learn nothing of the principles upon which modern cardiography is based, or of the effect upon the cardiogram of rotation of the heart on any of its axes. Left bundle branch block is described as showing "L.A.D." The QRS complexes are wide with the T wave written in the opposite direction to the QRS" (Fig. 54, etc.). This discordant type of left branch block is due merely to a horizontal position of the heart. Concordant curves, due to a vertical position, are classified as bundle branch block, though in Fig. 118 the single precordial lead given makes it obvious that the lesion is left-sided. The author includes auricular flutter among the lower ranges of the auricular tachycardias, in which the auricular rate is stated to vary from 250 to 500 a minute. If the ventricular rate is less than 200, and the extra P waves cannot be made out, they are assumed to be hurried to the QRS. In auricular flutter, however, the response to carotid sinus pressure is different and the existence of a circulating wave was proved by Lewis. The author does not mention the recent suggestion that some auricular paroxysms may be due to a circulating wave with a slower rate than in flutter because the A-V node is involved in the orbit. He gives a good account of the cardiographic changes in acute pericarditis, but does not say that pathological Q waves are absent, nor why this must be so. The section on cardiac ischaemia contains much wisdom. Some of the interpretations are open to question. Fig. 23 would seem to show premature ventricular systoles; the auricular rhythm is regular and the P waves are all upright. Fig. 132 suggests a septal infarction. Q waves are not found in lead I in uncomplicated left branch block, and the T wave is "domed." Precordial leads would have helped. It is difficult to understand why the diagnosis of 2:1 heart block in Fig. 147 is rejected. Among other things the form of the T waves in lead II would be most peculiar if P were not summated with them. But these are small blemishes in a book in which the illustrations are uniformly good and well produced, and to anyone content with the older conceptions this section can be recommended as a straightforward and clearly expressed account of cardiographic abnormalities.

Sound tracings were used by Lewis forty years ago, but since then have not attracted much attention in this country. Different types of recording instruments give differing results, and there is no agreement yet on which is the more accurate. In this section the author shows records obtained with a string galvanometer and a glass rod of various additional heart sounds and of cardiac murmurs. The records are very clear and the descriptions easy to follow, but it is rather startling to learn in Fig. 192 of an inaudible murmur.

C. W. C. BAIN.

RADIOTHERAPY

The Treatment of Malignant Disease by Radium and X-rays. By Ralston Paterson, M.C., M.D., F.R.C.S.Ed., D.M.R.E., F.F.R. Being a Practice of Radiotherapy. (Pp. 622; illustrated. £2 5s.) London: Edward Arnold. 1948.

Radiotherapy is a relatively new branch of medicine requiring an acquaintance with physics and biophysics which is unnecessary in other medical work. Physicians and surgeons tend to regard the radiotherapist as a kind of technician, and this indeed he must be; but he must also be a clinician who, like the general physician and the general practitioner, is concerned with all regions of the body and with problems of

nutrition, relief of pain, nursing, and the innumerable ways in which cancer and the metabolism of the individual are linked. The reader of Dr. Paterson's textbook on radiotherapy gains an appreciation of these two sides of the subject—a technical knowledge of the accurate administration of radiation and insight into its effects, and also the knowledge of patients necessary to every true doctor. The author considers the technical side in great detail, but the clinical aspects form a background against which the technical points may be appreciated by radiotherapists. No one without an immense knowledge and experience of cancer treatment could have attempted such a work. While Paterson is the author of the book, he refers also to the team at the Holt Radium Institute whose work has made it possible for him to write it. He is clearly the inspiration of this team and the architect of an elaborate, extensive, and efficient organization which has already published many papers and, in the last two years, accounts of the results achieved by the methods he describes here and a book on radium dosage.

Having decided from the experience of himself and others what doses of radiation he thinks are necessary to destroy cancers and to help patients in whom they cannot be destroyed, Paterson has given details of how to administer those doses, bearing in mind the technical and clinical difficulties. He has been helped with certain chapters by other authorities. Windeyer and Roberts contribute a chapter on radium beam work; Levitt discusses the treatment of blood dyscrasias; Margaret Tod helps with the chapters on reticulo-endothelial and gynaecological conditions; Dobbie teaches us a great deal about beam direction and field selection. Dr. Edith Paterson's review of the biological effects of radiation is excellent but seems to be insufficiently related to the rest of the book. Jefferson's article on tumours of the central nervous system is short but very interesting. The physics is capably dealt with by Meredith.

In his introduction the author prepares us for an account of Manchester methods based on Manchester ideas. While this gives force to the book it detracts from its value as a textbook. Calibration of apparatus, details of organization, equipment and staffing of centres of radiotherapy, the provision of isodose curves, radium charts, and lucid details in connexion with the nursing of patients are all desirable features, but some omissions strike one. For instance, the use of differentially loaded radium needles for implants and the use of radon ointment in treating necrosis are important technical advances. The heavy dosage given to the spinal cord in treating pharyngeal cancer, the insistence on treating the whole penile shaft for all penile cancer, and the dogmatic attitude to certain as yet unsettled principles of radiation biology are a few of the points one would like to argue with the author. The chapter on new radiotherapeutic agents, however, is balanced and clear.

Every radiotherapist will find the book readable and exceedingly useful. It is important that those with little experience should, as indicated by the author, realize that it is a statement of present-day Manchester principles and methods only. Radiotherapy is still a developing subject.

FRANK ELLIS.

SWISS OBSTETRICS

Lehrbuch der Geburtshilfe. By Th. Koller. Volumes 1 and 2. (Pp. 613 Vol. 1 and 1,323 Vol. 2. 110 Swiss francs.) Basel: Verlag von S. Karger. 1948.

This two-volume textbook of obstetrics forms part of "The System of Obstetrics and Gynaecology," written under the direction of Professors Anderes, Guggisberg, and Koller, of Switzerland. The publishers have maintained the exceptionally high standard for which they are well known on the Continent. The print and paper will be examined with envy by British medical authors. The excellent illustrations are derived in the main from photographs and photomicrographs, and, together with the line drawings, are a striking feature of the book.

The subject matter is of some interest, for it follows the traditional German style and contains a wealth of theory at the expense of clinical examination and operative technique. It is quite out of keeping with modern American and British

textbooks. The author has paid very little attention to original work carried out in America or Britain. This neglect is particularly striking in the chapter on implantation, and an outstanding omission is any reference to the important contributions of Caldwell and Malloy. For a modern textbook the author has emphasized puerperal sepsis too much and described foetal abnormalities in too great detail. As a standard textbook for Swiss students and practitioners the book will be held in esteem and perhaps with affection, but it is unlikely to receive much attention in either America or Great Britain.

WILFRED SHAW.

A GUIDE TO CHEMOTHERAPY

A-B-C's of Sulphonamide and Antibiotic Therapy. By Perrin H. Long, M.D., F.R.C.P. (Pp. 231. 17s. 6d.) Philadelphia and London: W. B. Saunders Company, 1948.

In this little book the author first discusses general principles and methods of administration of sulphonamides, penicillin, and streptomycin, and then the principal diseases and conditions, in alphabetical order from "abscess" to "yaws," for which they are indicated. His clear and dogmatic instructions include brief references to other forms of treatment and frequent warnings against undue reliance on chemotherapy when, for instance, surgery is also required, and against giving these drugs without adequate reason on the off-chance that they may do good.

Noteworthy features are the full discussions on syphilis and tuberculosis, the heroic system of dosage advocated for subacute bacterial endocarditis (2-hourly injections for six weeks), and the repeated warnings, because of the danger of sensitization, given against local application. He considers that the local treatment of ulcers, burns, and blepharitis with either sulphonamides or penicillin is inadvisable for this reason, which seems unfortunate. He advises the use of penicillin for controlling peritonitis due to perforating wounds but not for that produced by appendicitis, a distinction for which the reasons are not quite clear. Although in a few instances everyone may not agree with the instructions given, this book should be a useful and handy guide to the practitioner.

L. P. GARROD.

MINOR SURGERY IN GERMANY

Kleine Chirurgie. By Professor Hans Kurtzahn, revised by W. Heyn. 12th edition. (Pp. 496. M.17.50.) Berlin: Urban und Schwarzenberg, 1948.

Perusal of this book makes one feel rather sad. Here is the 12th edition of a very popular German book on minor surgery rather poorly produced and very much out of date. Though this edition has the year 1948 on the title page it might almost as well have been published ten years ago. It contains much useful information on fractures, minor operations, and the like, but shows little evidence that the far-reaching new discoveries of the last few years have reached the medical profession in Germany. It is not necessary to read far to find this out. The sulphonamides are said to be useful, but no dosage is given, and the author says of their use in erysipelas that no definite judgment can be given on their efficacy. An account of penicillin occupies thirteen lines; it is described as a drug recently developed by the Americans; about its value we are told that we must wait for a future edition for a conclusive estimation of its efficacy. No description of dosage is given nor of methods of administering it. The author does not mention it in discussing the treatment of septic infection of the fingers, or that of carbuncle, for which extirpation is said to be the best treatment. He describes old-fashioned remedies for the treatment of burns and refers to therapy by tannic acid as a recent innovation. (It was introduced in 1925.) Tannic acid is specially recommended for the treatment of burnt fingers and hands. All the recent advances in the treatment of burns are ignored. And so we could go on. In this country the chief use of this book should be to simulate surgeons to help their brethren in Germany to learn of the wonderful new remedies of which they know so little.

ZACHARY COPE.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Proceedings of the Annual Meeting, 1948. British Medical Association. (Pp. 415. 35s., postage 1s. 3d. extra.) London: Butterworth, 1949.

The collected papers read at the Association Meeting in Cambridge last June.

Papers on Psycho-analysis. By E. Jones, M.D., F.R.C.P. 5th ed. (Pp. 504. 31s. 6d.) London: Baillière, Tindall and Cox, 1948.

In this edition nine recent papers replace some older ones.

Arterial Hypertension. By D. Ayman, M.D. (Pp. 91. 12s. 6d.) New York and London: Geoffrey Cumberlege, 1948.

A monograph reprinted from the *Oxford Loose-Leaf Medicine*.

Death in Clairvoyance. By J. Bell. (Pp. 244. 9s. 6d.) London: Longmans, Green and Co., 1949.

A detective story.

Juvenile Rheumatism. By G. E. M. Scott, M.B., L.R.C.P.Ed., L.R.F.P.S. (Pp. 163. 25s.) Melbourne: W. Ramsay, Ltd., 1948.

A review of the author's experience.

The Train. By V. Panova. (Pp. 252. 9s. 6d.) London: Putnam and Co., Ltd., 1948.

A novel, translated from the Russian, about a hospital train in the U.S.S.R. during the war.

Some Common Psychosomatic Manifestations. By J. B. Murray, M.A., M.D., M.R.C.P. (Pp. 101. 7s. 6d.) London: Geoffrey Cumberlege, 1949.

An account of effort syndrome and the "low-back syndrome."

Our Plundered Planet. By F. Osborn. (Pp. 192. 10s. 6d.) London: Faber and Faber, 1949.

The author's theme is the conservation of soil fertility and the neglect of this in many countries.

Guiding Human Misfits. By Alexandra Adler, M.D. (Pp. 114. 7s. 6d.) London: Faber and Faber, 1949.

An account of the writer's experience; intended for both medical practitioners and laymen.

Hemolysis and Related Phenomena. By E. Ponder. (Pp. 398. 50s.) London: J. and A. Churchill, 1948.

A monograph on the structure and haemolysis of mammalian red cells.

Topics in Physical Chemistry. By W. M. Clark, Ph.D., Sc.D. (Pp. 738. 44s.) London: Baillière, Tindall and Cox, 1948.

A textbook for undergraduate students.

The Belsen Trial. Edited by R. Phillips, M.C., M.A., B.C.L. (Pp. 749. 30s.) London: William Hodge, 1949.

A verbatim record of the trial.

Aids to Biochemistry. By E. A. Cooper, D.Sc., F.R.I.C., A.R.C.S., and S. D. Nicholas, B.A., A.R.I.C. 4th ed. (Pp. 244. 5s.) London: Baillière, Tindall and Cox, 1948.

The book has been extensively revised for this edition.

The Mystery of Birth. By J. Oldfield, T.D., D.C.L., M.A., M.R.C.S., L.R.C.P. (Pp. 208. 12s. 6d.) London: Rider, 1948.

Discussion of many topics related to birth, sex, and heredity.

Outline of Arabic Contributions to Medicine and the Allied Sciences. By A. A. Khairallah, B.A., M.D., F.A.C.S. (Pp. 228. \$2.50.) Beirut: American Press, 1946.

Annotated quotations from Arabic works; in English.

Energy and Matter. By R. L. Worrall, M.B., Ch.M., D.P.H. (Pp. 144. 10s. 6d.) London: Staples Press, 1948.

A description in plain language of some of the concepts of modern physics.

Anaemia Problems in Rheumatoid Arthritis. By F. Nilsson. (Pp. 193. No price.) Uppsala: Appelbergs, 1948.

A monograph with references.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY MARCH 26 1949

TRANSMISSION OF SARCOMA
BY DRIED TISSUE

Cancer is so different from microbial infections that most pathologists are reluctant to accept the notion that a virus can be its cause. No one any longer disputes that some tumours are caused by viruses: first, there are various sarcomata and other connective tissue tumours of fowls; there is an adeno-carcinoma of frogs; there is Shope's papilloma of cottontail rabbits and the cancers derived from it; and finally there is Bittner's milk factor, which plays an essential part in causing mammary cancers in inbred mice and has all the properties of a virus. Towards these virus tumours pathologists take up one of two attitudes. Most of them regard them as exceptional growths, zoological curiosities. They feel that all cancers need not have the same aetiology: some are induced by carcinogenic hydrocarbons, some by x rays and other physical agents, some by parasitic worms, most by as yet undefined causes—and a small minority by viruses. The other, much smaller, school of thought, led by Rous in America and Gye in this country, emphasizes an important difference between the part played in tumour causation by a virus and by hydrocarbons and other agents. The hydrocarbon determines the onset of the tumour, but is then no longer essential for its continued growth, while the virus remains in the cancer cell and is apparently the driving force constantly imposing upon it its malignant conduct. The Rous fowl sarcoma, in Boycott's words, "has been provided for our learning and pushed under our noses by Providence," and "we should not be too shy of drawing conclusions from such . . . examples."¹

The core of the whole argument is this: Are the filterable tumours things apart, or are they essentially the same as other tumours, differing only in some quantitative manner, so that our techniques just fail (as they sometimes fail even with fowl tumours) to reveal a continuing cause separable from the living cell? In an Imperial Cancer Research Fund Lecture delivered at the Royal College of Surgeons on March 22 and published as the opening paper in this issue, Professor W. E. Gye, F.R.S., has sketched the historical background of this side of cancer research. He has shown how attempts to find a continuing cause for malignant growth within the cells of most cancers have failed again and again, until most workers believe that no such separate entity exists and that cancerous growth is nothing but abnormal behaviour imposed permanently upon the cell by some event in the past. He then puts forward evidence, even finding clues in work done as far back as 1907, that the propagation of experimental tumours need not always depend on the transplantation of intact cells. The malignant transformation of the stroma of

transplanted carcinomata has been long known; one possible explanation has been the transfer of an agent from the malignant cells to those adjacent to it. Successful transplantation with tumour tissue frozen at -10°C has been known for forty years and has been attributed to the cancer cells' tenacity of life. Similar results can be achieved with tumours frozen at -79°C ., but this fact is not nearly so remarkable as the results obtained at -10°C . At that temperature, Professor Gye points out, water crystallizes out but salts do not, and the cell is in fact pickled in strong brine. More recent work shows that suspensions of tumour cells survive in 40% glycerin or 40% glucose.

In contrast to all this are normal embryonic cells; their viability can be tested, for they continue to live as grafts in individuals of a similar inbred stock. It turns out that they are not remarkably tenacious of life, for they die after less than an hour at -79°C . Here are a number of straws pointing one way; but we lack certainty. It may be that cancer cells can withstand freezing, pickling, and other maltreatments which no ordinary cell would be expected to stand. Though histological study of long-frozen tissue reveals no intact cell, there is the chance that an odd cell has eluded observation, and, after all, trypanosomes can survive at -76°C .

But now Professor Gye and his colleagues take a step further, for they have transmitted three mouse sarcomata by means of dried tissues. It is far harder to believe in the survival of dried mammalian cells than of those merely pickled or frozen. It is known that bacterial cells can survive drying indefinitely, but their organization is very different from that of the cell of a mammal. Transmission of the Rous sarcoma by dried tissue is, along with filterability, the convincing piece of evidence that the transmitting agent is a virus. Two things have made possible the new success in a field where failure has for years beset many investigators. First, Dr. James Craigie has improved the technique of drying by the use of an apparatus of which a description is reported to be in the press. Secondly, it has been found, very surprisingly, that tumour tissue which has been frozen for some time and then dried can still reproduce a tumour on injection, while tissue dried while fresh will be inactive or at any rate much less potent. Professor Gye does not go deeply into the reason for this remarkable finding, though he suggests the possibility of gradual denaturation of an inhibitor at low temperatures. From all this work he concludes, "It is no longer justifiable to put the . . . filterable tumours of chickens in a separate class. . . . This work has now brought tumours of mice . . . into the same class. They have a continuing cause, and . . . probably it is viral in nature."

The question will be asked, "Do the facts justify this most important conclusion?" While it is probably the right one, the issues at stake are so important that the evidence must be completely convincing. It is to be hoped that future developments in this work will provide the answer to three questions: Is it reasonably certain that frozen, pickled, and above all dried tumour tissue does not contain any living mammalian cells at all? Secondly, are the results with these three sarcomata applicable to sarcomata generally? Two of the three which have now been dried

¹ *Proc. R. Soc. Med.*, 1928, 22, 55.

are sarcomata derived from malignant transformation of the stroma of epithelial tumours, and therefore perhaps more likely than the average to yield evidence of a cause separable from the cells. The third is, however, a sarcoma induced by methylcholanthrene; there is, therefore, particular significance if evidence of a virus can be found in it. The finding of a single mouse sarcoma resistant to drying would not be fundamentally important—it could be dismissed as yet another zoological curiosity. Discovery of a general principle applicable to many or all mouse sarcomata would be another story. Are three successfully dried tumours so very much better than one? Thirdly, can epithelial tumours, too, be transmitted with dried tissue? It will be recalled that as yet no carcinoma of the fowl has been successfully dried or filtered—most of them cannot even be transplanted.

Suppose the answers to these three questions turn out affirmatively and we can safely accept the conclusion that tumours in general can be propagated in the absence of viable tumour cells, where does this lead? It leads certainly to the biggest advance in cancer research for many years. It means that of current theories of the nature of cancer some 90% can be quietly relegated to the waste-paper basket, leaving investigators free to concentrate on a much more limited field through which certain obvious paths are clearly indicated. The new work does not, of course, throw light on another controversial question briefly mentioned at the end of Professor Gye's lecture—are tumour viruses of intrinsic or extrinsic origin?

Professor Gye is due to retire this summer from the directorship of the laboratories of the Imperial Cancer Research Fund. His successor, Dr. James Craigie, F.R.S., much of whose work has lain hitherto in fields other than cancer, has been a very active partner in the recent research and will be able with his colleagues to continue the work of opening up this fruitful discovery.

DELAYED ADMISSION TO HOSPITAL

About a year ago we published an article by Dr. Richard Asher on the dangers of going to bed. It will not be long before we are asked to publish an article on the dangers of not going to bed, if the present difficulties experienced by general practitioners all over the country in securing admission of urgent cases to hospital continue. The situation has become so serious in London, for example, that the Local Medical Committee, having considered a confidential report of a meeting at the Ministry of Health, passed a resolution deploring such delay and stating the deep concern of the Committee about "reports which reach it of many patients who have died whose lives might have been saved had energetic action been taken to secure medical and nursing attention for them at the time when practitioners endeavoured to obtain their admission to hospital."¹ One of the cases that prompted the Local Medical Committee for London to take action was that of a man with chronic tuberculosis suffering from retention of urine. When the medical man in charge of this case asked the Emergency Bed Service to see that the patient

was admitted for the treatment of retention of urine he was told that the E.B.S. could not do this because tuberculous cases were the responsibility of the tuberculosis officer of the appropriate hospital board. The doctor, less concerned with administrative finesse than with the welfare of his patient, refused to accept this decision, and so the E.B.S. referred the matter to a medical officer of the Regional Board, who "confirmed that this was a case for the tuberculosis officer and not one that could be forced into hospital regardless of the tuberculosis, as a matter of life and death." The E.B.S. then inquired whether the patient's local hospital would admit him and was once more met with the objection that the matter should be referred to the tuberculosis officer. The doctor in charge of the case finally found a hospital in which the patient could be treated. A correspondent informs us that at 9 o'clock one evening he asked the E.B.S. to arrange for the admission of a patient with a perforated duodenal ulcer. At midnight he was informed that 10 hospitals had been tried but that no bed was available. He visited his patient twice during the night, and when the unfortunate man was finally admitted at 10 a.m. the next morning he was in a bad condition. Our correspondent adds: "I have been in general practice for 28 years and have never had before July 5, 1948, an experience of this kind." It appears that these are not isolated cases but that the difficulty of getting acute cases into hospital is being experienced by practitioners throughout the country. It is impossible to estimate the size of the problem, but necessary to emphasize that it exists. It is indeed a paradox that a hospital service available for the whole community under the National Health Service Act should in many cases fail at the point where hospital treatment may be a matter of life or death. If this sort of thing had happened before July 5, 1948, it would have been called a scandal and attributed to the faulty organization of the hospital services. There are probably many factors at work which make it difficult to get patients into hospital, but the principal obstacle is that no one now has the authority to insist that an acutely ill patient is immediately admitted to hospital.

From the time of Queen Elizabeth to July, 1948, the destitute sick were in the privileged position of having beds available for hospital treatment. Under the Local Government Act of 1929 local authorities were allowed by permission of the Ministry of Health to appropriate poor law hospitals as public health hospitals, and as a result a municipal hospital service evolved, the outstanding example of which was that under the control of the London County Council. Under the Poor Law the Relieving Officer had the authority to request admission to a poor law hospital of anyone coming under the designation of destitute sick or urgently ill. The Ministry of Health made it a condition for appropriation under the Act of 1929 that the public health or municipal hospitals should incur the same obligation as under the Poor Law to admit urgent cases, and the Relieving Officer was given the responsibility of insisting upon the admission of an urgent case into the municipal hospital. Under the N.H.S. Acts no one below the Minister of Health has the power to require a hospital to admit a sick person. So we have the curious situation in which a privilege

¹ *British Medical Journal Supplement*, 1949, 1, 120.

enjoyed by the destitute sick since the time of Queen Elizabeth till July 5, 1948, is now not available to them in a universal hospital service open to all. In relation to the needs of the acute sick the State Hospital Service in London is less efficient than the hospital service previously administered by the London County Council. If the Minister of Health is to fulfil his promises to the public it is imperative that he should see that the old obligation to admit acute cases is restored—and quickly.

It is true that the hospital service generally is suffering from a grave shortage of nurses, reflected in the fact that wards have had to be closed. It is possible that more persons are now seeking hospital treatment, but it is also true that before July, 1948, any hospital, however hard-pressed, always managed to find room for someone in need of life-saving medical or surgical treatment. In London an Emergency Bed Service was established in 1938 to give the practitioner immediate information on the availability of beds. The E.B.S. has not the authority to compel admission. No doubt it is now hard-pressed with requests, but it is permissible to question whether conditions allow it to operate at full efficiency. Practitioners complain that the E.B.S. does not have at any one moment an up-to-date statement of bed vacancies in London. They complain, too, that during the evening and night hours the E.B.S. tends to be of little use. In other words its service seems to be least efficient at the time when the general practitioner experiences the greatest difficulty in securing admission for acutely ill patients. Another possible cause of delay is the establishment of urgency. Any doctor may make a mistake in diagnosis, but the establishment of urgency cannot be done by a clerk who takes down over the telephone details of the frequency of pulse and respiration and of temperature. The place to establish urgency should be at the hospital, and until he or she gets there the patient should be given the benefit of the doubt. But the urgent need is for the quick re-establishment of authority to secure the immediate admission into a State hospital of an acutely ill person.

HOW OFTEN ARE WE ILL?

With the introduction of the National Health Insurance Act of 1911 it was held that valuable records for research would accumulate from the doctors' certificates of incapacity. In fact extremely little was ever done with this potential source of information on the incidence of illness in the working population except, later, in Scotland, where the Department of Health, with a smaller and more manageable number of records, published valuable analyses annually for several years before the war of 1939-45. In England and Wales brief references to the frequency of different diagnoses were for a time made in the annual reports of the Chief Medical Officer of the Ministry of Health, and important pioneer studies of sickness in particular industries, based upon insurance certificates, were issued by the Industrial Health Research Board. No analysis was ever made of the full national records, and it was frequently argued that the diagnoses were not sufficiently accurate to justify such a task. Such arguments

might equally well have applied to the analysis of the early death certificates of 100 years ago—some, no doubt, would say of to-day, too. But it is only through the continual use of the death records as a measuring rod in public health and preventive medicine that the certifying doctor has come to realize the importance of as accurate a diagnosis as he or she can give.

If sickness certificates are similarly valuable measures of the state of the public health—and it is known that they are being analysed for that purpose—there is no reason to doubt that the general practitioner will co-operate, as in registering deaths, by giving as precise a diagnosis as is possible. The system, too, has one great advantage to the busy doctor. Most requests, or demands, for statistics to-day inevitably mean yet another form to fill in. Under the National Insurance Scheme the certificate of sickness has already to be provided, and statistics of the "nature of the illness" suffered by the population and the frequency of different illnesses will merely come out as a by-product. Thus the only plea made by Dr. A. Massey, the Chief Medical Officer to the Ministry of National Insurance, in outlining the Ministry's plans in a statement published in this week's *Supplement* is for an accurate diagnostic statement—except, he recognizes, in the few cases where in the interests of the patient it cannot be done.

In this new study of morbidity the final medical certificate is the one to be used. The Ministry foresees from a working population approaching 25 millions some 7 million claims for sickness benefit a year and about three-quarters of a million claims for industrial injury benefit. It would be very wasteful of man-power and energy to analyse these huge numbers, and in accordance with modern statistical thought it is proposed to take appropriate samples. Every claim to benefit under the Acts, made in the first instance to a local office in any part of the country, has to pass promptly to the Ministry's vast record office in Newcastle. Here the claimant's "insured state" is checked and the appropriate reply returned to the local office. At some point in the ceaseless flow of these documents through the Newcastle office the final medical certificates must day by day be tapped and a representative sample drawn off. The data will then be analysed by means of punched cards and mechanical sorting to give particulars of the illnesses experienced by men and women of different ages, employed in different jobs, and living in different localities. Different times of the year are not mentioned, but this, one may hope, will also be brought into account. Short sicknesses will, of course, be seldom included, since often no claims for these can be made. Such sickness statistics, too, will present many other difficulties in interpretation. For instance, it is very unlikely that persons in the upper social classes will trouble to claim benefit at all when they are ill for a short time; thus their sickness experience will be understated, perhaps quite considerably. Until the next census—due in 1951—the numbers of persons at risk in local areas and in different occupations will be unknown, so that the required sickness rates will be lacking and only those decidedly second-best indices—proportional rates—can be calculated. But in spite of imperfections and difficulties—some merely temporary—the collection and analysis of these morbidity data, which started on Jan. 1

this year, are clearly well worth while—at the very least on the experimental basis on which Dr. Massey places them. The results of the experiment will be awaited with interest.

CHILDREN'S CARDIAC CLINICS

Cardiac clinics to which children suspected of heart disease can be referred for an accurate assessment of their true condition serve a most useful purpose. In a paper appearing elsewhere in this issue Dr. R. Kemball Price describes the working of such a clinic during its first eighteen months and points out not only how it helps the individual child but also how it aids the accumulation of knowledge of heart disease. "Innocent" or "functional" murmurs are particularly common in children, and unless their nature is recognized there is a serious danger that a child's activities may be unnecessarily curtailed, with the development of a cardiac neurosis as a possible result. Further, it is too infrequently realized that most children with inactive rheumatic heart disease and acyanotic congenital heart disease need not lead restricted lives.

Unless active rheumatic infection is present children with minor lesions of rheumatic heart disease have no symptoms, and they suffer no ill effects from being allowed to lead a full, normal life. In the case of the rheumatic child, as of the child with a healthy heart and a functional murmur, unnecessary inactivity may easily lead to needless cardiac invalidism. In fact, of Dr. Kemball Price's first 200 cases 96 had already had their activities restricted on medical advice before being seen at the clinic, and in only 15 was such restriction found necessary. Thus 81 children of the 200 referred to the clinic had suffered needless and unhealthy limitation of their activities. It is equally important that when rest is indicated children's lives must be suitably rearranged, and it is noteworthy that of the 37 children found to have rheumatic heart disease 6 had active rheumatism. While the clinic will not often find it necessary to limit the activities of a child with inactive rheumatic heart disease there is a very important service to the patient which it should perform—that is to advise on suitable occupations. As Dr. Price points out, it is difficult for a man in his thirties to change from manual work to something less strenuous, but it is relatively simple to select a sedentary occupation at the time of leaving school.

Children's cardiac clinics can be expected to provide new information on the incidence of organic heart disease, on "innocent" murmurs, audible third heart sounds, and other abnormalities. Dr. Price, for instance, found more cases of congenital than of rheumatic heart disease. While no closely comparable figures are available for large cities in this country there can be little doubt that in a completely urban area there would be a far larger proportion of children with rheumatic heart disease. This is certainly so in the United States, where, for example, Weiss¹ in Louisville found 69% of all organic heart disease in children to be rheumatic in origin, and Rauh² in

Cincinnati reported a figure of 55%. In neither of these areas is rheumatic fever regarded as prevalent. There has been and still is considerable difference of opinion about the incidence of uncomplicated congenital pulmonary stenosis, perhaps the most extreme view being that of Taussig,³ who considers it one of the rarest types of congenital heart disease. However, in Dr. Price's series physical signs suggesting this diagnosis were common.

Much useful information can be obtained by keeping these children under close observation for many years. This will provide not only a check on the accuracy of the original diagnosis but also information, which at present is lacking, about the disappearance of the "innocent" murmur, so much less commonly found in adults than in children. In addition there is still much to learn about the prognosis of both congenital and rheumatic heart disease. In the case of the latter the results of some long-term studies similar to those envisaged at Brighton by Price are now available. For instance, Ash⁴ has reported from Philadelphia the follow-up of 547 children for 16 years after the onset of the rheumatic infection. Of the 318 children with signs of heart disease at the end of the initial attack 42% had died within ten years; but on the other hand 30 of the children had lost all signs of cardiac abnormality. Of the 219 children with no clinical evidence of heart disease after the first attack only 5% died of heart disease in the 10-year period, and over three-quarters continued to have no abnormal signs. Nearly a quarter of all the children included in this study died of rheumatic infection within 10 years of the onset. Wilson and Lubschez⁵ in New York have carried their survey further having followed up 89% of 1,042 rheumatic children for an average of 14.8 years. Their results were rather better than those of Ash, since only 194 of the patients died of heart disease during the period of observation. Wilson and Lubschez calculate from their figures that a child affected with rheumatic fever has four chances out of five of living for 15 years after the onset, and a one-in-twenty chance of surviving to the age of 40.

Many more such observations as these from different regions are clearly desirable, and there is a need for similar studies of congenital heart disease now that operative treatment is available for some malformations. All too little is known of the natural history of congenital heart disease yet such knowledge is essential for the proper assessment of the risks of operation compared with those inherent in the defect itself.

EXOGENOUS HAEMOCHROMATOSIS

The term haemochromatosis, or "bronzed diabetes," normally calls to mind a rare and little understood condition in which large quantities of iron are deposited in the tissues—notably the skin, liver, pancreas, and abdominal lymph glands, though few organs escape. Varyingly ascribed to an inborn error of metabolism,¹ to copper poisoning,² and more recently to some nutritional deficiency,³ it affects males 20 times as frequently as females and is commonest between the ages of 45 and 55. The reasons why iron should accumulate in the body are not known, which is not surprising in view of the lack of information about the normal metabolism of iron. Until recently, for example, it was believed that iron was absorbed by the small bowel and excreted by

¹ *Amer. Heart J.*, 1941, 22, 112.

² *Ibid.*, 1939, 18, 705.

³ *Cerebral Malformations of the Heart*, 1947. The Commonwealth Fund, New York.

⁴ *Amer. Heart J.*, 1948, 35, 89.

⁵ *J. Amer. med. Ass.*, 1948, 138, 794.

the colon and, in very small amounts, in the urine and bile. This belief is no longer tenable, since it is now clear that iron in the faeces represents merely the unabsorbed residue of the food iron. Recent work⁴ appears to show that the intestinal mucosa in some way controls the absorption of iron according to the needs of the body. Apart from loss of blood—e.g., by menstruation—there is no way in which iron can be eliminated in appreciable quantity,⁵ and this may help to explain why "endogenous" haemochromatosis is so much commoner in males.

Many unsuccessful attempts have been made to produce haemochromatosis in animals by the administration of large quantities of iron. Polson⁶ gave large amounts of dialysed iron subcutaneously or intraperitoneally to rabbits over periods of several years, and despite the accumulation of enormous quantities of iron in the liver no fibrotic changes occurred in this organ or in the pancreas. Cappell⁷ injected colloidal iron intravenously in mice and found that no ill effects resulted from massive deposition of iron in the liver cells. Nothing analogous to the lesions of haemochromatosis in man was seen even when very large amounts of iron were administered over long periods.

Interesting and important as these investigations were, they did not seem to have much direct application to man. At that time injection of iron was regarded as dangerous (despite the large quantities which Cappell was able to use experimentally), and the amounts given were so small that it was unlikely they could influence haemoglobin production, let alone produce haemochromatosis. However, the recent use of iron in a form which can be given intravenously in large quantity^{8,9} has reopened the question of whether haemochromatosis is a risk of such therapy. The amount of iron required to restore the haemoglobin to normal in a case of iron-deficiency anaemia with a haemoglobin of 50% is about 1.5 g., while the accumulation of iron in cases of haemochromatosis may amount to 25–50 g. It would seem, therefore, that the risk is not great, provided that excessive amounts of iron are not given and that the method is not used in cases of anaemia in which there is no iron deficiency and utilization of the iron to form haemoglobin is not possible.

Iron is administered parenterally in a less obvious form when blood transfusions are given. One pint of blood contains approximately 250 mg. of iron, so that repeated transfusion of patients who have no external blood loss, particularly those with aplastic anaemia, may introduce into the body large quantities of iron. It is not unknown for such patients to have received 100 or more pints of blood, representing a total of at least 25 g. of iron, which is as much as may be found in cases of naturally occurring haemochromatosis. Schwartz and Blumenthal¹⁰ describe five such cases in which certain features of haemochromatosis appeared, and they mention eight others previously reported in the literature. In only two out of the thirteen was clinical diabetes present, but in nine there was obvious enlargement of the liver and in twelve some degree of fibrosis was found at biopsy or necropsy. It is difficult to assess the relative importance of the primary disease and the giving of blood in producing these changes, which seem to have been relatively mild. Some haemosiderosis appears to be inevitable when there is parenteral administration of iron, but whether true haemochromatosis, in the sense of pancreatic and hepatic fibrosis and eventual failure, results

from this alone and is a real risk of such treatment remains uncertain. Some further investigation would be of value now that massive blood transfusion and parenteral iron administration have both become common forms of treatment.

CANCER MORBIDITY

Large-scale studies of the incidence of cancer and of the survival rate are scarce. It is over twenty years since the Ministry of Health published the findings of an inquiry into the natural duration of the disease and the results of surgical treatment. A recent analysis by Eleanor MacDonald¹ of 37,863 cases of cancer is an important contribution to the subject. The facts were obtained from the records of Connecticut hospitals, and every known case of cancer admitted to or attending any of the general hospitals in the State from 1935 to 1947 was included in the analysis. The disease was diagnosed microscopically in about three-quarters of the cases. Follow-up investigations were thorough, and information about patients who left Connecticut was obtained through reciprocal arrangements with physicians, health departments, and institutions in 41 other States. MacDonald believes that the results form a practically complete record of cancer among the 1,750,000 inhabitants of Connecticut during the period reviewed. The average incidence of cancer during the seven years 1940–6 was 194 per 100,000 men and 221 per 100,000 women. The incidence continued to rise during the period, even after correction for age. The changes in the incidence and death rates appear to indicate that earlier diagnosis leads to more effective treatment and consequently more survivals. In every 100,000 living females in Connecticut 805 had a history of cancer and 220 had survived five to twelve years from the onset of the disease; corresponding figures for men were 531 and 129. One of the analyses carried out was to group the survivors by stage of disease on admission to hospital according to a broad anatomical classification. For all sites combined, 25.4% of the males and 35.5% of the females who sought treatment while the disease was localized survived for five years; when regional metastases were present on admission the percentages were 9.1 in the case of males and 19.1 in the case of females, and when remote metastases were present they were 1.4 and 3.7. The chance of surviving five years varied considerably according to the site of the disease. The lowest rate of survivorship was among the patients in the group who developed cancer in the viscera contained in the chest cavity. Even when the disease was localized on admission only 3.9% of the men and 3.5% of the women survived five years.

The age distribution of patients with microscopically proved cancer differed between the sexes. For all sites combined, the age groups 50–59 in women and 60–69 in men provided the greatest number of admissions, and the mean age of the women at the time of treatment was 55.4 and of the men 59.6. For disease in most parts of the body the average age at which men obtained treatment was generally only a year or two more than that of the women, but in the group of patients with cancer of the genital tract and external genitalia the average age at treatment was 53.6 in the case of women and 66.2 in the case of men. This study shows that between 1938 and 1946 in Connecticut delay in obtaining treatment either through personal procrastination or inadequate medical advice has been significantly reduced and that there has been a corresponding increase in the proportion of patients surviving five years or more. MacDonald suggests that, although the facts are not very encouraging, continued efforts to reduce the delay will meet with further success.

¹ Sheldon, J. H., *Haemochromatosis*, 1935, London.

² Mallory, F. B., Parker, F., and Nye, R. N., *J. Med. Res.*, 1921, 42, 461.

³ Gittman, J., and Gittman, J., *Gastroenterology*, 1947, 8, 19.

⁴ Hahn, P., Balch, W. F., Ross, J. F., Balfour, W. M., and Whipple, G. H.,

J. exp. Med., 1943, 78, 169.

⁵ McCance, R. A., and Widdowson, E. M., *J. Physiol.*, 1935, 94, 145.

⁶ Brit. *J. exp. Path.*, 1933, 14, 73.

⁷ *J. Path. Bact.*, 1930, 33, 175.

⁸ Nissim, J. A., *Lancet*, 1947, 2, 49.

⁹ Slack, H. G. B., and Wilkinson, J. F., *ibid.*, 1949, 1, 11.

¹⁰ *Blood*, 1948, 3, 617.

¹ *Brit. Amer. Coll. Surg.*, 1948, 33, 75.

RINGWORM OF THE SCALP

Small-spore ringworm infection of the hair of children under the age of puberty presents teasing problems for the clinician, the mycologist, and the biochemist. The simplest measures will cure the infection on the smooth skin, but in the hair follicle changes occur which make treatment much more difficult unless drastic steps are taken, such as by x rays, to produce epilation of the entire hair shaft and root. These changes include altered character of fungal growth with increased spore formation, altered pH of affected skin, and biochemical changes with production of a substance causing fluorescence in ultra-violet light filtered through Wood's glass. Workers in the U.S.A. have detected infection by recording pH variations when no infection was disclosed by fluorescence under Wood's light.

The incidence of small-spore ringworm infection in school-children was so high in the early part of the century that special schools were established and catered for more children than attended the normal schools. After 1910 the incidence fell, partly as the result of x-ray therapy and partly, it would seem, because of a change of phase in the natural cycle of the disease. Between the wars the incidence was very low, but there has been considerable increase in the last 10 years. Spontaneous cure does occur in a small proportion of cases. Immunity develops after the infection is cured, but some children appear to be naturally immune and will not contract the disease in spite of intimate contact with an infected child. There is no satisfactory explanation of these facts or of spontaneous cure at puberty. New parasitocidal preparations are now available for local treatment. Emulsified bases penetrate the skin more effectively, but results are not much better than those obtained with iodine in goose grease, which was employed in the last century. The same is true of the new parasitocides—the more effective producing some inflammation in the follicle, which is undesirable.

It has been generally accepted that x rays do no more than remove the hair, so that local treatment easily clears up what then becomes an infection of the smooth skin. Some doubt about the truth of this view is expressed by Drs. F. L. Lydon, T. Stephanides, and T. M. Robb in an article appearing at page 523. They have cured over 100 cases by epilation alone—the heads being washed with soap and water, and sterile caps being replaced every second day. It may be that this is sufficient treatment to cure any infection of the smooth skin, for perfect epilation saves the dermatologist with no further worries. If, however, the dose of x rays is not quite adequate, so that epilation does not leave a shining, bald surface, or if the hair is not completely removed from infected patches, then the difficulties of treatment are, if anything, increased. This does not suggest that x rays hinder the growth of the fungus or render the "soil" less suitable. Indeed, in some cases after x-ray therapy and epilation the ringworm infection appears to become increasingly active before recovery takes place.

ENJOYING THE COUNTRY

Unlike Acts of Parliament concerned with the treatment of sickness, Acts whose purpose it is to help people to lead healthy lives seldom contain the word health in their titles. Even so, it is measures such as the National Parks and Access to the Countryside Bill, which was introduced in the House of Commons last week, that in the long run will ease the load which the National Health Service has placed on the practitioner. This Bill is designed to increase everybody's opportunities of enjoying the country. National Parks are to be created by a National Parks Commission, which will begin by considering the areas recommended

in the report of the Hobhouse Committee. The Parks will be managed by committees of local planning authorities (county and county borough councils), which will have power to provide accommodation, meals, and camping sites, in addition to their duty of preserving the natural beauty of the areas. There may be some incompatibility in these two functions, but it is tempting to look forward to the time when the committees responsible for, say, the Broads and the Lake District strive to surpass each other in imaginative (and, we hope, dignified) use of the powers they possess. The National Parks Commission is also to become the guardian of "natural beauty" in any part of England and Wales and will have power to designate areas of outstanding natural beauty, which will then be made accessible to the public and will obtain protection similar to that given to the National Parks.

Another function of the Bill is to give the public access to mountain, moor, heath, down, cliff, and beach so that they may wander without trespassing; owners of land are to be compensated for depreciation. The Ministry of Town and Country Planning is empowered to buy areas of open country and hand them over to the National Trust, or some other suitable body. County councils, with the help of district and parish councils, are to survey all foot-paths and bridle-paths, and it is hoped that at the end of three years a Domesday Book of all rights of way in the countryside will have been compiled. Where necessary new rights-of-way are to be created. The National Parks Commission is to make proposals for long-distance foot-paths—such as the Pennine Way, the Pilgrims' Way, and a path right round the coast. Finally, the Bill gives powers to the new Nature Conservancy to set up nature reserves, which are defined as land managed for the purpose of providing opportunities for studying and for preserving flora and fauna or geological or physiographical features.

FELLOWS OF THE ROYAL SOCIETY

The following were among those elected to the Fellowship of the Royal Society on March 17: Ernst Boris Chain, M.A., D.Phil., University Demonstrator in Chemical Pathology, University of Oxford; distinguished for his work on enzymes of snake-venom and bacteria, and especially for his researches on penicillin and other antibiotics. Kenneth Mather, Professor of Genetics, University of Birmingham; distinguished for his contributions to genetics and particularly for his studies of polygenic inheritance. Walter Thomas James Morgan, D.Sc., Ph.D., research worker, Lister Institute of Preventive Medicine, and Reader in Biochemistry in the University of London; distinguished for his contributions to the chemistry of immunology and blood groups. David Aylmer Scott, research member, Connaught Laboratories, University of Toronto; distinguished for his contributions to the chemistry of insulin, heparin, and carbonic anhydrase. Wilson Smith, M.D., Professor of Bacteriology, University College Hospital Medical School; distinguished for his researches on the virus of influenza and on the pathology of staphylococcal infections. Frank George Young, D.Sc., Ph.D., Professor of Biochemistry, University College, London; distinguished for his studies of the part played by the hormones of the anterior lobe of the pituitary gland in carbohydrate metabolism.

Dr. A. P. Thomson, F.R.C.P., will deliver the Lumleian Lectures before the Royal College of Physicians of London (Pall Mall East, S.W.) on Tuesday and Thursday, April 5 and 7, at 5 p.m. His subject is "Problems of Ageing and Chronic Sickness."

TRILENE AS AN ANALGESIC IN LABOUR

REPORT OF THE ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

BY

F. NEON REYNOLDS, F.R.C.S.Ed., F.R.C.O.G.

An account of the investigation into the possible use of trilene by midwives as an analgesic in labour has been issued by the Royal College of Obstetricians and Gynaecologists. The report does not seem to have received the publicity in the medical press which it demands. A standard method of administration by means of the modified Freedman's inhaler was adopted and efficacy, effect on labour, and safety for mother and child were investigated.

Results of Investigation

The results, in brief, arrived at under these headings were as follows:

Efficacy.—Adequate relief can be given to a high proportion of cases—76% to 89%—without any special skill upon the part of the administrator. The degree of analgesia provided was superior to that obtained from gas and air by Mannitt's method.

Effect on Labour.—No evidence was adduced of any adverse effect upon length of labour, forceps rate, or obstetrical interference rate. No case of diminution of uterine contractions due to trilene was recorded, but in three cases out of 1,168 unexplained delay might have been attributable to the analgesic. A small proportion—4.6%—of patients became uncooperative mainly because they became too sleepy to push in the second stage. This incidence did not appear to have any relation to the duration of the trilene analgesia.

Safety to Mothers.—In the group to which trilene alone was given there was one maternal death—a rate of 0.86 per 1,000—and that on the fourth day of the puerperium in a patient with mitral stenosis. In marked contrast the death rate was more than doubled—1.96 per 1,000—in the group to whom no analgesic or anaesthetic of any sort was given.

The conclusion, as published in the report, that "there is no evidence in this series that the standard method has any influence on the maternal mortality rate" might even be described as an understatement. The paragraphs which follow this conclusion deal with the possible effects upon maternal respiration and pulse rate. No ill effects upon respiration were noticed. Possible alterations in pulse rate are referred to, but comment here is not possible since the details published are insufficient. The information given is unconvincing because the amounts of trilene administered vary to an inexplicable and almost unbelievable degree. It is difficult to reconcile 9 ml. of trilene in twenty-eight minutes, 7 ml. in three and a quarter hours, and 7½ ml. in a little more than ten minutes.

Effects on the Foetus

Foetal Pulse Rate.—The criterion of foetal distress was taken as slowing of the foetal heart rate to a hundred or below. This occurred in 3 cases among 1,168 to whom nothing else but trilene was given. The opinions reached were not unanimous. There were 18 cases in which the point arose, but in all but the three mentioned above other factors were present, such as difficult labour or the use of other non-volatile analgesics in addition to trilene; furthermore, 11 out of this 18 occurred in the same hospital, and the observer of these cases considers that the possibility of some effect on the foetal heart rate must be borne in mind.

Asphyxia Neonatorum.—Some degree of asphyxia occurred in 3.9% of babies where trilene alone was used, but a considerably higher proportion was noticed if pethidine had been administered previously.

Stillbirth Rate.—There were 25 stillbirths, again among 1,168 patients, but in no case was the analgesia considered in any way responsible. This gives a stillbirth rate of 2.14 per 1,000. In a series of 2,040 patients to whom no analgesia or anaesthetic of any sort was given the stillbirth rate was 71.56 per 1,000. The final conclusion was that there was no evidence to show that trilene influenced the stillbirth rate in any way.

Neonatal Death Rate.—In the three groups of cases investigated the lowest neonatal death rate—5.13 per 1,000—was obtained in the series of patients to whom trilene alone was given. Where no analgesic at all was used the rate was 35.94 per 1,000, but this high incidence is explained by the inclusion of a large number of premature labours. In the group to which other analgesics as well as trilene

were given, a figure of 11.80 per 1,000 was found. The conclusions were again that trilene had no influence on the neonatal death rate.

Final Conclusions

In the final summing up the observers expressed their opinions on whether the use of trilene by unsupervised midwives trained in this method would be safe. The majority—eight in number—were of the opinion that it could be safely employed with great benefit to the mother, and stated that they would be quite happy to be responsible for a district in which the use of trilene by midwives was allowed. Two were of the opinion that further investigations were necessary and that in the hands of midwives without supervision it might be used for longer periods than was commonly the case during this investigation; and two considered it unsuitable for domiciliary midwives on account of its effect on the foetus and the production of a non-cooperative state in the mother.

In spite of this large majority and of the evidence produced, the final recommendation of the observers was that this method should not be made available to unsupervised domiciliary midwives. The reasons actually given in the report are:

(1) The limits of variation of the trilene vapour/air mixture delivered by the apparatus are far too great.

(2) Under less ideal conditions or by deliberate misuse these limits can be caused to vary still further.

(3) As a result of the above and also due to varying tolerance in different individuals cases will occur where the mother will pass beyond the stage of co-operative analgesia into a state of uncooperative stupor. This has occurred in the best of hands, and in the case of less skilled supervisors this condition might easily be taken to a state of anaesthesia.

In writing this précis every effort has been made, and I think successfully, to avoid divorcing subject-matter from context, thus conveying any false impression or biased view. Certain points deserve emphasis; the most striking, perhaps, is that the lowest mortality rates in both mothers and babies are found in that group of patients to whom trilene alone was administered. So far as maternal mortality is concerned this is a finding to which attention has been drawn before, and it is of the utmost importance that this aspect of the use of analgesics should be recognized. The low stillbirth rate is extremely interesting but cannot, of course, be attributed entirely to the use of analgesics.

The adverse part of the report relates to non-cooperation of the patient due to excessive stupor and the danger of this passing into a state of anaesthesia, together with the varying strength of the trilene vapour delivered by the apparatus. It was felt that these disadvantages might be still further increased by unsuitable home conditions or by deliberate misuse. The three cases of non-cooperation and three of alteration in foetal pulse rate constitute no greater proportion of such complications than is found in patients to whom no analgesic is given.

No one is anxious to press for an analgesic which would increase the risks to mother or infant, but the outstanding features of this report are that with the use of trilene mortality rates show an absolute decline. A certain amount of risk has to be taken in childbirth anyway, and it would appear reasonable to suppose that the risks of using trilene, such as they are, would at least be offset by the consequent reduced mortalities. A risk is taken every time an anaesthetic is administered: fatalities have been reported even under gas for removal of teeth, but no one would demand minor operations being carried out without its use. Is it reasonable to take for granted that midwives would deliberately misuse the apparatus by placing the bottle in hot water or would adopt other illicit means to increase the dosage? My experience of them does not support such an idea for a moment. If the practice is known to exist, surely it can be remedied in some way other than at the cost of human suffering?

One is forced to the conclusion that the investigation upon which the report from the Royal College of Obstetricians and Gynaecologists is based produces all the evidence in favour of a trial of this method being made. I must repeat that eight out of twelve observers were of the opinion that it could be safely so used; the majority of them (number not given) stated that they would be quite happy to be responsible for a district in which trilene was available to domiciliary midwives. We have no alternative analgesic the practical application of which is so

widely possible. I would ask, therefore, that districts be chosen in which a clinical trial can be carried out upon a much wider scale than the scope of the recent investigations allowed. I believe the results would more than justify the undertaking.

We must ask ourselves whether the doubts of the few or the slight risks they envisage should prevail and thus deprive thousands of women of the relief so greatly needed. Let those who have expressed their readiness to shoulder the responsibility be allowed to take action without further delay to rectify a state of affairs which is causing national anxiety.

STRATEGY OF HEALTH EDUCATION

TELLING THE PUBLIC

The subject of a symposium arranged by the Public Health Department of the Middlesex County Council on March 14 was "The Principles and Technique of Informing the Public." The all-day meeting was attended by the public health and other staff of the council, and medical officers and health visitors from neighbouring authorities. The words of Lord Derby, who was Prime Minister in 1866, stood at the head of the programme: "Health instruction is even more essential than health legislation, for the best laws are waste paper if they are not appreciated and understood."

Dr. W. HARTSTON, deputy county medical officer of health, who presided, said that the purpose of the symposium was to give the Middlesex authorities some guidance on health propaganda. The people most in need of health education were not people of the highest intelligence nor with any wide range of ideas; they belonged to that 30% who were in grades 4 and 5 of the five intelligence groups in the Army intake during the later years of the war. Therefore the educational appeal must not be pitched too high.

Health education, Dr. Hartston continued, was bound to be a somewhat disappointing business. "Many are taught, but few learn." But if it could be imparted satisfactorily and acceptably it would rid us of most of our avoidable inflections. He pointed to the success obtained with diphtheria immunization. That could be said to be the result of teaching and propaganda. He mentioned Harrow in his own county, with a population of over 200,000, which in the years 1946-8 had no deaths at all from diphtheria, and in 1948 no cases; yet he supposed Harrow had its share of the above-mentioned 30%. Dr. Hartston suggested that time might be bought on Radio Luxembourg to "call all lumbagos"—or any other class. This suggestion was opposed by Dr. CHARLES HILL, the next speaker, on the ground that people would say, "What is Middlesex County Council up to? Can't we keep our own backaches?"

Personal Contact

Dr. Hill began by saying that in all forms of health education the fact must be reckoned with that the vast majority of people in this country, while they had a lively interest in ill-health, had relatively little interest in the maintenance of good health. The purpose of health education was to modify that attitude. Too little was known about the prevention of disease. The public was apt to assume that there was a mass of knowledge which, but for the reluctance of those who possessed it, would be available for general assimilation. The sad and depressing truth was that there was really very little knowledge. It was perhaps no longer true that practitioners were "brought up on the rare to go out and treat the trivial," but pathology dominated the curriculum, and physiology had a long way to go before its rightful position was achieved.

Dr. Hill doubted whether health education for the over-forties was worth while. Habits of life and conduct, of eating and drinking, were then firmly laid down, so that it was beyond the power of the most enthusiastic health educator to jerk them out of their routine path. As for the means of health education, he thought that exhibitions, like lectures, were largely a waste of time, attended for the most part by the converted. As for posters and leaflets, there had been an immense improvement in recent years. Especially commendable were posters which had a touch of humour, like those

of Fougasse for the Central Council for Health Education. But the most effective medium was the spoken word—spoken by the doctor or health visitor. He hoped that eventually the burden of work on the doctor would be eased so as to give him more opportunity for these personal contacts.

For broadcasting on health subjects, or indeed on anything else, Dr. Hill laid down some simple rules: (1) Take advantage of the fact that people are interested in ill-health, and use ill-health as an opening for passing on to more positive instruction. (2) Don't despise small and unambitious jests. Don't be afraid of saying something which might not be wholly approved by an audience of medical practitioners. (3) Never mind Sir Ernest Gowers: talk English as you ordinarily talk it.

The Written Word

Mr. MACDONALD HASTINGS, editor of the *Strand Magazine*, discussed the value of the written word, remarking that what sounded well very seldom read well, and vice versa. He looked with more toleration than some on the popular press. He saw in its sensational headlines and comic strips not the signs of declining popular intelligence but the emergence into relative literacy of a population which previously had read next to nothing at all. He even excused the inaccuracy with which medical matters were often handled in the lay press. Four-fifths of it was the profession's own fault. Not once in a thousand times did a newspaper set out to print something that was false. The errors arose from the speed with which newspapers were published, the enthusiasm of individual reporters, and the absence of satisfactory liaison between the medical profession and the Press so that there were no rapid means of obtaining an authoritative opinion.

In the general discussion, in which several health visitors took part, it was suggested that the county council should have a whole-time health education officer, not necessarily a medical man. Suggestions were made for sample surveys, also for area group studies, the group being formed of medical officers, nurses, health visitors, and school teachers. The final word was with a dental officer, who pleaded that, while there might well be education directed to the prevention of caries, there should be no propaganda for more dentistry—at present.

MENTAL HOSPITAL RECORDS

A conference of the Psychological Medicine Group of the Association was held at B.M.A. House on March 7, with Dr. W. G. Masefield in the chair, principally to discuss the question of statistical returns from mental hospitals. Dr. C. P. Blacker, who has played a considerable part in devising the new system of records, said that he must not be regarded as responsible for all the final features of the system. He would have liked to see some of the questions differently framed, and he regretted the use of a hospital index card as a substitute for a case-sheet front page.

Turning to the hospital index cards now in use, he discussed the genetic and demographic questions numbered 20 to 29. The first question, concerning twins, scarcely required comment; the value of twins for genetic research was universally recognized. Another question asked whether the parents were related by blood. It ought to have been specified in the handbook of instructions that first-cousin marriages were here intended. The question was capable of bringing to light new forms of mental defect, or perhaps of disorder, in which recessive genes played a part. Question 22 asked whether the patient was related by blood to his first spouse; the question was limited because to have brought in second or later spouses would have introduced too many complications. But the question had an important bearing on the amount of consanguinity, which varied in different localities. With regard to the next question, which asked whether the spouse had been dealt with under the Acts, a wider net might have been cast by asking whether the spouse had ever been treated by a psychiatrist: but questions of interpretation of "psychiatrist" would have arisen, and there was much to be said for confining questions to simple factual alternatives.

Another question was on the age of the mother at the birth of the patient; the significance of this in relation to mongolism was well known. The answers to the questions relating to siblings would bear on the fertility of the parents of the mental hospital population, and the question on the number of the patient's children born alive would give information, though incomplete, about the fertility of that population.

This year the analysis of mental health records would now be made with Hollerith machinery instead of by the laborious pen-and-ink methods hitherto followed. Nevertheless, the labours that the new arrangements would impose on Somerset House would be immense. In time, he hoped, the bulk of the pressure would be removed if properly equipped statistical departments, perhaps linked with the departments of social medicine in the universities, were established in every region. Such regional departments could provide a statistical service to every hospital. Professor Ryle had suggested that these regional departments should be assigned dual functions—namely, a statutory function to provide the central office with whatever statistical material it might require, and an independent local function of helping the regional hospitals and other bodies and the university in their research projects.

The present format of index cards should not be regarded as immutable; indeed, he had the authority of Mr. Barter, chairman of the Board of Control, for saying that they would not be. Dr. Blacker suggested a plan whereby the Board could pursue a systematic and yet elastic programme of research by issuing to hospitals and institutions new front pages of case-sheets at intervals. It would be most advantageous if interested departments—such as social medicine and genetics—could be notified of cases interesting to them, and he was convinced that the dangers of such a system were much exaggerated. The public was accustomed to the notification of dangerous or contagious diseases; it would be but a step to accustoming it to the notification of interesting diseases or circumstances from which useful information could be gained.

Social Influences

Professor T. Ferguson Rodger addressed the conference on the value of diagnosis in clinical records in mental hospitals. At the present time, when vast decisions were frequently taken which affected the mode of life of everyone in the nation, the psychiatrist, alive to his social responsibility, was being forced into an active role. How far was the psychiatrist equipped to give advice on planning? Possibly in this country, thanks to the work of E. O. Lewis, more was known than in any other about the incidence of mental defect, but how much was known of the social conditions which gave rise to neuroses? He would like to know—he could not discover—how much loss of production, psychopathy, delinquency, how many prison cells and mental hospital beds, should be placed to the account of the bad housing conditions of the Gorbals of his own Glasgow. The present position of psychiatrists was like that of a physician concerned with individual symptomatology but not realizing the importance of sanitation.

When one thought along these lines the new index card seemed a very modest affair. In an era of planning it was probably more important to know about these things—social influences—than about genetics. For the first time entire new towns were being planned before they were built. Physical hygiene had had its say in planning them, and they ought to be in a position to provide accurate information about the requirements of mental hygiene. A town could now be planned for a low infant mortality rate; it should be possible to plan a town for a low delinquency rate. The index card was on the right lines for setting going a scheme of social research. Mental hospitals would always be the chief training centres for the psychiatrist, and careful case-taking was a necessary part of his training. They could not hope to cover all relevant factors completely, and if very detailed records were insisted on case-taking might become an end in itself; but a good clinical record should reveal the dynamics of the case and suggest the problems which were to be tackled either by psychotherapy or by social adjustment.

Professor Rodger referred to the handicap of the large variety of diagnostic classifications which had been used in the past. A great deal could still be done in following up

the after-care of patients who, while they might recover from the attack and leave hospital, presented a very different picture when next admitted. The correlation of diagnosis and prognosis might help to narrow down the very large margin of error which occurred when labels which had prognostic significance were attached. The fact that the response of the manic-depressive patient to electroplexy was so different from that of the schizophrenic was only one of the unmistakable indications that diagnosis was a highly significant procedure. "New diagnostic procedures are being introduced," said Professor Rodger in conclusion, "and research on clinical assessment will no doubt continue with the aim of achieving a better classification. In the meantime, in the evaluation of treatment, in genetic studies, in research on pathology and psychopathology, our present classification is capable, if we use it properly, of serving us well for many years to come."

Dr. Doris Odum complained of the vagueness and wooliness of the classifications at the present time. Nearly all diagnosis was descriptive, so that they were very likely, if a case took a certain course, to assume that the diagnosis had been wrong—in other words, to judge diagnosis by the end-result. Dr. Rees Thomas said that what they had tried to do in the index card was to be factual. A great many things had been left out, but one factor of great importance was left in—namely, the physical condition. The system allowed for a change of diagnosis. It had seemed a little unfair on any doctor to allow him to take an early case, make his diagnosis within a maximum of three months, and hold him down to that diagnosis for all time.

Dr. Masfield, in closing the discussion, said that the Board of Control was to be congratulated on having produced these index cards. There was nothing to stop anyone adding information to them.

MALARIA AS A WORLD PROBLEM UNIVERSITY OF LONDON LECTURE

Professor B. G. MAEGRAITH, of the Liverpool School of Tropical Medicine, delivered a University of London lecture on Feb. 24 at Westminster Hospital Medical School, his subject being "Malaria as a World Problem."

Not enough attention, said Professor Maegraith, was given to malaria in the average medical curriculum. Yet malaria was the most widespread of human diseases, not even excepting the common cold. Its mortality was comparable with that of the influenza pandemic of 1918-19, and, while malaria was a disease which killed, it was even more a disease which produced a high morbidity. It was primarily a disease of rural areas, and it must be regarded as a great cause of world food shortages, slowing down agricultural production over vast areas. In war it interfered with strategy. In the 1914-18 war it nearly paralysed operations on both sides in the Balkans, and in the last war it was not until some control over malaria was established that the fighting in the south-west Pacific could proceed.

The lecturer went on to discuss the natural history of malaria and the methods by which it was spread. Malaria, he said, could be recognized from the earliest human records; it was common in Greece and Rome. The ancient doctors were able to separate fevers into two classes, continuous and intermittent, and the intermittent fevers must have been malaria. The organism was not seen and described until the early nineteenth century. Laveran was the first to prove in 1880 that it was present in the blood and was in fact a protoplasmic parasite. Manson argued in an article in the *British Medical Journal* in 1894 that the malaria parasite could be picked up from human blood by mosquitoes. He propounded the theory that the mosquito carried malaria. Pfeiffer, some years earlier, had also suggested that the mosquito might carry the parasite, and had mentioned this to Koch. Ross, studying avian malaria, traced the parasite from the blood of the bird to the mosquito, and from the mosquito to another bird. The final proof of the transmission of human malaria was given by Manson at the London School of Tropical Medicine when he demonstrated the complete cycle.

Methods of Control

It was on this basis that attempts to control malaria rested. If only the parasite could be destroyed in the human blood the

infection could be got rid of altogether. To this field had been brought the armamentarium of chemotherapy. Theoretically it might be possible to provide some chemical barrier beyond which the parasite could not pass, but there was at the moment no chemical substance which would destroy the parasite when it was injected. The parasite, however, underwent a phase of its development in the tissues before it entered the blood stream, and there were certain chemical substances which were of use here, the outstanding ones being mepacrine and paludrine. How effective these drugs could be was shown in the last war when, up to 1942, the incidence of malaria in the south-west Pacific was such that warfare was almost impossible; then mepacrine was introduced and used almost under duress, and the incidence of malaria fell markedly. But when it came to dealing with the control of malaria in large communities it must be admitted that chemotherapeutic means were of no real value over a long period.

The mosquito could be prevented from biting man by screening. Screening was valuable under certain special conditions, but it was a costly business and over a wide range of humanity almost impossible. Repellants had been used—substances which made the body unpleasant to the mosquito—but there was no substance which would last long enough to give real protection. One was driven to deal with the mosquito itself. It could be killed by the introduction of natural enemies, such as fish, by the drainage or control of swamps, or by the deliberate distribution of insecticide. Professor Macgregor discussed the different methods and their application in various parts of the world, and described the use of insecticides, principally D.D.T. and gammexane. D.D.T., he said, had been developed to a point where its residual activity was such that spraying need be done only once every two or three months. It had no very outstanding "knock-out" effect, but its residual effect was very important. The mosquito took a week or more to become infective after taking blood from a human subject. When exposed to these substances it could not live long enough to become infective, and so the chain might be broken. This method of residual spraying had made all the difference in rural communities. It had made the control of malaria in big territories a feasible proposition.

FAMILY PLANNING CLINICS OPPORTUNITIES AND LIMITATIONS

A medical conference was organized in London on March 12 by the Family Planning Association. It was attended by between sixty and seventy medical officers of F.P.A. clinics, of which there are now 78, run by 64 branches. Dr. HELENA WRIGHT and Dr. ANNIS GILLIE presided over the two sessions. The main subjects being the help to be afforded by the clinics in cases of marital difficulty and in the treatment of minor gynaecological conditions and subfertility.

Adjustment of Marital Relations

The subject of marital difficulty was opened by Dr. STELLA CHURCHILL. She remarked on the number of cases in which mutual satisfaction in marriage was not achieved; such failure, of course, was not to be laid wholly at the door of the wife; perhaps it derived much more often from the husband. But she addressed herself to one particular psychological cause in women—namely, narcissism, the self-regarding state. The narcissistic woman, she said, was in love with the idea of being in love, and too many got no further in marriage than that. The pity was that many of these narcissistic women were superficially attractive, but they had very little idea of the element of giving in the marriage relationship.

Dr. NOEL HARRIS referred to the distinction between cases which could be helped at the clinics and those which should be referred for specialist treatment. It was always a matter for consideration by the clinic officer whether underlying what appeared to be a superficial and temporary condition was a neurosis. A large number of what were termed anxiety states might not be linked up in any way with a neurosis but might simply be attached to a particular problem. Each person had

a constitutional pattern, and the normal personality was a blend of many types which in their abnormal manifestations were schizoid (reserved and solitary), obsessional (methodical, precise, exact), and so forth. When a marked personality type was encountered it was necessary to be on one's guard; slight obsessional tendencies might indicate a neuropathy which required more expert handling and more time than a clinic could afford.

Dr. HARRIS went on to discuss conditions of impotence in the male. These included failure of erection, premature ejaculation, and lack of sexual desire. Premature ejaculation was very frequently associated with an anxiety state, and if the anxiety was relieved and adequate instruction given the condition would pass away very rapidly. Failure of erection was much more difficult to deal with. It might be a local condition or linked up with some constitutional disturbance, though definite proof of the latter might be lacking. Very little could be done about it. The value of injections of progesterone, he thought, had not been established. Failure of erection might be closely connected with lack of sexual desire, which was much more likely to need intensive and prolonged treatment. Very probably the underlying condition was depressive. Frigidity was often associated with sexual weakness as well as with lack of knowledge of sexual technique. Finally, he touched on perversion, often misunderstood and badly dealt with, and homosexuality, which he did not think in its extreme form could be cured by any psychological treatment. It was sometimes forgotten that extreme homosexuality was at one end of a scale and normal heterosexuality at the other, and in between there were any number of intermediate grades, in some of which help could be given.

Minor Gynaecological Conditions

Dr. JOSEPHINE BARNES began by saying that gynaecology could scarcely be divided into minor and major, and that minor gynaecology could hardly be said to exist. Nevertheless, there were a number of conditions in which the clinic could afford help to the patient. One very common condition among married women was the early case of prolapse. Personally she thought that ring treatment should be resorted to very seldom; quite a number of ring ulcers and occasionally carcinoma were seen. Most cases of prolapse were better operated on. In early prolapse a measure of extreme value was physiotherapy. In cases of retroversion it was necessary to be careful what one said to the patient. So often patients came up saying that they had been told that their womb was "twisted." She preferred to tell them that the womb was tending to fall back. Very few operations for retroversion were done, but in some cases operation was worth while.

In cases of leucorrhoea the treatment should be directed to the inflammations which gave rise to it. For cervicitis by far the most satisfactory method was cauterization with the electrocautery. Various degrees of vaginitis caused leucorrhoea. The vagina had on the whole a successful defence mechanism, but once this was upset there might follow infection by various organisms. Dysmenorrhoea accounted for about half the out-patients seen nowadays; in the spasmodic type it was worth giving stilboestrol a good trial; the congestive type was much more difficult to treat. Finally Dr. Barnes touched on the early diagnosis of cancer and again stressed the diagnostic value of the clinic consultation.

Treatment of Subfertility

Mr. LINTON SNAITH considered that the task of the clinic doctor should be restricted to making the initial examination and giving reassurance and general advice. F.P.A. clinics should not be turned into minor hospital departments. There were two chief types of cases for which such clinics were ideal—cases in which there were difficulties in marriage arising from sexual maladjustment, and genuine cases of subfertility after two years or more of marriage. The clinic could in the latter cases initiate investigations and sometimes, in full co-operation with the hospital staff, deal competently with the cause. After marriage many cases came forward while as yet there was no real evidence of subfertility, and he suggested that clinics, while admitting the value of investigation, should not rush into it too

soon. The competent clinician could make a pretty good estimate of subfertility, and in many cases reassurance was all that was wanted. As for the genuinely subfertile group, those who had been married for two or three years without conception, many of these cases must be dealt with at the hospital and not at the clinic, though if investigation showed the problem to be one of marital maladjustment the help given by the clinic might be sufficient to put it right. It was surprising in how many cases the sex relationship was unsatisfactory after years of marriage.

The chief cause of subfertility was constitutional—meaning both the physical and the psychological constitution—and in the majority of cases this could not be modified, though much could be done to keep the morale of the couple high. Some of the functional causes of subfertility were obscure. He was a little critical of the various methods adopted for the treatment of tubal spasm, and was not convinced that antispasmodics had any effect. Of the organic causes tuberculosis was one of the most important.

MEDICAL FILMS

Excision of Intervertebral Disks

Mr. J. E. A. O'Connell is to be congratulated on his film "Excision of Intervertebral Disks," made in the Department of Neurosurgery at St. Bartholomew's Hospital.

The first part of the film shows the physical signs of a "typical" disk protrusion. This is followed by shots of the operation illustrating the main points of Mr. O'Connell's technique. The earlier part of the operation shows up very well indeed, but the pictures of the exposure of the nerve root and the removal of the disk are on the small side. This part of the operation must be one of the most difficult to photograph satisfactorily owing to the very small area that has to be shown at the bottom of a very deep wound. In Mr. O'Connell's film it would be difficult for a person not well acquainted with the detailed anatomy of this part to appreciate that the disk in the picture was actually protruding. Moreover, the non-expert might have some difficulty in recognizing the nerve root. To convince a disbeliever so far as this lesion is concerned one must be able to show the disk "sticking out" and not merely as a shiny flat surface.

The final part of the film deals with the after-treatment and shows the type of exercises the patients perform. The film is in colour throughout and is of a uniformly high standard. It should be of great value and interest to those already acquainted with the operation. It would have a much wider appeal, however, if some close-up shots of the region of the nerve root and intervertebral disks could be incorporated.

NURSES AND THE N.H.S. NATIONAL CONFERENCE

The sixth of a series of national conferences on nursing problems, arranged by the Royal College of Nursing, was held in London from March 3 to 5, when the general subject was "The Machine and the Nurse," meaning by "the machine" the new hospital arrangements under the National Health Service. The conference was attended mainly by matrons and principal nursing officers. The practice was followed of having discussions in groups and of bringing forward the group conclusions at plenary sessions.

Dr. John Kershaw, divisional medical officer for North-East Essex, pointed out that the "machine" was a new one. Many of the difficulties were administrative, and, like the problems of civil defence in war, would settle themselves in time. The administrators were themselves experimenting and changing their ideas. New people were being brought into hospital management. Some regional boards had brought on to hospital management committees people who had never had anything to do with hospitals before, but whom they thought could be trained to be sound hospital administrators.

There were many expressions of assent when Dr. Kershaw said that he gathered that nurses did not feel they were getting

a fair voice in hospital management at the present time. In the old days the matron had considerable power, for committees were composed of lay people among whom her special knowledge of administration counted for much. The nursing side should have fair representation, and matrons should be given access to committees where their special administrative knowledge would be of value. Dr. Kershaw said that what was wanted was a smooth-running administrative machine at national, regional, and hospital levels, and to get this it was necessary to compromise. The administrators should be prepared to make a little concession to administrative untidiness where human needs conflicted with "streamlining."

The principal theme at the concluding session was the place of the matron or nursing representative on hospital management committees. Some of the matrons present claimed that, even if technically not members of such committees, they should have a right to be present when matters affecting nursing were discussed. Others said that it was of even greater importance to have the right to attend subcommittees; the main committee often did no more than "rubber stamp" subcommittee decisions. The question of presenting nursing opinion to the regional boards was also mentioned. It was stated that one regional board had invited more than fifty matrons in its area to a meeting at which they had given the board and its chairman their views on nursing matters.

Regional meetings of principal nursing officers were strongly advocated. Another point on which there was general agreement concerned the need for cultivating social life in hospitals. The day of the ridiculous shut-in sitting-room where nurses were allowed to receive visitors only at certain times had ended or must end. It was suggested that the lack of social life in hospital nursing was one of the main factors militating against recruitment.

Preparations and Appliances

A PORTABLE RESUSCITATOR

Dr. B. G. B. LUCAS, research assistant in anaesthesia, University College Hospital, writes: Now that the respiratory depressants, such as the barbiturates and curare, are in common use in anaesthesia and in electric convulsion therapy, some form of resuscitation apparatus becomes almost a necessity. Kreiselman (*Anesthesiology*, 1943, 4, 608) described a simple resuscitator consisting of a bellows bag and face-mask. This has been modified so as to use oxygen, and has been constructed from standard parts so far as is possible.

The apparatus consists of a Connell bellows bag mounted on a McKesson pattern face-mask. On the base plate of the bag is a Heidbrink expiratory valve which can be loaded, and an inlet pipe through which oxygen is fed from a 30-gallon (136-litre) cylinder via a combined demand regulator and reducing valve. The regulator is set at atmospheric pressure so that oxygen flows automatically when the bag is expanded or if the patient breathes of his own accord. The whole apparatus is carried in a fibre case 19 by 13 by 8 in. (47.5 by 32.5 by 20 cm.) and weighs 25 lb. (11.34 kg.) complete. No spare cylinder is carried, but an oxygen-content gauge is mounted on the side of the reducing valve (see accompanying photograph). This apparatus was made for me by Medical and Industrial Equipment, Ltd., 12, New Cavendish Street, W.1.



Reports of Societies

TRAUMATIC CHANGES IN THE BRAIN AFTER DELIVERY

At a meeting of the Section of Neurology of the Royal Society of Medicine on March 3, with Dr. WILLIAM JOHNSON, the president, in the chair, a lecture was given by Professor B. BROUWER, of Amsterdam, on "Traumatic Changes in the Brain after Spontaneous Delivery at Full-term." The president introduced Professor Brouwer as a neurologist whose fame was world-wide and whose Neurological Institute many of them had visited with great profit.

Professor BROUWER said that he proposed to present certain material from the Neurological Institute at Amsterdam in the preparation of which he had worked in collaboration with Dr. Cornelia de Lange, professor of paediatrics at the university. They were all aware of the clinical syndromes which might arise after birth—for example, muscular palsy, spinal paralysis, mental disorders, and idiocy. Haemorrhages into the pia and arachnoid and in the central nervous system might occur after almost every birth and disappear spontaneously. The number of cases in which blood was found on lumbar puncture was high, and not infrequently haemorrhages were seen in the retina. Destructive processes in the central nervous system might be observed not only in the premature infant but also in the infant born at full-term and without instrumental aid. The examination of such cases of birth injury had shown that not only were haemorrhages frequent in various parts of the central nervous system but that other processes might also be present. Destruction was seen, for example, in the striate bodies, and it was rare for the effects of birth injury to be confined to the pia.

Over the last two years his Institute had received the brains of six children, all delivered spontaneously at full-term, in which there were found signs of intracranial birth injuries. In four cases the brains had been studied microscopically; in the other two the examination was still proceeding.

Illustrative Cases

The remainder of Professor Brouwer's lecture consisted of a detailed account of each of these cases, illustrated by lantern slides of brain sections. The first of the four cases was a girl, a vertex presentation, whose birth weight was 3,520 g. For some days after birth she had convulsions, for which she was treated in hospital. In a short time the condition improved and the child was sent home. At five months she was readmitted suffering from frequent epileptic fits. Ophthalmological examination revealed no retinal lesion, and there were no signs of meningitis. There was marked microcephaly. Examination post mortem showed a central haematoma in the parietal region. Sections of the medulla might be regarded as normal, and the pyramidal tracts were well formed. Microgyria was very evident. The architecture of the occipital lobe was altered, and among other brain changes he called particular attention to a peculiar "cactus" formation in the neuroglia. Conglomerations of fat cells were seen in many parts of the brain. Degeneration was seen only in the pallium; the deeper structures of the brain were largely unaffected. His conclusion was that the changes were not caused by congenital malformation but were the result of brain trauma at birth. The question arose whether the microcephaly might also be regarded as the result of birth trauma. Systematic examination of the brain pointed strongly to a traumatic origin for the microcephaly. It seemed likely that this was caused by compression at birth.

In the second case death occurred on the thirteenth day. The cranium seemed small, and only a small quantity of fluid could be removed by lumbar puncture. A clinical diagnosis of meningitis had been made. On post-mortem examination blood-clot was found on the posterior half of the right ventricle, and small conglomerations of glial cells were seen in the surrounding tissues.

The third child was taken to hospital with fever and diarrhoea, and the consulting neurologist suggested the possibility of a lesion of the brain stem. After some improvement the child was discharged, but was readmitted and died at 13 months. On

examination great destruction was found in the corpus cerebri, with the formation of cavities. Here again Professor Brouwer concluded that subdural haemorrhage following birth injury had led to under-development of the brain with great destruction of the cortex, but the deeper parts of the central nervous system had been left intact.

The fourth case was the second child of healthy parents, and had developed epileptic fits at the age of 7½ months, but no objective neurological symptoms were found. The child died at the age of 2 years and 4 months, and again on examination of the brain it was found that a great deal of the cortex was destroyed. It was true that in this case the epileptic fits had not occurred until several months after birth, but it was well known that such fits might take place after a "silent" period.

PHARMACOLOGICAL EXPLORATIONS OF PERSONALITY

Professor JEAN DELAY, who holds the chair of psychiatry in the Faculty of Medicine of Paris, gave an address in the Section of Psychiatry, Royal Society of Medicine, on March 8. The chair was taken by Dr. J. R. REES. Professor Delay, who was elected an honorary member of the Section, was visiting this country in connexion with the International Congress of Psychiatry to be held in Paris in 1950, of which he is chairman.

Professor Delay spoke first of the history of the use of drugs to recall forgotten memories and to explore latent personality. The modern use of drugs in the study of psychopathology dated from 1845, when Moreau de Tours concluded that dreams experienced under the influence of hashish were identical with the hallucinations of psychotic patients. Other drugs came into vogue later, and now interest was centred on the sodium barbiturates and methedrine. In speaking of hashish, Professor Delay related the following case history.

A lad of 18 had quarrelled with his mother and stepfather and left home. One night he visited a black-market restaurant and purchased some cigarettes. While smoking the cigarettes he had an acute hallucination. He made straightway for his former home, where he found his stepfather in bed, strangled him, and returned to his lodgings. Waking late the next morning, he was overwhelmed by his recollections of what he had done, and gave himself up to the police. The police, on visiting the house, found the stepfather having his lunch. The son had not visited the house at all, and nothing had happened. The cigarettes had contained hashish.

The sodium barbiturates had been increasingly used for narco-analysis, particularly during the war, not only in the treatment of acute combat neuroses but also for the diagnosis of malingering. Many techniques were employed, but the common basic approach was the exploration of the unconscious. A distinction must be made between the techniques in which the doctor was passive, allowing the drug to elicit the unconscious material alone, and those in which he played an active role, questioning, suggesting, and interpreting to the patient.

Methedrine, whose psychotonic action was first discovered in 1938, produced on intravenous injection (30 mg.) a state best described as "methedrine shock," with raised blood pressure as well as psychological effects. It was twice as powerful as benzedrine. The sodium barbiturates were "psycholeptic," producing a lowering of intra-psychic tensions, depressing the psychological tone; methedrine was "psychogogic," increasing intra-psychic tension and acting as a stimulant. Professor Delay was particularly interested in the psychosomatic effects of narco-analysis—that is to say, the exploration of the somatic behaviour, the emotional language of the *soma* as evidenced by tics, coughs, praecordial pain, and other manifestations.

Manic and depressive states could be relieved for short periods by sodium amytal.

A stuporous woman aged 42 was brought to hospital following an attempt at suicide. She was completely mute. When given methedrine she became agitated, cried, and with dramatic gestures declared that she had murdered her child. After a few hours the stuporous condition returned. Three days later she was given sodium amytal, and there was complete disappearance of all anxiety. Her mood was one of happiness and warmth. She was now able to give an account of her melancholic state, and she knew that she had not killed her child. By the use of both drugs the underlying pattern of ideas was discovered.

Sodium amytal, by decreasing the anxiety, enabled the patient to externalize the problem, while methedrine, by increasing the anxiety, forced its production. In schizophrenia, Professor Delay said, the presence or absence of catatonic features was important. These, when present, diminished in intensity with sodium amytal, but became more marked with methedrine. When not apparent, methedrine might bring them to light, whereas sodium amytal had no such effect, but facilitated contact with the patient. Psychological tests showed likewise the different actions of these two drugs.

Neurotic States

In the acute neuroses methedrine was of value diagnostically, but even more so therapeutically, its action being rapid and effective where emotional abreaction was the basis of cure. It appeared to be particularly valuable in exploring thoughts already present in consciousness but not freely expressed, whereas sodium amytal was more effective in revealing unconscious forces and in relieving amnesic states. Given together, the results were striking. In other words, methedrine was more useful in those cases in which the patient was unwilling to talk but knew unconsciously what to talk about, and sodium amytal was useful in cases where the patient was willing to talk but did not know what to talk about.

In chronic neurotic states the therapeutic results were not so good. The whole personality was much more deeply involved. Repeated sessions, with or without injections of these drugs, were necessary, since the problem was one of emotional re-education. Methedrine could be used only rarely, but through its "psychogenic" action it might be effective in externalizing conflicts where sodium amytal had failed. This was particularly true of psychasthenic states. There was, however, a risk of habit formation and addiction. Drug addiction could also be treated by combining methedrine and narco-analysis, methedrine being particularly useful in relieving the depressive symptoms resulting from the withdrawal of the addiction drug.

NUTRITION AND FERTILITY

NUTRITION SOCIETY CONFERENCE

A conference on "Nutrition and Fertility" was held on March 5 at the London School of Hygiene and Tropical Medicine, with Professor W. C. W. NIXON presiding.

Dr. J. HAMMOND, F.R.S., discussed the physiology of reproduction in relation to nutrition, and gave many examples of the interaction of endocrine systems, seasonal influences, and nutritional factors in farm animals. The predominant part played by the anterior pituitary in promoting growth and sexual development was emphasized; in cattle deficiency of vitamin A may affect growth indirectly by causing pituitary lesions. In animals with restricted breeding seasons the desire and ability to mate might be delayed either by poor general nutrition or by deficiency of some particular nutrient, but a rich diet, unlike exposure to light, could not bring on the breeding season before its usual time. Experiments on sheep indicated that adequate nutrition during the latter months of pregnancy was essential for the production of large, strong offspring; under-nutrition during the early stages of pregnancy had no serious ill effects on the progeny.

Dr. A. WALTON commented on the wide variations in the amounts of semen produced by different animals, but considered that even in boars producing 750 ml. of fluid per week the loss of nutrients involved was quantitatively trifling, and did not include any unusual factors which could not readily be derived from a normal diet. Mr. J. EDWARDS said that there was little evidence to suggest that the diets given to bulls used in the artificial insemination service in this country were a limiting factor in determining their fertilizing power.

Dr. S. J. FOLLEY spoke on the influence of nutrition on female fertility, with particular reference to endocrine changes. Malnutrition might prevent the normal functioning of oestrus in rats by suppressing the development of the ovaries, which might, however, be stimulated into activity without improving nutrition by the administration of the appropriate hormones. Deficiency of vitamin E, commonly known as the "anti-sterility vitamin" on account of its action in preventing foetal death and resorption in rats, had been reported to cause injury

to the pituitary gland. Malnutrition might also affect the metabolism of the sex hormones by preventing their inactivation. Thus in deficiency of vitamin B₁₂, or in cirrhosis of nutritional origin, the power of the liver to inactivate oestrogens was reduced. In herbivora, interference with fertility sometimes occurred through the ingestion of plants, such as subterranean clover, which contained oestrogenic factors. In this country the adverse effect exerted by spring pasture on the composition of cows' milk might possibly be due to the inclusion of plants with oestrogenic activity.

Malnutrition in Pregnancy

Professor A. St. G. HUGGETT said that experience in communities suffering severe dietary deprivations had shown that both the birth rate and the weight of the babies at birth were greatly reduced. In the siege of Leningrad, when the main item of the diet was 400 g. of bread daily, 50% of the babies weighed less than 2½ kg. at birth. In non-pregnant women severe malnutrition usually caused amenorrhoea. Deficiency of vitamin E in experimental rats brought about the termination of pregnancy, with death and resorption of the foetuses. Vitamin A deficiency also interfered with reproduction. Lack of this vitamin in pigs during the early stages of pregnancy sometimes caused congenital eye abnormalities, which recalled the observation that infection of the human mother with rubella during early pregnancy was often responsible for cataract in the child. Warkany had found that when rats were exposed to deficiency of riboflavin during the early stages of pregnancy their young, among other deformities, had cleft palates and defective ossification. Under-nutrition in the pregnant woman had one good effect in partial compensation for the reduced birth weight of the child; most authorities agreed that the incidence of toxæmia was greatly reduced.

Dr. G. J. M. SWYER pointed out that whereas in many Eastern countries chronic malnutrition was associated with fertility rates so high as to lead to serious over-population, in the West superior levels of nutrition were usually associated with much lower rates of reproduction. Social and economic restrictions might therefore be more important than limited food supplies in checking human reproduction. Experience in Russia, Holland, and Asia during the war, however, indicated clearly that grossly inadequate diets led to widespread amenorrhoea and loss of libido, with a great reduction in the conception rates. In communities where good nutrition was subsequently restored these defects were speedily corrected, while the conception rate tended to rise much above its normal level. The scanty menses and poor powers of reproduction sometimes found in unduly fat women, however, indicated that obesity, no less than semi-starvation, might hinder fecundity. Possibly the excessive fat deposits interfered with the action of oestrogens by removing them from the blood stream. Also obese women often had infections of the cervical canal with *B. coli*; it had been claimed that this condition might be cured, with substantial reduction in body weight, by the adoption of a diet in which sucrose was replaced by lactose. The failure to inactivate oestrogens in vitamin B deficiency might be of clinical importance in causing excessive uterine bleeding, cystic mastitis, and premenstrual tension. Claims that vitamin E was effective in combating male infertility had been contradicted by several workers, although it was possible that the doses given were inadequate. In regard to female fertility Bacharach had claimed that the combined results of early trials provided unequivocal statistical evidence of the value of the vitamin in the treatment of habitual abortion; no valid criticism of this conclusion had yet been advanced.

Mr. A. L. BACHARACH mentioned that the substitution of white flour for "national" flour in the diet of a rat-breeding colony caused anaemia and signs of vitamin E deficiency in the young. He had also noticed considerable seasonal variations in the animals' powers of reproduction which did not appear to depend on changes either in the environmental temperature or in the exposure to light. Dr. E. KODICEK commented on the importance of the "animal protein factors" for reproduction, and Dr. L. J. HARRIS recalled early work by Mapson in which liver was found to contain "physin," a factor which improved the growth of young rats if given to their mothers during pregnancy.

Professor NIXON, summarizing the day's proceedings, hoped that pregnant women would continue to avail themselves of the dietary supplements recommended officially and provided through the Ministry of Food.

INCOORDINATE UTERINE ACTION IN LABOUR

At a meeting of the Edinburgh Obstetrical Society held on Feb. 9, with the president, Dr. E. C. FAHMY, in the chair, Professor T. N. A. JEFFCOATE read a paper on incoordinate uterine action in labour.

Professor Jeffcoate criticized the use of the phrase "uterine inertia" in view of the fact that many cases of incoordinate uterine action were associated with high muscle tone, especially in the middle and lower zones, or with violent spasmodic contractions, or with a constriction ring. The clinical picture was one of prolonged labour with slow dilatation of the cervix, despite the presence of strong uterine contractions and the absence of gross disproportion. Pain was unusually distressing and was felt predominantly in the back. It sometimes assumed a bearing-down nature before full dilatation of the cervix and in such circumstances appeared to arise as a result of spasm of the lower bowel. All degrees of the condition might be found, and, although he had defined it for the purposes of his present paper as developing in the absence of disproportion, yet there was no doubt that, when disproportion was present, incoordinate action of the uterus was particularly prone to occur as a complicating feature.

Professor Jeffcoate then reviewed 101 cases, 62 seen in private practice and 39 in hospital. The incidence in hospital cases was 0.6%. The condition was observed more often in private practice, but it was not possible to work out any very reliable figures of its incidence. The disease was almost entirely confined to primigravid patients, but the aetiological influence of advancing age had been exaggerated. Premature rupture of the membranes did not appear to be a direct cause, occurring in only 22 cases, while the disordered action of the uterus was recognized before rupture of the membranes in 56 cases. Even when the membranes were unruptured the uterine disturbance was sometimes sufficient to affect the foetus. The significance of the occipito-posterior position as a cause of incoordinate action had been confirmed, and delayed engagement of the head in occipito-anterior positions was noted frequently.

The maternal and foetal dangers of this incoordinate uterine action had diminished as a result of the introduction of chemotherapy, better general care, caution over anaesthesia, and a readiness to resort to caesarean section late in labour. Nevertheless, the dangers were still present, although in the two series no mothers died and the foetal loss by stillbirth and neonatal death was no more than 12%. Professor Jeffcoate said that but for caesarean section the foetal mortality might have been in the neighbourhood of 50%.

Remote Prognosis

A further series of cases had been investigated by Professor Jeffcoate in respect of remote prognosis; 140 severe but non-fatal cases requiring caesarean section or forceps delivery during the years 1936-46 were collected, but unfortunately it had been possible to trace only 91. Of these women more than one-third had decided to avoid further pregnancy as a result of their experiences. Only one-half had had further pregnancies. There was little difference between the caesarean section group and that in which forceps had been used in regard to this voluntary infertility, but all the women who had lost their first children tried subsequently to conceive; contraception was practised only by those who had a living child. A few women embarked on a further pregnancy only when promised that subsequent delivery would be by elective caesarean section. In general terms the follow-up showed that in a large proportion of cases the behaviour of the uterus was much more efficient in the second labour, and that whereas caesarean section might be necessary in the first labour there was a good chance of vaginal delivery in the second. The

ease of the second delivery appeared to be to some extent proportionate to the stage of dilatation reached by the cervix at the first labour. When full dilatation had been attained, the second labour was usually easy, even when the first baby had been delivered dead and with difficulty. It was therefore necessary to be cautious in advising elective caesarean section solely for "bad obstetric history."

In the management of disordered uterine action the administration of analgesics and antispasmodics, particularly morphine and pethidine, remained the chief line of attack. Professor Jeffcoate recorded generally disappointing results with the use of intravenous magnesium sulphate, of trinitroglycerin, and of oestrogens. After the intravenous administration of dilute solutions of oxytocin in glucose saline, as advocated recently by Theobald and others, two of Professor Jeffcoate's patients had suffered most severe pain without any change in the nature of the contractions, which remained incoordinate. Tetraethylammonium chloride had been tried in 11 cases, and had appeared in all to produce a strong and sustained uterine contraction, sufficient in one case to cause alarm for the foetus. When this contraction had passed off the patients experienced more frequent and apparently stronger uterine contractions for a period of up to one hour after the injection, but again there was no evidence of any alteration in the nature of the contractions, and in two cases constriction rings persisted.

Professor Jeffcoate briefly discussed the part played by nervous and emotional factors in the production of incoordinate uterine action. He was critical of the belief that fear and emotional tension were important in the aetiology in view of the fact that incoordinate uterine action did not recur in subsequent deliveries, even in those cases in which the first labour had been sufficient to daunt the stoutest heart. He thought that an unnatural resistance of the soft tissues of the lower part of the uterus might be found more important than neuromuscular imbalance resulting from fear. Professor Jeffcoate concluded by offering a classification of inefficient uterine action under the headings of (a) inertia proper, (b) incoordinate uterine action, and (c) cervical dystocia.

Professor Jeffcoate's paper was discussed by Dr. JOHN STURROCK, Dr. W. F. T. HAULTAIN, Professor KELLAR, Dr. HECTOR MACLENNAN, Dr. C. D. KENNEDY, Dr. T. M. ABBAS, Dr. J. A. CHALMERS, Dr. A. S. DUNCAN, Dr. W. I. C. MORRIS, and the president.

HEALTH CENTRES

In our account of a discussion on "Health Centres" at a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on March 7 (*Journal*, March 19, p. 494), Mr. W. T. DURNFORD, the architect, was misreported. Describing the new L.C.C. health centre at Stoke Newington, the architect is stated to have said that allowance would also be made there "for a certain number of private patients." What Mr. Durnford actually said was: "With 4,000 patients permitted at present, some overcrowding might result, but this number will no doubt be reduced in time, and the health centre was planned on the assumption that the number of registered patients per doctor might stabilize at 2,500, leaving a number of patients in the area to continue attending at private surgeries."

THE KING'S HEALTH

Uneventful Recovery

The following bulletin was issued from Buckingham Palace on Monday, March 21:

"The King's recovery from his operation has been uneventful. Instrumental tests have confirmed the substantial improvement in the blood-flow to the right foot, which had already been observed clinically after the operation."

MAURICE CASSIDY.
THOMAS DUNHILL.
HORACE EVANS.

J. R. LEARMONTH.
J. PATERSON ROSS.
JOHN WEIR.

Correspondence

Occupational Diseases of the Lens and Retina

SIR.—Professor Grey Turner (March 19, p. 497) is not quite correct in saying that Dr. William Robinson's communication received a "lukewarm reception." It was largely due to it that glass-workers' cataract was added to the schedule of diseases notifiable under the Employers' Liability Act. The Glass-workers' Cataract Committee of the Royal Society, of which I was then secretary, made a special visit to Gateshead to interview Dr. Robinson on the subject.—I am, etc.,

Leeds.

J. HERBERT PARSONS.

Classical Caesarean Section

SIR.—The lower-segment section was being performed at the Rotunda Hospital in 1909 when I was an assistant—i.e., 40 years ago. Professor J. Chassar Moir (March 5, p. 409) states it was introduced into "this country" 28 years ago. From an obstetrical point of view we consider that Great Britain and Ireland are one, and so I feel he is incorrect in the date he mentions for the introduction of the operation. Everyone agrees that the lower-segment operation should be done in nearly every case where caesarean section is indicated, but, as pointed out by several of your correspondents, there are exceptional instances where the classical operation must be the choice, and where the mentality of the obstetrician is still above suspicion.—I am, etc.,

Dublin.

BETHEL SOLOMONS.

Proguanil and Falciparum Malaria

SIR.—The recent criticism of proguanil ("paludrine") as a therapeutic agent in falciparum malaria is tending to obscure the fact that the drug when used in adequate dosage does give rise to radical cure of many strains of *P. falciparum*.

Over the last three years in Liverpool we have treated many uncomplicated cases of falciparum malaria with proguanil without reinforcement (100 to 300 mg. proguanil twice daily for 10 days). The disappearance of the parasites and the subjective improvement of the patients have been satisfactory in all cases. Follow-up has been difficult owing to the fact that most of our patients have been merchant seamen, but following the recent work on the Lages falciparum strain we made a special effort and have managed to trace the subsequent history of 30 patients, the majority of whom had primary infections contracted in West African ports ranging from Dakar to Victoria. Three of these were followed up for 6-7 months, ten for 8-24 months, and the rest for 2-4 years.

There have been no relapses after treatment. These figures are small, but they surely indicate that over a fairly wide range of strains falciparum infections respond well to adequate proguanil treatment and that the likelihood of relapse in a random sample of strains is small.

Sir Gordon Covell and his colleagues (Jan. 15, p. 88) have demonstrated the failure of proguanil to bring about radical cure in neurosyphilitics infected with the Lages strain, and have pointed out that there is a good deal of other criticism of the drug in the treatment of falciparum malaria. Some of these failures with proguanil have resulted from the inadequate treatment originally recommended (as one of us (B.G.M.) observed particularly in British West Africa), but genuine failures have undoubtedly been reported. It may therefore be advisable in view of the serious nature of falciparum malaria to reinforce proguanil in routine treatment with mepacrine, as suggested, especially in areas such as the West Coast of Africa where there may be non-reactive or resistant strains—some of the latter possibly developing as the result of previous inadequate treatment. We believe, however, that in the majority of uncomplicated cases proguanil unaided will both cure the clinical attack and give rise to radical cure.

Sir Gordon Covell's comments (Jan. 29, p. 192) on your leading article on proguanil are fully justified. On suppressive and therapeutic dosage toxic side-effects are of no importance.

In fact, as Afridi has pointed out, many patients have a very decided feeling of well-being while taking the drug.—We are, etc.,

Liverpool.

B. G. MAEGRAITH.
W. H. H. ANDREWS.

Treating the Aged Sick at Home

SIR.—I would like to draw your attention to a small omission in your excellent report (March 5, p. 408) of the recent meeting of the Medical Society for the Care of the Elderly.

When Dr. Brooke has received a report from his social worker he then arranges in many cases to meet the practitioner concerned to discuss the patient with him. Your report of the meeting gives the impression that the work is done by the social worker rather over the head of the general practitioner. I am sure this is neither the intention of the social worker nor the strict truth.—I am, etc.,

London, S.W.3.

ANULREE,
Chairman of the Medical Society for
the Care of the Elderly.

Punch Prostatectomy

SIR.—It was refreshing to read the interesting article by Mr. H. T. Cox on punch prostatectomy (March 5, p. 386). As the writer states, it is a pity that transurethral resection has received so little attention in this country, and the reason undoubtedly is the difficulty of learning and teaching an operation where the operator alone has the operative field in view. Once the technique is mastered, however, a perfectly performed transurethral resection of the prostate gives great satisfaction to both patient and surgeon.

No other operation can offer the patient so many advantages, but I must stress that it must be done perfectly. I think it is a pity that Mr. Cox laid so much emphasis on the adjective "subtotal" in connexion with resection; the more completely the obstructing tissue is removed down to the prostatic capsule the better the results, and most of the poor results of transurethral resection, such as haemorrhage, sepsis, and "recurrence," can be attributed to tissue left behind. As he mentions, in poor-risk cases the operation can safely be done in stages until the capsule is exposed, so that it is very rarely necessary to do a permanent suprapubic cystostomy.

The mortality rate for transurethral resection of the prostate by the punch method at the Mayo Clinic has for many years been around 1%. While working in another private clinic in the United States I performed the operation on a series of over 100 cases with no deaths, but here in Newcastle-upon-Tyne, where we have a large proportion of poor-risk public cases, we have never bettered 4%. It is evident that the better physical state of the private cases goes far to influence results.

Modern transvesical and retropubic prostatectomy offer little hazard in good-risk cases, are easily learned, and are more readily available to the general surgeon. Transurethral resection, although a more highly specialized procedure, offers to both good and poor risks the advantage of a "non-cutting" operation, with shorter hospital stay and quicker convalescence.—I am, etc.,

Newcastle-upon-Tyne.

JOHN SWINNEY.

Plasma-cell Mastitis

SIR.—May I comment on the recent correspondence in your columns on Dr. Max Cutler's article on plasma-cell mastitis (Jan. 15, p. 94) in order to make the point that the condition is rather an uncommon type of histological response in a common group of disorders of the breast, primarily involving the large ducts near the nipple and areola? The frequency of the disorders is to some extent concealed by the relative paucity of literature on the subject, probably due to the fact that the troubles they cause are often minor and self-limited.

If I may attempt to collect up some of the scattered threads, the underlying pathology would appear to be either atrophy of the breast at the menopause or hyperinvolution after lactation, so that the large ducts radiating from the nipple are left thinned and dilated. Sampson Handley had a beautiful illustration of the naked-eye morbid anatomical picture of the condition in his article on the breast in Choyce's *System of Surgery* (1932 edition), although concealed under the omnibus

title of "chronic mastitis." Sometimes the dilated ducts, while causing no symptoms, can be felt clinically, giving rise to the clinical picture which has been graphically described by Bloodgood¹ as varicocele of the nipple. Sometimes serous fluid accumulates in the dilated ducts; at other times the fluid and shed epithelium stagnant in the ducts tend to form an inspissated yellowish material, often resembling pus, which may discharge spontaneously or be expressed from the nipple. In either case the condition may lead to the patient presenting herself to the doctor as a case of discharge from the nipple.

Occasionally, but rarely, the inflammatory fibrosis around the stagnant ducts leads to retraction of the nipple—a feature which in the old terminology of breast disease used to be regarded as the exceptional example of the occurrence of nipple retraction in "chronic mastitis." In all the above examples there may be no palpable mass. But if there is sufficient inflammatory infiltration around the stagnant ducts a mass may be palpable clinically which has to be distinguished from other breast masses, if necessary by biopsy. The clinical picture is that of a predominantly periareolar mass, sometimes, but not always, with redness, tenderness, and other clinical inflammatory signs, the benign nature of which is often manifested by signs of its partial resolution.

There are two main histological pictures. The first is that of periductal mastitis,² of which Culter's plasma-cell mastitis would appear to be a histological sub-variety. Mr. Colin D. L. Cromar (Feb. 26, p. 363) notes also the existence of intermediate grades in which plasma cells, although present, do not predominate. The other picture is one which Professor R. W. Scarff, of the Bland-Sutton Institute of Pathology of the Middlesex Hospital, has demonstrated to me both in personal cases and in those of colleagues; in this the inspissated, cheesy, and presumably fatty contents of the duct have burst through the degenerated duct wall and excited in the surrounding tissues similar histological reactions to those met with in fat necrosis—a picture apparently also noted by Mr. Cromar.

The above different clinical pictures may of course be combined, so that a single case may show, for example, both a nipple discharge, a mass, and nipple retraction. It is difficult to find a term to cover the whole group, but I would suggest that to emphasize the most important common pathological feature the term "duct stagnation" might be used. Suffixes such as "duct stagnation with periductal mastitis," "duct stagnation with periductal fibrosis," "duct stagnation with nipple discharge," might be added to emphasize the predominant clinical and pathological feature of the particular case.—I am, etc.,

London, W.

DAVID H. PATEY.

REFERENCES

- ¹ *Surg. Gynec. Obstet.*, 1923, 36, 486.
- ² Geschickter, C. F., *Diseases of the Breast*, 1943. Philadelphia.

Blood Changes in Luminizers

SIR.—Dr. Ethel Browning (March 12, p. 428), in discussing blood changes in luminizers, makes the following statement:

"In the early stages the one consistent sign of overexposure is an absolute and progressive leucopenia, with a relative lymphocytosis causing an associated neutropenia or in some cases with a lymphopenia. This sign has been conspicuously absent in the luminizers examined between 1940 and 1947. The deviations in their blood picture suggest on the contrary a hyperstimulative effect, which appears to be produced by a mode of action entirely different from the depressive effect on the bone marrow of external gamma radiation."

Surely the findings of this paper are in accordance with the experience of all workers with x or gamma radiation. Chronic occupational exposure to these radiations produces the following effects on the blood:

1. The early responses are (a) an increase in the red cell count and in the haemoglobin value—both changes being very slight and associated with a slight rise in the colour index; and (b) little variation in the total white count but a relative lymphocytosis—up to 50% of the total white count. This early response is found in all workers with these radiations and occurs even if the radiation received is well within the accepted tolerance dose.
2. Later stages which occur include (a) leucopenia and a relative lymphopenia (when this occurs the worker should be removed forthwith from all exposure to any of these radiations); (b) still little change in the red cell count—the colour index being still slightly

raised; terminally the red cell count and haemoglobin values fall, by which time the worker is probably doomed to a severe and rapidly progressive aplastic anaemia.

These changes emphasize the absolute necessity of performing regular white and red cell counts on every worker exposed to these radiations. Only by this means is it possible to differentiate a normal count from one which has previously shown the earliest stages of response to radiation and is now falling into the later and dangerous stage. There are so many variations in each individual person that again one must differentiate by these repeated counts minor variations due to intercurrent ailments.

The results of the survey by Dr. Ethel Browning surely indicate the efficiency of the measures taken to protect these luminizer from any harmful dosage of radiation. Had they shown absolute leucopenia or relative lymphopenia, then there would have been serious cause for alarm and revision of protective measures.—I am, etc.,

Worcester

ANTHONY A. VICKERS.

Ankylosing Spondylitis

SIR.—Dr. K. Sicher in his letter (March 12, p. 455) states, "The earlier the diagnosis is made the greater the success." He also emphasizes the value of a high total skin dose (2,500 r) of x rays. Our experience in the British Legion Unit of Rheumatology, and later when it became the Royal Free Hospital Unit of Rheumatology, is in full support of both these statements.

Drs. Gilbert Scott and F. Herniman-Johnson (March 12, p. 456), and Dr. N. R. W. Simpson and Surgeon Lieutenant C. J. Stevenson (Feb. 5, p. 214), all advocate the value of early x-ray examination of the sacro-iliac joints. So diagnostically significant are the x-ray appearances that I recommended in a recent report to the Director-General of Health, New Zealand, that radiological changes in the sacro-iliac joints could be made a proper subject of notification. I gave the opinion that this course would ultimately lead to earlier recognition, and consequently earlier treatment, of this crippling disease—a disease which appears to select the most normal healthy physiques and youths for its inroads. It should ultimately be possible to bring the principles of mass radiography to the sacro-iliac joints of all recruits, and possibly other categories, and so arrest this disease in its most responsive phase.—I am, etc.,

London, W.1.

C. B. HEALD.

Occupational Therapy

SIR.—In a review by Dr. Donald Stewart (March 5, p. 397) of a recently published book on occupational therapy the reviewer seems to have a misconception of the practice of occupational therapy. It is stated that "physiotherapists will be inspired to demand better accommodation and equipment . . .", that "those sections of the book on the treatment of special disabilities will be of wide help to physiotherapists." Whereas the physiotherapists, except for a few doubly qualified people, have not got the knowledge to practise occupational therapy satisfactorily.

The physiotherapist is more concerned with individual or group muscular action rather than with the more widespread physiology which is embraced in the planning and completion of a complicated set of movements. It is the physical medicine specialist, the occupational therapist, or an interested physician who is more likely to be concerned in the principles of occupational therapy, and not the physiotherapist.—I am, etc.

Edgware, Middlesex.

J. D. THOMPSON.

Self-administered Trilene Analgesia

SIR.—I feel that Dr. R. W. Cope (March 12, p. 454) and others who oppose the use of "trilene" by midwives are unduly apprehensive. No therapeutic agent which is used to relieve pain can be said to be completely safe at all times and under all circumstances.

Gas-air machines can get out of order and give too high proportion of gas to air, thus producing asphyxia. But cannot an apparently normal confinement "get out of order"? Does the midwife never have to send for medical aid? Even when the midwife sends for medical aid, does the young practitioner never ask the midwife what to do? I did many times, and will

very glad to take the midwife's advice. The midwife is trained to recognize the abnormal and to act skilfully in emergency.

We must acknowledge that the midwife is a colleague, and a very highly trained colleague too. She is not a half-witted subordinate, untrustworthy or unskilled. Most country doctors quite contentedly trust the midwife to administer chloroform anaesthesia for an instrumental delivery. And the country midwife soon becomes a very good anaesthetist from necessity. I have no doubt that there are far more fatalities during intravenous anaesthesia administered by a registered medical practitioner under favourable circumstances than occur under chloroform anaesthesia given by the midwife in country practice under most unfavourable conditions.

We are losing all sense of proportion in this argument as to what midwives should or should not use. The simple truth is that any recognized and well-established technique of pain relief is reasonably safe in the hands of those who have been trained to use it. It is equally unsafe in the hands of those who are untrained, be they medical practitioners, midwives, or motor drivers. Misfortune comes to the most skilful practitioner. In one hospital at which I worked two patients lost their arms following intravenous anaesthesia, given by a professional anaesthetist on the staff of a London teaching hospital, in a period of three months.

Having regard to the enormous increase in anaesthetic mortality and morbidity over the last twenty years we are in no position to throw stones at the midwives or to tell them that they are not to be trusted with pain-relieving drugs. Mr. F. Neon Reynolds (Sept. 25, 1948, p. 620, and Oct. 23, p. 671) and Dr. J. T. Hayward-Butt (Feb. 26, p. 364) have my support in strong measure.—I am, etc.,

New Barnet, Herts.

JOHN ELAM.

Trilene in the Oxford Vaporizer

SIR,—Dr. P. S. A. Heyworth's memorandum (March 12, p. 441) on the use of "trilene" in the Oxford vaporizer in the hands of midwives is of great interest to those of us who after qualifying aspire to practise domiciliary obstetrics.

For forceps delivery and other procedures the use of chloroform appears to be universal amongst general practitioners to-day, carrying out the induction themselves and handing over to the midwife for maintenance. Yet, as a final-year student who has completed a course in anaesthetics, I have yet to use or see used a drug which is apparently to be my constant standby in the years to come; and this lack of experience is not for want of pestering my seniors for opportunities to become acquainted with it.

From the report on Dr. Heyworth's 1,400 obstetric cases in which trilene was administered in the Oxford vaporizer it seems that this technique may well enable those of us who lack experience of the "rag-and-bottle" to face obstetric procedures with as much confidence as our forerunners. Trilene is a drug which we have ample opportunities of using during our clinical training both for first-plane anaesthesia and for analgesia in obstetrics. If its limitations for domiciliary use—i.e., its low volatility—can be overcome by the use of the Oxford vaporizer, we have surely a versatile and portable addition to our armamentarium.

Another contributor to the *Journal* has spoken of fatalities due to vagal inhibition during trilene anaesthesia. That this may form the basis of an argument against allowing midwives to use the drug is admitted. But surely there can be no questioning the lethal potentialities of a chloroform bottle in the hands of an inexperienced practitioner, and it is for this reason—and with a very personal eye for the future—that I express the hope that Dr. Heyworth's technique will be given the widest possible trial.—I am, etc.,

London, W.2.

JOHN A. RICHARDS.

Taking Children's Temperatures

SIR,—Being a Continental doctor I am astonished—and a little amused—about the discussion in the *British Medical Journal* on rectal temperature-taking. Nobody on the Continent—save perhaps a few "psycho-analysts"—would consider taking the temperature of small children anywhere else but in the rectum. "Nobody" does not refer to doctors only, but also to mothers of all classes, because "temperature-

taking" on the Continent is part of a mother's task if the infant seems "off colour." Whenever a doctor is called to a young child he is sure to ask the mother, "What is the temperature?" I have never met a mother who would either say that she has not a thermometer or that she does not know how to take the temperature or how to read it. That was a completely new experience for me when I started practising in this country.

But Continental mothers always take the "rectal" temperature of their young children. I do not suppose that a baby who has all his bodily needs cared for by the mother (including the care of his anal region) would perceive this act as "uncalled-for interference with parts which he prefers to be left alone."

For a young child, his several bodily orifices are of similar importance and of similar "sentimental" value. But things put in the mouth are expected to provide some sort of satisfaction in so far as they can be sucked and swallowed. From this point of view a thermometer proves a very unsatisfactory and frustrating instrument if put into the mouth and is far more likely to create a psychological upset than if it were inserted into the anus, where it only evokes the desire for expulsion, which will—after one or two minutes—be satisfied.—I am, etc.,

London, N.W.3.

LISE GELLNER.

Sexual Offenders

SIR,—The Report of the Joint Committee on Psychiatry and the Law appointed by the B.M.A. and the Magistrates' Association (*Supplement*, March 12, p. 135) is valuable inasmuch as it gives official recognition to what psychiatrists have stated for years. For example, I wrote in my book nine years ago:

"We would seriously state that imprisonment aggravates rather than cures homosexuality. Firstly, we have shown by the work of Jenkins that segregation from the opposite sex in rats tends to produce homosexual reactions and that these reactions do not always disappear after restoration of normal conditions. We have, however, much stronger evidence that such segregation is harmful. For example, Fishman investigated the sexuality of a prison population and found that as many as 30-40% were homosexual. He stated that the worst thing was that many young men reacted to prison by being initiated, in the abnormal atmosphere, into homosexuality. Although we have no statistics, experience of homosexual patients who have served prison sentences is that no improvement in their illness or behaviour results without psychotherapy."

It is nice to have official, if tardy, recognition of such facts. It is a pity, however, that the medical members did not have wider experience of the practical problems of paraphilia: their views appear to be based on theoretical rather than practical knowledge. For example, they perpetrate the old view that endocrine abnormality may be the basis of homosexuality. There is absolutely no evidence that this is so, although glandular disease may be a minor concomitant. The committee mentions "true perversion," but what is meant? It omits to define what entity it is describing. Neither is it stated what is supposed to be an "apparent perversion" or a "minor perverse trait." It implies that these supposed entities (which are extremely doubtful) can be differentiated by the ease with which they respond to treatment. Yet I have cleared up what has appeared to be a "true perversion"—if by that the writers mean someone who obtains sexual pleasure in an unbiological manner (i.e., without the possibility of fertilization because of abnormal relationship)—in a few sessions, whereas what has appeared to be an "apparent perversion" has proved obstinate and difficult.

The statement that treatment rather than imprisonment is the best thing for both the public and the offender is one with which everyone must agree. The problem from the practical point of view is, however, that there are so few places where it can be obtained. The ordinary psychiatric out-patient department is most unsuitable, and the few clinics where psychotherapy is available are overwhelmed with neurotics. In any case the treatment of the pervers is a specialized matter. If he cannot afford private treatment it is almost impossible for him to be cured.

I think that the time has come when an institute of psychosexual diseases should be established in London and these unfortunate people be given a real chance of cure. Otherwise

it is but a case of punishing a man for being ill without giving him the means of being cured. If I may alter Omar Khayyām:

Oh, Thou, who didst with Pitfall and with Gin
Beset the Road I was to wander in,
Thou wilt not with stern Legislation round
Enmesh me, and impute my Fall to Sin?

—I am, etc.,

London, W.1.

CLIFFORD ALLIN.

Institute of Social Psychiatry

SIR,—May I draw your attention to the fact that in your leading article on Group Psychotherapy (Feb. 5, p. 227) you made no reference to the pioneer work or publications of the Institute of Social Psychiatry?

This Institute is the outcome of the work carried out by Dr. J. Brier and others during the last two or three years. A book entitled *Therapeutic Social Clubs* was published for the Institute of Social Psychiatry by H. K. Lewis & Co., Ltd.; it was edited by Dr. J. Brier and contained an introduction by Dr. E. B. Strauss. The following articles have also been published:

"Psychotherapy in Mental Hospital Practice" (*J. ment. Sci.*, 1940, 86, 928), "Group Psychotherapy" (*British Medical Journal*, 1942, 1, 214), "A New Form of Group Psychotherapy" (*Ment. Hlth Lond.*, 1944, 5, 23), by Dr. J. Brier. "Group Psychotherapy of War Neurosis" (*Lancet*, 1943, 1, 204), by Dr. D. Blair; and "Mass Psychotherapy" (*Lancet*, 1940, 2, 769), by Dr. E. N. Snowden.

No reference was made in your leader to any of the above, which, as you will note, are amongst the earliest publications on this subject, but I feel sure that this must be an oversight on the part of the writer and that he would not wish to exclude mention of some of the pioneer work in this field in England.—We are, etc.,

JULIAN SNOW.

Hon. Secretary, Board of Governors,
Institute of Social Psychiatry

NOEL HARRIS.

Chairman, Academic Committee
Institute of Social Psychiatry

London, N.W.3

Anuria

SIR,—I thank Dr. J. F. Heggie (March 12, p. 454) for replying to my letter (Feb. 12, p. 282); but he thinks I have misread him and thus misinterpreted his meaning. I quoted him accurately, and I thought sufficiently; but even now he does not answer my criticism. He states that the intralobular arteries are "very fine straight branches," whereas the interlobular arteries in the juxtamedullary region of the cortex are large, so that when a vasoconstriction occurs the former are the more affected.

This is not an explanation: it is a statement, and I query the statement. And he creates a difficulty. He writes: "This abrupt division of comparatively large arteries into very small ones which are really end-arteries (since they give off the different glomerular arterioles) provides for the relatively high pressure necessary for filtration in the glomerular vessels." But I should have thought that if a relatively high pressure of moving blood within glomerular capillaries is necessary for the appearance of water in Bowman's capsules the arteries and arterioles supplying those glomeruli would have been relatively big, and the juxtamedullary interlobular arteries (or the arterioles in which I suppose they end), supplying juxtamedullary glomeruli (often degenerate, according to Trueta and his co-authors¹), would have been relatively small.

Unfortunately Dr. Heggie has not referred to the second part of my letter in which I pointed out, quoting Brodie, that the secretion of urine has a profound effect on the flow of blood through the kidney. It is the key to an understanding of puerperal anuria and to the very marked oliguria of eclampsia, as I showed in a paper published in 1929.² In that I stated that "the distension of the cortical tubules is the primary change." Evidence of this was given on Jan. 21, 1949, at a meeting of the Section of Obstetrics of the Royal Society of Medicine, when sections of the kidney from two different cases of puerperal anuria obtained from the living patient were displayed on the screen: the distension of the cortical tubules was the overwhelming feature. This demonstrates that the

anuria is not due to a primary constriction of peripheral cortical arterioles—the urine comes from the blood, and if no blood reaches the glomeruli and the tubules no urine can be formed and no distension of tubules could occur. There is another point to mention. On March 2, 1949, at a meeting of the Section of the History of Medicine at the Royal Society of Medicine, Professor Winton stated he had repeated Brodie's experiments and had confirmed his results: he also made some other valuable statements bearing on this question.

The evidence is—and successful treatment supports it—that cortical necrosis occurring in association with puerperal anuria is simply the result of an intrarenal obstruction to the exit of urine. Obviously if the kidney is so compressed that the urine formed in the cortex cannot traverse Henle's tubules, with their hairpin corners in the medulla, the same effect as that caused by clamping the ureter in the experimental animal (or by its ligation in man) will occur—the kidney will become almost bloodless. That such a compression of the kidney occurs in concealed accidental haemorrhage obstetricians may perhaps allow. It is the primary change. After delivery (emptying the uterus) other forces operating within the kidney, to which I referred in my 1929 paper, come into play, explaining the tendency of the anuria to persist.—I am, etc.,

Rugby

R. H. PARAMORE.

REFERENCES

¹ *Studies of the Renal Circulation*, 1947.

² *J. Obstet. Gynaec. Brit. Emp.*, 1929, 33, 349

Renal Lesions Associated with Pregnancy

SIR,—In your report of the meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine (Feb. 12, p. 281), I am quoted as describing the morbid anatomy of "uraemic cortical necrosis." I should like to point out that I never used this phrase, and, in consideration of the context of your report, the term "lower nephron nephrosis" should be substituted. Since I argued that bilateral cortical necrosis and lower nephron nephrosis were distinct pathological entities the distinction is of some importance.—I am, etc.,

London, E.1

J. F. SMITH

POINTS FROM LETTERS

Occupational Therapy and Physiotherapy

Mrs. Z. C. GROUNDERS-PRACT (Edinburgh, 4) writes: I read with interest the review by Dr. Donald Stewart of *Principles of Occupational Therapy* by Willard and Spackman (March 5, p. 397). I am glad to learn of his enthusiasm for work of this nature. It is, however, somewhat discouraging to realize that even he fails to appreciate the distinction between occupational therapy and physiotherapy. This is clear from his suggestion that "the author's description of the ideal organization of a hospital department of occupational therapy may well inspire physiotherapists in Great Britain to demand better accommodation and equipment and a more important place in the hospital hierarchy." May I call your readers' attention to the fact that in Great Britain there are separate training schools both for occupational therapists and physiotherapists, and that a diploma in occupational therapy is awarded after satisfactory completion of a course of 2½–3 years' duration at a training school recognized by the Association of Occupational Therapists in England and the Scottish Association of Occupational Therapists in Scotland?

Value of Clinical Records

MR. GEORGE JENNINGS (Huddersfield) writes: The greatest experiments in the realm of medicine are conducted by clinicians—G.P.s and specialists—in the treatment of their patients. In many of our hospitals, owing to inadequate records and classification, invaluable evidence is lost every day—evidence which in the hands of competent investigators might be of inestimable value in assessing the value of treatment. In planning surgical treatment one is continually wondering what would be the fate of, say, 1,000 patients in ten years if such and such a treatment were carried out. It is idle to theorize or to plan purely according to mechanical considerations when the answer to such a question should be available. Every patient undergoing an operation should have an account of his complaints and clinical condition; a special operation form attached to the above notes must contain the pathological findings and nature of the operation. Reports of x-ray and laboratory findings should be appended. If this can be done, provided no attempt be made to turn the house-surgeon into a clerk, then untold advantages may accrue. Encouragement would be given to the writing of good notes, surely the handmaiden of good clinical work. This matter should surely be planned and executed on a national basis by the profession.

Obituary

J. R. T. CONNER, M.D.

Dr. J. R. CONNER, who was editor of the *Clinical Journal* for more than thirty years, died on March 16 at the age of 87. John Richard Tarrant Conner was a student at Queen's College, Cork, and St. Thomas's Hospital. He took his M.D. with honours in 1882, and from then onwards his chief interests lay in medical journalism. For over thirty years he was in sole editorial control of the *Clinical Journal*. He pursued a policy of providing his general practitioner readers with articles and information that were essentially clinical and often written by well-known specialists. If he could not always obtain original articles he reprinted the best from other journals, and he abstracted widely and well under the heading of "Medical Progress." The standard he maintained was high. He was an individualist and knew just what he wanted. He had very definite ideas about how an article should be written, and used his blue pencil freely. Some of his contributors objected, but there could be no denying that by the time he had finished with it the article was improved. His indexing, of which he made a specialty, was a model of accurate detail.

Though he lived for the *Clinical Journal* he had other interests. For many years he was the London correspondent of the *Journal of the American Medical Association*, and he contrived to provide an informative column at almost weekly intervals. Many English readers of the *J.A.M.A.* found his "London Letter" one of its most interesting features. Latterly he had much to write about the working of the National Health Service Act, but he tended to allow his political sympathies to run away with his judgment. He was an uncompromising anti-socialist and a Southern Irishman who loved an argument. He must have enjoyed writing his last letters to America every bit as much as they were appreciated over there, for he recounted with vigour and obvious relish the teething troubles of the Act.

For a man of 87, J. R. Conner—he omitted the T. in his signature—was remarkably active both physically and mentally. He read widely and had a retentive memory. He was surprisingly well informed on trends and progress in modern medicine. To talk to him was to improve one's knowledge, and he delighted in making the long journey to the West End of London from his home in Greenford in order to meet and discuss things with a friend. He feared neither inclement weather nor the busiest traffic.

He died as he would have wished, suddenly and in full harness. He leaves a widow—a woman of Irish charm, who has been a great help to him—and a son.—W.B.

Dr. R. Y. Stones, Chester, writes: It is with sorrow that one heard of the passing of that great athlete and sportsman, A. W. Wakefield. In the obituary notice of March 19 (p. 504) no mention is made of his swimming. In this he was proficient, and represented his hospital and the United Hospitals Swimming Association, of which he was captain, in water-polo, diving, and racing. He was a member of the Amateur Diving Association. The tribute mentions that he was a severe disciplinarian. This discipline included sternness to himself, as was shown when he broke his olecranon through diving, I believe, into unexpectedly shallow water. He had the bogue wired, and within a day or two he was boxing—"A.W.'s" method of preventing stiffness in the joint.

The Services

AUXILIARY R.A.M.C. FUNDS

The annual general meeting of members of the Auxiliary R.A.M.C. Funds will be held at 11, Chandos Street, London, W., on Monday, April 4, at 5.30 p.m., when the report and accounts for 1948 will be received and officers and auditors for 1949 appointed.

Colonel (Local Brigadier) A. G. Harsant, O.B.E., late R.A.M.C., has been appointed Honorary Surgeon to the King in succession to Colonel James Biggam, M.C., retired.

Medico-Legal

ACTION FOR NEGLIGENCE IN DIAGNOSIS

Mr. J. B. Hunter's Appeal Allowed

Mr. James Forbes Whiteford, an American citizen and a consulting engineer, was awarded £6,300 damages in an action¹ in which he alleged negligence against Mr. John Bowman Hunter, M.S., F.R.C.S., and Dr. Seymour R. Gleed, a medical practitioner of Finchley. Mr. Justice Birkett dismissed the action against Dr. Gleed, holding that no negligence could be attributed to him. Mr. Hunter subsequently appealed against the decision of Mr. Justice Birkett, and Mr. Whiteford cross-appealed against the dismissal of Dr. Gleed from the case. Mr. C. R. Havers, K.C., and Mr. Henry C. Dickens, instructed by Messrs. Hempsons on behalf of the Medical Defence Union, appeared for the defendants; Mr. Richard O'Sullivan, K.C., and Mr. Robert Fortune, instructed by Messrs. Billinghurst, Wood and Pope, for the plaintiff.

Lord Justice Asquith,² in allowing the appeal by Mr. Hunter, said that it was patent from the evidence that Mr. Hunter had been mistaken in his diagnosis of cancer of the bladder on April 5, 1942. It was not, however, every slip or mistake which imported negligence. It was alleged that Mr. Hunter was negligent in not verifying his diagnosis by cystoscopy or by biopsy. On the question of cystoscopy it appeared to the Court decisive that, once it had been decided on April 5 to open the plaintiff's bladder, cystoscopy became entirely unnecessary. On the question of biopsy Mr. Hunter had given three reasons for not resorting to this procedure. His Lordship discussed the arguments for and against biopsy in detail and took the view that Mr. Hunter was not negligent in his decision not to carry out biopsy. It followed that the appeal must be allowed.

Mr. Whiteford's cross-appeal against the dismissal of his action against Dr. Gleed, which had not been strongly pressed, was dismissed. Leave was given to appeal to the House of Lords.

A fuller account of this important judgment will appear in a subsequent issue.

¹ *British Medical Journal*, 1948, 2, 537.

² *The Times*, March 22, 1949.

Medical Notes in Parliament

ANALGESIA IN CHILDBIRTH

On March 15 Mr. BEVAN asked the permission of the House to make a statement on analgesia in childbirth. The debate on the second reading of the Analgesia in Childbirth Bill, which was moved by Mr. Peter Thorneycroft on March 4, was reported in our issue of March 12 (p. 459).

The Minister of Health said that at the end of 1947 more than 7,000 of the 16,000 midwives then practising were trained in the administration of analgesia. During 1948 practising midwives were trained at the rate of 240 per month, and at this pace training would be completed in two years. If the Central Midwives Boards at any time considered that they needed to make further rules in the matter, the boards already had ample powers in the Midwives Acts. The number of cases in which analgesia was administered by midwives had also increased greatly. In 1938 analgesia was administered by domiciliary midwives in England and Wales in less than 1,200 cases; in 1944 it was administered in 5,100 cases, while in 1947 domiciliary midwives were able to give this relief in almost 44,000 cases. Returns for 1948 were not yet complete, but those so far received showed that in the 72 areas to which they relate good progress was again made. In these areas analgesia was administered in 16,500 cases in the six months of 1948 during which the National Health Service was in operation as compared with 9,100 cases in the last six months of 1947. It was the Government's policy and determination to secure that full facilities were provided as quickly as possible for women to have analgesia in childbirth, and much progress had already been made. In so far as it was necessary to ensure that sufficient analgesic apparatus and drugs were provided for the use of domiciliary midwives employed in the

National Health Service, that the apparatus was maintained in a proper state of efficiency, and that facilities for transport were provided, he was satisfied that he had all necessary powers to place a duty on local health authorities in these matters.

Part III of the National Health Service Act required local health authorities to carry out a number of duties relating to local health services, including duties to make arrangements for the care of expectant and nursing mothers and to secure that sufficient midwives were available for attending domiciliary confinements. Local health authorities were further required to carry out these duties in accordance with proposals submitted to and approved by the Minister of Health or, in Scotland, the Secretary of State, who might before giving approval modify them and might at any time require the submission of revised proposals. In submitting their proposals for approval most local health authorities included provisions relating to analgesia. Where they did not do so, or the Ministry of Health thought the provisions were inadequate, the proposals were altered before being approved. Thus duties had already been imposed on local health authorities in this matter.

The National Health Service Acts had placed upon the Minister and the Secretary of State the duty of providing an adequate hospital service, and by reason of this duty an obligation rested upon them to see that proper arrangements were made for the administration of analgesia in their hospitals. Mr. BEVAN added that he was sure that the views spoken with such sincerity in the recent debate would be carefully observed by those authorities, both local health authorities and hospital authorities, which were concerned with the care of women in childbirth, and would create in them also a determination to see that there was no delay or hindrance in making that full provision which was desired.

Mr. THORNECROFT thanked Mr. BEVAN for his statement and gathered from it that the Minister did not regard the Analgesia in Childbirth Bill as necessary. Mr. Thorneycroft questioned whether it was possible by regulation to turn a permissive power into a public duty. The National Health Service Act did not prescribe a duty to provide an analgesia service. He declared he would endeavour to bring the Analgesia Bill into law.

Mr. BEVAN replied that there was no statutory limitation and therefore no need for statutory easement. Limitations were imposed by Nature, by resources, and by the state of medical knowledge. The Minister of Health and the Secretary of State had power to modify, change, and enlarge any duties imposed on local health authorities. That included power to impose the duty of using analgesic apparatus or any other apparatus medically useful in alleviating pain in childbirth. He was not prepared to select out of a general service one matter for priority.

Colonel STODDART-SCOTT asked whether the Minister intended to use his power to place on local authorities a duty in these matters. Was Mr. BEVAN aware that one local authority in Wales—Newport—would not permit a midwife to have a motor-car?

Mr. BEVAN said that in Newport the analgesic apparatus was sent by ambulance. The figure he had given of 240 midwives trained every month in the use of the apparatus was for Great Britain.

Colonel GOMNIE DUNCAN asked for the figures for Scotland.

Mr. WOODBURN said that in Scotland in most maternity cases doctors were available and had powers to use whatever methods were necessary for relieving pain.

Further Debate Suggested

Mr. ERIC FLETCHER on March 17 asked whether Mr. Morrison proposed to give time for consideration of a motion on the Order Paper advocating that the Government should provide time to facilitate consideration of the Analgesia in Childbirth Bill.

Mr. HERBERT MORRISON said Mr. BEVAN had dealt with the matter. Mr. Morrison thought the Minister's statement fully justified. He did not think there would be any advantage in a debate.

Mrs. MANNING pointed out that Government supporters were associated with the Bill and had not withdrawn their names from the motion.

Mr. MORRISON, continuing, said he could not add to what Mr. Blenkinsop and Mr. BEVAN had said in previous discussions.

ARTIFICIAL INSEMINATION AND LEGITIMACY

LORD READING, in the House of Lords on March 16, called attention to the effects of recent judicial decisions on the legitimacy of children. He said the Matrimonial Causes Act of 1937 laid down that wilful refusal to consummate a marriage should be a ground for nullity. It also introduced as grounds on which a marriage could be declared null and void the

ground that one of the parties had been of unsound mind when the marriage took place, or that one of the parties suffered from venereal disease at the time of the marriage, or, in the case of a woman, that she at the time of the marriage had been pregnant by some man other than the husband.

In a case brought in 1942, after the parties had lived together for thirteen years and a child had been born, a petition against the husband was met with the reply that the marriage had never been consummated in spite of the fact that a child had been born which by common consent was the child of the husband and the wife. The husband asked for a decree of nullity, and the judge came to the conclusion that the marriage had never been consummated by actual penetration and that the child had been conceived by an accidental process of fecundation from without. In a second case a child was conceived before the marriage but born after the marriage took place. Seventeen years later the husband filed a petition of nullity on the ground that the marriage had never been consummated because of the wife's wilful refusal. The judge made the decree, with the result that the child, then 17 years of age, was made a bastard.

LORD READING then turned to the separate and more controversial issue of human artificial insemination. He believed it was increasingly practised, and he mentioned the case in November, 1948, of a woman married in 1940 to a man whom she found to be unable to consummate the marriage. That woman, towards the end of 1947, had herself artificially impregnated with the husband's consent and through his agency. She left him in January, 1948, and in September a child was born. Two months later a decree of nullity was granted on the ground of the husband's incapacity. There had been no penetration, but there was a child of the father and the mother, yet the decision of the judge to grant a decree was inevitable as the law stood. Artificial insemination by a donor raised even more complex questions. The view expressed by a legal authority that artificial insemination by a donor constituted adultery required further consideration. It would be an irrational situation if, after artificial insemination by a husband, a marriage could be annulled, whereas extra-marital intercourse of the same kind could be put forward as adultery. In the case of artificial insemination by a donor, whose name, in the declaration made of the birth of a child, was to be put in as the father? It might be that a doctor would find himself involved in a charge of conspiracy as well as of perjury.

The position of the medical profession in this matter was one of immense delicacy and responsibility. He had seen it suggested that artificial insemination by a donor should be made a criminal offence. That would be a fatal error. It would drive the practice underground and force it into clandestine and uncontrolled use. He pressed the Government to appoint a Royal Commission or a Departmental Committee to go into every aspect of this difficult and debatable matter.

LORD BRABAZON OF TARA, who had a motion on the paper calling attention to the social problems resulting from human artificial insemination, referred to the document on the subject which had been issued under the authority of the Archbishop of Canterbury. He said it was axiomatic that a child born as a result of A.I.D. must be illegitimate as it was not the child of the two spouses; but he cited a case in the Supreme Court of New York State in which the child had been declared legitimate and the husband the legal father. It appeared to Lord Brabazon that anyone who wished to be a donor must be a megalomaniac of the first order, and he did not think that in this country many would be found who would consent to be donors. He hoped that if they were discovered they would be ostracized. Children engendered by artificial insemination were as genuinely born as any others and should not be called "test-tube children." He thought it true that such a child was unlikely to suffer psychologically, but there were no real data on which to judge.

A.I.D. as a Criminal Offence

THE ARCHBISHOP OF CANTERBURY said artificial insemination was a practice far less widespread in this country than in the United States, but it was established here on a small scale. Artificial insemination by a husband was, on the whole, justifiable. Artificial insemination by a donor was contrary to Christian standards. All those concerned with A.I.D. accepted that the donor should remain unknown to anybody but the doctor concerned, but when the child was registered and the nominal father registered himself as the real father that was a criminal offence under the Perjury Act, 1911, for which a sentence of seven years' imprisonment might be imposed. This falsity in the declaration of paternity raised legal points connected with titles, estates, interests, or funds. Either the law must be altered to allow relief from perjury to the nominal father or A.I.D. should be made a criminal offence. The doctor assisted at an act which to his knowledge would involve perjury. The Archbishop was perturbed that the Medical

Nearly home . . .

but it seems like miles



Doctors today find that a large number of their patients complain of constant tiredness, of 'finding everything too much', of 'feeling generally run down'. Cases of debility and lassitude caused by present-day conditions are becoming increasingly prevalent. For these conditions 'Vibelan' is of particular value. It counteracts B vitamin deficiencies, containing as it does the principal members of the B group in the balanced proportions which are necessary for effective utilisation of proteins, fats and,

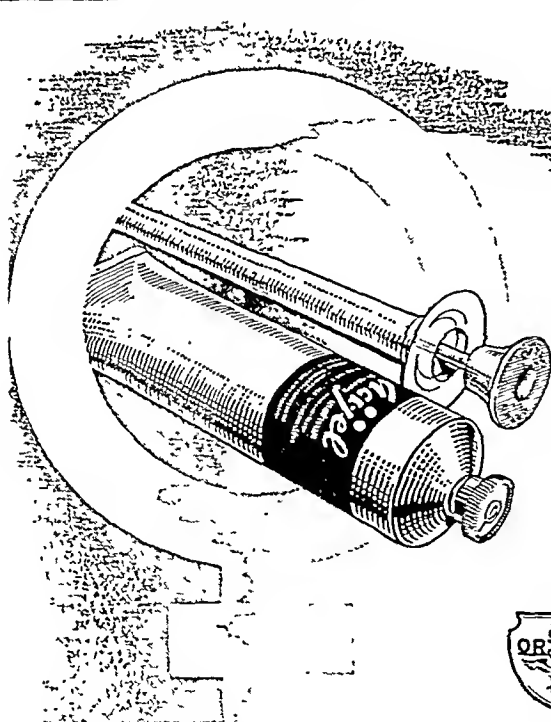
more especially, carbohydrates. Each tablet contains vitamin B₁ 0.5 mg., riboflavin 0.75 mg., nicotinamide 7.5 mg., in a yeast extract base. Four tablets provide the normal daily requirement of these vitamins. 'Vibelan' is available in bottles of 50 tablets. Further details are available on request.

'Vibelan'

VITAMIN B COMPOUND B.D.H.

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1
TELEPHONE: CLERKENWELL 3000 TELEGRAMS: TETRADOME TELEX LONDON

Vib E 5'9



Aci-jel
FOR VAGINITIS

Investigators^{1, 2, 3} characterize a buffered acid jelly as one of the simplest and most direct forms of effective therapy in vaginitis and cervicitis.

Clinically, the re-establishment of a normal vaginal pH (4 to 4.5) proves "extremely useful,"⁴ because it encourages "the elimination of pathologic organisms and the

growth of normal vaginal flora consistent with the healthy vagina."

Aci-jel affords the physician a water-miscible, buffered acid jelly which is entirely non-irritant and may be used with safety over prolonged periods. It is available in 3½ oz. tubes, with or without measured applicator, for professional use or prescription.

Sample and Literature on request.

1. Am. J. Obst. & Gyn. 45:1, 1947
2. Texas State J. Med., 32:1, 1947.
3. J. Tennessee M.A., 35:455, 1942.
4. Med. World, 58:562, 1946.
5. Am. J. Obst. & Gyn., 52:1, 1945.



ORTHO PHARMACEUTICAL LIMITED · HIGH WYCOMBE · BUCKS

Makers of Gynaecic Pharmaceuticals



HEPASTAB FORTE

HEPASTAB FORTE is a highly concentrated extract of liver which has been prepared in our Nottingham laboratories as the result of research conducted by our own chemists in co-operation with clinicians in this country and abroad. It contains all the known anti-anæmic factors of liver, is highly refined, painless on

injection, and highly concentrated. Each 1 c.c. of Hepastab Forte is obtained from 100 G. of liver and is therapeutically equivalent to 4,000-5,000 G. of fresh liver by mouth.

Ampoules of 1 c.c.: single ampoules, boxes of 3, 6 and 12 ampoules. Rubber-capped vials of 10 c.c.



Literature and further information gladly sent on request to Medical Department.
BOOTS PURE DRUG COMPANY LIMITED, NOTTINGHAM, ENGLAND.

S.17



the VITAMIN appetite of the VERY YOUNG



Even the baby weighing less than fifteen pounds needs almost half as much vitamin A as the adult of fifteen stones. In terms of vitamin D, infant requirements are more than *twice* those of the average grown-up. That is why administration of Adexolin Liquid is so often adopted as a routine measure for infants, helping to ensure that their need for these two vitamins is properly met. Twelve drops daily—two or three drops at each feed—are quite sufficient. For the mother, Adexolin Capsules provide a convenient means of supplementing the dietary intake. The simple routine of one capsule daily throughout pregnancy can significantly reduce the risk of infection and lessen the incidence of toxæmia and caries. Moreover, a satisfactory maternal level of Vitamins A and D is clearly of great benefit to the orderly development of *fœtal* tissues.

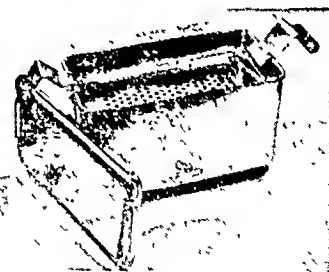
Liquid. Each cc contains 12,000 i.u. vitamin A and 2,000 i.u. vitamin D.
 Capsules. Each capsule contains 4,500 i.u. vitamin A and 900 i.u. vitamin D.



GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX. BYRON 3434



MAW "MINIMATIC" ELECTRIC STERILIZER



- Fitted with safety cut-out to prevent boil-dry damage. Visible warning pilot light.
- Seamless boiler with reinforced base. Resists leakage and warping.
- Removable tray with special safety handles.

Leaflet on request.

S. MAW, SON & SONS, LTD.
 ALDERSGATE HOUSE, NEW BARNET, HERTS.
 Telephone: BARNET SS55 Telegrams: ELEVEN, BARNET

Defence Union should have given advice to medical practitioners concerned in this practice on how to protect themselves professionally against adverse legal consequences to themselves in connexion with this practice. If A.I.D. were made a criminal offence, then no doctor could employ it without losing his professional standing and without himself becoming liable to charge. The only effective way to prevent the practice was to forbid the doctor to employ it. Commenting on a recent case in the Probate and Divorce Division, the Archbishop said that presumably any couple who had children born by A.I.H. and *a fortiori* by A.I.D. could get a nullity decree if they desired it. He contended that where through the impotence of one party there was a mutual surrender of the reproductive organs, though not of the sexual organs, that, surely, was consummation of the marriage. By the same argument, A.I.D. was adultery. Lord Dunedin in *Russell v. Russell* had said fecundation *ab extra*—from another party—was adultery. The suggestion that A.I.D. should be employed to enable unmarried women to bear children was on all grounds to be rejected. The only two countries which had in recent times encouraged this practice were Nazi Germany and Soviet Russia. In the interests of society, of the family, and of the child A.I.D. should not be permitted. The practice became yet more degrading when the semen was derived from what the Medical Defence Union described as a "bureau" or "bank."

Fraud and Secrecy

Lord MERRIMAN said sexual intercourse, in the ordinary sense of the word, was necessary to constitute adultery. How far it proceeded was another matter, but the man and the woman must be personally concerned. A whole range of cases showed that adultery might be regarded as proved though penetration must have been very slight. Once the court got to a state of doubt created by evidence of virginity, a heavy additional burden was thrown on a husband who asserted that adultery had been committed. Artificial insemination was increasing and ought to be diminished. What was to happen in the next generation? The Medical Defence Union said it was prepared to limit the number of inseminations from one donor at one time to 100. This meant that in the practice of one doctor a man might sire 100 boys and girls at one time. What was to happen when these half-sisters and half-brothers fell in love with each other twenty years later? The whole essence of A.I.D. was fraud and secrecy. The undertaking exacted by the Medical Defence Union that no question of property was involved was not worth the paper on which it was written. The sooner the medical profession became aware that by lending themselves to false statements in the register they might become liable to a charge of common law misdemeanour or of conspiracy the better it would be.

Replying to the debate, Lord CHORLEY said that the situation which existed under the Act of 1937 called for treatment. On the other hand, questions of property rights and all sorts of other problems were involved and he would be wrong to undertake that immediate legislation would be introduced. By those who advised the Government on legal problems it was regarded as far from clear that artificial insemination by an outside donor amounted to adultery. The Government agreed with the view that to make A.I.D. a criminal offence would drive it underground. At present the practice was being pursued under medical supervision, which was probably the best which could be devised. To make it a criminal offence would shock a large number of people. The problem was dominated by the question of fertility in marriages, and till the Report of the Royal Commission on Population was published, which would probably be in the next few months, it was impossible to come to any satisfactory conclusion on this matter. Until the Government got that Report it would be wrong to set up a new Royal Commission or Departmental Committee. The Lord Chancellor, Lord Chorley said, thought that questions of legitimacy and inheritance arising from artificial insemination would not be numerous and would be most satisfactorily dealt with by the courts as they arose.

Lord READING remarked that he had seldom heard a more unsatisfactory answer given to a serious debate in the House of Lords.

Lord ADDISON promised that without delay consideration would be given to what had been said in the debate.

Exchange Control Medical Advisory Committee

Colonel STODDART-SCOTT said on March 14 that treatment for some diseases could not be obtained in this country. From time to time medical pioneers who worked abroad were prepared to undertake cases which lesser men would give up as incurable. When a doctor or specialist decided that the only

treatment which would do good was treatment in a foreign country the patient then had to apply to the Exchequer for permission to receive foreign exchange; 914 cases were refused foreign currency for treatment abroad in 1948 although that treatment had been recommended by a doctor or a specialist. The Chancellor always said that he had been advised by the Exchange Control Medical Advisory Committee that foreign currency should not be granted. This committee included ten medical members who each received yearly for their services £500. The House had never been told who composed the committee. Was the reason that it was composed of medical nonentities? Probably it was composed of distinguished consultants. If they were distinguished consultants, why did the country not know who they were? Disclosure would reduce the unrest among members of the medical profession, who disliked to see their recommendations, made after full investigation and examination, turned down by a committee which had never seen the patient.

Mr. DOUGLAS JAY, replying for the Treasury, said there was no question of refusing currency to anyone who as a result would improve his chances of recovery. The question was how to decide which individuals fell into that category. In running an exchange control system that decision had to be made and the Treasury could not make it. The objection to letting the doctor of the individual make the decision was not that anyone questioned the medical facts stated by the patient's doctor. The Exchange Control Medical Advisory Committee accepted those facts from the doctor. Having accepted those facts, its function was to decide whether a case was established for the patient to travel to a specified country in order to obtain special treatment. They should apply common standards in deciding what medical facts justified the journey suggested. The suggestion that the committee should see the patient misconceived the committee's functions. That would be a checking of the veracity of the statement made by the patient's doctor. Experience before the present arrangement came into force had given little evidence that common standards would be applied without the procedure of the Advisory Committee.

The previous system had led to abuses which were liable to cost a great deal in foreign exchange, and some check had to be introduced. The present check was working well. The Advisory Committee consisted of ten leading specialists in tuberculosis and other diseases in addition to the chairman and secretary. The names had not been given because that was not the desire of the medical profession or of the members of the committee. Every case was studied by two members of the committee, who in the event of disagreement referred it to the chairman, and the fact that the committee as a whole had not met in a certain period was irrelevant. The committee was always willing to reconsider any case if fresh medical evidence was brought forward. Figures showed the cases were dealt with in a sympathetic manner. For many of these cases treatment was available within the sterling area. In 1948 2,907 applications had been made and nearly 2,000 were granted; of tuberculosis cases 101 were refused and 1,009 were granted.

Colonel STODDART-SCOTT then contended that the only way to avoid abuse was for every patient to be seen, and he said that the committee if it failed to see a case was sure to make mistakes.

Mr. JAY remarked that Colonel Stoddart-Scott was impugning the veracity of the medical profession by implying that the diagnosis of the patient by the ordinary practitioner could not be relied on. He thought that in the great majority of cases one could rely on the ordinary doctor for statements of fact.

Hospital Accommodation in Northern Ireland

In the Northern Ireland Parliament last week Mr. HANNAH asked the Minister of Health and Local Government whether he could state the total number of beds available for patients in general hospitals in Belfast and Northern Ireland at the date of the coming into operation of the Health Services Act and at the present time.

The Minister replied that on July 5, 1948, the total number of beds available in general hospitals vested in the Northern Ireland Hospitals Authority was: Belfast, 3,170 beds; Northern Ireland, excluding Belfast, 3,204 beds. The total number of beds available in general hospitals on March 10 was: Belfast, 3,280 beds; Northern Ireland, excluding Belfast, 3,344 beds.

Lepers in Nigeria.—It is estimated that there are about 400,000 lepers in Nigeria; 37,000 are receiving hospital and similar treatment; 33,000 are out-patients. Leprosy is compulsorily notifiable only in districts proclaimed under the law governing the isolation and detention of lepers.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

M. M. Bull, M.B., B.Chir., has been appointed a University Lecturer in Anatomy for three years from April 1.

The following medical degrees were conferred on March 12:

M.D.—S. F. Logan Dahne.

M.B., B.Chir.—*N. Allsup, *W. Beautyman, A. E. Neill.

* By proxy.

UNIVERSITY OF MANCHESTER

On Founder's Day, May 18, the honorary degree of D.Sc. will be conferred on Alfred Ernest Barclay, D.M., F.R.C.P., Honorary Radiologist and Acting Director, Nuffield Institute for Medical Research, Oxford, for his contributions to medical research, and on Katherine Hope Coward, D.Sc.(Lond.), Reader in Biochemistry and Head of the Nutrition Department in the School of Pharmacy, University of London, for her educational and scientific services.

Alexander William Gordon Ewing, M.A., Ph.D., has been appointed Ellis Llywd Jones Professor of the Education of the Deaf and Director of the Department, from March 25.

Medical News

King Thanks Hospital Board

The thanks of his Majesty the King have been conveyed to the South-Eastern Regional Hospital Board and to the board of management of the Edinburgh Royal Infirmary for their kindness in granting leave of absence to Professor J. R. Learmonth, Dr. John Gillies, Mr. A. J. Slessor, and Miss Gordon, theatre sister in the Royal Infirmary, so that their services might be available to him in his recent illness. The chairman of the South-Eastern Regional Hospital Board has received a letter signed by Sir Alan Lascelles, his Majesty's Private Secretary. His Majesty also pays tribute in it to the skilful treatment and care he has received, and expresses his thanks to the Royal Infirmary for providing and preparing equipment for his operating theatre at Buckingham Palace. The equipment referred to is the personal instruments of Professor Learmonth and his team. These were prepared and sterilized at the Royal Infirmary two days before the King's operation and sent down in two large baskets to London with the team so that they would have the advantage of working with their own instruments.

Sir Alexander Fleming Honoured

The freedom of the Borough of Chelsea has been conferred on Sir Alexander Fleming, F.R.S., who has lived there since 1921.

Rosenberg Foundation

Dr. Charles Hill, Secretary of the Association, has been invited by the University of California to lecture for the Rosenberg Foundation of San Francisco on the organization of health, medical, and hospital services. He has had to decline the invitation owing to pressure of work in England, including the presidency of the World Medical Association, which he assumes in October.

National Portrait Gallery

Mr. Geoffrey Langdon Keynes has been reappointed by the Lords Commissioners of the Treasury as a trustee of the National Portrait Gallery for a further term of seven years.

President of Australian Federal Council

Mr. T. E. Victor Hurley has succeeded Sir Henry Newland as resident of the Federal Council of the B.M.A. in Australia.

Faculty of Anaesthetists

The Faculty of Anaesthetists celebrated its first anniversary with a dinner held at the Royal College of Surgeons on March 16. In proposing the health of the College Mr. A. D. Marston, Dean of the Faculty, spoke of his appreciation of the close connexion that now existed between anaesthetists and the Royal College. In reply, Lord Webb-Johnson expressed his delight at the establishment of the Faculty. He pointed out that the anaesthetist was the "clinical physiologist" of the surgical team, and was no longer concerned solely with the supervision of the patient during the operation but was deeply implicated in the pre- and post-operative care of the case. Mr. V. Zachary Cope, toasting the Faculty, commented that it had required no analgesia at its birth and demonstrated that he could express himself in verse with equal ease about anaesthetists as about the acute abdomen. In reply, Dr. Bernard R. M. Johnson, the Vice-Dean, stressed the anaesthetist's concern in the care of the patient before and after his visit to the theatre. Dr. Frankis T. Evans proposed the health of the guests, to which Dr. D. W. Logan, Principal of the University of London, and Sir Cecil Wakeley both replied.

Lecturing in Spain

The British Council is sponsoring a visit to Spain by Professor E. C. Dodds, F.R.S., Courtauld Professor of Biochemistry in the University of London, Director of the Courtauld Institute of Biochemistry (Middlesex Hospital), and editor of the *Journal of Endocrinology*, and Dr. Peter Bishop, consultant to Guy's Hospital, who have been invited by the University of Barcelona to lecture there between March 24 and 30. Professor Dodds's subject is "Theoretical and Practical Aspects of Synthetic Oestrogens," and Dr. Bishop will speak on "Treatment of Functional Menstrual Disorders." These lectures will form part of a month's course on endocrinology arranged by the University of Barcelona Medical Faculty, to which specialists in the subject from several different countries will each contribute a lecture.

Child Welfare

Professor R. W. B. Ellis, of the Department of Child Life and Health, Edinburgh University, and Dr. W. Pearce, of the Scientific Institute for the Study of Delinquency, London, are among those invited by the International Union for Child Welfare to take part in the meeting of the Advisory Committee on Delinquent and Maladjusted Children at the International School of Philosophy, Amersfoort, Holland, on March 28-April 2. The principal subject of discussion will be the training and status of the educational staff in children's and young people's institutions.

Guy's Hospital Dental School

The annual clinical meeting at Guy's Hospital Dental School on March 5 was attended by more than 500 old students. There are at present 350 students in the Dental School at Guy's and many applications for admission have had to be refused. The visitors saw many signs of the rehabilitation of the school since last year, notably the installation of 142 dental chairs of the latest type, a purchase made possible by a university grant. Professor M. Rushton, Nuffield Professor of Dental Medicine, showed some of his work on the structure of teeth. Professor H. R. Fenn demonstrated how polyvinyl chloride could be mixed with appropriate dyes to reproduce clinical material for teaching purposes. Mr. D. J. Anderson showed a method of recording the flow of saliva. Other interesting work on the causation of caries was exhibited in the department of preventive dentistry.

Visit to Greece

Mr. St. John Buxton, the orthopaedic surgeon, and Mr. A. E. Whiffing, technical inspector to the Ministry of Pensions limb-fitting centre at Rochampton, left London for Greece on March 17 for a fortnight's visit sponsored by the British Council and the British Medical Association. Mr. Buxton is lecturing in Athens and Salonika, and his subjects include "Amputation," "Gun-shot Wounds," and "Advances in Orthopaedics (Including Bone Grafting)." Mr. Whiffing, who took with him a crate of artificial British limbs for demonstration purposes, is visiting factories to advise on new methods and appliances. He is accompanying Mr. Buxton on visits to hospitals, including one in the front line.

Hunterian Society

The Hunterian Society's gold medal for 1948 for the best essay by a general practitioner has been awarded to Dr. Jack Lieber for his paper entitled "The Treatment of Obesity in General Practice."

Sheffield Registrars' Group

A United Sheffield Hospitals Registrars' Group was formed on Feb. 4 and has received the official recognition of the United Sheffield Hospitals Medical Committee. The honorary secretary of the group is Dr. R. S. Weetch, Royal Infirmary, Sheffield, 6.

Chinese Award

The President of the National Government of the Republic of China has conferred the Order of the Brilliant Star, with Rosette, upon the Reverend Dr. Arthur Taylor, LL.D., F.R.C.S., in recognition of services rendered during the war.

COMING EVENTS

Physical Society Exhibition

The thirty-third annual exhibition of the Physical Society will be held at the Imperial College of Science and Technology, Prince Consort Road, London, S.W., from April 5 to 8 (both days inclusive).

Tuberculosis Association's Conference

The British Tuberculosis Association's Annual Conference at Cambridge includes the following items in the programme: April 6. *Afternoon*: (1) Dr. J. B. McDougall on "WHO and Tuberculosis"; (2) Dr. R. H. Hazemann, of Paris, on "Tuberculosis in Students and Teachers in France"; (3) Demonstration of tubercle bacilli under the electron microscope in the Cavendish Laboratory. *Evening*: Annual General Meeting. April 7. *Morning*: (1) Mr. Irving Sarot, of New York, on "Resection for Pulmonary Tuberculosis"; (2) Mr.

J. McHale, of Birmingham, on "Post-operative Course of Thoracostomy Cases." *Afternoon:* (3) Dr. J. A. Young, of Cambridge, on "Studies in the Vaccination of Cattle with the Vole Bacillus"; (4) Dr. W. E. Ogden, of Toronto, on "Preclusion of Tuberculous disease by Preclinical Diagnosis and Control: Twenty Years' experience." *April 8. Morning:* (1) Dr. J. M. Lemoine, of Paris, on "Atelactasis"; (2) Dr. Conrad Kalabarder, of Barcelona, on "Atelactasis." *Afternoon:* (3) Mr. John Francis on "Infection with the Bovine Tubercle Bacillus, including its Control and a Comparison of Tuberculosis in Man and Cattle"; (4) Dr. Honor Fell, of Cambridge, on "The Relationship between Cells and Tubercle Bacilli in tissue Culture and *in vivo*," followed by demonstration; (5) Drs. M. Brieger and B. R. Smith on "Observation on the Life History of Tubercle Bacilli"; (6) Drs. V. E. Cosslett and E. M. Brieger—Lectures Microscopy Studies of Tubercle Bacilli (demonstration). *Evening:* Reception and Annual Dinner, April 9. *Morning:* Visit to Papworth. Talk by Dr. R. R. Trail, Golf.

Contraceptive Technique

A lecture and demonstration (on living models) on contraceptive technique will be given by Dr. Marie C. Stopes and Dr. Beddow at the Mothers' Clinic, 108, Whitfield Street, Tottenham Court Road, London, W., on Thursday, April 7, at 2.30 p.m. Tickets must be obtained by letter in advance, as space is limited.

Medical Library Association

The Medical Library Association will hold its 48th Annual Meeting on April 10-14 at Galveston, Texas. The Library of the University of Texas Medical Branch will be the host, and headquarters will be at the Hotel Galvez. Addresses include: "Function of the Historical Collections in Medical Libraries," by Dr. John F. Fulton; "The Elmer Belt Library of Vincennes," by Dr. Elmer Belt; and "Bibliography by Co-operation," by Dr. Luther H. Evans. Particulars may be obtained from the secretary, Medical College of Alabama Medical Library, Birmingham 5, Alabama, U.S.A.

Clinical Medicine

A course of instruction in recent advances in clinical medicine will be held at the Broussais Hospital, 96, Rue Didot, Paris, on May 20-22. The subscription for the course is 2,000 francs. Particulars may be obtained from Professor J. Hamburger, 29, boulevard de Courcelles, Paris, 8c.

Paediatrics Congress

The Sixth International Congress of Paediatrics will be held at Zurich during the last ten days of July, 1950. The congress itself will last four to five days. It is proposed to hold two plenary sessions, each lasting half a day, and a series of simultaneous group sessions, each group session will consist of prearranged lectures lasting from 10 to 30 minutes, followed by open discussion in which no contribution may exceed 5 minutes. Notifications for important lectures not included in the programme can be accepted only through the secretariats of the various national paediatric societies. The manuscripts of lectures (without illustrations) must reach the Organizing Committee not later than April 1, 1950. It is planned to hold a scientific exhibition to display the lecturers' graphs, photographs, etc. The Organizing Committee will provide free of charge the exhibition space and all other sheets necessary to hang the graphs. Show-cases for lantern slides, coloured photographs, etc., can be provided only if ordered and paid for well in advance. All those invited to lecture can display their material; other conference members must secure special permission from their national paediatric societies beforehand.

SOCIETIES AND LECTURES

Friday

NORTH OF ENGLAND SOCIETY OF ANAESTHETISTS.—At Royal Victoria Infirmary, Newcastle-upon-Tyne, March 25, 7.30 p.m. "Shock," by Dr. R. P. Harbord.

Monday

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—March 28, 3.45 p.m. "The Knee Joint." Arnold Demonstration by Mr. R. J. Last.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—Jointly with Institute of Urology (University of London), March 28, 5 p.m. "Neurological Disorders of the Urinary Bladder." Urology lecture by Mr. David Band.

WESTMINSTER HOSPITAL SCHOOL OF MEDICINE, Meyerstein Lecture Theatre, Horseferry Road, London, S.W.—March 28, 5.30 p.m. "Steatorrhoea in Childhood." Clinico-pathological meeting.

Tuesday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—March 29, 5 p.m. "Histopathology of the Skin," by Dr. I. Mende.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—March 29, 5 p.m. "Cataract Associated with Lesions of the Skin," ophthalmology lecture by Professor A. Franceschetti (Geneva). 6.15 p.m., "Ophthalmic Aspects of Protein Deficiency and Disordered Protein Metabolism," ophthalmology lecture by Professor G. B. Bietti (Pavia).

ROYAL INSTITUTION OF GREAT BRITAIN, 21, Albemarle Street, London, W.—March 29, 5.15 p.m. "Chemistry of the Actinides and Some Newly Discovered Elements," by Professor H. J. Emeleus, D.Sc., F.R.S.

Wednesday

INSTITUTE OF LARYNGOLOGY AND OTOTOLOGY, 330, Gray's Inn Road, London, W.C.—March 30, 10 a.m., "The Relationship of Dental Disease to Diseases of the Throat, Nose, and Ear," by Mr. A. C. Deverell. Illustrated by lantern slides.

PHYSICAL SOCIETY: COLOUR GROUP.—At Royal Photographic Society, 16, Prince's Gate, South Kensington, London, S.W., Wednesday, March 30, (1) 3 p.m., 9th annual general meeting of the group. (2) 3.15 p.m., 45th science meeting, "Photoelectric Spectrophotometers and Tricolorimeters." Discussion to be introduced by Dr. T. Vickerstaff.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—March 30, 5 p.m., "Psychosomatic Symptoms in Ophthalmology," ophthalmology lecture by Dr. E. Hartmann (Paris). 6.15 p.m., "Ophthalmic Manifestations of Besnier-Broc's Disease," ophthalmology lecture by Professor H. J. M. Weve (Rijksuniversiteit).

Thursday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—March 31, 5 p.m. "Pitfalls in Treatment," by Dr. H. Gordon.

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.—At B.M.A. House, Tavistock Square, London, W.C., March 31, 8.30 p.m., "Geriatrics," by Dr. J. H. Sheldon. A discussion will follow.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—March 31, 5 p.m. "Surgical Treatment of the Painful Hip Joint." Hunterian Lecture by Professor Charles Gray.

Friday

MEDICAL SOCIETY FOR THE CARE OF THE ELDERLY.—At Belmont Road Hospital, Liverpool, April 1, 2 p.m. "Viewpoint on Geriatrics," by Lord Amulree; "Overcoming Physical Limitations," by Dr. Marjory Warren.

SOCIETY OF PUBLIC ANALYSTS: PHYSICAL METHODS GROUP.—At Chemistry Lecture Theatre, The University, Highfields, Nottingham, April 1, 3.30 p.m. 21st Ordinary Meeting. "Electrophoretic Analysis." Papers by R. A. Kekwick, D.Sc., Dr. N. H. Martin, A. E. Ambler, B.Sc., Ph.D., and J. Madinaveitia, Ph.D., and A. J. P. Martin, M.A., Ph.D.

Saturday

MEDICAL SOCIETY FOR THE CARE OF THE ELDERLY.—At Belmont Road Hospital, Liverpool, April 2, 9.30 a.m. "Personality Factors in Senile Psychosis," by Dr. J. W. Affleck.

SOUTH WESTERN LARYNGOLOGICAL ASSOCIATION.—At Royal Victoria and West Hants Hospital, Shelley Road, Boscombe, Bournemouth, April 2, 2.30 p.m., clinical meeting.

APPOINTMENTS

The Home Secretary has appointed Mr. Geoffrey Keynes to be a member of the Advisory Committee on the Administration of the Cruelty to Animals Act, 1876, in place of Sir Gordon Gordon-Taylor, who has resigned.

EAST ANGLIAN REGIONAL HOSPITAL BOARD.—Assistant Orthopaedic Surgeon, Norfolk and Norwich Hospital, R. Cornfield Howard, F.R.C.S. Specialist Obstetrician, Peterborough and District Memorial Hospital, Norman Kimbell, M.B., Ch.B., M.R.C.O.G.

FULHAM HOSPITAL, St. Dunstan's Road, Hammersmith, W.—Part-time Senior Registrar to the Ear, Nose, and Throat Department, J. L. Wakeham, M.R.C.S., L.R.C.P., D.L.O. Junior Anaesthetist Registrar, S. Mehlman, M.D.

HALL, HOWARD W., M.B., Ch.B., D.P.H., Deputy Medical Officer of Health and Deputy School Medical Officer for the County Borough of Walsley.

RICE, HUGH MACAN, M.D., Pathologist in Charge, Nottingham General Hospital.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Kelly.—On March 9, 1949, at St. Anne's Nursing Home, Penryn, to Pamela (née Mountain-Palmer), wife of Dr. T. L. Kelly, Eastcott, Middlesex, a son—Nigel.

MacKenzie.—On March 12, 1949, at Shrewsbury, to Marjorie (née Teague) wife of Dr. G. K. MacKenzie, a daughter.

Portch.—On March 1, 1949, at Caythorpe, to Thelma (née Morris, S.R.N.), wife of Dr. G. G. Portch, a son—Christopher John.

DEATHS

Atkinson.—On March 12, 1949, at 202, Abington Avenue, Northampton, Edward William Atkinson, M.R.C.S., L.R.C.P., late of Long Buckby, near Rugby, Northants, aged 67.

Bates.—On March 18, 1949, at Banlemans, Sandwich, Kent, John Edwin Bates, T.D., M.B., B.Ch., late of Wimbledon, aged 79.

Brown.—On March 13, 1949, at Littlewood, Cranleigh, Daniel Darnard Brown, M.D., aged 82.

Brown.—On March 14, 1949, at Woburn, Bedfordshire, Robert Tennant Brown, M.D., aged 76.

Buck.—On March 9, 1949, Arthur Herbert Buck, F.R.C.S.Ed., aged 79.

Bakrodie.—On March 18, 1949, at Salt Hill House, Chichester, Sussex, Christopher Victor Bakrodie, D.S.O., M.D.

Conner.—On March 16, 1949, at All Hallows Vicarage, Greenford, John Richard Tarrant Conner, M.D.

Cooper.—On March 13, 1949, at Stoneleigh, Salcombe, S. Devon, Charles Edward Cooper, M.B., B.Ch.

EPIDEMIOLOGICAL NOTES

Influenza

There were 321 deaths in the great towns in the week ended March 12, compared with 259 in the previous week. Deaths remained practically the same in London and the south-east, but there was a rise in the north, particularly in the north-west, and in the Midlands. The incidence has been high in certain places—for example, Salford, the West Riding of Yorkshire, and Birmingham—but the disease has been of a mild type. From one London borough a report has been received that four patients suffering from influenza developed coffee-ground vomiting and melaena. Nearly all the isolations of virus have been of virus A, but virus B has been found in material received from two school outbreaks and from one fatal case of staphylococcal pneumonia at Leicester.

Registrar-General's Review for 1946

The review issued on March 24 covers the first post-war year. There were 820,719 live births in England and Wales in 1946, which represented a birth rate of 19.2 per 1,000 total population. This was an increase of 3.3 per 1,000 over the rate in the previous year and the highest since 1923, when it was 19.7. Later figures show that the birth rate further increased to 20.5 in 1947 but fell considerably in 1948, the provisional rate for that year, based on the total number registered, being 17.9. There were 53,919 illegitimate births in 1946, a proportion of 6.6% of the total, compared with 9.3% in the previous year. This proportion has since fallen again to 5.3% in 1947. Stillbirths numbered 22,915, representing a rate of 27 per 1,000 live and stillbirths compared with 28 in the previous year, but figures for subsequent years show that by 1948 this rate had fallen to 23.

Of the "legitimate maternities" during the year 44.9% were to mothers with no surviving previous children; 30.2% to mothers with one surviving child; and 12.9% to mothers with two surviving children. There were 10,788 maternities resulting in multiple births, of which 85 were triplets; no quadruplets were born in 1946. Of about 88,000 confinements which took place within 11½ months of marriage some 43,000 occurred within 8½ months of marriage, and of these 36,000 occurred within 7½ months of marriage.

Discussion of Table

In *England and Wales* infectious diseases were less prevalent and there were decreases in the notifications of measles 1,436, whooping-cough 392, acute pneumonia 107, scarlet fever 73, diphtheria 18, dysentery 14, and cerebrospinal fever 13.

A large fall in the notifications of measles was recorded; during the preceding five weeks the weekly number had been doubled. The largest decreases in the incidence of measles during the week were Southampton 324, Staffordshire 284, Devonshire 199, Lancashire 188, Essex 134, Cheshire 118, and Yorkshire West Riding 116; the only large increase was London 250.

Notifications of whooping-cough decreased in most areas, but notably in Lancashire 84. A decrease of 8 in Lancashire was the chief feature of the returns of diphtheria. The fall in the incidence of acute pneumonia was shown mainly in the southern section of the country.

The only large return for dysentery was 24 in Lancashire, where there were 17 notifications fewer than in the preceding week.

In *Scotland* a slight decrease was reported in the incidence of infectious diseases; the falls included acute primary pneumonia 42 and scarlet fever 10. The decline in the incidence of scarlet fever was mainly contributed by the south-eastern area. In the western area a rise of 8 occurred in the notifications of diphtheria.

In *Eire* increases were recorded in the notifications of measles 55, whooping-cough 23, and diarrhoea and enteritis 16. The increased incidence was spread throughout the country, although Dublin C.B. accounted for a large part of it.

In *Northern Ireland* an increase of 69 in the notifications of measles and a decrease of 51 in the notifications of whooping-cough were recorded. The rise in the incidence of measles occurred in the counties of Antrim and Down. A fall in the notifications of whooping-cough was reported throughout the country.

Week Ending March 12

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,178, whooping-cough 2,621, diphtheria 101, measles 17,305, acute pneumonia 1,514, cerebrospinal fever 35, acute poliomyelitis 17, dysentery 49, paratyphoid 3, and typhoid 1.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended March

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease are for: (a) The 126 great towns in England and Wales (including London) (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	33	2	13	—	1	42	4	37	—	—
Deaths ..	—	—	1	—	—	2	2	2	—	—
Diphtheria ..	101	13	28	2	5	200	21	60	8	—
Deaths ..	—	—	1	—	1	5	1	—	—	—
Dysentery ..	65	5	23	—	2	184	22	37	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute ..	2	1	—	1	1	—	—	1	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Erysipelas ..	—	—	33	8	4	—	—	55	13	—
Deaths ..	—	—	—	—	—	—	1	—	—	—
Infective enteritis or diarrhoea under 2 years ..	—	—	—	49	—	—	—	—	20	—
Deaths ..	28	—	—	4	—	49	3	7	1	—
Measles* ..	18,619	1081	166	175	214	8,788	1303	775	78	3
Deaths† ..	—	—	—	—	—	—	—	4	—	—
Ophthalmia neonatorum ..	34	—	9	—	—	67	6	6	1	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	5	—	3(B)	—	—	2	1	6(B)	—	1(B)
Deaths ..	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal ..	1,500	72	33	11	21	794	45	10	8	—
Deaths (from influenza)‡ ..	259	48	11	1	5	27	2	1	1	—
Pneumonia, primary ..	1,458	75	261	51	17	316	60	277	22	15
Deaths ..	—	—	—	—	—	—	—	—	—	—
Polio-encephalitis, acute ..	1	—	—	—	—	1	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	9	—	2	—	—	22	2	2	2	—
Deaths§ ..	1	—	—	—	—	6	—	—	—	—
Puerperal fever ..	—	—	7	—	—	—	2	12	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| ..	103	6	9	1	—	94	6	13	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Relapsing fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Scarlet fever ..	1,189	54	182	101	30	2,069	136	347	38	1
Deaths¶ ..	—	—	—	—	—	—	—	—	—	—
Smallpox ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Typhoid fever ..	4	—	—	3	—	5	2	—	—	—
Deaths ..	—	—	—	—	—	1	—	—	—	—
Typhus fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	2,653	218	247	106	66	3,067	217	44	63	1
Deaths ..	7	—	1	—	—	10	1	—	1	—
Deaths (0-1 year) ..	318	40	44	15	11	430	49	45	27	—
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths) ..	6,502	1010	717	181	176	5,914	956	668	221	1
Annual death rate (per 1,000 persons living) ..	—	—	12.7	10.9	—	—	—	13.5	13.8	—
Live births ..	7,438	1215	929	357	259	8,369	1317	944	404	2
Annual rate per 1,000 persons living ..	—	—	18.6	22.1	—	—	—	19.1	25.3	—
Stillbirths ..	178	35	29	—	—	231	37	28	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	30	—	—	—	—	29	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the return are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

"And mind the Hansoms, Horatio"

JOSEPH ALOYSIUS HANSON'S safety-cab was still making a contribution to road safety in the 80's. The automobile was just beginning to splutter its way into history preceded by a man with a red flag. It was in these daring days that Scott's of Edinburgh entered the infant feeding field with M.O.F., but it has changed much since 1887. The same inventiveness and progressive spirit has remained an essential part of Scott's policy. Today, Scott's of Edinburgh provide a whole range of infant foods for mixed-feeding time.

SCOTT'S BABY CEREAL

The ready-cooked baby cereal fortified with essential vitamins and minerals.

SCOTT'S M.O.F.

In use for sixty years. Contains added iron, calcium, phosphorus and vitamin D.

SCOTT'S STRAINED FOODS AND SCOTT'S BABY SOUPS

A tempting variety of fruit, fish, meat and vegetable purees which help to prepare baby's taste-sense for normal food.



SCOTT'S OF EDINBURGH

A. AND R. SCOTT LIMITED,
COLINTON, EDINBURGH

why these two aids
in infant care
receive medical support



In the treatment and care of infants in recent years efforts have been persistent to reduce the incidence of skin irritations such as impetigo and urine rash.

Nothing has contributed more towards meeting this problem than Johnson's Baby Lotion. Wherever it has been used in hospitals, clinics and welfare centres skin conditions improved.

Johnson's Baby Lotion is a homogenized emulsion of specially compounded mineral oil and water with lanolin. It is antiseptic and forms a protective discontinuous film that allows

the normal function of the skin.

Together with Johnson's Baby Powder, here are two indispensable aids in baby care, not only while under your personal supervision but when mothers care for their babies at home.

If you are not yet personally familiar with Johnson's Baby Lotion we will gladly send you samples.

BABY LOTION

For nappie-change to avoid irritations.

BABY POWDER

For after babies' baths.

TREATMENT OF HABITUAL ABORTION

It is quite true that progesterone therapy frequently fails to prevent abortion since there are various other factors which may be responsible. Recent clinical reports, however, indicate that the most common single cause of habitual abortion is progesterone deficiency. In such cases adequate substitutional therapy with 'Proluton' will enable the pregnancy to continue to term.

'PROLUTON'

Injection of Progesterone B.P.

1 c.c. ampoules of 2 mg. 5 mg. and 10 mg.



167/169, GREAT PORTLAND STREET • LONDON, W.

Johnson & Johnson (GT. BRITAIN) LTD. SLOUGH & GARGRAVE

'AVLON'

brand

PETHIDINE HYDROCHLORIDE

Pethidine Hydrochloride possesses analgesic and anti-spasmodic properties, and is used with success in midwifery. It is especially valuable where prolonged labour is due to cervical spasm.

Pethidine Hydrochloride may be employed to alleviate pain in renal, intestinal and biliary colic, in hypersensitive headache, and in neuritis of diverse origin. It may be safely administered in therapeutic doses by the oral and parenteral routes with minimal risks of habituation.

Technical literature and further information will be forwarded on request.

PACKINGS:

Tablets of 0.025 gramme and 0.05 gramme in bottles of 25, 100 and 500.

Ampoules of 0.05 gramme (1 c.c.) in boxes of 10 and 100, and 0.1 gramme (2 c.c.) in boxes of 10 and 100.

Solution in bottles of 25 c.c. (each c.c. containing 0.05 gramme).

Powder: Bottles of 1 gramme.

Pethidine Hydrochloride 100 mg. with 0.216 mg. or 0.432 mg. Hyoscine Hydrobromide

Ampoules of 2 c.c. Boxes of 10 and 100.

Obtainable from your usual suppliers.

IMPERIAL CHEMICAL [PHARMACEUTICALS] LIMITED

(A subsidiary company of Imperial Chemical Industries Limited)

MANCHESTER



Ph.350

A woman with an intimate problem . .



The question of whether or not to use internally worn sanitary protection is one which all women face sooner or later. In doing so, they naturally seek the guidance of one whose advice they completely trust—that of their Doctor. Tampax, which was invented by a gynaecologist and has already been accepted by thousands of members of the Medical Profession throughout the world, deserves your endorsement for its assurance of hygiene, physical comfort and alleviation of mental strain. If you are not acquainted with Tampax, descriptive literature and samples of both absorbency sizes will gladly be sent on request.

★ Tampax may be confidently recommended by Physicians for use by married women during normal menstruation. Its use by unmarried girls should not be advocated as the size of the hymenial aperture would cause difficulty in insertion and withdrawal.

. . consults her Doctor

Issued by Tampax Ltd., 110, Jericho Street, London, S.W.1.

CELLON LABORATORIES LTD.

The following tested preparations are available for prompt delivery:—

CELETANE (REGD.) — MEDICATED (LETHANE) HAIR OIL—N.W.F.

The modern Insecticide for eradication of head lice (Pediculosis Capitis), as employed by many Medical Officers of Health, etc.

BENZELIA (REGD.)—BENZYL BENZOATE EMULSION—25%

A well-established preparation for rapid eradication of scabies within 48 hours. Also supplied in form of vanishing cream.

OLEOCIDE (REGD.)—OLEO-SULPHONAMIDE

This valuable preparation is a marked advance in Sulphonamide Therapy. Ensures rapid relief of ulcers, Impetigo and other streptococcal infections of the skin; first and second degree burns—broken or unbroken.

CELOZENE (REGD.)—ANTISEPTIC

A powerful non-toxic, non-irritant antiseptic of great value for wounds and cuts, having a Rideal Walker value of 4.0. A special grade can be supplied for sterilising instruments.

SKLEN (REGD.)—PLASTIC BANDAGE REMOVER (NON-INFLAMMABLE)

A solution for dissolving adhesive of plastic bandages enabling easy removal of plaster and subsequent cleansing of adhesive remaining on the skin.

Further information, samples and prices upon request from:

CELLON LABORATORIES LTD.

KINGSTON-ON-THAMES

Kingston 1234 (7 lines)

CVS-38

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Heredity and Pulmonary Tuberculosis

Q.—It is said that the genetic factor is mainly responsible for some people's developing clinical pulmonary tuberculosis, whereas the majority do not. How much is known about this, and can you tell me where I can find details?

A.—The writer is not aware of any recent authoritative review of the part played by heredity in determining susceptibility to pulmonary tuberculosis. The evidence that genetic constitution is of importance is based on familial and especially twin studies, on considerations of racial differences, and on laboratory work on animals. Probably the most important single contribution is that of Kallmann and Reisner (*Amer. Rev. Tuberc.*, 1943, 47, 549). Briefly, they found that the chance of developing adult-type pulmonary tuberculosis before the age of 30 in the general population of the State and City of New York was 1.4%. For the various relatives of sufferers the chances were as follows: husbands and wives, 7.1%; half-sibs, 11.9%; parents, 16.9%; full sibs, 25.5%; fraternal co-twins, 25.6%; identical co-twins, 87.3%. This indicates that hereditary constitution is of considerable importance. When the patients were classified in more detail according to the extent and course of the disease, identical twins were actually sixteen times more like each other than fraternal twins. This finding is in harmony with the view that the importance of hereditary constitution lies in the degree of resistance to the established infection rather than in determining whether infection is contracted or not. Observations on man accord well with those on experimental animals, the behaviour of different human populations being paralleled by strains of differing resistance or susceptibility. Thus in Lurie's experiments, in which a low intensity of exposure was used, certain rabbits of high genetic resistance acquired an infection that healed completely, while others, of low genetic resistance, developed fatal tuberculosis.

It is important to realize that the interaction of hereditary and environmental influences must be complex, and the relative importance of heredity will not be the same against different environmental backgrounds. It might not be going too far to suggest that there is no degree of genetic resistance, however high, that could not be overcome by a sufficiently malignant combination of massive infection and adverse environmental conditions; similarly it may be that even those of the greatest genetic susceptibility could be successfully protected under optimum conditions. Kallmann and Reisner's findings apply to conditions as they existed in the nineteen-thirties in the State and City of New York, and the relative importance of hereditary constitution might be very different—either greater or less—in different communities living in different circumstances. It might well be that, in a community living in bad conditions and with a very high incidence of the disease, hereditary constitution would be found to be relatively less important; while in a community enjoying special advantages, and in which the incidence of the disease had been reduced to a very low figure, the influence of heredity would appear to be great; in other words, in such a community those who succumbed in spite of advantageous circumstances would be those who chanced to be genetically strongly predisposed.

Anuria after Sulphonamides

Q.—In domiciliary practice the administration of sulphonamides at intervals of less than 8 hours is difficult, especially during the night. I therefore use sulphamerazine 8-hourly, the last dose being at 10 or 11 p.m. However, I know of two cases of anuria following small doses of this drug, and I feel that this complication is more common with sulphamerazine than with

other sulphonamides. Would using sulphathiazole 4-hourly during the day, substituting sulphamerazine in corresponding dose at 10 p.m. and starting sulphathiazole at 6 a.m. the next morning maintain as effective a concentration of sulphonamide as either drug given separately at the intervals appropriate to itself? Have you any other suggestions for combining minimum toxic effects with adequate blood level of sulphonamide and 8 hours' sleep for the family?

A.—The best method of dealing with the risk of anuria when using sulphonamides is to give a mixture of sulphathiazole, sulphadiazine, and sulphamerazine. The solubility of any one of these does not affect that of the others. It must be given with plenty of fluid and with sodium citrate in order to keep the urine alkaline. With an alkaline urine there is much less risk of renal symptoms, since the solubility of these substances is greater. If one sulphonamide is to be used alone, sulphathiazole is the least likely to cause toxic symptoms, because it is much more soluble than either sulphadiazine or sulphamerazine, provided the urine is alkaline.

It is clear that an eight-hourly dosage cannot possibly maintain as steady a blood concentration as a four-hourly dosage. Is the question of eight hours' sleep for the family of great importance, in view of the short period for which the sulphonamides are usually given—that is to say, for a maximum of 6 to 8 days?

Hemivertebra

Q.—A boy aged 7 has developed a lateral curve in the lumbar region. X-ray examination demonstrates that he has an extra lumbar half-vertebra. Can you advise me about the treatment of this condition?

A.—The problem of scoliosis is one of the most difficult in orthopaedic surgery, and when the condition is due to congenital hemivertebra the difficulties are even more formidable. Hemivertebra is due to failure of development of one of two lateral centres of ossification of a vertebral body when this is not formed, as it is normally, from a single central ossific centre. It leads to increasing lateral curvature from an early age, and unless treatment is effective the ultimate deformity may be severe. Because the scoliosis is structural in origin, correction is even more difficult than in the ordinary postural scoliosis. For this reason a number of patients have been treated by excision of the hemivertebra. This is a rational method, and though the operation is difficult it is quite practicable in the lumbar region. If excision is deemed inadvisable, treatment will usually follow principles similar to those employed in other varieties of scoliosis. The spine is mobilized as much as possible by a short intensive course of exercises, and, if the deformity is severe or is judged to be increasing, correction is attempted, usually by a divided plaster jacket with a hinge. When maximal correction has been secured an appropriate length of the spine is fused, if necessary in stages, in the hope of maintaining the correction that has been achieved. The most hopeful cases are those in which deformity is of relatively late onset, and in which correction and fusion are consequently not required until the later years of childhood. But when severe deformity is found in early childhood, and particularly if it is increasing, correction and fusion may have to be undertaken without delay. Cases of hemivertebra—apart from those treated by excision—usually fall into this category; and it is unfortunately true that, however intensive and efficient the treatment, the results often leave much to be desired.

Alarming Dreams in the Aged

Q.—Many old people frequently have alarming dreams, such as hanging on to the edge of a precipice, and they wake up in a distressed condition. Is there any known treatment by which the dreams can be prevented or modified? Is it possible that many deaths which occur during sleep may be due to such dreams?

A.—There are some who give a physiological explanation for such dreams, ascribing them to a fall in blood pressure. Possibly this may be the precipitating cause, but obviously the form of the dream—clinging on to a precipice, etc.—cannot be derived from that and demands a psychological explanation.

Dreams are the manifestation during sleep of unsolved problems, many of which are associated with fear. Dreams of falling may be revivals of actual experiences, usually in earliest childhood, when we can do least about it; or they may be symbolic fear of a moral lapse or failure in business or fear of death. Such dreams occur at all times of life, and are not confined to old age, though possibly the lowered inhibition of old age may make them more acute, so that frightening experiences, which occur especially in the helplessness of childhood (including the fear of falling, one of the strongest of primitive fears), emerge into consciousness.

In so far as the fear is psychologically determined, the cure is to get the patient to discover what *latent* fear he may have and face up to it. Otherwise the palliative treatment might be tried of producing deeper sleep by hypnotics; but if this treatment is not successful it sometimes makes the patient worse, since the drugs lessen the inhibition to the repressed fears.

As to the last question on the possibility of nightmares producing death, the general opinion is the other way round. It is now fairly well established that some organic diseases which are not sensed during the day give rise to dreams regarding the affected organ during the night, just as *external* stimuli like an alarm clock may produce a dream. I have had a case in which a patient on two occasions had a dream of being paralysed on the right side, and a few weeks later developed it in fact—not a hysterical but an organic paralysis. Similarly some people have anxiety dreams coming from disease of the heart, and then may die of such disease. Jung has made a special study of this subject, which is also referred to in Freud's *Interpretation of Dreams*.

Marriage of Double First Cousins

Q.—*I have been approached by a young woman for advice on her proposed marriage. Both her own father and her fiancé's are brothers, and the mothers are sisters. As this makes the young couple closer relations than the common first cousins, what are the risks to their children?*

A.—One of the risks inherent in any marriage is that both partners may happen to carry the same harmful recessive gene; any child will then have a 1 in 4 chance of suffering from the condition. This risk is increased in a marriage of blood relatives, who share some of their genes in common. One-eighth of the genes of first cousins are the same, having been received from their common ancestry; in the marriage of double first cousins, as mentioned in the question, the proportion is one-quarter. The consequences may be illustrated by some approximate figures. The chance that any child from a random unrelated marriage will suffer from what is perhaps the commonest serious recessive defect, recessive retinitis pigmentosa, is about 1 in 5,000. The corresponding chance in a marriage of first cousins is about 1 in 1,100, and in a marriage of double first cousins about 1 in 550. To take a much rarer condition—alcaptonuria—the chance of its occurrence in a child from an unrelated marriage is about 1 in 1,000,000, in a first-cousin marriage about 1 in 16,000, and in a double-first-cousin marriage about 1 in 8,000. It will be appreciated, therefore, that the risk of the appearance of some undesirable recessive trait or other is much increased in a marriage of blood relatives. But it is a relative risk; what interests the individual is the absolute risk—that is, the sum of all these chances for all undesirable recessive genes. This is not known, and so it is impossible to say how large the risk may be that in a cousin (or double-cousin) marriage some harmful recessive condition or other may appear. It seems likely, however, that the chance is not large in comparison with all the other risks inherent in pregnancy, childbirth, and early life. For example, it is probably not as great as the risk of haemolytic disease in later-born children in the marriage of an Rh-negative woman to an Rh-positive man. While, then, it must be recognized that the risk is increased, it is probably not of such magnitude that the average sensible person, with a knowledge of the facts, need feel that it outweighs other considerations favouring the marriage. There is one reservation, however. If there is a history of recessively determined abnormality in either family the chance might be relatively large. Scrutiny of the family history would then be necessary, and the proposed marriage might have to be pronounced definitely unwise.

NOTES AND COMMENTS

Chemotherapy of Acute Otitis Media.—Mr. L. F. DAY (Hastings) writes: I did not think that the answer given to the question concerning the very important matter of chemotherapy in acute otitis media ("Any Questions?" March 5, p. 422) was quite in accord with the usual view held by otologists. The answer that I give when asked, as one is asked frequently, is never to give any form of chemotherapy unless there is a free exit for the exudate in the middle-ear cleft or unless myringotomy is imminent. I was sorry to see that the dangers of giving sulphonamides or penicillin in closed infections of the tympanic cavity were not more stressed. To suggest that it is wiser to open the drum if it is red and bulging before giving sulphonamides is putting it very mildly. It is not uncommon to see an extensive necrosis of the mastoid process proceeding under the mask of an adequate dose of one of the sulphonamides, particularly if myringotomy has not been performed. I had such a case recently in which the tympanic membrane was intact, but it was necessary to do a very extensive excision of the mastoid cells, exposing the dura mater and lateral sinus widely. This child was 6 years of age and had been on a sulphonamide for two weeks. I have seen children who have been on one of the sulphonamide drugs for ten days who were free from pyrexia and pain but who were severely deaf, with tympanic membranes like wet tissue-paper. The prospect in these cases with regard to the hearing is poor. I know of a few who still show a marked hearing loss six months afterwards. My practice is to make an adequate incision in the tympanic membrane and then to give sulphonamides, or, if the case is a fulminating one, penicillin. Only thus is it possible to ensure a rapid return to normal of the vital structures within the tympanic cavity. I do not believe that the fact that many cases of acute suppurative otitis media may recover, apparently with complete return of the hearing, without myringotomy justifies withholding this simple procedure when the indications for it are present. Apart from the fact that it is the safest course to adopt it gives immediate relief of pain, a shorter convalescence, and a rapid recovery of the hearing loss. There are no complications. With regard to the very early cases, I should say that it would be most unwise to put every child with earache and some injection of the tympanic membrane on a four days' course of chemotherapy. Many of these cases resolve spontaneously in a short time without any interference, before bulging of the drumhead occurs and there are other measures that can be used to hasten recovery. Retained muco-pus in the middle-ear cleft, although the virulence of the organisms may be reduced by drugs, is always liable to organize and form fibrous tissue, causing an adhesive otitis media and permanent deafness. The danger may not be so great in older persons, but in young children it is not possible accurately to assess the hearing, and permanent damage may occur without it becoming apparent for years. There are so many cases to-day of long-standing deafness of obscure origin dating from an early age and it seems not unlikely that there will be very many more in the future if the administration of sulphonamides or penicillin is not combined with daily inspection of the drumhead and careful supervision. With a free discharge of the exudate there can be few more useful purposes to which these drugs can be applied.

Keloid.—Dr. E. JACOBSEN (Kirkby Stephen, Westmorland) writes: In answer to a question regarding the treatment of keloids ("Any Questions?" Feb. 26, p. 377), I should like to mention a more harmless method which is worth-while trying, and which I have used with satisfactory results. It is based on the idea that pepsin has a digestive action on scar tissue. It can be applied either as a compress soaked in a 5% glycerin-pepsin solution, with a piece of oiled silk to keep it moist, or as the following ointment: pepsin 5.0, boric acid 3.0, petroleum jelly to 100.0. Massage with the same ointment is also recommended. The treatment should be continued for several months.

Sir Benjamin Ward Richardson.—Mrs. OLGA SOMECH PHILLIPS (4, Perceval Avenue, Belsize Park, N.W.3) writes: I should be grateful if any of your readers could give me personal reminiscences of the late Sir Benjamin Ward Richardson. I should be glad, too, to know of any unpublished writings of his or any letters.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atiology Western, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Author overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Westmed, London*.

MEMBERS' Association should be sent to the SECRETARY of the Association, B.M.A. House, Tavistock Square, W.C.1. TELEGRAMS: *Medisecra, Western London*.

B.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY MARCH 26 1949

THE SECRETARY REPORTS

THE TRADE UNION CONTROVERSY

Does the Trade Disputes Act of 1906 apply to a medical trade union? Clearly this is an issue of considerable importance, for if it does not so apply there is little case, all other considerations apart, for a medical trade union. After all, the position which the bulk of trade unions enjoy is in large measure due to the protection which this Act affords. Section 3 of the Act provides that an act done by a person in furtherance of a "trade dispute" shall not be actionable on the ground only that it interferes with another person's business, etc.; and Section 4 provides that an action against a trade union, whether of workmen or masters, in respect of any tortious act alleged to have been committed by or on behalf of the trade union shall not be entertained by any court. In short, these sections afford immunity from legal proceedings in respect of certain acts which ordinarily would be actionable wrongs, provided that these acts are committed in furtherance of a trade dispute or committed by or on behalf of a trade union.

The expression "trade dispute" is defined in the Act as meaning a dispute (connected with employment) "between employers and workmen or between workmen and workmen"; and the expression "workmen" is defined as meaning "all persons employed in trade or industry." Now, in the opinion of the counsel consulted by the Association, a medical practitioner is not "employed in trade or industry" and is not a "workman" within the meaning of the Act; and it follows from this view that, unlike a trade union of workmen, a trade union composed of medical practitioners could derive no benefit from Section 3 of the Act. It is to be observed also that Section 4 deals only with "an action against a trade union, whether of workmen or masters." The opinion of counsel is that medical practitioners are neither workmen nor masters within the meaning of the Act, and that Section 4 would not be extended so as to give protection to a medical trade union. "It must be remembered," counsel state, "that the section, in removing from the jurisdiction of the courts in regard to wrongful acts a section of the community, will be read strictly." It appears from this opinion that the widely held opinion that the conversion of the Association into a trade union, or the creation of a trade union (were this practicable) would place it in a peculiarly strong position is without solid foundation so far as it rests on the supposed protection of the Trade Disputes Act, 1906, which offers real advantages to a trade union of "workmen" but not to a trade union of medical practitioners.

It will be seen from these extracts from the Report of the Council on the Constitutional Position of the Association that we are advised that the Act does not apply to a medical trade union. Others have sought legal advice and have been advised that the Act does so apply. To put it in another way, if we accept the high legal opinion we have received, we accept the view that the Act does not apply; if we contemplate the legal opinions which we and others have received, the position is that there is substantial doubt on the point. In either case we cannot confidently assume the protection of the Act. The central issue is one which can only be finally decided in the courts, possibly by the House of Lords.

The constitutional question, which will come before the Special Representative Meeting next week, is but one aspect of the Association's organization. Another, perhaps no less important, is the representative character of the Council, a subject to which the Winchester Division has given its vigorous and stimulating attention. Some proposals on this subject will

be put forward by the Council to the Annual Representative Meeting at Harrogate. Indeed, it is probable that this will be one of the more important questions dealt with at Harrogate in June. Incidentally, members of the Association who have not yet attended an Annual Meeting are warmly invited to make a beginning by attending this year's meeting at Harrogate. The Annual Meeting, whether viewed as a scientific, medico-political, or merely social occasion, is a great affair which members who can spare the time to attend it should not willingly miss.

Terms and Conditions of Service of Specialists

Regional consultants' committees throughout the country are now examining the Ministry's detailed proposals for the terms and conditions of service of specialists published in full in these columns last week. It is interesting to note some lay reactions to the proposals. *The Times*, after a detailed survey of the proposals, made an interesting comment on the position of the general practitioner:

"The lowest rate for the youngest specialist represents roughly the highest rate the really conscientious general practitioner can hope to earn from the Service, if he restricts his practice to 2,500 patients in order to do good work and undertakes a good deal of midwifery and other duties to make up his income. To earn as much as the young specialist he has to work far longer, at greater inconvenience, and with much poorer equipment and services; he has to find and pay his own deputy when absent from work; he has no fixed holidays; he is entitled to no 'distinction awards' or annual increments of pay. Only by undertaking the care of 3,000 or 4,000 patients, which is out of the question for most doctors and intolerable to the best, can he hope to approach the incomes now offered to specialists of more than three or five years' standing. The scale for specialists, like the Spens Report from which it derives, takes no account of the shrewd fear of the earlier Spens Report on general practice that the attractions of medical specialization might turn the ablest doctors away from general practice. Since the Government are committed to a high standard of pay for specialists, a review of the fees of general practitioners is now inevitable. If there is to be a proper balance of remuneration between the different branches of medical work, a substantial proportion of general practitioners, preferably the ablest, will also have to be put into the surtax-paying class."

Levies

There is sometimes confusion between the statutory levy and the voluntary levy, using these terms in relation to the general practitioner service. A statutory levy is a levy imposed on every doctor on the local medical list, and does not require his previous consent. All the executive council requires is a request from the local medical committee backed by a resolution of that committee. A statutory levy can be used only for the expenses of the local medical committee.

A voluntary levy requires the consent of the individual doctor, which must be obtained in the form of a proper legal authorization signed by the doctor himself. The authorization specifies the amount, in respect of each person on the doctor's list, which is to be deducted from the doctor's remuneration from the National Health Service. It is not necessary for the object for which the levy is being collected to be mentioned in the authorization, but such objects must be clearly set out in the covering letter seeking the doctor's signature.

In both cases the proceeds of the levy are passed to the secretary or treasurer of the local medical committee, whose receipt is sufficient for executive council audit purposes.

National Health Service

MORBIDITY STATISTICS

We print below a statement from the Ministry of National Insurance on the collection of data for morbidity statistics.

There are new possibilities in the field of morbidity statistics through the operation of the National Insurance Scheme. These have been considered by the Ministry of National Insurance in collaboration with the Ministry of Health, the Department of Health for Scotland, and the other interested Government departments.

The Ministry of National Insurance has an opportunity to produce for the first time morbidity figures relating to the population insured against sickness and industrial injury by analysing appropriate samples of some 7,000,000 claims for sickness benefit and 750,000 claims for industrial injury benefit which are expected each year. This relates substantially to the whole working population (approaching 25,000,000) but does not, of course, include non-insured groups such as children and old people.

The object is, through the use of appropriate methods of sampling and mechanical tabulation, to produce tables analysing the numbers of persons receiving sickness benefit and industrial injury benefit by such categories as sex, marital status (for women), age group, industry and occupation, geographical locality, nature of incapacitating illness, and duration of incapacity. Where the "exposed to risk" populations can be computed it will be possible to give rates, but there are certain difficulties here until the next census figures are available. Although practical considerations will necessarily impose limitations on what can be done, it is thought that much information can be collected that might well be useful to the cause of preventive medicine. The collection of data, which started on Jan. 1, 1949, will be experimental at first. The results will be subjected to expert scrutiny before any final decision is taken as to publication.

The basis of these statistics is the final medical certificate, and their validity will of course depend upon the diagnostic statements on the certificates. It is appreciated that there will be certain cases where, in the interests of the patient or for some other good reason, the certificate cannot state a precise diagnosis. But, when all allowance is made for such necessary exceptions as these, it is thought that important statistical information can be obtained provided that in the rest of the cases a sufficient degree of precision in diagnosis can be achieved. It is understandable that in the past, when the certificates were given solely to support claims for benefit,

ctors may sometimes have felt that the purpose would be served by a statement which established the patient's incapacity for work but did not aim at the maximum of accuracy in diagnosis. Now, however, that the certificates are to be used also to provide sickness information, the matter is likely to present itself to the medical profession in a different light.

With this in mind, the General Medical Services Committee of the British Medical Association has been consulted by the Ministry of National Insurance. The committee has agreed in principle to the Ministry's proposals and expressed the view that there is now a welcome opportunity to make a start on what is admitted to be a long-felt need.

PROPOSED TERMS FOR HOSPITAL STAFFS SENIOR HOSPITAL MEDICAL OFFICERS

The Ministry of Health states that it appears that some of the phraseology relating to senior hospital medical officers (*Supplement*, March 19, p. 149) has given rise to misunderstandings about the kinds of officers regarded as falling into that group. The following notes may be useful to boards and committees and to regional review committees in clarifying the position.

1. The first group—i.e., those described in paragraph 1 of the proposed terms as "specialists"—is intended to include only those members of medical and dental staffs who are regarded as of full consultant and specialist status, whether

as a result of assessment by a review committee (in the case of existing staff) or of selection by an advisory appointments committee (in the case of future staff appointments).

2. The group described in the proposed terms (paragraph 3 (c)) as "senior hospital medical officers" is intended to include members of medical staffs performing clinical duties, whether of a general or special nature; that is, it includes officers who may be engaged (whether wholly or partly) in a special branch of medicine—e.g., anaesthetists, pathologists, tuberculosis officers, venereologists, psychiatrists, and more rarely physicians, surgeons, or obstetricians—but who individually are not regarded as of full consultant and specialist status. In this sense, therefore, the heading of paragraph 3 of the proposed terms—"other non-specialist grades"—is inaccurate and should be amended by omitting "non-specialist."

APPLICATION OF THE SPENS RECOMMENDATIONS TO MEDICAL TEACHERS AND RESEARCH WORKERS

A Special Committee has been set up by the Council to consider the best method of securing the application of the recommendations of the Spens Committee to medically qualified teachers, research workers, and other practitioners not in contract with, or only partly in contract with, official organs of the National Health Service. The following have already accepted the invitation to serve:

Appointed by Council.—The President, the Chairman of Council Dr. Janet Aitken, Dr. J. Fenton, Dr. S. Cochrane Shanks.

Appointed by the Committee of the Group of Full-time Non-Professorial Medical Teachers, Laboratory and Research Workers.—The Chairman (Dr. R. D. Stuart), Dr. P. D'Arcy Hart, Dr. G. W. Harris, Dr. M. C. G. Israëls, Dr. J. Rannic.

This committee will make recommendations and is empowered to make representations to the appropriate bodies, including the university authorities, the University Grants Committee, the Lord President of the Council, and the Northern Ireland Government in the case of full-time university teachers, and the Medical Research Council, the Agricultural Research Council, the Treasury, the Scientific Civil Service and Government-aided Research Institutes with salary scales based on the Scientific Civil Service in the case of full-time laboratory and research workers, to the Ministry of Health and the Secretary of State for Scotland.

The committee will pay particular attention to the position of the following classes of practitioners:

- (i) full-time university teachers not engaged in hospital work;
- (ii) full-time workers employed by the university and doing clinical hospital work;
- (iii) full-time workers employed by the university and doing non-clinical hospital work;
- (iv) full time non-university research workers.

The recommendations of the Conference of Non-Clinical Medically Qualified Professors, which were accepted by the Non-Professorial Group as a basis for discussion, have been reflected in the Government's initial proposals for the remuneration of clinical specialists engaged in the teaching of medical and dental students.

LOCAL AUTHORITY FEES

A special committee has been set up to negotiate with the associations of local authorities fees not now covered by national agreement. These fees cover the remuneration of police surgeons, medical officers of many types of homes administered by local authorities, fees for certain certificates, etc. The membership of the committee is as follows: J. Fenton (chairman of the Public Health Committee), R. L. Newell (chairman of the Consultants and Specialists Committee), I. D. Grant (chairman of the Private Practice Committee), L. Abel, G. Buchan, A. Dickson Wright, J. A. Gorsky, E. W. Goodwin, R. H. H. Jolly.

WHITLEY MACHINERY IN PUBLIC HEALTH SERVICE

The continued delay in the opening of negotiations on new scales and conditions of service was the first matter to which the Public Health Committee of the Association addressed itself on March 11. The committee unanimously reaffirmed the position which it took in January, and which had been endorsed by the Council, that, negotiations through approved Whitley machinery not having been begun by Feb. 28, advertisements from local authorities be not accepted unless the salaries offered were in conformity with the Association's own proposals for new scales. It was stated that the number of advertisements refused by the *British Medical Journal* since Feb. 28 was eleven. All the medical journals were acting together in this matter.

A copy of a letter sent to town clerks by the Association of Municipal Corporations came before the committee. It was pointed out that one statement in this letter was erroneous—namely, that the question of forming dental and medical functional councils had been in abeyance because, and only because, of the refusal of the professional associations to take part. As the rest of the letter showed quite clearly, the associations of local authorities discovered their own difficulty when they realized that the medical profession was both ready and anxious to begin discussions, bringing into such discussions the Spens Reports.

Discussion took place on the position in Scotland, and the Scottish representatives on the committee all declared that they wished the negotiations to be conducted on a national basis, covering England and Wales and Scotland. They asked, however, that the representation of Scotland on the proposed medical functional council should be increased to three; at present Scotland has one representative out of a total of eleven. The committee agreed to recommend to the Council that the Scottish representation be increased to three.

Equal Pay

A report by Dr. Kelynack, the B.M.A. representative on the Joint Committee on Equal Pay, was laid before the Public Health Committee and was approved. The committee decided to recommend to the Council that steps be taken to widen the representation on the Joint Committee so as to include the nursing profession, certain important teaching bodies, and the medical auxiliaries. The committee further recommended that the Association's support of the Joint Committee's policy of equal pay for equal work in all professions be given on the understanding that any approach to the political parties by the Joint Committee would be on a non-political basis. Dr. Mary Esslemont, on behalf of the Medical Women's Federation, expressed the thanks of that body to the B.M.A. for what it had done in the matter of equal pay. In connexion with a dispute on equal pay in Scotland, it was resolved that the Association's policy be pursued with the utmost vigour.

A cognate question concerned the retirement age of women medical officers. A letter was read from the Medical Women's Federation drawing attention to the fact that nine women medical officers in the education medical service of Glasgow Corporation were subject to a compulsory retiring age of 60, whereas for men medical officers in the same service the age is 65. This provision is embodied in the Corporation's superannuation scheme. In the National Health Service the regulations with regard to retirement are exactly the same for men and for women. The view of the Federation was that there should be no sex differentiation with respect either to retiring age or to option for retirement.

After some discussion the matter was referred to the Scottish Committee for its opinion, and it was suggested that a legal ruling be obtained on the wording of the Glasgow superannuation scheme.

Conflict of Duties

A letter came before the committee addressed by a local authority to a practitioner requesting an indication of his fees for dealing with all cases of sudden illness or accident to officers and employees of the authority, bearing in mind that it would

be necessary for him or someone nominated by him to be continually available. The secretary of the committee had written to the practitioner pointing out that it would be unwise of him to agree to any such arrangement, and that it would be undesirable for the local council to appoint one doctor for emergency cases, as such treatment came within the terms of service of general practitioners under the National Health Service, and any arrangement such as this would cut across the relationship of doctor and patient. The committee endorsed this view.

It was reported that a police authority had decided that the examination of candidates for the force and of officers whose medical fitness had to be determined for the police pensions scheme should in future be carried out by the staff of the medical officer of health. The Deputy Secretary of the Association had written suggesting that the Division which had brought the matter to the attention of Headquarters should protest to the police authority, and if this was without success the matter would be taken up centrally. The policy of the Representative Body is that it should not be part of the duties of the public health staff to examine municipal employees for superannuation, and a similar examination of candidates for the police force would be deprecated. The Public Health Committee endorsed the letter. It was pointed out that the Association had never objected to the appointment of a particular practitioner—e.g., the police surgeon—for such examinations; the issue here was the employment of a whole-time member of the public health staff.

Port Medical Officers

The situation which has arisen at Bristol concerning the duties of port-medical officers was further considered, and the committee decided unanimously to support certain recommendations made by the Occupational Health Committee that no advertisement for medical officers for a National Dock Labour Board be accepted for publication unless a satisfactory assurance was received as to the scope of the work to be undertaken. The committee had previously expressed its opposition to the undertaking of general practice or industrial medicine by whole-time public health medical officers.

From another port it was learned that a medical officer of health was required to attend at 5 a.m. on three mornings a week for the medical examination of aliens arriving by steamer, but that no additional fees were paid at this port (or indeed at other ports outside London) for this service, and that the salary of this particular medical officer of health was only £19 above the minimum. It was agreed to bring pressure to bear upon the local council concerned, and, if that failed, to take up the matter with the Home Office.

Certification of Contacts and Carriers

A protest was made by a local medical committee against a suggestion in E.C.L. 140 that, in a case where it was considered desirable that a carrier or contact should absent himself from work, sickness benefit under the National Insurance Scheme should be paid only on the strength of a certificate by the medical officer of health and not on the strength of a certificate by a general practitioner.

A letter, however, was read from Dr. Massey, chief medical officer of the Ministry of National Insurance, which put a different complexion upon the matter. It was pointed out that the only person who knew the epidemiological situation in the town was the medical officer of health. The general practitioner, while fully aware of the circumstances of his own case, could not know about other cases not within his practice. It was a public health problem which was concerned. The committee, while agreeing with Dr. Massey's argument, thought the original circular was unfortunately worded. It now gathered that there was no question of veto on the general practitioner's certificate by another authority, and it hoped that the position would be clearly explained to those concerned.

The committee considered the Analgesia in Childbirth Bill, but did not think any action on its part was called for. It appointed three of its members to a joint subcommittee which has been set up to consider the report of the Working Committee on Midwives.

PRIVATE PRACTICE COMMITTEE

Fees in Service Cases

A meeting of the Private Practice Committee was held on March 2, with Dr. J. D. Grant presiding. Dr. Robert Forbes was elected deputy chairman of the committee.

A communication was read from the Admiralty stating that the fee payable to Admiralty surgeons and agents for demobilization examinations would be increased to one guinea, subject to an overriding daily maximum, as from Jan. 1 last; also that whatever fees are approved later for vaccination and inoculation would be allowed retrospectively to July 5, 1948. A debatable point on a further communication from the Admiralty concerned fees payable to Admiralty surgeons and agents for visiting a ship alongside the quay and the claim for an increased fee for visiting a ship lying offshore. On the first of these questions the Admiralty was unable to approve such a fee; its decision on the second was still outstanding.

The Air Ministry was unable to agree that the re-examination of R.A.F. personnel for fitness to fly was so comprehensive as to justify the 1½ guineas which the committee had requested. The Ministry pointed out that an R.A.F. medical officer was expected to be able to undertake up to a dozen such examinations in a day if required, and that a civilian practitioner with no previous experience of what was entailed might be expected to complete three such examinations in 2½ hours, for which three guineas would be paid. The chairman said that the form which the practitioner was required to fill in seemed very similar to the ordinary life insurance form, and obviously such examinations called for special care and responsibility. The committee resolved to continue its demand for 1½ guineas.

National Coal Board

It was reported that representations had been made to the National Coal Board on the establishment and remuneration of medical officers in the Board's service. The proposals of a joint subcommittee (with the Occupational Health Committee) were brought forward, which suggested certain ranges for different grades of National Coal Board medical officers. It was pointed out, however, that these figures did not correspond with those demanded for public health medical officers of similar grades, also that increments should be precisely stated. The suggested scales were accepted only provisionally, being subject to revision when the scales for other branches of the profession are determined and subject also to the addition of an exact statement on increments. Dr. John Buchan was elected to the joint subcommittee.

The subcommittee also brought forward other proposals applying to part-time appointments under the Coal Board; these related to methods of remuneration, maximum number of hours per week for part-time appointments, and the question of adequate annual leave.

Allowances to Witnesses

On the question of allowances to medical witnesses in criminal courts, it was stated that the advice which the Home Secretary had given the courts was that, apart from travelling and night allowances, the allowance paid to a professional witness who was a salaried officer and did not lose income by attendance at court should not exceed the allowances payable to an ordinary witness who did not lose income by attendance. Dr. Forbes stated that the Costs in Criminal Cases Act, 1908, on which this instruction was based, did not justify this interpretation. So long as an officer could show that he had had trouble and loss of time in attending and giving evidence he was justified in claiming a special allowance.

It was agreed to send a deputation, consisting of Dr. Forbes, Dr. Gorsky, and Dr. Gregg, to the Home Office on this subject.

The Doctor's Car

The secretary of the committee reported that designs for a badge displaying the letters "B.M.A." had been before the subcommittee appointed on this subject, and the advice of the Automobile Association and the Royal Automobile Club

had been sought. The specimen designs were exhibited and much admired, but objection was taken by some members of the committee to the use of the initials, which it was thought in the minds of some police and other authorities would not immediately connect themselves with doctoring. It was suggested that it be left to the option of a Division or Branch whether in its area this or any other "doctor" sign should be permitted. Eventually, by a vote of 8 to 5, the committee expressed itself as against the use of any sign at all.

The subject of dangerous drugs left in doctors' cars raised another point of interest. The Council had asked that consideration should be given to this subject by the committee. The Home Office had issued a comment on the regulation which came into operation in January requiring drugs to be kept in a locked receptacle which could be opened only by an authorized person. The Secretary of State had been advised that a motor-car or the room of a house could not be regarded as a "receptacle," though a cupboard in a room might properly be so regarded. Some discussion took place on this point. Dr. Gorsky said that there was nothing the committee could do about it. A locked car was not sufficient protection. Another view was that there was no need to lock the car so long as the receptacle itself was locked. It was decided in view of the complications of the situation to seek legal enlightenment on the matter.

Other Business

The committee was informed that further representations had been made to the War Office concerning the question of medical boards for the examination of recruits to the Territorial Army, and that the War Office was willing to receive a deputation on the subject. It was emphasized that a point to be borne in mind was the loss of time entailed in holding medical boards in isolated areas.

It was reported that the Ministry of Pensions was giving consideration to the representations of the committee that the fee payable for a medical report on a deceased soldier, sailor, or airman (Form M.P.W.13) should be increased from 7s. 6d. to 10s. 6d.

The remuneration of civil practitioners for the treatment of service personnel on leave or sick leave, the recently introduced Treasury medical service, fees for medical examinations of candidates for admission to the sea training schools of the Shipping Federation, and the fees for examination of prospective employees in a large business undertaking, were among other matters considered. Certain items on the agenda were passed over to the General Medical Services Committee.

GENERAL PRACTICE IN SCOTLAND

Several remits from the recent conference of representatives of Scottish Local Medical Committees were considered by the General Medical Services Subcommittee (Scotland) at B.M.A. House, Edinburgh, on March 10. Dr. W. M. Knox presided. The need for appointing some form of executive committee was debated, and it was decided to appoint a chairman's subcommittee to deal with all matters requiring attention between meetings of the main subcommittee.

It was agreed that all local medical committees should be represented on the General Medical Services Subcommittee (Scotland). The question of weighting of representation was remitted to the chairman's subcommittee for a report. The committee appointed two representatives to discuss with the Consultants and Specialists Committee (Scotland) the problems of general practitioners in hospitals and institutions.

In connexion with a remit urging that travelling expenses and subsistence allowances should be paid from central funds for attendance at local medical committee meetings, it was intimated that at a meeting with representatives of the Department Sir George Henderson had undertaken to inquire further into the question so far as the Highlands and Islands are concerned, and also that the central General Medical Services Committee was considering ways and means of meeting the recognized difficulties of the sparsely populated areas. It was agreed that further information from all the areas of Scotland should be collected.

Similarly, it was reported that as a result of direct negotiation the Department had agreed to take back for further consideration the question of the cost of long-distance telephone calls from rural areas to hospitals, consultants, and laboratories. It was reported that representatives of the Scottish Committee had met the Secretary of State recently to discuss methods of dealing with these and similar difficulties and that local medical committees were to be invited to submit specific proposals for their areas.

It was decided to take up again with the Department the question of free medicines for private patients. The Scottish Secretary drew attention to the information in the *British Medical Journal* that a test case in this matter would shortly be coming before the courts.

The subcommittee decided to accept an invitation issued on behalf of the three Scottish local-authority associations to discuss the question of fees payable to general medical practitioners for services rendered to local authorities. Detailed arrangements were remitted to the chairman's subcommittee, which will discuss with the Department of Health before meeting the local authority associations the subjects mentioned in the invitation in their relationship to the terms of service of practitioners under the National Health Service.

HEALTH SERVICES IN NORTHERN IRELAND

Facts about the progress of the new Health Services in Northern Ireland were given in the Northern Ireland House of Commons this week by Capt T. O'Neill, Parliamentary Secretary to the Ministry of Health and Local Government. He said that the number of people seeking free dental treatment had greatly exceeded expectations. By January of this year applications had reached 175,000 of which over 100,000 had had treatment completed. While there were grounds for satisfaction here the very considerable outlay in payments to dentists was a matter of some concern. Applications for dental treatment continued at a high level.

The number of prescription forms dispensed by chemists in January last totalled over 370,000 at a cost of approximately £90,000. If maintained at that level, payments in respect of prescriptions dispensed in a full year would exceed £1,000,000.

There had been an avalanche of applications for sight testing and glasses. By Dec 1, 1948, 120,000 persons had had their sight tested. The cost of supplementary eye services was expected to be £285,000 greater than was originally estimated.

INTERNATIONAL HOLIDAY EXCHANGES

Members are reminded that the Association co-operates in a scheme whereby exchanges can be arranged for British doctors who would like to spend a holiday as guests of Continental doctors, and who would be prepared to offer hospitality in return in this country. The scheme has now been extended to include doctors' unaccompanied children. Any member who would like to send a child to spend a holiday in the household of a Continental doctor, and who is willing to offer hospitality to the child of a Continental doctor in return, is asked to communicate with the Secretary of the Association who will attempt to arrange an exchange. Once again it must be stated that the Association's responsibility in the scheme is limited to arranging the introductions.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils—Fulham, Hackney, Poplar

Non-Corban Borough Councils—Dartford, WallSEND

Urban District Councils—Denton, Droylsden, Houghton-le-Spring, Hutton-with-Roby, Redditch (restricted to new appointments), Tivdesley

HEARD AT HEADQUARTERS

The Burden of Work

Widely different accounts are coming from practitioners about the additional burden of work imposed upon them by the new Service. One Midland practitioner with a list of 4,000 and an assistant surprised his colleagues by declaring that, contrary to expectation, neither he nor his assistant had been conscious of any special strain this winter. An industrial practitioner in Yorkshire said that he had been impressed mostly by the restraint and timidity of his patients, who were afraid of taking up unduly the overburdened doctor's time. But there seems to be more said on the other side. There are the people who say, "Here is something for nothing. We must be in on it." There are the hypochondriacs, who are having the time of their lives. And even for the most forbearing lot of patients there is a vast increase of form-filling of all sorts, giving point to the remark of a little girl in a country area in Scotland when she saw the doctor coming, "Oh, mummy, here's the docket man." The Association is collecting material on this matter of burden of work, but obviously it must be spread over a fair period.

Private and Confidential

The Chief Medical Officer of the London County Council, Sir Allen Daley, told an amusing story at a meeting the other night. Medical record-cards of school-children are confidential and not ordinarily to be seen by the parent, but on one occasion by an inadvertence a school nurse handed a youngster his record card, which he took home. By ill luck there had been inserted in the space for the father's occupation the word "tooper," and there was a good deal of trouble before the matter was adjusted. The question of notifications has been a good deal in the air lately. The public accepts without question the notification of infectious and contagious diseases, but whether, as Dr C. P. Blacker rather optimistically predicted at the Psychological Medicine Group Conference at the B.M.A., it would respond with enthusiasm to the notification of interesting and unusual diseases is another story. Then there has lately been a case in which a Middlesex practitioner refused to divulge to the ambulance service the nature of the illness from which the patient who was to be carried in the ambulance was suffering. The chief officer of the ambulance service stated that this was the first time a doctor had refused such information, which was given without question to hospitals.

Occupational Health Service Bill

It is generally agreed that there should be an extension of the present industrial health services. This has been urged by the B.M.A., the Royal College of Physicians, the Association of Industrial Medical Officers and the Trades Union Congress, but no details, official or unofficial, have so far been published to show how this extension is to come about. A subcommittee of the Occupational Health Committee of the Association is putting forward for discussion an outline of an Occupational Health Services Bill, which should be preceded by a White Paper. This Bill proposes the setting up of a department of occupational health within the Ministry of Health, the department to be under the executive control of a small medical board appointed by the Minister after consultation with the profession. The function of the board would be to institute, supervise and direct on a regional basis a comprehensive occupational health service. There would be regional occupational health consultants.

The Night Duty Doctor

The Woodberry Down Health Centre, of which the Minister of Health laid the foundation stone last week, includes a bedroom for the doctor on night duty, though apparently this arrangement is not rigid and the room could be used for some other purpose. At first sight it seems natural enough that in an institution of this size devoted to medical services, including, in the forefront, general practitioner services, there should be a doctor on the premises at all hours. But the necessity for the night doctor was questioned when the matter was debated at the Royal Society of Medicine, and it was suggested that if a doctor was wanted on a night call it would be equally convenient to telephone him at his home, say a mile away. But

will doctors attached to health centres live no more than a mile away? Will there not be a disposition, when health centres cover the ground, for doctors, in London at any rate, to take their cue from business men who live ten, twenty, thirty miles from their offices? On the basis proposed there will be 150 to 200 health centres in the county of London. Will the doctors attached to them live within five minutes' car distance? If some live near and some afar, the former may complain of an undue burden of night work. A doctor on night duty at the health centre seems reasonable, even though at night there may be no consultations at the centre in the ordinary way.

Pessaries and Dutch Caps

General practitioners may supply pessaries under the National Health Service. As a corollary it was suggested that Dutch caps should be included in the arrangement, but the Ministry cannot agree. Its view is that if a practitioner thinks his patient ought to have such appliances on medical grounds he should refer her to the hospital service. The Executive Subcommittee of the General Medical Services Committee takes exception to this view, and thinks that Dutch caps should be supplied by the practitioner where he considers this to be advisable for medical reasons, and that as part of his terms of service he should ordinarily be expected to undertake any necessary fitting without referring the patient to hospital.

Questions Answered

Private or State Patient

Q.—My executive council informs me that it is not permissible for me to claim an emergency fee or to give a prescription on Form E.C.10 in respect of any patient permanently residing in my area who refuses to register either himself or his family on any doctor's list. One such patient refuses also to pay fees for services rendered by me privately. Am I under any obligation to give medical attention to the family when called?

A.—The General Medical and Pharmaceutical Services Regulations define the categories of persons for whose treatment a practitioner is responsible as follows:

(a) all persons whom he has accepted or agreed to accept for inclusion in his list and who have not been notified to him by the council as having ceased to be on his list;

(b) all persons whom he has accepted or agreed to accept as temporary residents;

(c) all persons who have been assigned to him in accordance with the allocation scheme and who have not been notified to him by the council as having ceased to be on his list;

(d) all persons for whom he may be required under the terms of the allocation scheme to provide treatment pending their acceptance by or assignment to a practitioner or to provide treatment in case of accident or other emergency;

(e) all persons for whose treatment the practitioner is responsible under paragraph 5 of these terms of service (evidence of person's title to obtain treatment).

The case quoted is not covered by any of the above sections and you may treat the patient privately, charging a fee. You are under no obligation to give medical attention to the family when called unless it is specifically claimed under paragraph (d) above.

Prescribing for Expectant Mothers

Q.—Since a number of N.H.S. expectant mothers have come up with demands for prescriptions for cotton-wool and toilet sundries for use by a private maternity home during their lying-in period I referred the matter to the executive council. The council seems nonplussed. What is the position?

A.—A practitioner who has booked an expectant mother may prescribe on Form E.C.10 any drugs and dressings which he considers necessary for the proper care of the patient. Patients who book a midwife may be supplied with a free maternity outfit by the local authority, and the Association has asked the Ministry whether similar arrangements are contemplated when the patient books a general practitioner. Until the Ministry decides the question, it can only be left to the practitioner's discretion what items he prescribes on Form E.C.10,

and, in so far as appliances are concerned, so long as these are included on the Third Schedule of the General Medical and Pharmaceutical Regulations, 1948.

Verbal Report to Coroner

Q.—Is a doctor entitled to the statutory fee of 5s. from a coroner when the latter telephones for a verbal report as opposed to a written report?

A.—There is no statutory fee for a verbal report by a medical practitioner to a coroner. The statutory fees are those for the payment of which provision is made in the Coroners (Amendment) Act, 1926—i.e., in respect of the conduct of a post-mortem examination at the request of a coroner, and for the attendance of a practitioner to give evidence at an inquest. These are the only fees for medical services specifically provided for by the Coroners Acts. However, local authorities are empowered by virtue of Section 25 of the Coroners Act, 1887, to make a schedule of fees, allowances, and disbursements whereby provision can be, and often is, made for the payment of a fee for a written medical report at the request of the coroner.

Correspondence

University Salaries

SIR.—I am very glad to see that the universities are to increase the salaries of teachers in medical schools so that they are less ridiculously different from those of specialists in the National Health Service. It would be interesting, however, to know the logic of the criteria adopted in selecting only teachers in medical schools.

The salary of a professor of physiology in a non-medical school may be £1,450 or £1,500, while that of his colleagues in the medical schools is to be raised to between £2,000 and £2,500. This cannot be because of differences in the standard of the teaching of physiology, for many of the non-medical examinations in physiology exempt students from physiology in the second medical examinations.

Is it because the physiologists in medical schools are medically qualified? But some of them are in fact not so qualified, while many physiologists in non-medical schools are qualified. And what about the first-year subjects? Are teachers of chemistry for the first medical examination to have salaries far higher than teachers for honours degrees in non-medical schools?—I am, etc.,

King's College of Household and Social Science.

JOHN YUDKIN.

Payment by Time

SIR.—The ophthalmic medical practitioners' remuneration is to be reduced—ostensibly because a minority are doing the work in less time than that estimated when the remuneration was agreed. I wish to protest against this principle of payment by time before it is too late. The satisfaction of the parties concerned is the criterion of a task successfully completed, and this bears no relation to the time taken in its performance.

Our organizations should beware of this departmental pitfall before the principle is applied to surgery and, let us say, four cataracts an hour becomes a basis for payment.—I am, etc.,

London, W.1.

H. F. MELHUISH.

Tapering Capitation Fee

SIR.—Much has been written in your correspondence columns about the impossibility of one man properly looking after more than about 2,000 patients in the N.H.S. It may be taken that the writers have practices below this figure. Very little has been said by the "large list" doctors, so that a word from one of them should not be out of place.

In a socialist society there is a tendency in all walks of life to discount the great differences in working capacity which exist between individual members of our species. In the medical sphere these differences are as marked as in any other. Whereas one slow, lazy, or inefficient general practitioner may

find 3,000 patients a burden another quick, efficient man who is fond of his work may manage 5,000 with ease. To do this latter, two requisites are necessary: first, to be a good doctor with a good sense of proportion; second, to be unafraid of hard work. Loud-voiced advocates of practice limitation should mark well and consider these two conditions.

It is true that many doctors cannot or will not look after more than 2,000 people. But to gear down the whole profession to the pace of the slowest is sheer waste of medical man power. Now the fashionable suggestion for a method by which doctors may be prevented from working at full capacity is to impose a sharply tapering capitation fee. This would, of course, make a small practice proportionately more profitable than a large one—and indeed the ostensible object of a tapering capitation fee (hereafter TCF) is to help small practices. To discover whether small practices deserve this help (at the expense of larger ones) it is necessary to consider why some practices are small, and whether a TCF would be justified having regard to each cause of this smallness.

The reasons why practices are small and the bearing of a TCF on each, are

(1) Because the practice has only recently been started. Here the TCF means that established, experienced doctors subsidize young, inexperienced beginners. The two is paid a bigger consultation fee than the tried and trusted veteran. The basic salary alone, for a limited time, is a more suitable form of help in these cases.

(2) Because public opinion considers the doctor to be bad. Here the TCF would subsidize those qualities which the public dislikes.

(3) Because the doctor is either unwilling or unable to work hard. Here the TCF encourages laziness, or subsidizes physical inadequacy.

(4) Because the doctor is a slow worker by nature. Other things being equal, slow work means waste of time. Here the TCF encourages waste of time.

(5) Because the doctor is so meticulously careful that, though the quality of his work is good, his output is small. Ultra-careful methods are excellent in a research worker, but in a GP often denote that he lacks a sense of proportion. (Also see below.)

(6) Because the locality of the practice is so attractive that many doctors settle down there and compete for the limited population. Here the TCF ensures that those doctors practising in pleasant surroundings can have the best of both worlds without sacrificing anything.

(7) Because the local population is sparsely distributed. Here a sufficient mileage and time allowance is what is required. The TCF is of no value in discriminating between concentrated and dispersed practices.

(8) Because the doctor prefers (or has in the past preferred) to treat a few wealthy patients rather than many poor ones. It would be unfair to expect his colleagues (by means of a TCF) to subsidize this doctor's excessive output of bedside manner.

Out of all these causes of smallness there is only one (No. 5) in which a TCF might justifiably operate by increasing the doctor's income so as to be more proportional to his worth. However, the rare cases of this sort could be better met by founding chairs of general medicine or appointing research workers with salaries additional to their capitation fees. From the foregoing considerations it can be seen that a TCF is not justifiable on any general grounds as a means of helping small practices.

To sum up its effects a tapering capitation fee would encourage laziness, slowness, and inefficiency. It would be grossly unfair to those who can and will work hard. By its superior worth of the experienced man would be more than discounted. Anything which discourages people from working is bad and such a device for securing artificial equality of income would seal the ruin of a profession whose traditions of freedom, liberality, and steady growth in wisdom are already being ruthlessly trampled underfoot—I am etc.

Derbyshire

J W O HOLMES

British Medical Guild

SIR—May I ask for enlightenment on two matters arising out of the Report of Council (Supplement, Feb. 26, p. 93)?

(1) Has the Association sufficiently considered the implications of the legal maxim *Qui facit per alium facit per se*? (2) Would the British Medical Guild possess any greater powers than the British Medical Association?

The proviso attached to Clause 3 of the Memorandum of Association prohibiting it from acting as a trade union was

no doubt inserted because the Board of Trade required such an assurance that the Association was a union of professional men and women, and not an association of workmen who might be coerced into agreement with the policy of its leaders. Even if the British Medical Guild is sufficiently distinct in law from the Association to enable it to disregard this proviso, might not an injunction still lie against the Association if its Council adopted so crude a device as to call itself by some other name in order to do something which is expressly forbidden by its Memorandum of Association? The Council would surely be regarded as procuring the committal of this illegal act by a mere legal subterfuge. Would not many members regard such conduct as disreputable?

The Report of Council states (*loc cit*, end of para. 32, p. 93) that "unless the trustees [of the British Medical Guild] speak with the voice of the medical profession their policy cannot be enforced in any case, and, if they do, then public opinion within the profession will bring back-sliders into line more quickly and effectively than anything else." From this it would appear that the only way in which members of the profession can be induced to follow a particular policy is by peaceful persuasion, based on "public opinion within the profession." Is not the Association already possessed of ample powers for the guidance of such opinion, for its estimation on particular questions (as shown in the recent plebiscites) and for taking whatever steps may be appropriate to bring such opinion before the proper authorities?—I am etc.,

London W 1

DONALD C NORRIS

Cost-of-Living Variation

SIR—During the last few weeks there have been numerous letters in the *British Medical Journal* and numerous resolutions passed at group and committee meetings, all relating to the necessity of a rise in the capitation fee so that the general practitioner should obtain an adequate salary for his manifold services. A survey of these recommendations indicates that they are all based on what can be called a short-term policy. We know that the rural practitioner or the urban practitioner with small lists is finding things financially difficult and attempts are being made to rectify this by an increase in the capitation fee for the first 1,000 patients. This is all to the good, but in addition would it not be wise to consider very seriously the long-term policy?

It has been shown that, with the present population and number of general practitioners each practitioner on the average would have to look after 2,300 patients. In the course of time this distribution may take place. It would enable the doctor to give more time to each patient and perhaps find time for a little leisure and recreation. But the important thing is that his income for these 2,300 patients should be at least equal to that of any dentist or optician—or should approximate to the maximum suggested by the Spens Report. It may necessitate a varying capitation fee for the first 1,000 because of the peculiar circumstances of the rural areas but the 2,000 lists should receive the maximum income.

Some other safeguards must be added. First, the fee for the first 1,000 patients ought to vary annually according to the official Government "index of living", and secondly as the number of general practitioners increases, the average per doctor may decrease. Assuming the same population persists, the maximum salary ought to be earned for the new mean average of patients—I am etc.

Barnham

I ACKERMAN

Representative Body and Council

SIR—I should like to congratulate Mr. Cyril E. Beare on his letter (Supplement March 5, p. 125). His criticism of Dr. Cockshut's recent articles is just and deserved. They are disingenuous and full of half truths and evasions. It is one of the greatest weaknesses of the Association that resolutions passed by the R.B. or more frequently permissive riders to resolutions which at the time seem to provide ample safeguards against disaster of one kind or another are disregarded by Council or at least are never heard of again. When the question of reform of our Constitution comes up at the S.R.M. at the end of this month I hope that one of the reforms will be a measure

which will make it obligatory on Council to carry out the expressed wishes and directions of the Representative Body.—I am, etc.,

Wolverhampton.

A. VICTOR RUSSELL.

Position of Assistants

SIR,—The *Supplement* has contained recently an increasing volume of protest on the position of experienced assistants, but I have not yet noted the voice of a principal raised in defence of the now outmoded assistantship system. As the regulations now stand the doctor gaining G.P. experience as an assistant after war service may be exploited to an alarming degree. The advertisement columns of the *Journal* show all too clearly that the trainee assistant with his State-subsidized salary is often better rewarded financially than his more experienced counterpart. Is the B.M.A. too occupied with the question of salaries for the public health medical officers to give some attention to a suitable minimum for assistants?

Almost all recent correspondents have stressed the need for limiting lists to 2,500 patients. I am reluctant to believe that the regulation which allows a principal and one assistant to accept 6,400 patients was originally proposed by the Ministry of Health, which could not fail to be aware of the financial advantage to the employing doctor of this gross overloading. It does look very much like a bargaining clause inserted at the instigation of our negotiating principals.

One has every sympathy for the established doctor in failing health who requires help to run his practice, but for the commercially minded gentleman living well on the proceeds of an inflated list and the labours of an overworked assistant one can but earnestly hope that his days of profiteering are numbered. May I suggest that the B.M.A. give the mere assistant some effective representation and urgently investigate what is to many of us a most grave injustice?—I am, etc.,

FIAT JUSTITIA.

Prescribing for Hospital Out-patients

SIR,—The letter from Miss Margaret E. Brighton, of the National Association of Women Pharmacists (*Supplement*, March 12, p. 143), opens up a point of view which may be irrelevant to her letter but, I think, will have to be dealt with sooner or later. I refer to the necessity for out-patients' being given medicines from hospital at all. The general practitioner with a patient on his or her list is responsible for the treatment of this person, who may be receiving medicines and treatment from a hospital of which the G.P. has no knowledge. When all persons are eligible for free medicines from the G.P. I question the necessity and the wisdom of this custom of hospitals' supplying medicines.

To one accustomed to the habits of private consultants the custom is incomprehensible; no consultant ever prescribed drugs without reporting to the G.P. This immediate report to the G.P., with the necessity of all drugs given to the patient being given with the knowledge, and on the prescription of the G.P., would certainly cut the costs of hospital administration.

Another point arises. I administer penicillin when necessary to patients either in the surgery or in their own houses. Colleagues living in similar towns send their penicillin cases to hospitals. My costs of prescribing for patients will be appreciably higher than theirs, and I am certain to have this matter brought to my notice sooner or later. Also, I am paid the same as they are for my services to my patients, but I do more for mine. There must be some uniformity of practice.—I am, etc.,

Ruthin, Denbighshire.

ENID HUGHES.

Midwives and Doctors

SIR,—At a meeting held at Bristol for the purpose of discussing the Report of the Working Party on Midwives, and addressed by Miss J. P. Ferlie, I was profoundly disturbed to discover the depth of the bitter feeling that exists in the minds of midwives concerning their relationship with the general practitioner under the National Health Service. There appears to be a widespread fear that the domiciliary midwife will be relegated to the position of maternity nurse and general

handywoman, with consequent lowering of the status and dignity of the profession.

The resentment that this fear promulgates in the breasts of the midwives seems to be directed in the main against the general-practitioner obstetrician, who is regarded as being desirous of gathering unto himself the whole of the practice of domiciliary midwifery, normal and otherwise, first by signing the patient on with an E.C.24, secondly by doing the pre-natal examinations himself, and thirdly by exercising his right to deliver the patient irrespective of whether his attendance is obstetrically required or not.

Now let us look at the other side of the picture. The G.P. is somewhat uneasy too. He feels that there is a growing tendency amongst the midwifery hierarchy to regard him as being entirely superfluous to the practice of domiciliary midwifery, that the midwife is to be regarded as the sole practitioner of normal midwifery, and that she should have behind her a team of consultants on whom she can call directly should any abnormality arise. In this arrangement the G.P. will no doubt be cast an occasional pearl in the shape of a torn perineum or a "sticky eye."

During the past 15 years I have engaged extensively in the practice of domiciliary midwifery and enjoyed with the local midwives a professional relationship that has been almost entirely free from friction, and neither side of the partnership has ever bothered to consider whether the midwife has been a "midwife" or a "maternity nurse."

The cessation of this "war" is a matter of extreme urgency if our patients are to receive the comprehensive obstetrical attention we all desire. To this end I put forward the following observations as a possible basis for the solution of the problems that undoubtedly exist.

(1) Normal midwifery should be regarded as the province of the midwife, always bearing in mind that the newly fledged G.P. must himself conduct a considerable number of normal domiciliary cases before he can adequately cope with the abnormal. The midwife must accept the premise that the mere expression of the mother's wish to have a doctor is sufficient reason for one being called.

In this respect one would point out that the presence of the G.P. at the delivery does not necessarily mean that he performs it. In my own case I find it difficult to remember the last time that I conducted a normal delivery in a patient's own home. It has been my habit for years to give an anaesthetic and leave the actual delivery to the midwife or to the pupil if one be present. Even when one applies forceps one's custom is to bring the head down to the perineum and then, whenever possible, to allow the pupil to complete the delivery.

(2) Every mother being confined in her own home must be attended at her delivery by a qualified individual, whether it be G.P. or midwife. There is a tendency among some district sisters to entrust deliveries to pupils, who only send for their superiors if they suspect that some abnormality has arisen. This practice must cease, and qualified midwives who are responsible for the supervision and training of pupils in domiciliary midwifery must themselves be present at every delivery unless prevented by circumstances beyond their control. The natural corollary to this is of course that no district sister shall be responsible for more than one pupil.

(3) Every mother should be given her free choice of doctor and, if possible, her choice of midwife, and both should be engaged at an early stage of pregnancy. The present misguided practice among some midwives and pupils of telling the mothers that they "don't really need a doctor" is to be deprecated.

(4) The pre-natal examinations should normally be carried out by the midwife, and the doctor who is chosen to attend the delivery if required should see the patient at the time of the initial booking and at the 34th and 38th weeks, and at any other time the midwife may desire. These examinations ought to be conducted when both doctor and midwife are present. This could be most conveniently done, in urban areas at least, in existing or future municipal midwifery centres.

(5) At the time of the confinement I suggest the following procedure. The patient is told that as soon as labour commences she must notify the midwife, who then visits the patient and informs the G.P. of the state of the mother. The doctor will then in due course call upon the patient, do whatever examination he considers necessary, and hold himself in readiness to attend the confinement if the midwife requires his help. During the post-natal period the doctor visits the patient as he may desire and carries out the final post-natal examination at about the 6th week as usual.

(6) On the vexed question of the administration of analgesics, I consider that the midwives should be granted authority to use the gas-air machine without the previous consent of a doctor. If the patient is unfit to receive gas-air she should probably have had her

pregnancy terminated months ago. As regards "trilene," I am not happy at present and would for the time being not permit its use without the consent of the doctor. To forbid completely the use of pethidine by a midwife because one member of the profession decided to give it to herself instead of the patient and thereby developed a habit seems about as sensible as closing the Clifton Suspension Bridge to pedestrian traffic because a number of people have chosen to leap therefrom as a quick solution of the problems associated with twentieth-century existence.

The suggestions I have submitted are no doubt imperfect and deserving of considerable criticism, but I do suggest that somewhere along these lines is to be found the solution to the disquiet that now threatens the amicability of the future relationship between the midwife and the general-practitioner obstetrician.—I am, etc.,

Bristol.

O. E. L. SAMPSON.

Breach of Terms of Service

SIR,—Under the above heading you describe (Feb. 26, p. 371) how a Medical Service Committee has recommended that the sum of 150 guineas be withheld from the remuneration of a general practitioner whose offence was the issue of a post-dated medical certificate.

At the hearing there was no legal representation and the procedure does not appear to have been carried out in a manner equivalent to a judicial court of law. It seems reasonable that such a court could, as the practitioner's employer, recommend whether or not his name should be removed from the medical list—i.e., give him the sack—but what is tantamount to imposing a fine, and a heavy one, too, seems to me to be not only a barbarous punishment but one which no non-legal court should have power to recommend. In this case, although regulations are quoted in support of the committee's actions, no such regulation is given to justify the withholding of remuneration, if the summary given by your correspondent is accurate.

At p. 106 of the *Supplement* in the same issue there appears a discussion bearing on this very question. To quote: "The appearance of a solicitor with the defendant often resulted in heavy weather being made of the case . . . and that this magnification might be reflected in the penalty. The view was strongly held that the domestic type of jurisdiction was most suitable. . . ." To my mind magnification of the punishment is impossible in this case. In the next paragraph we read, ". . . in about a year's time the committee would be reviewing procedure. . . ." I urge the General Medical Services Committee of the B.M.A. to act at once and protect doctors from arbitrary treatment of this sort. Doctors must insist that where heavy penalties are involved they are given a fair trial by a properly constituted court. The present position offers an alarming prospect to those who, like myself, have yet to establish themselves in the profession.—I am, etc.,

Sale, Cheshire.

D. C. LINDARS.

* In such cases the Minister of Health may direct that remuneration be withheld under the National Health Service (Service Committees and Tribunal) Regulations, 1948.—ED., *B.M.J.*

Public Health Salaries

SIR,—Medical members of the Public Health Service must have been cheered by the tone of the leading article under the above title (*Journal*, March 5, p. 401), especially when read in conjunction with the appropriate paragraphs contained in the *Supplement* to the same issue under the heading of "The Secretary Reports." The crux of the matter is that the associations of local authorities have so far refused to open negotiations, knowing full well that in the light of the Spens Reports there must be a substantial increase in the salaries of whole-time medical officers in the Local Government Service, and they fear that increases in the remuneration of their medical staff will mean corresponding increases in the case of other chief officials and their deputies. In general, it is customary for the town clerk to be the highest paid Local Government official, followed by the treasurer and then by other chief officials such as medical officer of health, city engineer, chief education officer, etc.

Is there any reason why the medical officer of health should not, in fact, receive more than the other chief officials?

In this respect it is pertinent to ask, Which of the chief officials has the longest academic training and is required to possess the highest qualifications in the way of degrees and special diplomas? The answer is, without any doubt, the medical officer of health.

Although medical officers of health are heads of departments and thereby chief officials, they are primarily members of the medical profession, and from every point of view it is desirable that remuneration within the Public Health Service should be closely related to that in general practice and the specialist services. Only in this way will the right men be attracted into the Public Health Service. There is already much evidence that young men are not turning towards the Public Health Service as a career. A number of medical schools have ceased to run D.P.H. courses during the last year, and I understand that the candidates attending those courses still running are few in number.

The Public Health Service is an integral part of the National Health Service and must continue to expand. This will not be possible if local health authorities continue with their present outlook, as an example of which I quote a paragraph taken from a recent letter sent by the secretary of the Association of Municipal Corporations to all town clerks:

"If your council should have occasion in the near future to consider the appointment of medical officers in the Public Health Service or School Health Service, I trust that you will not be influenced by the scales of salaries promulgated by the British Medical Association which have not yet been considered by the Association, and if the British Medical Association refuse to accept an advertisement for publication in their journal, there are, of course, many other daily and weekly publications of which your council can avail themselves for this purpose."

I sincerely hope that all members of the Public Health Service will stand firm and will not apply for any black-listed post, and that we shall continue to have the strongest support from the entire medical profession in this matter.—I am, etc.,

M.O.H.

Supplementary Ophthalmic Service

SIR,—A letter has been sent to ophthalmic surgeons informing them that, in spite of energetic protests and the enthusiastic representations of the Negotiating Committee, the Minister has reduced the fee payable to ophthalmic surgeons from £1 11s. 6d. to £1 5s. If the Minister had read the letter of censure which the Ophthalmic Negotiating Committee sent out to ophthalmic surgeons some weeks ago he would have shared my doubts about the enthusiasm of our negotiators, and the protests would probably have been more energetic from a committee composed of ophthalmic surgeons, who were actually working the Supplementary Scheme. The fact that Mr. Bevan values the services of the optician who measures the patient for spectacles at a higher figure than that of an ophthalmic surgeon doing the refraction and making a complete eye examination shows what he thinks of the medical profession in general and of ophthalmic surgeons in particular.—I am, etc.,

Camberley.

LESLIE HARTLEY.

SIR,—It seems incredible after such recent history that the B.M.A. should sponsor an attempt by our Negotiating Committee to take the chestnuts out of the fire for Mr. Bevan, as witness the recent circular letter sent to ophthalmic practitioners (now popularly called O.M.P.s) signed by the chairman of the Ophthalmic Negotiating Subcommittee and the chairman of the Ophthalmic Group Committee. I consider the letter ill-informed and premature, and I for one resent the insinuations and implications, and reject its directions and hope that honest working O.M.P.s will do the same. I have delayed criticism, thinking others might express an opinion; if only a few were forthcoming it should not be assumed that the letter was accepted.

The circular in question starts off by stating that we have been already informed that "your Negotiating Committee" settled terms of service for the Supplementary Ophthalmic Service with the Ministry of Health, and undertook, on their part, that ophthalmic practitioners participating would give a full ophthalmological examination to each case, which they

estimated would occupy an average half-hour, this being apparently the basis of remuneration fixed on the Spens scale. Actually this information was only received a month or six weeks before the circular letter, and at the time of joining the Service nobody knew except by public notice what the payments were to be, let alone any indication of what the forthcoming Service required.

Paragraph 2 says that "the returns of moneys paid by local executive councils out of public funds to the individual ophthalmic practitioners . . . make it clear that this implied contract is not being universally fulfilled; and unfortunately there is a minority of practitioners whose earnings have been such that it must be concluded that they are not maintaining adequate professional standards in their public work."

This is an amazing statement, if only for its loose verbiage and rather comical conclusions. Why "unfortunately"? Why, if it is a fact that a minority of men are earning too much, should it be concluded *ipso facto* that these men are not maintaining adequate public standards in their professional work?

The rest of the paragraph I will develop later, to draw attention quickly to its next phrase. I quote: "The Ophthalmic Group Committee of the B.M.A. have therefore asked the Negotiating Committee to seek a further meeting with the Ministry with a view to modifying the conditions of this service." Here is a very sorry spectacle indeed of our Negotiating Committee begging a meeting with the Ministry to reduce the original working contract. One would imagine that the Ministry should ask our Negotiating Committee for a conference with it. Whose Negotiating Committee are they anyway? Whose interests are they guarding, ours or the Ministry's? It seems to me that the dry rot of May, 1948, is still with us.

The circular ends with the threat, "It would, of course, be easy but distasteful to suggest regulations designed to discipline those who do not so behave." I would warn the writers that the Minister is not the type who takes his orders from anybody's suggestions, and therefore their disciplinary measures might have the opposite effect.

Returning to the first paragraph again, I quote: "Your Negotiating Committee undertook that, on their part, the ophthalmic practitioners participating in this service would give a full ophthalmological examination to each case, which your Committee estimated would occupy on the average half an hour." May I inform our Negotiating Committee that if they meant this the Ministry must have meant something completely different. The form O.S.C.1 signed by G.P.s certifies that the patient needs his eyes tested; the form O.S.C.2 is headed, "Sight testing and supply of glasses." Claim forms are framed, "I have tested the applicant's sight." Not once anywhere in the labyrinth of complicated instructions is there a mention of a complete ophthalmological examination: we are completely ignored. The whole set-up of the Service is an insult to O.M.P.s. How much of the time required to fill up O.S.C.2 forms did our Negotiating Committee allow for out of the half-hour, and if the practitioner makes arrangements for the clerical work to be done might he then have the advantage of allowing himself more time for the actual examination and consequently seeing more patients? Have our Negotiating Committee ever been consulted about the nit-witted form O.C.S.2 with all the elaborate details of the patient, involving four signatures from the doctor, supplemented by his list number twice, etc.?

Of the last hundred patients I have seen at a clinic in South London sixty were between the ages of 55 and 80 and had never had glasses; thirty between the ages of 60 and 75 had had them off the counter, and only ten between 38 and about 56 had been examined by either an O.M.P. or an optician. Inability to buy glasses kept the majority of applicants now applying from having their sight attended to before, and I for one get a great kick out of seeing the joy and hope in the eyes of some of these old people who discover for the first time in 20 or 30 years that they can read again or go to a picture.

After the announcement of the half-hour's examination, imagine the come-down in the second paragraph to a sentence which must be a classic. I quote: "It was never the intention of your Negotiating Committee that refraction work should be paid out of public funds at a rate which could very consider-

ably exceed that which has been generally accepted by the profession as a whole, as being applicable to the 4% of specialists who will participate in the highest Spens award." What a change from complete ophthalmic examination to refraction work! I have an idea that I have seen books on the practice, the art, and the science of refraction, but never one on "refraction work." It can hardly be so derogatory that some people can make money by writing of refraction work, though they may not call it such. Then again, "refraction work," as if the ophthalmic hierarchy never touch it; or do they? Surely they cannot live on trephining all the time and finding bracing climates for relief of post-operative tensions some of the time?

When July 5 came O.M.P.s found a colossus of work. On all sides they were wanted to work the scheme with efficiency and to cope with the avalanche of applicants. Through complete ophthalmological examination on the one hand or sight-testing on the other since July 5 I have spotted and adequately directed for treatment, surgical or otherwise, some interesting cases—one pituitary adenoma, two brain tumours (one frontal and one temporal lobe), two choroidal melanomas, six chronic glaucomas (one with an anterior chamber so big as to belie the diagnosis), numerous retinal and choroidal conditions, hundreds of all manner of lens changes, abnormal corneal conditions, and congenital abnormalities. Add to this nearly 30 domiciliary visits to the aged poor and infirm in London and the Home Counties, out of ordinary working hours, for which I asked no extra fees. Some of these cases required much longer than the "official" half-hour.

Therefore I seriously suggest that, instead of the extraordinary letter of castigation in question, one should be addressed to the men who held the fort, thanking them for saving thousands of patients from being lost to the professional consultant for ever.

Finally, it must be conceded from a democratic no less than a professional point of view that those who negotiate shall have a practical and actual experience of the subject to be negotiated, providing the intricacies of small and big points under discussion with knowledge that experience alone can give. If, added to this, a little grit and determination were also forthcoming to stand up to the Ministry of Health officials and make them see the justice of the professional claims and the service that the O.M.P.s can, and do, render to the public, we then might get somewhere and not once more be betraying ourselves and the public.—I am, etc.,

Walton-on-Thames, Surrey.

JAMES H. MELLOTT.

* Dr. Mellott asks us to say that this letter was received before the recent reduction in O.M.P.s' fees was announced.—Ed., B.M.J.

SIR,—In reply to Dr. Cecil B. F. Tivy (*Supplement*, March 5, p. 125), my point of view is this. Under existing circumstances an ophthalmic medical practitioner is called on to deal with two distinct classes of patient: (i) those who are referred to him at his own rooms by a G.P. or ophthalmic optician for a medical opinion; (ii) those who come for a routine refraction, mainly under the auspices of the dispensing opticians, and often at clinics organized by them. While I think there is a case for reduction of the fee in regard to the second class of patient, I see none at all in regard to the first. The original guinea-and-a-half fee was only half the usual private consulting fee which those of our representatives who are established in large private practices are accustomed to charge their well-to-do patients. On this basis it is certainly a reasonable fee for a medical ophthalmic examination, irrespective of the time taken.

It is to be hoped that none of our negotiators would be party to excluding the first class of patient from the Supplementary Service, and so degrading it to a level at which it could equally well be run by ophthalmic opticians alone. Such a degradation would clearly not be in the best interests of ophthalmic medical practitioners, G.P.s, ophthalmic opticians, or the public, all of whom stand to benefit if a second opinion is readily available to patients who do not need or do not wish to go to hospital and cannot afford to pay private fees.—I am, etc.,

Birmingham.

J. H. AUSTIN.

Association Notices

FULL-TIME NON-PROFESSORIAL MEDICAL TEACHERS', LABORATORY AND RESEARCH WORKERS' GROUP

The Group Committee invites all members of the Association who are non-professorial medical teachers, laboratory or research workers to join the Non-Professorial Group, which is represented on the new Special Committee which has now been set up by Council (see page 160). Application forms may be obtained from the Secretary, B.M.A. House, or members are invited to approach the representative of the Group Committee in their Region. A list is given below:

Region 1	Dr. I. Rannie (Newcastle).
" 2	Dr. Georgiana Bonser (Leeds).
" 3	Dr. A. R. Kelsall (Sheffield).
" 4	Dr. G. W. Harris (Cambridge).
" 5	Dr. P. D'Arcy Hart (London).
" 6	Dr. J. F. Heggie (London).
" 7	Dr. C. L. Oakley (Bromley).
" 8	Dr. M. R. Pollock (London).
" 9	Dr. A. H. T. Robb-Smith (Oxford).
" 10	Dr. K. E. Cooper (Bristol).
" 11	Dr. F. R. Magarey (Cardiff).
" 12	Mr. B. N. Brooke (Birmingham).
" 13	Dr. M. C. G. Israëls (Manchester).
" 14	Dr. J. C. Brundret (Liverpool).
" 15	Dr. J. W. Howie (Aberdeen).
" 16	Dr. G. R. Tudhope (Dundee).
" 17	Mr. A. G. R. Lowdon (Edinburgh).
" 18	Dr. R. D. Stuart (Glasgow).
" 19	Dr. W. R. M. Morton (Belfast).

SCHOLARSHIPS IN AID OF SCIENTIFIC RESEARCH

The Council of the British Medical Association is prepared to receive applications for research scholarships as follows: An Ernest Hart Memorial Scholarship of the value of £200 per annum, a Walter Dixon Scholarship of the value of £200 per annum, and four Research Scholarships each of the value of £150 per annum. These scholarships are given to candidates whom the Science Committee of the Association recommends as qualified to undertake research in any subject (including State medicine) relating to the causation, prevention, or treatment of disease. Preference will be given, other things being equal, to members of the medical profession.

Each scholarship is tenable for one year starting on Oct. 1, 1949. The scholar may be reappointed for not more than two additional terms. A scholar is not necessarily required to devote the whole of his or her time to the work of research but may hold an appointment at a university, medical school, or hospital, provided the duties of such an appointment do not interfere with his or her work as a scholar.

In addition, applications are invited for the award of the Insole Scholarship of the value of £250 for research into the causes and cure of venereal disease.

Applications for scholarships must be made not later than March 31, 1949, on the prescribed form, a copy of which will be supplied on application to the Secretary of the Association, B.M.A. House, Tavistock Square, London, W.C.1. Applicants will be required to furnish the names of three referees who are competent to speak of their capacity for the research contemplated.

NATHANIEL BISHOP HARMAN PRIZE

The Council of the British Medical Association is prepared to consider the award of the Nathaniel Bishop Harman Prize in the year 1949. The value of the prize is approximately £100. The purpose of the prize is the promotion of systematic observation and research among consultant members of the staffs of hospitals who are not attached to recognized medical schools. It will be awarded for the best essay submitted in open competition. The work submitted must include personal observations and experiences collected by the candidate in the course of his practice. A high order of excellence will be required. No study or essay that has been previously published in the medical press or elsewhere will be considered eligible for the prize.

Any registered medical practitioner who is a consultant member of the staff of a hospital in Great Britain or N. Ireland and is not

attached to a recognized medical school is eligible to compete. If any question arises in reference to the eligibility of a candidate or the admissibility of his essay the decision of the Council shall be final.

Should the Council of the Association decide that no essay submitted is of sufficient merit, the prize will not be awarded in 1949 but will be offered again the year next following this decision, and in this event the money value of the prize on the occasion in question shall be such proportion of the accumulated income as the Council shall determine.

The writer of the prize-winning essay may be required to prepare a paper on the subject for publication in the *British Medical Journal* or for presentation to the appropriate section of the Annual Meeting of the Association. Each essay must be typewritten or printed in the English language, and must be distinguished by a title and a motto. The essay must not bear the name of the writer, which should be sent with the essay in a sealed envelope bearing only the motto on the outside.

Essays must be forwarded to reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, not later than March 31, 1949. The prize will be awarded at the Annual Meeting of the Association to be held in 1949. Inquiries relative to the prize should be addressed to the Secretary.

PRIZES FOR MEDICAL STUDENTS

The Council of the British Medical Association is prepared to consider the award in 1949 of prizes to medical students for essays submitted in open competition. The subject of the essays for 1949 shall be: "The Value of Observation in the Training of the Medical Student." The purpose of these prizes is the promotion of systematic observation among medical students. In awarding the prizes due regard will be given to evidence of personal observation. No study or essay that has previously been published in the medical press or elsewhere will be considered eligible for a prize.

The following prizes are offered:

National Prizes—six, each of the value of £25.

Regional Prizes—as detailed below, based on the four Regions of the British Medical Students Association:

London Region, 6 prizes (1 of the value of £15; 5 of the value of £7).

Midland Region, 3 prizes (1 of the value of £15; 2 of the value of £7).

Northern Region, 3 prizes (1 of the value of £15; 2 of the value of £7).

Scottish Region, 5 prizes (1 of the value of £15; 4 of the value of £7).

Any medical student who is a registered member of a medical school in Great Britain or Northern Ireland at the time of submission of the essay is eligible to compete for the prizes. The winners of the National Prizes will be ineligible for the award of a Regional Prize. If any question arises in reference to the eligibility of a candidate or the admissibility of his essay, the decision of the Council shall be final. Should the Council of the Association decide that no essay entered is of sufficient merit, no awards shall be made.

Each essay must be typewritten or written legibly in the English language, and must be unsigned and accompanied by a detachable sheet giving the name of the candidate, his medical school, and his B.M.S.A. Region. Essays must be forwarded so as to reach the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, not later than March 31, 1949.

PRIZES FOR NURSES

The Council of the British Medical Association is prepared to consider the award in 1949 of three prizes each of the value of 20 guineas for the best essay and three prizes each of the value of 10 guineas for the second best essay submitted in open competition by each of the following categories of nurses: (i) Pupil nurses; (ii) State-registered nurses working in a hospital; (iii) State-registered nurses not working in a hospital—i.e., district nurses, private nurses, etc.

The subjects of the essays for 1949 shall be: category (i), "What discipline do you think necessary in the training of nurses?"; category (ii), "What part of nursing duties can be delegated to others with safety?"; category (iii), "The care of old people in their own homes."

The purpose of these prizes is the promotion of systematic observation among nurses. In awarding the prizes due regard will be given to evidence of personal observation. No essay that has previously appeared in the medical press or elsewhere will be considered eligible for a prize. Nurses who are undergoing training at a hospital are eligible to compete under category (i); nurses registered by the General Nursing Council are eligible to compete under

categories (ii) and (iii). If any question arises in reference to the eligibility of a candidate or the admissibility of his or her essay, the decision of the Council of the British Medical Association shall be final. Should the Council decide that no essay entered is of sufficient merit, no award shall be made. Each essay must be typewritten or legibly written, must be unsigned, and must have attached to it a sealed envelope containing the name and address of the candidate and the category into which he or she falls. Essays must reach the Secretary of the British Medical Association not later than March 31, 1949. Inquiries about the prize should be addressed to the Secretary, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1.

Diary of Central Meetings

MARCH

- 25 Fri. Venereologists Group Committee, 2.30 p.m.
- 29 Tues. Special Representative Meeting, 10 a.m.
- 30 Wed. Special Representative Meeting, 10 a.m.
- 31 Thurs. Drafting Subcommittee, 2.15 p.m.

APRIL

- 4 Mon. Joint Committee of B.M.A. and National Veterinary Medical Association, 2 p.m.
- 6 Wed. Health Centre Committee, 2 p.m.
- 7 Thurs. Journal Committee, 2 p.m.
- 11 Mon. Armed Forces Committee, 2 p.m.
- 12 Tues. Proprietary Medicines Committee, 11 a.m.
- 12 Tues. Planning Subcommittee, 11 a.m.
- 13 Wed. Charities Committee, 2 p.m.
- 22 Fri. Pathologists Group Committee, 2 p.m.
- 28 Thurs. Occupational Health Committee, 2 p.m.

MAY

- 24 Tues. Scholarships and Grants Subcommittee, 11 a.m.

Branch and Division Meetings to be Held

CAMBERWELL DIVISION.—At St. Giles Hospital, London, S.E., Tuesday, March 29, 8.30 p.m. Mr. D. F. Ellison Nash: "Genito-Urinary Disorders in Childhood." Non-members of the B.M.A. are invited.

LEWISHAM DIVISION.—At Lewisham Hospital, 390, High Street, London, S.E., Friday, April 1, 8.30 p.m. Dr. C. C. Worster-Drought: "Brain Tumours."

MID-ESSEX DIVISION.—At St. John's Hospital, Chelmsford, Sunday, April 3, 10 a.m. Mr. Peter Martin: "Varicose Veins and Vascular Disorders of the Limbs."

NORTH OF ENGLAND BRANCH.—At Royal Victoria Infirmary, Newcastle-upon-Tyne, Thursday, March 31, 7.15 p.m., Short communications by Mr. Frank Stabler: "What to do until the Arrival of the Flying Squad"; Dr. William Hunter: "The Care of the Perineum During Labour"; Mr. Linton Snaith: "Threatened Abortion." 4.45 p.m., Professor E. Farquhar Murray: "Consideration of the present Position of Midwifery, with some Practical Points"; Mr. H. Harvey Evers: "Comments on the Third Stage of Labour and its Complications."

ROCHDALE DIVISION.—At Rochdale Infirmary, Sunday, March 27, 6 p.m. Agenda: Instruction of Representative to Special Representative Meeting on March 29 and 30, etc.

SALISBURY DIVISION.—At Red Lion Hotel, Salisbury, Wednesday, March 30, 7.30 p.m. for 8 p.m. Annual dinner. Address by Mr. E. Watson-Williams: "Medicine and Magic."

STOCKPORT DIVISION.—At Stockport Masonic Guildhall, Wednesday, March 30, 8.30 p.m. Annual dinner and dance.

WINCHESTER DIVISION.—(1) At Guildhall, Winchester, Thursday, March 31, 3 p.m., Address by Dr. Charles Hill: "Current Problems." Members from adjoining Divisions are invited. (2) At Banqueting Hall, Winchester, Thursday, March 31, 7.30 p.m., Annual dinner and dance.

Meetings of Branches and Divisions

MARYLEBONE DIVISION

The following motion has been passed by the Division for inclusion on the agenda for the S.R.M. on March 30:

"That the B.M.A. should protect the public and the profession from the evils inherent in the nationalization of medicine by the exertion of moral force, as it did in January, 1948, and without the formation of any new or parallel organization such as a medical guild."

CITY OF ABERDEEN DIVISION

At a meeting of the Division held on Feb. 15 Professor John Craig, of the Chair of Child Health, Aberdeen University, opened a discussion on "The General Practitioner and the Child Health Service." After giving a short account of the development of the Child Health Service he proceeded to consider how the family doctor

could increase his contribution to child health. He discussed the present relationship of the family doctor to the child-welfare clinics, school clinics, and health visitors, and after reviewing the difficulties in integrating the various services he emphasized the necessity for devising means whereby the family doctor could co-operate and have effective liaison with these services. If group practices and health centres were established it might be possible to attach a health visitor to each practice and to have child-welfare clinics in the health centres. He then considered the most suitable methods of giving graduate and postgraduate instruction on child health, and wondered if it would be possible for a small number of students to be allocated to family doctors for training. Each area should devise its own child health organization rather than accept a centralized and uniform service.

GUILDFORD DIVISION

At a meeting of the Division on Jan. 4 Dr. L. S. Michaeli lectured on "Orthopaedic Treatment in Rheumatic Disease." He said that even the most advanced stages of rheumatoid arthritis and osteoarthritis were accessible to well-considered treatment. The only exceptions were extreme physical or psychological deterioration. Individually designed combinations of exercise, splinting, manipulation, and operation could render bedridden patients capable of walking and sitting, and patients unable to work capable of earning a livelihood. Arthrotomy and lavage (Timbrell Fisher) in the acute phase arthroplasties of elbow and knee, and excision and osteotomy (Batchelor) at the hip were useful operations demanding wider application and further study. He emphasized the difficulties and importance of early accurate diagnosis and of prevention of fixed deformity. Only a complete census would disclose the true extent of neglected invalidism, of wasted man- and woman-power, and of money spent on unproductive maintenance rather than on active rehabilitation. The general practitioner, helped by travelling specialists, should be made a member of the country-wide team undertaking this census and, after suitable training, the continuous follow-up of all patients suffering from severe rheumatism and arthritis.

LINCOLN DIVISION

A General Meeting of the Division, to which all practitioners in the area were invited, was held on Feb. 20, with Dr. A. M. Maiden in the chair.

The chairman opened a discussion on remuneration, and he summarized the report prepared for the consideration of the Conference of Local Medical Committees. He felt it was a good report, and, if it went through, it would be a great help to all practitioners. The most controversial question was the suggestion that the whole of any extra capitation fee be added to the first 1,000 patients on practitioners' lists. Dr. Robertson thought that if all the increase went to the first 1,000 it would benefit the man who restricted his list, and it would be better therefore to base the number on an average list rather than on the first 1,000. Dr. Semple said that one of the objections to the present Service was basic salary, and the present proposal would cut out basic salary and inducement payments, which would be a good thing.

A good deal of attention was given to what action should be taken by the profession if the Minister said that the proposed increase could not be afforded. Dr. Nelson said that he had just come back from South Africa, and there the threat of mass resignation had proved entirely successful. All speakers agreed that this was our best weapon, but professional unity would be very necessary to make it entirely effective.

ST. PANCRAZ DIVISION

The Division was "At Home" to members of neighbouring Divisions in London at B.M.A. House on Feb. 4 for the first showing in this country of a new film entitled "Angina Pectoris," recently purchased by B.M.A. Film Library. Dr. Liston, the chairman of the B.M.A. Film Committee, presided. He said that when the Film Committee published the report of its deliberations two of the most important suggestions which it put forward were (1) that the B.M.A. should encourage the production of appropriate medical films, and (2) that the B.M.A. should set up a medical film library. Such projects would take much time and money, but he announced that they were arranging for the production of a film on "Infection of the Hand and Fingers." They were able to do it through the generosity of one of the leading pharmaceutical houses and without cost to B.M.A. In regard to the Film Library, they had had a most generous gift from Messrs. Kodak, who had presented their medical film library, and those films were now being assessed, as were others received from some of their colleagues—Mr. Dickson Wright, Mr. Lawrence Abel, Mr. Holmes Sellers, and others. The Film Library catalogue would be available on request and without charge to Divisions throughout the country.

The film was then shown. Dr. George E. S. Ward, cardiologist, the Middlesex Hospital, opened the discussion on the film, and, while emphasizing that medical films had their place in medical teaching, he could not exaggerate the importance of not scrapping old methods. After all, the diagnosis of such a condition as angina pectoris very largely depended on the history and clinical signs elicited. He felt that the film was too long, and that parts of it were too detailed and might easily have been omitted as of no real significance. Sir John Parkinson thought that the film had been brilliantly conceived and executed, and that there was very little to criticize. The same view was expressed by Dr. Hope Gosse. Mr. Lawrence Abel put in a plea for an early reference of such cases to the surgeon. A vote of thanks to Dr. Ward and the chairman concluded a most enjoyable and instructive evening.

BRITISH MEDICAL JOURNAL

LONDON SATURDAY APRIL 2 1949

WHITHER MEDICINE?*

BY

LORD HORDER, G.C.V.O., M.D., F.R.C.P.

Although this Society is not amongst the older-established medical societies of London yet it has, during the 67 years of its existence, attained a high status, following closely the rapid development of the hospital and nurses' training school at Hammersmith. The influence of these medical societies upon the history of our Science and Art is very great, and the contribution made by the West London Society is considerable.

When I was very kindly invited to speak to the Society I was given free choice of subject as between, say, some clinical theme about which I might reasonably convince others, if not myself, that I had had experience, or some aspect of the very topical subject of Medicine in relation to the State. Pressed for a title, I stated it to be "A Guild for Doctors"; and I shall have something to say on that subject. But I have decided to take a larger view of the present situation in our relations with authority, and so I later suggested for my title "Whither Medicine?" The change was influenced somewhat by the knowledge that the Council of the B.M.A. is itself at this moment considering very seriously the desirability of setting up a Guild of doctors which shall be able to impose sanctions which are not free from legal obligations if imposed by the Association itself. Whether such a body will be actually formed, and, if so, of what nature it will be, is for the time being unknown. It is, however, significant that such a step should be definitely contemplated.

In actual fact the profession of Medicine was never a proper Guild in this country. The nearest thing to a Guild was the Barber Surgeons Company, whose history is sufficiently well known to us all. Its natural successors have been the Royal Colleges and the Society of Apothecaries. But the word "guild" has been used symbolically from time to time, as in an address by Osler to the Canadian Medical Society fifty years ago. In that address Osler spoke of four great features of the Guild of Medicine—its noble ancestry, its remarkable solidarity, its progressive character, and its singular beneficence.

A Beneficial Influence

In dilating on the first of these features—the *origins of Medicine*—Osler quotes Gomperz, who pays homage to the Greek School of Medicine because it very early brought the spirit of criticism to bear upon the arbitrary and superstitious views of the phenomena of life that held sway at that time in the world's history. By introducing quiet methodical research into the domain of the physician's

art it exercised a most beneficial influence on the whole intellectual life of mankind.

"The critical sense and sceptical attitude of the Hippocratic School laid the foundations of modern Medicine on broad lines and we owe to it: *first*, the emancipation of medicine from the shackles of priestcraft and of caste; *secondly*, the conception of Medicine as an art based on accurate observation, and as a science, an integral part of the science of man and of nature; *thirdly*, the high moral ideals, expressed in that most memorable of human documents' (Gomperz), the Hippocratic oath; and *fourthly*, the conception and realization of medicine as the profession of a cultivated gentleman. No other profession can boast of the same unbroken continuity of methods and of ideals. We may indeed be justly proud of our apostolic succession. Schools and systems have flourished and gone, schools which have swayed for generations the thought of our guild, and systems that have died before their founders; the philosophies of one age have become the absurdities of the next, and the foolishness of yesterday has become the wisdom of to-morrow; through long ages which were slowly learning what we are hurrying to forget—amid all the changes and chances of twenty-five centuries, the profession has never lacked men who have lived up to these Greek ideals."

Concerning the solidarity of Medicine Osler says:

"Of no other profession is the word universal applicable in the same sense. . . . It is not the prevalence of disease or the existence everywhere of special groups of men to treat it that betokens this solidarity, but it is the identity throughout the civilized world of our ambitions, our methods and our work. To wrest from nature the secrets which have perplexed philosophers in all ages, to track to their sources the causes of disease, to correlate the vast stores of knowledge, that they may be quickly available for the prevention and cure of disease—these are our ambitions. To carefully observe the phenomena of life in all its phases, normal and perverted, to make perfect that most difficult of all arts, the art of observation, to call to aid the science of experimentation, to cultivate the reasoning faculty, so as to be able to know the true from the false—these are our methods. To prevent disease, to relieve suffering and to heal the sick—this is our work. The profession in truth is a sort of guild or brotherhood, any member of which can take up his calling in any part of the world and find brethren whose language and methods and whose aims and ways are identical with his own."

Of the progressive character of Medicine Osler says:

"Based on science, medicine has followed and partaken of its fortunes, so that in the great awakening which has made the nineteenth memorable among centuries, the profession received a quickening impulse more powerful than at any period in its history. With the sole exception of the mechanical sciences, no other department of human knowledge has undergone so profound a change—a change so profound that we who have grown up in it have but slight appreciation of its

* A dinner-address to the West London Medico-Chirurgical Society on Feb. 18.

momentous character. And not only in what has been actually accomplished in unravelling the causes of disease, in perfecting methods of prevention, and in wholesale relief of suffering, but also in the unloading of old formulae and in the substitution of the scientific spirit of free inquiry for cast-iron dogmas we see a promise of still greater achievement and of a more glorious future.

"And lastly, the profession of medicine is distinguished from all others by its *singular beneficence*. It alone does the work of charity in a Jovian and God-like way, dispensing with free hand truly Promethean gifts.

"There are those who listen to me" (continued Osler) "who have seen three of the most benign endowments granted to the race since the great Titan stole fire from the heavens. Search the scriptures of human achievement and you cannot find any to equal in beneficence the introduction of Anaesthesia, Sanitation, with all that it includes, and Asepsis—a short half-century's contribution towards the practical solution of the problems of human suffering, regarded as eternal and insoluble. We form almost a monopoly or trust in this business. Nobody else comes into active competition with us, certainly not the other learned professions which continue along the old lines. Every few years sees some new conquest, so that we have ceased to wonder. The work of half a dozen men, headed by Laveran, has made waste places of the earth habitable and the wilderness to blossom as the rose. . . . There seems to be no limit to the possibilities of scientific medicine, and while philanthropists are turning to it as to the hope of humanity, philosophers see, as in some far-off vision, a science from which may come in the prophetic words of the Son of Sirach, 'Peace over all the earth.'

"Never has the outlook for the profession been brighter. Everywhere the physician is better trained and better equipped than he was twenty-five years ago. Disease is understood more thoroughly, studied more carefully and treated more skilfully. The average sum of human suffering has been reduced in a way to make the angels rejoice. Diseases familiar to our fathers and grandfathers have disappeared, the death rate from others is falling to the vanishing point, and public health measures have lessened the sorrows and brightened the lives of millions. The vagaries and whims, lay and medical, may neither have diminished in number nor lessened in their capacity to distress the faint-hearted who do not appreciate that to the end of time people must imagine vain things, but they are dwarfed by comparison with the colossal advance of the past fifty years."

I make no apology for this long quotation from Osler's address. My reason for introducing it is that I wanted to establish at the outset the basic qualities of the great science and art to which we have sworn allegiance. Because, whether we have taken the actual Hippocratic oath or not—and some of us have—we have surely consecrated ourselves and our lives to Medicine in one or other of its branches. And I could not myself state these basic qualities half so well as they were set forth in the passage I have just quoted.

Straight Ahead!

But if Osler could stake out so splendid a claim for Medicine in 1902, what could he not have done to-day, after nearly fifty more years of breath-taking progress? I remember well, only three years after he gave this Montreal address, he came excitedly into my room straight from Rome, where he had just seen Schaudinn's staggering demonstration of the spirochaete in the lesions of syphilis.

Think what has happened since then. The discovery of radium, the rapid development of x-ray diagnosis and treatment, the recognition of the vitamins, the synthesis of the sex hormones, the introduction of psycho-analysis, the preparation and getting under control of the sulphonamides, of penicillin, and of other antibiotics—this is to name only some of the major additions to the progress of Medicine made during the past half-century, despite two long interrupting world wars.

Very good. A man from Mars, looking on and being ignorant of the queer lapses of the earthly human mind into unintelligence, would think the question that I have taken as the title of this talk to you itself unintelligent! "Whither Medicine?" he would say. "Why, whither else than straight ahead; forging still more weapons with which to conquer disease, taking still more toll of science in the interest of humanity, adding more and more culture to more and more learning, improving both the art and the craft. Medicine has really only just begun its task. It has tackled, and, as you say, not unsuccessfully, the simpler and grosser causes of bodily disablement. You don't die any more in swathes—from smallpox, or plague, or even typhoid fever. Though you don't live longer, more of you live to old age than you used to do. You have got a lot of diseases under control. But I see no decrease as yet in the number who fall victims to what you call high blood-pressure and cardiovascular degeneration. Nor any lessening of the psychoneuroses. Indeed, both of these groups of your patients seem to be increasing in number. And as for the spirit of man, rather than his body, have you even begun to tackle that? Forgive this little criticism," concludes our Martian friend, "but the answer to your question, 'Whither Medicine?' is as I say, 'Straight ahead.'"

And this is surely the answer that every thinking man and woman of us will also give. Why, then, does the question arise? I want to try to answer this further question.

Emergence of the Individual

At this point we have to consider what our American friends are fond of calling "the changing order." On analysis, the salient feature of this "changing order" seems to be the emergence of the individual in Society. This emergence has synchronized with a number of profound alterations in the way of living and in social attitude. Among these are industrial expansion, poverty, the rise of big business and big government, the arrival of social service, and the development of voluntary health insurance plans.

There are two even more basic elements in this concentration upon the individual which is the fundamental feature in the changing order. The first is recognition of the fact that the citizen himself, and not his goods and chattels or the want of them, constitutes the real wealth or poverty of a nation. Thinking men have told us this again and again. (You remember the old cliché: "The health of its citizens is a nation's greatest asset.") But we did not listen until dire national peril was upon us. During the recent war we passed our men and women through a finer comb than we had ever done before, and now, in the post-war era, man-power is the commodity we find in shortest supply.

The second basic element leading to the emergence of the individual is his own spiritual evolution. That the evolution of personality proceeds along lines which tend to help humanity forward is generally accepted. In the course of this advance the individual very reasonably says to Medicine, "What can you do for me?"

The Medical Ideal

Now although it is true that, being based upon Science, Medicine, to be really progressive, should command a degree of autonomy—of freedom—there is agreement that its full powers should be applied to the attainment of the health and happiness of the individual. In so far as the State acts wisely in the interests of the citizen, this desideratum has always been recognized. At first it was recognized only dimly, but later more clearly. There has to-day opened

up for the statesman, the sociologist, and the physician a large field for their inquiry and their action, and this field is common ground. The man of Medicine must not spend all his time in this field; he must go apart, whether in the laboratory or at the bedside, or, like Harvey, walk under the trees rapt in thought so that by observation, by experiment, and by contemplation he may keep Medicine dynamic. For it is *through Medicine* that he makes his contribution, a contribution which no one else can make. To stand aloof from the work going on in this same field is to do a disservice not only to society but to Medicine itself; but to become entirely absorbed in it is to do a disservice no less serious.

Yes, but the contribution that Medicine makes must be fitted into the social structure of the day—"fitted into," not just attached.

As Sigerist puts it, and very aptly:

"The history of the medical ideal is the history of human society. We have seen that the Greek physician was an artisan, that the Roman was a slave to begin with, and the physician of the early middle ages was a cleric, and of the latter part a doctor. The position of the sick in society differed with every cultural epoch. So the demands upon the doctor and his position in the social structure changed constantly. Even the intellectual physician undergoes changes. He develops with advances in science. The physicians whom Melville caricatures so mercilessly in his comedies are also scholars; but their actions are grotesque because they abide by outmoded scientific ideals. The 17th century expected quite different treatment from its physicians and had a new medical ideal."

It is the demands made upon the physician by society in the Renaissance, the Baroque period, the enlightenment, the bourgeoisie epochs, are different in detail, but remain the same in their fundamental claims.

"The good physician was at all times the physician who felt himself bound by the medical ideal of his time. Men like Hippocrates, Sydenham, Laennec, Billroth and Osler, were therefore great physicians and will always occupy a special position in the history of medicine, for they came closest to the medical ideal of their time. The clear understanding of the prevailing medical ideal is of great importance."

Can we achieve this end, about which we are agreed? And, if so, how? Let us suppose that we had been given the chance of helping the State by making constructive suggestions—what would these have been? In the first place there is surely consensus concerning certain basic desiderata. Medical services should provide everything that science can offer towards the preservation of health and the cure of disease; the whole corpus of knowledge, as it is termed, must be implemented in the citizen's interest. Then these benefits should be available to the entire population. Seeing that the general public has a vital interest in our plans, it should be adequately represented in their formation. But inasmuch as it is the doctor who must render the medical care, he should play the dominant part in the preparation of the scheme he will be called upon to carry out.

We should have emphasized our belief that gradual extension and improvement of medical care is preferable to revolutionary changes and that, while recognizing Government responsibility for the citizen's health, sweeping legislative action would defeat its own purpose by impairing the spirit and quality of a service which is essentially individual and personal.

Conditions for Fulfilment

As to the conditions necessary to bring about the desiderata I have enumerated, there are certain paramount criteria: the quality of medical care must be preserved; provision of public health services is essential; there must

be effective use of hospitals with adequate facilities; trained professional and non-professional personnel is a *sine qua non*; optimal results require organization and co-ordination of physicians through the extension of medical groups and health centres; voluntary prepayment plans are needed; extensive education for both physicians and the public is required; the local needs of the community must be allowed for; and finally Government help, preferably by grants-in-aid, would be necessary. Indeed, a method of grants-in-aid would seem to offer the brightest promise, so far as help by a central authority is concerned.

We must realize that the practical expressions of unplanned energies are often cumbersome and wasteful. This is the price we pay for highly individualized societies. We began doing things many years ago; we did some of them so well that it has never been considered helpful to scrap them. There are parts of the machinery of our health services which work perfectly; some units stand out as pieces of perfect organization and efficiency—the large teaching hospitals, the well-run cottage hospital, some of our public health services, our Medical Research Council. It is when we come to consider the machine as a whole that organization, and therefore efficiency, are found to be unsatisfactory.

Then, lastly, to make Medicine a complete science in the service of man we must see that it infiltrates the important and now more clearly perceived sphere—as yet largely neglected—of social need. This sphere lies between that in which the diseases of the individual patient are presented to, and treated by, the individual doctor and the sphere in which the preservation of the public health is achieved by the proved methods of the Medical Officer of Health. This largely untitled field includes all the environmental factors which influence the citizen's health and happiness: his conditions of working, his home life, his sense of security or insecurity, and his ignorance of the things that make for the salvation of his body and his mind. In short, as Professor Ryle has stated: "Our next advance (in Medicine) will be . . . concerned with causes, but with the ultimate, rather than the intimate, causes of disease."

Professor Ryle's work at Oxford merits not only recognition but high praise. His term "social pathology" is an apt designation for this work. A study of the environmental factors in the aetiology of disease was overdue; it is high time that they were studied and the results statistically analysed. But when Professor Ryle says that Social Medicine is concerned with the ultimate, rather than with the intimate, cause of disease, I am sure he realizes that he is covering only a part, and not the whole, of a disease process. A disease is the resulting interaction between various extrinsic aetiological factors and the individual patient. It is always the patient that is the main factor. Hence the wisdom of Trousseau's exhortation: *Le malade, toujours le malade*.

Attention to Basic Needs

That, I think, is how we should have put the case for making our contribution to society. But we should have failed in an important part of our duty if we had not, at the same time, warned the State that if it did not attend to the more basic needs of the citizen our direct contribution from Medicine would avail little. By basic needs I mean: a sufficient amount of the proper food, suitable shelter and clothing, a satisfactory job of work, access to fresh air and sun, reasonable leisure, and the amenities of life. The doctor must stake out his claim in every one of these needs, for his is the knowledge that can guide and his is the enthusiasm that can stimulate to achievement. We physicians must lead; we must guide the politicians, since they

cannot act without expert help; we must keep the citizen's end up, since he learns to rely upon us for support.

But suppose the politician won't be guided. Suppose it is as Swift wrote in a letter to Pope: "Although I have known many great Ministers ready enough to hear opinions, yet I have hardly ever seen one that would descend to take Advice; and this pedantry ariseth from a maxim which they themselves do not believe at the time they practise it, that there is something profound in politics, which men of plain honest sense cannot arrive to." In that case the physician has no alternative but to appeal to public opinion, continuing to serve his patient in the manner which he believes to be in the patient's best interest.

Conclusion

That, I say, is how I think we should have stated our case. And so far as we had a chance of so doing, we did. It was a pity that we had no mechanism by which we could express ourselves as a corporate whole. We had no actual Guild. Following a lead by Sir Stewart Duke-Elder, some of us foresaw this plight and urged the formation of an Academy of Medicine, a body which would receive the unquestioned confidence of the Government, the people, and the profession. We failed to get support. So, scattered in different camps, we were taken off our feet. Precipitate action was the order of the day. Action, as Dr. Walshe reminded us in his recent Harveian Oration, is easier than contemplation. Many of us were hustled into this premature action against our better judgment. Almost we became politicians by *force majeure*.

I like to think that were Osler with us to-day he would resist the allurements of the song of the siren of Politics and even, if need be, order his sailors to bind him to the mast of his ship until the danger was past. It is clear to me, from talks I had with him as well as from his published essays, that an attitude of dignity and calm detachment would have characterized this great custodian of Medicine in face of the threat of political pressure.

I have more than once, in my own fashion, preached this gospel. "It is paramount that we remain detached from the general clamour . . . political clamour, the clamour of 'left' and of 'right.' For Medicine there can be no left or right. For Medicine there is only expert knowledge and a rooted adherence to truth. . . . Detachment, public confidence, courage—these are the essentials that enable Medicine to make its contribution to the common Health and Happiness."

One of the finest tributes to the heritage of which we are the trustees was that of Karl Marx: "For thousands of years," he said, "Medicine has united the aims and aspirations of the best and noblest of mankind. To deprecate its treasures is to discount all human endeavour and achievement as naught."

As a humanist I passionately want to see this great heritage placed at the disposal of my fellow men. It is a pity that the present effort of the State to bring this about has so largely failed of its purpose. It might have been a great success. We must still labour to make it so.

The work during 1947 of the Water Pollution Research Laboratory is described in "Water Pollution Research 1947," published for the Department of Scientific and Industrial Research by H.M.S.O. (price 1s. 6d., by post 1s. 8d.). The report of the Board deals chiefly with the results obtained in some of the investigations made. The report of the Director of Research gives a more complete survey of the work on the treatment of water, sewage, and industrial effluents, and on the effects of pollution of natural waters. An appendix gives references to papers published during the year in scientific journals describing some of the investigations in detail.

VENOUS THROMBOSIS AND ANTICOAGULANTS

BY

K. P. BALL, M.D., M.R.C.P.

Chief Assistant, Medical Department, Central Middlesex Hospital

AND

H. O. HUGHES, O.B.E., M.R.C.S., L.R.C.P.

Resident Pathologist, Central Middlesex Hospital

Venous thrombosis and pulmonary embolism are common occurrences in all branches of medical practice, and are conditions which cause prolonged disability or sudden death. In recent years both pathologists and clinicians have demonstrated that the usual site of origin of venous thrombosis is the deep veins of the calf. It has also been shown that venous thrombosis can be prevented, and that when it does occur effective treatment can be given.

This paper deals with 100 consecutive patients requiring anticoagulant treatment. They have been drawn from 11 of the 23 wards of the hospital over a period of 20 months. Its purpose is to indicate the frequency of venous thrombosis, to discuss its early clinical features, and to show that anticoagulants are an effective method of treatment.

Incidence

Venous thrombosis and pulmonary embolism occur more often in medical patients than is generally realized. In a series of necropsies on cases of pulmonary embolism Hampton and Castleman (1940) found that 60% were in medical patients and that one-half of these had suffered from heart disease.

Bauer (1946) found that, out of 804 cases of thrombosis from ten of the largest Swedish hospitals in the year 1935 56% came from medical wards. In the present series 42.5% of the cases of thrombo-embolism were medical, 35% were obstetric, and 22.5% were surgical. The distribution of the 85 cases of venous thrombosis and pulmonary embolism, and of the 15 cases treated prophylactically, was as follows:

Aetiology of 100 Cases Treated with Anticoagulants

Treated cases of thrombo-embolism (85):

Medical (36):

Cardiovascular (cardiac infarction, 9; heart failure, 4; angina pectoris, 1; old apoplexy, 3)	17
Previous leg thrombosis	4
Pneumonia	3
Carcinoma	2
Axillary vein thrombosis	2
Other conditions	8

Surgical (19):

Gynaecological (hysterectomy, 5)	7
Appendicectomy	3
Herniorrhaphy	2
Other operations	7

Obstetric (30):

Normal delivery	9
Forceps delivery	5
Caesarean section	3
Other abnormalities of childbirth, toxæmia, post-partum hæmorrhage, etc.	7
Abortion	5
Pregnancy	1

Prophylactic treatment (15):

Myocardial infarction	7
? Developing thrombosis	5
History of previous thrombosis	3

Development of Venous Thrombosis

Most textbooks state that pulmonary emboli are secondary to thrombosis in the pelvic or femoral veins, upholding the view put forward by Virchow a hundred years ago. However, a number of workers have shown that in nearly all cases of venous thrombosis the process, although often spreading to the femoral veins, begins in the deep veins of the calf. From a series of necropsies Frykholm (1946)

concluded that the four areas of origin of venous thrombosis are: the plantar veins, the veins of the musculature of the calf, the branches of the deep femoral vein in the adductor musculature, and the visceral pelvic veins, and that of these the calf was the most frequent site.

By using phlebography Bauer (1946) has shown that venous thrombosis almost always arises in the deep veins of the lower leg, and only in about 3% of the cases in the thigh or the pelvis. He suggests that from its origin in a calf vein the thrombus spreads in the direction of the blood stream up into the femoral vein, becoming a slippery "eel-like formation, 40-50 cm. long." As venous obstruction is still only slight, the clinical signs at this stage are few, yet the patient is in great danger of the thrombus becoming detached and causing a fatal pulmonary embolism. It is probable that only a freshly formed thrombus breaks off, so that if the clotting process can be halted organization on to the vein wall will occur.

Clinical Features

Unless doctors and nurses become more "thrombosis-minded" venous thrombosis will too often remain undiagnosed until it has spread to the femoral vein and produced an obvious swelling of the leg or sudden death through pulmonary embolism has occurred. The key to effective treatment is early diagnosis while the process is limited to the calf.

Leg Thrombosis.—The patient may complain of a slight pain or cramp in the calf. Although rarely severe, it may have disturbed his night's rest. On examination there may be some swelling of the affected leg, which should be confirmed by measurement. The superficial veins may be more engorged than on the normal side. Palpation must be performed carefully, and it is best done with the patient lying with the knees half flexed and the soles of the feet placed flat on the mattress, the calf muscles thus being relaxed. Firm palpation, beginning in the popliteal fossa and working downwards, reveals a tender area, the site of the thrombosis. Local induration of the calf muscles is often felt. The plantar, femoral, and adductor regions should also be examined for local tenderness. Finally the knee is extended and the foot dorsiflexed. In the presence of deep calf thrombosis a pain in the calf is felt (Homan's sign). Quite apart from the local signs, however, the presence of an unexplained fever or tachycardia in any patient confined to bed should suggest the possibility of venous thrombosis and should lead to a thorough examination of the legs.

Pulmonary Embolism.—In a patient who develops a sudden pain in the chest with haemoptysis, and who also has venous thrombosis of one leg, the diagnosis is relatively simple. In medical patients, however, the primary heart or chest disease often obscures the true condition, and the diagnosis may be made only post mortem. Sudden onset of pleural pain is one of the commonest symptoms, but the pain may be central and mimic coronary thrombosis. Where shock, tachycardia, and cyanosis are also present the similarity may be very great. Fever, pleurisy, haemoptysis, and signs of consolidation may suggest a diagnosis of pneumonia. Sagall, Bornstein, and Wolf (1945) analysed 108 cases of pulmonary embolism and found that the clinical picture had simulated pneumonia, angina pectoris, myocardial infarction, pleurisy, vascular collapse, or acute heart failure in a large number of cases. Thus, unless the possibility of a pulmonary embolism is always considered when the above signs are present, the diagnosis may be made too late. The warning of the first attack not being heeded, a fatal embolism occurs before effective treatment is given.

In the present series leg thrombosis occurred in 74 patients, and the clinical site of origin was: deep calf veins only, 39; calf and femoral veins, 18; calf, femoral, and iliac veins, 15; and femoral veins only, 2. Of the 35 cases in which the femoral vein was involved, calf thrombosis was also present in 33. In the two cases in which femoral thrombosis alone occurred, one followed ligation of the

great saphenous vein with retrograde injection, and the other case was probably secondary to thrombosis in the adductor muscles.

Plantar tenderness probably indicates thrombosis of the plantar veins, and was present in six out of 43 cases examined for it. The left leg alone was affected in 38 cases, the right alone in 31, and both together in 5.

Pulmonary embolism occurred 29 times in 27 patients. In 13 cases it was the presenting sign and in eight a complication of leg thrombosis before the start of treatment. Pulmonary embolism occurred after treatment had been started in eight cases; it will be referred to later. In 19 of the 27 patients the leg was the source of the embolism. In the other eight cases no definite source was discovered.

End-results of Venous Thrombosis

When the dangers of pulmonary embolism have passed, the patient who has suffered occlusion of the deep leg veins as a result of thrombosis faces further trouble in the years ahead. Bauer (1946) followed up 100 patients who had had deep leg thrombosis more than 10 years previously. Of these, 91 had developed indurative lesions of the leg, and in 79 ulcers had appeared. Birger (1947) found that 40% of 869 cases of leg ulcer were caused by a previous deep thrombosis.

Too often do we forget the connexion between the young mother with her puerperal thrombosis and the older woman, crippled with leg ulcers, who frequents the "varicose vein" clinic. Her legs are a perpetual source of grievance to her. She cannot do a full day's work, and her bandaged legs destroy all her social confidence. The amount of misery and time lost from work on account of these conditions is undoubtedly very great. According to Roholm (1937), in the year 1936 the sequelae of venous thrombosis cost Denmark, with a population of 3½ million inhabitants, 2 million crowns (approximately £100,000) in the value of lost working days, hospital expenses, etc.

Treatment

Prevention.—(a) *Active exercises* performed in bed and early post-operative walking considerably reduce the incidence of venous thrombosis. The dangers of venous stagnation in medical patients are probably even greater than in the surgical, particularly where there is a predominance of older patients and those suffering from heart disease. Old, ill, and obese patients often lie with their legs still for hours on end, providing ideal conditions for the development of thrombosis. Active leg exercises should become a routine for such patients. At each ward round the doctor should encourage them to "go for a walk in bed" at frequent intervals. In order to get the co-operation of the nursing staff, a full explanation of the need for preventing thrombosis should be given to them. They should know the clinical features of early thrombosis and should be instructed to notify the doctor immediately on finding them. Active leg exercises will not become effective unless the doctors, nurses, and patients are continually mindful of them, so that they become part of the ward routine. (b) *Anticoagulants*.—Both heparin and dicoumarol have been used to prevent thrombosis, but in this hospital their use has been limited to post-operative or puerperal patients giving a history of previous thrombosis, and to cases of coronary thrombosis, a disease in which thrombo-embolic complications often occur.

Curative.—Until about ten years ago deep thrombosis was always treated by prolonged immobilization of the affected leg. Unfortunately it is still a common practice, and is even advocated in several recently published textbooks. During the past few years, however, three new

methods have been tried—venous ligation, lumbar sympathetic block, and the use of anticoagulants. Each method has its supporters, and each has helped to reduce the dangers of venous thrombosis. Compared with venous ligation, the anticoagulants have the advantage of preventing the spread of thrombosis wherever its site of origin, and this may be obscure. On the other hand, they do not immediately stop emboli from occurring. Femoral venous ligation immediately prevents further emboli from arising distal to the ligation, but it does not stop thrombosis developing elsewhere, and in a few cases permanent swelling of the leg results. Lumbar sympathetic block has been used successfully to overcome peripheral vascular spasm, both venous and arterial, which accompanies the fully developed whiteleg, and in such cases, combined with anticoagulants, it is probably the treatment of choice. This treatment should rarely be necessary, since early treatment with anticoagulants can prevent the spread of thrombosis from calf to thigh, and the resultant whiteleg.

Heparin and Dicoumarol

These are the only anticoagulants in common use, and their respective advantages and disadvantages may be tabulated as follows:

Heparin

Difficult to administer
Expensive (£2-£4 daily)
Immediate effect
Few contraindications
Haemorrhages rare
Effect disappears in three hours
Coagulation times are simple to perform, and not essential

Dicoumarol

Easy to administer
Cheap
Effect delayed 24-72 hours
Many contraindications
Haemorrhages frequent
Effect disappears in 3-10 days
Prothrombin content estimations imperative, and require expert technicians

Indications for Anticoagulants.—(1) Deep venous thrombosis; (2) pulmonary embolism; (3) arterial embolism (with or without surgery); (4) coronary thrombosis, especially with recurrent attacks.

Contraindications to Dicoumarol.—Liver damage, renal failure, recent operations on the brain or spinal cord, subacute bacterial endocarditis, and of course disease with bleeding tendencies have all been considered contraindications to the use of dicoumarol. With normal precautions it can be safely used in the puerperium.

Method of Administration

Although the anticoagulant effect of heparin is more satisfactory than that of dicoumarol, the difficulty of prolonged intravenous administration, together with its expense, is against its routine use. In the present series the drugs have been used together, heparin being given until dicoumarol has taken effect. In most cases heparin has been given by continuous drip for 48-72 hours at a rate of 1,500 to 2,000 international units per hour. If after a few hours the coagulation time by the Lee and White method has not increased two to three times (normal 3-8 minutes in our experience) the dose is increased. In cases of pulmonary embolism an immediate initial dose of 10,000 i.u. is given. Alternatively, heparin may be given by intermittent intravenous injections of 10,000 i.u. four- to six-hourly, especially where intravenous fluids are contraindicated, as in congestive heart failure.*

Dicoumarol, 300 mg., is given when the heparin is started, and 200 mg. on the second day. The subsequent doses are regulated by daily estimations of the plasma prothrombin content (P.C.). It is important that no further dicoumarol be given until the result of estimating the P.C. has been obtained. Patients vary considerably in their sensitivity to the drug, and if the dose is not controlled by daily

P.C. estimations a serious haemorrhage may occur. Blood for P.C. estimation should not be taken until three hours after the last dose of heparin has been given. The aim of treatment is to keep the P.C. between 10 and 30% of normal (Allen *et al.*, 1947). If the P.C. exceeds 10% a serious haemorrhage is rare, and so long as it is kept below 30% a spread of the thrombosis is unlikely to occur. Dicoumarol is given in the afternoon, the dose depending on the P.C. taken the same day. If the P.C. exceeds 20%, 200 mg. usually given, although when the P.C. is rapidly falling 100 mg. is sufficient. It must be remembered that a single dose of dicoumarol does not exert its full effect for from 24 to 48 hours. Moreover, in one patient the first two doses may cause an adequate fall of P.C. for a week while in another a daily dose of 200 mg. may be necessary for several days. The daily dose for most cases is about 100 mg., but it is quite impossible to generalize. The keeping of a simple chart showing the dose of dicoumarol (one-half of the page) and the P.C. on the other makes easier to assess the effect of treatment. The accompanying diagram illustrates the effect of treatment in a patient

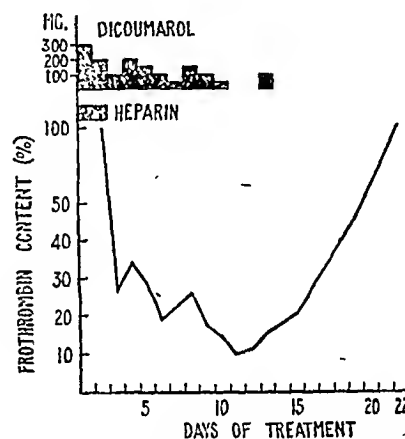


Chart showing the effect of treatment in a case of deep thrombosis occurring after a cardiac infarction.

who developed a deep calf thrombosis after a cardiac infarction. Patients with a high fever or debilitating diseases appear to be more sensitive to the drug and should be treated with greater caution.

Treatment should be continued until the patient is fit to be ambulant, a therapeutic depression of the P.C. for 7 days usually being adequate. As the anticoagulant effect may last for several days after stopping the drug, it should be taken to see that the P.C. has returned to normal before the patient is discharged. Confidence in the P.C. estimation is essential for dicoumarol therapy. In the earlier cases of the series dosage was controlled by Witts' Hopson's (1940) modification of Fullerton's (1940) method of prothrombin estimation performed on alternate days. Further experience has shown that this method is unsatisfactory as is explained later.

Leg movements are not restricted, and after the first 48 hours they are actively encouraged. The patient is usually allowed up within three to four days of starting treatment. A Dickson Wright elastic bandage is applied if there is any residual oedema, although women usually prefer an elastic stocking.

Toxic Reaction

Haemorrhage is always a danger during treatment with dicoumarol, although accurate daily estimations of the prothrombin content, together with careful daily examination of the patient for evidence of minor bleeding, will reduce serious haemorrhage to a minimum. Among the 93 patients treated with dicoumarol some form of haemorrhage

* The needle described by Olousson (*Lancet*, 1948, 2, 495) facilitates intermittent injections.

occurred in 26 (28%). In only 8 (8.6%) cases was it considered of moderate or severe degree, and four of these were among the first 10 of the 93 cases treated. The higher incidence of haemorrhage in the earlier cases was almost certainly due to the lack of daily prothrombin estimations and to the use of "stypven" as thromboplastin for the estimations performed. Familiarity with dicoumarol has certainly not bred contempt, but rather an increasing respect for its dangers. In 18 cases slight haemorrhage occurred. In eight of these, however, the only sign was the return of red lochia in the puerperium. This was a frequent event in the treatment of puerperal thrombosis, but was never more than slight in amount and never caused any anxiety.

In the present cases epistaxis (8), vaginal haemorrhage (8), haematuria (4), ecchymoses (4), haematoma (2), wound bleeding (2), and oral bleeding (1) all occurred. There was no death from dicoumarol haemorrhage.

Dicoumarol is stopped immediately haemorrhage occurs, and in the mild cases no further action is necessary. If the bleeding is serious, however, one or more pints of fresh blood and an intravenous injection of 100–300 mg. of vitamin K ("synkavit") are given. The latter should be administered slowly, since it may cause giddiness and flushing. Earlier reports stated that vitamin K did not affect dicoumarol haemorrhage, but the doses given were certainly too small. In large doses the P.C. usually rises considerably within two days, but, as with dicoumarol itself, there is a lag in its effect, and fresh blood must be given where an immediate source of prothrombin is required. Haemorrhage may even continue after the P.C. has returned to normal, though this has never been serious.

The incidence of haemorrhage was certainly greater than in some other reported series. Allen *et al.* (1947) had an incidence of 5.2% amongst 1,983 post-operative cases treated prophylactically, and Bruzelius (1945) noted 9.7% of haemorrhages amongst 113 cases. With the present method of P.C. estimation the incidence of severe haemorrhage should be reduced to a minimum.

Heparin rarely produced side-effects. Minor haemorrhages (5), pyrexia probably due to the heparin (4), and pain in the loin following injection (1) all occurred, but only in the last case had treatment to be stopped.

Results

Heparin and dicoumarol were used together in 76 cases, dicoumarol alone in 17, and heparin alone in 7. Heparin was given by continuous intravenous drip in 48 cases, intermittently in 21, and in the remainder by a combination of these methods.

The assessment of results in a small and varied series is difficult and may be misleading. Most cases of leg thrombosis rapidly improved after treatment, the pain and tenderness diminished, and the temperature became normal within four to five days.

In five of the 74 cases of deep thrombosis treated a relapse or spread to the opposite side took place while under treatment, although in two of them there was inadequate depression of the prothrombin content. Relapse of the thrombosis also occurred in four cases after treatment had been stopped. This result compared favourably with that of conservative treatment, in which there is a spread to the opposite leg in 31% of cases (Zilliacus, 1946).

Pulmonary embolism usually responds well to treatment. There were 29 instances of pulmonary embolism in 27 cases: 21 were treated after the attack had taken place, (two of these patients died, both with congestive heart failure following a recent cardiac infarction); in five pulmonary embolism occurred during the treatment, none of them

proving fatal; and in three it took place after treatment had been stopped, one of these being fatal. In the last-mentioned case the patient, a woman aged 37, was admitted in severe shock with an extensive thrombophlebitis of the leg associated with superficial haemorrhagic bullae. Dicoumarol was not given, owing to anuria, and she was treated with continuous intravenous heparin. She died from massive pulmonary embolism 43 hours after treatment had been stopped because of increasing haemorrhagic bullae.

Of the 30 treated obstetric cases, 19 were confined in this hospital. These 19 can be compared with 16 cases of puerperal deep thrombosis treated conservatively here during the previous four years. Although the two series are not entirely comparable, the very striking difference in the length of stay in hospital and in the time spent in bed on account of the thrombosis is undoubtedly of significance. The stay in hospital has fallen from 68 to 24 days, and the time in bed from 45 to 6 days. In the group treated conservatively there were four cases of pulmonary embolism (one fatal). In the group treated with anticoagulants there was one non-fatal case of pulmonary embolism.

To summarize, no fatal case of pulmonary embolism occurred among 74 cases of deep leg thrombosis during treatment. And as a result of treatment in cases of puerperal thrombosis the time spent in bed has been reduced from six weeks to one week.

Discussion and Conclusions

Early diagnosis is the key to effective treatment. The irregular post-operative temperature, the "cramp" in the calf, the "stitch in the chest"—all frequent warning signs—are too rarely heeded. A realization of the significance of these signs could prevent many cases of massive pulmonary embolism, and could relieve the patient with extending calf thrombosis from a future of ulcerated legs.

Many other workers agree with the conclusion derived from the present study, that the anticoagulants provide an effective method of treatment of venous thrombosis. Allen and his associates (1947) treated 352 cases of post-operative venous thrombosis. Venous thrombosis or pulmonary embolism later appeared in only nine cases, although from previous experience at the Mayo Clinic 88 cases would have been expected if conservative treatment had been adopted. No cases of fatal embolism occurred, although 20 would have been expected. Bauer (1946) found that the recumbent period due to leg thrombosis had been reduced from 40 days in 264 cases with conservative treatment to 4.7 days in 209 cases using heparin. Zilliacus (1946) reported similar results.

The sheet-anchor of dicoumarol treatment is an accurate method of estimating the prothrombin content. Unless the physician is fully confident in the results he is obtaining he should use heparin and not dicoumarol. As we consider this a matter of fundamental importance, full details of the method of prothrombin content estimation are given. We have heard of a number of cases of serious or fatal dicoumarol haemorrhage occurring with inadequate control, and as a consequence the drug has been regarded by some as too dangerous to use. We believe that it is the control and not the drug which is at fault.

Venous thrombosis is still frequently treated by immobilization. When the anticoagulants are used they are often given too late, in adequate doses, or without proper supervision. As effective treatment requires some experience, it is suggested that every hospital should have an anticoagulant service under the control of a physician who would be responsible for all cases of venous thrombosis arising. The occasional use of these drugs by each member

of the staff cannot lead to the best results. Although the majority of cases seen will be those occurring while the patient is in hospital under treatment for some other condition, the development of deep venous thrombosis at home should be considered an indication for urgent admission. Anticoagulants can only rarely be given at home, owing to the difficulties of administering heparin and controlling dicoumarol, although intermittent injections of heparin should be used in any emergency until the patient can be transferred to hospital.

The ideal anticoagulant would be one that is easy to administer, is inexpensive, and has a widely separated therapeutic and toxic dose. Both the present drugs fall short of this ideal. Suitable slow-acting preparations of heparin for subcutaneous injection may overcome some of the difficulties in future. In the meanwhile we have found the above method to be effective and safe. Present difficulties of administering anticoagulants are no excuse for withholding a valuable and often life-saving treatment.

Summary

An analysis of 100 patients treated with anticoagulants is given. Venous thrombosis is found to be a common condition, especially in medical patients. Heparin combined with dicoumarol is an effective method of treatment. Since dicoumarol needs careful control, a reliable technique for estimating the plasma prothrombin content is described. With early diagnosis of leg thrombosis, both pulmonary embolism and chronic leg ulcers can be prevented.

Our thanks are due to all those members of the hospital staff who allowed us to treat their patients, to the nursing staff whose co-operation has made this study possible, and to Dr. H. Lempert and Dr. G. Discombe for their help and suggestions concerning prothrombin estimation.

APPENDIX

Technique for Estimating Prothrombin Content of Plasma

In the earlier cases of this study the Witts-Fullerton technique for the estimation of prothrombin index was used. In this procedure the thromboplastin is a mixture of Russell-viper venom and lecithin. It was soon found that the prothrombin indices obtained in this way were an insensitive and unreliable control of the clinical state of the patient. A comparison with Quick's (1938) method was therefore made, and, in agreement with Wilson (1947) and Lempert (1948—personal communication), it was found that quantitative values of prothrombin content determined by Quick's method, using human brain as a source of thromboplastin, were a reliable and delicate index of the clinical haemorrhagic tendency of the patient.

Success, however, with Quick's method depends on minute attention to detail, detection of any deterioration of reagent or fault in technique by reference to a control, and previous and expected results on the test plasma. In other words, the approach to this test must be similar to the approach to the routine Wassermann reaction. The literature offers only the outline of the procedure, and so the full details, with an indication of common difficulties, are given here.

Glassware and saline solutions must be prepared as for the Wassermann test.

Reagents

1. *Stock Thromboplastin Powder*.—A coronal slice 2 in. (5 cm.) thick is taken from a human cerebral hemisphere which shows no sign of local disease and has been removed within 24 hours of death, and the blood vessels and pia are removed under a gentle stream of tap-water. With scissors, the slice is cut into cubes of about 1 cm., which are allowed to fall into 450 ml. of acetone contained in a 12-in. (30-cm.) mortar. The fragments are then ground up with a pestle, and after about five minutes the acetone is decanted and replaced by fresh acetone, the grinding being repeated. This procedure is repeated five or six times, when one is left with a mealy mass. The last sample of acetone is decanted; the residue is squeezed between large sheets of blotting-paper, then spread out on a fresh sheet of blotting-paper and placed in a

37°-C. incubator for not more than 15 minutes. It is then ground up again for two to three minutes and spread out on large sheets of filter-paper in a vacuum desiccator over anhydrous calcium chloride. The desiccator is attached to a motor-driven vacuum pump (Hyvac or Pulsometer Geryk) and evacuated continuously until a constant minimum pressure is obtained (usually one to two hours). The dry product is ground in the mortar and passed through a nest of metal filters (B.S.S. No. 41 mesh 10, 25, and 44). The product is a cream-coloured sand-like dust which is stored *in vacuo* over calcium chloride at 4° C. It remains active for at least four months.

2. *Working Thromboplastin Solution*.—Weigh out approximately 0.65 g. of stock powder and pour into a universal container, adding 9.5 ml. of saline. Mix thoroughly. Incubate in a 50°-C. incubator or bath for 12 minutes, shake the container three or four times during this period. Centrifuge immediately in running tap-water. Centrifuge at 1,000–1,500 r.p.m. for two minutes to bring down coarse particles. Pipet off milky supernatant fluid and store at 4° C. The solution thus stored remains active for 48 hours and is prepared on alternate days. A satisfactory reagent is one which gives times for the normal control of 15 to 18 seconds, undiluted plasma being used, and figures of the order of 20, 25, 32, and 59 seconds for the 50, 30, 20, and 10% dilutions in saline of the control plasma. Storage for 24 hours appears to enhance the activity of the solution.

3. *0.2% Calcium Chloride*.—Dissolve 2 g. of pure anhydrous calcium chloride in 1,000 ml. of distilled water. Filter.

4. *M/10 Potassium Oxalate*.—Dissolve 1.84 g. of anhydrous potassium oxalate in 100 ml. of distilled water.

Procedure

A tube containing the calcium chloride reagent is first placed in the 37°-C. bath and allowed to reach this temperature. 0.1 ml. of thromboplastin solution is added to 0.1 ml. of plasma or diluted plasma in a 3 by $\frac{1}{2}$ in. (7.5 by 1.25 cm.) tube, which is placed in a 37°-C. water-bath. Then 0.1 ml. of calcium chloride solution at 37° C. is rapidly added, a spring-loaded syringe pipette with teat being used, thus mixing the compounds. At the moment when the calcium chloride is added a stop-watch started.

The tube is shaken gently in the water-bath for three to five seconds, then removed and tilted almost horizontally so that the contents run back and forth at eye level. The end-point is the appearance of a fibrin clot, and the time is then taken.

A control plasma is tested daily in parallel with the unknown because reference to a standard curve made up for a batch of dried brain is not satisfactory. It is best to use plasma taken daily from a single volunteer; a new volunteer is obtained each week, usually one of the medical or laboratory staff. The control plasma is tested undiluted and diluted with saline to contain 50, 30, 20, and 10% plasma. A new calibration curve is therefore set up for each day's observations. The patient plasma is tested undiluted and the prothrombin content read from the curve. All estimations are set up in duplicate and a mean taken.

Special Points

1. *Collection of Plasma*.—Exactly 0.5 ml. of oxalate solution is placed in a bijou bottle and 4.5 ml. of blood obtained by venipuncture is added. The contents are mixed and the bottle then centrifuged, the supernatant plasma being removed and stored at 4° C., at which temperature it will keep for four to six hours. It is convenient to arrange for blood samples to be collected about 10 a.m. (thus avoiding excessive lipaemia) and to perform all the day's tests together at some convenient time.

2. *Normal controls* and their dilutions do give somewhat varying times with any batch of "thromboplastin solution" but at the critical dilutions—namely, 30, 20, and 10%—this is practically insignificant, as the spread is such that it does not permit one to deduce from the plot of a single control the prothrombin content of an unknown sample at these critical levels to within $\pm 5\%$.

3. *Reading of "End-points"*.—This requires practice. Undiluted controls and normal plasmas appear to clot solid in the dilutions of the control and test plasmas with lower prothrombin the end-point takes the form of very fine white flakes or fibres which develop fairly sharply.

4. Clotting is accelerated when thromboplastin and plasma are incubated together for more than four minutes before the addition of calcium chloride; it is essential to place no more thromboplastin-plasma mixtures in the water-bath than can be comfortably treated with calcium chloride and read within this time.

REFERENCES

- Allen, E. V., Hines, E. A., Kvale, W. F., and Barker, N. W. (1947). *Ann. intern. Med.* 27, 371.
 Bauer, G. (1946). *Lancet*, 1, 447.
 Birger, I. (1947). *Acta chir. scand.*, 95, Suppl. 129.
 Bruzelius, S. (1945). *Ibid.*, 92, Suppl. 100.
 Fr  kholm, R. (1940). *Surg. Gynec. Obstet.*, 71, 307.
 Fullerton, H. W. (1940). *Lancet*, 2, 195.
 Hampton, A. O., and Castleman, B. (1940). *Amer. J. Roentgenol.*, 43, 305.
 Quick, A. J. (1938). *J. Amer. med. Ass.*, 110, 1658.
 Roholm, K. (1937). Quoted by J. E. Jorpes in *Heparin*, Oxf. Univ. Press, 1946.
 Sagall, E. L., Bornstein, J., and Wolff, L. (1945). *Arch. intern. Med.* 76, 234.
 Wilson, S. J. (1947). *Proc. Soc. exp. Biol., N.Y.*, 66, 126.
 Witts, L. J., and Hopson, F. C. G. (1940). *Lancet*, 2, 247.
 Zillicus, H. (1946). *Acta med. scand.*, Suppl. 171.

DIABETIC COMA

TREATMENT WITH AND WITHOUT THE EARLY
ADMINISTRATION OF GLUCOSE

BY

J. LEE, M.B., M.R.C.P.

D. NAIDOO, B.Sc., M.R.C.P.Ed., D.C.H.

AND

J. A. TORRENS, M.D., F.R.C.P.

(From a Medical Unit, West Middlesex Hospital)

Whether or not glucose should be administered in the treatment of diabetic coma has been the subject of much discussion. On the one hand, Himsworth (1932) states that the "essential therapeutic agent in the treatment of diabetic intoxication is glucose, and unless this substance is present in sufficient amounts insulin is relatively impotent." He claims that the "maximum of sugar and the minimum of insulin" should be given, and "not conversely as is the present practice."

On the other hand, Root (1945a) holds that the harmful effects of glucose may be concealed in the early case of coma by the insulin simultaneously administered. He claims that the moderate case may be converted into a severe one requiring excessive insulin dosage, and that "in advanced coma glucose administration either by mouth or by needle may cause anuria and death."

Among those who administer glucose as a beneficial procedure are Bertram (1932), Lawrence (1936), and Soskin (1945). Joslin (1947) and Root (1945a) are the leading opponents of glucose administration, but they do give carbohydrate in quantities not exceeding 10 g. per hour during the second to sixth hour of treatment.

Physiological evidence supporting the administration of glucose is based largely on experimental work such as that of Soskin and Levine (1937, 1944), and of Mirsky *et al.* (1937). The last-named authors have shown that intravenous injection of large amounts of glucose (a) to anaesthetized nephrectomized depancreatized dogs, (b) to unanaesthetized depancreatized dogs, and (c) to phlorhizinized depancreatized dogs, where insulin was entirely excluded, resulted in the disappearance of ketone bodies. The antiketogenic action of glucose is attributed to the deposition of glycogen in the liver and a consequent cessation of ketone formation. Soskin and Levine's (1937) depancreatized hepatectomized animals utilized larger amounts of carbohydrate without insulin when their blood

sugars were maintained at high levels. Peters (1945), basing his opinion upon a large field of experimental work, comes to the conclusion that the reversal of the metabolic disorder in diabetic coma requires the use of every measure that will accelerate the utilization of carbohydrate. "Chief among these measures are the administration of insulin and the provision of sugar." Soskin and Levine (1944) calculated a large carbohydrate deficit and advised the administration of 500 g. of carbohydrate during the first twenty-four hours of treatment and one-half that amount during subsequent days in order to maintain normal stores of glycogen and carbohydrate metabolism.

Root (1945b), however, disagrees. He found a deficit of only 27 g. and stressed the point that there has been "an overestimation of the importance of an immediate restoration of glycogen stores in the liver." Franks *et al.* (1947) found that comparable doses of dextrose were retained more efficiently under much smaller doses of insulin when the blood-sugar level was normal than when it was considerably elevated. Mirsky's earlier work, suggesting that maintenance of hyperglycaemia would hasten the abolition of ketosis, is not borne out by Franks's clinical material. Pauls and Drury (1942), working on diabetic rats receiving large quantities of sugar and insulin, provided evidence that only a small part of the sugar was oxidized and that most of it was stored as fat. Drury (1940) showed that glucose may also be converted into fat when it is given at a rate exceeding calorific needs. Astwood's (1942) dogs, receiving glucose continuously at a rate exceeding their metabolic needs, died within 70 hours. Further, Bjerling and Iversen (1934) demonstrated that diabetic acidosis exaggerates the limitation of the power of the tubules to reabsorb glucose, and that there is poor retention of exogenous glucose in the presence of hyperglycaemia. Helmholz and Bollman (1940) produced a marked diuresis in response to high concentrations of glucose brought about by injection, and as a result hydropic degeneration of the tubules occurred and temporary anuria developed. Franks *et al.* (1947) showed a "striking difference" between the glucose and saline groups of cases in the handling of water and chloride. The fluid intake of the dextrose group was only slightly larger than that of the saline group, but the output was nearly four times as great, "largely because of an elevenfold difference in glucose output." Sunderman and Dohan (1941) found that hyperglycaemia causes the withdrawal of water from the tissues, and, conversely, that the administration of insulin, with the consequent fall in blood sugar, caused the transfer of water and electrolytes from the plasma to the tissues. In addition, cases of acidosis lost body water and electrolytes after the withdrawal of insulin (Atchley *et al.*, 1933).

The consistent high mortality for cases of diabetic coma in England due to circulatory failure and "intractable dehydration" led us to reconsider the value of the therapeutic measures employed, particularly with regard to the use of glucose and its effect on procedures adopted to correct dehydration.

Material

The West Middlesex is a hospital of 1,670 beds serving a wide area in south-west Middlesex. A large proportion of cases of diabetic coma are admitted as emergencies, never having been under the management of the physician in charge of the diabetic out-patient clinic. Only those cases which are unconscious and not responsive to external stimuli are considered cases of coma. All others, irrespective of the level of the blood sugar, are treated as cases of diabetic ketosis or pre-coma. The mortality in cases of diabetic pre-coma is negligible whether or not glucose is administered in the early stages of treatment.

The 28 consecutive cases of true diabetic coma which were admitted to this medical unit between September, 1944, and March, 1948, have been studied. Those cases admitted before February, 1946 (Group A), were given glucose throughout the first twenty-four hours of treatment, whereas cases admitted after that date (Group B) had no glucose until the blood sugar had reached normal levels or, alternatively, until the patient was able to sit up and drink the glucose without help.

Procedure

On receipt of information from the admissions officer a bed with electric blankets, enema and gastric lavage equipment, "cutting-down set" with pint flasks of normal saline, together with syringes and bottles for chemical investigations, are held in readiness. On arrival the patient is put to bed, surrounded by warm blankets. The diagnosis is confirmed and the severity of the attendant infection assessed. A gastric lavage and a cleansing enema are given while the house-physician cuts down on a vein, removes blood for chemical testing, injects insulin, and proceeds, as the ward sister finishes her work, to set up the intravenous drip.

Insulin.—The mental state of the patient and the severity of the concurrent infection determine the size of the initial dose of insulin, which is never less than 100 units. Where a patient's mental state is graded 4 (Collen) 200 units are usually administered, a quarter of it intravenously. Insulin is given at intervals of not less than two hours thereafter.

Fluids.—The Group A or glucose cases receive intravenous normal saline with 4.3% glucose, and Group B or saline cases receive normal saline intravenously until there is adequate correction of the hypochloruria, after which half-normal

definition of coma varies widely and there is no entirely satisfactory method of assessing the severity of individual cases. Timing the duration of coma is not always a simple matter, and it is difficult to obtain a history of exactly when, in the insidious course of diabetic ketosis, a patient lapsed from one mental state to another. Further, there is no definite evidence that the duration of coma up to about eight hours, taken by itself, correlates closely with the ultimate outcome. Collen's indices have been used, as they appear to be the most accurate available guide to prognosis (Collen, 1942). He computed his severity index by means of the following formula

$$\frac{30(\text{M.S.} + \text{C}) + 50 + \text{A} - \text{diastolic B.P.}}{4}$$

where M.S. is the mental state and C the complications.

M.S. is graded thus: 0 = conscious, 1 = drowsy, 2 = semi-conscious, 3 = unconscious but with response to pain, 4 = unconscious with no response to pain.

C is "complications," graded numerically from 0 to 5 in terms of danger to life. Grade 1 is "infection or other complication present" but of no real consequence. Grade 5 is "infection or other complication present" which by itself would seriously endanger life. Examples: Grade 1 — carbuncles (Case B1), pyelitis (Case B6); Grade 3 — lobar pneumonia (Case B14); Grade 5 — bilateral empyemata (Case B8).

A = Age in years.

Indices of over 60% are considered invariably fatal and those of below 30% bear a good prognosis. As Franks remarks, it would appear that only those cases in the "intermediate group are suitable for the evaluation of a therapeutic regimen."

TABLE I.—Group A Cases

Case No.	Age and Sex	Duration of Coma (hours)	M.S.	C.	B P	Collen's Index %	Blood Sugar (mg per 100 ml.)					Alkali Reserve (Vois. CO ₂ %)				Insulin Units (Total Dose)					Fluids (pints)		Deaths	
							Adm.	4 hrs.	8 hrs.	12 hrs.	16 hrs.	20 hrs.	Adm.	4 hrs.	8 hrs.	12 hrs.	Adm.	4 hrs.	8 hrs.	12 hrs.	24 hrs.	Intra-venous 24 hrs.		Total 24 hrs.
1	55 F	4	4	2	100/55	57	880	760					8	12			200	400	600			6	8	Died
2	61 M	4	3	2	145/90	43	768	610	463				17				200	400	600	800		9	14	
3	26 M	3	3		110/70	24	660	550	480	312	180	214	12	18	31		200	400	560	680	800	12	15	Died
4	31 F	2	3	1	90/60	35	510	500	495	216	204	214	15	16	18	26	200	360	440	480	600	8		
5	56 F	4	4	2	130/75	53	804	830					9	8	13		200	400	760			8		Died
6	18 F	6	3		100/65	23	822	750	598	580	312	226	18	21	28	31	100	300	500	680	800	11	17	
7	32 M	6	4	2	50/30	58	985	810	805	620			5	8			200	380	580	700		11		Died
8	37 F	4	4		70/50	38	708	648	630	524	475		14	19			200	400	600	800	1,060	8	15	
9	29 F	4	3	1	100/75	31	540	438	256	180	84		13	15	21	26	100	300	460	580	740	8	13	
10	14 F	2	4	1	95/65	37	618	616	543	205	198	216	17	30	35		200	460	600	740	840	9	12	

saline is given. Every case receives not less than 2 pints (1.14 l.) of fluid intravenously in the first hour. In the older diabetic, or in cases in which cardiac embarrassment is expected, intragastric drip is set up after the fourth to sixth hour, although altered blood may have been present in the stomach contents during lavage.

Glucose.—The saline cases do not receive glucose in the first four-hour period, and in the second four-hour period it is given only if the patient becomes fully conscious. In the third four-hour period glucose is always administered, usually by mouth. Not more than 100 g. is given over the first 24-hour period in any one case in the saline series. The glucose cases receive a standard solution of 4.3% glucose in normal saline, whether by vein, mouth, or intragastric drip.

Potassium.—Since the publication of Holler's (1946) case and the subsequent cases by Nicholson and Branning (1947) and by Martin and Wertman (1947), about 1 dr. (4 g.) of potassium chloride is left in the stomach after lavage in the most severe cases.

Results

A comparison of therapeutic results between different series of cases of diabetic coma is not always easy. The

Group A or Glucose Cases

Group A comprises ten cases ranging from 14 to 61 years, with an average of 35.9 years. Seven cases were in females. The figures given for the duration of coma are approximations. On admission all the cases described were unconscious and did not respond to external stimuli. Five cases responded feebly to a strong painful stimulus applied to the sole of the foot. Complications were few in this group and were mild in nature. The diastolic blood pressure ranged from 30 to 90 mm. Hg. Collen's formula was worked out and indices of between 23 and 58% (average 39.9%, mean deviation 10.2) were found. The four patients (Cases 1, 2, 5, 7) who died had indices of 57, 43, 53, and 58% respectively.

The initial blood sugar for the ten cases averaged 729.5 mg. per 100 ml., the lowest being 510 mg. and the highest 985 mg. The fall during the first four hours was calculated for each case: the readings for Case 5 rose, but the mean fall was 75.3 mg. per 100 ml.

Fluid intake for the survivors over the first 24 hours was 14.3 pints (8.13 litres), of which 9.5 pints (5.39 litres) were given intravenously and the remainder by other routes, such as by intragastric drip, by rectum, and by mouth. Glucose was administered in this group at the rate of 46 g. in the first hour,

23 g. in the second, and between 20 and 30 g. in the succeeding two hours. The average total glucose intake was 330 g. in 24 hours. The volume of the urinary output was measured in five cases. The output was 43.3% of the fluid intake.

The initial dose of insulin was either 100 or 200 units, with similar amounts given at two-hourly intervals until the readings showed definite signs of a fall. An average of 807 units was

The most significant result is that the mortality in Group A was 40% and in Group B 11%. Further, the fall in blood sugar in the first eight hours was more pronounced in the saline group and the output of urine (eight cases) was 21% of the total intake for the twenty-four hours, whereas in the glucose cases urinary output (five cases) amounted to 43% of the intake. Nearly 50% more fluid

TABLE II.—Group B Cases

Case No	Age and Sex	Duration of Coma (hours)	M S	C	B.P.	Collen's Index %	Blood Sugar (mg. per 100 ml.)						Alkali Reserve (Vols CO ₂)				Insulin Units (Total Dose)					Fluids (pints)		Deaths
							Adm	4 hrs	8 hrs	12 hrs	16 hrs	20 hrs	Adm	4 hrs	8 hrs	12 hrs	Adm	4 hrs	8 hrs	12 hrs	24 hrs	Intra-venous 24 hrs	Total 24 hrs	
1	16 M	3	3	1	100/60	32	984	540	350	212	180		16	38			200	360	420	450	580	6	9	
2	42 F	2	3	2	105/65	44	780	420	318	232			18	18			200	360	480	600	700	5	8	
3	45 F	5	4	1	100/50	50	1,050	788	280				11	26			230	380	460	520	640	6	9	
4	55 F	1	3	1	110/55	43	835	418	242				15	30			100	300	420	500	620	5	11	
5	42 M	1	3	1	100/70	35	900	816	340				12	14			200	380	460	520	640	5	7	
6	40 F	3	3	1	125/70	35	397	194	120				10	40			200	360	420	480	580	4	9	
7	45 M	4	3	1	130/80	26	950	630	318				14	26			100	300	500	660	860	8	11	
8	22 M	6	4	5	40/0	86	954	2	648				9	11			300	600	760	920	1,100	8		Died
9	25 F	5	4	—	95/55	35	1,150	678	328				10	25			100	300	500	640	740	5	9	
10	33 F	3	3	1	125/75	32	786	456	320				16	32			100	300	460	540	680	6	10	
11	19 M	4	1	2	125/80	35	1,074	728	—	246			15	—	39		200	400	600	850	1,050	8	11	
12	17 F	3	3	1	110/75	28	832	528	—	308			22	42			100	300	460	620	780	5	10	
13	11 F	5	4	1	95/65	37	542	282	102	265			15	32	45		100	300	360	400	480	4	9	
14	27 F	2	3	3	120/80	44	764	324					18	10			100	300	480	540	650	5	12	
15	42 F	2	4	3	115/60	60	924	502	280				10	10			200	400	560			7		Died
16	13 F	Coma on adm	4	—	90/50	33	630	350					7	30			80	240	360	460	560	5	9	
17	44 M	2	3	3	110/80	49	920	540	324				17	48			200	350	460	520	640	7	14	
18	58 F	4	3	2	135/80	45	860	500					9	21			200	400	560	720	860	4	11	

* Case 5 received only two pints of fluid intravenously, the third and fourth pints having inadvertently dripped into the bedclothes. Nevertheless, the patient rehydrated adequately.

given to each surviving case in 24 hours. The urine became acetone-free in this group of cases in 13 hours (range 10 to 24)

Group B or Saline Cases

This group comprises eighteen cases ranging from 11 to 58 years, with an average of 33.3 years. Twelve cases were in females. Six cases fell into the most serious grading of mental state, whereas the remaining twelve responded to strong painful stimuli applied to the sole of the foot. The diastolic blood pressure fell in some cases, to dangerous levels. The lowest recording of 40/0 mm. Hg was for Case 8, who was nearly moribund. The highest readings, 135/80 mm. Hg, were in Case 18, whose pressures rose in convalescence to 185/110. There were all degrees of complications, eight being Grade 1, three Grade 2, three Grade 3, and one Grade 5. Case 15 had lobar pneumonia and Case 8 suffered from bilateral empyemata. These two patients (severity indices 60 and 86% respectively) died. Collen's indices for the whole group ranged from 26 to 86%, with an average of 41.6% (mean deviation 9.8).

The mean initial blood sugar was 865 mg. per 100 ml., the lowest being 542 mg and the highest 1,150 mg. The calculated fall in the first four hours was 339 mg. The total 24-hour fluid intake for the sixteen surviving patients was almost exactly 10 pints (5.68 litres), of which 5 pints (2.84 litres) were given intravenously. The total urinary output in those cases (eight in number) where the urine was successfully collected and measured amounted to 21% of the total 24-hour intake. The initial dose of insulin was either 100 or 200 units. Three hundred units were given in one case (100 intravenously), but the fourth-hour sugar reading was unfortunately lost. The average total dose of insulin given over 24 hours was 693 units. Acetone disappeared from the urine in 14 hours (range 11 to 24+).

The two groups of cases considered are of nearly equal severity and the age distribution is very similar. In other respects, such as depth and duration of coma, incidence of complications, level of diastolic pressure, and height of initial blood sugar, the groups of cases are comparable.

The procedure adopted in treatment throughout the first twenty-four hours was identical in the two groups except for the fact that Group B cases did not have glucose in the early stages of treatment.

was required to produce an adequate clinical state of hydration in those surviving cases given glucose.

Comment

There is a big difference in the mortality of two groups of comparable cases treated with and without glucose by what was otherwise the same therapeutic technique. Arguments in favour of the point of view that glucose is utilized at high blood-sugar levels, up to 2,000 mg. per 100 ml. (Wierzychowski and Bielinski, 1939), and that its administration in cases of coma restores carbohydrate metabolism, abolishes acidosis, and replenishes the liver glycogen would seem to be physiologically incontrovertible. Peters (1945) has made out a very good case for glucose administration on these grounds. Much of the literature and the mortality statistics relating to this controversy are from America, where cases described as those of coma include cases of what would be labelled pre-coma or ketosis in Britain. It would seem, therefore, that American authors dealing with large numbers of cases of ketosis and coma find that only a small proportion present as emergencies of dehydration.

It is possible that because of this there has been, as Root suggests, "an overemphasis of the importance of an immediate restoration of glycogen stores in the liver." The controversy is still being fought on physiological issues. The main point disputed is whether or not a patient in diabetic coma can utilize glucose at a high blood-sugar level.

Still undetermined are such subsidiary points as whether the endogenous glucose is sufficient for purposes of carbohydrate metabolism when insulin is supplied what quantities of glucose are retained at what level of blood sugar and under what doses of insulin, and whether or not the early administration of glucose abolishes ketosis more quickly. None of these points is by any means decided for the diabetic human being, although experimental animals with induced glycosuria give more or less conclusive results in favour of glucose utilization and glycogen restoration at high blood-sugar levels.

It is possible that the higher mortality for cases which were given glucose is not connected with the action of glucose on carbohydrate metabolism, which is probably beneficial, but on its interference with the process of cellular rehydration. The maintenance of hyperglycaemia induces an intense and prolonged glycosuria and, associated with it, a proportional diuresis. The urinary output bears a linear ratio to the glucose output (Franks *et al.*, 1947). The urinary output in our Group A cases was 43.3% of the total intake, and the fluid intake in these cases was 43% more than in the cases not given glucose.

The administration of glucose in the first four hours of treatment, by maintaining a heightened blood sugar, serves to increase water excretion, to worsen the state of cellular dehydration, and to add to the circulatory collapse and shock. This process may be of no great consequence in the milder cases, but where the clinical state of the patient is poor it may cause death.

The results of this study indicate that glucose should not be administered in the early stages of the treatment of diabetic coma. The withholding of glucose for at least the first four to six hours of treatment ensures rapid rehydration and decreases the mortality significantly in serious cases of coma with circulatory collapse.

Summary

A clinical study of 28 consecutive cases of diabetic coma treated with and without the early administration of glucose is described.

Ten cases received glucose and 18 only saline in the first four to six hours of treatment. The two groups of cases were comparable.

There was a mortality of 40% in the glucose cases and of 11% in the saline cases.

The results of this study indicate that the administration of glucose to serious cases of diabetic coma in the early stages of treatment interferes with rapid rehydration and increases the mortality significantly.

BIBLIOGRAPHY

- Astwood, E. B., *et al.* (1942). *J. clin. Invest.*, 21, 621.
 Atchley, D. W., *et al.* (1933). *Ibid.*, 12, 297.
 Bertram, F. (1932). *Klin. Wschr.*, 11, 1993.
 — (1939). *Die Zuckerkrankheit*. Leipzig.
 Bjering, T., and Iversen, P. (1934). *Acta med. scand.*, 82, 193.
 Collen, M. F. (1942). *Arch. intern. med.*, 70, 347.
 Darrow, D. C., and Yannet, H. (1935). *J. clin. Invest.*, 14, 266.
 Drury, D. R. (1940). *Amer. J. Physiol.*, 131, 536.
 — and Palmer, J. J. (1938). *Proc. Soc. exp. Biol., N.Y.*, 38, 394.
 Franks, M., *et al.* (1947). *Arch. intern. Med.*, 80, 739.
 Hartmann, A. F. (1935). *Ibid.*, 56, 413.
 Helmholtz, H. F., and Bollman, J. L. (1940). *J. Lab. clin. Med.*, 25, 1180.
 Himsworth, H. P. (1932). *Lancet*, 2, 165.
 Holler, J. W. (1946). *J. Amer. med. Ass.*, 131, 1186.
 — and — (1935). *Ibid.*, 105, 587.
 — and — (1947). *Treatment of Diabetes Mellitus*, 8th ed. Philadelphia.
 Lawrence, R. D. (1936). *British Medical Journal*, 2, 81.
 Martin, H. E., and Wertman, M. (1947). *J. clin. Invest.*, 26, 217.
 Mirsky, I. A., *et al.* (1937). *Amer. J. Physiol.*, 118, 290.
 — (1941). *J. clin. Endocrinol.*, 1, 307.
 Nicholson, W. M., and Branning, W. S. (1947). *J. Amer. med. Ass.*, 134, 1292.
 Pauls, F., and Drury, D. R. (1942). *J. biol. Chem.*, 145, 481.
 Peters, J. P. (1945). *Yale J. Biol. Med.*, 17, 705.
 — (1946). *Amer. J. digest Dis.*, 13, 127.
 Root, H. F. (1945a). *J. Amer. med. Ass.*, 127, 557.
 — (1945b). *J. clin. Endocrinol.*, 5, 353.
 — and Carpenter, T. M. (1943). *Amer. J. med. Sci.*, 206, 234.
 — and Riseman, J. E. F. (1938). *J. Amer. med. Ass.*, 110, 1730.
 Sackin, S. (1945). *Ibid.*, 127, 563 (in discussion).
 — and Levine, R. (1937). *Amer. J. Physiol.*, 120, 761.
 — (1944). *Amer. J. digest Dis.*, 11, 305.
 Sunderman, F. W. (1943). *Amer. J. med. Sci.*, 205, 102.
 — and Dohan, F. C. (1941). *Amer. J. Physiol.*, 132, 418.
 Weiner, H. J. (1938). *Amer. J. med. Sci.*, 196, 211.
 Wierzbuchowski, M., and Bielinski, Z. (1939). *C. R. Soc. Biol.*, 130, 1552.

SUBACUTE PANCREATITIS

BY

IAN MACNAB, F.R.C.S.

Late Surgical Registrar, General Hospital, Birmingham

The most commonly recognized types of pancreatitis are the acute haemorrhagic form, with its dramatic clinical picture and high mortality rate, and the chronic type, with a long-drawn-out history of dyspepsia associated with general ill-health. Of the other degrees of pancreatitis, there is the variety which gives rise to a prolonged illness, with abscess formation, and the low-grade pancreatitis which may later progress to pseudocyst formation.

All these types are well known, but there remains another degree of the condition—subacute pancreatitis—which is not so widely recognized. Subacute pancreatitis is a fairly rapidly developing inflammation of the pancreas, generally associated with much oedema, which, though presenting as a surgical emergency, does not produce the same urgent clinical picture as is presented by the haemorrhagic form. There is a marked tendency to recurrence, and the initial attack is generally followed by several similar attacks over a period of time, producing the syndrome of recurrent pancreatitis. During one year at the General Hospital, Birmingham, there were 19 cases of subacute pancreatitis, of which 13 were recurrent attacks.

Pathology: Clinical Picture

At operation the gland is found to be enlarged and oedematous. The enlargement is sometimes very gross, and in three cases abdominal palpation revealed a mass which was found at operation to be an enlarged pancreas. In one instance the oedematous pancreas produced pyloric obstruction. The surface of the gland may present petechial haemorrhages and the peripancreatic lymph nodes are enlarged. There may be some free fluid in the peritoneum, but it is not blood-stained as in haemorrhagic pancreatitis. In two cases there was fat necrosis in the omentum.

The clinical findings are shown in Tables I and II. The patient, usually middle-aged and obese, develops upper abdominal pain which, though not severe at first, gradually increases in intensity over several hours until it is unbearable. The pain may be situated in the epigastrium or in the right or left hypochondrium. In some cases it is felt right across the abdomen under the subcostal margin. The pain, which may continue unabated for several hours, does not vary in intensity. When asked to describe the pain the patient generally states that it is deep-seated and boring in nature and that it passes through to the back. Vomiting occurs early, and when the stomach contents have been emptied incessant retching adds to the patient's distress. The temperature is normal, but the pulse rate is generally raised. There is some tenderness and guarding in the upper abdomen, and this may be present anywhere in the subcostal region. There is tenderness in one or both loins and in the costovertebral angles posteriorly. There are some inconstant signs, such as jaundice, due to obstruction of the common bile duct by the swollen pancreas, and occasionally glycosuria. In cases presenting recurrent attacks the clinical picture is similar, but vomiting is not severe, and the tenderness, when present, is only slight.

Laboratory Investigations

Only two of the multitude of investigations described for pancreatitis have proved of use in establishing the diagnosis—estimation of the level of the serum lipase and serum

TABLE I.—Summary of Clinical Findings in Patients Suffering from an Initial Attack of Subacute Pancreatitis

Case	Onset	Pain		Vomiting	Tenderness	Guarding	Jaundice	Glycosuria	Serum Amylase	Treatment
		Situation	Type							
1	Gradual; 24 hours	Epigastrium and through to back	Constant and deep-seated	Severe	Generalized; especially marked in epigastrium	Epigastrium	Nil	++	Urinary diastatic index 100 units	Conservative
2	Gradual; 48 hours	Epigastrium, right hypochondrium and through to back	"	"	Right and left hypochondria, costovertebral angles posteriorly	Right and left hypochondria	Slight	Nil	438 units, two months later 61 units	"
3	Gradual; 5 days	Epigastrium, right and left hypochondria	"	Very severe	Left hypochondrium and left costovertebral angle	Nil	"	"	32 units	Laparotomy
4	Gradual; 4 days	Epigastrium and right hypochondrium	"	"	Right hypochondrium and right costovertebral angle	Right hypochondrium	Nil	"	51 "	"
5	Gradual; 4 days	Epigastrium and left hypochondrium	"	Severe	Right hypochondrium, right and left costovertebral angles	Nil	Severe	"	190 "	"
6	Gradual; 8 hours	Left hypochondrium	"	Vomiting at onset severe, retching afterwards	Left hypochondrium and epigastrium	Nil	Slight	"	439 units; one month later 46 units	Conservative

TABLE II.—Summary of Clinical Findings in Patients Suffering from a Recurrent Attack of Subacute Pancreatitis

Case	Duration of Attacks	Pain		Vomiting	Jaundice	Glycosuria	Serum Amylase	Findings at Laparotomy
		Situation	Type					
7	5 years	Right hypochondrium and epigastrium	Constant and deep-seated	Severe	Slight	+++	36 units	Enlarged hard pancreas. Areas of fat necrosis in omentum
8	3 "	Epigastrium	" "	"	Nil	Nil	164 "	Enlarged firm pancreas. Areas of fat necrosis in omentum
9	3 "	Subcostal, through to back	" "	Occasionally	"	"	59 "	Enlarged hard pancreas
10	3 "	Subcostal	" "	Severe	"	"	245 units (during attack), 39 units three weeks later	Enlarged pancreas
11	6 "	"	" "	Never	"	"	258 units during exacerbation	" "
12	"Years"	Epigastrium	1½ hrs after meals, constant for 2 hrs	"	"	"	Not tested	Enlarged pancreas. Irregular "boxes"
13	2 years	Left hypochondrium	1 hr after meals, constant for 2 hrs	Severe	"	"	"	Enlarged pancreas. Areas of fat necrosis in omentum
14	18 "	Left hypochondrium and epigastrium	Constant and deep-seated	"	"	"	42 units	No laparotomy
15	15 "	" "	" "	Occasionally	Severe	+++	Diastatic index urine, 6	Patient died. Enlarged fibrotic pancreas
16	10 "	" "	" "	"	Nil	Nil	Not tested	No laparotomy
17	2 "	Right hypochondrium and right costovertebral angle	" "	Severe	"	"	59 units	Enlarged pancreas
18	2 "	Epigastrium	"Dragging"	Occasionally	"	"	504 units in exacerbation	" "
19	3 "	Subcostal	Constant and deep-seated	"	"	"	217 units in exacerbation	No laparotomy

amylase. Several estimations of the serum amylase have been made both in normal subjects and in patients suffering from various abdominal lesions. Somogyi (1932) stated that the normal limits were 80 to 180 units. Lewison (1941) gave 40 to 175 units as the normal range, and our results are more in keeping with those of Lewison than with those of Somogyi.

In the initial attacks the serum amylase is raised above normal and remains elevated until the symptoms have abated. In recurrent attacks the serum amylase is generally below normal, presumably because repeated attacks are associated with fibrosis of the gland and diminution of acinar tissue. Occasionally during an exacerbation the blood amylase is raised above normal and then settles to a subnormal limit later. This was found in three of the cases in this series.

The diastatic index of the urine follows the changes in the serum amylase level and is dependent upon the renal threshold for amylase being exceeded.

Diagnosis

The main features of subacute pancreatitis are: the deep-seated severe pain, which is of gradual onset and long duration, is situated anywhere in the subcostal region, and passes through to the back; the constant nature of the pain; the incessant vomiting and retching; the tenderness in one or both costovertebral angles; and, finally, the elevation of the serum amylase.

Differentiation from Perforated Gastric Ulcer

The clinical picture is as clear-cut as that produced by an acute appendicitis. An acute exacerbation of symptoms in a patient suffering from a chronic peptic ulcer may give rise to confusion, but the history and a normal serum-amylase level should make the diagnosis obvious. The dramatic picture presented by a perforated gastric ulcer differentiates it readily from subacute pancreatitis, though occasionally confusion may occur, as in the following case.

A man was admitted to the General Hospital on July 2, 1946, complaining of severe epigastric pain. He gave a history of attacks of pain in the left hypochondrium over the previous twelve years. The pain was of a constant nature and would continue unabated for 48 hours, uninfluenced by food and unrelieved by alkalis. Forty-eight hours before admission he had what he described as "a characteristic attack." The pain was continuous and constant for 24 hours and then subsided. Twelve hours later the pain recurred and gradually intensified to agonizing severity. He vomited twice at the onset of the pain, after which retching was incessant. On examination he was slightly jaundiced; there was epigastric distension, with generalized abdominal tenderness and guarding, but no rigidity. No tenderness was felt in the costovertebral angle. The serum amylase was 54 units, the blood sugar 270 mg. per 100 ml, and there was heavy glycosuria. A diagnosis of recurrent pancreatitis was made, but the patient was subsequently proved to be suffering from a perforated duodenal ulcer.

This case is unusual, however, and the differentiation of the two conditions should not prove difficult. Confusion has arisen with coronary occlusion, cholangitis, and

intestinal obstruction: however, in each case the history and signs differ in many points from those presented by subacute pancreatitis, and the serum-amylase level is within normal limits.

Confusion with Acute Cholecystitis

The condition most likely to give rise to confusion is acute cholecystitis, especially when subacute pancreatitis is associated with pain and tenderness in the right hypochondrium. The differential points to be borne in mind are the incessant retching which accompanies subacute pancreatitis, the tenderness in the costovertebral angles, and the rise in the serum-amylase level. Acute cholecystitis is often associated with a rise in temperature; this is not seen in subacute pancreatitis.

Undoubtedly many cases of subacute pancreatitis are incorrectly diagnosed as acute cholecystitis. Many of these cases are later subjected to an interval operation, and at laparotomy nothing abnormal is found. In such instances cholecystectomy may be performed with minimal pathological justification. On the other hand, evidence of a chronic cholecystitis may be found, and it has been stated that chronic cholecystitis is an aetiological factor in subacute pancreatitis. In such instances it is probably advisable to remove the gall-bladder, but it must be borne in mind that if the original condition was subacute pancreatitis and not acute cholecystitis, then the symptoms are apt to reappear.

Recurrence of symptoms after cholecystectomy is a condition so well known that a name has been given to it—the post-cholecystectomy syndrome. This syndrome may be produced by a stone in the common bile duct or by attacks of pancreatitis. This latter condition, though not generally recognized, is much more frequent than is commonly acknowledged. The following is a typical case.

This patient, aged 67, was admitted to the General Hospital suffering from jaundice. A cholecystectomy was performed in 1930, and since that date the patient had had attacks of pain situated in the epigastrium and left hypochondrium which would continue unabated from two to eight hours. Vomiting and retching and occasionally jaundice were associated with the attacks. During the month before admission the patient had had several such attacks and had become progressively more jaundiced. There was marked glycosuria and the diastatic index of the urine was 6 Wohlgemuth units. Death occurred shortly after admission, and necropsy revealed an enlarged fibrosed pancreas with dilated ducts.

Confusion with Gall-stone Colic

When subacute pancreatitis is associated with jaundice the condition may be confused with gall-stone colic. A careful consideration of the history and physical findings taken in conjunction with the level of the serum amylase would differentiate the two conditions. In this respect the following case of subacute pancreatitis is of interest.

Case 5 (see Table I).—This patient, a young woman, was admitted to the General Hospital on Sept. 19, 1945, with a history of attacks of epigastric pain over the previous ten days, increasing in severity. The pain was constant in nature and was associated with severe vomiting. Four days before admission the patient became jaundiced. On examination she was deeply jaundiced; the abdomen was flaccid, with guarding and tenderness in the right hypochondrium and tenderness in the costovertebral angles posteriorly. A radiograph revealed a shadow in the gall-bladder area which was reported as being possibly due to a gall-stone. The serum amylase was 190 units. A pre-operative diagnosis of cholecystitis was made, but laparotomy revealed a normal gall-bladder with no evidence of calculi. The pancreas was swollen, congested, and oedematous, and the peripancreatic lymph glands were enlarged. The patient made an uneventful recovery. Four weeks later the blood amylase was 80 units.

Treatment

The treatment of subacute pancreatitis is conservative. Rest in bed should be enforced until symptoms have subsided. Large doses of morphine may be necessary in the first few hours to give the patient relief from pain, but apart from this no other special medical treatment is indicated. When there is a history of recurrent attacks of subacute pancreatitis the gall-bladder should be investigated, and if there is any evidence of chronic cholecystitis cholecystectomy should be performed, as it is very probable that the diseased gall-bladder is acting as the focus of infection for the recurrent attacks of pancreatic inflammation.

Typical Case Reports

The following two cases are reported in full as being typical of the conditions described.

Subacute Pancreatitis (Case 6)

A middle-aged man was admitted to the General Hospital on Dec. 28, 1945, complaining of severe pain in the left loin and left hypochondrium. The pain was described as being deep-seated and passing through to the back. It later radiated to the right hypochondrium. The patient vomited at the onset of the attack and had suffered from severe retching throughout.

On examination he was jaundiced and was tender on deep palpation in the left hypochondrium, the epigastrium, the left loin, and the left costovertebral angle. The serum amylase was 439 units and the serum bilirubin 6 mg. per 100 ml. He settled down on conservative treatment, and a month later his blood amylase had fallen to 46 units.

Recurrent Pancreatitis (Case 7)

A man was admitted to the General Hospital on Nov. 21, 1941, complaining of intermittent attacks of epigastric pain over the previous eight weeks. The pain was continuous and was unrelated to food. The attack immediately before admission had continued for four days, during which time he had vomited incessantly. A diagnosis of subacute intestinal obstruction was made. A laparotomy was undertaken, but failed to reveal any abnormality. The patient made an uneventful post-operative recovery.

On Nov. 21, 1942, he was readmitted complaining of an exactly similar attack of only two hours' duration. A diagnosis of perforated gastric ulcer was made, but laparotomy revealed no abnormality in the stomach. The pancreas was swollen greatly and was very hard. He again made an uneventful post-operative recovery.

On May 5, 1944, a similar attack occurred and the patient was readmitted to hospital. A diagnosis of subacute obstruction due to severe constipation was made. It was noticed that he was suffering from severe diabetes.

On April 12, 1946, he was readmitted after an exactly similar attack. On examination he was tender in the epigastrium, in the left hypochondrium, and in both costovertebral angles. The blood sugar was 235 mg. per 100 ml. and the blood amylase was 36 units. The patient progressed well on conservative treatment and was discharged in ten days.

I am convinced that Case 7 was a clear-cut instance of recurrent pancreatitis. The low level of the serum amylase is in keeping with the fibrosis which must have occurred in the pancreas.

Conclusion

Subacute pancreatitis has a clinical picture as clear-cut as that presented by a perforated gastric ulcer. The diagnosis, though it may readily be made by consideration of the history and physical signs, is confirmed by the changes in the serum-amylase level.

The possibility of subacute pancreatitis must always be borne in mind when diagnosing an abdominal emergency, especially acute cholecystitis. Confusion of the condition with cholecystitis accounts for many of the cases of recurrence of symptoms following cholecystectomy. This error

in diagnosis would largely be obviated if serum-amylase investigations were more often employed in elucidating obscure cases of upper abdominal pain.

Subacute pancreatitis is not a rare condition, and its diagnosis depends largely on being aware of the existence of this clinical syndrome.

Summary

Subacute pancreatitis is a clinical entity readily differentiated from acute haemorrhagic pancreatitis and other abdominal emergencies.

Patients suffering from this condition present as an acute abdominal emergency but settle down on conservative treatment. The condition is very apt to recur. Of the 19 cases presented 13 were recurrent attacks.

It is suggested that estimation of the serum-amylase level should be more widely employed to differentiate this condition from other acute abdominal lesions.

I would like to thank Professor F. A. R. Stammers for his help in presenting this paper

REFERENCES

- Lewison, E. F. (1941). *J. Lab. clin. Med.*, 26, 1901.
Somogyi, M. (1932). *J. Biol. Chem.*, 97, lxxxvi.

REPORT ON AN OUTBREAK OF INFLUENZA IN THE ARMY

BY

D. G. MILNE, M.B., Ch.B.
Major, R.A.M.C.

AND

J. D. CRUICKSHANK, M.B., M.R.C.S.
Lieutenant-Colonel, R.A.M.C.

During the months of January and February, 1949, several Army units in Mid-West District, which comprises the whole of Wales and the adjoining English counties, reported that cases of influenza were occurring among their personnel. The first cases to be diagnosed as influenza occurred on Jan. 19 in units stationed at Malvern. The second unit affected was a Boys' Battery of the Royal Artillery, near Rhyl, on Jan. 24. On Jan. 31 cases were reported at Lichfield and on the following day at Donnington. Oswestry garrison were the next victims, on Feb. 7, and by Feb. 21 cases were also being reported from Nesscliffe, near Shrewsbury, Wrexham, and Tonfanau, on the Welsh coast. A total of 646 cases were notified from all Army units in Mid-West District from the start of the outbreak on Jan. 19 to Feb. 21.

Features of the Outbreak

It had been previously impressed upon all ranks that if an epidemic of influenza did occur it was of prime importance to report sick early. Nearly all soldiers affected attended their medical officer within a few hours of experiencing their first symptoms. It is interesting to note that, in one instance only, a soldier remained in his barrack room for over 24 hours before reporting sick. Eighteen out of twenty of his comrades in the same hut developed influenza later.

The main features were a sudden onset with frontal headaches, a transient sore throat without lymph-node enlargement or tenderness, a slight cough, and a feeling of general weakness and lassitude, coupled with aches and pains in the arms and legs and in the lumbar region. Mild rigors preceded the rise in temperature, which was in the neighbourhood of 103° F. (39.4° C.), although a few cases did develop temperatures of 105° F. (40.6° C.). Circumoral pallor, injection of the conjunctivae, and profuse nasal discharge were absent. Epistaxis occurred in a few cases at Lichfield, but was not a common feature. The temperature gradually

dropped, and by the fourth day of the disease most patients were afebrile. Chest complications did not occur and after-effects were absent amongst the great majority of male patients. In the few cases occurring in the W.R.A.C. or A.T.S., however, lassitude and post-influenzal depression were noted.

Patients were treated in camp reception stations until their temperature subsided, and were then transferred to barrack accommodation for a convalescent period of two days before starting duty. The average duration of the illness from the initial symptoms until return to full duty was between six and eight days.

Treatment.—This was of a palliative nature. Warmth, rest in bed, and plenty of fluids by mouth were the main principles adopted. Salicylates and Dover's powder were given during the pyrexial period, and codeine if the cough proved troublesome.

Laboratory Investigations

When it was obvious that a definite outbreak had occurred each garrison was visited and throat washings in 10–15 ml. of sterile saline were taken from selected cases. Febrile patients or cases in the early stages of the illness were chosen so far as was possible. The washings were packed in ice and delivered within six hours to the Central Public Health Laboratory, Colindale, and the National Institute for Medical Research, Hampstead, where they were examined for the presence of virus. Broth was not added to the washings: the addition of 5 ml. would have improved the chances of recovering the virus.

The first of the paired sera required for the Hirst and complement fixation tests was taken at this visit. This was held in the refrigerator at 2–3° C. until the second of the pair was taken, on the twelfth to fourteenth day of the disease.

The sera were examined by Dr. A. P. Goffe at the Central Public Health Laboratory, Colindale; the results are indicated in brief in the tabulated schemes which follow.

TABLE I—Cases at Rhyl (all males)

Case No.	Age in Years	Symptoms					Temperature on Day of Disease
		Shivering	Head-ache	Sore Throat	Cough	Muscle Pains	
1	16½	++	+	+	+	—	100.6° F.; 1st (38.2° C.)
2	15½	++	+	+	+	—	101.6° F.; 1st (38.7° C.)
3	20	++	++	+	+	±	97.0° F.; 3rd (36.1° C.)
4	17½	++	+	—	+	+	98.0° F.; 4th (36.7° C.)
5	16½	—	++	+	+	±	97.5° F.; 3rd (36.5° C.)
6	16	+	++	—	+	—	98.0° F.; 4th (36.7° C.)

Saline Washings.—Report on Feb. 2, 1949: Type A virus isolated in two cases from washings taken on Jan. 29, 1949.

Hirst Test.—Four cases showed fourfold rise of antibody inhibiting foal red-cell agglutinin (A PR 8) in second serum. Two cases in which the first serum (taken on the fourth day of illness) showed a high titre (1 in 48) had a twofold rise on the 14th day in antibody to A PR 8 agglutinin.

C.F.T.—Second sera showed 16- to 64-fold rise in complement-fixing antibody to Type A strain antigen.

Result.—Influenza type A.

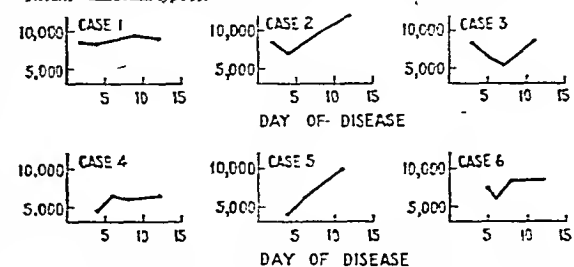


Chart showing the white cell count of the Rhyl cases (see Table I).

TABLE II.—Cases at Lichfield (all males)

Case No.	Symptoms						Temperature on Day of Disease
	Age	Shivering	Head-ache	Sore Throat	Cough	Muscle Pains	
1	18	—	—	Dry	+	—	101.6° F.; 2nd (38.7° C.)
2	18	—	+	Dry	+	+	101.0° F.; 2nd (38.3° C.)
3	19	+	—	Dry	+	—	98.4° F.; 2nd (36.9° C.)
4	22	+	+	+	—	+	102.8° F.; 1st (39.3° C.)

Saline Washings.—Virus was not isolated from these washings.
C.F.T.—Second sera showed 4- or 8-fold rise in titre of complement-fixing antibody to Type A strain antigen.
Result.—Influenza type A.

TABLE III.—Cases at Donnington (all males)

Case No.	Symptoms						Temperature on Day of Disease
	Age	Shivering	Head-ache	Sore Throat	Cough	Muscle Pains	
1	19	+	+	—	—	+	99.6° F.; 3rd (37.5° C.)
2	18	+	+	—	—	+	99.8° F.; 3rd (37.7° C.)
3	18	+	+	—	—	+	98.0° F.; 3rd (36.7° C.)
4	19	+	+	—	—	+	100.0° F.; 2nd (37.8° C.)
5	20	—	+	—	+	+	100.2° F.; 3rd (37.9° C.)
6	19	+	+	—	+	—	100.8° F.; 3rd (38.2° C.)
7	20	+	—	+	+	—	100.2° F.; 5th (37.9° C.)
8	18	+	+	—	+	—	99.4° F.; 3rd (37.4° C.)

Saline Washings.—Type A strain of virus isolated in one case from washings taken on Feb. 9, 1949.
C.F.T.—Second sera showed 8- to 32-fold rise in titre of complement-fixing antibody to Type A strain antigen.
Result.—Influenza type A.

Complement fixation tests on sera from four cases at Malvern showed results with Type A strain antigens similar to those in the Tables.

Preventive Measures

Early diagnosis and rapid isolation of the patient were aimed at in order to check the spread throughout each unit. Strict attention was paid to the adequate ventilation of barrack rooms and to the spacing of beds to the optimum. General measures on the maintenance of the health of the troops, the shaking and airing of blankets in the open, and the sweeping of floors, previously sprinkled with water, were adopted. Routine gargling and the spraying of rooms with disinfectant were not carried out, nor was prophylactic inoculation attempted. Unit cinemas were closed for a short time in two areas at the height of the outbreak, but the numbers of cases occurring did not warrant restricting the movement of troops or cancelling the intake of National Service men to training establishments.

The movements of the first three cases occurring in each unit prior to the onset of symptoms were investigated, with, however, inconclusive results. No direct connexion with the European epidemic could be traced.

Summary

An outbreak of influenza of the Virus A type occurring in Army units in Wales and the West Midlands is reported. Symptoms, treatment, laboratory investigations, and preventive measures adopted are described.

Our thanks are due to Lieutenant-General Neil Cantlie, C.B., M.C., K.H.P., Director-General Army Medical Services, and Major-General R. W. Galloway, C.B., C.B.E., D.S.O., K.H.S., D.D.M.S. Western Command, for permission to publish this report.

SPONTANEOUS INTRA-ABDOMINAL HAEMORRHAGE

BY

A. L. WOOLF, M.B., B.S.

AND

H. R. THOMSON, M.D., M.R.C.P.

(From the Central Middlesex County Hospital,
Park Royal, London)

Spontaneous intraperitoneal haemorrhage—i.e., that occurring without any obvious cause such as cirrhosis of the liver (James, 1930) and rupture of aneurysm—has been recorded in 26 cases*—19 collected by Berk, Rothschild, and Doan† (1941), three reported by Marks and Freedlander (1945), and one each by Keusenhoff (1934), Matheson (1934), Crile and Newell (1940), and Haugen (1944).

In only eight of these cases were necropsies performed. In Keusenhoff's case and in two cases recorded by Moorehead and McLester (1936) a definite arterial rupture was found; but in the remaining five no single vessel could be held responsible, though in Matheson's case the haematoma was related to the branches of the ileocolic artery. Four of the cases had clinical or morbid anatomical evidence of hypertension (Moorehead and McLester two, and the fatal case of Marks and Freedlander) or arteriosclerosis (Keusenhoff). Haugen's case, which followed appendectomy, like those of Matheson (1934), Churchman (1911), and Hartley and MacKechnie (1934), showed no evidence of vascular disease, but in these cases blood-pressure readings before the catastrophe or reports on the histology of the kidneys are lacking.

Three cases of spontaneous abdominal haemorrhage, two of which included a haemoperitoneum, are described below.

Case 1

A woman aged 58 was admitted with a four-months history of discharging ear (? cerebral abscess). She had had pain in the left hypochondrium for one month accompanied by vomiting when severe. Investigations before admission showed: haemoglobin, 66%; leucocytes, 17,300 per c.mm. (89% neutrophils); serum Wassermann reaction, negative.

On examination the temperature was 99° F. (37.2° C.), pulse 110. She had a profuse discharge from the right ear, and diplopia on looking above the horizontal. The abdomen appeared normal. The B.P. was 140/80. Leucocytes numbered 43,000 per c.mm. Two days after admission she had severe upper abdominal pain and urge to defaecate, but the bowels were not opened. On examination she was pale, the pulse was 160, and there was extreme tenderness in the upper half of the abdomen. She died in less than an hour.

Necropsy.—Intracranial disease was not discovered. Very marked purulent bronchitis and emphysema were found. On opening the abdomen large blood clots were seen in the peritoneal cavity. The greater omentum and lesser sac also contained blood clot. Careful dissection of the branches of the coeliac axis, the superior mesenteric artery, and the tributaries of the portal vein failed to reveal any macroscopic evidence of structural change in their walls or of thrombosis. Smaller vessels within the area of haemorrhage in the pancreas were also minutely examined without any abnormality being detected. Both renal arteries contained thrombi, the kidneys appearing very pale but otherwise normal. The bowel contents were black, but there was no macroscopic lesion in the intestinal mucosa.

Histology.—Omentum:—A huge area of haemorrhage occupied the omental fat tissue, which included a central area of

*Since submission of this paper a case of malignant hypertension with haemoperitoneum has been published by De Navasquez and French.

†The case of Florence and Ducuing (1913) was traumatic.

haemorrhagic necrosis. This area was surrounded by macrophages containing haemosiderin. Outside the haemorrhagic areas the arterioles showed fibrinoid thickening of the intima, and collars of lymphocytes, eosinophils, and macrophages. In addition, several islets of haemopoiesis were found. *Myocardium*:—Only the vascular changes were striking. The arterioles showed subintimal swelling, sometimes in the form of appositional loosely woven pink cushions and sometimes in the form of intensely eosinophil hillocks over which endothelial cells appeared unusually prominent and sometimes detached. *Spleen*:—There was very extensive and marked hyaline fibrinoid infiltration of walls of arterioles with reduplication of elastic laminae of some vessels. *Pancreas*:—Marked hyalinosis of arterioles was present. Stroma was rich in fat grapes and contained extensive areas of haemorrhage. *Stomach*:—Arterioles of outer layers of wall, outside and in the periphery of blood clot, showed marked hyaline fibrinoid infiltration. Innumerable collagen shreds could be seen in the clot. *Kidney*:—A fair number of glomeruli showed hyalinosis of the afferent arterioles. Many glomeruli appeared enlarged, with fusion and hyalinization of loops and increase in nuclei. There were tubular casts but no crescent formation. An occasional glomerulus showed fibrinoid change in some of its loops. Another section showed several collections of lymphocytes, the most conspicuous being around a hyalinized vessel the lumen of which was completely occluded by hyaline material, part of which showed fibrinoid change.

Comment.—Necropsy revealed no intracranial lesion and no source for the haemorrhage. Histologically there were widespread arteriolar thickening and kidney changes, as normally seen in hypertension, to which the massive intraperitoneal haemorrhage may therefore be attributed, in spite of the readings, which were, however, taken only after the onset of the disease. That the arteriolar changes may have given rise to the haemorrhage is possible, especially as similar lesions occurring in dermatomyositis have been shown (Pagel, Woolf, and Asher, 1948) to lead to extravasation of blood, though this was admittedly microscopic. Goldblatt's (1938) finding of petechial and larger haemorrhages in dogs with experimental malignant hypertension provides further support. The petechial haemorrhages in such cases were associated with dissection of necrotic or hyalinized arteriolar walls by red blood corpuscles. On the other hand, the possibility of a haemorrhagic diathesis may be considered, although Bruce's (quoted by Berk, Rothschild, and Doane, 1941) similar case with recovery was subsequently investigated for bleeding tendency without success. Multiple small discrete haematoma in the greater omentum and mesentery in Hartley and MacKechnie's case, however, suggest that their patient may have had a haemorrhagic diathesis.

The following case of abdominal haemorrhage affecting chiefly the ilio-psoas muscle, though lacking a haemoperitoneum, showed in other respects a striking resemblance to Case 1, and is therefore included.

Case 2

A woman aged 65 had had rheumatoid arthritis for eight years, and recently the onset of dyspnoea, nocturia, and swelling of the feet. On examination myxoedema, congestive cardiac failure, and advanced rheumatoid arthritis were found. The B.P. was 180/100. She collapsed and died two days after admission.

Necropsy.—Very pale and thin body. Basilar artery and circle of Willis showed severe atheroma. Right pleura adherent and oedematous, with numerous small haemorrhages (up to 0.4 cm. diameter), marked left ventricular hypertrophy, and atheroma of endocardium below aortic valves. Severe atheroma of coronary arteries. Femoral arteries showed medial sclerosis. Kidneys granular, with variegated cortex. There were extensive areas of intramuscular haemorrhage up to 5 by 4 cm. diameter in the superficial portions of the rectus abdominis and in the ilio-psoas muscles.

Histology.—*Psoas muscle*:—There was a massive haemorrhage beneath the fascia but no appreciable haemorrhage in the muscle itself. In addition to the extensions of the extravasation along the interfascicular stroma there were striking cellular and muscular changes. (a) The cellular changes consisted of dense perivascular and interstitial infiltration with plasma cells and lymphocytes, the former being predominant around the vessels, which, though for the most part appearing normal or showing slight fibrous thickening, occasionally showed intensely eosinophil eccentric intimal cushions as described in the myocardium in Case 1. (b) The muscular changes occurred only between the strata of extravasated blood, and consisted of vacuolation and shrinking of sarcoplasm with evidence of cellular regeneration. *Heart muscle*:—Conspicuous eccentric subintimal cushion formation in small arterioles. *Kidney*:—Extreme glomerular hyalinization of the wire-loop type, many glomeruli being completely atresic. There was also atrophy of the renal tubules.

Comment.—The presence of severe arteriolar disease and the clinically observed hypertension suggest a primarily vascular cause for the haemorrhages in this case. This is corroborated by the confinement of the pictures of muscular degeneration to the haemorrhagic areas. The perivascular, lymphocytic, and plasma-cell cuffing in the area of haemorrhage in these two cases is probably a local reaction to the latter, and is described in cases of perirenal haematoma by Heilmann (1930).

Case 3

A man aged 63 was admitted two hours after an acute onset of pain in the right hypochondrium radiating to the right scapular angle. The pain was dull and continuous, and he felt as though blown up with wind. There was slight nausea but no vomiting. A similar attack a year previously, diagnosed as a coronary thrombosis, cleared up after a week in bed.

On examination he was seen to be obese and pale, and he was sweating. The pulse was 72, temperature 97° F. (36.1° C.), and respirations 20. The blood pressure was 220/125. The abdomen was distended and tympanitic, without shifting dullness. There was tenderness but no rigidity in all areas, most pronounced in the right upper quadrant and extending round the flank to the right loin. Peristalsis was diminished. Rectal examination showed no abnormality and the urine was normal. On two occasions after admission he suddenly became shocked and his blood pressure fell to 60/40 but with a pulse rate of only 80. On each occasion he recovered in a few hours. On the afternoon following admission the tenderness and the gnawing pain were localized to the right iliac fossa. Laparotomy was performed for "acute appendicitis." There was much free blood in the peritoneal cavity and adhesions were present, mainly on the right side. In the right iliac fossa a fresh retroperitoneal haematoma was spreading towards the right loin, and a large boggy swelling was palpated in the position of the right kidney. Death occurred 30 hours after operation.

Necropsy.—Short, fat man. Right pararectal operation wound. *Heart*:—Weight, 800 g.; left ventricular hypertrophy. *Aorta*:—Gross atheroma. Peritoneum contained 60 oz. (1.7 litres) of fresh blood; omentum adherent to anterior abdominal wall. *Intestines*:—Gross distension; coil of terminal ileum adherent to pelvic peritoneum and obstructed by an omental band. Adhesions between gall-bladder and transverse colon. There was a large blood clot in the right perirenal fat which extended to the splenic flexure. The right suprarenal gland was expanded by a dense blood clot; external measurements 7 by 3 by 3 cm. The right kidney was surrounded by blood clot but was normal, apart from autolysis, and its capsule was intact. The renal artery was free from thrombosis, but the suprarenal artery could not be identified owing to the advanced autolysis.

Histology.—Suprarenal gland:—wholesale necrosis of the cortex, also of the capsular fat tissue. Some islets of parenchyma were still preserved in the central areas, where there was fibrinoid infiltration of the septa. With staining for elastic tissue the outlines of vein walls were visible in the centre of the blood clot.

Comment.—Perirenal haematoma was first described by Wunderlich (1856) under the title of "Apoplexie des

Nierenlagers," and was later classified into four categories by Ponfick (quoted by Coenen, 1910). Case 3 is an example of Ponfick's haematoma renis extracapsulare. Coenen, who collected 12 cases of perirenal haematoma and reported one of his own, mentions nephritis, renal sarcoma, arteriosclerosis, renal tuberculosis, chronic splenomegaly with gastritis, and haemophilia as the associated conditions. Heilmann (1930), who reported four cases of perirenal haematoma, suggests spasm of the capsular vessels as an aetiological factor. Cases of gross suprarenal haemorrhage have been reported in adults (Keele and Keele, 1942; Burnett, 1948). Eleven cases had previously been described. Only three of these cases, including those of Keele and Keele, were unilateral, as was the case under discussion, and in no instance was there a haemoperitoneum. In addition to atheroma and a possible spastic mechanism owing to hypertension, thrombosis of the suprarenal vein as in Keele and Keele's case should be considered as the proximate cause.

Summary

Three cases of intra-abdominal haemorrhage are reported. All three had evidence of hypertension.

The first case was one of spontaneous intraperitoneal haemorrhage with no morbid anatomical source for the bleeding apart from hypertensive changes in the smaller vessels.

The second case showed intramuscular haematoma; hypertensive arteriolar disease was sufficient to account for the haemorrhage.

The third case showed a haemoperitoneum from rupture of a perirenal haematoma. The origin of this is discussed. There was clinical evidence of severe hypertension.

Our thanks are due to Dr. W. Pagel for provision of material and assistance in preparation of this paper, to Dr. R. J. Porter, Dr. R. A. J. Asher, and Mr. J. D. Fergusson for the use of the clinical notes, and to Mr. L. Spain for histological assistance.

REFERENCES

- Berk, J. E., Rothschild, N. S., and Doane, J. C. (1941). *Ann. Surg.*, 113, 513.
 Burnett, C. W. F. (1948). *Lancet*, 1, 249.
 Churchman, J. W. (1911). *Amer. J. med. Sci.*, 142, 825.
 Coenen, H. (1910). *Beitr. klin. Chir.*, 70, 494.
 Crile, G., and Newell, E. T. (1940). *J. Amer. med. Ass.*, 114, 1155.
 De Navasquez, S., and French, E. B. (1947). *Guy's Hosp. Rep.*, 96, 85.
 Florence and Ducuing (1913). *Bull. Mém. Soc. Chirur. Paris*, 38, 645.
 Goldblatt, H. (1938). *J. exp. Med.*, 67, 809.
 Hartley, H., and MacKechnie, D. M. (1934). *Lancet*, 1, 289.
 Haugen, A. I. (1944). *J. Iowa med. Soc.*, 34, 198.
 Heilmann, P. (1930). *Virchows Arch.*, 277, 256.
 James, T. G. I. (1930). *Lancet*, 2, 1123.
 Keele, D. V., and Keele, K. D. (1942). *British Medical Journal*, 2, 687.
 Keusenhoff, W. (1934). *Zbl. Chir.*, 61, 1834.
 Marks, M., and Freedlander, S. O. (1945). *Ann. Surg.*, 121, 191.
 Matheson, M. M. (1934). *Med. Rec.*, 140, 186.
 Moorehead, M. T., and McLester, J. S. (1936). *J. Amer. med. Ass.*, 106, 373.
 Pagel, W., Woolf, A. L., and Asher, R. A. J. In press.
 Wunderlich, C. A. (1856). *Handbuch der Pathologie und Therapie*, 2nd ed., 3, 402. Stuttgart.

The British Council for the Welfare of Spastics has produced an admirable pamphlet entitled "Notes for Parents on the Home Care of Children Handicapped by Cerebral Palsy." It has been prepared by Dr. J. H. Crosland, of the Physical Medicine Department, Haring Cross Hospital, and Mr. H. P. Weston, executive secretary of the council. After a short account of the causes and nature of cerebral palsy the authors describe in detail how to care for spastic and athetoid children, while emphasizing that they must not be coddled. While these children must receive what help they need, the parents' natural anxiety should not prompt them to make their children over-dependent. Self-confidence and a sense of security must be inculcated into the children, and there are illustrations of special furniture, toys, and feeding utensils that will help the children to live as independently as possible. Special sections are included on the training of speech and excretion. Particulars may be obtained from the council's honorary executive secretary at 107, Norfolk Avenue, Sanderstead, Surrey. The pamphlet is obtainable from the same address for 1s. 3d. post free.

EFFECT OF PRESSURE COOKING ON VITAMIN C CONTENT OF VEGETABLES

BY

GWENETH M. CHAPPELL, M.Sc.

AND

AUDREY M. HAMILTON, B.Sc.

(From King's College of Household and Social Science, University of London)

We have recently been investigating the effect of pressure cooking upon the loss of vitamin C in vegetables. As it may be some time before we can continue this work, and as there is considerable topical interest in the question the results so far obtained are here briefly reported.

Method

In order that the results may be interpreted readily, we have compared the effects of pressure cooking with those of cooking in an ordinary saucepan. Since it is known that factors such as the volume of water and the period of cooking greatly affect the loss of vitamin C in the saucepan, the method adopted was that known to conserve the vitamin as much as possible. This method, advocated by the Ministry of Food, involves the use of a small volume of water, bringing this to the boil before putting in the vegetable, and cooking for the minimal time. With one exception, 200 g. of vegetable was cooked in 200 ml. of water in the saucepan, as this was found to be the minimum amount of liquid necessary to prevent the saucepan boiling dry. The exception was spinach, to which, as in common practice, water was not added.

The pressure cooker used was one of the now popular variety with a capacity of 7 pints (3.96 litres). The vegetables were cooked in this according to the directions supplied by the manufacturer. Again 200 g. of vegetables was used, but only 100 ml. of water. A larger volume of water is unnecessary, and would undoubtedly result in a greater loss of vitamin C by leaching. Care was taken to avoid overcooking with either method.

In every experiment six samples of each raw vegetable so far as possible equivalent and representative, were taken. Two were for the determination of the initial content of vitamin C, two for the pressure cooking, and two for saucepan cooking. Two different portions of each raw sample of vegetable and three of each cooked sample were taken for analysis. The vitamin C was also assayed in the cooking-water. Thus for every experiment 20 samples were assayed, each assay being made in duplicate. In all, 14 experiments were performed on 10 different vegetables. The method of estimation used was that of Harris and Olliver (1942).

Results

In view of the varying nature of different vegetables and of different specimens of the same type, it was not to be expected that the variation in results between the two methods of cooking would be uniform. In all of the 10 vegetables examined there was no evidence that saucepan cooking was better than pressure cooking in retaining vitamin C. In six vegetables—cauliflower, broccoli, winter cabbage, new carrots, turnips, and swedes—the retention was consistently better in pressure cooking by between 3 and 28% of the original amount of vitamin C. In the other four vegetables—spring cabbage, broad beans, old carrots, and spinach—pressure cooking gave a slightly higher retention in some experiments and a slightly lower retention in others. The average difference in

these instances was always small—of the order of 5% in favour of the one or the other method. The average retention of the original vitamin C in all the experiments performed was 7.5% more in pressure cooking than in saucepan cooking—66% against 58.5%.

The estimations of vitamin C in the cooking-water showed that, with the exception of spinach, there was a greater loss by leaching in the saucepan than in the pressure pan. The results with spinach were no doubt due to the fact that no water was added to the saucepan, whereas 100 ml. was added in the pressure cooker. It is often recommended that the water used in cooking vegetables should be used in soups, stews, and gravies. This is, however, not often done, and when it is the liquid is frequently kept for some time and then cooked again. If it were to be used immediately the difference in the total ascorbic acid in the vegetable and cooking-water together would be negligible when comparing the two methods of cooking. In other words, the total amount of the vitamin in the vegetable and cooking-water together was on the average almost the same in the two forms of cooking (78% pressure cooking; 79.6% saucepan cooking).

Discussion

This investigation is of necessity limited by difficulties peculiar to any attempt to bring laboratory methods to domestic problems. On the one hand, it is clearly necessary to control as many factors as possible by using standardized conditions; on the other hand, it is obvious that no two housewives will cook in identical conditions; in fact, these conditions will differ from time to time even in one kitchen.

In the controlled conditions we have used it is evident that, so far as the retention of vitamin C is concerned, pressure cooking is certainly no worse than cooking in a saucepan, and in some instances is better. The differences are small, however, so that a bad technique with either method would result in a greater loss of the vitamin with that method. In some of our work, overcooking in the pressure cooker or a longer time in reaching the necessary pressure led to an appreciably greater loss of vitamin. Again, in what is still, unfortunately, the common way of cooking vegetables in a saucepan, with large volumes of water and a tendency to overcook, there is a greater loss of vitamin C than in the Ministry of Food method used in these experiments. It is probable, therefore, that either type of cooking in the home will often cause greater loss of vitamin C than in our experiments. This is more likely to occur when the saucepan is used: overcooking of vegetables in the pressure cooker results so easily in disintegration that housewives soon learn to avoid this, whereas slight overcooking with a large volume of water in the saucepan results in no obvious loss in appearance or palatability. We may reasonably conclude that, in general, the retention of vitamin C in vegetables in pressure cooking is likely to be no worse, and will probably be better, than in the saucepan when either process is used in the home. There is certainly no reason, from our experiments, to suppose that pressure cooking should be discouraged because of its effect upon the nutritive value of vegetables.

So far as other foods and vitamins are concerned, very little has been published. A few experiments of our own on the vitamin B₁ content of pulses suggest that the pressure cooker is better than the saucepan.

Summary

A comparison has been made of the effect upon the retention of vitamin C in 10 different vegetables when cooked in a modern pressure saucepan and in an ordinary saucepan according to the recommended methods. On the average the

retention was higher in vegetables cooked in the pressure cooker.

We should like to thank Professor John Yudkin for his counsel and the Ministry of Food for cooking some of the samples.

REFERENCE

Harris, L. J., and Olliver, M. (1942). *Biochem. J.*, 36, 155.

SPERMATOLYSIS: A CAUSE OF MALE STERILITY

BY

CAFER YILDIRAN, M.D.

Urological Surgeon, Trabzon-Numune Hospital; member of Turkish Medical Society; British Council Student in Urology

Much attention has been directed of late towards the problem of sterility and infertility. In consequence I have been stimulated to present the results of some studies on male sterility which suggest a causative factor not hitherto described.

During the investigation of 75 males complaining of sterility at the urological clinic of Dr. A. E. Gussel, in the Guraba Hospital, Istanbul, I came across two specific abnormal spermatozoon types which were thought to be the cause of the sterility. The purpose of this communication is to call attention to the abnormalities. Short summaries of five of the case histories are given.

Case Reports

Case 1.—H. T., married five years; no children; wife pronounced normal by the gynaecologist. No history of venereal disease. No physical abnormality present. Examination of sperm 30 minutes after collection showed no microscopical or macroscopic abnormality. After two hours the specimen was separating into two layers—a clear supernatant and a sedimented layer. Microscopically the clear layer was acellular, but the sediment contained aggregations of dying spermatozoa. (I intend to make some observations on the death of spermatozoa in a further paper.) As time passed fewer and fewer sperms were seen, until at the end of six hours none were visible—the phenomenon of spermatolysis. Furthermore, the fluid obtained from this patient by prostatic massage caused spermatolysis to occur in the semen of a normal control when added to the latter.

Case 2.—N. O., married four times in the previous twenty years. One of his former wives had remarried and had had a family. No previous venereal disease, and no abnormal physical findings. The seminal fluid appeared to be more viscous than normal, but microscopically it seemed normal in every way up to two hours, when agglutination was beginning. After six hours spermatolysis was complete as in Case 1, and again prostatic fluid from this case caused spermatolysis when added to a normal control seminal fluid.

Case 3.—H. D., aged 34; married eight years; no history of venereal disease; wife normal. A spermogram showed oligospermia and hypokinesia. In two hours spermatolysis was complete.

In these three cases aspiration of the epididymis was performed. Unfortunately no sperms were found in any of the specimens, but in Case 3 minute comma-shaped bodies about 2 by 4 μ were seen. They showed some brownian movement. I got the impression that they were microsperms. Within two hours they had undergone lysis. In normal cases spermatozoa aspirated from the epididymis live two to three days.

Case 4.—F. O., aged 32; married three years; history of gonorrhoea twice, with clinical cure; no evidence of epididymitis or prostatitis; wife normal. Semen appeared normal

but showed asthenospermia microscopically. In five hours spermatolysis was complete, but in this case the prostatic fluid had no effect on a normal seminal fluid.

Case 5.—H. O., aged 30; married eight years. Nothing relevant in the history, and physical examination normal. Asthenospermia was present, and spermatolysis was complete in two hours.

Study of these cases suggests that two abnormal spermatozoon types were concerned. In the first type, as exemplified by Cases 3, 4, and 5, oligospermia and hypokinesia were present. Can it be assumed that the factors causing this also caused the spermatolysis? In the second type, as in Cases 1 and 2, the only abnormal feature was the spermatolysis. In all cases it seems right to assume that the spermatolysis was the cause of the sterility, since any sperm undergoing lysis within four to six hours of ejaculation is not likely to fertilize an ovum.

If spermatolysis occurs, then it seems reasonable to suggest that there must be a spermatolysin. In Cases 1 and 2 the only abnormality was spermatolysis, yet prostatic fluid from them caused lysis in the seminal fluid of normal controls. I have concluded that the prostatic secretion of these men contained a "spermatolysin" substance. The epididymis, vas deferens, seminal vesicle, and prostate produce a secretion which nourishes the sperms. Changes in the nature of the trophic products, the result of infection or from unknown causes, can give rise to abnormalities of the spermatozoa—e.g., asthenospermia—but I believe that the actual lysin factor is an abnormal prostatic substance.

Summary

Some cases of sterility in the male are due to agglutination and dissolution of the spermatozoa within a short time of ejaculation. This is spermatolysis.

Spermatolysis was thought to be the cause of sterility in five of 75 cases investigated. In two of these five no abnormality of the sperms apart from lysis was present.

The importance of examining seminal fluid at intervals is stressed. Otherwise if only one examination is done, and that too early, the phenomenon of spermatolysis might not be recognized.

Spermatolysins may be associated with otherwise normal spermatozoa or with abnormal sperm types. In the latter case it may be that a lysin factor is produced in the epididymis, vas deferens, or seminal vesicle, as well as in the prostate.

Medical Memorandum

A Case of Diabetic Coma Treated with 56,000 Units of Insulin

The following notes concern a case of diabetic coma treated at the General Hospital, Jersey. Their interest lies in the dose of insulin given and the conclusions they suggest concerning the use of glucose in diabetic coma.

CASE HISTORY

The patient, a man aged 32, a known diabetic, had previously kept well on a dose of 26 units of P-Z insulin and 16 units of soluble insulin. On Nov. 1, 1948, he had a cold; the following day he felt worse and omitted his insulin and took no food.

At 3 a.m. on Nov. 3 he was admitted to hospital in diabetic coma. Dehydration, air hunger, and the smell of acetone were conspicuous. The urine was "brick red" to Benedict's test and laden with acetone. The temperature was 98.6° F. (37° C.), pulse 102, and respirations 24. Gastric aspiration resulted in about 4 pints (2.28 litres) of dark-brown fluid. 130 units of insulin were given, and an intravenous drip of 5% glucose and 0.5% saline was set up. The blood sugar (B.S.) on admission was 500 mg. per 100 ml. Between 7 a.m. and 4 p.m. 950 units of insulin were given. At 6 p.m. the B.S. was 450 mg. per 100 ml. The pulse had risen to 130 and the patient's condition was worse.

In view of the inefficacy of the above method of treatment it was decided to change to that advocated by Professor Micks. As will be apparent, the inadequate treatment hitherto had permitted a marked state of insulin resistance to occur. At 7 p.m. the glucose drip was replaced with saline. A dose of 500 units of insulin was given and thrice repeated. The B.S. fell to 280 mg. 10,000 units were given at 1.30 a.m.: B.S. 270 mg. At 2.30 a.m. the B.S. had risen to 280 mg. and the patient had collapsed, the pulse being barely perceptible. At the suggestion of the laboratory technician the drip was investigated and was found to have been replenished in error with 5% glucose about an hour previously. The error was remedied and the patient improved.

At 3.15 a.m. 20,000 units of insulin, occupying 250 ml., were injected into several muscle masses, and 400 units into the drip tubing. At 4 a.m. the B.S. was still 280 mg. A second dose of 20,000 units was given and, since soluble insulin was running short 400 units of P.Z.I. This proved to be the final dose. In 26 hours 56,080 units of insulin had been given.

Hitherto the urine (tested hourly) had been continuously "red" to Benedict's test and "acetone + + +." Now at last it began to become concentrated, and sugar and acetone to diminish. It did not become free from sugar and acetone till 22 hours after the last dose of insulin. The B.S. at 8.30 a.m., four hours after the last dose, was 65 mg., the pulse rate 160; the latter thereafter fell steadily and 24 hours later it was 90. No sudden change in the patient reflected the fall in blood sugar. Following the 8.30 a.m. B.S. result, glucose in amounts varying from 5 to 15 g. in 25% solution was administered hourly by drip tubing.

At 5 a.m. on Nov. 5, 25 hours after the last dose of insulin, a hypoglycaemic convulsion occurred without warning. It responded instantaneously to intravenous glucose. Shortly after this the drip was changed to glucose. By evening on the same day the patient was restored to consciousness sufficiently to take additional glucose by mouth. By about 11 p.m., some 65 hours after admission and 4½ after the last dose of insulin, he was perfectly *compos mentis*. The drip was discontinued next day, and the patient was nursed flat for three days as a precaution against sudden circulatory failure. He progressed steadily and was discharged on Nov. 25, feeling perfectly fit, on a morning dose of 40 units of P.Z. and 60 units of soluble insulin.

COMMENT

It is to be supposed that the patient's descent into coma was initiated by the cold he had on Nov. 1. No trace of this or evidence of any other infection was apparent on admission. I had expected the conversion of the B.S. from high to low values to be indicated by marked clinical change. A sharp rise in the pulse rate coincided with the event, but this was the only prominent point. The pulse rate and the urinary sugar and acetone gradually diminished, and the patient's general condition slowly improved. Even the hypoglycaemic convulsion, arriving late and without warning and immediately controlled, did not seem to interrupt this steady progress.

B.S. recordings during this period may be of interest. These were: 5 hours after the last dose of insulin, 65 mg. per 100 ml. 7 hours after last dose, 56 mg.; 8 hours, 50 mg. (here the drip was changed to glucose); 10 hours, 62 mg.; 12 hours, 30 mg.; 14 hours, 50 mg.; 16 hours, 24 mg. (no clinical reflection of this low value); 27 hours, 70 mg. (convulsion two hours before this); 29 hours, 60 mg.; 32 hours, 45 mg.; 34 hours, 168 mg.

The lack of response to treatment when glucose was used, the collapse that occurred when it was added in error to the saline drip, and the recuperation that followed the correction of the error, strongly suggest that glucose is not an innocuous substance in diabetic coma and that its use as a precaution against hypoglycaemia may gravely jeopardize the patient's chances of survival. This was emphasized by Root (1945) and Mick (1948).

Gastric aspiration on admission produced brown fluid containing altered blood. A second aspiration twelve hours later yielded about 1 oz. (28 ml.) of blackish fluid, presumably also blood further altered. This, I believe, is a usual occurrence in diabetic coma. I should be interested to know the cause and origin of this blood. I understand that a surgeon operating on a case of chronic pyloric stenosis may occasionally observe blood oozing from the gastric mucous membrane.

I wish to thank Dr. Graeme Bentlif, senior physician to the General Hospital, for permission to publish these notes.

J. G. H. SHEPPARD, M.B., B.S.

REFERENCES

- Micks, R. H. (1948). *British Medical Journal*, 2, 200.
Root, H. F. (1945). *J. Amer. med. Ass.*, 127, 557.

Reviews

FEMALE REPRODUCTIVE TRACT

The Epithelia of Woman's Reproductive Organs. By George N. Papanicolaou, M.D., Ph.D., Herbert F. Traut, M.D., and Andrew A. Marchetti, M.D. (Pp. 53, 22 Plates, 55s.) New York: The Commonwealth Fund. London: Geoffrey Cumberlege. 1948.

Most of this monograph is on the cytological appearances of the normal epithelia of the female reproductive tract. Dr. Papanicolaou is world famous for his studies in this field and his present collaborators have been associated with him in much of his work. The monograph is a triumph of trans-continental collaboration since almost half-way through the ten years devoted to collecting material Dr. Traut left Cornell University to become professor of obstetrics and gynaecology in the University of California.

Discussion of all the normal epithelia from the ovary to the vagina occupies 48 pages. Every one of them is packed with detailed information not only on the cytology of the tissues but on the correlation of the changes which take place throughout the female genital tract as a whole at the different phases of the menstrual cycle and in the menopausal woman. It is clearly shown that all the epithelia take part in these cyclical changes and that the changes in the Fallopian tubes, cervix, and vagina though less well known than those in the ovaries and endometrium are nevertheless completely characteristic to the eye of the expert cytologist. The illustrations are beautifully produced and lend the highest distinction to the work as a whole. Most are in colour, they consist of photomicrographs of admirable clarity and excellent drawings by Hashime Murayama. No doubt the high quality of the production is reflected in the price, though it is difficult to produce work of this kind, which depends so largely on accurate illustration on a less lavish scale.

This monograph will prove an admirable companion to that published five years ago by Dr. Papanicolaou and Dr. Traut on the diagnosis of uterine cancer by the vaginal smear. Their pioneer work in this field is too well known to need further comment, but anyone who wishes to learn this difficult but fascinating method of gynaecological investigation will find these two monographs indispensable. There is no doubt that the vaginal smear will very soon be universally recognized as a routine procedure in gynaecology.

The absence of an index is to be regretted, especially in a work where so many cross references are to be found. The chart given at the end of the book, however, affords an admirable summary of the changes in the menstrual cycle to be seen not only in the epithelia but in the basal-temperature chart and the hormone excretion levels. It also serves to emphasize again the main theme which is that of correlation of cytological changes with function.

JOSEPHINE BARNES

ATLAS OF ANATOMY

Living Anatomy: A Photographic Atlas of Muscles in Action and Surface Contours. By R. D. Lockhart, M.D., Ch.M. (Pp. 71; 149 figures, 12s. 6d.) London: Faber and Faber. 1948.

This is a photographic album of "the muscles in action and surface contours" by the staff and students of the anatomy department at Aberdeen. It consists of about 150 photographs, mainly of the superficially placed muscles of the trunk and limbs in different subjects of both sexes. The brief introduction and the photographs will succeed in diverting the attention of the student from the textbook description and the dissecting-room appearance of the muscles. The photographs are instructive, though some criticism may be made of many of the poses in that the subject is shown performing somewhat unusual actions against the resistance of the restraining hands of the master of ceremonies.

The most superficial of all muscles, and among the first to be developed in the embryo, is the platysma. This muscle is not figured. In its extreme contraction its longest fibres are capable

of moving the nipple over one to two rib spaces in the male and even more in the female. Putting this muscle into violent contraction is often of use in examining the female breast for the site, size, shape, consistency, and attachments of a tumour. From the purely artistic point of view there is nothing to approach Paul Richer's *Anatomie Artistique*, which is the best delineation and description of the external form of the muscles at rest and in action. It also is the best portrayal of those fat deposits which lend beauty to the female form.

This album has certainly instructed and entertained the students of Aberdeen. It may stimulate others to the point of reading Duchenne and Beevor, who are gratefully mentioned in the preface.

H. A. HARRIS

EPILEPSY

Epilepsy, Psychiatric Aspects of Convulsive Disorders. By Paul H. Hoch, M.D., and Robert P. Knight, M.D. Proceedings of the 36th Annual Meeting of the American Psychopathological Association, May, 1946. (Pp. 214, illustrated, 21s.) London: William Heinemann Medical Books. 1948.

This volume contains fifteen chapters by different authors, each discussing some facet of the problem—genetics, prevalence and incidence, social implications, psychopathology, diagnosis, E.E.G., and so on. It records the proceedings of the annual meeting of the American Psychopathological Association in 1946, so that the psychiatric aspects of epilepsy are naturally discussed at greater length than they would be in a balanced monograph on the subject. The divergence of psychiatric opinion on the psychopathology of epilepsy may be illustrated by two statements by different contributors to this book. The first is that epilepsy, like other manifestations in human life, is a way of expression and living through the stresses and strains of life; the second is that the notion that epileptic seizures may be merely an exaggeration created by difficulties of adjustment to life has been abandoned. It is at any rate satisfactory to have both views presented, so that the reader may decide on the evidence provided for him whether the epileptic attack represents an escape from an unbearable situation, a functional disorder of the brain or perhaps a little of both.

As might be expected in a volume of this kind, the contributions vary in quality. The one on the antisocial aspects of epilepsy makes no attempt to deal with the practical problem of criminal responsibility, and in some of the others there is a great deal of theorizing about very little. There are, however, interesting and up-to-date accounts of the application of the Rorschach test to the delineation of the so-called epileptic personality, and of experimentally produced epilepsy in animals. Patton describes sound-induced convulsions in young albino rats with diets lacking in pyridoxin or magnesium. Kopeloff and his colleagues write of a continued epileptic liability in the monkey induced by the application of alumina cream to the cortex; it seems to be independent of the histological character of the lesion, and is of interest in relation to the observed frequency of epilepsy in man in certain cerebral diseases, such as cysticercosis. Jasper, in a brief but lucid review of the E.E.G., states his reasoned opinion that the terms grand mal and petit mal should be used as of old to describe the clinical manifestations of epilepsy and should not be tied to specific E.E.G. patterns. Diethelm's thoughtful essay on differential diagnosis is of particular value for the clinician. He records the recall or partial recall under hypnosis of post-epileptic amnesias and considers that fugues occurring in psychopaths may be indistinguishable from epileptic attacks. For this chapter alone the book is worth referring to by every serious student of the subject, and he will doubtless find other matter in it which will engage his particular interest.

CHARLES SIMMONDS

FAILURES IN TREATMENT

Failures in Psychiatric Treatment. Edited by Paul H. Hoch, M.D. (Pp. 241, 54s. 6d.) New York: Grune and Stratton. 1948.

In this book are collected the papers presented to the annual meeting of the American Psychopathological Association in 1947. The features which must have made the symposium

intestinal obstruction: however, in each case the history and signs differ in many points from those presented by subacute pancreatitis, and the serum-amylase level is within normal limits.

Confusion with Acute Cholecystitis

The condition most likely to give rise to confusion is acute cholecystitis, especially when subacute pancreatitis is associated with pain and tenderness in the right hypochondrium. The differential points to be borne in mind are the incessant retching which accompanies subacute pancreatitis, the tenderness in the costovertebral angles, and the rise in the serum-amylase level. Acute cholecystitis is often associated with a rise in temperature; this is not seen in subacute pancreatitis.

Undoubtedly many cases of subacute pancreatitis are incorrectly diagnosed as acute cholecystitis. Many of these cases are later subjected to an interval operation, and at laparotomy nothing abnormal is found. In such instances cholecystectomy may be performed with minimal pathological justification. On the other hand, evidence of a chronic cholecystitis may be found, and it has been stated that chronic cholecystitis is an aetiological factor in subacute pancreatitis. In such instances it is probably advisable to remove the gall-bladder, but it must be borne in mind that if the original condition was subacute pancreatitis and not acute cholecystitis, then the symptoms are apt to reappear.

Recurrence of symptoms after cholecystectomy is a condition so well known that a name has been given to it—the post-cholecystectomy syndrome. This syndrome may be produced by a stone in the common bile duct or by attacks of pancreatitis. This latter condition, though not generally recognized, is much more frequent than is commonly acknowledged. The following is a typical case.

This patient, aged 67, was admitted to the General Hospital suffering from jaundice. A cholecystectomy was performed in 1930, and since that date the patient had had attacks of pain situated in the epigastrium and left hypochondrium which would continue unabated from two to eight hours. Vomiting and retching and occasionally jaundice were associated with the attacks. During the month before admission the patient had had several such attacks and had become progressively more jaundiced. There was marked glycosuria and the diastatic index of the urine was 6 Wohlgemuth units. Death occurred shortly after admission, and necropsy revealed an enlarged fibrosed pancreas with dilated ducts.

Confusion with Gall-stone Colic

When subacute pancreatitis is associated with jaundice the condition may be confused with gall-stone colic. A careful consideration of the history and physical findings taken in conjunction with the level of the serum amylase would differentiate the two conditions. In this respect the following case of subacute pancreatitis is of interest.

Case 5 (see Table 1).—This patient, a young woman, was admitted to the General Hospital on Sept. 19, 1945, with a history of attacks of epigastric pain over the previous ten days, increasing in severity. The pain was constant in nature and was associated with severe vomiting. Four days before admission the patient became jaundiced. On examination she was deeply jaundiced; the abdomen was flaccid, with guarding and tenderness in the right hypochondrium and tenderness in the costovertebral angles posteriorly. A radiograph revealed a shadow in the gall-bladder area which was reported as being possibly due to a gall-stone. The serum amylase was 190 units. A pre-operative diagnosis of cholecystitis was made, but laparotomy revealed a normal gall-bladder with no evidence of calculi. The pancreas was swollen, congested, and oedematous, and the peripancreatic lymph glands were enlarged. The patient made an uneventful recovery. Four weeks later the blood amylase was 80 units.

Treatment

The treatment of subacute pancreatitis is conservative. Rest in bed should be enforced until symptoms have subsided. Large doses of morphine may be necessary in the first few hours to give the patient relief from pain, but apart from this no other special medical treatment is indicated. When there is a history of recurrent attacks of subacute pancreatitis the gall-bladder should be investigated, and if there is any evidence of chronic cholecystitis cholecystectomy should be performed, as it is very probable that the diseased gall-bladder is acting as the focus of infection for the recurrent attacks of pancreatic inflammation.

Typical Case Reports

The following two cases are reported in full as being typical of the conditions described.

Subacute Pancreatitis (Case 6)

A middle-aged man was admitted to the General Hospital on Dec. 28, 1945, complaining of severe pain in the left loin and left hypochondrium. The pain was described as being deep-seated and passing through to the back. It later radiated to the right hypochondrium. The patient vomited at the onset of the attack and had suffered from severe retching throughout.

On examination he was jaundiced and was tender on deep palpation in the left hypochondrium, the epigastrium, the left loin, and the left costovertebral angle. The serum amylase was 439 units and the serum bilirubin 6 mg. per 100 ml. He settled down on conservative treatment, and a month later the blood amylase had fallen to 46 units.

Recurrent Pancreatitis (Case 7)

A man was admitted to the General Hospital on Nov. 2, 1941, complaining of intermittent attacks of epigastric pain over the previous eight weeks. The pain was continuous and was unrelated to food. The attack immediately before admission had continued for four days, during which time he had vomited incessantly. A diagnosis of subacute intestinal obstruction was made. A laparotomy was undertaken, but failed to reveal any abnormality. The patient made an uneventful post-operative recovery.

On Nov. 21, 1942, he was readmitted complaining of an exactly similar attack of only two hours' duration. A diagnosis of perforated gastric ulcer was made, but laparotomy revealed no abnormality in the stomach. The pancreas was swollen greatly and was very hard. He again made an uneventful post-operative recovery.

On May 5, 1944, a similar attack occurred and the patient was readmitted to hospital. A diagnosis of subacute obstruction due to severe constipation was made. It was noticed that he was suffering from severe diabetes.

On April 12, 1946, he was readmitted after an exactly similar attack. On examination he was tender in the epigastrium, the left hypochondrium, and in both costovertebral angles. The blood sugar was 235 mg. per 100 ml. and the blood amylase was 36 units. The patient progressed well on conservative treatment and was discharged in ten days.

I am convinced that Case 7 was a clear-cut instance of recurrent pancreatitis. The low level of the serum amylase is in keeping with the fibrosis which must have occurred in the pancreas.

Conclusion

Subacute pancreatitis has a clinical picture as clear-cut as that presented by a perforated gastric ulcer. The diagnosis, though it may readily be made by consideration of the history and physical signs, is confirmed by the change in the serum-amylase level.

The possibility of subacute pancreatitis must always be borne in mind when diagnosing an abdominal emergency, especially acute cholecystitis. Confusion of the condition with cholecystitis accounts for many of the cases of recurrence of symptoms following cholecystectomy. This error

in diagnosis would largely be obviated if serum-amylase investigations were more often employed in elucidating obscure cases of upper abdominal pain.

Subacute pancreatitis is not a rare condition, and its diagnosis depends largely on being aware of the existence of this clinical syndrome.

Summary

Subacute pancreatitis is a clinical entity readily differentiated from acute haemorrhagic pancreatitis and other abdominal emergencies.

Patients suffering from this condition present as an acute abdominal emergency but settle down on conservative treatment.

The condition is very apt to recur. Of the 19 cases presented 13 were recurrent attacks.

It is suggested that estimation of the serum-amylase level should be more widely employed to differentiate this condition from other acute abdominal lesions.

I would like to thank Professor F. A. R. Stammers for his help in presenting this paper

REFERENCES

- Lewison, E. F. (1941). *J. Lab. clin. Med.*, 26, 1901.
Somogyi, M. (1932). *J. Biol. Chem.*, 97, lxxxvi.

REPORT ON AN OUTBREAK OF INFLUENZA IN THE ARMY

BY

D. G. MILNE, M.B., Ch.B.
Major, R.A.M.C.

AND

J. D. CRUICKSHANK, M.B., M.R.C.S.
Lieutenant-Colonel, R.A.M.C.

During the months of January and February, 1949, several Army units in Mid-West District, which comprises the whole of Wales and the adjoining English counties, reported that cases of influenza were occurring among their personnel. The first cases to be diagnosed as influenza occurred on Jan. 19 in units stationed at Malvern. The second unit affected was a Boys' Battery of the Royal Artillery, near Rhyl, on Jan. 24. On Jan. 31 cases were reported at Lichfield and on the following day at Donnington. Oswestry garrison were the next victims, on Feb. 7, and by Feb. 21 cases were also being reported from Nesscliffe, near Shrewsbury, Wrexham, and Tonfanau, on the Welsh coast. A total of 646 cases were notified from all Army units in Mid-West District from the start of the outbreak on Jan. 19 to Feb. 21.

Features of the Outbreak

It had been previously impressed upon all ranks that if an epidemic of influenza did occur it was of prime importance to report sick early. Nearly all soldiers affected attended their medical officer within a few hours of experiencing their first symptoms. It is interesting to note that, in one instance only, a soldier remained in his barrack room for over 24 hours before reporting sick. Eighteen out of twenty of his comrades in the same hut developed influenza later.

The main features were a sudden onset with frontal bead-aches, a transient sore throat without lymph-node enlargement or tenderness, a slight cough, and a feeling of general weakness and lassitude, coupled with aches and pains in the arms and legs and in the lumbar region. Mild rigors preceded the rise in temperature, which was in the neighbourhood of 103° F. (39.4° C.), although a few cases did develop temperatures of 105° F. (40.6° C.). Circumoral pallor, injection of the conjunctivae, and profuse nasal discharge were absent. Epistaxis occurred in a few cases at Lichfield, but was not a common feature. The temperature gradually

dropped, and by the fourth day of the disease most patients were afebrile. Chest complications did not occur and after-effects were absent amongst the great majority of male patients. In the few cases occurring in the W.R.A.C. or A.T.S., however, lassitude and post-influenzal depression were noted.

Patients were treated in camp reception stations until their temperature subsided, and were then transferred to barrack accommodation for a convalescent period of two days before starting duty. The average duration of the illness from the initial symptoms until return to full duty was between six and eight days.

Treatment.—This was of a palliative nature. Warmth, rest in bed, and plenty of fluids by mouth were the main principles adopted. Salicylates and Dover's powder were given during the pyrexial period, and codeine if the cough proved troublesome.

Laboratory Investigations

When it was obvious that a definite outbreak had occurred each garrison was visited and throat washings in 10–15 ml. of sterile saline were taken from selected cases. Febrile patients or cases in the early stages of the illness were chosen so far as was possible. The washings were packed in ice and delivered within six hours to the Central Public Health Laboratory, Colindale, and the National Institute for Medical Research, Hampstead, where they were examined for the presence of virus. Broth was not added to the washings: the addition of 5 ml. would have improved the chances of recovering the virus.

The first of the paired sera required for the Hirst and complement fixation tests was taken at this visit. This was held in the refrigerator at 2–3° C. until the second of the pair was taken, on the twelfth to fourteenth day of the disease.

The sera were examined by Dr. A. P. Goffe at the Central Public Health Laboratory, Colindale; the results are indicated in brief in the tabulated schemes which follow.

TABLE I—Cases at Rhyl (all males)

Case No.	Age in Years	Symptoms					Temperature on Day of Disease
		Shivering	Head-ache	Sore Throat	Cough	Muscle Pains	
1	16½	++	+	+	+	—	100.8° F.; 1st (38.2° C.)
2	15½	++	+	+	+	—	101.6° F.; 1st (38.7° C.)
3	20	++	++	+	+	±	97.0° F.; 3rd (36.1° C.)
4	17½	++	+	—	+	+	93.0° F.; 4th (34.4° C.)
5	16½	—	++	+	+	±	97.8° F.; 3rd (36.5° C.)
6	16	+	++	++	+	—	93.0° F.; 4th (34.4° C.)

Saline Washings.—Report on Feb. 2, 1949: Type A virus isolated in two cases from washings taken on Jan. 28, 1949.

Hirst Test.—Four cases showed fourfold rise of antibody inhibiting foal red-cell agglutinin (A PR 8) in second serum. Two cases in which the first serum (taken on the fourth day of illness) showed a high titre (1 in 48) had a twofold rise on the 14th day in antibody to A PR 8 agglutinin.

C.F.T.—Second sera showed 16- to 64-fold rise in complement-fixing antibody to Type A strain antigen.

Result.—Influenza type A.

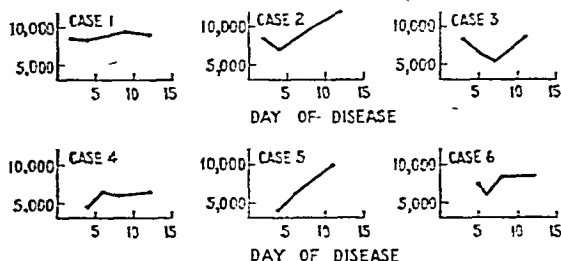


TABLE II.—Cases at Lichfield (all males)

Case No.	Symptoms						Temperature on Day of Disease
	Age	Shivering	Head-ache	Sore Throat	Cough	Muscle Pains	
1	18	—	—	Dry	+	—	101.6° F.; 2nd (38.7° C.)
2	18	—	+	Dry	+	+	101.0° F.; 2nd (38.3° C.)
3	19	+	—	Dry	+	—	98.4° F.; 2nd (36.9° C.)
4	22	+	+	+	—	+	102.8° F.; 1st (39.3° C.)

Saline Washings.—Virus was not isolated from these washings.
C.F.T.—Second sera showed 4- or 8-fold rise in titre of complement-fixing antibody to Type A strain antigen.
Result.—Influenza type A.

TABLE III.—Cases at Donnington (all males)

Case No.	Symptoms						Temperature on Day of Disease
	Age	Shivering	Head-ache	Sore Throat	Cough	Muscle Pains	
1	19	+	+	—	—	+	99.6° F.; 3rd (37.5° C.)
2	18	+	+	—	—	+	99.8° F.; 3rd (37.7° C.)
3	18	+	+	—	—	+	98.0° F.; 3rd (36.7° C.)
4	19	+	+	—	—	+	100.0° F.; 2nd (37.8° C.)
5	20	—	+	—	+	+	100.2° F.; 3rd (37.9° C.)
6	19	+	+	—	+	—	100.8° F.; 3rd (38.2° C.)
7	20	+	—	+	+	—	100.2° F.; 5th (37.9° C.)
8	18	+	+	—	+	—	99.4° F.; 3rd (37.4° C.)

Saline Washings.—Type A strain of virus isolated in one case from washings taken on Feb. 9, 1949.
C.F.T.—Second sera showed 8- to 32-fold rise in titre of complement-fixing antibody to Type A strain antigen.
Result.—Influenza type A.

Complement fixation tests on sera from four cases at Malvern showed results with Type A strain antigens similar to those in the Tables.

Preventive Measures

Early diagnosis and rapid isolation of the patient were aimed at in order to check the spread throughout each unit. Strict attention was paid to the adequate ventilation of barrack rooms and to the spacing of beds to the optimum. General measures on the maintenance of the health of the troops, the shaking and airing of blankets in the open, and the sweeping of floors, previously sprinkled with water, were adopted. Routine gargling and the spraying of rooms with disinfectant were not carried out, nor was prophylactic inoculation attempted. Unit cinemas were closed for a short time in two areas at the height of the outbreak, but the numbers of cases occurring did not warrant restricting movement of troops or cancelling the intake of National Service men to training establishments.

The movements of the first three cases occurring in each unit prior to the onset of symptoms were investigated, with, however, inconclusive results. No direct connexion with the European epidemic could be traced.

Summary

An outbreak of influenza of the Virus A type occurring in Army units in Wales and the West Midlands is reported. Symptoms, treatment, laboratory investigations, and preventive measures adopted are described.

Our thanks are due to Lieutenant-General Neil Cantlie, C.B., M.C., K.H.P., Director-General Army Medical Services, and Major-General R. W. Galloway, C.B., C.B.E., D.S.O., K.H.S., D.D.M.S. Western Command, for permission to publish this report.

SPONTANEOUS INTRA-ABDOMINAL HAEMORRHAGE

BY

A. L. WOOLF, M.B., B.S.

AND

H. R. THOMSON, M.D., M.R.C.P.

(From the Central Middlesex County Hospital,
Park Royal, London)

Spontaneous intraperitoneal haemorrhage—i.e., that occurring without any obvious cause such as cirrhosis of the liver (James, 1930) and rupture of aneurysm—has been recorded in 26 cases*—19 collected by Berk, Rothschild, and Doanet (1941), three reported by Marks and Freedlander (1945), and one each by Keusenhoff (1934), Matheson (1934), Crile and Newell (1940), and Haugen (1944).

In only eight of these cases were necropsies performed. In Keusenhoff's case and in two cases recorded by Moorehead and McLester (1936) a definite arterial rupture was found; but in the remaining five no single vessel could be held responsible, though in Matheson's case the haematoma was related to the branches of the ileocolic artery. Four of the cases had clinical or morbid anatomical evidence of hypertension (Moorehead and McLester two, and the fatal case of Marks and Freedlander) or arteriosclerosis (Keusenhoff). Haugen's case, which followed appendicectomy, like those of Matheson (1934), Churchman (1911) and Hartley and MacKechnie (1934), showed no evidence of vascular disease, but in these cases blood-pressure readings before the catastrophe or reports on the histology of the kidneys are lacking.

Three cases of spontaneous abdominal haemorrhage, two of which included a haemoperitoneum, are described below.

Case 1

A woman aged 58 was admitted with a four-months history of discharging ear (? cerebral abscess). She had had pain in the left hypochondrium for one month accompanied by vomiting when severe. Investigations before admission showed: haemoglobin, 66%; leucocytes, 17,300 per c.mm. (89% neutrophils); serum Wassermann reaction, negative.

On examination the temperature was 99° F. (37.2° C.), pulse 110. She had a profuse discharge from the right ear, and diplopia on looking above the horizontal. The abdomen appeared normal. The B.P. was 140/80. Leucocytes numbered 43,000 per c.mm. Two days after admission she had severe upper abdominal pain and urge to defaecate, but the bowels were not opened. On examination she was pale, the pulse was 160, and there was extreme tenderness in the upper half of the abdomen. She died in less than an hour.

Necropsy.—Intracranial disease was not discovered. Very marked purulent bronchitis and emphysema were found. On opening the abdomen large blood clots were seen in the peritoneal cavity. The greater omentum and lesser sac also contained blood clot. Careful dissection of the branches of the coeliac axis, the superior mesenteric artery, and the tributaries of the portal vein failed to reveal any macroscopic evidence of structural change in their walls or of thrombosis. Smaller vessels within the area of haemorrhage in the pancreas were also minutely examined without any abnormality being detected. Both renal arteries contained thrombi, the kidneys appearing very pale but otherwise normal. The bowel contents were black, but there was no macroscopic lesion in the intestinal mucosa.

Histology.—Omentum:—A huge area of haemorrhage occupied the omental fat tissue, which included a central area of

*Since submission of this paper a case of malignant hypertension with haemoperitoneum has been published by De Navasquez and French.

†The case of Florence and Ducuing (1913) was traumatic.

haemorrhagic necrosis. This area was surrounded by macrophages containing haemosiderin. Outside the haemorrhagic areas the arterioles showed fibrinoid thickening of the intima, and collars of lymphocytes, eosinophils, and macrophages. In addition, several islets of haemopoiesis were found. *Myocardium*:—Only the vascular changes were striking. The arterioles showed subintimal swelling, sometimes in the form of appositional loosely woven pink cushions and sometimes in the form of intensely eosinophil hillocks over which endothelial cells appeared unusually prominent and sometimes detached. *Spleen*:—There was very extensive and marked hyaline fibrinoid infiltration of walls of arterioles with reduplication of elastic laminae of some vessels. *Pancreas*:—Marked hyalinosis of arterioles was present. Stroma was rich in fat grapes and contained extensive areas of haemorrhage. *Stomach*:—Arterioles of outer layers of wall, outside and in the periphery of blood clot, showed marked hyaline fibrinoid infiltration. Innumerable collagen shreds could be seen in the clot. *Kidney*:—A fair number of glomeruli showed hyalinosis of the afferent arterioles. Many glomeruli appeared enlarged, with fusion and hyalinization of loops and increase in nuclei. There were tubular casts but no crescent formation. An occasional glomerulus showed fibrinoid change in some of its loops. Another section showed several collections of lymphocytes, the most conspicuous being around a hyalinized vessel the lumen of which was completely occluded by hyaline material, part of which showed fibrinoid change.

Comment.—Necropsy revealed no intracranial lesion and no source for the haemorrhage. Histologically there were widespread arteriolar thickening and kidney changes, as normally seen in hypertension, to which the massive intraperitoneal haemorrhage may therefore be attributed, in spite of the readings, which were, however, taken only after the onset of the disease. That the arteriolar changes may have given rise to the haemorrhage is possible, especially as similar lesions occurring in dermatomyositis have been shown (Pagel, Woolf, and Asher, 1948) to lead to extravasation of blood, though this was admittedly microscopic. Goldblatt's (1938) finding of petechial and larger haemorrhages in dogs with experimental malignant hypertension provides further support. The petechial haemorrhages in such cases were associated with dissection of necrotic or hyalinized arteriolar walls by red blood corpuscles. On the other hand, the possibility of a haemorrhagic diathesis may be considered, although Bruce's (quoted by Berk, Rothschild, and Doane, 1941) similar case with recovery was subsequently investigated for bleeding tendency without success. Multiple small discrete haematomata in the greater omentum and mesentery in Hartley and MacKechnie's case, however, suggest that their patient may have had a haemorrhagic diathesis.

The following case of abdominal haemorrhage affecting chiefly the ilio-psoas muscle, though lacking a haemoperitoneum, showed in other respects a striking resemblance to Case 1, and is therefore included.

Case 2

A woman aged 65 had had rheumatoid arthritis for eight years, and recently the onset of dyspnoea, nycturia, and swelling of the feet. On examination myxoedema, congestive cardiac failure, and advanced rheumatoid arthritis were found. The B.P. was 180/100. She collapsed and died two days after admission.

Necropsy.—Very pale and thin body. Basilar artery and circle of Willis showed severe atheroma. Right pleura adherent and oedematous, with numerous small haemorrhages (up to 0.4 cm. diameter), marked left ventricular hypertrophy, and atheroma of endocardium below aortic valves. Severe atheroma of coronary arteries. Femoral arteries showed medial sclerosis. Kidneys granular, with variegated cortex. There were extensive areas of intramuscular haemorrhage up to 5 by 4 cm. diameter in the superficial portions of the rectus abdominis and in the ilio-psoas muscles.

Histology.—*Psoas muscle*:—There was a massive haemorrhage beneath the fascia but no appreciable haemorrhage in the muscle itself. In addition to the extensions of the extravasation along the interfascicular stroma there were striking cellular and muscular changes. (a) The cellular changes consisted of dense perivascular and interstitial infiltration with plasma cells and lymphocytes, the former being predominant around the vessels, which, though for the most part appearing normal or showing slight fibrous thickening, occasionally showed intensely eosinophil eccentric intimal cushions as described in the myocardium in Case 1. (b) The muscular changes occurred only between the strata of extravasated blood, and consisted of vacuolation and shrinking of sarcoplasm with evidence of cellular regeneration. *Heart muscle*:—Conspicuous eccentric subintimal cushion formation in small arterioles. *Kidney*:—Extreme glomerular hyalinization of the wire-loop type, many glomeruli being completely atretic. There was also atrophy of the renal tubules.

Comment.—The presence of severe arteriolar disease and the clinically observed hypertension suggest a primarily vascular cause for the haemorrhages in this case. This is corroborated by the confinement of the pictures of muscular degeneration to the haemorrhagic areas. The perivascular, lymphocytic, and plasma-cell cuffing in the area of haemorrhage in these two cases is probably a local reaction to the latter, and is described in cases of perirenal haematoma by Heilmann (1930).

Case 3

A man aged 63 was admitted two hours after an acute onset of pain in the right hypochondrium radiating to the right scapular angle. The pain was dull and continuous, and he felt as though blown up with wind. There was slight nausea but no vomiting. A similar attack a year previously, diagnosed as a coronary thrombosis, cleared up after a week in bed.

On examination he was seen to be obese and pale, and he was sweating. The pulse was 72, temperature 97° F. (36.1° C.), and respirations 20. The blood pressure was 220/125. The abdomen was distended and tympanitic, without shifting dullness. There was tenderness but no rigidity in all areas, most pronounced in the right upper quadrant and extending round the flank to the right loin. Peristalsis was diminished. Rectal examination showed no abnormality and the urine was normal. On two occasions after admission he suddenly became shocked and his blood pressure fell to 60/40 but with a pulse rate of only 80. On each occasion he recovered in a few hours. On the afternoon following admission the tenderness and the gnawing pain were localized to the right iliac fossa. Laparotomy was performed for "acute appendicitis." There was much free blood in the peritoneal cavity and adhesions were present, mainly on the right side. In the right iliac fossa a fresh retroperitoneal haematoma was spreading towards the right loin, and a large boggy swelling was palpated in the position of the right kidney. Death occurred 30 hours after operation.

Necropsy.—Short, fat man. Right pararectal operation wound. *Heart*:—Weight, 800 g.; left ventricular hypertrophy. *Aorta*:—Gross atheroma. Peritoneum contained 60 oz. (1.7 litres) of fresh blood; omentum adherent to anterior abdominal wall. *Intestines*:—Gross distension; coil of terminal ileum adherent to pelvic peritoneum and obstructed by an omental band. Adhesions between gall-bladder and transverse colon. There was a large blood clot in the right perirenal fat which extended to the splenic flexure. The right suprarenal gland was expanded by a dense blood clot; external measurements 7 by 3 by 3 cm. The right kidney was surrounded by blood clot but was normal, apart from autolysis, and its capsule was intact. The renal artery was free from thrombosis, but the suprarenal artery could not be identified owing to the advanced autolysis.

Histology.—Suprarenal gland:—wholesale necrosis of the cortex, also of the capsular fat tissue. Some islets of parenchyma were still preserved in the central areas, where there was fibrinoid infiltration of the septa. With staining for elastic tissue the outlines of vein walls were visible in the centre of the blood clot.

Comment.—Perirenal haematoma was first described by Wunderlich (1856) under the title of "Apoplexie des

Nierenlagers," and was later classified into four categories by Ponfick (quoted by Coenen, 1910). Case 3 is an example of Ponfick's haematoma renis extracapsulare. Coenen, who collected 12 cases of perirenal haematoma and reported one of his own, mentions nephritis, renal sarcoma, arteriosclerosis, renal tuberculosis, chronic splenomegaly with gastritis, and haemophilia as the associated conditions. Heilmann (1930), who reported four cases of perirenal haematoma, suggests spasm of the capsular vessels as an aetiological factor. Cases of gross suprarenal haemorrhage have been reported in adults (Keele and Keele, 1942; Burnett, 1948). Eleven cases had previously been described. Only three of these cases, including those of Keele and Keele, were unilateral, as was the case under discussion, and in no instance was there a haemoperitoneum. In addition to atheroma and a possible spastic mechanism owing to hypertension, thrombosis of the suprarenal vein as in Keele and Keele's case should be considered as the proximate cause.

Summary

Three cases of intra-abdominal haemorrhage are reported. All three had evidence of hypertension.

The first case was one of spontaneous intraperitoneal haemorrhage with no morbid anatomical source for the bleeding apart from hypertensive changes in the smaller vessels.

The second case showed intramuscular haematoma; hypertensive arteriolar disease was sufficient to account for the haemorrhage.

The third case showed a haemoperitoneum from rupture of a perirenal haematoma. The origin of this is discussed. There was clinical evidence of severe hypertension.

Our thanks are due to Dr. W. Pagel for provision of material and assistance in preparation of this paper, to Dr. R. J. Porter, Dr. R. A. J. Asher, and Mr. J. D. Fergusson for the use of the clinical notes, and to Mr. L. Spain for histological assistance.

REFERENCES

- Berk, J. E., Rothschild, N. S., and Doane, J. C. (1941). *Ann. Surg.*, **113**, 513.
 Burnett, C. W. F. (1948). *Lancet*, **1**, 249.
 Churchman, J. W. (1911). *Amer. J. med. Sci.*, **142**, 825.
 Coenen, H. (1910). *Beitr. klin. Chir.*, **70**, 494.
 Crile, G., and Newell, E. T. (1940). *J. Amer. med. Ass.*, **114**, 1155.
 De Navasquez, S., and French, E. B. (1947). *Guy's Hosp. Rep.*, **96**, 85.
 Florence and Ducuing (1913). *Bull. Mém. Soc. Chirur. Paris*, **38**, 645.
 Goldblatt, H. (1938). *J. exp. Med.*, **67**, 809.
 Hartley, H., and MacKechnie, D. M. (1934). *Lancet*, **1**, 289.
 Haugen, A. I. (1944). *J. Iowa med. Soc.*, **34**, 198.
 Heilmann, P. (1930). *Virchows Arch.*, **277**, 256.
 James, T. G. I. (1930). *Lancet*, **2**, 1123.
 Keele, D. V., and Keele, K. D. (1942). *British Medical Journal*, **2**, 687.
 Keusenhoff, W. (1934). *Zbl. Chir.*, **61**, 1834.
 Marks, M., and Friedlander, S. O. (1945). *Ann. Surg.*, **121**, 191.
 Matheson, M. M. (1934). *Med. Rec.*, **140**, 186.
 Moorehead, M. T., and McLester, J. S. (1936). *J. Amer. med. Ass.*, **106**, 371.
 Pagel, W., Wolf, A. L., and Asher, R. A. J. In press.
 Wunderlich, C. A. (1856). *Handbuch der Pathologie und Therapie*, 2nd ed., **3**, 402. Stuttgart.

The British Council for the Welfare of Spastics has produced an admirable pamphlet entitled "Notes for Parents on the Home Care of Children Handicapped by Cerebral Palsy." It has been prepared by Dr. J. H. Crosland, of the Physical Medicine Department, Claring Cross Hospital, and Mr. H. P. Weston, executive secretary of the council. After a short account of the causes and nature of cerebral palsy the authors describe in detail how to care for spastic and athetoid children, while emphasizing that they must not be coddled. While these children must receive what help they need, the parents' natural anxiety should not prompt them to make their children over-dependent. Self-confidence and a sense of security must be inculcated into the children, and there are illustrations of special furniture, toys, and feeding utensils that will help the children to live as independently as possible. Special sections are included on the training of speech and excretion. Particulars may be obtained from the council's honorary executive secretary at 107, Norfolk Avenue, Sanderstead, Surrey. The pamphlet is obtainable from the same address for 1s. 3d. post free.

EFFECT OF PRESSURE COOKING ON VITAMIN C CONTENT OF VEGETABLES

BY

GWENETH M. CHAPPELL, M.Sc.

AND

AUDREY M. HAMILTON, B.Sc.

(From King's College of Household and Social Science, University of London)

We have recently been investigating the effect of pressure cooking upon the loss of vitamin C in vegetables. As it may be some time before we can continue this work, and as there is considerable topical interest in the question, the results so far obtained are here briefly reported.

Method

In order that the results may be interpreted readily, we have compared the effects of pressure cooking with those of cooking in an ordinary saucepan. Since it is known that factors such as the volume of water and the period of cooking greatly affect the loss of vitamin C in the saucepan, the method adopted was that known to conserve the vitamin as much as possible. This method, advocated by the Ministry of Food, involves the use of a small volume of water, bringing this to the boil before putting in the vegetable, and cooking for the minimal time. With one exception, 200 g. of vegetable was cooked in 200 ml. of water in the saucepan, as this was found to be the minimal amount of liquid necessary to prevent the saucepan boiling dry. The exception was spinach, to which, as in common practice, water was not added.

The pressure cooker used was one of the now popular variety with a capacity of 7 pints (3.96 litres). The vegetables were cooked in this according to the directions supplied by the manufacturer. Again 200 g. of vegetables was used, but only 100 ml. of water. A larger volume of water is unnecessary, and would undoubtedly result in a greater loss of vitamin C by leaching. Care was taken to avoid overcooking with either method.

In every experiment six samples of each raw vegetable, so far as possible equivalent and representative, were taken. Two were for the determination of the initial content of vitamin C, two for the pressure cooking, and two for saucepan cooking. Two different portions of each raw sample of vegetable and three of each cooked sample were taken for analysis. The vitamin C was also assayed in the cooking-water. Thus for every experiment 20 samples were assayed, each assay being made in duplicate. In all, 14 experiments were performed on 10 different vegetables. The method of estimation used was that of Harris and Olliver (1942).

Results

In view of the varying nature of different vegetables and of different specimens of the same type, it was not to be expected that the variation in results between the two methods of cooking would be uniform. In all of the 10 vegetables examined there was no evidence that saucepan cooking was better than pressure cooking in retaining vitamin C. In six vegetables—cauliflower, broccoli, winter cabbage, new carrots, turnips, and swedes—the retention was consistently better in pressure cooking by between 3 and 28% of the original amount of vitamin C. In the other four vegetables—spring cabbage, broad beans, old carrots, and spinach—pressure cooking gave a slightly higher retention in some experiments and a slightly lower retention in others. The average difference in

these instances was always small—of the order of 5% in favour of the one or the other method. The average retention of the original vitamin C in all the experiments performed was 7.5% more in pressure cooking than in saucepan cooking—66% against 58.5%.

The estimations of vitamin C in the cooking-water showed that, with the exception of spinach, there was a greater loss by leaching in the saucepan than in the pressure pan. The results with spinach were no doubt due to the fact that no water was added to the saucepan, whereas 100 ml. was added in the pressure cooker. It is often recommended that the water used in cooking vegetables should be used in soups, stews, and gravies. This is, however, not often done, and when it is the liquid is frequently kept for some time and then cooked again. If it were to be used immediately the difference in the total ascorbic acid in the vegetable and cooking-water together would be negligible when comparing the two methods of cooking. In other words, the total amount of the vitamin in the vegetable and cooking-water together was on the average almost the same in the two forms of cooking (78% pressure cooking; 79.6% saucepan cooking).

Discussion

This investigation is of necessity limited by difficulties peculiar to any attempt to bring laboratory methods to domestic problems. On the one hand, it is clearly necessary to control as many factors as possible by using standardized conditions; on the other hand, it is obvious that no two housewives will cook in identical conditions; in fact, these conditions will differ from time to time even in one kitchen.

In the controlled conditions we have used it is evident that, so far as the retention of vitamin C is concerned, pressure cooking is certainly no worse than cooking in a saucepan, and in some instances is better. The differences are small, however, so that a bad technique with either method would result in a greater loss of the vitamin with that method. In some of our work, overcooking in the pressure cooker or a longer time in reaching the necessary pressure led to an appreciably greater loss of vitamin. Again, in what is still, unfortunately, the common way of cooking vegetables in a saucepan, with large volumes of water and a tendency to overcook, there is a greater loss of vitamin C than in the Ministry of Food method used in these experiments. It is probable, therefore, that either type of cooking in the home will often cause greater loss of vitamin C than in our experiments. This is more likely to occur when the saucepan is used: overcooking of vegetables in the pressure cooker results so easily in disintegration that housewives soon learn to avoid this, whereas slight overcooking with a large volume of water in the saucepan results in no obvious loss in appearance or palatability. We may reasonably conclude that, in general, the retention of vitamin C in vegetables in pressure cooking is likely to be no worse, and will probably be better, than in the saucepan when either process is used in the home. There is certainly no reason, from our experiments, to suppose that pressure cooking should be discouraged because of its effect upon the nutritive value of vegetables.

So far as other foods and vitamins are concerned, very little has been published. A few experiments of our own on the vitamin B₁ content of pulses suggest that the pressure cooker is better than the saucepan.

Summary

A comparison has been made of the effect upon the retention of vitamin C in 10 different vegetables when cooked in a modern pressure saucepan and in an ordinary saucepan according to the recommended methods. On the average the

retention was higher in vegetables cooked in the pressure cooker.

We should like to thank Professor John Yudkin for his counsel, and the Ministry of Food for cooking some of the samples.

REFERENCE

Harris, L. J., and Olliver, M. (1942). *Biochem. J.*, 36, 155.

SPERMATOLYSIS: A CAUSE OF MALE STERILITY

BY

CAFER YILDIRAN, M.D.

Urological Surgeon, Trabzon-Numune Hospital; member of Turkish Medical Society; British Council Student in Urology

Much attention has been directed of late towards the problem of sterility and infertility. In consequence I have been stimulated to present the results of some studies on male sterility which suggest a causative factor not hitherto described.

During the investigation of 75 males complaining of sterility at the urological clinic of Dr. A. E. Gussel, in the Guraba Hospital, Istanbul, I came across two specific abnormal spermatozoon types which were thought to be the cause of the sterility. The purpose of this communication is to call attention to the abnormalities. Short summaries of five of the case histories are given.

Case Reports

Case 1.—H. T., married five years; no children; wife pronounced normal by the gynaecologist. No history of venereal disease. No physical abnormality present. Examination of sperm 30 minutes after collection showed no microscopical or macroscopic abnormality. After two hours the specimen was separating into two layers—a clear supernatant and a sedimented layer. Microscopically the clear layer was acellular, but the sediment contained aggregations of dying spermatozoa. (I intend to make some observations on the death of spermatozoa in a further paper.) As time passed fewer and fewer sperms were seen, until at the end of six hours none were visible—the phenomenon of spermatolysis. Furthermore, the fluid obtained from this patient by prostatic massage caused spermatolysis to occur in the semen of a normal control when added to the latter.

Case 2.—N. O., married four times in the previous twenty years. One of his former wives had remarried and had had a family. No previous venereal disease, and no abnormal physical findings. The seminal fluid appeared to be more viscous than normal, but microscopically it seemed normal in every way up to two hours, when agglutination was beginning. After six hours spermatolysis was complete as in Case 1, and again prostatic fluid from this case caused spermatolysis when added to a normal control seminal fluid.

Case 3.—H. D., aged 34; married eight years; no history of venereal disease; wife normal. A spermogram showed oligospermia and hypokinesia. In two hours spermatolysis was complete.

In these three cases aspiration of the epididymis was performed. Unfortunately no sperms were found in any of the specimens, but in Case 3 minute comma-shaped bodies about 2 by 4 μ were seen. They showed some brownian movement. I got the impression that they were microsperms. Within two hours they had undergone lysis. In normal cases spermatozoa aspirated from the epididymis live two to three days.

Case 4.—F. O., aged 32; married three years; history of gonorrhoea twice, with clinical cure; no evidence of epididymitis or prostatitis; wife normal. Semen appeared normal

but showed asthenospermia microscopically. In five hours spermatolysis was complete, but in this case the prostatic fluid had no effect on a normal seminal fluid.

Case 5.—H. O., aged 30; married eight years. Nothing relevant in the history, and physical examination normal. Asthenospermia was present, and spermatolysis was complete in two hours.

Study of these cases suggests that two abnormal spermatozoon types were concerned. In the first type, as exemplified by Cases 3, 4, and 5, oligospermia and hypokinesia were present. Can it be assumed that the factors causing this also caused the spermatolysis? In the second type, as in Cases 1 and 2, the only abnormal feature was the spermatolysis. In all cases it seems right to assume that the spermatolysis was the cause of the sterility, since any sperm undergoing lysis within four to six hours of ejaculation is not likely to fertilize an ovum.

If spermatolysis occurs, then it seems reasonable to suggest that there must be a spermatolysin. In Cases 1 and 2 the only abnormality was spermatolysis, yet prostatic fluid from them caused lysis in the seminal fluid of normal controls. I have concluded that the prostatic secretion of these men contained a "spermatolysin" substance. The epididymis, vas deferens, seminal vesicle, and prostate produce a secretion which nourishes the sperms. Changes in the nature of the trophic products, the result of infection or from unknown causes, can give rise to abnormalities of the spermatozoa—e.g., asthenospermia—but I believe that the actual lysis factor is an abnormal prostatic substance.

Summary

Some cases of sterility in the male are due to agglutination and dissolution of the spermatozoa within a short time of ejaculation. This is spermatolysis.

Spermatolysis was thought to be the cause of sterility in five of 75 cases investigated. In two of these five no abnormality of the sperms apart from lysis was present.

The importance of examining seminal fluid at intervals is stressed. Otherwise if only one examination is done, and that too early, the phenomenon of spermatolysis might not be recognized.

Spermatolysins may be associated with otherwise normal spermatozoa or with abnormal sperm types. In the latter case it may be that a lysis factor is produced in the epididymis, vas deferens, or seminal vesicle, as well as in the prostate.

Medical Memorandum

A Case of Diabetic Coma Treated with 56,000 Units of Insulin

The following notes concern a case of diabetic coma treated at the General Hospital, Jersey. Their interest lies in the dose of insulin given and the conclusions they suggest concerning the use of glucose in diabetic coma.

CASE HISTORY

The patient, a man aged 32, a known diabetic, had previously kept well on a dose of 26 units of P-Z insulin and 16 units of soluble insulin. On Nov. 1, 1948, he had a cold; the following day he felt worse and omitted his insulin and took no food.

At 3 a.m. on Nov. 3 he was admitted to hospital in diabetic coma. Dehydration, air hunger, and the smell of acetone were conspicuous. The urine was "brick red" to Benedict's test and laden with acetone. The temperature was 98.6° F. (37° C.), pulse 102, and respirations 24. Gastric aspiration resulted in about 4 pints (2.28 litres) of dark-brown fluid. 130 units of insulin were given, and an intravenous drip of 5% glucose and 0.5% saline was set up. The blood sugar (B.S.) on admission was 500 mg. per 100 ml. Between 7 a.m. and 4 p.m. 950 units of insulin were given. At 6 p.m. the B.S. was 450 mg. per 100 ml. The pulse had risen to 130 and the patient's condition was worse.

In view of the inefficacy of the above method of treatment it was decided to change to that advocated by Professor Micks. As will be apparent, the inadequate treatment hitherto had permitted a marked state of insulin resistance to occur. At 7 p.m. the glucose drip was replaced with saline. A dose of 500 units of insulin was given and thrice repeated. The B.S. fell to 280 mg. 10,000 units were given at 1.30 a.m.: B.S. 270 mg. At 2.30 a.m. the B.S. had risen to 280 mg. and the patient had collapsed, the pulse being barely perceptible. At the suggestion of the laboratory technician the drip was investigated and was found to have been replenished in error with 5% glucose about an hour previously. The error was remedied and the patient improved.

At 3.15 a.m. 20,000 units of insulin, occupying 250 ml., were injected into several muscle masses, and 400 units into the drip tubing. At 4 a.m. the B.S. was still 280 mg. A second dose of 20,000 units was given and, since soluble insulin was running short, 400 units of P.Z.I. This proved to be the final dose. In 26 hours 56,080 units of insulin had been given.

Hitherto the urine (tested hourly) had been continuously "red" to Benedict's test and "acetone + + +". Now at last it began to become concentrated, and sugar and acetone to diminish. It did not become free from sugar and acetone till 22 hours after the last dose of insulin. The B.S. at 8.30 a.m., four hours after the last dose, was 65 mg., the pulse rate 160; the latter thereafter fell steadily and 24 hours later it was 90. No sudden change in the patient reflected the fall in blood sugar. Following the 8.30 a.m. B.S. result, glucose in amounts varying from 5 to 15 g. in 25% solution was administered hourly by drip tubing.

At 5 a.m. on Nov. 5, 25 hours after the last dose of insulin, a hypoglycaemic convulsion occurred without warning. It responded instantaneously to intravenous glucose. Shortly after this the drip was changed to glucose. By evening on the same day the patient was restored to consciousness sufficiently to take additional glucose by mouth. By about 11 p.m., some 65 hours after admission and 43 after the last dose of insulin, he was perfectly *compos mentis*. The drip was discontinued next day, and the patient was nursed flat for three days as a precaution against sudden circulatory failure. He progressed steadily and was discharged on Nov. 25, feeling perfectly fit, on a morning dose of 40 units of P.Z. and 60 units of soluble insulin.

COMMENT

It is to be supposed that the patient's descent into coma was initiated by the cold he had on Nov. 1. No trace of this or evidence of any other infection was apparent on admission. I had expected the conversion of the B.S. from high to low values to be indicated by marked clinical change. A sharp rise in the pulse rate coincided with the event, but this was the only prominent point. The pulse rate and the urinary sugar and acetone gradually diminished, and the patient's general condition slowly improved. Even the hypoglycaemic convulsion, arriving late and without warning and immediately controlled, did not seem to interrupt this steady progress.

B.S. recordings during this period may be of interest. These were: 5 hours after the last dose of insulin, 65 mg. per 100 ml.; 7 hours after last dose, 56 mg.; 8 hours, 50 mg. (here the drip was changed to glucose); 10 hours, 62 mg.; 12 hours, 30 mg.; 14 hours, 50 mg.; 16 hours, 24 mg. (no clinical reflection of this low value); 27 hours, 70 mg. (convulsion two hours before this); 29 hours, 60 mg.; 32 hours, 45 mg.; 34 hours, 168 mg.

The lack of response to treatment when glucose was used, the collapse that occurred when it was added in error to the saline drip, and the recuperation that followed the correction of the error, strongly suggest that glucose is not an innocuous substance in diabetic coma and that its use as a precaution against hypoglycaemia may gravely jeopardize the patient's chances of survival. This was emphasized by Root (1945) and Micks (1948).

Gastric aspiration on admission produced brown fluid containing altered blood. A second aspiration twelve hours later yielded about 1 oz. (28 ml.) of blackish fluid, presumably also blood further altered. This, I believe, is a usual occurrence in diabetic coma. I should be interested to know the cause and origin of this blood. I understand that a surgeon operating a case of chronic pyloric stenosis may occasionally observe blood oozing from the gastric mucous membrane.

I wish to thank Dr. Graeme Bentlif, senior physician to the General Hospital, for permission to publish these notes.

J. G. H. SHEPPARD, M.B., B.S.

REFERENCES

- Micks, R. H. (1948). *British Medical Journal*, 2, 200.
Root, H. F. (1945). *J. Amer. med. Ass.*, 127, 557.

Reviews

FEMALE REPRODUCTIVE TRACT

The Epithelia of Woman's Reproductive Organs. By George N. Papanicolaou, M.D., Ph.D., Herbert F. Traut, M.D., and Andrew A. Marchetti, M.D. (Pp. 53, 22 Plates 55s.) New York: The Commonwealth Fund. London: Geoffrey Cumberlege. 1948.

Most of this monograph is on the cytological appearances of the normal epithelia of the female reproductive tract. Dr. Papanicolaou is world famous for his studies in this field and his present collaborators have been associated with him in much of his work. The monograph is a triumph of trans-continental collaboration since almost half-way through the ten years devoted to collecting material Dr. Traut left Cornell University to become professor of obstetrics and gynaecology at the University of California.

Discussion of all the normal epithelia from the ovary to the vagina occupies 48 pages. Every one of them is packed with detailed information not only on the cytology of the issues but on the correlation of the changes which take place throughout the female genital tract as a whole at the different phases of the menstrual cycle and in the menopausal woman. It is clearly shown that all the epithelia take part in these cyclical changes and that the changes in the Fallopian tubes, cervix, and vagina though less well known than those in the ovaries and endometrium are nevertheless completely characteristic to the eye of the expert cytologist. The illustrations are beautifully produced and lend the highest distinction to the work as a whole. Most are in colour, they consist of photomicrographs of admirable clarity and excellent drawings by Hashime Murayama. No doubt the high quality of the production is reflected in the price, though it is difficult to produce work of this kind, which depends so largely on accurate illustration on a less lavish scale.

This monograph will prove an admirable companion to that published five years ago by Dr. Papanicolaou and Dr. Traut on the diagnosis of uterine cancer by the vaginal smear. Their pioneer work in this field is too well known to need further comment, but anyone who wishes to learn this difficult but fascinating method of gynaecological investigation will find these two monographs indispensable. There is no doubt that the vaginal smear will very soon be universally recognized as a routine procedure in gynaecology.

The absence of an index is to be regretted, especially in a work where so many cross references are to be found. The chart given at the end of the book, however, affords an admirable summary of the changes in the menstrual cycle to be seen not only in the epithelia but in the basal-temperature chart and the hormone excretion levels. It also serves to emphasize again the main theme which is that of correlation of cytological changes with function.

JOSEPHINE BARNES

ATLAS OF ANATOMY

Living Anatomy: A Photographic Atlas of Muscles in Action and Surface Contours. By R. D. Lockhart, M.D., Ch.M. (Pp. 71; 149 figures 12s. 6d.) London: Faber and Faber. 1948.

This is a photographic album of "the muscles in action and surface contours" by the staff and students of the anatomy department at Aberdeen. It consists of about 150 photographs, mainly of the superficially placed muscles of the trunk and limbs in different subjects of both sexes. The brief introduction and the photographs will succeed in diverting the attention of the student from the textbook description and the dissecting-room appearance of the muscles. The photographs are instructive, though some criticism may be made of many of the poses in that the subject is shown performing somewhat unusual actions against the resistance of the restraining hands of the master of ceremonies.

The most superficial of all muscles, and among the first to be developed in the embryo, is the platysma. This muscle is not figured. In its extreme contraction its longest fibres are capable

of moving the nipple over one to two rib spaces in the male and even more in the female. Putting this muscle into violent contraction is often of use in examining the female breast for the site, size, shape, consistency, and attachments of a tumour. From the purely artistic point of view there is nothing to approach Paul Richer's *Anatomie Artistique*, which is the best delineation and description of the external form of the muscles at rest and in action. It also is the best portrayal of those fat deposits which lend beauty to the female form.

This album has certainly instructed and entertained the students of Aberdeen. It may stimulate others to the point of reading Duchenne and Beevor, who are gratefully mentioned in the preface.

H. A. HARRIS

EPILEPSY

Epilepsy, Psychiatric Aspects of Compulsive Disorders. By Paul H. Hoch, M.D., and Robert P. Knight, M.D. Proceedings of the 36th Annual Meeting of the American Psychopathological Association, May, 1946. (Pp. 214, illustrated 21s.) London: William Heinemann Medical Books. 1948.

This volume contains fifteen chapters by different authors, each discussing some facet of the problem—genetics, prevalence and incidence, social implications, psychopathology, diagnosis, E.E.G., and so on. It records the proceedings of the annual meeting of the American Psychopathological Association in 1946, so that the psychiatric aspects of epilepsy are naturally discussed at greater length than they would be in a balanced monograph on the subject. The divergence of psychiatric opinion on the psychopathology of epilepsy may be illustrated by two statements by different contributors to this book: the first is that epilepsy, like other manifestations in human life, is a way of expression and living through the stresses and strains of life; the second is that the notion that epileptic seizures may be merely an exaggeration created by difficulties of adjustment to life has been abandoned. It is at any rate satisfactory to have both views presented, so that the reader may decide on the evidence provided for him whether the epileptic attack represents an escape from an unbearable situation, a functional disorder of the brain or perhaps a little of both.

As might be expected in a volume of this kind, the contributions vary in quality. The one on the antisocial aspects of epilepsy makes no attempt to deal with the practical problem of criminal responsibility, and in some of the others there is a great deal of theorizing about very little. There are, however, interesting and up-to-date accounts of the application of the Rorschach test to the delineation of the so-called epileptic personality, and of experimentally produced epilepsy in animals. Patton describes sound-induced convulsions in young albino rats with diets lacking in pyridoxin or magnesium. Kopeloff and his colleagues write of a continued epileptic liability in the monkey induced by the application of alumina cream to the cortex; it seems to be independent of the histological character of the lesion, and is of interest in relation to the observed frequency of epilepsy in man in certain cerebral diseases, such as cysticercosis. Jasper, in a brief but lucid review of the E.E.G., states his reasoned opinion that the terms grand mal and petit mal should be used as of old to describe the clinical manifestations of epilepsy and should not be tied to specific E.E.G. patterns. Diethelm's thoughtful essay on differential diagnosis is of particular value for the clinician. He records the recall or partial recall under hypnosis of post-epileptic amnesias and considers that fugues occurring in psychopaths may be indistinguishable from epileptic attacks. For this chapter alone the book is worth referring to by every serious student of the subject, and he will doubtless find other matter in it which will engage his particular interest.

CHARLES SYMONDS

FAILURES IN TREATMENT

Failures in Psychiatric Treatment. Edited by Paul H. Hoch, M.D. (Pp. 241 5s. 6d.) New York: Grune and Stratton. 1948.

In this book are collected the papers presented to the annual meeting of the American Psychopathological Association in 1947. The features which must have made the symposium

interesting and stimulating at the convention in 1947 are to some extent lost in print. There is not enough in common between the various themes, such as insulin shock therapy, the treatment of neurosyphilis, and social case-work, for the whole collection to be anything but a psychiatric scrapbook. Some original data are reported, among which are Dr. Kallmann's three pairs of uniovular twins, whose different fates under the impact of schizophrenic psychoses seemed to be determined by variations in body weight. Dr. Kallmann cites them as evidence for the contention that a genetical approach, rather than stultifying therapy, may suggest new lines of therapeutic attack. In his introduction Dr. Nolan Lewis also refers to the neglect of hereditary factors as a possible cause for failures in treatment, to the existence, besides deep analysis, of other methods of psychotherapy perhaps insufficiently exploited, and to the amount of poor psychotherapy that is given; the schools, he says, are being swamped by students anxious to enter this remunerative field.

The editor sums up and tries to draw some general lessons. He finds it necessary to re-emphasize the importance of accurate diagnosis for successful therapy, and to point out once again that "motivology" and "aetiology" are two different things. The symposium provides the encouraging suggestion that American psychiatry as a whole is retreating a little from the extreme psychodynamic attitude to causation, and that a less fanatical and more medical atmosphere is beginning to appear.

ELIOT SLATER.

PRIMARY TUBERCULOSIS

Die primäre Tuberkulose bei Erwachsenen und Kindern und ihre Entwicklung. By Dr. St. J. Leitner and Dr. R. M. Steinmann. (Pp. 158; illustrated. 15 Swiss francs.) Berne: Medizinischer Verlag Hans Huber.

The authors give a clinical study of primary tuberculosis in 160 adults and 106 children, the cases being followed up for a period of two to eight years. They emphasize that sanatorium treatment should continue until the radiographs no longer show infiltrative changes. These take much longer to disappear than does the acute pneumonic and influenzal picture so often simulated by primary tuberculosis in adults as well as in children. Erythema nodosum was common (33.7% in adults and 6.6% in children); so was pleural effusion (31.8% in adults, 21.7% in children; bilateral in 8 adults). Discussing the relationship between primary tuberculosis and phthisis, the authors consider to be important the frequent observation of an early post-primary spread to the apices. They saw progressive tuberculosis develop from such disseminated foci (i.e., an endogenous source) twice as often as from the primary focus itself. Progressive pulmonary changes following early cavitation of the primary focus or of daughter foci occurred without any recognizable cause—regardless of therapy—and took a rapid and unfavourable course. Those, however, which developed after a longer interval were due to factors weakening general resistance and were quite amenable to therapy.

The authors present their material well and cover most of clinical aspects. Their references to the literature are occasionally erratic and many papers discussed are redundant. On the other hand, the study of Frimann-Dahl and Waaler could have been mentioned, because it was the first to draw attention to the recent dramatic shift of primary infection to adult age groups; nor have they mentioned the extensive discussion of the whole problem held at the Royal Society of Medicine in 1942. There are hardly any observations on pathology, and the authors have not always made use of the pertinent morbid-anatomical facts. For example, we miss a discussion of recrudescence of primary foci as a source of phthisis; it often bridges the long interval between primary infection and phthisis and disposes in such cases of the theory of "exogenous superinfection." These few points, however, do not detract from the distinct value of the book. It lies in its clinical observations and in the demonstration that there is no essential feature in which primary tuberculosis in adults differs from that in children.

W. PAGEL.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Aero-otitis Media and Aerosinusitis. By G. K. Aschan. (Pp. 93. No price.) Uppsala: Almqvist and Wiksells. 1948.

An account of experimental histopathological changes due to oxygen deficiency and oxygen poisoning.

Aids to Physical Chemistry. By R. G. Austin, B.Sc., F.R.I.C. 2nd ed. (Pp. 443. 7s. 6d.) London: Baillière, Tindall and Cox. 1948.

An outline for students.

Failure of the Heart and Circulation. By Terence East, M.A., D.M., F.R.C.P. 2nd ed. (Pp. 144. 6s.) London: Staples Press. 1948.

A concise practical account.

There's No Need to Shout. By F. Warfield. (Pp. 152. 8s. 6d.) London: Victor Gollancz. 1949.

The autobiography of a partially deaf woman.

The Child: An Adult's Problem. By A. M. Ludovici. (Pp. 288. 10s. 6d.) London: Carroll and Nicholson. 1949.

Bringing up children discussed for parents and teachers

Experimental Diabetes Mellitus. By E. T. Bell, M.D. (Pp. 31. 7s. 6d.) Oxford: Blackwell. 1949.

A short monograph with references

Le Benzolisme. By V. Raymond and A. Vallaud. (Pp. 174. No price.) Paris: Institut National de Sécurité pour la Prévention des Accidents du Travail et des Maladies Professionnelles. 1948.

The toxicology of the benzols and an account of measures affording protection against them.

Diabetic Manual. By E. P. Joslin, M.D., Sc.D. 8th ed. (Pp. 260. 12s. 6d.) London: Henry Kimpton. 1948.

A practical guide for medical men and their patients.

Frauenheilkunde. By W. Benthin. (Pp. 260 M.14.) Berlin: Urban and Schwarzenberg. 1948.

A manual of gynaecology intended for students and general practitioners.

Principles and Practice of Ophthalmic Surgery. By E. B. Spaeth, M.D. 4th ed. (Pp. 1,044. 75s.) London: Henry Kimpton. 1948.

An illustrated textbook giving details of surgical technique.

The Therapy of the Neuroses and Psychoses. By S. H. Kraines, M.D. 3rd ed. (Pp. 642. 32s. 6d.) London: Henry Kimpton. 1948.

Intended particularly for the non-specialist.

Richtlinien einer Philosophie der Medizin. By A. W. Kneucker, M.D. (Pp. 197. 22s. 6d.) Vienna: Wilhelm Maudrich. 1949.

The author discusses such topics as logic, materialism, ethics, and education.

Röntgen- und Radiumbehandlung. By P. Hess. (Pp. 147. M.13.) Berlin: Urban and Schwarzenberg. 1948.

A practical account of the technique of radiotherapy.

Sex and Marriage. By N. Robertson. (Pp. 46. 2s. 6d.) London: Research Books. 1949.

A short guide to sex conduct for men and women.

Trace Elements in Food. By G. W. Monier-Williams, O.B.E., M.C., M.A., Ph.D., F.R.I.C. (Pp. 511. 30s.) London: Chapman and Hall. 1949.

A study of elements which, in minute amounts, take part in animal and plant metabolism.

Hospital Trends and Developments, 1940-1946. Edited by A. C. Bachmeyer, M.D., and G. Hartman, Ph.D. (Pp. 819. 30s.) London: Geoffrey Cumberlege. 1948.

A collection of articles on hospital administration and allied subjects, selected from literature published between 1940 and 1946.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY APRIL 2 1949

CORONARY THROMBOSIS TREATED WITH
ANTICOAGULANT DRUGS

Thrombosis of the leg veins, occurring in sick and debilitated adults, is a treacherous hazard of bed rest, unpredictable in its outcome, and at times producing by massive pulmonary embolism the tragedy of sudden death. In a paper appearing elsewhere in this issue Drs. K. P. Ball and H. O. Hughes discuss this danger and urge doctors and nurses to become more "thrombosis-minded." Many workers have now stressed the value of the anticoagulant drugs in the treatment of leg thrombosis, and it is natural that much interest should have been aroused in the possibility of using these drugs in the treatment of coronary thrombosis. Studies such as those of Nay and Barnes¹ have shown how frequently coronary thrombosis is complicated by thrombosis elsewhere. They found thrombotic or embolic complications in 37 out of 100 cases of acute myocardial infarction; 14 out of 100 had pulmonary emboli. Foord² found at necropsy that 48 out of 315 cases of myocardial infarction had pulmonary emboli. It is clear that a safe and effective means of preventing intravascular clotting would reduce the risk of many complicating disasters. Wood³ has even suggested that the treatment of angina at rest with anticoagulants may prevent the onset of some cases of coronary thrombosis.

The most effective anticoagulant is heparin. The disadvantages of this substance are that not enough is produced to meet all demands, repeated injections have to be given, and it is very expensive. Dicoumarol has the advantage that it can be given by mouth, and it is less costly and more readily available than heparin, but its effect upon coagulation is only to prolong by a few seconds a certain stage in the clotting process (prothrombin time). This prolongation of a few seconds may, of course, be quite enough to reduce the chance of blood clotting as it flows over diseased vessel walls and to limit the dissemination of such clots. The greatest disadvantage of dicoumarol is its tendency to produce severe and even fatal bleeding, the avoidance of which requires careful daily laboratory control of its effect on prothrombin time. There seems at the moment to be no way of simplifying this method of treatment for widespread application outside hospitals.

Laboratory investigations have been undertaken to discover whether the anticoagulant drugs will prevent the spread of coronary thrombosis once established. Two reports^{4, 5} serve to show that this aspect of the problem is not likely to be settled by experimental coronary ligation in animals. There were no significant differences in the infarcts in dicoumarol-treated and untreated animals, and thrombosis in the smaller vessels within the infarcted area was found just as often in animals receiving dicoumarol as in the control group. Beattie and his colleagues⁵ observed no obvious changes as a result of dicoumarol treatment in dogs with ligated coronary arteries. They emphasize, however, that the experimental procedure in previously healthy vessels is very different from the process in diseased arteries.

If possible, then, the answer must be sought in the clinical results. Glueck and others⁶ have been able to compare 44 patients who received anticoagulant drugs with 44 control patients. The mortality was 45% in the untreated group and 20% in the treated group. Among the former 27% had thrombo-embolic complications, while in the group receiving anticoagulants the incidence of this complication was reduced to 7%. The widely varying outlook even in a carefully collected series such as this still leaves a little doubt, and the American Heart Association wisely set up a committee three years ago to collect more information. The investigators were a group of distinguished men whose collected evidence was obtained from the observation of 800 cases: Irving Wright and his colleagues⁷ have issued a report on the findings. The routine treatment was to administer heparin for the first 48 hours, during which time dicoumarol is coming into action. Thereafter the prothrombin time was held between 30 and 35 seconds by dicoumarol. The cases numbered 368 in the control group and 432 in the treated group; age incidence and severity of the attack were comparable in the two groups. The following figures summarize the results: the percentage mortality in the treated was 14.9 and in the untreated 24; the percentage incidence of thrombo-embolic complications was 11 in the treated and 25 in the untreated; the number of thrombo-embolic complications per 100 patients was 14 in the treated and 36 in the untreated. Closer examination of the figures provides an even more favourable impression than the overall percentages. For example, about half of the treated patients who had thrombo-embolic complications such as venous thrombosis, pulmonary embolism, hemiplegia, and extension of the myocardial infarction developed them before the anticoagulant drugs had time to become fully effective. It is during the first four weeks of the illness that the treatment is most useful: after that the chances of further complications of this type seem to diminish considerably. This report from the U.S.A. is very valuable, and further information from the committee will be awaited with interest. It is to be noted that dicoumarol therapy does not wholly abolish the incidence and the complications of further clotting, but it certainly produces a significant reduction. The anticoagulant regime seems to be of established value in spite of occasional disappointments, and perhaps in time a better and safe anticoagulant will be found.

¹ *Amer. Heart J.*, 1945, 30, 65.² *J. Amer. med. Ass.*, 1948, 138, 1009.³ *British Medical Journal*, 1949, 1, 27.⁴ Blumgart, H. L., et al., *Amer. Heart J.*, 1945, 30, 13.⁵ Beattie, E. J., et al., *ibid.*, 1948, 35, 94.⁶ *Ibid.*, 1945, 35, 269.⁷ *J. Amer. med. Ass.*, 1948, 138, 1074.

FRACTURES OF THE NECK OF THE FEMUR

Up to the end of the war of 1914-18 transcervical fracture of the neck of the femur presented an insoluble problem. Non-union was accepted as inevitable. The credit for overcoming this defeatist attitude must be given to Whitman,¹ who showed that union could be obtained by applying the accepted principles of reduction and fixation. This involved encasing the patient in a long spica plaster-of-Paris splint; the treatment was tedious and uncomfortable, and stiffness of the hip and of the knee was a common sequel. Whitman himself never published his results, but it was generally assumed that union could be hoped for in 50% of patients. Löfberg,² following up 153 of his own patients treated by the Whitman method, reported union in 67%, whereas an American Commission³ which reviewed a large number of cases treated in different clinics put the number of successful unions at 30%. Surgeons, now as optimistic as before they had been pessimistic, were not satisfied with these figures and searched for a more efficient treatment.

Although internal fixation had been tried from time to time, it was not until Smith-Petersen⁴ introduced his nail that pinning the neck of the femur came into fashion. Most rationally he pointed out the obvious need for preventing rotation as well as angulation of the fragments and devised his three-flanged nail for the purpose. Smith-Petersen carried out his first operations in 1925. After opening the hip-joint he reduced the fracture and inserted his pin under direct vision. The method was accepted with alacrity by surgeons all over the world. A contribution almost equal to that of Smith-Petersen was made in 1932 by Sven Johansson, of Gothenburg,⁵ who conceived the idea of making a canal in the nail. After reducing the fracture by manipulation he passed a guide wire up the neck of the femur, and when the wire was shown by x-ray control to be well placed he threaded the canalized Smith-Petersen nail over it and hammered the nail home. This procedure avoided opening the hip-joint. Since then various instruments have been devised to enable the guide wire to be correctly placed at its first or second insertion. Probably the most popular one in use in England was that introduced by the late Hey Groves. Many surgeons, including Sven Johansson, scorn the assistance of wire introducers and prefer to rely on their eye to insert the guide wire correctly. Surgeons in different parts of the world have modified the technique—for example, by using a screw instead of a three-flanged nail or by using multiple thin nails. But transcervical fracture of the neck of the femur is now universally treated by threading a Smith-Petersen nail over a guide wire inserted up the neck of the femur into the head. Whitman's abduction-plaster method is a thing of the past.

Pinning of fractured necks of femur has now been employed long enough for the treatment to be assessed.

Early enthusiasm is giving place to the sombre judgment of experience. The results obtained by Sven Johansson have lately been published by Gunnar Odén.⁶ Three hundred and fourteen patients operated on between 1932 and 1941 have been followed up: 27 died at or after the operation, and, since many of the patients were elderly, 104 have died since of natural causes; of the remaining 183 Odén has examined 141, all at least three years after the date of their accident. His detailed analysis answers several questions. The immediate mortality from the injury is less in those subjected to operation than in those treated conservatively. The distinction made by Böhler between the abduction or valgus and the adduction or varus types of fracture is worth retaining. The valgus fracture is frequently impacted and may not need pinning, and whether pinned or not always unites. Johansson prefers to operate on all transcervical fractures, since an impacted valgus fracture may disimpact and become displaced. Impaction cannot be gauged from viewing the radiograph; clinical evidence on this point is alone reliable. And only when the radiograph shows bone trabeculae crossing the old fracture line can one be certain that union has occurred.

Of the varus fractures 90% united after being pinned. In considering this high percentage of successful results it must be remembered that the operations were done by a master surgeon with a special interest in the subject and long experience. Although a fracture table and facilities for taking antero-posterior and lateral radiographs in the theatre are almost indispensable, the operation is not technically difficult. However, an amateur performance is not sufficient: the nail must be inserted far enough and into the centre of the head. Johansson likes the nail to penetrate to within one centimetre of the articular cartilage; other surgeons are not content unless the end of the nail reaches the extreme limit of the bone. Johansson emphasizes the importance of reduction, which he believes is best achieved by skeletal traction applied for seven days. The leg should be allowed to rotate out during this period. External-rotation deformity is not corrected until the patient is on the operation table, when the medial fragment can be prevented from rotating by the use of either the Leadbetter⁷ or the Tavernier⁸ method of reduction.

In Odén's series redisplacement after pinning was common, but was least frequent when the neck after reduction was valgus (27%) and most frequent when it was varus (47%). Over-reduction therefore gave better results than exact reduction. Odén's analysis also showed that the more vertical the nail the less chance there was of redisplacement of the fragments. The position of the nail seemed immaterial, though the length of the nail within the head fragment was all-important. It is self-evident that the maximum length of nail in the head is achieved when the point of the nail lies immediately underneath the centre of the articular area of the head. This should be the surgeon's objective. Early weight-bearing did not increase the risk of redisplacement. Odén concludes that redisplacement in the majority of cases was the result of faulty technique. Though bony union was achieved in 89% of the cases, in only 68% was the clinical result deemed good. In this group the patients walked about as

¹ *J. Amer. med. Ass.*, 1921, 77, 913.

² *Zbl. Ch.*, 1927, 54, 2222.

³ Report of the Fracture Commission of the American Orthopaedic Association, *J. Bone Jt. Surg.*, 1930, 12, 966.

⁴ *Surg. Gynecol. Obstet.*, 1937, 64, 287.

⁵ *Acta orthopæd. scand.*, 1932, 3, 362.

⁶ *J. Bone Jt. Surg.*, 1947, 95, Suppl. 131.

⁷ *J. Bone Jt. Surg.*, 1919, 20, 103.

⁸ *Pr. med.*, 1932, 40, 604.

⁹ *Ungerske helse og livsskildringer*, 1944, Copenhagen.

freely as before the accident, did not use a stick, and did not complain of pain; those at work resumed their former occupation. Another 8% were classed as satisfactory: they used a stick out of doors or had difficulty in tying their shoe-laces or complained of pain. In no less than 24% of the cases the results were classed as bad.

The bad results were due either to non-union or to osteoarthritis of the hip-joint consequent on an aseptic necrosis of the head of the femur. Odén found evidence of aseptic necrosis, past or present, in 38% of the patients. Its frequency varied with the amount of the pre-reduction displacement, but it was commonest in those patients in whom the fragments became redisplaced; it occurred in 16 out of 20 patients who had been repinned. Spotoft⁹ confirms this gloomy prognosis: he found partial or complete necrosis in 21 out of 24 repinned patients. Union may take place in spite of aseptic necrosis, for the fracture did in fact unite in more than half of Spotoft's patients. It is a common belief that aseptic necrosis is more frequent in fractures treated by pinning than in those treated conservatively, but there is no evidence to support this view. The vascular disturbance that eventually discloses itself as an aseptic necrosis of the head of the femur either dates from the time of the accident or is caused by a slow but continuous shifting of one fragment on the other. Aseptic necrosis is usually, though not invariably, associated with faulty technique and subsequent displacement of the fragments.

Is operative treatment for a fracture of the neck of the femur an improvement on Whitman's abduction method? The answer is undoubtedly yes: the mortality is no greater, the end-result is better, and the discomforts of treatment are far less. It is reasonable to assume that two out of three patients with a transcervical fracture of the neck of the femur, treated by a competent surgeon by pinning, will be as good as they were before the accident, and one of four will be left a cripple.

ADVANCES IN MICROSCOPY

In addition to the electron microscope, which is still in the hands of the specialist, the phase-contrast microscope and ultra-violet and fluorescence microscopy are rapidly enlarging knowledge of the cell and of many other structures which come within the domain of the infinitely small. The existing knowledge of the microscopic structure of cells has in the past been derived almost exclusively from the study of fixed and stained material. With the phase-contrast microscope fresh material can be carefully examined. The development and application of the phase-contrast technique to the microscope is due in the first place to Zernicke,¹² and its subsequent improvement by Köhler and Loos³ has placed a valuable tool in the hands of the biologist. Those who wish to acquire some knowledge of the principles and properties of the modern phase-contrast microscope should read Taylor's⁴ description of it. The important property of phase contrast lies in the conversion of phase differences into amplitude differences; the eye is sensitive only to the latter. Thus phase-contrast microscopy will reveal structures which differ in refractive index from the surrounding medium by too small a degree to be made visible by other methods. At the same time, full apertures can be employed and the maximum resolving power

of the objectives under the special conditions of illumination can be brought into use. As a result definition is very greatly improved, and this, coupled with the small depth of focus, provides a picture which in detail and contrast can be rivalled only by the best histological preparations. Furthermore, material can be prepared and examined much more rapidly than by histological procedures. In common with all other methods for the study of living material phase-contrast microscopy does not differentiate between structures which differ only in chemical nature, and to be fully effective it should be used in conjunction with histological methods. Phase-contrast microscopy is of the greatest value in the study of small living cells. Austin and Smiles,⁵ for instance, have studied the fertilization and early development of the rat egg. The magnificent photomicrographs with which their paper is illustrated afford an opportunity for comparing the pictures obtained by direct illumination and by the phase-contrast technique.

Greater resolution and also information about the chemical constitution of the structures studied are obtained by the use of ultra-violet light as a source of illumination, since certain organic compounds possessing specific molecular configurations absorb ultra-violet radiations selectively. The first ultra-violet micrographic equipment was designed by von Rohr⁶ and Köhler⁷ in 1904, but the work of J. E. Barnard was responsible for the development of this type of microscope to its present high degree of efficiency; the apparatus and technique devised by him and Welch⁸ for the study of bacteria and viruses have now largely been standardized for application to living cells. Ludford, Smiles, and Welch⁹ have used this technique with success in the study of living malignant cells. As a result of their investigations Caspersen's¹⁰ conception of a "cytoplasmic protein-forming system" has had to be modified, though there is no disagreement with the general conception of the relation of nucleic acids to protein synthesis. Cytoplasmic protein synthesis probably occurs in the peripheral parts of the cell and not in the immediate vicinity of the nucleus: the site of protein synthesis may very possibly be the mitochondrial-cytoplasmic interfaces.

Fluorescence microscopy also reveals differences in the chemical constitution of cell constituents. The idea of fluorescence microscopy was first suggested in 1911. When cells are treated with a fluorescent dye and are viewed in light of certain wavelengths various tissue structures give out secondary waves. Levaditi and his colleagues,¹¹ for instance, have shown that when ordinary sections from paraffin-embedded material are treated with a dye such as thioflavine S and exposed to wavelengths of light at 3,600 Å a maximum secondary transmission occurs when the wavelength equals 5,150 Å. Under these conditions photomicrographs can be taken on orthochromatic plates. Cytoplasmic inclusions caused by viruses can thus be recognized visually. For instance, the inclusions produced by rabies, vaccinia, and Borna disease fluoresce with an azure blue colour, the same tint as that given out by nucleoli and red cells. Cell protoplasm, nuclei, and collagen fibres, on the other hand, are golden yellow. When viewed by fluorescence microscopy the inclusions are oval or round, without visible structure. The elementary bodies of vaccinia, fowl pox, and lymphogranuloma venereum and the intranuclear inclusions produced by herpes all have a golden-yellow tint.

¹ *Z. techn. Physik*, 1935, 16, 454, 845

² *Phys. Z.*, 1935, 36, 848

³ *Naturwissenschaften*, 1941, 29, 41.

⁴ *J. R. mter. Soc.*, 1946, 68, 1.

⁵ *Ibid.*, 1948, 68, 13.

⁶ *Die Theorie der optischen Instrumente*, 1904, Vol. 1. Berl.

⁷ *Z. wiss. Mikr.*, 1904, 21, 129, 273.

⁸ *J. R. mter. Soc.*, 1936, 58, 365.

⁹ *Ibid.*, 1948, 68, 1.

¹⁰ *Symp. Soc. exp. Biol.*, 1947, No. 1, p. 127

¹¹ *C.R. Acad. Sci., Paris*, 1948, 227, 1061.

NATIONAL HEALTH SERVICE EXPENDITURE

ESTIMATES FOR 1949-50

The Civil Estimates for 1949-50, presented to the House of Commons on March 23, show that in the coming year the total cost of the National Health Service in England and Wales will be £228,424,600. This is made up as follows:

	1949-50	1948-9	Increase
	£	£	£
Central Council, etc.	16,000	10,000	6,000
Hospital, specialist, and ancillary services	169,648,500	123,479,000	46,169,500
Services provided by local health authorities	13,275,000	8,758,000	4,517,000
General medical and dental services, pharmaceutical services, and supplementary ophthalmic services	95,661,800	75,340,500	20,321,300
Other services	18,597,000	27,518,542	—
WALES			
Hospital, specialist, and ancillary services	7,882,500	6,118,500	1,764,000
Services provided by local health authorities	750,000	525,000	225,000
General medical and dental services, pharmaceutical services, and supplementary ophthalmic services	6,730,800	4,981,000	1,749,800
Other services	108,000	866,000	—
Gross total	£312,669,600	£247,596,542	£74,752,600
Deduct—Appropriations in aid	84,245,000	62,165,400	—
Net total	£228,424,600	£185,431,142	£74,752,600
		Net increase	£42,993,458

The Central Health Services Council and Standing Advisory Committees will spend £11,000 on salaries and wages and £4,000 on payments to members for loss of remunerative time, travelling, and subsistence.

Hospital, Specialist, and Ancillary Services

Here there are increases in every item, though it must be recalled that in 1948-9 the Service was operating only for nine months. The details are as follows:

	1949-50	1948-9
	£	£
ADVANCES TO REGIONAL HOSPITAL BOARDS:		
(a) Capital expenditure	7,000,000	5,251,000
(b) Maintenance and running costs, including specialist services	133,000,000	98,688,000
Total	£140,000,000	£103,939,000
ADVANCES TO BOARDS OF GOVERNORS OF TEACHING HOSPITALS:		
(a) Capital expenditure	1,935,000	1,656,000
(b) Maintenance and running costs, including specialist services	22,000,000	16,505,000
Total	£23,935,000	£18,161,000
CAPITAL EXPENDITURE BY THE MINISTER IN THE ACQUISITION OF LAND, HOSPITALS, AND EQUIPMENT:		
(a) Acquisition of land	3,000,000	250,000
(b) Acquisition of hospitals	100	—
(c) Acquisition of hospital equipment, etc.	100	—
Total	£3,000,200	£250,000
PAYMENTS TO THE MINISTER OF PENSIONS:		
(a) Medical treatment	5,000	19,000
(b) Surgical appliances—supply, renewal, and repair	1,875,000	473,000
(c) Travelling and other incidental expenses	22,000	8,000
Total	£1,902,000	£500,000
EXPENSES OF THE MINISTER IN CONNECTION WITH RESEARCH:		
(a) Special inquiries into diseases	15,600	8,260
(b) Other services	5,700	5,740
Total	£21,300	£14,000
BACTERIOLOGICAL SERVICE, ETC.:		
(a) Expenses of public health laboratories	730,000	557,000
(b) Payments to the Lister Institute for the production of lymph	18,000	17,500
(c) Cost of 1910 ds, etc., supplied for immunisation purposes	22,000	31,000
(d) Other services	20,000	9,500
Total	£790,000	£615,000

General Medical Services

The expenditure under this heading is estimated as follows:

	1949-50	1948-9
	£	£
(a) Expenses of Executive Councils		
ADMINISTRATION:		
(a) Salaries, wages, etc.	1,350,000	1,026,000
(b) Payments to members for loss of remunerative time, and travelling and subsistence expenses of members and staff	14,000	15,000
(c) Incidental expenses	546,000	460,000
Total	£1,910,000	£1,501,000
GENERAL MEDICAL SERVICES:		
Payments under arrangements made with medical practitioners	£37,825,000	£28,000,000
PHARMACEUTICAL SERVICES:		
Payments under arrangements made for the supply of drugs, medicines, and appliances	£17,530,000	£15,000,000
GENERAL DENTAL SERVICES:		
Payments under arrangements made with dental practitioners	£26,343,000	£17,750,000
SUPPLEMENTARY OPHTHALMIC SERVICES:		
Payments under arrangements made for the testing of sight and the supply of optical appliances	£11,716,000	£12,900,000
TRANSFERRED LIABILITIES:		
Payments in respect of liabilities transferred to executive councils from insurance committees	£1,000	£5,000
(b) Other Expenses		
MEDICAL PRACTICES COMMITTEE:		
(a) Salaries, wages, etc., including remuneration of members	6,000	6,000
(b) Payments to members and staff for travelling and subsistence expenses	1,500	1,000
(c) Incidental expenses	500	250
Total	£8,000	£7,250

In this same section £320,000 is provided for the Dental Estimates Board, as against £171,000; and the Tribunal set up under Section 42 of the Act will cost £300, as against £250. On refresher courses £8,500 will be spent, as against £6,000; £3,000 will be paid to the universities for the provision of courses, and £5,500 will be needed for travelling and subsistence allowances. In 1948-9 a sum of £4,250,000 was set aside for compensation for loss of the right to sell medical practices. The corresponding allocation for 1949-50 will be £5,000,000, and there is also provided for the first time the sum of £2,250,000 to pay the interest on compensation which must remain outstanding until the retirement or death of the practitioner.

The cost of the superannuation scheme will be £1,955,000, as against £1,360,000, and £150,000 is set aside for compensation for loss of office under Section 68 of the Act, as against £50,000 in the first nine months of the Service. The estimated cost of medical supplies is divided as follows:

	1949-50	1948-9
	£	£
CENTRAL PURCHASE OF MEDICAL SUPPLIES, STORES, AND EQUIPMENT:		
(a) General medical and surgical stores and appliances	2,540,000	2,200,000
(b) X-ray equipment	1,890,000	510,000
(c) Purchase of streptomycin, etc.	490,000	295,000
(d) Government hearing-aids	1,625,000	200,000
(e) Mass radiography units and vans	200,000	127,000
(f) Miscellaneous	255,000	168,000
Total	£7,000,000	£3,500,000

Liabilities transferred to the Minister under Sections 6 and 69 of the Act totalled £17,750,000 in 1948-9. The corresponding figure for 1949-50 is estimated at only £1,751,000. Among other items budgeted for are the expenses of Rampton and Moss Side Hospitals for Mental Defectives (£282,575); the Broadmoor Institution (£168,425); and miscellaneous committee expenses and contributions to the National Association for Mental Health and the Central Council for Health Education, which will account for only £40,000 as against £72,000 for 1948-9.

Wales

A separate estimate for Wales shows that advances to regional hospital boards will total £7,180,000, as against £5,645,000. There is also an increase in the advances to boards

governors of teaching hospitals from £468,500 in 1948-9 to £85,000. The expenses of the Minister in connexion with research on pneumoconiosis are put at £500 for 1949-50 as against £3,000 in 1948-9. Other research services are again estimated at £1,000. The services provided by local authorities will cost £750,000 as against £525,000.

(a) Expenses of Executive Councils

	1949-50	1948-9
ADMINISTRATION:		
(a) Salaries, wages, etc.	£ 82,000	£ 67,000
(b) Payments to members for loss of remuneration, time, and travelling and subsistence expenses of members and staff	2,000	2,000
(c) Incidental expenses	35,000	36,000
Total	£119,000	£105,000
GENERAL MEDICAL SERVICES		
Payments under arrangements made with medical practitioners	£2,575,000	£1,800,000
PHARMACEUTICAL SERVICES		
Payments under arrangements made for the supply of drugs, medicines, and appliances	£1,470,000	£1,225,000
GENERAL DENTAL SERVICES		
Payments under arrangements made with dental practitioners	£1,861,000	£1,250,000
SUPPLEMENTARY OPHTHALMIC SERVICES		
Payments under arrangements made for the testing of sight and the supply of optical appliances	£704,000	£600,000
TRANSFERRED LIABILITIES		
Payments in respect of liabilities transferred to executive committees from insurance companies	£100	£1,000

(b) Other Expenses

REFRESHER COURSES		
(a) Payments to universities, etc., for the provision of courses	350	—
(b) Travelling, subsistence, and other expenses of persons attending courses	1,350	—
Total	£1,700	—
LIABILITIES TRANSFERRED TO THE MINISTER:		
(a) Liabilities transferred in respect of voluntary hospitals	10	400,000
(b) Liabilities transferred in respect of local authority hospitals	106,990	455,000
Total	£107,000	£855,000

Scotland

The National Health Service in Scotland will cost £31,303,000 in 1949-50, as against £22,907,000 in 1948-9. This is made up as follows:

	1949-50	1948-9	Increase
	£	£	£
Scottish Health Services Council, etc.	1,000	1,000	—
Hospital, specialist, and ancillary services	24,471,000	15,450,000	8,991,000
Services provided by local health authorities	1,100,000	950,000	150,000
General medical and dental services, pharmaceutical services, and supplementary ophthalmic services	12,553,000	10,070,000	2,483,000
Other services	1,530,000	1,897,000	—
Gross total	£39,655,000	£28,308,000	£11,624,000
Deduct—			
Appropriations in aid	5,352,000	5,401,000	—
Net total	£31,303,000	£22,907,000	£11,624,000
		Net increase	£8,396,000

Advances to regional hospital boards will total £23,200,000 (£15,000,000 in 1948-9); expenditure by the Secretary of State on health centres £20,000; on research £20,000; on bacteriological services £90,000; and on blood transfusion services £0,000. Grants to local health authorities will total £1,100,000 as against £950,000.

The estimates for general medical services are made up as follows:

	1949-50	1948-9	Increase
	£	£	£
(a) Expenses of Executive Councils			
Administration	320,000	250,000	70,000
General medical services	5,400,000	4,000,000	1,400,000
General dental services	2,700,000	2,800,000	—
Pharmaceutical services	1,800,000	1,490,000	310,000
Supplementary ophthalmic services	2,250,000	1,470,000	780,000
Transferred liabilities	11,000	11,000	—
(b) Other Expenses			
Expenses of Scottish Medical Practices Committee	4,000	2,000	2,000
Expenses of Scottish Dental Estimates Board	63,000	40,000	23,000
Expenses of the tribunal under Section 43 of the Act	1,000	1,000	—
Expenses of refresher courses	4,000	6,000	—
Total	£12,553,000	£10,070,000	£2,553,000

The amount set aside for compensation is £575,000 (as against £300,000); for superannuation £140,000 (£75,000); compensation for loss of office £1,000 (£30,000); central purchase of stores and equipment £370,000 (£100,000).

Taken as a whole the Civil Estimates for 1949-50 make it clear that the total cost in the coming year of the National Health Service, National Insurance, and National Assistance will be £555,358,000. In the present financial year, during which these social services will have operated only for nine months, the total cost will be £449,980,000.

If the rate of expenditure in the first nine months had been continued, the annual cost would have been about £600,000,000. These estimates for 1949-50, which are about £45,000,000 below that figure, show that the rate of expenditure is expected to fall.

PROGUANIL IN PROPHYLAXIS AND TREATMENT

COLONIAL MEDICAL RESEARCH COMMITTEE'S RECOMMENDATIONS

The following recommendations on the use of proguanil ("paludrine") in the prophylaxis and treatment of malaria, and suggestions for trial, are issued by the Colonial Office and the Medical Research Council on the advice of the Colonial Medical Research Committee. It should be clearly appreciated that the recommendations are tentative on the basis of present knowledge and that they are subject to review in the light of future experience and experiment.

Prophylactic Use

The dose recommended for suppression of malaria of all types in endemic areas is 100 mg. daily. For children the following dosage is advised: from birth to 5 years—25 mg. daily; from 6 to 12 years—50 mg. daily. When a daily dose is not practicable one dose of 300 mg. should be taken on the same day each week; dosage for children should be in the proportion indicated.

In the case of persons, other than the indigenous inhabitants, who have been resident in an endemic area for some time, or who have been otherwise already exposed to malarial infection, a full therapeutic course (see I (a) below) should be taken before entering on the suppressive regimen.

I. P. Falciparum (Malignant Tertian) Infections; Mixed Infections; Undiagnosed Type Infections

(a) Treatment of Non-immunes.—Proguanil alone cannot be relied upon to effect radical cure in all cases, and the clinical response with this drug unaided is also somewhat slow. It has been shown, however, that these disadvantages may be overcome by reinforcement with mepacrine on the first day of treatment. The following combined course is recommended for trial: 300 mg. proguanil twice daily for 10 days reinforced on the first day of treatment with three doses of 300 mg. mepacrine, and followed by 100 mg. proguanil daily for

six weeks. (Persons continuing to live in an endemic area should continue their suppressive regimen.)

(b) *Treatment of Clinical Attack in Semi-immune Subjects such as Labour Forces and Rural Populations in Endemic Areas.*—A single dose of 300 mg. proguanil will usually suffice to produce clinical cure. Relapses can be treated similarly as and when they arise. Serious cases should be given emergency treatment (see below).

(c) *Treatment of Malarial "Emergencies."*—For treatment of conditions such as cerebral or algid malaria and where for any other reason the patient is unable to take drugs by mouth, immediate intramuscular mepacrine or intravenous quinine therapy should be employed.

2. P. Vivax (Benign Tertian) Infections

(a) *With the Object of Radical Cure.*—The course advised for adults is 100 mg. proguanil plus 10 mg. pamaquin base (or a corresponding dose of one of the other 8-amino-quinoline derivatives) three times daily for 10 days. The dose for children should be proportionate. Pamaquin should not be given unless the patient can be kept in bed under medical supervision throughout the course; this is particularly important in the case of children. When the patient cannot be kept in bed the alternative course recommended is 100 mg. proguanil three times daily for 10 days followed by a single dose of 300 mg. proguanil on the same day each week for a year.

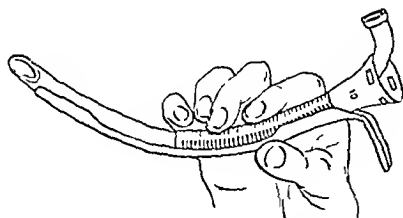
(b) *Treatment of the Clinical Attack in Semi-immunes.*—As for M.T. malaria.

Unless otherwise stated, the dosage mentioned is that for adults. In recommending the use of a single dose of 300 mg. proguanil for the treatment of the febrile attack in semi-immunes and a weekly dose of 300 mg. for suppressive purposes, the advantages of these procedures are emphasized as (a) bringing an effective antimalarial drug within the economic capacity of village and rural populations of endemic areas of malaria and (b) providing a method of prophylaxis easy of administration.

Preparations and Appliances

ORO-TRACHEAL TUBE INTRODUCER

Dr. J. G. BOURNE, honorary anaesthetist, St. Thomas's Hospital, writes: In a previous article (*British Medical Journal*, 1947, 2, 654) I described a "spring" made in two sizes, Nos. 10 and 8, for use with oro-tracheal tubes, and added: "The Macintosh laryngoscope is preferred to other models. It sometimes happens that the Magill tube is deflected towards the oesophagus at a tangent to its curved blade. To overcome this little difficulty various types of simple introducers have



been used to direct the tip of the tube into the glottis." Illustrated here is the introducer which I have found most satisfactory. It is withdrawn directly the tip of the tube has passed between the cords.

I would like to make two further observations with regard to the use of these "springs." First, when correctly placed in position the tube should lie well to one side or the other of the tongue. If it is left over the dorsum it tends to be extruded from the mouth. Secondly, if a tube and a connecting-piece of suitable fit are chosen they can be firmly locked within the "spring" by being pulled down into it from the bevelled end of the tube. If this fails they can be fixed with tape before tying this round the patient's neck. These "springs" and introducers are now obtainable from Messrs. A. Charles King, 27, Devonshire Street, London, W.1.

I am indebted to Miss J. Dewe, of St. Thomas's Hospital, for the drawings in this and in the original article.

Reports of Societies

SPECIALIZATION—ITS VALUE AND ABUSE

A meeting of the Section of Medicine of the Royal Society of Medicine on March 22 was devoted to a discussion on specialization. Sir ADOLPHE ABRAHAMS presided.

Sir ROBERT YOUNG recalled that when he himself started his clinical work as a student the two senior surgeons at his hospital both also practised ophthalmology, the throat surgeon was lecturer on anatomy, and the physician to the skin department was also assistant physician to the hospital. His own first reaction to the starting of special departments was antagonistic but he soon realized that special departments were necessary, and helpful and to the public advantage. The chief factor in promoting specialization in medicine had been the rapid development of instruments and instrumental methods. The clinical laboratory was a comparatively recent development but it was difficult now to realize to what extent physicians of a former day had to rely upon their senses. One of the unfortunate results of specialization had been that they were liable to cut short their direct observation of the patient and proceed at once to the instrumental or radiological aid.

The only abuses of specialization that he could see were its employment as a cloak for the crank and a spotlight for the quack, but there were many misuses. An important one was the direct approach by the patient or his friends to the specialist and in some cases the ready acquiescence of the specialist in such approach, without the knowledge or approval of the general practitioner. One of the unfortunate results of specialization was the passing of the general physician. The student at all stages of the curriculum was now taught by specialists, the best of whom were enthusiasts. The old physician, however, should not be pushed aside. The time taken in eliciting the history of the patient and making the routine examination was by no means time wasted. It might save a great deal. He was glad that in most hospitals there were still some general physicians.

At the present time the general practitioner was caught in a vortex of forms, certificates, and reports. When he was free from all these he would wish to be the trusted, unhurried, unhurried adviser of his patient. Sir Robert Young hoped that some day a Ministry of Health would issue a special instruction to medical schools asking them to revive, restore, and reintroduce doctors of the old type, who were interested in the general make-up of their patients and knew that what they had to deal with was not the mere dysfunction of an organ but a suffering human being.

Integration Needed

Mr. A. DICKSON WRIGHT considered that one result of the National Health Service would be a temporary eclipse of the more general aspects of medicine and surgery. In former days they could recall many men who, after establishing themselves in the front rank as general physicians, came to devote themselves to some special aspect; Sir William Gowers, Sir John Rose Bradford, and Sir William Broadbent were examples. Since then specialization had developed in curious ways and unevenly in different countries. In America it had gone ahead and had been to some extent overdone. In France it had lagged behind, and there the general surgeons did gynaecological operations. The need was to integrate the specialist system with a very good general practitioner system. In America the patients rambled around among the specialists according to their whim or the advice of the hall-porter. Moreover, men in general medicine were almost forced to take up a specialty or lose in the race for places. If they continued their general medicine alongside their specialty they might be regarded as second-rate by the general public. In the teaching hospitals the ultra-specialist was apt to feel that his work was too deep or advanced for the students, and the students, already overburdened, were inclined to think the same, and so the narrow specialist escaped his teaching duties, leaving more and more to the general physician and surgeon. But it was possible that as specialist techniques became simplified a number of specialists would come back into the general field again.

Some specialists Mr Dickson Wright continued, became bored with the monotony and narrowness of their specialty and extended their work into other fields. The neurologist would interest himself in the female pelvic floor, and work in the territory of the gynaecologist, the gynaecologist would start to work on the rectum, owing to the proximity of the parts or he would look on the breast as his domain, the breast being controlled by the ovaries. The thoracic surgeon would concern himself with the alimentary tract and the sympathetic chains and the vagus nerve which passed through his territory. The orthopaedic surgeon was perhaps the worst offender of all in this respect. An opposite abuse was for the specialist to become narrower and narrower. Specialties were developing for cavities, for organs for systems, for ages, for techniques even for ways of thinking. He instanced the treatment of cancer. The cancer specialist, allied with the statistician, might be ready to take control of any organ of the body in which cancer might appear. Specialties in cancer, in diabetes, in rheumatism, in tuberculosis were open to serious criticism.

Another development of specialization was the complicated approach to diagnosis. The specialist surrounded diagnosis with a great deal of investigation. The man who used the gastroscope was assumed to be ahead of the man who did not. The ultra specialists were unwilling to accept simple explanations. There was a tendency to over-elaborate, especially in the matter of diagnosis and to wrap a case up in a large amount of diagnostic ritual which created its own impression on the patient and also gave the specialist's colleagues the feeling that they could not carry on a specialty unless they did all this too. A great many of these evils would disappear if the entrance upon specialism were a little longer delayed. The man who had a good grounding in general medicine and surgery and then quietly went into specialism would serve the public better than the man who became a specialist almost from his first MB.

THE PRESIDENT here remarked that the public was very largely to blame for the abuses of specialization. With the development of instruments it was more or less inevitable that they should expect a specialist for every symptom. The remedy was the proper recognition of the general practitioner and the general physician.

Specialization Justified

SIR HENRY COHEN said that there were some branches of medicine in which a degree of specialization was not only advisable but necessary. In research, the narrower the field the more deeply could one dig and there was no doubt that to-day a great number of advances in medicine came from digging very deeply, with all the instruments available, in a relatively narrow field. Therefore some degree of specialization in research, whether clinical or laboratory or a combination of both might be regarded as justifiable. But while there was some justification for a man pursuing research in renal disease there could be no justification for a man confining his practice of medicine to the kidneys.

He thought it unwise that specialization should enter at all into undergraduate as opposed to postgraduate, teaching. Specialization had led to the provision of clinical material in the undergraduate teaching hospitals which was quite unsuitable for the undergraduate. It had led to the population of undergraduate teaching hospitals being entirely unsuitable for undergraduate teaching. What was needed was that the teacher of undergraduates should be concerned to inculcate a philosophy of medicine.

When it came to practice, he believed that many of the difficulties arose partly from nomenclature and partly because they had not pictured to themselves the kind of case in which specialists played a part. The general practitioner should have been so trained that he had a large outlook in medicine. He might need for the purpose of diagnosis for example, a radiologist, but he should be quite competent to understand the radiologist's films and his report. He might need a pathologist or other specialists because they practised a special branch which was largely concerned at this stage of the case with diagnosis. If, again, his patient needed some special treatment he might have to refer him to a surgeon or some specialist surgeon. Apart from all this, however, there must be patients about whom the general practitioner was uncertain and there should be a group of people to whom he could refer these

difficult problems—namely, the consultants. He likened the consultant to the conductor of an orchestra, one who perhaps could not play the violin as well as his first violinist, or could not play the cello at all but who knew how to get the necessary reaction and response from a number of people. The consultant himself might require certain information for which he would have to refer to a surgeon, a neurosurgeon, a thoracic surgeon, or whomsoever it might be, but there should be general physicians trained as such, and afterwards perhaps some of them might, because of their interest or opportunity, take up cardiology or urology or some other special branch.

One of the dangers of specialization, in Sir Henry Cohen's opinion, was that often the specialist on examining the patient referred to him discovered something in his own department which had no relation to the patient's complaint but with which he persisted in dealing. Focal sepsis was a case in point. He had often seen gallstones removed from a patient whose complaint in fact was due to other causes. It was true that there were gallstones, but a proper history and examination would have shown the cause of the symptoms to lie elsewhere. The surgeon could become so expert in some technical procedures that he took a pride in their performance. But the feasibility of an operation or the completeness with which it could be done was not the best indication for resorting to it. He agreed that there were specialties, both in the field of diagnosis and of treatment, which required such perfection of technique as to justify them. But it must always be remembered that a man was more than the sum of his parts. The gastric system could not be isolated from the nervous system, or the respiratory from the renal system. Jowett said of logic that it was not a science but a trick, and much the same was true of surgery. It was important, more particularly in some special branches of surgery, that there should be competence in technique, both diagnostic and therapeutic, which competence could come only with specialization, and therefore specialization was clearly necessary. But there was no justification for a specialization in which the sole basis of the specialty was an instrument.

Back to the General Physician

DR MAURICE DAVIDSON remarked that it used to be said, If you want pathology, go to the Germans, if you want surgery, go to the French, but if you want to get well, go to the British. There was a time when that was true, and he was sufficient of a 'reactionary' to wish that that time would come back. One of the outstanding faults about medical teaching was that it had become divorced from the principle of general education which used to be so outstanding a feature of the medical student's curriculum. During the last twenty-five years there had been an increasing tendency on the part of medical committees of teaching hospitals to appoint people by reason of their prominence in some comparatively narrow field. The question would be asked of a candidate: What has he done?—meaning 'What contribution has he made to elaborate scientific literature?'—rather than, 'What experience has he had from the wider point of view? What are his abilities for summing up and dealing with the whole personality of the sick man?'

DR S. L. SMITHSON said that there were large numbers of good specialists practising in all branches of medicine who had done general medicine and pathology for a number of years. The teams which operated for example, at Queen Square or Great Ormond Street were without doubt supreme and were leaders in their respective fields of nervous diseases and children's diseases. The important thing, surely, was neither specialization nor general medicine but sound judgement in both. He agreed that no man should be a specialist who had not a general training. Specialization impoverished general medicine and surgery, and some arrangement should be made whereby, while they had specialists in general hospitals, this impoverishment was avoided.

DR RICHARD ASHER said that one of the dangers of specialization was that specialists were apt to frighten off the 'general' man, making him feel that certain parts of medicine lay within a prohibited zone. Some psychiatrists, for example, made general practitioners feel that for them to enter upon their patient's worries and anxieties was a blundering invasion. As an example of ultra-specialism he mentioned that a patient was sent to an ophthalmologist, who returned the case saying

that the man had retinitis pigmentosa and that this might indicate the Laurence-Moon-Biedl syndrome, and he therefore suggested that the patient should be examined to discover whether he had polydactyly.

In reply to Dr. Horace Joles and others, Sir HENRY COHEN said that he had no use for the isolated special hospital except where it might be pursuing research or a form of treatment which required special skill. Great as had been the history of Queen Square and Great Ormond Street—two hospitals mentioned in the discussion—he believed it would have been greater had they been part of general hospitals with access to the general outlook in medicine.

ANTIHISTAMINE DRUGS

A meeting of the Section of Experimental Medicine of the Royal Society of Medicine on March 8 was devoted to a discussion on antihistamine drugs. Dr. H. P. HINSWORTH presided.

Professor W. A. BAIN, of Leeds University, brought forward a quantitative study, by himself and his co-workers, of the action of histamine antagonists in man. From a pharmacological point of view, he said, this work represented an attempt to apply to man quantitative methods which had been applied with success to animals and animal tissues. The intradermal reaction to varying doses of histamine had been determined by the measurement of weal and flare areas on the skin of the forearm, and the extent to which such reactions were modified by histamine antagonists had been determined. It was relatively easy to devise means of obtaining quantitative information about the relative weight-for-weight potencies of the different drugs, the duration of their action, and their therapeutic efficacy. What could not be precisely dealt with quantitatively were the side actions. A group of subjects were given different doses of histamine antagonists—"phenegan," "anthisan," "antistin"—and the weal response computed. It was then possible thus to construct dose-response curves for the different drugs and obtain a measure of their relative weight-for-weight potencies.

Phenegan was found to have the most powerful action on the intradermal weal response, being 7 times more potent than anthisan and 14 times more potent than antistin. It took much longer than the others to establish its full action, reaching its maximum in three hours. The mean time taken by phenegan to fall from maximum to half the maximum action had also been measured; it was 1,170 minutes. The corresponding time with anthisan was 310 minutes, and with antistin 210. Thus phenegan stood out as the most powerful and the longest-acting drug. Because of the lengthy action of phenegan it seemed that it might be a good plan to give this drug, not as customarily three times a day, but once in the twenty-four hours, and that at night, so that the sleepiness it produced would pass unnoticed, while its action might be expected to continue through the following day. On comparing the nightly dose of phenegan required to clear a chronic urticaria with the daily dose of anthisan needed for the same result it was found that on the average only one-fourteenth of the amount of phenegan was necessary—in other words, a nightly dose of 25 mg. of phenegan was equivalent to a daily dose (split up into three or four administrations) of 350 mg. of anthisan. Of the 20 subjects on whom the experiment was tried only one preferred anthisan, 5 had no preference, and 14 preferred phenegan, no doubt because of the relative absence of side effects. The question was raised whether in chronic urticaria the antihistamines were perhaps exhibiting two modalities of action—(1) an increase in capillary permeability, and (2) interference with the liberation of histamine from the tissues.

Types of Asthma

Dr. H. SCHULZ pointed out that the antihistamines did not affect equally the whole action of histamine. The drugs were not necessarily specific; many drug actions overlapped. Most antihistamine drugs were specific in small doses, but tended to have a more widespread action in higher concentrations. When it was discovered that it was thought that it would be possible to distinguish between histamine-asthma and asthmas of other types, but in fact it had not turned out in that way. A more useful, but not exactly in the way

expected. As chronic asthma could not be induced in animals it was the more important that the pharmacologist and clinician should work together in the study of these phenomena in man.

Dr. RANYARD WEST said that up to date it could not be stated that antihistamine drugs abolished or prevented the bronchospasm of asthma under any well-controlled conditions. But apart from simple asthma there was another condition of bronchospasm in which histamine liberation occurred. This was curare-bronchospasm, first described in 1935 as a regularly occurring complicating action of crude curare. He described the action of antihistamine drugs in this condition.

Dr. H. G. J. HERNHEIMER said that not all subjects were sensitive to antihistamines, and some were sensitive only to one or two of the drugs. The dosage would be different in every patient and had to be worked out with great care. If these drugs were given to sensitive patients and in the right doses they were most beneficial, but in severe bronchial constriction in an acute attack of asthma no action of the antihistamines would serve. It was only in mild degrees of the condition that the antihistamine was protective. It was effective only in mild asthmatic states.

Nova et Vetera

HISTORY OF CARDIOLOGY

A History of the Heart and Circulation. By F. A. Willis, M.D., M.S. in Med., and T. J. Dry, M.A., M.B., Ch.B., M.S. in Med. (Pp. 456; illustrated. £2.) Philadelphia and London: W. B. Saunders Company. 1948.

This book is full of interesting information. In a sense it is a companion volume to that attractive book *Cardiac Classics* which Willis and Keys have compiled. The authors have approached the subject from three points of view. The writing of medical history has often been unsatisfactory. It so easily becomes a dull, disconnected catalogue of biography. The most interesting method is to trace the development of ideas or knowledge in some special subject. The authors first survey various epochs, beginning with the remote past, continuing with the Mediaeval and Renaissance eras, and ending with the first quarter of the present century. The second part comprises selected biographies in which the lives and writings of the most eminent workers in the subject are described. Finally, for reference, there is a selection of various topics, with a chronological account of the various steps of advance that have been made in each. These three approaches lead to some overlapping, but that does not really matter; in some ways it is an advantage. There are many good illustrations, mainly portraits. The authors have found room for quite long quotations from original descriptions. The index is in two parts—subjects in one and personal names in the other.

There could never be complete agreement on the selection of names. On this side of the Atlantic we have known too little about some of them. Perhaps the chapter on the theological activities of Servetus might have been shorter and so less dull. The English is often heavy and lacks charm and vigour, so that the book is not easily readable. The authors might have said more about the early work on intermittent claudication. The acknowledgment for the portrait of Floyer on p. 78, which was found by Professor Gunn in a book in the Bodleian Library, is really due to the *Medical Press and Circular*, which published it first in about 1934. Too little is said of Floyer's books. Is it correct to say that Trousseau referred to fibrosis of the lung as "Corrigan's disease" (p. 123)? In his 89th lecture he refers to aortic reflux in this way, which is still the practice in France, just as they still call the syphilitic lesion "maladie de Hodgson" (but no "d'Hodgson" as is given in this book on p. 114). At the foot of p. 364 there is a slip which makes Sir Thomas Lewis "K.T."

The study of the origins of our knowledge is only beginning to assume a due proportion. This book will be of value to anyone interested in cardiology and particularly to anyone engaged in teaching. It is a useful addition to that excellent little book on the growth of our knowledge of heart disease that R. O. Moon wrote twenty years ago, and to the Harvey lecture by Rolleston in 1928, which was an admirable account of the advances since the time of Harvey. TERENCE EAST.

Correspondence

Second Thoughts on Proguanil

SIR.—Your issues of Jan. 15 and 29 have only just reached me. I have read with great interest the article by Sir Gordon Covell, Dr. W. D. Nicol, and Messrs. P. G. Shute and M. Maryon on "paludine" (proguanil) in prophylaxis and treatment of malaria (Jan. 15, p. 88), your leading article (p. 106) entitled "Second Thoughts on Proguanil," and Sir Gordon Covell's letter under the same title (Jan. 29, p. 192).

It has long been clear that not all the claims made for proguanil have been substantiated nor all the hopes fulfilled. I agree, however, with Covell that your leading article overstated the case against proguanil, especially in strongly suggesting that it causes loss of appetite, weight, and energy in those using it in prophylaxis. Since coming to Nigeria I have experienced no such symptoms or even heard of them in others taking prophylactic proguanil. Covell's view that, in spite of certain limitations as a therapeutic agent in an attack of malaria, proguanil has a vast field of usefulness is amply justified.

We tend to judge the value of antimalarial drugs too much by their efficacy in controlling and eradicating malarial infection in Europeans, who have little or no acquired immunity to malaria. The millions of indigenous inhabitants of malarious areas in the Tropics and sub-Tropics are of far more importance, and they often present quite a different problem from that of the European with malaria or exposed to malarial infection. In such populations the three main requirements in an antimalarial drug are cheapness, reasonable effectiveness, and non-toxicity. The need for cheapness is obvious, for such populations are usually very poor. Reasonable effectiveness should include the power to control the fever, to prevent serious complications in the majority of cases, and to enable the patient to resume full activity at an early date. In such populations the eradication of the malarial infection is often undesirable as well as unattainable. Such eradication will almost certainly interfere with the establishment or the maintenance of the acquired immunity which keeps the adult population, at any rate, reasonably free from severe malaria. Moreover, reinfection is often certain, and is likely to be more serious in persons whose previous infections have been eradicated.

Non-toxicity is, I believe, of vital importance, for treatment often has little or no medical supervision. This is where proguanil scores so heavily over mepacrine and even quinine. Covell and his co-authors refer to the toxic effects of mepacrine as being of rare occurrence but by no means negligible, and especially mention mepacrine psychosis, with mental aberration and sometimes maniacal excitement. Your leading article makes light of this and quotes Findlay's figures (1.71 per 1,000) for its incidence in persons taking mepacrine prophylactically or therapeutically. Regarding mepacrine psychosis occurring on prophylactic doses I know little, but such cases are on record. Psychosis on therapeutic doses is far more common, and other authors have quoted far higher figures than Findlay. (I am far from libraries here and cannot give references.) My own experience in the civil population in India in wartime showed that mepacrine psychosis was a very real problem even on a low dose. The theory that it was caused by the malaria and not by the mepacrine has been disproved by the production of the psychosis in an appreciable proportion of healthy volunteers on an ordinary therapeutic course of mepacrine totalling 2.8 g. Admittedly the incidence of psychosis is usually not high: in a disciplined army or in an educated population it will not be a major problem. But in other circumstances the situation will be very different. Only those who have tried to popularize and use mepacrine widely in the little-educated people of a malarious area realize what a devastating effect even a low incidence of psychosis can produce.

Briercliffe, in the very severe malaria epidemic in Ceylon in the 1930's, was possibly the first person to attempt to use mepacrine widely in such circumstances. In his most interesting report on the epidemic he stated that on a dose of 0.3 g. a day for five days the incidence of psychosis was enough to

make the drug so unpopular that its use had to be abandoned in certain valleys affected by the epidemic. In some parts of India in recent years cases of mepacrine psychosis have made the drug extremely unpopular.

All this trouble is avoided by the use of proguanil. I note with interest Covell's suggestion that in the treatment of the attack of malaria mepacrine should be given with proguanil for the first day, and thereafter proguanil only. I agree that the risk of mepacrine psychosis should be greatly reduced, if not abolished, by this means and the efficacy of the treatment increased. In my experience mepacrine psychosis occurs only at or after the end of a course of mepacrine administration lasting at least four days.

I entirely agree with Covell when in his letter he re-emphasizes the great field of usefulness of proguanil in prophylaxis and in treatment in the populations of malarious areas. There appears to be at the moment no other drug which possesses to the same degree the properties essential in such circumstances.—I am, etc.,

Uzuakoli, N.E.R., Nigeria.

JOHN LOWE.

Strain and Paralytic Poliomyelitis

SIR.—The application of x-ray therapy in the vicinity of epiphyses and growing bone generally is now recognized as carrying with it a risk of interfering with normal growth, and therefore should be avoided if possible. However, the following case is instructive in several ways:

A child 2 years of age was treated in 1941 with quite moderate doses of x rays on account of an extensive haemangioma involving the whole of the left leg and buttock. Treatment was directed especially to the foot, which was hypertrophied, but also in smaller amount to the lower half of the left thigh as far as the line of the knee-joint. The haemangioma improved, but during the past two years a slight under-development of the whole leg has been noticed, both in length and girth. I ascribed the condition partly to the previous haemangioma and partly to the irradiation. Recently the child was brought to me on account of falling down without any apparent cause and walking with difficulty. It was evident that the trouble was the leg which I had treated and which I knew to be weaker than the other. An orthopaedic surgeon immediately recognized that the quadriceps muscle was flaccid and that the cause was anterior poliomyelitis. A previous slight malaise with transient pyrexia had been noticed one week previously. The question occurred to me, *Why* should the disease pick on this unfortunate leg? and a possible answer was that it was due to the fact that the leg was weaker than the other and therefore more strained.

Dr. W. Ritchie Russell's masterly article (March 19, p. 465) on the incidence and prevention of serious paralysis has brought this matter vividly to my mind. If my explanation is correct it would suggest that even slight strain may be sufficient to initiate the paralysis, as the difference in strength between the two limbs was previously insufficient to cause anything noticeably unusual in the gait. That the weakened leg was affected by chance is possible, but Dr. Ritchie Russell's findings support the view that it was not so.—I am, etc.,

Stoke-on-Trent.

GEORGE G. BRISTOL.

SIR.—Dr. W. Ritchie Russell is to be congratulated on his illuminating and graphic account of poliomyelitis (March 19, p. 465). He is to be particularly congratulated on having drawn attention to the possibly far-reaching implications of the relationship between trauma and the development of paralysis. It is only too easy to dismiss such an observation as being either accidental or of no particular importance, but the history of medicine provides many examples of the rich reward to the worker who, perceiving the possible implications of an apparently anomalous finding, follows it up and elucidates its meaning.

If, as Dr. Ritchie Russell suggests, a non-specific stimulus such as minimal trauma is able to modify the physiology of the central nervous system in such a way as to make it more vulnerable to a specific virus infection, then the orthodox conception of the nature of the battle between host and invading organism needs to be reviewed. It will need to include more than a consideration of the number and virulence of the organisms and the antibody and defence reactions of the host. The previous experience of the nervous system will also have to be taken into account.

Speransky, whose book, *A Basis for the Theory of Medicine*, is largely concerned with a study of the role of the C.N.S. in infective diseases, quotes many experiments in line with those referred to by Dr. Ritchie Russell. For example, he shows that after freezing an area of cerebral cortex there is a critical time within which the traumatized area must be excised in order to prevent the subsequent development of epilepsy. After this interval a process is generated in the C.N.S. which is independent of the original stimulus and which has its own dynamism. He shows that an intramuscular injection of tetanus toxin will be ineffective in causing local tetanus if the nerves supplying the muscle are first cocaineized, even though potent toxin can be demonstrated in the nerve trunks about the block. Apparently the specific stimulus of tetanus toxin requires to reach the C.N.S. through the nerve endings.

In a case of recovered tetanus he was able, months later, to provoke a recurrence of the spasms by a "second blow," such as a non-specific injury to a nerve. It was as though the pattern of tetanus had been implanted in the C.N.S. and the specificity of response to subsequent trauma resided more in the C.N.S. than in the nature of the traumatizing agent.

It may be that this approach will throw light on the nature of "susceptibility" and give a deeper meaning to Osler's dictum that there are no illnesses—only ill people. No doubt much of Speransky's work will need to be checked and revised, but, having assimilated its basic concept, it is scarcely possible to spend a day in clinical work without receiving a hint—however tenuous—that the role of the C.N.S. in integrating pathological processes and in organizing their peripheral manifestations is of profound importance to the understanding of medicine.—I am, etc.,

Birmingham

J. S. HORN.

Haematemesis

SIR,—Drs. D. C. Lewin and Sidney Truelove (March 5, p. 383) make the interesting suggestion that in haemorrhage from peptic ulcer the fatality rate is influenced much more by the age of the patient than by the chronicity of the ulcer. I believe that there may be a fallacy in their argument, which involves deducing the pathological state of the ulcer mainly from the duration of the dyspepsia. In his Goulstonian Lectures on the subject of haematemesis and melaena (Sept. 20, 1947, p. 442, and Sept. 27, 1947, p. 478) Avery Jones showed, concerning bleeding from gastric ulceration, that the total history of dyspepsia was no longer in the case of the chronic than in that of the acute lesion. Experience suggests that this may also be true of duodenal cases. Indeed, Drs. Lewin and Truelove recognize this difficulty when they say, "A certain number of patients in the 'unknown' or 'acute ulcer groups' were later found to be suffering from chronic peptic ulcers."

While acknowledging that the authors have done valuable service in re-emphasizing the lowered resistance to haemorrhage of the older patient, I feel that nothing should be allowed to obscure the fact that death is almost always due to bleeding from a chronic ulcer with which arteriosclerosis is often associated. I am, etc.,

Liverpool

NORMAN GIBBON.

Artificial Insemination

SIR,—The attack launched upon the Medical Defence Union by the Archbishop of Canterbury and by Lord Merriman during the House of Lords debate on artificial insemination (reported in the *Journal* of March 26, p. 550) appears to be misdirected and perhaps due to a failure by each of them to appreciate the function and services of that body. It is possible that they may labour under the conviction that the Union sponsors or advocates a particular line of treatment such as artificial insemination. This is not so. The decision whether artificial insemination will constitute appropriate treatment for any given patient rests within the judgment of the doctor in attendance. He and he alone can determine whether or not it is fitting and proper to recommend that line of treatment to remedy a sterile marriage.

The Union, fulfilling a primary function defined in its Memorandum, has consistently warned its members in a suitable manner of the medico-legal dangers associated with artificial

insemination. It has pointed out that they may be accused of negligence, of adultery, or of conspiracy. It has shown to those who desire to undertake this form of therapy the precautions that they should adopt, and it has published two documents which it has been advised by its solicitors are suitable for completion by the parties concerned. It holds no brief for any person who knowingly commits perjury at the time of the registration of the child that is the result of A.I.D.

If the Archbishop's commission had afforded the Union an opportunity of appearing before it when it was in session it is just possible that the persons appointed to give evidence on its behalf would have removed some of the unfortunate misapprehensions that appear to have arisen in their minds.

The law may require alteration, but this should only be effected, if necessary, after the matter of artificial insemination has been fully explored by a Royal Commission or a departmental committee. It would be unfortunate if the Church were once more to align itself with the opponents of a new form of therapy before that therapy has been properly examined by competent authorities and either condemned or confirmed.—I am, etc.,

London, W.C.1.

ROBERT FORBES,
Secretary, The Medical Defence Union

The Arab Refugees

SIR,—The Jewish Society for Human Service is concerned for the Arab refugees, victims of the fighting in the Middle East and now said to number three-quarters of a million. "Their state," wrote *The Times* correspondent in Jericho on Feb. 21, "beggars description." In particular, there is a disastrous shortage of drugs. Of the larger donations promised by governments only the British million pounds has been paid—a pound or so per head of refugees who must be fed, clothed, housed, cured. I have it on the authority of a Minister of the Crown that drugs are so short simply because food is the priority and there is not nearly enough money for everything.

May I beg your readers to send a contribution for this purpose to the Jewish Society for Human Service, 14, Henrietta Street, London, W.C.2? As the Society is collecting for many other needs of these refugees, contributions should be earmarked "Drugs for Arab Relief."—I am, etc.,

London, W.C.2.

VICTOR GOLLANCZ.

Psychiatric Indications for Abortion

SIR,—The annotation on psychiatric indications for abortion (March 19, p. 489) supports the view that with the advent of family allowances, maternity benefit, and a comprehensive health service there is less indication for abortion on "social grounds." From your observation that "nevertheless the over-prolific family will continue to suffer hardship" it is clear that the term "economic" should have been substituted for "social." You go on to say that in Switzerland, where changes in the law relating to abortion have been introduced, the remedy of sterilization is provided for the over-prolific family. You conclude your annotation by suggesting that the wider use of sterilization in women who are unfitted to bear and to rear children would reduce the number of occasions when difficult decisions have to be taken about the therapeutic termination of pregnancy.

In the first place, I venture to suggest that economic factors alone neither justify termination of pregnancy nor sterilization, and in practice it is extremely rare for a request for either to be made on such grounds. When economic factors are advanced it is usually by parents, who sometimes cannot do justice to their existing children. They are invariably quite comfortably off, have planned a small family, and budgeted accordingly. Really badly off parents, who sometimes cannot even afford a contraceptive appliance, never seem to worry very much over the threat to their economy constituted by an unexpected pregnancy. The anxiety reaction on the part of the moderately well-off planning parent is always much greater than that of her hard-up and haphazard contemporary.

Is it seriously suggested that the payment of family allowance or the provision of a free maternity service is going to make all the difference between affording and wanting another child and requesting an abortion or sterilization? To what extent is it considered that the comprehensive health service will

ameliorate the lot of a deserted, unstable, and unmarried mother who has to support an invalid parent?

There are no definite psychiatric grounds for termination of pregnancy. Each case must be considered on its merits. The admission of a suicidal patient to hospital in preference to terminating the pregnancy which determines the morbid impulse can only be justified under very exceptional circumstances. If hospitalization is deemed necessary, surely the severity of the condition warrants removal of the cause, in preference to perpetuating it under conditions which are less favourable and acceptable than those in which the patient was originally situated. It should not be difficult to decide when a pregnancy should not be terminated. There can be fewer occasions on which it could be considered wiser to follow the old adage, 'When in doubt, don't.'

Finally, in my view there is too much glib reference to sterilization of women. There are few indications for sterilization in women which cannot be dealt with adequately by sterilization of the men. In any case sterilization should never be resorted to on such a variable factor as the economic position of the family. Obviously they have no football pools in Switzerland—I am, etc.

London, W1

ELLIS STUNGO

Diagnosis of Early Pulmonary Tuberculosis

SIR,—About two years ago, in common with many other practitioners, I received from the National Association for the Prevention of Tuberculosis a pamphlet on the diagnosis of early pulmonary tuberculosis by Dr. C. H. C. Toussaint, of Bernonsey, and in the last few days I had a second copy. Everyone will agree about the importance of early diagnosis of tuberculosis, but are we helped by this list of indications for immediate x-ray examination?

Cough	including senile patients	Influenza	particularly females
Bronchitis		Febrile chill	
Dyspnoea		P.U.O.	
Laryngitis		Pleurisy, pleurodynia, or pain in chest	
Loss of weight	15-30	Loss of weight	particularly females
Bronchial catarrh		Anorexia	
Haemoptysis		Anaemia	
Ischio-rectal abscess		Debility	
Erythema nodosum	15-30	Amenorrhoea	

Now it may well be that most (if not all) cases of tuberculosis of the lungs have one or more of these symptoms at some time before diagnosis, but so do a very great number of others who have no tubercle. Can we in fact, by taking these symptoms as guides, separate out a body of patients of manageable size among whom we may hope to find the majority of the cases of tuberculosis?

I made two counts of my patients; one in July, 1946, gave 17 cases in one week, and one this year, March 8 to March 14, gave 54 cases showing one or more of these symptoms. My total list is 3,000. Even on the summer figure it would mean something over 1 in 4 of my patients in the course of a year—or for an x-ray plant dealing with 50,000 people more chest radiographs in one week than they now do in a year. Films are in short supply even now, and could the tuberculosis officers cope with the numbers?

Indeed, Sir, I would not have troubled you at all about it except that there seems here to be a good idea gone wrong by some exaggeration or want of precision in the presentation of the case.—I am, etc.,

King's Langley

REGINALD FISHER.

Ankylosing Spondylitis

SIR,—In the *Journal* of March 12 (p. 455) you print a letter from Dr. K. Sicher in which he discusses the results of x-ray treatment. I have now had the opportunity of observing such results for nearly 20 years, as I began to work with Gilbert Scott on this subject in 1931 and have seen and treated over a thousand cases.

Usually, but not always, the earlier the case is seen the better the outcome. But a few early cases get worse despite treatment. Some people are extremely sensitive to x-rays, and relative overdosage at the start may destroy their resistance

for months or even years. All symptoms may be banished and apparent arrest of the disease brought about by dosage of the order of one-third to one-half of the 2,500 r referred to. Professor Davidson, of San Francisco, uses even less.

Does the very large dose really eliminate the disease? There is little to indicate that this is so and much to prove the contrary. Exacerbations occur after months or even many years. Meanwhile the BSR is a totally unreliable guide. It is as a rule normal during quiescent periods. But Professor Davidson has shown that the 17-ketosteroids continue to be excreted in excess during remissions, and certain newly discovered biochemical tests, such as those dealing with serum viscosity, are often positive despite normal BSR and absence of symptoms. And what of the 35% of later-stage patients whom Dr. Sicher finds it impossible to benefit by x-rays? Is their sole resort to be the orthopaedic surgeon, who, after all, deals with the results of the disease rather than the disease itself?

Very small doses of x-rays, carefully graduated, will be found to be the answer in some cases, but there remain a considerable number who will require the same continuous care and attention as cases of chronic rheumatism. If cure, or even complete remission, is not possible, nevertheless an attempt should be made to keep such people fit for work and play. To this end any of the usual anti-rheumatic remedies may have to be employed. Gold may be useful, but it has not the dramatic effect which is often observed in rheumatoid arthritis and should be given only in very small doses, say 0.001 g weekly. Polyvalent anti-rheumatic vaccines may also be tried in doses not sufficient to produce general or focal reaction. Bismuth is an alternative to gold, in doses of 0.5 g of sodium-bismuth tartrate once in two weeks. Finally, there is radioactive thorium X, which requires expert administration.

Too often spondylitic patients are told by their doctors, "Nothing can be done." This is nearly always far from the truth.—I am, etc.

London W1

F. HERNIMAN-JOHNSON

Occupational Therapy

SIR,—We have read with interest the review (March 5, p. 397) by Dr. Donald Stewart on *Principles of Occupational Therapy*, edited by Helen S. Willard and Clare S. Spackman. We should like to endorse most sincerely his comments regarding medical prescriptions for occupational therapy. The need for these is felt very strongly by occupational therapists in this country, and they have been striving for them since the earliest days of the profession.

The only points in his review of this book about which we are not entirely happy are the comments, "The authors' description of the ideal organization of a hospital department of occupational therapy may well inspire physiotherapists in Great Britain . . . to demand a more important place in the hospital hierarchy", and again, " . . . will be of wide interest and help to physiotherapists" (my italics). We feel that occupational therapists will also be helped and inspired greatly by this book, and as occupational therapy and physiotherapy are entirely different though frequently interdependent forms of treatment we cannot help feeling that the omission of reference to the occupational therapist is an oversight—I am, etc.

London SW1

JOYCE OLDNALL,
Secretary, Association of
Occupational Therapists

Penicillin-resistant Staphylococci

SIR,—It would appear from the preamble and summary to the paper entitled 'Frequency of Penicillin-resistant Staphylococci' (March 5, p. 395) that the authors Drs. A. Vourekha and W. Howard Hughes, in recording a 7.6% incidence, are satisfied that penicillin is not losing much ground as an anti-bacterial agent in the treatment of staphylococcal infection. They believe that previous reports have tended to create an exaggerated impression of the waning power of penicillin.

While these authors make no direct reference to the recent work of Barber,^{1,2} one is bound to draw a comparison between the two sets of results. Barber has reported a progressive increase in the percentage incidence of resistant strains from

14% in 1946 to 59% in 1948. Her studies were carried out in a large hospital and her findings represent the percentage incidence of hospital infections due to penicillin-resistant strains. She freely admits that "though penicillin-resistant strains of *S. pyogenes* are now appearing with increasing frequency in many hospitals, this is probably not the case in the community at large."

The strains investigated by Drs. Voureka and Howard Hughes were recovered from the anterior nares of out-patients not suffering from obvious staphylococcal infection. In other words their figure of 7.6% is simply an index of the number of temporary nasal carriers of penicillin-resistant staphylococci. Admittedly 185 of 304 strains were coagulase-positive, but the production of staphylocoagulase implies potential rather than actual pathogenicity.

During 1948 a survey of strains from in-patients and out-patients suffering from staphylococcal infection was undertaken at the Kent and Canterbury Hospital. A report on this study is being prepared for publication, but it would seem timely to give a brief summary in advance. Of out-patient strains, 90% were sensitive and 10% resisted at least 1 unit of penicillin. By contrast only 32% of hospital strains were sensitive. All the resistant strains produced penicillinase. In assessing the value of penicillin in the treatment of staphylococcal infections on the basis of the frequency with which resistant staphylococci are encountered due regard must be paid to the source of the strains investigated.—I am, etc.,

Canterbury, Kent

G. B. FORBES.

REFERENCES

- ¹ *J. Path. Bact.*, 1947, 59, 373.
- ² *British Medical Journal*, 1947, 2, 863.
- ³ *Lancet*, 1948, 2, 641.

Specialization

SIR.—Another heading might be added to those that Dr. Leonard Simpson makes in his letter (Feb. 26, p. 368): the attitude of the patient towards specialists. One of the promises of the Health Service was of "specialist treatment where for all." Although the operative word is "available," many patients must see this as "specialist treatment for all." Of course "all" do not need specialist treatment, but if they think they are entitled to it they are quite liable to ask for it (the Englishman standing up for his rights). And on what grounds can a G.P. refuse? Only that he does not think it necessary. This does not always go down with the patient, who wants to see specialists.

Doctors who have been in the Army will remember how soldiers on sick parade, when asked their trouble, would reply (for instance), "I want to see the E.N.T. specialist." The doctor's "What about?" startled them like an impertinent question. "Me ears," they would reply. Then, if the medical officer actually looked at their ears, they were puzzled; and if he went so far as to treat them for their troubles they thought it very queer indeed. Surgeries, like sick parades, are in danger of degenerating into sessions at which all that the patients have come for is a chit to see someone else. Eventually the G.P. has only the patients that the chemist used to get, and the specialists get the G.P.'s patients.

There is a danger, too, of doctors achieving the label "specialist" without really knowing a great deal more about their special subject than the average G.P., and it will happen this way. There will be thousands of patients wanting to see specialists about their very special ailments, and someone will pipe up in Parliament that we have not enough specialists. "Then create some," the Minister of Health will say, with a grand gesture. This is what happened in the Army. The Army decided that beyond anything soldiers required psychiatrists. And behold, there were psychiatrists. As the war started there cannot have been so many civilians deserving the title "psychiatrist"—yet the Army was thick with psychiatrists. It was done by the simple process of inviting all M.O.s with the slightest experience in psychiatry to apply for "specialist" in psychiatry. So, as well as the genuine psychiatrists, there were myriads who had had the minimum training, and never it was. (Something like six months H.P. in a mental hospital.) Such a dilution of the state of affairs in civilian practice is bound to have for the present generation of doctors a deleterious effect, but as new specialist-minded generations grow

up, and the N.H.S. "progresses," everything will become much more organized. Who will then be the G.P.? A different sort of person will have to go in for medicine. The Civil Service type of mind will be attracted to the profession, and scientific youngsters of school-leaving age will enter something more exciting than the medical schools.—I am, etc.,

Windlesham, Surrey.

MARGARET C. TAIT.

Pharmacology of the Failing Heart

SIR,—I would like to make some remarks on the article by Professor J. McMichael (Nov. 27, 1948, p. 927). If I would discuss every point in this article with which I disagree it would take up too much of your space, and in many respects it would only lead to repetitions of my teachings which are contained in my book, *Physiology and Pathology of the Heart and Blood Vessels*, Oxford University Press, 1947.

If Professor McMichael would have taken the trouble to read the relevant paragraphs in this book about the effects of digitalis and about the factors which determine the output of the heart (p. 30) he would have made his work more easy and valuable. He would surely have noticed that not only in my mathematical deductions (p. 6) but in my practical conclusions one cannot neglect the most essential factor for the performing of the stroke volume—e.g., the dilatability of the ventricle. Thus the main effect of digitalis lies in the diminution of the diastolic resistance of the diseased ventricle. If he had drawn this neglected factor into account in his speculations he could have easily explained all his conclusions and doubts, and even why digitalis has no effect on a healthy myocardium.

I am full of admiration for Forssman's bold method of the heart catheterization, but it seems to me that it can hardly give more information than my method either for the determination of the stroke volume or for the diagnosis of the congenital vicia. Certainly, by the application of a catheter into the heart cavities the results of the examination cannot be regarded as the results of a normal heart function. For this and other reasons I wonder why Professor McMichael became so enthusiastic about this by no means indifferent method, and why he abandoned my method, which served him in all his previous work so well.

Many people who have been informed only through the publications of Professor McMichael about his haemodynamic experiments will surely be surprised to hear my claim to be the father of the method which has been applied by Professor McMichael. Heaven only knows what prejudiced him to constantly attribute my sack method to the late Professor Fick, who made his suggestions in the 'eighties of the last century (namely, Vierordt's *Daten und Tabellen*, p. 161), and which induced many authors of great repute like Gréhan and Quinquaud, Zuntz, Hagemann, Loewy, von Schroetter, Wolfberg, Nussbaum, etc., to try to realize the proposal of Fick. But all the attempts did not lead to any practical result. Only in 1906, when I invented my sack method, was it possible to determine the stroke volume of the heart on the basis of Fick's proposed principle, and to lay the basis of our present knowledge of human haemodynamics. All this shows clearly that Fick had no method of his own for the determination of the stroke volume.

In a great series of experiments I proved my methods and published them first *in extenso* in a monograph, "Haemodynamische Studien," in 1909. The essentials of the invention are to respire, for a short time, in a sack filled with nitrogen until the tension of the gases of the blood in the right heart are in equilibrium with the gases in the sack. The analysis of the partial pressure of O and CO₂ in the sack expressed the amount of the blood gases in the right heart. The determination, in connexion with the determination of the O₂ capacity of the blood, further with the determination of the oxygen demand of the body, and the determination of the blood volume and the pulse rate, gave me the opportunity not only to determine as the first in physiological and pathological cases the stroke volume, but all the other haemodynamic features in the living human body. This method has never been superseded, in spite of the fact that many authors have attempted to modify it by insignificant trifles. The 76 sentences of my conclusions stand to-day as firmly as they did 40 years ago.

In the same year as I published my "Haemodynamics" I wrote a treatise, "Zur Diagnose der kongenitalen Vitien," in the *Deutsche Medizinische Wochenschrift*, No. 9, 1909. I used the sack method for the diagnosis of the cor triloculare, where, as is well known, the

blood of the left and the right heart becomes mixed and thus changes the blood gas concentration in the right heart accordingly.

We have possessed, therefore, for 40 years a simple, harmless method for the determination of the gases in the blood, and now the same determination is recommended as a novelty with only the difference that the blood is taken through a heart catheter, which is by no means an indifferent measure and which represents an encroachment on the physiological conditions of the circulation.

Had Professor McMichael further taken the trouble to study my books, which, to my greatest regret I must admit are not easy to understand or everybody, he would surely have rather accepted my subdivision of the cardiac failures in diastolic and systolic insufficiencies and their implications instead of recommending his subdivision of high or low output in failures of the heart, which has no practical significance whatsoever. He also could have learned that his ideas about "back pressure effect" are, plain speaking nonsense. This conception of his proves clearly that he is mixing up in his mind fundamentals of hydrostatics and haemodynamics. He must at least realize that in a closed channel system, as the blood circulation represents, and where the atmospheric changes are negligible, other rules are valid than in the flow in open channels as in a river, where the flow is decidedly influenced by atmospheric changes.

I trust that Professor McMichael will revise the results of his publications according to these suggestions—I am, etc.,

London W 1

J PLESCH

Physiology of the Orgasm

SIR,—The publication of Berg's *Clinical Psychology* once again raises the issue of the place of the orgasm in the therapy of the neuroses. The problem was originally stated by Reich but received negligible discussion at the time. Reich subsequently developed the concept of orgasmic potency as a therapeutic end point, and developed a technique which he considered to be soundly based on the physiology of the autonomic system. If Berg's latest work is an indication that the orgasm is to be discussed once again by psychiatrists it seems a wise preliminary to correct past errors in orgasmic physiology. Discussion can then take place on a scientific basis.

Following Reich Berg thus describes the orgasm in terms of parasympathetic discharge:

"An exceptional degree of sexual tension, conducted along the parasympathetic, would tend to discharge itself as orgasm whereas an excessive degree of anxiety tension, conducted along the sympathetic system, would lead to a condition described in medicine as 'sympatheticotonia,' and would tend to discharge itself in some such phenomenon as an hysterical outburst."

This is an incorrect statement of the position. The standard works on the autonomic nervous system (Kuntz, White, and Smithwick) show that the orgasm is a brief period of acute sympatheticotonia occurring at the end of a period of parasympathetic predominance. The latter is the basis for tumescence, and the sympathetic discharge from the upper lumbar segments causes the contraction of the musculature of the genital tract. In these circumstances the physiological basis of Reichian therapy requires complete reassessment—I am, etc.,

London N W 3

P D EEMAN

POINTS FROM LETTERS

Scottish Proverb

Dr J B MILLER (Bishopbriggs, Lanark) writes: In a letter on "Whither Tuberculosis?" Dr Patrick Heffernan (Feb 26, p 365) uses the following quotation: "Keep its ain fish gus for its ain fish maws." There are several versions of this old Scots proverb, but all agree that the last two words are "sea maws"—i.e. sea mews or gulls. It is of interest that this was a favourite proverb of Sir Walter Scott and is quoted in *The Antiquary* (chap 15) as follows: "We maun gie our ain fish gus to our ain sea maws" (i.e., of course, that charity begins at home).

Obituary

WILLIAM JOHNSON, M.C., M.D., F.R.C.P.

In all professions there are men and women whose promotion to high office has been due primarily to their solid worth and trustworthiness, their desire for publicity has been small, and only those colleagues who have worked intimately with them have been in a position to assess their other attributes and professional qualities. Such a man was William Johnson, whose death on March 15 at the age of 63 after a brief illness has brought sorrow to his many friends. A reserved and modest man, rather shy, yet possessing a most warm and friendly nature, he was beloved for his generosity of spirit and for his plain and simple faith. It was only natural that his ability as a physician and clinical teacher and his wisdom in counsel should be widely recognized by his appointment to many offices all of which he held with distinction. To each task he brought a well trained, mature mind, full of sound common sense and a rich measure of human understanding.

William Johnson received his early training at Guy's Hospital. After graduating in 1908 he held several resident posts at Guy's and then embarked upon his career as a physician with a special interest in neurology. He was chief clinical assistant in the neurological department at Guy's Hospital, and he proceeded M.D. in 1911 and took the M.R.C.P. in 1912. In the first world war he served with distinction in France, being awarded the Military Cross for conspicuous gallantry and devotion to duty. While on active service, with the rank of major, R.A.M.C., he enjoyed opportunities for pursuing his studies in neurology, and he contributed the article on "Neuroses in France" to the official *Medical History of the War*.

After demobilization Johnson decided to engage in consultative practice in Liverpool, and he was appointed assistant physician to the Royal Southern Hospital and to the Royal Liverpool Children's Hospital. He served these institutions with efficiency and loyalty, and in due course became senior physician to both of them. When his period of active service on the staff came to an end both hospitals showed their appreciation of what he had done and their desire to retain his support and advice by appointing him to their respective governing bodies.

Johnson was elected F.R.C.P. in 1926, and among other appointments he held that of lecturer in clinical medicine and clinical paediatrics in the University of Liverpool. He was president of the Liverpool Medical Institution in 1939, and at the time of his death he was president of the Section of Neurology of the Royal Society of Medicine. These offices brought him much pleasure, but his appointment as censor of the Royal College of Physicians of London was natural, the distinction which pleased him most, and no word could have expressed the gratification which he obviously felt on being selected for this honour. The holding of these and other important offices including examinations for the Universities of Durham and Liverpool, and for the Conjoint Board did nothing to impair his close friendships, many of which were with men much junior to himself. He remained true to his pattern, strong in character, gentle, lovable and loyal by nature, the best of friends. His greatest fortune was in the happiness which his wife and children brought to him, and they have our sympathy in their great sorrow.

So passes one who played a man's part in life and leaves it rich with grateful memories. Sir William Osler expressed the opinion, in *Aequanimitas* that in the physician or surgeon no quality takes rank with imperturbability. Not everyone would agree that this attribute comes first, but by common consent it would certainly be placed high among the requisites of a good doctor. Imperturbability was but one of William Johnson's many qualities, and his epitaph might well be those words of Marcus Aurelius with which Osler prefaced his lecture—"Thou must be like a promontory of the sea, against which, though the waves beat continually, yet it both itself stands and about it are those swelling waves stilled and quieted"—N B C.

PHILIP BRUCE WHITE, F.R.S.

Philip Bruce White, who died on March 19 at the age of 57, belonged to the rare genus of truly original research workers. Had he lived the full allotted span he could not have failed to add many further contributions to the rich legacy bequeathed. Although of Scottish descent he was brought up in Bangor, for his father, Philip Jacob White, was the first lecturer in zoology, and later professor of that subject, in the University College of North Wales. It was to his father that he owed an unusually early interest in biological science combined with unique opportunities during childhood and adolescence for its exercise and development. His strong inborn curiosity was thus fostered and led to the acquisition of a width of knowledge and experience which often surprised even his closest friends.

His formal education was obtained first at Lurgan School, Bangor, and later at the University College of North Wales, where he took an honours science degree in 1915 with zoology and botany as his principal subjects. His original intention had been to proceed to a medical degree, but to a man of Bruce White's temperament some direct contribution to the war effort was an urgent necessity. Ineligible for military service because of the results of an accident at school, he served a brief apprenticeship in bacteriology at the Lister Institute and a short period as assistant pathologist at Trinity College, Dublin, before obtaining an appointment at Tidworth Military Hospital as a civilian pathologist, in which post he remained until the conclusion of hostilities. In 1919 he went to Aberdeen to assist in an investigation of Isle of Wight disease of bees. The solution of the problem of the aetiology of this disease was an outstanding piece of research for which Bruce White was largely responsible. A few years later he joined W. G. Savage in Bristol in an investigation of food poisoning, sponsored jointly by the Medical Research Council and the Ministry of Health. This was the starting point of his long series of researches on the salmonella, which continued for over a decade and firmly established Bruce White's reputation both as a bacteriologist of note and as a world authority on this group of organisms. His appointment to the scientific staff of the National Institute for Medical Research in 1927 provided the ideal requisite for his intensive study of the antigenic constitution and relationships of the salmonella. Upon that study are based the modern diagnostic methods now in use in laboratories all over the world. This work was followed by similar investigations into the cholera vibrios, which continued almost to the day of his death. An invitation to visit India in 1936 provided an opportunity, eagerly seized, of studying epidemic cholera in the field, and in the following year he went to Egypt to investigate the Cairo outbreak. Side by side with these fundamental researches Bruce White carried out a great deal of notable work in connexion with the preparation and assay of biological standards under the auspices of the Health Organization of the League of Nations. His high scientific attainments were recognized in 1941 by his election as a Fellow of the Royal Society.

Outside his work Bruce White had wide interests. He keenly appreciated many forms of art, and he loved the literature, wines, and cooking of France. He brought zest to all his activities whether serious or trivial, and lived life with a gusto which stimulated those around him. The kindest and most approachable of men, he was nevertheless a shrewd judge of character and could deflate pretence and pomposity with a penetrating comment or witty phrase. Unconventional, unself-conscious, and possessing physical and mental courage of high degree, he was a good companion who will ever be remembered with affection by those who gained the privilege of his friendship. He leaves a widow and two sons, both of whom have adopted the profession of medicine.—W. S.

Dr. ANDREW CONNELL died at his home in Aberdeen on Jan. 26 at the age of 66. Dr. Connell was born in Glasgow and educated at Hillhead High School and later the High School of Glasgow. In 1903 he graduated M.B., Ch.B. at Glasgow University. After holding a number of resident appointments he was given the opportunity of accompanying Sir James Simpson on a special plague mission to the Gold Coast.

Returning to Glasgow in 1904, he took his M.D. degree with highest honours, and had the distinction of being awarded the Bellhouston Gold Medal for his thesis on cerebral meningitis. At the London School of Tropical Medicine he received the diploma in tropical medicine and hygiene in 1910, and 12 years later he took the Combined D.P.H. The Combined work in the West African Medical Service, which he joined in 1919, obtained early recognition. He was appointed director of the Medical Research Institute at Yaba, Lagos, in 1921, and was also deputy director of the laboratory service of Nigeria. He left these appointments in 1924 to return from the Service in 1924. During this long period of 12 years, 10 years he was in the forefront of advances in tropical medicine, and he made a special study of malaria. In all his laboratory work he had the able and devoted assistance of his wife, by whom he was aided. For his services to medicine in West Africa, Dr. Connell was awarded the O.B.E. in 1932. He especially loved Ghana, and it was there that he made his home when he returned to Scotland. Still comparatively young in years, and energetic, young in spirit, he felt that he was never too old. He spent much of his time at the Keweenaw Hotel, Lagos. He gave ample scope for his experience in the field of preventive medicine and in the treatment of infectious diseases. Of efficient, conversational, and unpretentious, he did not spare himself during the long hours of his day, and he did not stop his work. At the end of the year he was offered the post of medical officer and lecturer at the University of Aberdeen. Here he found a fine staff, a congenial and friendly staff, and a fresh outlet for his talents. His popularity with the students and the affectionate regard in which he was held by the staff were a tribute to his outstanding character and to his abilities as a fine teacher and clinical lecturer. Dr. Connell was a truly generous soul. He was the perfect host, and the doors of his home were always open to his many friends. While he shunned the glare of publicity, his private acts of generosity were as numerous as the stars in the heavens. He lived a full life, and he was except orally well informed on subject. He removed from his home. A collector he placed with his, as an amateur collector, he could speak with authority. But it was perhaps in another that he found his favourite recreation. Every summer he spent some weeks at Seaton, where he knew every fish and bird for miles around. Gifted with a keen sense of fun and wit, he could see all things in their true perspective. His charming courtesy, his warmth and modesty, were attributes that endeared him to all who knew him.—D. J. M.

Dr. HAROLD JESS CONNELL died on Feb. 18 at his home at Tidworth, Surrey, at the age of 70. He was born at Kew, the son of the late Dr. George Richard Curdell, a former mayor of Richmond. He was educated at St. Paul's School under the redoubtable F. W. Walker. There he got his first M.C. as a fast bowler and a dashing, if somewhat unorthodox, batsman; he was also a good rugby footballer. From St. Paul's he entered the medical school of St. Mary's Hospital, Paddington, and he took the M.R.C.S., F.R.C.P. in 1902. He was house-surgeon at the Huddersfield Infirmary, and afterwards resident medical officer at the Three Counties Mental Hospital, Arlesey, and at the Horton Mental Hospital, Ipswich. He then spent some years in general practice at Leeds, and from 1911 to 1935 at Liverpool. From 1935 to 1948 he practised at Tidworth. He served abroad in the R.A.M.C. during the 1914-18 war, part of the time in the Far East. This diversity of experience and training made him a practical general practitioner of real merit, and the people of Surrey are the poorer by his loss. Dr. Curdell married Miss Gold, who survives him with their son.—H. R.

Mr. GEORGE KENNETH RIDDOCH was lost in the *Star Tiger* disaster on Jan. 30, 1948. He was the elder son of the late Dr. George Riddoch, and was educated at Rugby and Corpus Christi College, Cambridge, entering the London Hospital in 1938. He was awarded the Frederick Treves Prize in clinical surgery, and graduated in 1941. He married soon afterwards, while carrying out house appointments at Chase Farm Hospital, Enfield. In 1942 he joined the Navy, in which he served till 1946, for most of that time being overseas, at first in destroyers and later in a naval hospital. Riddoch returned to the London after the war and gained the F.R.C.S.Ed. He then went to the West Middlesex Hospital, and was still an assistant there at the time of his death. Keith Riddoch was an exceptional person. He had a first-class intellect and great practical ability, and was consequently already a surgeon at an age at which most show no more than promise. He had had considerable experience both in the Navy and afterwards, but it was not in his nature to follow one subject to the exclusion of all else, and his general training was sound and full. In his last year as a student, the first year of the war, organized teaching was replaced by a

series of resident appointments in 'sector' hospitals and of these he made full use. His bright and cheerful personality won him the friendship of all with whom he came in contact, and his forthrightness and ability won him their respect. He was a delightful companion, with many interests outside medicine, to all of which he applied himself with characteristic energy. Everything he did he did thoroughly. He read widely, he was a skilled carpenter, mended the family's shoes, and extended his knowledge of gardening to the production of a cellar of home made wines—and these were but a few of the diverse interests to be found in a friend with a keen sense of humour and a constant kindness. He knew how easy it is to become the slave of Medicine, and he was determined not to be so. He had achieved happiness, and those of us who knew him well, and knew particularly the complete happiness of his home with his wife and their son Graeme, see much more than the tragically early end of a career that must have been great—and will always be the happier for having known him—J O W D and J R E

Dr CHARLES HAROLD WALKER McCULLAGH died on Feb. 20 at the Queen Elizabeth Hospital, Birmingham, at the age of 74. He graduated at Trinity College, Dublin, in 1897, and proceeded M.D. in 1905. Four years later he took the Cambridge D.P.H. Dr McCullagh came to Birmingham in 1927. He was a very successful general practitioner, and he was held in the highest esteem by his colleagues and patients alike. He had a keen sense of humour and was exceptionally well read. A man of high ideals, his conscientious devotion to duty never failed. His heart was in the work to which he gave himself with unsparring energy until the day of his death. All his colleagues will miss him, and many will regret the loss of a good friend and will sympathize with his widow and two daughters—W MCM

Dr NORTON BURROUGHS CLOWES, who died on Feb. 25, came from a line of well-known Norfolk doctors. His father and both his brothers had been students at Guy's Hospital, where he qualified in 1890. He served in the R.A.M.C. for the duration of the 1914-18 war. He was attached to the Colchester Military Hospital during the recent war, and worked at the Ministry of Pensions at intervals. Although suffering from the after-effects of operations for duodenal ulcer he carried on his work with pluck and determination to the end, and he was loved and respected by all who knew him. Dr Clowes always hoped that he would die in harness and would "pass out quickly when his time came." Both of these wishes were granted. He married the youngest daughter of the late Sir William Robinson, who survives him with two married daughters.

Dr RICHMOND STEEL died at his home in Southport on March 10. He graduated M.B., Ch.B. at Glasgow University in 1909, and even before the 1914-18 war he had begun to take an interest in radiology. A regimental medical officer during the war, on demobilization he decided to give up general practice, and he studied radiology in London, Paris, and Stockholm. He was also a pupil of Thurstan Holland, though to the latter's regret he did not proceed to the then recently created diploma. Settling in Southport, Dr Steel specialized in x-ray work, and when a vacancy occurred he was elected radiologist to the Southport Infirmary. This post he filled for nineteen years. He served also the Ormskirk Hospital and the Southport E.N.S., now the Promenade Hospital, to within a few days of his death. Indeed he had to be prevented from carrying on his examination of films while in bed. It was a great satisfaction to Steel that quite recently a very early carcinoma of the stomach which he detected was operated on successfully by Professor Wells. His films were then used to make slides for use on an American tour, since this was the earliest case that had been sent to Professor Wells. Quite apart from his professional skill, Steel was loved for his personal qualities. His broad humanitarianism, his flair for friendship, and his love of the society of his fellows endeared him to all. He delighted in organizing the social gatherings of the local Caledonian Society, of which he was secretary. Of sincere though unobtrusive religious conviction during the recent war he supported his wife in an outstanding work for the dependants of men in the Forces. The loss of an only son killed almost at the end of the fighting by a missile from a friendly plane, was borne with fortitude by both. To his widow the sympathy of all his colleagues and friends will be extended—W A M

Dr Lina M. Potter writes: I would like to amplify a little the account (*Journal* March 19 p. 503) of Dr Ethel Vaughan-Sawyer's clinical class. Her patients adored her to the extent of tolerating whatever she prescribed. Mrs. Vaughan-Sawyer appreciated this herself and interpolated highly amusing asides for the benefit of the students.

Medico-Legal

ACTION FOR NEGLIGENCE IN DIAGNOSIS

Appeal Allowed

Mr James Forbes Whiteford, an American citizen, was awarded £6,300 damages in an action in July, 1948, in which he alleged negligence against Mr John Bowman Hunter M.S., F.R.C.S. and Dr Seymour R. Gleed, a medical practitioner of Finchley. Mr Justice Birkett dismissed the action against Dr Gleed holding that no negligence could be attributed to him. Mr Hunter subsequently appealed against the decision of Mr Justice Birkett and Mr Whiteford cross-appealed against the dismissal of Dr Gleed from the case.

As has already been briefly noted, Mr Hunter's appeal was allowed and Mr Whiteford's cross-appeal against the dismissal of his action against Dr Gleed was dismissed. The judgment of the Court of Appeal was read by Lord Justice Asquith on March 21.

Summary of Judgment

Lord Justice Asquith said the action was one for damages for negligence and breach of contract brought by a patient against a well known consultant surgeon and a general practitioner. On March 21, 1942, the plaintiff, a consulting engineer aged 65 or 66, consulted Dr Gleed about certain bladder symptoms. On March 22 at Dr Gleed's request Mr Hunter saw the plaintiff at the Finchley War Memorial Hospital. He found the bladder distended and concluded that this was due to prostatic obstruction. He advised that the bladder should be drained at once and that removal of the prostate should be undertaken in about a fortnight. He then made a suprapubic puncture and inserted a drainage tube, which remained there till April 5, 1942.

On April 5 Mr Hunter operated, intending to remove the prostate, which did not then feel very large. Up to this point the plaintiff had to concede that both doctors were right. Any negligence alleged must be proved in relation to April 5 when Mr Hunter had embarked on the prostatectomy. Mr Hunter opened the bladder. He then examined the interior of the bladder manually and visually with the help of a light. In the trigone area there was an indurated mass of tissue as large as the palm of a man's hand, reddish grey in colour, and of an infiltrating submucous character. He examined this by sight and touch for fifteen or twenty minutes and concluded that it was a cancer and an inoperable cancer. He also concluded that it was this mass, and not the prostate, which had given rise to the retention of urine. If his diagnosis was accurate the only surgical measure possible was excision of the whole bladder, and this he was satisfied the patient could not have borne. After consulting with Mrs Whiteford, and on her advice, he informed the patient through Dr Gleed that he was suffering from inoperable cancer and had only a matter of months to live.

Mr Hunter never saw the plaintiff after April 5. Dr Gleed attended him regularly up to August 21. In July the patient's thighs and genitals became enormously swollen, which Dr Gleed thought to be consistent with a spread through the lymphatic glands of the cancer. Mr Whiteford sailed for New York on August 21 and arrived on September 6 being admitted immediately to the Memorial Hospital 444, East 68th Street. On September 8 Dr Barringer examined the plaintiff using a cystoscope furnished (as only about six cystoscopes in England were at that time) with a rongeur attachment, which allowed the surgeon to take a scraping from any suspected area of the bladder wall. Dr Barringer saw several areas which, in view of Mr Hunter's reported diagnosis, he suspected as cancer; a fairly large diverticulum in the base of the bladder, and a median prostatic bar. He took a scraping from the suspected areas, and microscopic examination revealed no evidence of cancer, merely cystitis. On September 15 Dr Barringer operated and removed a large part of a "small fibrous" prostate; he also emptied the diverticulum of some soft calcareous material and removed the drainage tube. A specimen of the prostate was later examined and showed "benign prostatic hypertrophy." After a long period of convalescence further portions of the

Universities and Colleges

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following candidates have been approved at the examinations indicated:

M.D.—R. M. Peet, E. N. O. Sodeinde.
M.A.O.—G. B. Gibson, M. A. Majekodunmi.
FINAL MEDICAL EXAMINATION—*Midwifery (B.A.O.)*: *S. B. Sloan, *D. W. Beckett, *Eleanor B. O'Brien, *L. J. Clein, *C. F. Ross, *R. J. M. Fry, *Stephanie Saville, *W. D. H. Troughman, *R. P. A. Coffey, *W. P. C. Desly, *K. C. Finkel, *W. Pappenheim, *R. S. Young, *W. G. T. Bell, *R. S. Crone, *B. B. Fazackerley, J. H. Ashmore, F. G. O. Burrows, S. M. Laird, T. T. E. Michael, Frances E. Russell, Evelyn Browne, D. W. Kyle, S. C. Blake, E. G. England, Wilhelmina Hutchinson, Beatrice P. Karmel, L. R. Robinson, M. D. M. Staunton, F. A. Walkey, C. D. Wray, Audrey M. Franklin, O. H. Killen, W. D. McNaul, Thelma H. W. Marks, B. J. O'Reilly, A. A. Sweeney, Dorothy J. Cartmill, Agnes C. Good, E. V. Page, Kathleen C. Rogers, E. K. D. Williamson, Anne L. J. Casack, R. C. Gray, Sheilaigh M. M. McHugh, Gwendoline G. L. Poole, R. N. Siberry, J. P. Nixon, Mildred Vilensky, Reva Berstock, E. B. McHugh, E. A. O'Chere, W. D. H. Powell, B. S. Telford, Joan I. Buchanan, J. C. McLean, Ruth M. Perrott, Margaret E. E. Ellis, D. Miller.
D.G.O.—A. Aziz, U. Bardolai, H. K. Brar, N. M. Damle, D. S. Desai, W. G. Dixon, H. Kessel, M. W. Livingston, A. Mansi, A. S. Murad, Z. Nasiruddin, W. F. Rassam, I. M. Shrivada, Sarah T. Thomas.

* Second Class Honours.

UNIVERSITY OF DURHAM

Edgar Alexander Park, M.D., D.A., has been appointed Professor of Anaesthetics at King's College, Newcastle-upon-Tyne.

UNIVERSITY OF LONDON

James Livingstone Livingstone, M.D., F.R.C.P., has been appointed a Fellow of King's College.

A Special University Lecture on "Hypersensitivity in Disease" will be delivered by Professor J. H. Biggart, M.D., Musgrave Professor of Pathology in Queen's University, Belfast, at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C., on Friday, April 8, at 5.30 p.m., with Professor Wilson Smith, M.D., F.R.S., in the chair. The lecture is addressed to students of the University and to others interested in the subject and admission is free, without ticket.

UNIVERSITY OF MANCHESTER

The following candidates have been approved at the examination indicated:

D.P.M.—Part I: L. Couper, R. Halliday, R. McDonald, J. R. M. Mackie, H. J. B. Miller, P. H. Mitchell, Margaret I. Platt.

UNIVERSITY OF LEEDS

At a meeting of the Council of the University on March 16 R. J. Still, M.B., B.Chir., was appointed University Medical Officer from May 1.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The following lectures will be delivered at the College (Lincoln's Inn Fields, London, W.C.) at 5 p.m. each day: April 1, Erasmus Wilson Demonstration by Mr. Guy Blackburn, "Diseases of the Thyroid Gland"; April 28, Hunterian Lecture by Professor Charles F. M. Saint (Capetown), "Stomatodaeal Ruminations, Clinical and Non-clinical"; April 29, Hunterian Lecture by Professor R. I. Harris (Toronto), "Spondylolisthesis." The lectures are open to those attending courses at the College and to all other medical practitioners, dental surgeons, and advanced students.

The Services

NAVAL MEDICAL COMPASSIONATE FUND

A meeting of the subscribers of the Naval Medical Compassionate Fund will be held on Friday, April 22, at 3 p.m., at the Medical Department of the Navy, Queen Anne's Mansions, St. James's Park, London, S.W., to elect six directors of the fund.

DEATHS IN THE SERVICES

Major Robert William Henry Jackson, R.A.M.C. (retd.), died at his home in Caernarvon on Feb. 20. He was born in Dublin in 1864, the son of Surgeon-General Sir Robert W. Jackson, F.R.C.S.I. He graduated M.B., B.Ch., B.A.O. in 1897 at Trinity College, Dublin, obtaining the D.P.H. in the same year. He proceeded M.D. in 1892. Major Jackson was chairman of the Caernarvonshire and Anglesey Division of the B.M.A. for three years in succession during the last

war, and represented the Division in 1939, 1941, and 1942 at annual representative meetings. Two years after qualifying he entered the Army at the top of the examination list, and was attached to the second battalion Coldstream Guards. He was later posted to India, where he did excellent work in public health and hygiene as a special officer for the plague departments in Bombay and Calcutta. He saw active service on the North-west Frontier and in the Boer War. In 1907 he volunteered for duty at Kingston, Jamaica, acting as senior medical officer and special health officer, and was highly commended for his services. Major Jackson retired from the Army in 1910, but was again put on the active list during the 1914-18 war, serving as senior medical officer of the Portland Defences, Weymouth, and on hospital ships and troop transports. After the first world war he was placed in charge of the Military Hospital, Clonmel, Ireland. Although 75 years of age at the outbreak of war in 1939, he was not content to remain inactive, and immediately volunteered for duty as medical officer of the ninth battalion R.W.F. camp at Caernarvon, which post he relinquished to act as ship surgeon on the M.V. *Glenapp*, carrying munitions via the Panama Canal and the Dutch East Indies to Singapore. The vessel had to leave this port hurriedly for Australia, returning home via the Cape, owing to the Japanese capture of Singapore. Major Jackson was elected an honorary life member of the British Red Cross Society and the Venerable Order of the Hospital of St. John of Jerusalem, and was the county controller for Caernarvonshire for the Red Cross Society.—I. M. W.

Medical Notes in Parliament

ANALGESIA IN CHILDBIRTH

Mr. BEVAN on March 24 furnished the following information to Lady TWEEDSMUIR. It relates to England and Wales.

Year	Number of Domiciliary Confinements at which Midwives were in Charge (2)	Number of Domiciliary Confinements where Gas and Air Analgesia was Administered by Midwives (3)	Percentage of Col. (3) to Col. (2)
(1)			(4)
1938	289,035	1,175	0.4
1939	285,024	1,029	0.4
1940	284,227	1,545	0.5
1941	265,905	1,783	0.7
1942	274,148	1,743	0.6
1943	269,579	2,207	1.2
1944	281,769	5,102	1.8
1945	245,237	7,262	3.0
1946	298,019	20,507	6.9
1947	327,245	43,683	13.3
1948	Information not yet available		

In addition to the domiciliary confinements where a midwife was in charge there were a large number of domiciliary confinements where a doctor was in charge. These confinements numbered 95,543 in 1946 and 96,937 in 1947. Although figures were not available it was known that analgesia or anaesthesia was given in a high proportion of these doctors' cases.

Mr. Bevan further stated that analgesia was being used in the domiciliary midwifery service of 134 of the 145 county and county borough councils. Individual action was being taken with the councils of the counties and county boroughs in which it was not yet being provided.

In reply to another question Mr. Bevan said that in Leeds 100% of the domiciliary midwives employed by the city council and 65% of the hospital midwives were trained in the use of analgesia. In the six months of 1948 in which the National Health Service was in operation 35% of the domiciliary cases attended by the council's midwives had analgesia.

Figures for Scotland

Colonel GOMME-DUNCAN asked on March 22 in how many cases in Scotland was analgesia administered by domiciliary midwives or nurses trained in midwifery in the years 1938, 1944, 1947, and 1948 respectively.

Mr. WOODBURN replied that there could not have been any cases in 1938 and 1944, because it was only in July, 1946, that the Central Midwives Board for Scotland authorized the administration of analgesia by midwives. In 1947 there were 120 cases and in 1948, according to preliminary returns, about 800. Mr. Woodburn further stated that in Scotland training in analgesia was being given to certified midwives at the rate of almost 250 a year, and to all student midwives numbering about 600 a year. He hoped that by the end of 1950 over three-quarters of the midwives then practising in Scotland would have had this training.

Examination of National Service Men

Replying on March 15 to a question by Mr. GRANVILLE SHARP on the medical examination of men for National Service, Mr. ISAACS said there had been no general raising of the medical standards, but a revised system of medical classification, known as the Pulheems system, which was introduced in June, 1948, resulted in a more accurate assessment of a man's physical and mental fitness for service. Certain improvements in the methods of medical examination were also introduced towards the end of 1948. The effect of these changes could not yet be fully assessed, but the latest available figures showed a slight increase in the proportion of men rejected as unfit for service. Two major changes had been made in the medical examination. Mass radiography was undertaken and the examination for ear troubles was more intensive. At the moment the percentage of rejections was 15.9 against 13.5. The increase was mainly due to the innovations which he had mentioned.

"Dogger Bank Itch"

Mr. STEELE, replying on March 15 to Dr. BARNETT STROSS, said he did not know if a ruling had been given on whether fishermen in the North Sea who developed dermatitis from irritation by the sea chervil were entitled to workmen's compensation. Interpretation of the regulations was a matter for the appropriate authorities under the Industrial Injuries Act. This type of dermatitis was the subject of an annotation in our issue of Feb. 26 (p. 358).

Handicapped Persons' Welfare—Advisory Council.—Lord Rushcliffe will be chairman of the Advisory Council on the Welfare of Handicapped Persons appointed under the National Assistance Act. The only medical member of the Council is Dr. Fraser Brockington, who is medical officer of health of West Riding County Council. The Council will advise the Minister on the development of welfare services for the blind, deaf and dumb, and cripples.

EPIDEMIOLOGICAL NOTES

Influenza

There were 360 deaths in the great towns in the week ended March 19, compared with 321 in the previous week. There were small increases in the West Riding towns but the principal increases were in the Midlands; Birmingham, for example, had 37 deaths against 20 in the previous week. In Greater London a small decrease from 83 to 71 deaths was noted.

Discussion of Table

In *England and Wales* the only notable change in the trends of infectious diseases was a decrease of 1,314 in the notifications of measles. There were decreases also in the incidence of whooping-cough 32, dysentery 16, and scarlet fever 11.

The largest falls in the notifications of measles were Yorkshire West Riding 396, Essex 281, Lancashire 219, Somerset 203, Southampton 188, Nottinghamshire 116, and Leicestershire 109; the largest rises in the notifications were Warwickshire 92, Surrey 79, and Middlesex 58.

Notifications of diphtheria fell by 7 in London and in Lancashire. The only appreciable change in the incidence of scarlet fever was a decrease of 46 in Lancashire. The notifications of whooping-cough fell by 33 in Yorkshire West Riding.

Of the 49 cases of dysentery 19 were notified in Lancashire (Liverpool C.B. 8).

In *Scotland*, apart from decreases in the incidence of acute primary pneumonia 37 and whooping-cough 16, the notifications of infectious diseases remained practically unchanged. Almost two-thirds of the cases of diphtheria and dysentery were notified in Glasgow.

In *Eire* there were decreases in the notifications of whooping-cough 43, measles 38, and diarrhoea and enteritis 11. The largest of the local outbreaks during the week were 19 cases of measles in Donegal, Stranorlar R.D., and 17 cases of scarlet fever in Kilkenny, Kilkenny U.D.

In *Northern Ireland* the notifications of measles declined by 32, while a rise of 22 was recorded in the incidence of whooping-cough. The largest fall in the notifications of measles was 21 in Antrim county, and the largest increases in the notifications of whooping-cough were Belfast C.B. 15 and Tyrone county 14.

Week Ending March 19

The notifications of infectious diseases in *England and Wales* during the week included scarlet fever 1,209, whooping-cough 2,790, diphtheria 114, measles 16,275, acute pneumonia 1,524, cerebrospinal fever 57, acute poliomyelitis 18, dysentery 35, paratyphoid 2, and typhoid 3.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended March 12.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Principal Diseases, are for: (a) The 126 great towns in England and Wales, (b) London (administrative county), (c) The 13 principal towns in Eire, (d) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	35	4	16	3	1	55	5	25	1	1
Deaths	—	1	—	—	—	—	—	—	—	—
Diphtheria	101	6	32	1	5	173	19	50	13	8
Deaths	1	—	—	—	—	2	1	—	—	—
Dysentery	49	3	20	—	1	213	23	72	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	33	8	6	—	—	40	4	3
Deaths	—	—	—	—	—	—	1	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	—	—	—	—	—	—	—
Deaths	50	2	5	38	1	50	6	11	36	2
Measles*	17,305	1034	164	137	182	8,449	1257	614	78	39
Deaths†	—	—	—	—	—	—	—	2	1	1
Ophthalmia neonatorum	34	3	8	—	—	42	3	13	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	3	—	2(B)	—	—	3	—	1(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal Deaths (from influenza)†	1,514	78	22	13	12	933	49	4	6	8
Deaths	321	39	7	1	4	31	8	—	—	—
Pneumonia, primary	—	—	224	42	—	—	—	320	38	—
Deaths	527	83	13	22	—	293	71	6	8	—
Polio-encephalitis, acute	3	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	17	2	1	1	—	20	4	2	4	—
Deaths‡	1	—	—	—	—	—	—	—	—	—
Puerperal fever	—	—	10	—	—	—	—	10	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| .. ..	95	5	2	2	1	120	9	7	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,178	69	186	102	22	2,027	123	319	50	46
Deaths†	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	1	—	—	2	1	4	1	—	3	1
Deaths	1	1	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,621	189	231	63	88	3,418	236	49	41	15
Deaths	15	—	2	1	—	15	2	—	—	—
Deaths (0-1 year)	349	38	42	34	13	380	55	61	23	12
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	7,206	1116	694	241	192	5,581	988	680	205	140
Annual death rate (per 1,000 persons living)	—	—	13.9	14.9	—	—	—	13.7	12.8	—
Live births	7,963	1311	969	452	249	8,738	1419	986	463	215
Annual rate per 1,000 persons living	—	—	19.4	28.0	—	—	—	19.9	29.0	—
Stillbirths	204	19	24	—	—	240	23	36	—	—
Rate per 1,000 total births (including stillborn)	—	—	24	—	—	—	—	35	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

Medical News

Chloromycetin Synthesized

It has been announced by Parke Davis and Company that the antibiotic chloromycetin (to which reference has recently been made in two leading articles—Aug 28, 1948, p 428, and Dec 25, 1948, p 1113) has been produced artificially in their research laboratories in the U.S.A. A copy of the structural formula was handed to Sir Alexander Fleming in London on March 30. The substance, which can be manufactured on a commercial scale, has been tested clinically and found effective in a number of diseases. The formula is as follows: (I) ψ -1 p nitrophenyl 2 dichloroacetamidopropyl-1, 3 diol

Imperial Cancer Research Fund

At a meeting of the Imperial Cancer Research Fund held on March 8 Dr James Cairge was appointed General Superintendent of Investigations and Director of the Central Laboratory of the Fund from August, 1949, in succession to Professor W. E. Gye. Sir Henry Dale was elected a Life Governor of the Fund in recognition of his distinguished services as a member of council.

Chinese Medical Visitor

Dr Li Fang-Yun, Professor of Public Hygiene in the National Kweichang Medical College, who has been working in the U.S.A., arrived in Britain on March 15 for a month's visit under the auspices of the British Council before returning to China. He is studying the undergraduate teaching of preventive medicine and public health. After spending a week at the London School of Hygiene and Tropical Medicine and then visiting the Woolwich Health Department, the Department of Bacteriology at the London Hospital, and the Ministry of Health, he goes on April 3 to Edinburgh to spend two weeks in the Department of Social Hygiene of Edinburgh University. Dr Li carried out a rural health experiment as technical expert to the Mass Education Movement at Ting Hsien between 1932 and 1937. He was Director of the Public Health Division of the Provincial Health Department of Kiangsi from 1937 to 1939, and in 1945 was appointed Professor of Public Hygiene in the National Medical College.

Professor Haddow in Italy

Professor Alexander Haddow, Professor of Experimental Pathology in the University of London and Director of the Chester Beatty Research Institute at the Royal Cancer Hospital, Fulham Road, left London on March 25 for a lecture tour in Italy under the auspices of the British Council. He is speaking at Milan, Bologna, Florence, Rome, and Turin on 'Recent Advances in the Chemotherapy of Cancer' and 'Mode of Action of the Nitrogen Mustards—a New Working Hypothesis and Its Possible Relation to Carcinogenesis'. His lectures are being arranged with the co-operation of Professor Rondoni, the leading cancerologist of Milan, and of Professor Bastianelli, head of the Cancer Institute in Rome.

The Late Alderman William Hyde

A memorial window was dedicated to the memory of the late Alderman William Hyde, C.B.E., J.P. in the parish church at Toddington, Beds on Dec 11, 1948. Alderman Hyde, who died in 1945, was the first secretary of the Nuffield Provincial Hospitals Trust, which was founded in 1939. He had a very wide knowledge of medical services, and at the time of his death Sir Farquhar Buzzard wrote of him: "Without any professional training or background he became an acknowledged authority in many spheres of voluntary and benevolent enterprises, he was equally at home in National Health Service in social insurance, in friendly and approved societies, and was recognized as the pioneer of provident associations, which he developed throughout the country. Having always been interested in hospitals, both in the voluntary and local government fields, he naturally and appropriately was chosen by the Nuffield Provincial Hospitals Trust as its leading active officer, thus becoming mainly responsible for that body's efforts to promote the regional co-ordination of health and hospital services."

Australian Postgraduate Education

A Federation to be known as the Australian Postgraduate Federation in Medicine has been formed with the object of encouraging and advancing postgraduate medical education, work, and research in Australia. In addition, the Federation will deal with matters common to more than one Postgraduate Committee, and particularly with the arrangements for visits of teachers to Australia. The members of the Federation are the Melbourne Permanent Postgraduate Committee, the Postgraduate Committee in Medicine in the University of Sydney, the Postgraduate Committee in Medicine of the University of Adelaide, the Postgraduate Medical Education Committee of the University of Queensland, the Western Australian Postgraduate Committee (British Medical Association), and the Tasmanian Postgraduate Committee in Medicine. Provision has been made to admit to membership organizations from New Zealand or

elsewhere on certain conditions. A president, vice president, and an executive committee will be appointed each year, and the executive committee will be elected from persons nominated by the Postgraduate Committee of the State chosen for this purpose by the Federation. The Postgraduate Committee in Medicine in the University of Sydney was selected to provide the first executive. The meetings of the Federation will usually be arranged at times when inter-State meetings of medical organizations are held and will thus ordinarily take place at times of the annual meetings of the Royal Colleges and during Congresses of the British Medical Association.

Hunterian Society

The council of the Hunterian Society has chosen "The Treatment of Varicose Veins and Their Complications" as the subject for the 1949 competition for the society's gold medal which is awarded for the best essay submitted by any general practitioner. Further details may be obtained from the honorary secretary of the society, Mr J. C. Ainsworth Davis, 48, Wimpole Street, London, W.1, by whom essays must be received by Dec 31.

Influenza Centre

An Influenza Information Centre has been established in the United States at Bethesda, Maryland, to serve as headquarters for American participation in the World Health Organization study of influenza. The centre will be concerned with the identification of influenza virus from outbreaks in the U.S.A., and will assess the usefulness of including new strains in commercial vaccines. It will also serve as a liaison office between American laboratories and the International Influenza Centre, which was established at the National Institute for Medical Research in London in 1947.

Royal Sanitary Institute Prizes

The Council of the Royal Sanitary Institute have announced particulars of the prize essay competitions for 1949. Three prizes are offered: the John Edward Worth Prize of £40 for an essay on practical improvements of appliances or inventions used or proposed to be used in or about dwelling houses; the John S. Owens Prize of £15 for an essay on the ventilation of dwellings and its effect on human health; and the Henry Saxon Snell Prize of 50 guineas for an essay describing suggested improvements in the construction or adaptation of sanitary appliances. Intending competitors should apply to the Royal Sanitary Institute, 90, Buckingham Palace Road, London, S.W.1, for a copy of the general conditions.

Wills

Dr Alexander Wilson Gill, of Barlaston, Staffs, left £41,453. Dr Charles Braxton Mooring Aldridge, of Bournemouth, left £56,417. Dr Edward Augustus Bullmore, formerly of Wisbech, St. Peter, Cambs, £36,871. Dr Robert Warren Merrick, of South Croydon, £38,734, and Dr Herbert Edmund Vincent, of Reigate, £4,506.

COMING EVENTS

Royal Microscopical Society

A special meeting of all sections of the Royal Microscopical Society will be held at B.M.A. House, Tavistock Square, London, W.C., on Wednesday, April 6, at 4.30 for 5 p.m., when Dr J. A. Murray, F.R.S., a past president of the society, will be admitted to the Honorary Fellowship. Demonstrations will be given by Mr H. G. Crabtree on "Liver Tumours Induced by Azo-dyes," by Dr E. Vasquez Lopes on "Nerve Endings in the Posterior Pituitary," and by Mr J. Smiles on "Recent Applications of Phase-contrast Microscopy to Biological Research." Short communications will be presented by Dr G. M. Findlay on "Primary Carcinoma of the Liver," by Dr L. Foulds on "Vesicular Tumours Induced in Mice by 2-acetylaminofluorene," by Mr E. Horne, D.Sc., on "Lung Tumours Induced by a New Technique," and by Dr F. R. Selbie on "Malignant Transformation." The meeting will be followed by a dinner at the Holborn Restaurant at 7 for 7.30 p.m.

Regional Consultants Committee for East Anglia

A meeting of the Regional Committee of Consultants and Specialists for East Anglia will be held at Rutland Arms Hotel, Newmarket, on Monday, April 11, at 8.15 p.m., when, among other things, the proposed terms and conditions of service of hospital medical and dental staff will be considered. The meeting will be preceded by dinner at 7.15 p.m.

Bristol Medical Reunion Dinner

The Bristol Medical Reunion Dinner will be held at the Victoria Rooms, Bristol, on Wednesday, April 20, 1949, at 7.30 p.m. and not on Saturday, April 30, as was stated in our issue of March 5 (p. 419). Particulars may be obtained from Dr Richard Clarke, Harley Lodge, Clifton Down, Clifton, Bristol, 8.

Society of Anaesthetists of the South-West Metropolitan Region

The Society of Anaesthetists of the South-West Metropolitan Region has arranged a meeting to be held at St. Helier Hospital, Carshalton, Surrey, on Saturday, April 23. Anaesthetists from other areas will be welcome, and those wishing to attend should communicate with the honorary secretary, Dr. W. Alexander Low, Department of Anaesthetics, St. Thomas's Hospital, London, S.E.1, not later than April 4.

University of Leeds Postgraduate Committee

A refresher course for general practitioners will be held at the University of Leeds during the two weeks beginning May 2. The fee for the course is £10 10s., or £5 5s. for one week. Applications for places in the course, and for particulars of the financial assistance available to (a) demobilized general practitioners within one year of release from the Forces, and to (b) doctors engaged in practice in the National Health Service, should be made to the senior administrative Officer, School of Medicine, Leeds, 2, it being stated whether the applicant falls into class (a) or class (b), or whether he proposes to attend at his own expense.

Spanish Paediatric Congress

The 7th National Congress of Paediatrics will be held at Seville on May 9-14 under the presidency of Professor González-Meneses Jimenez and Dr. Carlos Sainz de los Terreros. Information may be obtained from the Secretary-General, Dr. Morales y González, Bailén, 49, Sevilla.

APPOINTMENTS

BAILEY, NEIL, M.B., Ch.B., Senior Resident Medical Officer, Fulham Maternity Hospital.

KEITH, G. ELIZABETH, M.B., B.S., F.R.C.S.Ed., M.R.C.O.G., Honorary Gynaecologist, Hôpital et Dispensaire Français, and Consultant Obstetrician, Wimbledon Antenatal Clinics.

MITCHELL, ROBERT, M.B., Ch.B., D.P.H., Deputy Medical Officer of Health, County Borough of Bury, Lancashire.

SOCIETIES AND LECTURES

Friday

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—April 1, 5 p.m., "*Diseases of the Thyroid Gland*," Erasmus Wilson Demonstration by Mr. Guy Blackburn.

WHIPPS CROSS HOSPITAL MEDICAL SOCIETY.—At Whipps Cross Hospital, Leytonstone, E., April 1, 8.30 p.m., "*Emergency gynaecology*," by Mr. A. Galletly.

Tuesday

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, London, S.W.—April 5, 5 p.m., "*Problems of Ageing and Chronic Sickness*," Lumlaine Lecture by Dr. A. P. Thomson.

Wednesday

HARVEIAN SOCIETY OF LONDON.—At 26, Portland Place, London, W., April 6, 8.15 p.m., "*Cineradiography*," by Dr. Russell J. Reynolds.

INSTITUTE OF LARYNGOLOGY AND OTOTOLOGY, 330, Gray's Inn Road, London, W.C.—April 6, 12 noon, "*The Larynx: Tuberculosis, Lupus, Syphilis*," by Mr. J. D. McLaggan.

LONDON COUNTY MEDICAL SOCIETY.—At St. James's Hospital, Ouseley Road, Balham, S.W., April 6, 3 p.m., clinical meeting.

ROYAL INSTITUTE OF PUBLIC HEALTH AND HYGIENE.—At 28, Portland Place, London, W., April 6, 3.30 p.m., "*The Growing Family under Modern Home Conditions*," by Dr. L. G. Housden.

ROYAL MICROSCOPICAL SOCIETY.—(1) At B.M.A. House Tavistock Square, London, W.C., April 6, 4.30 p.m. for 5 p.m., Special meeting of all sections. Demonstrations: "*Liver Tumours Induced by Azo-dyes*," by H. G. Crabtree, M.Sc., A.R.I.C., "*Nerve Endings in the Posterior Pituitary*," by Dr. E. Vasquez Lopes, "*Recent Applications of Phase-Contrast Microscopy to Biological Research*," by J. Smiles, A.R.C.S., F.R.M.S. Short communications: "*Primary Carcinoma of the Liver*," by Dr. G. M. Findlay, "*Vesical Tumours Induced in Mice by 2-Acetyl-amino-Fluorene*," by Dr. L. Foulds, "*Lung Tumours Induced by a New Technique*," by E. W. Horning, D.Sc., "*Malignant Transformation*," by F. R. Selbie, Ph.D. (2) At Holborn Restaurant, London, W.C., 7 p.m. for 7.30 p.m., Dinner.

ROYAL SANITARY INSTITUTE.—At 90, Buckingham Palace Road, London, S.W., April 6, 2.30 p.m., "*The Disinfection of Ice-cream-Serving Equipment*," (a) "*The Problem*," by Dr. J. G. Davies, Ph.D., D.Sc., F.R.I.C.; (b) "*The Use of Quaternary Ammonium Compounds*," by Mr. J. C. L. Resuggan, F.R.I.C.; (c) "*Technique and Results*," by Miss Roberta Ives.

SOCIETY OF PUBLIC ANALYSTS.—At Gas Industry House, 1, Grosvenor Place, London, S.W., April 6, 7 p.m., Ordinary meeting. Papers will be presented and discussed.

Thursday

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, London, S.W.—April 7, 5 p.m., "*Problems of Ageing and Chronic Sickness*," Lumlaine Lecture by Dr. A. P. Thomson.

ROYAL PHOTOGRAPHIC SOCIETY: MEDICAL GROUP, 16, Prince's Gate, London, S.W.—April 7, 7 p.m., "*Group Hospital Medical Photography*," by Mr. J. F. V. Larway.

Friday

LONDON UNIVERSITY.—At London School of Hygiene and Tropical Medicine, Keppel Street, W.C., April 8, 5.30 p.m., "*Hypersensitivity in Disease*," by Professor J. H. Biggart.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—At Miller Hospital, Greenwich High Road, London, S.E., April 8, 8.30 p.m. Presidential address by Dr. J. M. Loftus.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Chacia.—On Feb. 5, 1949, to Joan (née Tanner), M.B., B.S., wife of Edm. W. Chacia, a daughter—Helen Joan Barbara.

Finlayson.—On March 21, 1949, at Falkirk and District Royal Infirmary, Dr. and Mrs. Finlayson, 8, Roschall Terrace, Falkirk, a son.

Hamilton.—On March 9, 1949, at the Simpson Memorial Pavilion, Edinburgh Royal Infirmary, to Dr. Gwyneth Maclean Hamilton, wife of Lieut. J. R. Hamilton, a son.

Mather.—On March 20, 1949, at York, to Dr. Maud Mather (née Bushan wife of Dr. John S. Mather, Shilton Thorpe, York, a daughter.

Miller.—On March 21, 1949, at Fernwood House, Newcastle-upon-Tyne, Dr. Eileen Miller (née Baird), wife of Dr. Henry G. Miller, a son.

DEATHS

Carrey.—On March 5, 1949, John Carrey, M.B., B.Ch., B.Sc., Lieut. Colonel, I.M.S., retired, of Eckett Lodge, Beckett Road, Worcester.

Carter.—Joseph Hamilton Carter, M.B., Ch.B. (Edin.), of Trinidad, B.W.I. Cruise.—On March 23, 1949, Charles Hawkins Craig, M.B., Ch.B. (Ed.), of Station Road, Cheddle Hulme, Stockport, aged 78.

Crawford.—On March 14, 1949, John Martin Maynard Crawford, O.I. F.R.C.S.I., Lieutenant-Colonel, R.A.M.C., retired.

Croxford.—On March 15, 1949, Roland John Croxford, L.R.C.P. & S. L.R.F.P.S. (Glas.), of Queen's Park, Manchester.

Davenport.—On March 22, 1949, at Middlesex Hospital, London, W., Perc. Arthur Clive Davenport, M.B., Ch.M., Lieut. Colonel, I.M.S., ret. of 26, Chestow Villas, London, W.

Dobbin.—On March 13, 1949, at 500, Caledonian Road, London, N., W. Arthur Edwin Dobbin, M.R.C.S., L.R.C.P.

Grinling.—On March 14, 1949, at 22, North Quadrant, Sheffield, Philip New Grinling, M.B., B.S., aged 41.

Hamilton.—On March 17, 1949, at Adelaide, South Australia, Charles W. Hamilton, M.D.

Hay.—On March 9, 1949, Alexander Robertson Forrest Hay, M.B., Ch.B., 1, Golden Hillock Road, Birmingham, aged 66.

Hayward.—On March 12, 1949, at Hileot, Wiltshire, John At Hayward, M.D., M.R.C.P., F.R.C.S., aged 83.

Hope.—On March 21, 1949, at 9, Grove Avenue, Gosforth, Newcastle-upon-Tyne, M. Edith Hope, M.R.C.S., L.R.C.P., D.M.R.E., of 62, Wim Street, London, W.

Henry.—On March 15, 1949, at Ennerdale, Westrow Road, Southampton Robert Henry, M.R.C.S., L.R.C.P., aged 83.

Johnson.—On March 15, 1949, at The Acres Heswall, Cheshire, Wil Johnson, M.C., M.D., F.R.C.P.

Johnson.—On March 19, 1949, in a car accident at Oxford, Brian Ins Johnson, B.M., B.Ch.

Kent.—On March 16, 1949, Charles Arthur Kent, M.D., D.P.H., of Do aged 81.

Lyne.—On March 19, 1949, at 348, Kew Road, Kew, Surrey, Charles V. Lyne, M.R.C.S., L.R.C.P., aged 82.

MacLaren.—On March 17, 1949, Henry Colin MacLaren, M.B., B.Chir., D.A., of 100, Brampton Road, Stanwix, aged 37.

McNair.—On March 7, 1949, at 4, Barrington Crescent, Stockton, David McNair, L.R.C.P. & S. (Ed.), L.R.F.P.S. (Glas.).

Martin.—On March 13, 1949, at Manchester, Justin Francis Martin, M.B., B.Ch., D.P.H., aged 36.

Martin.—On March 12, 1949, Alfred Eugene Martin, M.D., of Littlecote, Furze Hill Road, Boreham Wood, Herts, aged 74.

Perkins.—On March 21, 1949, at Tunbridge Wells, Philip Meyler Perkins, M.D., aged 73.

Price.—On March 17, 1949, Clifford Price, M.R.C.S., L.R.C.P., of Homefield, Garratts Lane, Banstead, Surrey.

Steel.—On March 10, 1949, at 32, Roe Lane, Southport, Lanes, Richmond Steel, M.B., Ch.B.

Stewart.—On March 14, 1949, at Princess Beatrice Hospital, Howard Douglas Stewart, L.R.C.P. & S. (Ed.), L.R.F.P.S. (Glas.), of 10, Broomhouse Road, London, S.W.

Stewart.—Samuel Dudley Stewart, M.B., Ch.B. (Ed.), of Trinidad, B.W.I.

Vaughan-Sawyer.—On March 9, 1949, at Mount Vernon Hospital, Northwood, Middlesex, Ethel May Vaughan-Sawyer, M.D., late of 131, Harley Street, London, W.1.

Wadham.—On March 14, 1949, at Ryde, Isle of Wight, Frank Jesser Wadham, M.R.C.S., L.R.C.P.

Whitehead.—Recently, at Bridlington, Arthur Ernest Whitehead, L.R.C.P. & S. (Ed.), L.R.F.P.S. (Glas.), aged 75.

Whitting.—On March 17, 1949, at Umbrella Cottage, Lyme Regis, Robert Everard Whitting, M.C., M.D.

Yorke-Davies.—On March 11, 1949, at Nakuru, Kenya Colony, John Wynne Yorke-Davies, M.R.C.S., L.R.C.P.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Spread of Tuberculosis by Books

Q.—Can books handled by tuberculous patients carry tubercle bacilli? If so, are such books, if untreated, dangerous to others, and can they be satisfactorily sterilized at home?

A.—Although observations on the possibility of spreading tuberculosis by books are not numerous, there is little doubt that when books are used by patients with positive sputum tubercle bacilli are deposited on them in varying amount. The degree to which such books become infected varies widely under different conditions, but from the investigations of Kenwood and Dove in 1915, and later of Roodhouse Gloyne, it may be concluded that at least 50% of the books used by patients with open tuberculosis become infected. Fortunately the bacilli become non-viable in about 48 hours when they are dry, so that Tytler considers that two days after the books have left tuberculous patients only 1 to 5% of the bacilli deposited on them are living, provided no moisture is present. After six days the chances of finding living bacilli are remote. There is therefore a risk to non-tuberculous persons, and particularly to children, in handling books used recently by the tuberculous. The risk decreases rapidly after the first two days, and is also dependent on the habits of the particular tuberculous patient. The danger is, of course, greater if the patient moistens his finger when turning over the pages or coughs directly on to the book he is reading. There is little risk in passing books from one tuberculous patient to another, as any superinfection or reinfection will not be large and will in all probability have no serious effect; but when healthy persons are also concerned all books used by the tuberculous should be kept in quarantine for at least one month before redistribution. To make quite certain that no viable bacilli are carried, books should be disinfected either by exposing the pages to bright sunlight for two or three days or by placing them in an oven for 30 minutes with an open dish of water at a temperature of 95° C.

Nice has shown that books can be sterilized in moist air at 80° C. and with 30 to 40% humidity for 32 hours without causing damage. Sterilization by formalin or formaldehyde vapour is falling more and more into disfavour, as it accomplishes only a surface disinfection and possesses small powers of penetration. It is therefore a possible means of disinfection only with books printed on smooth, shiny paper.

Spread of Infection in Fever Hospitals

Q.—In most fever hospitals it is traditional to forbid visiting by relatives and writing letters by patients, to disinfect all clothes worn by patients, and to burn all newspapers and magazines. Should this system be modified in view of recent knowledge of the transmission of infection?

A.—Recent knowledge of the transmission of infection has shown the importance of indirect modes of spread, particularly by infected dust disseminated into the air from fabrics, floors, and fomites. Thus, secondary streptococcal infection among children in hospital with measles or scarlet fever has been associated with gross streptococcal contamination of the bed linen and the dust of the ward. Again, it has been shown that a nasal carrier of haemolytic streptococci will quickly contaminate his clothing, his handkerchief, and his immediate environment. The nose carrier is probably important in the dissemination of other respiratory bacterial infections, such as diphtheria and pneumonia, and possibly of certain virus infections—for example, the common cold. Therefore gross contamination of the patient's clothing or of any material handled by him may be the means of transferring infection to others at a distance, so that the practice of disinfecting clothing and burning newspapers and magazines handled by infectious patients is justifiable for certain diseases at least. Letters written by patients may be disinfected by formalin

vapour. Visiting by children in infectious diseases wards should be forbidden, and only near relatives of dangerously ill or long-stay patients should be allowed to visit. Since, besides the risk of infection to himself, the visitor may be a source of danger to the patient, he should wear a face-mask and gown when visiting.

Notification of Measles and Whooping-cough

Q.—Does Section 148 of the Public Health Act, 1936 (penalty on exposure of persons knowing that they are suffering from a notifiable disease), apply to whooping-cough and measles, which were made compulsorily notifiable under regulations dated 1940? If Section 148 does not apply, presumably there is some good reason. I shall be glad to have your opinion.

A.—The regulations set out in Section 148 of the Public Health Act, 1936, do apply to measles and whooping-cough, as to other infectious diseases made notifiable under regulation or Order since the Infectious Diseases (Notification) Extension Act, 1899. The copy of the Statutory Rules and Orders, 1938, No. 1100, which apply to London, clearly expresses the Minister's intention—namely, 1 (2) "These Regulations shall come into operation on the 1st day of October, 1938, and shall be enforced and executed by the sanitary authorities for the purposes of the Public Health (London) Act, 1936." The Regulations (No. 204) were applied to England and Wales in February, 1940, superseding the provisional regulations of October, 1939. Nevertheless, in practice it is usual to differentiate between the dangerous infectious diseases, such as diphtheria, smallpox, and typhoid fever, and the diseases made notifiable subsequently by regulation, such as dysentery, poliomyelitis, and measles, as regards the need for strict isolation during life and pending burial in the event of death.

Umbilical Hernia

Q.—What is the most efficient treatment for a moderate degree of umbilical hernia in an infant? How long should palliative measures be carried out before resorting to operation?

A.—In discussing the question of treating umbilical hernia in infants the first point to consider is diagnosis. The true umbilical hernia comes through the centre of the umbilicus and has a "collar" of fibrous tissue from the linea alba that can be felt round its neck under the skin. The supra-umbilical hernia is a bulge just above the umbilicus, and the opening is wide, with thin edges and no collar. The true umbilical hernia will almost invariably close spontaneously—a process that can be much accelerated if protrusion of the abdominal contents is prevented by strapping. Two-inch (5-cm.) inextensible zinc oxide plaster should be pulled across the abdomen to produce a vertical skin fold over the umbilicus; it will stay in position for anything up to a fortnight if kept out of the bath. Placing a penny or a pad under it diminishes its efficiency, and rubber belts are useless, as they never remain in position. The supra-umbilical hernia has no tendency to spontaneous closure, and usually needs operation at the age of 5 or so. Subcutaneous ligation is ineffective in this case, and unnecessary in the true umbilical hernia. An important point in considering treatment is that an umbilical hernia in a child is never dangerous to life, and that the operation may produce a surprising amount of shock.

Peritoneoscopy

Q.—I should be glad if you would give me references to peritoneoscopy. Is it of value, and what are the risks and contraindications?

A.—The method has a limited diagnostic value—limited because only certain areas of the peritoneal cavity can be visualized, because palpation is not possible as in laparotomy, and because of the technical difficulties and risks. The latter are not very great: Ruddock reported one death in 1,500 examinations, in this case from haemorrhage following liver biopsy. Previous inflammatory disease may produce adhesions which not only render examination difficult but may anchor coils of intestine to the anterior abdominal wall so that they are exposed to the risk of puncture when the instrument is introduced. Some surgical emphysema at the site of puncture is usual, but is of small import. The likelihood of the formation of adhesions and the presence of acute intra-abdominal infections are the two chief contraindications. Useful descriptions

of peritoneoscopy will be found in the following articles: Hamilton, J. E., *Surg. Gynec. Obstet.*, 1942, 74, 505; Ruddock, J. C., *ibid.*, 1939, 65, 623; Hosford, J., *British Medical Journal*, 1948, 2, 348; Walker, R. M., *et al.*, *Proc. R. Soc. Med.*, 1943, 36, 445.

Short-wave Diathermy

Q.—Could you tell me the main uses of short-wave diathermy, and could you also recommend some books on the subject?

A.—Short-wave diathermy is used to generate heat, which it produces within the tissues instead of transmitting it by conduction or radiation. The heat can be produced superficially or deeply according to the position of the electrodes. As it is not necessary for the electrodes to be in contact with the skin short-wave diathermy is very convenient. All conditions in which heat is indicated can be treated by this method. It is valuable in the treatment of "rheumatic" conditions, of infections, both superficial and deep (as in the pelvis), and of the neuralgias. For further information the questioner is referred to the very full account of short-wave diathermy in Krusen's *Physical Medicine* (1941, Saunders, Philadelphia) and to Kovaes's *Electrotherapy and Light Therapy* (1945, Kimpton, London).

Inheritance of Fragilitas Ossium

Q.—A patient has just lost her second child, who died from fragilitas ossium congenita. The first child was normal. The mother is young, but nothing is known of her family. The father is also young, and there is no history of a similar case in his family. What is the possibility of subsequent children having this disease?

A.—This is a difficult question to answer. Fragilitas ossium frequently shows dominant transmission, but skipping of generations is observed in a proportion of families. There is some suggestion of familial incidence—that is, a recessive gene—in certain recorded pedigrees, and sporadic cases appear to be common. There is probably a good chance that this is a sporadic instance, whether due to mutation or not, and therefore that any subsequent children will be normal. On the other hand, in view of the absence of the mother's family history, dominant inheritance with skipping is quite possible. There is also a probability, perhaps, that this is a recessive gene, with the usual 1 in 4 chance for any subsequent pregnancy. It is impossible to calculate any overall chance, however approximate; but on the whole it seems likeliest that subsequent children should be normal.

Myopic School-children

Q.—It has been customary to restrict close work for school-children with myopia, but I am given to understand that this is no longer considered necessary. Is this true? What is the present position?

A.—The modification of school work for myopes is still an open question. The problem may be regarded under three heads—the effect on the myopia, the effect on learning, and the psychological effect on the child. The effect on myopia varies according to different observers. A committee considering the "partially sighted child" some years ago found that in high myopia the child who left the myope school was one or two dioptries less myopic than the child who had been through a less restricted training. This seemed to fall in with theory, but unfortunately further investigation showed that both types of patient were equally myopic two years later. In these cases there was no doubt about which group of children were the better fitted for life. On the other hand, a school-teacher faced with a large class has not always the time to help the lame chick along, and so the myope suffers in crowded schools. The child who is segregated in a myope school will probably get more of an inferiority complex than the myope in an ordinary school, who is naturally a "duffer" at games. These are only one or two pointers which show how complex the problem is and why there is a diversity of opinion about the best approach to it. There is no doubt that the present-day trend is towards the type of teaching from which the patient can derive the greatest amount of educational benefit, the myopic changes being relegated to a position of subsidiary importance in coming to a decision.

Claustrophobia

Q.—A man of 35 suffers from claustrophobia. He served with distinction during the war, but since his return to civil employment his condition seems to be getting worse—for instance, travelling in the Tube causes him anxiety. Is there any treatment to alleviate if not cure this state?

A.—This case would appear to be one of an "anxiety state"—that is, a psychological reaction determined on the one side by a susceptible constitution and on the other by some factor of stress in the patient's present situation. Most emphatically there should be an effective treatment. This will depend on discovering the nature of the stress factor, which may need some patient inquiry or may almost lie on the surface. When discovered it may be possible to eliminate it, or at least to reduce its severity. The stress may be due to a combination of circumstances. Many questions arise. Does his job satisfy him? Has he a difficult colleague? How about his home situation—his wife and children? Apart from treatment of the cause, his symptoms may be alleviated by a minor degree of sedation. He could, for instance, take a small dose of a rapidly acting sedative—such as "sodium amytal" 1 to 3 gr. (65 to 200 mg.)—before a Tube journey. The advice of a psychiatrist would probably be helpful; but in essence this is the type of problem a knowledgeable and sympathetic general practitioner could deal with on common-sense principles.

Menstruation at Age 56

Q.—Is it abnormal for a primipara of 56 to be still menstruating? She began her periods at the age of 12. Though now the bleeding is less copious, it is regular and there is no intermenstrual loss. Some hot flushes and headaches occur from time to time, but she is healthy and active, though she has always been obese. Fibroids and retroversion of the uterus have been excluded.

A.—It is unusual, but not very uncommon and not necessarily abnormal, for the menstrual cycle to continue to a relatively late age. Nevertheless it has been suggested that women who continue to menstruate after the age of 50 are more liable to develop carcinoma of the body of the uterus in later years. In the case in question there seems to be no need for alarm or for active treatment at present. If the hot flushes are menopausal the presence of a granulosa-cell tumour in the ovary is unlikely. The patient should be kept under observation and should be warned particularly to report if the bleeding becomes irregular or if she notices any intermenstrual discharge of any kind. In such an event diagnostic curettage should be carried out.

NOTES AND COMMENTS

Fat Intolerance.—Dr. A. A. BATTSON (Kampala, Uganda) writes: With reference to the question and answer on this subject ("Any Questions?" Jan. 22, p. 164), as a lifelong sufferer from fat intolerance may I suggest that yeast (in tablet form) be tried for this condition? I have recently discovered that two tablets taken with a fatty meal will raise my tolerance to normal levels. By n process of experiment I am satisfied that, for me, this is a fact.

Correction.—Owing to a printer's error the last sentence in the first column of p. 263 of the *Journal* of Feb. 12, in the article by Mr. Norman Emblin on "5,000 Deliveries without Maternal Death," was incorrect. It should have read: "It is true, then, to say that the high rate for the borough in the last decade was not due to the number of maternal deaths in the General Hospital or on the Domiciliary Service, where in the same ten-year period there were 4,389 deliveries with the death of only one woman."

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: Allottery, Western, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: Britmedads, Western, London. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, TELEPHONE: EUSTON 2111. TELEGRAMS: Medisecra, Western, London. B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY APRIL 2 1949

THE SECRETARY REPORTS

THE TRADE DISPUTES ACT

A further and fuller Opinion of Sir Valentine Holmes, K.C., on the vexed question of whether the Trade Disputes Act, 1906, applies to a medical trade union is now available. The substance of the Opinion is as follows:

A trade dispute is defined in the Trade Disputes Act, 1906, as "any dispute between employers and workmen or between workmen and workmen which is connected with the employment or non-employment or the terms of employment or with the conditions of labour of any person." "Workmen" means "all persons employed in trade or industry, whether or not in the employment of the employer with whom a trade dispute arises." There cannot, therefore, be a "trade dispute" or an act done in contemplation or furtherance of a "trade dispute" unless workmen so defined are parties to the dispute.

The following appear to be three essential points: (1) I do not think that doctors are employed in "trade or industry." (2) I do not think that doctors except in special cases such as doctors employed under a contract of service with a local authority or the like can be said to be employed under a contract of service with the Minister of Health or any committee. (3) I do not think that a person can be said to be a workman within the meaning of the Act unless he is employed under a contract of service.

As regards (1), it has been pointed out to me that in *Brimelow v. Casson*, 1924, 1 Ch. 302, it was decided that actors are employed in trade or industry. But Russell J. decided this because he said that "it seems to me that the business of presenting histrionic performances to the public for profit may fairly be described as a trade or industry in which many persons, including actors, are employed." No such reasoning can possibly be applied to the case of doctors, and with all respect it seems to me to be bordering on the absurd to say that doctors are employed in trade or industry." My attention has also been drawn to *National Association of Local Government Officers v. Bolton Corporation*, 1943, A.C. 166. In that case it was held that administrative, professional, and technical officials of the Corporation were "workmen" within the definition of the word in the National Arbitration Order. The definition in that Order of the word "workmen" did not refer to trade or industry and extended to any person who worked under a contract with an employer. I am unable to see how any assistance can be got from that case. In fact, Lord Simoo stressed the fact that the definition of workmen in the Order was "entirely different and much wider than that in the Act of 1906" with the result that the words "trade dispute" in the Order were also much wider. There are some dicta of Lord Wright which taken out of their context might support an argument that a professional worker under a contract of service might be said to be a trader. The actual decision in the case throws no light on the meaning of "trade or industry" in the 1906 Act.

As regards (2). There is no authority on this point, and I cannot do more than say that it does not seem to me that the National Health Service Act can be read as making doctors who wish to provide general medical services under the Act servants or employees of anyone.

As regards (3). It might be argued that the 1906 Act applies to everyone who is employed in trade or industry in the sense of being engaged in trade or industry and that it is immaterial that the person has no contract of service with an employer. There is no authority on this point, although I do not think that a case has ever arisen in which persons who were not employed under a contract of service have been suggested to be "workmen" within the definition of the 1906 Act. In my opinion, the word "employed" in the 1906 Act means "employed by an employer" and is not used in the sense of "taking part in a trade or industry." The Act is dealing with the relations between "employers" and "workmen" who are employed: and I find myself quite unable to read Section 5 (3) in the very wide sense suggested above.

It has been said that the perfect diagnosis can be made only in the post-mortem room. Whether or not this is true, it certainly appears that the final answer to a legal conundrum such as this can be given only in the House of Lords in rela-

tion to some legal action involving this issue. In the meantime it can be repeated that, to say the least, there is very substantial doubt whether the Trade Disputes Act of 1906 applies to a medical trade union.

Pools?

Some practitioners have doubted the need for a Central Pool for general practitioner remuneration. Why not remunerate a practitioner, they ask, by paying him an amount equal to the number of persons on his list multiplied by the nationally agreed capitation fee and leave it at that?

For the sake of argument let us assume the simpler method of paying the national capitation fee in proportion to the number of persons on a doctor's list (disregarding for the purposes of this argument the basic salary question). If the capitation fee is x and the number on a doctor's list 2,500, his public income should therefore be $2,500x$. But the practitioner in question is consulted by a person not on his list, that person needing medical attention and to be put on the doctor's list forthwith. The doctor confronted with such a situation and accepting the patient would not be properly paid if the capitation payment began only from that moment or, to be accurate, from the end of the next quarter (the quarterly payments are based on the number of persons on a doctor's list on the first day of the quarter). The doctor has, in fact, been at risk for that person without knowing it and should have been paid a capitation fee while he was at risk. This problem can be met either by some system of back payment or by assuming that doctors generally are at risk not only for the persons on their lists but for others as well. This involves paying a capitation fee in respect of both persons on their lists and persons not on their lists. If there be accepted a measure of responsibility for persons not on doctors' lists as well as those on doctors' lists the most efficient way of paying doctors for that responsibility is to make a national estimate of the total number of persons for whom doctors are at risk, including those who have not actually signed on their lists, and paying general practitioners generally for that total. This, in effect, is the Central Pool method. Put in another way the question is one of collective responsibility.

There is another point. The residents of Wigan go in large numbers to Blackpool for their annual holidays, with the result that Blackpool practitioners spend a good deal of time treating Wigan residents and being paid at temporary-resident rates for such treatment. Where should the temporary-resident money come from for such persons? Clearly it should come from the Wigan pool, for the Wigan doctors have been correspondingly relieved during the absence of those of their patients who have gone to Blackpool. In other words, it is necessary to make adjustments as between the local pools of different areas for temporary-resident purposes. To make this adjustment as between practitioner and practitioner would be a wellnigh impossible task. This adjustment of itself is inconsistent with the simple method of multiplying the number of persons on a doctor's list by x .

Thirdly, the Central Pool conception enables us to secure the application of what is best in Spens—the maintenance of certain levels of remuneration. To maintain the levels, however many doctors enter the Service, means a regular adjustment of remuneration, best made to a total sum estimated in relation to this and other factors. Our recent case is based on an acceptance of the Central Pool principle, for the existence of a Central Pool made possible such cogent arguments and detailed calculations.

National Health Service

HEALTH SERVICE TRIBUNAL

The National Health Service Tribunal for England and Wales has been appointed "for the purpose of inquiring into cases where representations are made that the continued inclusion of a person on the list of an executive council would be prejudicial to the efficiency of the Service in which that person is participating." The Lord Chancellor has appointed Sir Reginald Taaffe Sharpe, K.C., to be the chairman of the Tribunal. The Minister, after consultation with the associations of executive councils, has appointed Mr. Henry Lesser to be a member of the Tribunal, and has also, after consultations with the organizations representative of the professions concerned, appointed the following persons to form the panel of practitioner members of the Tribunal:

Dr. S. A. Winstanley (medical practitioner); Mr. L. C. Atkins (dental practitioner); Mr. G. H. M. Graham (registered pharmacist); Dr. E. G. Mackie (ophthalmic medical practitioner); Mr. W. B. Barker (ophthalmic optician); Mr. J. R. Howard (dispensing optician). The clerk to the Tribunal, appointed by the chairman with the Minister's approval, is Mr. R. B. Cooke (solicitor).

The Tribunal is the only body that can decide that a person's name should be removed from an executive council's list, and the practitioner may appeal to the Minister of Health to reverse the decision. If the Tribunal decides that the name should remain on the list the Minister cannot intervene.

CLAIMS FOR COMPENSATION

Practitioners are reminded that though the last date for submission of claims was Oct. 31, 1948, the Minister was empowered by regulation to accept claims during the ensuing six months where it could be shown that delay was unavoidable. This period of grace ends on April 30, 1949, and no undertaking can be given that any claim submitted for the first time after that date will be considered.

PRESCRIBING FOR OUT-PATIENTS NEW FORM

Hospitals and clinics in the National Health Service have dispensaries or other arrangements for dispensing prescriptions for their out-patients. The Minister of Health has therefore arranged for a new prescription form (E.C.10.H.P.) to be used in such cases.

The form is similar to Form E.C.10, but is printed on pink paper. After being completed by a medical practitioner on the hospital staff it is presented by the patient to a pharmacist on the executive council list. The appliances prescribed on this form may be only those included in the list in the Third Schedule to the General Medical and Pharmaceutical Regulations.

TRAINEE ASSISTANT SCHEME

The General Medical Services Committee has set up a sub-committee to consider the working of the trainee assistant scheme in the light of the recommendations of the Spens Committee on the remuneration of general practitioners.

MILEAGE ALLOWANCE TO MEMBERS OF MEDICAL BOARDS

As a result of representations made by the Association the Ministry of Pensions, Ministry of National Insurance, and the Ministry of Labour and National Service have agreed to pay a medical practitioner serving on a medical board or on an advisory panel a mileage allowance of 1s. a mile each way for every mile outside a radius of two miles between the boarding centre and his home, or any centre from which he practices, whichever is the nearer (provided he has not received or claimed a similar allowance otherwise). The mileage allowance is subject to a maximum of 20s. for each return journey, and came into effect as from March 17, 1949.

FEES FOR EMERGENCY TREATMENT AND ANAESTHETICS

After consultation with the B.M.A. the Ministry of Health has prepared two model forms: (a) E.C.31 (claim for payment for the services of an anaesthetist); (b) E.C.32 (claim in respect of emergency treatment). The Minister suggests that executive councils should confer with local medical committees with a view to adopting these forms for use. Variations should not be made without the Minister's specific approval. In both model forms the fees to be paid have been omitted. The Minister suggests that the following scales might be appropriate:

Scale of Fees for Emergency Treatment

	£	s.	d.
(1) Attendance at surgery after 8 a.m. and before 8 p.m.	5	0	
(2) Attendance at surgery after 8 p.m. and before 8 a.m.	7	6	
(3) Visit (day)	7	6	
(4) Night visit—i.e., visit made between the hours of 8 p.m. and 8 a.m. in response to a call received between those hours	15	0	
(5) Setting of fractures	1	1	0
(6) Reduction of dislocation	10	6	
(7) Administration of general anaesthetic other than nitrous oxide or ethyl chloride	1	11	6
Administration of nitrous oxide or ethyl chloride	10	6	
(8) Minor surgical operation requiring local or general anaesthetic	10	6	

Payment for Anaesthetist

As in item (7) of scale of fees for emergency treatment.

Executive councils and committees are free to suggest modifications of the scales to meet local conditions. The Minister suggests that the new scales should operate in respect of treatment given on or after April 1.

Payment for emergency treatment and anaesthetics for July 5, 1948, to March 31, 1949, is in accordance with the distribution scheme(s) for the area(s) of the former insurance committee(s) included in the L.E.C.'s area.

PAYMENT FOR SUPPLY OF DRUGS

General practitioners should be paid for drugs and appliances supplied from July 5, 1948, to March 31, 1949, in accordance with the following arrangements.

Practitioners Supplying All Drugs

Where under the General Medical and Pharmaceutical Services Regulations, 1948, a practitioner has arranged, or is required by the council, to supply certain patients (dispensing patients) with all requisite drugs and prescribed appliances, he may elect to be paid for the drugs and appliances which he actually supplies, in which case payment should be made on the basis of the Drug Tariff.

Where a practitioner elects to receive a capitation fee in respect of each dispensing patient to cover the liability to supply all drugs and prescribed appliances other than those included in the special list, the amount payable in respect of the period from July 5, 1948, to March 31, 1949, will be at the rate of 6s. 6d. a year based on the number of dispensing patients at Jan. 1, 1949, with adjustments if he has not provided this service throughout the period. In addition to drug capitation fees a practitioner will receive payment on the basis of the Drug Tariff for any drug or appliance in the special list actually supplied by him to the dispensing patient.

Drugs Administered by Practitioners

Payments in respect of drugs and appliances (other than those mentioned in the special list) required for immediate administration or application, or for use before a supply can conveniently be obtained by the patient, should be made at the rate of 2s. 6d. per annum for every 100 persons included in the practitioner's list, except those to whom he has arranged

or is required to supply all necessary drugs and prescribed appliances.

If, in special circumstances, payment at a higher rate was authorized for the area of the executive council under the arrangements in force under the National Health Insurance Scheme, payment should be made at that higher rate for the current period. Drugs and appliances in the special list supplied by a practitioner to a person on his list, or drugs supplied under paragraph 7 (9) (ii) of Part I of the First Schedule to the General Medical and Pharmaceutical Services Regulations, should be paid for on the basis of the Drug Tariff. The drugs referred to in the paragraph cited are those administered personally by the doctor other than drugs administered before a supply can be obtained otherwise under the regulations.

The balances due to doctors in respect of drug capitation fees for the period from July 5, 1948, to March 31, 1949, must have been paid not later than March 31. Payments made on the basis of the Drug Tariff should be made as soon as possible after the accounts have been received from the Pricing Office.

PREScribing PREPARATIONS

The Minister of Health has decided that Allen and Hanbury's Malt and Oil, Wander's Malt and Oil, and Radiostoleum should not be included in the list of preparations classified by the 1929 Advisory Committee as those preparations the prescribing of which by insurance practitioners was justified only in special circumstances (for list and full proviso see *Supplement*, Jan. 8, p. 12, Table II). The Minister considers, however, that malt-and-oil preparations and vitamin preparations should be regarded as drugs only when prescribed for a definite therapeutic purpose. Form E.C.10 may then be used. When ordered as a routine measure for healthy children and in like circumstances they are regarded as food adjuncts and should not be prescribed on Form E.C.10.

DISABLEMENT ADVISORY PANELS FEES

Following representations by the Association, the Ministry of Labour and National Service has now intimated that as from March 17 medical members of Disablement Advisory Panels will receive a fee of £2 5s. for a session of 1½ hours to 2½ hours; for an attendance of less than 1½ hours the fee will be £1 15s.

MEDICAL PRACTICES ADVISORY BUREAU LOCUMS AND ASSISTANTS

One of the important functions of the Bureau is the introduction of assistants and locums. In this field difficulties are inherent because of fluctuations in supply and demand. While the number of practitioners undertaking locum work, or seeking the short-term assistantships, is fairly constant, increasing temporarily after the half-yearly examinations, the demand for locums to cover periods of illness or holidays and for assistance during the winter rush is subject to peak periods, during which demand greatly exceeds supply.

At present the demand for both locums and assistants is very heavy, and practitioners willing to undertake this work are urged to get in touch with one of the branches of the Medical Practices Advisory Bureau. Doctors starting a career in general practice are reminded that service as locums does not make them ineligible for appointments as trainee assistants.

The demand for trainee assistants is also very heavy, and the Bureau is maintaining a register of those seeking such posts. It appears that many are reluctant to apply because they dislike the term "trainee"; but any difference between the subsidized post and the so-called "straight assistantship" is more apparent than real, and the former offers many advantages to those without previous experience.

One reason why there is a shortage of assistants is that, as a result of the war, large numbers of those entering general practice for the first time are married and anxious to obtain almost at once positions which offer security and early prospects of advancement. They are therefore loath to accept

appointments which do not offer a view to succession or partnership. While their needs are acknowledged, it should be borne in mind that an assistantship without view can be regarded as a "jumping-off point" and can offer adequate remuneration and experience while the doctor is seeking a more permanent opening.

It is probable that for some time to come the number of applicants for practices or shares will be greater than the number of these available, and that, in the case both of vacancies allocated by executive councils and of partnerships offered by doctors in established practices, those with previous experience in general practice have a greater chance of success. What is perhaps more important is that the doctor with experience, being a more acceptable candidate for an opening, has consequently a wider choice of area and type of work.

DEVELOPMENT CHARGES

A circular explaining certain provisions of the Town and Country Planning Act, 1947, has been issued by the Ministry of Town and Country Planning to local authorities in England and Wales. Under the Act permission is required before any development of land can be carried out. Development includes the making of any material change in the use of any buildings or other land.

The question whether a development charge would be involved where a medical practitioner acquired a property, formerly used entirely for residential purposes, with the intention of occupying it as his residence but also carrying on his practice there is discussed in the circular. It states that the Minister has considered in consultation with his legal advisers the implications of "material change" in this connexion and that he has formed the opinion that the use by a professional man, whether a doctor or a dentist, of one or two rooms in his private dwelling for the purpose of consultation with his patients would not constitute a material change in the residential character of the existing use so long as the professional use remains ancillary to the main residential use, though the use of the same house wholly for professional purposes would be another matter.

Medical practitioners who find themselves in doubt about their position when going to a new residence in which they propose to practise are advised to apply to the local planning authority under Section 17 of the Act for a determination whether the change which they propose to make does in fact constitute development. Under this section there is a right of appeal to the Minister against the determination by the local planning authority that the proposal in question constitutes development.

CONFERENCE OF B.M.A. REGIONAL OFFICERS

A conference of officers in charge of the Association's Regional Offices was held at B.M.A. House on March 21 under the chairmanship of the Secretary. The following Regional Officers attended: Mr. R. I. Gardner (Oxford), Mr. A. Hill (Birmingham), Miss P. M. Lee (Liverpool), Mrs. G. Maloney (Sheffield), Mr. H. W. Newman (Cambridge), Mr. R. H. Pill (Leeds), Miss F. Turnbull (Newcastle-upon-Tyne), Miss M. E. Brookes, Chief Clerk of the Association's Headquarters in Scotland, and Mr. W. A. Lee, Librarian of the Medical Institution of Liverpool, also attended by invitation. Mr. Beadle (Manchester) was unable to be present.

The Secretary opened the Conference with an outline of the purpose and functions of the Regional Offices. Dr. A. Macrae (Deputy Secretary) followed with a review of the Association's work and of the organization of the staff at Headquarters. The financial aspects of the work of the Regional Offices were briefly described by the Accountant, and a general discussion followed in which many suggestions were considered for the improvement of the Association's regional machinery. The conference was followed by a tour of Headquarters in which the visitors were shown all departments, including the Registry, Card Index Section, Typing and Duplicating Section, Empire Bureau, Medical Practices Bureau, the Library, and the principal reception rooms. It was felt that the conference was useful and ought to be repeated in the future.

British Medical Association

ANNUAL REPORT OF COUNCIL, 1948-9

Every member is asked to keep this Supplement, which contains matters referred to Divisions, until the subjects have been discussed by his Division.

CONTENTS

	Page		Page
Preliminary	174	Psychiatry and the Law	191
National Health Service	176	Armed Forces	191
General Medical Services	178	Scotland	191
Consultants and Specialists	181	Wales	191
Private Practice	185	Overseas	191
Occupational Health	187	Medical Films	191
Nursing	188		
Public Health	188		
<i>British Medical Journal</i>	189		
Finance	189		
Building	190		
Medical Ethics	191		
Coroners' Acts	191		
Organization	192		
Nutrition	194		
Science	194		
Public Relations	196		

Appendices

I. Attendances of Council	20
II. Revised Duties of and Ethical Rules for Industrial Medical Officers	20
III. Duties of and Ethical Rules for Industrial Medical Officers (1937)	20
IV. Amendment of Articles and By-laws	20
V. Memorandum on the Remuneration of Medical Officers of the Armed Forces	20
VI. Memorandum on the Remuneration of Officers in the Colonial Medical Service	20

PRELIMINARY

Annual Meeting, Harrogate, 1949

1. The Annual Meeting, 1949, will begin at Harrogate on Friday, June 24, under the Presidency of C. W. C. Bain, M.C., D.M., F.R.C.P., Harrogate.

All members of the Association are entitled to attend the Annual Scientific Meeting and the functions associated therewith. The Annual Representative Meeting will be held from Friday, June 24, to Tuesday, June 28.

The Council has decided as an experiment that the Scientific Sections should extend over a period of four days from Tuesday, June 28, to Friday, July 1. The Sections will meet as follows:

Anaesthetics	June 29 and 30
Anatomy and Physiology	June 28 and 29
Cardiology	June 30 and July 1
Child Health	June 29 and 30
Dermatology	June 30 and July 1
Medicine	June 28, 29, 30, and July 1
Neurology and Psychiatry	June 29 and 30
Obstetrics and Gynaecology	June 28, 29, 30, and July 1
Occupational Health	June 29 and 30
Ophthalmology	June 30 and July 1
Orthopaedics	June 28 and 29
Oto-rhino-laryngology	June 30 and July 1
Pathology and Bacteriology	June 28, 29, 30, and July 1
Preventive Medicine	June 30 and July 1
Radiology	June 28, 29, 30, and July 1
Rheumatology	June 28 and 29
Surgery	June 28, 29, 30, and July 1
Tropical Medicine	June 28 and 29

Accommodation at Harrogate

Members who intend to attend the Annual Meeting at Harrogate are advised to make early arrangements for accommodation.

Loyal Address to His Majesty

2. The Council submitted a loyal Address conveying the congratulations of the Council and of the members of the Association at home and overseas to his Majesty the King

on the occasion of the birth of a son to her Royal Highness the Princess Elizabeth.

Health Centres: Interim Report of Council

3. The Interim Report of Council on Health Centres was published in the *Supplement* of Sept. 11, 1948. This was intended to give guidance to local health authorities, local medical committees, and executive councils when considering the future provision of health centres. It is recognized that the development of health centres under the National Health Service Acts must necessarily be slow, and the Council hopes that its interim report will be a useful contribution to the study of the subject. The Council has under consideration the questions, in relation to health centres, of the position of the general-practitioner-specialist, the provision of specialist services, the provision of health centres in rural areas, and the utilization of the centres for the health education of the public. The Council will deal with these matters in its final Report.

Joint Consultative Committee of Professional Bodies

4. The Council has approved the creation of a joint consultative committee of professional bodies to facilitate exchanges of views on matters of common interest, especially on developments which may threaten to limit the exercise of their proper functions in the service of the community. The Chairman of Council and the Secretary have been appointed as the Association's representatives on the joint committee.

Deaths

5. The Council regrets to record the deaths of 524 members during the year 1948.

War Memorial

6. The Council has considered the question of a Memorial to the members of the Association who fell in the 1939-45 war, and has accepted the views of its expert advisers that such a Memorial should take the form of a Fountain erected in the Court of Honour at B.M.A. House. A limited competition will be held among three sculptors to be chosen by assessors and the Royal Society of British Sculptors will draw up rules

for the competition. The assessors to the competition will be two sculptors nominated by the Royal Society of British Sculptors, with Mr. C. H. James, R.A., F.R.I.B.A. A dedicatory inscription will be prepared by the Association, and the names of those members who fell in the war will be included in a Book of Honour. The cost of the entire Memorial will be in the region of £10,000, and an appeal will shortly be made to members of the Association for subscriptions for the Memorial.

The Secretariat

7. The Council has appointed S. J. Hadfield, M.B., B.Ch., D.R.C.O.G., as an Assistant Secretary of the Association.

Medical Practices Advisory Bureau

8. With the advent of the National Health Service the usual procedure for entry into general practice has undergone considerable modification. In the past, with the exception of a minority who "put up their plates" or secured openings through personal or family associations, introduction took place either directly in response to advertisement in the medical press or indirectly through the recognized medical agencies.

The abolition of the sale and purchase of goodwill has necessarily caused changes in established customs. A doctor wishing to enter the field of general practice as a principal must apply to an executive council for inclusion in the list for the area. The executive council, after consultation with the local medical committee, forwards applications to the Medical Practices Committee with a recommendation for acceptance or rejection. Under the Act, the Medical Practices Committee is responsible for declaring certain areas (or parts of areas) adequately served, and to refuse the admission of new principals in these cases, but, except in these "closed areas," its consent is automatic unless there is more than one applicant for a vacancy, when it has power to make a selection.

Formerly, when a doctor retired it was in his own interests to find a successor, but now executive councils are responsible for arranging for the provision of general medical services, and should a practice become vacant it is for the executive council rather than the doctor concerned, or his representatives, to see that the patients are not left without adequate care. Executive councils have a discretionary power but no statutory obligation to advertise vacancies.

It is of course still possible for a doctor to enter general practice as an assistant with a view to partnership or succession, but though the Minister has given to doctors the right to choose their own partners or assistants, the financial basis of partnerships and the transfer and adjustment of shares have been completely altered.

The Council became convinced of the need for some central machinery through which practitioners wishing to establish themselves in practice might obtain advice and information concerning suitable openings. It was clearly undesirable that the Medical Practices Committee or local medical committees, having statutory functions in connexion with the distribution of doctors, should also undertake to advise individual practitioners. It was felt that this task should be undertaken by a body which was not linked directly or indirectly with central or local government, but whose status and resources were such as would enable it to establish and maintain effective liaison with executive councils, local medical committees, and the Medical Practices Committee, and at the same time command the confidence of the profession.

The Council accordingly decided to establish as a department of the Association the Medical Practices Advisory Bureau to advise medical practitioners on all individual problems connected with entry into, or the conduct of, practice, and it was decided that the Bureau should include an appointments information service through which the introduction of locums, assistants, or partners could be effected.

The Medical Practices Advisory Bureau, under the direction of Dr. L. S. Potter, one of the Assistant Secretaries, was established at the beginning of 1949, and it was fortunate in being able to retain the services of some members of the staff of the British Medical Bureau, now in voluntary liquidation. Their experience has proved most valuable and has enabled branch offices to be established at the outset at 33, Cross Street, Manchester, and at the Scottish Office, 7, Drumsheugh Gardens,

Edinburgh. It is hoped that in the course of time other regional offices will play their part. The services of the Bureau are free of charge to members of the Association; others are expected to pay fees as a contribution to the expenses incurred.

Postgraduate Education of General Practitioners

9. In view of the satisfactory welcome given to the Report of the Association's Committee on "The Training of a Doctor" the Council has appointed a special Committee under the chairmanship of Professor Sir Henry Cohen to consider the Postgraduate Education of General Practitioners. The Committee is beginning its study from the point at which the Medical Curriculum Committee stopped—namely, at registration after a year of intern appointments—and is considering such matters as the preparation for a career in general practice, the objects of postgraduate education, and the methods and content of instruction.

National Formulary

10. In January, 1947, the Council, in conjunction with the Pharmaceutical Society of Great Britain, established a Joint Committee to compile a Standard Prescribers' Formulary suitable for use in connexion with the National Health Service and applicable to all branches of medicine. The Ministry of Health agreed to co-operate in the task by nominating representatives upon the committee, and subsequently the Service Departments were invited to appoint representatives. The committee as finally constituted was as follows:

Members	Appointed by
Professor A. E. Barnes	British Medical Association
Mr. A. Lawrence Abel	British Medical Association
Lieutenant-Colonel J. C. Brimston	War Office
Professor H. Berry	Pharmaceutical Society
Mr. B. A. Bull	Pharmaceutical Society
Sir Weldon Dalrymple-Champneys	Ministry of Health
Mr. H. Davis	Ministry of Health
Mr. P. Dobson	Pharmaceutical Society
Professor D. M. Dunlop	British Medical Association
Dr. S. A. Forbes	Insurance Acts Committee
Dr. F. Gray	British Medical Association
Dr. E. A. Gregg	British Medical Association
Dr. P. Hamill	Royal College of Physicians
Mr. D. W. Hudson	Pharmaceutical Society
Dr. D. Hunter	Royal College of Physicians
Dr. W. P. Kennedy	Ministry of Health
Mr. E. Lewis Lilley (deceased)	British Medical Association
Miss C. Mozley-Stark	Ministry of Health
Dr. A. Smith Pool	British Medical Association
Lieutenant-Colonel M. A. Rea	War Office
Surgeon Commander J. M. Rease	Admiralty
Mr. H. G. Rolfe	Pharmaceutical Society
Mr. R. H. Rowson	Pharmaceutical Society
Mr. J. W. Soulsby	Pharmaceutical Society
Professor E. J. Wayne	British Medical Association
Wing Commander C. E. G. Wickham	Air Ministry
Dr. D. J. B. Wilson	British Medical Association

Professional organizations, local medical and local pharmaceutical committees, medical staff committees of teaching hospitals, and individual experts have been consulted in connexion with the compilation of the *Formulary*, and their assistance, together with the interest and active co-operation of the Ministry and the Service Departments, has greatly facilitated the work of the committee.

The object has been to produce a *Formulary* which though comprehensive would be of convenient size to be carried in the pocket by the practitioner or pharmacist. Information which might more appropriately be sought from textbooks or works of reference has been omitted, but brief notes on certain types of preparation, such as sulphonamides, barbiturates, etc., which it was felt would be of value, have been included. Special attention has been directed to preparations in the Children's Section, in an endeavour to provide preparations, especially linctuses and mixtures, in a palatable form.

The Council believes that the *Formulary* which has been prepared will prove acceptable to the professions, and hopes that it will be useful in all branches of medicinal practice, including hospitals.

The cost of publication has been borne equally by the Association and the Pharmaceutical Society. The Ministry

has accepted the *Formulary* for use in the National Health Service, and is purchasing bulk supplies for distribution through local executive councils to medical practitioners, dentists, and pharmacists on the lists of those bodies. The *Formulary* will come into operation on May 1, 1949, and in the meantime copies are being made available first to manufacturing and retail chemists so that they may adjust their stocks of preparations. In order that they may familiarize themselves with the new *Formulary* practitioners on the lists of local executive councils will receive their copies some weeks before May 1, on which date it will replace the *N.W.F.*

The sale of individual copies to practitioners will be undertaken by the Association and to pharmacists by the Pharmaceutical Society.

Proprietary Medicines

11. The Council has appointed a special committee to consider the general problem of the advertisement and sale of proprietary medicines. It is hoped shortly to discuss the question with representatives of the Newspaper Proprietors' Association and other interested bodies.

Central War Medical Committee

12. The Council has agreed to a request from the Minister of Health that the Central Medical War Committee and the Scottish Central Medical War Committee should continue to advise him on the recruitment of medical practitioners to H.M. Forces during 1949. These committees are housed in the Association's offices in London and Edinburgh, and all their secretarial and clerical work is carried out by the Association's staff.

British Commonwealth Medical Conference

13. The Council reported last year that it was making arrangements to hold in London the Inaugural Meeting of a British Commonwealth Medical Conference. The meeting was held on Sept. 15 and 16, 1948, at B.M.A. House, and was attended by delegates from the following countries: Australia, Canada, Ceylon, Eire, Great Britain, India, New Zealand, Pakistan, South Africa, and Southern Rhodesia. The chair was taken by Sir Lionel Whitby.

It was evident that there was a general desire and need for some permanent liaison among the national medical associations or units in the countries of the British Commonwealth Nations, and the Conference drew up the following list of proposals and submitted it for approval to the associations and units represented:

1. That it is desirable to develop closer personal and professional relations, through their national medical associations or units, between the nations linked in the Commonwealth.
2. That to this end an endeavour be made to hold a Conference of Representatives of the national medical associations or units once a year.
3. That, wherever possible, the Conference be held in conjunction with a general meeting of the host association or unit.
4. That each country be invited to send two Representatives to each Conference.
5. That a pooling system be applied to the expenses of one Representative from each country.
6. That the Secretary of the host association or unit be the Secretary of the Conference of Representatives and be responsible for convening the meeting, the preparation of the agenda, and executive action resulting from decisions taken. The associations will be invited to send suggestions for the agenda to the Secretary of the meeting, and the agenda will be issued to associations at least two months before the meeting.
7. That the Conference of Representatives normally be of three days' duration.
8. That, subject to confirmation, the invitation of the Canadian Medical Association to hold the first Conference of Representatives in Saskatoon, Canada, on June 7, 8, and 9, 1949, be accepted.
9. That the President-Elect of the Canadian Medical Association, Dr. J. F. C. Anderson, be President of the first Conference.
10. That provisional acceptance be given to the holding of the Conference of Representatives for 1950 at Brisbane, Australia, and for 1951 in South Africa.

The proposals received general approval, and the next meeting of the Conference will be held in Saskatoon, Canada, in

June, 1949. All the Commonwealth countries will be represented, the British delegates being the Chairman of Council, Dr. H. Guy Dain, and the Secretary, Dr. Charles Hill. The delegates to the Conference have been invited to remain for the Annual Meeting of the Canadian Medical Association, which will take place immediately afterwards.

Visit of Sir Lionel Whitby to Canada

14. The Canadian Medical Association has invited the Council to send Sir Lionel Whitby, who is to visit the United States in the autumn of 1949, to Canada at that time in order that he may attend some or all of the Divisional Annual Meetings of the Association. The Council has eagerly accepted this opportunity of strengthening the links between this country and Canada, and Sir Lionel has agreed to extend his journey for the purpose.

World Medical Association

15. The Annual Meeting of the WMA, of which the B.M.A. is a member, was held at Geneva in September, 1948, and was attended by Dr. H. Guy Dain, Chairman of Council, and Dr. E. A. Gregg, Chairman of the Representative Body, as the British delegates, Mr. R. L. Newell and Dr. S. Wand as alternate delegates, Dr. J. A. Pridham as member of the WMA Council, and Dr. Charles Hill as Honorary Secretary. The General Assembly accepted the invitation of the B.M.A. to hold its next meeting in London and elected Dr. Charles Hill as President-Elect. The meeting will be held in October, 1949, at B.M.A. House.

NATIONAL HEALTH SERVICE

16. The new Service came into operation on July 5, 1948. It was perhaps inevitable that there should be growing-pains in a new service of such magnitude. During the first six months of the Service evidence soon began to accumulate that the burden of work for the profession, particularly paper work, had greatly increased; that in many cases income had gone down; that private practice had diminished much more than was anticipated and in many cases had virtually disappeared; and that there were doubts whether the Spens recommendations were being fully applied. In general practice the ratio of visits to consultations tended to rise, and multiple consultations became more frequent. While it is possible that some of this increase is of a temporary nature, arising out of a desire to use the Service merely because it is free, there is good reason to believe that much of it has come to stay.

17. Some of the early anomalies and difficulties found expression in a debate on the Adjournment in the House of Commons in January, 1949. In the course of that debate the Government admitted that it had completely underestimated the need for the Service, and this was borne out by some of the figures given. It was computed that 95 to 98% of the population had placed their names on doctors' lists. Rather more than 20,500 general practitioners out of an estimated total of 21,000 in England and Wales and Scotland had entered the scheme. In the first six months 75 million prescriptions for drugs and appliances were issued; over 3,400,000 patients received or were under dental treatment; over 2,500,000 people had their sight tested under the supplementary ophthalmic service, and over 3 million pairs of spectacles were supplied or were on order.

18. With the inception of the National Health Service the Association made certain adjustments in its constitution. At the Annual Representative Meeting in 1948 approval was given to the establishment of a new Central Consultants and Specialists Committee to consider and to act on all matters affecting those engaged in consultant and specialist practice and to watch the interests of consultants and specialists in relation to the new Service. The creation of this new autonomous body was accompanied by the establishment of a new regional organization of Consultants and Specialists (including Hospitals) Committees. The Insurance Acts Committee, which since its formation in 1912 has represented insurance practitioners and has been recognized by the Ministry of Health as their mouthpiece, has now been replaced by a General Medical Services Committee. At the outset this Committee was constituted on the same lines as the Insurance Acts Committee.

it being left to the new committee to review its constitution (including the grouping of areas for the election of direct representatives) in the light of experience. The General Medical Services Committee acts as the Executive of the Conference of Local Medical Committees and, like the Consultants and Specialists Committee, is an autonomous body. The Public Health Committee, which includes representatives of the Society of Medical Officers of Health, considers and reports on questions relating to the Public Health Service.

In December, 1948, following the discussions of the Exploratory Committee set up some months earlier by a conference of representatives of the Royal Colleges, the Royal Scottish Corporations, and the Association, it was agreed that in the interests of consultants a Joint Committee should be established to speak for consultants with one voice. For this purpose there was established a Joint Committee with the following terms of reference:

(a) To represent consultants and specialists in the impending negotiations with the Government on matters arising out of the National Health Service Acts and the report of the Spens Committee on the Remuneration of Consultants and Specialists.

(b) To prepare and to submit for the consideration of its constituent bodies a scheme, including terms and reference, for the future work of the Committee.

19. With the formation of the Joint Committee and the establishment of the representative machinery for general practitioners and public health medical officers it was generally agreed that the time had come formally to disband the Negotiating Committee. By the end of the year that body had ceased to function, except within the limited field of the supplementary ophthalmic service. The negotiations which had been conducted over a long period by the Ophthalmic Subcommittee were left for completion by that Subcommittee.

20. During the period under review terms and conditions of service, including remuneration, have dominated the medico-political picture. Early in January the Minister responded to the General Medical Services Committee's urgent representations on behalf of rural practitioners by increasing the Mileage Fund from £1,300,000 to £2 million per annum, the increase having retrospective effect from July 5, 1948. Of the £700,000 increase, £200,000 came from the Special Inducement Fund and £500,000 was new money provided by Parliament. A few months later representations were made for an increase in the Central Practitioners Fund in the light of the report of expert economists on the betterment factor which should be applied to the Spens recommendations—expressed in pre-war money values—to convert them to present-day values. These and many other points which have been the subject of representation to the Ministry are discussed in greater detail in the appropriate sections of the Council's Report.

21. With the establishment of the Joint Committee for consultants discussions on the national scale of remuneration for consultants and specialists were begun. The Ministry's proposed terms and conditions of service for hospital medical staffs were the subject of confidential discussions between representatives of the Department and the Joint Committee. In these discussions the Joint Committee was not committing consultants and specialists but was informing the Ministry what, in its view, was likely to be acceptable or more acceptable to the profession. Following these discussions the Ministry issued its proposed terms in March and the Joint Committee has submitted them to its constituent bodies for their observations. To allow time for full discussions the interim contracts which were due to expire on March 31, 1949, were extended for a further three months.

22. In the field of public health the delay in the negotiations of revised scales of remuneration arising from the reluctance of the Local Authority Associations to participate in the National Health Service Whitley Council machinery and the action taken by the Association to refuse for publication in the *British Medical Journal* advertisements not in conformity with the Association's own recommendations are set out in the Public Health section of the report. The Association is indebted to the other leading medical journals for their co-operation in this matter.

23. Although in May, 1948, the Minister proposed that an amending Bill would deal with a number of outstanding matters the draft of the Bill has not been published at the

time this report goes to press. The points which the Minister has promised to include in the amending Bill may be summarized as follows:

1. *Legal Committee on Partnerships.*—Clarification of the position of practitioners in partnership in the light of the report of the Legal Committee. The report recommends the naming of a new appointed day applicable to those in partnership on July 5, 1948, and the establishment of a supplementary compensation fund to meet the financial obligations under partnership agreements of those in the Service but in partnership with practitioners not in the Service.

2. *Whole-time Salaried General Medical Service.*—Provision to make clear that a whole-time salaried general medical service cannot be introduced by regulations—i.e., would need a further Act of Parliament. This would include provision precluding the imposition by regulation of any universal full-time consultant service.

3. *Chairmen of Executive Councils.*—Provision for Executive Councils to have the right to select their own chairmen, after the term of office of the present chairmen expires in March next.

4. *Professional Member of the Tribunal.*—Provision to enable the professional member of the Tribunal to be one of a panel of available members and not a fixed individual—so that the member may in each case be suitable in experience and otherwise to the particular issue before the Tribunal.

5. *Costs of Local Medical Committees.*—Power to the Executive Councils, where the local practitioners agree, to cover the costs of the Local Medical Committee (by the necessary deduction from the practitioners' remuneration).

24. The points which have been or are being put forward for inclusion in the amending Bill or in amending regulations include:

1. *The Global Compensation Sum.*—Augmentation of the global compensation fund of £66 million because the number of practitioners entering the Service is substantially in excess of 17,900.

2. *Drugs and Appliances for Private Patients.*—Private patients should be enabled to obtain drugs and appliances at the public expense even though they are obtaining their medical care privately.

3. *Foreign Visitors.*—The Minister's view, with which counsel consulted by the General Medical Services Committee has agreed, is that the services provided under the National Health Service Act for "people of England and Wales" are available also for foreign visitors. In so far as the Act provides for the free treatment of foreign visitors such provisions should be excluded by the amending legislation.

4. *Medical Practices Committee and Automatic Consent.*—The law should be brought into conformity with the Minister's promise that in all areas except those where the Medical Practices Committee has decided that no more doctors are needed in the Service, the consent of that Committee will be automatic to applications for inclusion in the medical list.

5. *Block Transfer of Patients.*—The block transfer of public patients should automatically follow the selection by the Medical Practices Committee to the declared vacancy, the transfer being made to the practitioner finally selected.

6. *Appeals on Applications for Basic Salary.*—Appeals from the decision of a local executive council on applications for basic salary should be made not to the Minister but to the Medical Practices Committee.

7. *Removal of General Practitioner's Name from the Medical List.*—The necessary amendment should be made to empower local executive councils to remove from their lists practitioners no longer working in the area and no longer providing the appropriate premises.

8. *Disciplinary Procedure.*—The Service Committees and Tribunal Regulations, 1948, require among other things that any complaint by a person against a medical practitioner in respect of an alleged failure to comply with the terms of service shall be investigated by the Medical Services Committee. The regulations, however, do not contain the provision which appeared in the Medical Benefit Regulations made under the National Health Insurance Act, 1936, requiring any question arising between an insurance practitioner and a person . . . in respect of the conduct of the person while receiving treatment . . . to be investigated by the Medical Services Subcommittee. It is urged that similar provisions should be made in the disciplinary arrangements under the new Service.

9. *Membership of Local Health Authorities.*—Provision to secure that general practitioners in London should participate in vaccination and immunization schemes under Section 26(3) of the National Health Service Act and will not on that account be disqualified from membership of the local health authority. For local health authorities outside London the Ministry has expressed the view that there will be no disqualification in these circumstances.

10. *Co-option to Statutory Health Committees.*—The Minister should be empowered to require local authorities to exercise their powers of co-option to secure the inclusion on statutory health committees of medical practitioners representative of the local profession.

11. *Basic Salary.*—There should be provision to secure that the basic salary of £300 per annum is not payable to a medical practitioner where it is established that he is not needed in the area for the provision of general medical services.

12. *Representative Specialist Staff Committees.*—It should be stated in the amending Act that the Minister may recognize representative specialist staff committees (as he does Local Medical Committees) at Hospital Management Committee, Regional Hospital Board, and Board of Governors levels and that (as with the Local Medical Committees) he shall prescribe the powers and duties of these committees from time to time as necessary. The profession would like to see these committees as internal committees of the Service, the executive bodies having a duty to see that they are set up, to give them access, and to encourage full co-operation. As initial functions it should be stated that such committees should have (a) reasonable access at all times to their executive body, (b) shall, on being recognized, give prompt attention to requests from their executive body, and (c) shall be a normal and regular source from which executive bodies ask advice.

13. *Advisory Appointments Committees.*—So far as non-teaching hospitals are concerned the Advisory Appointments Committee should contain at least one or two members of the specialist staff of the hospital (assuming that there are specialists). Representative specialist committees of the hospital concerned should be given an official opportunity of expressing their views on candidates. As for teaching hospitals, Statutory Instrument No. 1416, Schedule, Part II, should be amended to read:

(Amendments in italics)

1. The Advisory Appointments Committee shall consist of *ten* [at present 7 members] members appointed by the Board of Governors, of whom one shall be selected by the Board to act as chairman.

2. Two of the members shall be appointed on the nomination of the university with which the hospital is associated, and at least one of such members shall be a medical practitioner, in the case of the appointment of a medical officer, or a dental practitioner, in the case of the appointment of a dental officer.

3. *Three of the members shall be appointed on the nomination of the Council of Governors of the associated medical school.*

4. Of the five members appointed otherwise than on the nomination of the university or Council of Governors of the school, *at least three shall be on the nomination of the medical committee of the hospital concerned, and shall be medical practitioners,** in the case of the appointment of a medical officer, or dental practitioner, in the case of appointment of a dental officer. One shall be a person appointed after consultation with the Regional Hospital Board of the area in which the teaching hospital is situated, or, if the hospital is situated in the area of more than one Regional Hospital Board, after consultation with both or all of such boards.

5. Of the members who are medical or dental practitioners, at least two shall be, or shall have been, engaged in the practice of the special branch of medicine or dentistry concerned, and at least one shall be so engaged at some other teaching hospital.

14. *Specialist Members of Hospital Boards and Committees.*—Specialist members of executive bodies should in future be appointed after consultation with the appropriate representative specialist committee and up to one-fifth the number; Hospital Management Committees, Regional Hospital Boards, and Board of Governors to be uniform in this respect.

15. *Regulations.*—All regulations regarding specialists' services should be referred for comment to the Joint Committee before submission to Parliament.

16. *Chairmen of Hospital Boards and Committees.*—There should be provision in the amending Bill to secure that Boards of Governors and Hospital Management Committees shall elect their own chairmen.

17. *Pay-beds.*—(a) *Maximum Charges.*—The schedules of maximum charges for private in-patients and private out-patients should be abolished, if necessary by amendment of the Acts. (This will involve abolition of the schedules of the National Health Service Pay-Bed Accommodation in Hospitals, etc., Regulations, 1948, and any consequential amendment of the National Health Service Charges for Hospital Accommodation (Scotland) Regulations, 1948.) Boards of Governors and Hospital Management Committees should be given discretion to increase the overall maximum for professional service (now 75 guineas) in appropriate cases—e.g., where the stay in hospital is long or the demands on the specialist or specialists are unusually heavy.

(b) *Provision of and Charges for Private Accommodation.*—In all areas there should be an appropriate proportion of pay-beds to general beds, related to the public demand for such private accommodation. The effect of the high charges at present imposed in some private beds is to deprive a section of the population of amenities which were available to them before the introduction of the

*The part in italics at present reads "at least four shall be medical practitioners."

National Health Service. There should be a substantial reduction in the charges for private accommodation, such charges being on a uniform basis throughout the same region. Alternatively the patient should qualify for a contribution from the State towards the cost of private arrangements, such a contribution being equivalent to the cost which the State would have incurred had the patient chosen to enter public instead of private accommodation.

(c) *No-ceiling Beds.*—Boards of Governors and Hospital Management Committees should be required to provide as far as reasonably practicable that 15% of the private accommodation made available under Section 5(2) of the Act is not subject to the limitation of professional charges. (This would involve abolition of the words "not more than" preceding "15 per centum" in Regulation 9 of Pay-Bed Regulations.)

18. *Superannuation.*—(a) The option given to general practitioners to remain outside the National Health Service Superannuation Scheme and receive the Government's 8% contribution towards the maintenance of approved life insurance policies should be extended to specialists in contract with Regional Hospital Boards and Boards of Governors;

(b) The option of transferred officers to decide whether to retain the rights of alternative superannuation schemes should be extended until the final terms of service for hospital medical staff are published;

(c) Specialists practising in partnership should be entitled to have their superannuation contributions and benefits adjusted in accordance with the terms of their partnership agreement, as in the case of general practitioners;

(d) Where the services of a specialist are retained beyond the age of 65 he should be entitled to continue to make contributions to the superannuation fund, and to receive the additional benefits accruing therefrom; and

(e) Specialists who, upon retirement, are not entitled to any benefit under the Superannuation Regulations should receive the Government's 8% contribution in addition to the return of their own contributions with interest.

GENERAL MEDICAL SERVICES

Constitution of General Medical Services Committee

25. With the repeal of the National Health Insurance Act it became necessary to consider the future designation and constitution of the Insurance Acts Committee of the Association. A proposal was made that the new Committee should be constituted on lines analogous to the Central Consultants and Specialists Committee, the constitution of which was approved by the A.R.M., but it was decided that a committee based upon regional organization would not be satisfactory for general medical services which were based upon local executive council areas.

The Council decided that the new committee to take the place of the Insurance Acts Committee should be called the "General Medical Services Committee," and that for the time being its constitution should be the same as the Insurance Acts Committee. It was left to the new Committee to review its constitution, and this review has taken account of the opinion expressed by the Conference of Local Medical Committees that the mode of election and representation on the Committee should be re-examined afresh.

For some time there has been a measure of dissatisfaction with the grouping of areas for the election of direct representatives of Local Medical Committees, who form the greater part of the Committee, and the Conference asked that the grouping be revised in order that Local Medical Committees may be represented more fairly in accordance with the number of doctors in each group, having regard also to geographical considerations. This has necessitated an increase in the number of direct representatives from 27 to 33, but the increase is justified by the more equitable grouping of areas.

With one exception, no change is recommended in the composition of the rest of the Committee. The exception relates to the power of co-optation. Hitherto the Committee has had power to co-opt additional members so as to secure that there should be at least four non-insurance practitioners on the Committee. This is no longer necessary, but it is felt that the Committee should still have power to co-opt not more than four members so as to ensure the representation of a particular class of experience not otherwise represented on the Committee.

These proposals will involve an amendment to the Schedule to the By-laws, and the proposed revised constitution of the Committee is set out in detail at the end of Appendix IV of this report.

Completely New — Completely Different — Today's TREATMENTS!

1949 CURRENT THERAPY

A New Annual Volume on TREATMENT

This brand new annual volume is completely different from anything ever before published—different both in concept and in content. It gives a detailed and unbiased report on the very latest treatment of every disease and disorder, from abscess to yellow fever. Each treatment described in "1949 Current Therapy" is the best treatment available today for that particular disease. Every contributor was selected by a special Board of Consultants as the authority practising the most effective treatment that can be found anywhere today for the individual disease in question.

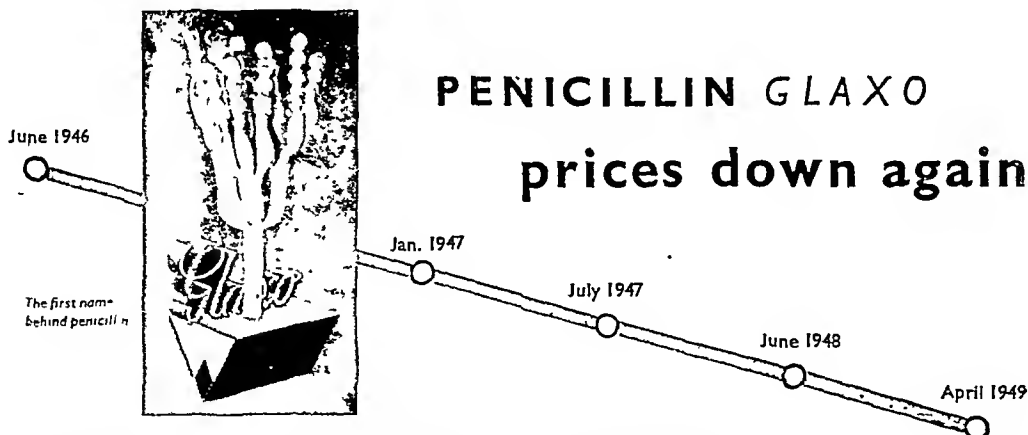
Every single plan of therapy was written especially for this book and represents the working experience of a foremost authority, clearly describing the method he is using successfully in his own practice.

For the sake of quick reference the book is conveniently divided into 14 main sections. The first page of each section lists alphabetically all the diseases to be found therein and gives page references for each. "1949 Current Therapy" is specifically designed to give the most practical, authoritative and helpful guidance on treatment that has ever appeared in print.

By 235 contributors, selected by a Board of 12 American Authorities. Edited by HOWARD F. CONN, M.D. 550 pages. 50s.

Available shortly.

W. B. SAUNDERS COMPANY LTD.
7 GRAPE STREET, LONDON W.C.2



Ever increasing production at the Company's expanding plants makes possible a further reduction in prices of Penicillin Glaxo—for the fourth time in less than three years. The new prices bring penicillin treatment down to less than half its original cost.

As from April 4th, 1949 the prices are as follows—

PENICILLIN Glaxo (freeze-dried sodium salt)		Single Vials		Boxes of 10	
		Old Price	New Price	Old Price	New Price
500,000 units	vials	4/3d	3/11d.	42/6d	38/7d.
1,000,000 units	vials	8/-	7/3d.	80/-	72/6d.
CRYSTALLINE PENICILLIN G Glaxo (sodium salt)		ampoules		Boxes of 10	
		Old Price	New Price	Old Price	New Price
100,000 units	ampoules	—	—	22/6d	17/7d.
100,000 units	vials	—	—	25/-	20/-
200,000 units	vials	4/-	3/-	40/-	30/-
500,000 units	vials	8/6d	6/-	65/-	60/-
1,000,000 units	vials	16/-	11/-	160/-	110/-

PROCAINE PENICILLIN G		Old Price	New Price
Oily Injection Glaxo	10 cc. vials	54/-	42/-
PENICILLIN OIL-WAX SUSPENSION Glaxo	10 cc. vials	35/-	30/-
PENICILLIN OILY INJECTION B.P. Glaxo	10 cc. vials	18/-	15/-
PENICILLIN CALCIUM SALT Glaxo	1,000,000 units vials	9/-	7/6
	10 Mega bottles	80/-	70/-

Prices of the following remain unchanged

PENICILLIN Glaxo	100,000 units, ampoules and vials
	200,000 units, vials
PENICILLIN OINTMENT B.P. Glaxo	
PENICILLIN LOZENGES B.P. Glaxo	

All prices subject to the usual professional discounts.

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX. BYRON 3434

SEX HORMONES

When B.D.H. is specified the prescriber ensures that a product of the utmost reliability is supplied. The range of B.D.H. Sex Hormone products completely covers the field in this branch of therapeutics.

ANDROGENS

Testosterone Propionate B.D.H.
Methyl-testosterone B.D.H.

PROGESTOGENS

Progestin B.D.H. (Injection of Progesterone B.P.)
Ethisterone B.D.H.

GONADOTROPHINS

Gonan (Chorionic Gonadotrophin B.P.)
Serogan (Serum Gonadotrophin B.P.)

ŒSTROGENS

'Estigyn' (Ethinyl Œstradiol B.D.H.)
Œstroform Tablets (Tablets of Œstrone B.P.)
Œstroform Ampoules (Injection of Œstradiol Monobenzoate B.P.)

DienŒstrol B.D.H.
StilbŒstrol B.D.H.
HexŒstrol B.D.H.

The following new strengths have been added to the B.D.H. range:-

TESTOSTERONE PROPIONATE
1 ml. and 2 ml. ampoules and 10 ml. vials each containing 50 mg. per ml.

METHYL-TESTOSTERONE
tablets containing 25 mg. and 50 mg.

PROGESTIN 1 ml. ampoules containing 25 mg. per ml. and 10 ml. vials each containing 25 mg. per ml.

ETHISTERONE tablets containing 25 mg.

'ESTIGYN' Ethinyl Œstradiol tablets containing 0.01 mg.

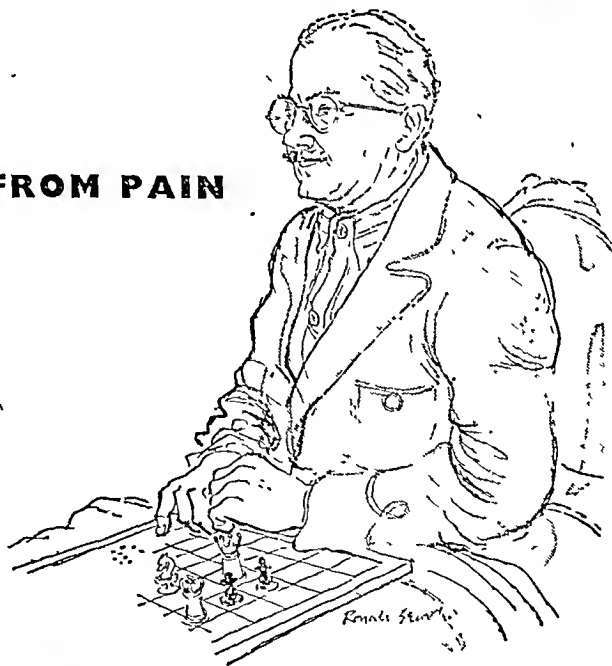
Literature describing all B.D.H. Sex Hormones will be forwarded on request.

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1
TELEPHONE: CLERKENWELL 3000 TELEGRAMS: TETRADOME TILX LONDON

SHor/E/195

Alert... AND FREE FROM PAIN

When the burden of pain proves too heavy, mental outlook becomes distorted. In such a case the drug of choice is 'Physeptone' which gives satisfactory analgesia while leaving the mind clear.



'PHYSEPTONE'

412 DIMETHYLAMINO-4,4-DIPHENYLHEPTANE-5-ONE HYDROCHLORIDE

THE ESTABLISHED ANALGESIC



BURROUGHS WELLCOME & CO. LONDON
(The Wellcome Foundation Ltd.)

Remuneration of General Medical Practitioners

26 The Annual Conference of Representatives of Local Medical Committees passed the following resolution

Resolved (unanimously) That this Conference considers the present capitation fee to be grossly inadequate and calls upon the General Medical Services Committee, as a matter of the utmost urgency, to take immediate action to secure an adequate overall increase in order to relieve the serious hardship resulting from the new service

The General Medical Services Committee began the task of implementing the foregoing resolution of the Conference by instituting an inquiry, the object of which would be to show whether or to what extent the current incomes of general medical practitioners were in accordance with the main recommendation of the Spens Committee. Five areas were chosen—Lancashire, Norfolk, Bath, Halifax, and Nottinghamshire and Nottingham—and the figures obtained from these areas showed that, generally speaking the "spread" of incomes in the 40 to 50 age group was in accordance with the Spens recommendation.

While this inquiry was being made the Committee decided that the financial position of the rural practitioners presented a problem of such grave urgency that speedy action was necessary to help them to meet their immediate commitments. Representations were made to the Ministry of Health in favour of an immediate substantial increase in the Mileage Fund, and the Ministry agreed to the Committee's recommendation that the fund should be increased from £13 to £2 million, the new money to be found from sources other than the existing Central Practitioners' Fund. £200,000 has been diverted from the Special Inducement Fund and the remaining £500,000 is a new grant from the Treasury. Thus the old mileage fund of £600,000 has been more than trebled, and the Committee was gratified at the prompt action which the Ministry took to remedy a serious situation.

There remained the question of the "betterment" factor to be applied to that part of the doctor's income which is estimated to be net income. A memorandum (*Supplement Feb 19*) was prepared in which the whole question of the adequacy of general practitioners' remuneration was examined in detail and conclusions were reached in the light of an expert economist's report and the changes in the cost of living of professional classes between 1939 and the end of 1948 (*Supplement Jan 22*). A Special Conference of Representatives of Local Medical Committees was held on March 3, when the Committee's memorandum was approved as the basis of the general practitioner case and the Committee was instructed to press the Government as a matter of urgency to adjust general practitioner remuneration on the basis of the memorandum, the adjustment to be retrospective to July 5, 1948.

On the requisition of the Council and of the prescribed number of Divisions of the B.M.A., a Special Representative Meeting was held on March 29 to consider the General Medical Services Committee's memorandum.

Basic Salary

27 Circulars issued by the Ministry of Health to executive councils show that the Minister has allowed appeals against the disapproval of applications for basic salary in cases where the applicants have only recently established themselves in the area. The effect of granting basic salary to such practitioners is to subsidize them at the expense of their professional colleagues in the area, and it is contended that this is contrary to the Minister's original intention that doctors should not be encouraged to go to areas where they are not needed.

The Minister's attitude is understood to be that having agreed with the profession's view that, up to the appointed day, every medical practitioner should have a right to choose the area in which he would enter the National Health Service, it would be impracticable to take any action which could be construed as being in conflict with that view. Subsequent to July 5 it is claimed the Minister's responsibility was to consider, on its merits every appeal against the disallowance of a claim for basic salary, without regard to the circumstances in which the appellant came to the district before July 5.

The Minister has been asked to make provision in the proposed amending Bill or Regulations, for an appeal from the

decision of a local executive council on an application for basic salary to be made to the Medical Practices Committee and not to the Minister.

Dispensing Capitation Fee

28 The Minister's offer of a capitation fee of 6s 6d (for England and Wales), to cover the provision of medicines and appliances (except those contained in a special list) for patients who would otherwise have difficulty in obtaining them from a chemist, was accepted without prejudice to revision as the result of negotiations at a later date. Before the fee is reviewed there is to be an investigation into dispensing costs.

Vaccination and Immunization

29 Discussions with representatives of local authorities on the fees to be paid for vaccination and immunization have been adjourned until the Committee has reached agreement with the Ministry of Health on the question whether these services fall within the scope of a general practitioners' agreement under the National Health Service Act.

The Committee's representations to the Ministry are to the following effect:

(i) That vaccination and immunization form no part of the practitioner's duty under his terms of service, but it is a statutory obligation of the local health authority to provide them.

(ii) That where a practitioner renders a service of this nature he should be entitled to a separate fee for the service and for any report made to the local health authority.

When agreement has been reached on the above proposals, the discussion with local authority associations will be based upon the following suggested fees:

For immunization or vaccination	
At the surgery	5s 0d per attendance
At the patient's house	7s 6d per attendance

In both cases the fee will include the report which it has been suggested should be simplified.

Provision of Medicines and Appliances for Private Patients

30 The A.R.M. in July last (*Minute 50*) expressed the view that those who wished to make private arrangements for medical attendance and treatment should not be debarred from obtaining necessary medicines and appliances through the National Health Service. The view of the Ministry of Health is that prescribing and dispensing are essential parts of treatment and cannot be dealt with as though they are something separate. The Ministry was asked to consider the possibility of making available, through the Hospital Service, to patients treated privately, particularly expensive and life saving medicines (insulin and liver preparations etc.) where the cost would represent hardship to the individual, but the Ministry does not think that any workable arrangement on these lines is possible. Efforts are now being made to secure an amendment of the Act to give effect to the profession's wishes in this matter.

Certification

31 The Association has submitted a memorandum of evidence to, and its witnesses have appeared before, the Departmental Committee on Certification. It is understood that the report of the Departmental Committee is not likely to be available for some little time.

Position of General-practitioner-Specialists

32 The General Medical Services and the Central Consultants and Specialists Committees have appointed a joint sub-committee to consider questions referred to it on matters of interest to general-practitioner-specialists.

General Practitioners and Special Departments of Hospitals

33 The Ministry of Health is giving sympathetic consideration to the request for arrangements which will enable all general practitioners to be given the privilege, now enjoyed by some, of being able to obtain x-ray and pathological examinations by direct application to the hospital department concerned. The problem is said to be the practical one of increasing facilities so that the hospital departments can meet the needs of general practitioners as well as their primary duties to the hospital services.

Remuneration of Staffs of Cottage Hospitals

34. The subject-matter of the following resolutions of the 1948 A.R.M. is under discussion with representatives of the Ministry of Health:

39. *Resolved:* That the question of remuneration of general practitioners on the staff of cottage hospitals be brought to the notice of the Minister.

200. *Resolved:* That every session done by a practitioner should be paid for at full rate with no limitation of the number of sessions undertaken.

This question is linked with the terms of service for consultants and specialists, which have not yet been finally settled.

Health Centres

35. A motion (Minute 129) which was referred to the Council at the last A.R.M. deprecated any widespread establishment of health centres except after careful experiment in properly selected areas. Local medical committees have been asked to use their influence to prevent the hasty establishment of undesirable types of health centre.

Maximum Numbers on Doctors' Lists

36. No exception has been taken to a proposal by the Ministry of Health that general approval of lists in excess of the prescribed maxima should be withdrawn, and that action might be taken to bring such lists within the prescribed maxima as soon as is reasonably practicable. The Ministry has agreed, however, that no compulsory action should be taken in individual cases until all the doctors' lists in the area concerned have been cleared of duplicate names.

Stationery and Franked Envelopes for Doctors

37. The decision expressed in Minute 61 of the 1948 A.R.M. that doctors under the National Health Service should be supplied with suitable stationery and franked envelopes for the transmission of records has been discussed with the Ministry of Health. The Ministry's view is that postage is a proper charge on a doctor's practice expenses (which were taken into account in fixing their remuneration), and that arrangements for franking envelopes are not justified. The Ministry was pressed to give further consideration to the Association's request and has consulted the postal authorities, but has been unsuccessful. There does not seem to be any hope of success taking the matter further.

The Ministry was asked for assistance in securing the abolition of purchase tax on filing-cabinets for medical records. The Ministry approached the Board of Customs and Excise, whose reply was that they have no authority to remit or refund purchase tax on equipment of this nature, and that there is no possibility of obtaining such authority. Not only are there administrative difficulties in giving preferential treatment to particular classes of purchasers, since purchase tax is charged at the wholesale stage, but a concession to doctors would make it impossible to resist other claims which could be regarded as equally strong.

Medical Treatment of Overseas Visitors

38. Counsel has advised that Section 33 of the National Health Service Act, which requires an executive council to arrange for the provision of medical services for "all persons in their respective areas," means that no other qualification is required for taking advantage of the relevant arrangements than that the person is in the area to which the arrangements relate. In other words, as the Act stands overseas visitors are entitled to the benefits of the National Health Service during their stay in this country.

This is regarded as extremely unsatisfactory in spite of an assurance that it is the policy of the Government to secure reciprocal benefits for British subjects in other countries. Steps are being taken to secure an amendment of the Act on this point.

Medical Services Committee Procedure

39. The regulations governing the consideration of complaints against a medical practitioner do not provide, as the old N.H.I. Medical Benefit Regulations provided, for similar action against a patient. Although such complaints are rare it is felt that there should be provision for them under the new Service, and appropriate representations are being made to the

Ministry of Health on the subject. It is understood that an amendment of the Act will be required.

Income Tax

40. The Chief Inspector of Taxes is being asked to agree that medical practitioners who wish to do so may pay their income tax quarterly or monthly.

Assistants

41. Consideration has been given to the position of the Medical Practices Committee in relation to an application by a doctor to employ a second assistant, it being agreed that the power to approve or refuse the appointment of an assistant whose name is not on the list rests with the executive council. The General Medical Services Committee's views are: (1) that the Medical Practices Committee has no jurisdiction where an application is made to the executive council by a principal to employ a second assistant, or where the executive council propose to refuse consent to the employment of an assistant; (2) that where desired by principals the names of assistants should be included in a separate part of the lists of executive councils; and (3) that where an assistant leaves the employment of his principal his name should be removed from the list.

Training Grants for Assistants

42. The Ministry of Health scheme, providing grants to general practitioners who undertake the training of assistants, has been given provisional approval on behalf of the profession. The scheme is regarded as being in the nature of an experiment. Modification will almost certainly be necessary, and it is intended to re-examine the scheme in the near future with a view to suggesting improvements in the light of the recommendations of the Spens Report.

Certificates for Incapacity due to Pregnancy

43. The Ministry of National Insurance has agreed to the proposal that at or about the 34th week of pregnancy the doctor should be required to give only one certificate to cover the interval to the actual confinement.

Certificates for Surgical Corsets

44. Urgent representations have been made to the President of the Board of Trade that, in the interests of the profession, medical certification for surgical corsets should be abolished.

Certificates for Out-patients

45. Approval has been given to a suggestion by the Ministry of Health that Forms Med. 7 and 8, for use in connexion with long-stay patients in hospitals, might be adapted for issue to out-patients.

Consultation on Draft Regulations and Instructions

46. The Ministry of Health was asked for an assurance that the General Medical Services Committee would be consulted by the Department before statutory orders were promulgated or instructions issued by the Department to local executive councils or other bodies on matters of principle affecting doctors rendering services under Part IV of the Act. The Ministry accepts the general principle that the profession's representatives should be consulted on points of major principle involving regulations.

Specialization of General Practitioners

47. It is regarded as essential in the interests of medicine that some degree of specialization in general practice should be encouraged, and this view has been stressed during discussions with officers of the Ministry of Health. From the attitude of the Ministry of Health it would appear that there is no prospect of the general practitioner who undertakes a specialist service to his patient (unless he is also employed as a specialist in the Hospital Service) receiving a fee for the service. This view is not accepted and the matter is being pursued in further discussions with the Ministry.

Treatment in Cottage Hospitals

48. The 1948 Annual Conference expressed regret that practitioners who were not participating in the National Health Service had been excluded from rendering service, as in the past, to their own patients in local cottage hospitals. Representations

have been made to the Ministry in favour of general practitioners in the area of a hospital with an "open" staff, whether or not participating in the Service, being allowed to treat their patients in the hospital.

Dental Haemorrhages

49. The present position is that a doctor is required under his terms of service to treat a case of dental haemorrhage, whereas a dentist is entitled to claim a special fee for this service. The Ministry states that it is not legally possible to regard a doctor as a dentist's deputy in such cases. This ruling is very unsatisfactory and the Ministry has been informed that, unless this decision is modified, general medical practitioners will be advised to refuse to accept service in cases of haemorrhage arising from dental operations.

Miscarriages

50. It has been necessary to contest a ruling of the Ministry that treatment for a miscarriage should be regarded as part of the ordinary obligation of a general practitioner under his terms of service. Discussions on this question are still proceeding with the Department.

Superannuation

51. The Ministry has promised to give consideration to an amendment of Regulation 38 of the Superannuation Regulations so as to make it clear that there must be agreement between partners before an executive council can be authorized to assess superannuation contributions on the basis of shares in the partnership.

Quality of Prescription Books

52. The present unsatisfactory construction of pads of prescription forms has been taken up with the Ministry of Health.

Removal of Names from Doctors' Lists

53. The Ministry of Health has been asked to withdraw the instruction to executive councils in E.C.L.134 to remove a person's name from a doctor's list if a notice or medical card sent to the person and correctly addressed is returned through the Dead Letter Office.

Dr. E. A. Gregg

54. The Council has placed on record its appreciation of the services of Dr. E. A. Gregg as chairman of the Insurance Acts Committee since 1937 and his unflinching devotion to the interests of general medical practitioners.

CONSULTANTS AND SPECIALISTS

Introductory

55. It will be remembered that in 1948 the Committee was reconstituted on a democratically elected basis, irrespective of membership of the Association, in order that it should be truly representative of consultants and specialists throughout the country, and competent to speak for them on all matters affecting their interests. In addition Regional Committees were established in the various Regions by the consultants and specialists themselves.

The Regional Committees without exception have taken an active interest in the many problems of the moment and have kept the Central Committee fully informed of the views of consultants and specialists throughout the country.

Despite the intention of the Association that the new Committee should enjoy complete autonomy, some doubt still appears to exist as to its status in relation to the Association, and this doubt is due in some measure to the wording of Minute 71 of the Representative Body set out below:

Min. 71.—The Central Consultants and Specialists Committee shall be an autonomous body with full powers to determine policy on consulting and specialist and hospital matters and action through the administrative machinery of the Association. The decisions of the Committee shall not be subject to approval of the Council of the Representative Body *except in so far as they may affect other forms of practice or other aspects of the policy or activities of the Association.*

The Committee is satisfied that it was the intention of the Resolution only to limit its autonomy to the sphere of consultant practice, and that within that sphere it has been afforded by the Council and the Representative Body complete autonomy. To make this abundantly clear, and in order that the Committee

shall continue to enjoy the full confidence and support of consultants and specialists, the Council has decided to recommend to the Representative Body:

Recommendation: That Minute 71 of the Annual Representative Meeting, 1948, be amended to read as follows:

"The Central Consultants and Specialists Committee shall be an autonomous body with full powers to determine policy and action on consulting and specialist and hospital matters through the administrative machinery of the Association. The decisions of the Committee within that sphere shall not be subject to approval of the Council or the Representative Body."

Joint Committee with the Royal Colleges and Scottish Royal Corporations

56. With the establishment of democratically elected committees representative of various sections of the profession it became apparent some months ago that the Negotiating Committee could not appropriately continue its role as the mouth-piece of the profession in negotiations with the Minister. The General Medical Services Committee, which superseded the Insurance Acts Committee, assumed the status of the negotiating body on behalf of general practitioners, but in the sphere of consultant practice the position was more complex. The Central Consultants and Specialists Committee is the only body representative of consultants and specialists democratically elected and having the peripheral organization necessary to obtain the views of consultants and specialists generally, but notwithstanding its claims on these grounds to represent the consultant profession it is clear that on the grounds of prestige and status the Royal Colleges and Scottish Royal Corporations also have a claim to participate in any negotiations with the Minister.

Accordingly, in order that there should be one channel, and one channel only, through which the views of consultants and specialists are presented to the Minister, discussions have taken place between representatives of the Committee and of the Royal Colleges and Scottish Royal Corporations, as a result of which a Joint Committee has been established with the following terms of reference:

"(a) To represent consultants and specialists in the impending negotiations with the Government on matters arising out of the National Health Service Acts and the report of the Spens Committee on the Remuneration of Consultants and Specialists;

"(b) to prepare and to submit for the consideration of its constituent bodies a scheme, including terms of reference, for the future work of the Committee."

The Joint Committee has now taken over the work of the Negotiating Committee in the field of consultant practice. Where agreement is not reached in the Joint Committee on any proposal a constituent member of the Committee is entitled to have its view represented to the Government, provided that, before any such representation is made, a conference between representatives of the Joint Committee and the constituent body is held in an endeavour to reach agreement.

It has been agreed that the members of the Joint Committee shall represent both teaching and non-teaching interests. The composition of the Committee is as follows:

Chairman: Sir Lionel Whitby, President of the Association.

Royal College of Physicians: Lord Moran, W. G. Barnard, H. E. A. Boldero.

Royal College of Surgeons: Lord Webb-Johnson, E. F. Finch, R. L. McNeill Love.

Royal College of Obstetricians and Gynaecologists: Sir William Gilliatt, H. J. Malkin.

Royal College of Physicians, Edinburgh: J. D. S. Cameron.

Royal College of Surgeons, Edinburgh: Sir Henry Wade.

Royal Faculty of Physicians and Surgeons, Glasgow: W. R. Snodgrass.

Central Consultants and Specialists Committee: T. Rowland Hill, C. E. Kindersley, W. S. Mack, A. M. A. Moore, R. L. Newell, T. Holmes Sellers.

Specialist Spens Report

57. The Minister of Health has accepted in principle the recommendations of the Spens Committee upon the remuneration of consultants and specialists.

The Committee is of the opinion that the proposed basic salary range can be regarded as satisfactory on the basis of 1939 values, but considers that there should be no reduction in

the salary of a practitioner appointed to a specialist post before the age of 32 as suggested by the Spens Committee. The Committee welcomes the proposal that provision should be made for varying the commencing salary of practitioners appointed to their first specialist post after the age of 32, and recommends that special consideration should also be given to those who have lost seniority through service with H.M. Forces.

The Committee regards the formula of the Spens Committee for assessing the remuneration of specialists rendering part-time services as generally satisfactory provided account is taken of the liability to deputize for colleagues absent through sickness or on leave, and for emergency visits.

Merit Awards

58. It will be remembered that the Spens Committee expressed the view that an automatic incremental scale was inappropriate for the remuneration of specialists beyond a certain level and recommended that after a salary of £2,500 (1939 values) had been reached additional financial rewards should be on the basis of merit as evidenced by special contributions to medicine in the field of research or otherwise, exceptional ability, or any outstanding professional work, the awards to be made in three grades by a National Committee. Such a Committee has now been appointed by the Minister in consultation with the Royal Colleges and the Scottish Royal Corporations.

The Central Committee has given consideration to the recommendations of the Spens Committee and to possible alternative methods of rewarding specialists above the level of the basic salary range. The views of the Regional Committees have been sought, and reveal that, while there is little real objection either to the principle of merit awards or to the method of implementation recommended by the Spens Committee, so far as it applies to the most outstanding 4% of the profession, there is considerable apprehension at the fate of so large a proportion as a further 30% of the profession being left to a national committee alone to determine.

It has been suggested that, as an alternative to the merit award proposals, super-scale posts carrying higher salaries should be established, or that the basic salary range should be extended. Awards in the form of annual prizes have also been suggested. The Committee does not feel that these suggestions offer a satisfactory method of dealing with the problem, or that they would be acceptable to the majority of consultants.

It is therefore of the opinion that, while the selection of the consultants for the highest awards should be left entirely to the discretion of the National Committee, there should be some modification of the proposals of the Spens Committee for dealing with awards of the second and third categories. Thus it suggests that in each Region a committee should be established by the National Committee, in consultation with the boards of governors and regional hospital boards, of distinguished practitioners of consultant status who are not personally interested in merit awards (i.e., being already in receipt of the highest awards or retired); that these committees should select specialists in the Region for awards in the second and third categories for recommendation to the National Committee, and that awards in these categories should be made by the National Committee solely upon the recommendation of these Regional Committees, subject to a right of appeal by a rejected candidate from the decision of a Regional Committee.

The Committee also suggests that both the National and the Regional Committees should have lay chairmen chosen in consultation with the Central Consultants and Specialists Committee.

The Committee considers that individual specialists should have the right to make direct application for an award and that the decisions of the National Committee should be published from time to time, giving the names and appointment of the recipients.

Pay-beds

59. The Committee is disturbed at reports of proposals to reduce the number of private hospital beds, and at the rising costs for hospital accommodation. It is also concerned that, although the Regulations permit hospital management committees or boards of governors to set aside up to 15% of the total number of pay-beds as "no ceiling" beds, there is no obligation upon these bodies to do so.

The Committee considers it essential that sufficient hospital accommodation should be preserved for the conduct of private practice, and that the costs of maintenance should be so adjusted as to be within the means of persons who wish to obtain hospital treatment privately. It has therefore recommended to the Joint Committee that negotiations should be entered into with the Ministry as a matter of urgency with a view to securing:

- (a) the maintenance or increase of the pre-Act proportion of pay-beds; including the provision of a number of pay-beds in each hospital management committee area, and the allocation of not less than 15% of the total number of pay-beds as "no ceiling" beds;
- (b) the adoption of the grant-in-aid principle in order that patients entering pay-beds shall not be required to pay the whole cost of hospital maintenance; and the standardizing of maintenance costs so far as possible in hospital groups;
- (c) the abolition of amenity beds.

The Committee also proposes that provision should be sought in the amending Bill to secure that the setting aside of pay-bed accommodation shall be obligatory upon the Minister and not merely permissive.

Representations have been made to the Ministry for the abolition of the detailed schedules of maximum professional charges permitted to be made by specialists in respect of the treatment of private patients in "ceiling" pay-beds, contained in the Regulations made under Section 5(2) of the Act. The view of the Ministry, however, is that the wording of the Act requires the provision of such detailed schedules in the Regulations.

The Committee considers that this procedure is impracticable. The detailed schedules are full of anomalies and there are many omissions, and in view of the fact that they would constantly need revision the Committee feels that any attempt to improve them would be futile. Moreover, it is of the opinion that any classification of treatments which ignores the differing circumstances of individual cases is unsound. The Committee therefore adheres to the view that the schedules should be abolished. It raises no objection to the provision in the Regulations of an overall inclusive charge for all professional services rendered to a patient in a "ceiling" pay-bed, the actual apportionment as between individual consultants to be made locally by agreement, provided that the Ministry accepts a similar restriction in the charges for maintenance. The Committee is also prepared to accept the present maximum of 75 guineas for this purpose, provided it is limited to the treatment given to a patient during one stay in hospital not exceeding 28 days from the date of admission.

Proposed Terms of Service of Hospital Medical Staff

60. In November, 1948, the Ministry issued to the constituent members of the Joint Committee a confidential document containing the Minister's proposals regarding the permanent terms and conditions of service of hospital medical staff. Permission to disclose the contents of this document to Regional Consultants and Specialists Committees or to the consultant members of the profession was refused despite protests from the Committee. The explanation of the Ministry for this course of action was that the proposals were to be regarded as a basis for preliminary discussions in the light of which definite proposals would be issued for more general consideration.

The Joint Committee with the Royal Colleges has entered into preliminary discussions with the Ministry on the proposed terms. In so doing the Committee made it abundantly clear to the Ministry that it was not negotiating terms of service on behalf of the consultant profession, but that it was merely advising the Ministry as to the terms and conditions which might in the Committee's view prove acceptable or more acceptable to consultants and specialists. The Ministry accepted this position and agreed that definite proposals would be issued for consideration and criticism by all interested parties. The proposed terms of service of hospital medical staff were received on March 10 and published in full in the Supplement of March 19. These proposals are now under consideration by the Committee, which has in the first instance referred them to its regional committees.

The Ministry has already been informed that it is essential that individual specialists should have ample time to consider the final terms of service before being required to sign long term contracts. The delay occasioned by the course adopted by the Ministry will make this impracticable by the end of March.

and the Ministry has now extended the interim period until July 4, 1949. In the meantime specialists are advised not to enter into permanent contracts, if they are offered, until the final terms have been approved by the Committee.

Security of Tenure

61. The Committee is of the opinion that one of the most important issues to be resolved in connexion with the conditions of service of specialists, both on the transfer from the interim to the permanent arrangements and as a long-term policy, is the security of the specialist in his hospital appointment. It holds strongly to the view that, as in many hospitals and university appointments before the appointed day, the contracts offered to specialists for duties in the public service should be tenable until retiring age, only terminable with the consent of the specialist or for reasons of professional misconduct. The Committee further suggests that machinery should be established in consultation with the profession for investigating allegations of professional misconduct, and for dealing with appeals against decisions to terminate a specialist's contract.

Selection of Specialists

62. In November last boards of governors and regional hospital boards were advised by the Ministry that, pending the settlement of the final terms of service, they should proceed without delay: (a) to determine the number and types of medical staff required to carry out the work of the hospitals under their control; (b) to assess the status of existing staff with a view to deciding which officers should be offered long-term contracts in a specialist or other capacity, and the duties they should be invited to perform.

Having determined the establishments required for the future, the boards were advised to consider how far the services rendered by the existing specialist staff might need modification to provide an adequate service—e.g., whether further part-time service or additional whole-time posts were required, or whether specific duties should be continued or redistributed in the interests of efficiency. After ascertaining the needs of the hospital in this way, the boards were to proceed with the assessment of the status of the existing medical staff: in the case of boards of governors on the advice of the medical committee of the hospital, and in the case of regional hospital boards on the advice of professional committees set up for this purpose, and consisting of two general physicians, two general surgeons, one obstetrician and gynaecologist, together with two specialists in the specialty under review.

The Ministry made it clear in its instructions that no general criteria of specialist status could be laid down, and that the determination of status could not depend solely upon the possession of higher qualifications or the exclusive practice of a specialty, but must take account of the actual experience of the practitioner. In making the assessment the professional committees were directed to have regard to the views of the medical committees of the hospitals concerned and, in appropriate cases, of the local medical committee and the local health authority.

The Committee feels that the direction to consult with hospital medical committees, although of considerable importance, does not sufficiently safeguard the interests of individual practitioners. It has therefore proposed that a central professional committee should be established to deal with appeals against the decision of the Assessments Committee or of the boards.

The Committee has made proposals to secure that where a general practitioner who also practises a specialty has acquired the necessary skill and experience to justify recognition as a specialist he should have the same security of tenure in his appointment and receive the same remuneration as those who practise a specialty exclusively, and, further, that he should be afforded a sufficient amount of specialist service to enable him to maintain his efficiency.

Only when the review referred to above has been completed and the permanent rates of remuneration are known can long-term contracts be offered. Boards have been instructed, however, that subject to the needs of the Service, consideration should be given to the circumstances and preferences of the individual specialist in offering contracts, and that opportunities to transfer from whole-time or part-time, or vice versa, should so far as possible be given.

Medical Advisory Committees

63. The Committee considers that the present position regarding the establishment and recognition of medical advisory committees at various levels leaves much to be desired. It is anxious that the members of hospital staffs should continue, as under the voluntary hospital system, to make an effective contribution to the organization of the hospital services. It feels that this can only be secured through the machinery of medical advisory committees, associated with the boards of governors and regional hospital boards and hospital management committees, freely elected by and representative of the medical staffs of the hospitals affected. It considers such committees should have statutory recognition in the same way as the local medical committee.

Advisory Appointments Committees

64. The Appointment of Specialists Regulations, which require the appointment of practitioners to hospital specialist posts to be made by boards of governors and regional hospital boards on the advice of advisory committees, make no provision for the representation of the medical staffs of the hospitals concerned upon these committees, and they have therefore no official voice in the appointment of their future colleagues.

The Committee proposes that the Ministry should be urged to amend the regulations to provide that at least two of the medical members of these committees should be nominated from among the members of the senior medical staff of the hospital in which the vacancy exists, and that the medical committee of the hospital should have an opportunity of submitting its views upon the candidates for the appointment. It also proposes that the advisory committee should include a specialist or specialists nominated by an organization recognized by the board of governors or the regional hospital board as being representative of the branch of specialists concerned.

Mileage

65. The Committee considers that the mileage allowances payable to specialists are completely inadequate, and it has obtained from the A.A. and R.A.C. estimates of the cost of maintaining and running cars of varying horse-power over different annual mileages which support this view. The Committee is using these figures in pressing its claim with the Ministry that the allowances should be substantially increased.

The Committee has recommended that where full-time salaried specialists are under a continuing liability to travel outside their main hospital in the course of their duties they should be entitled to claim mileage in respect of journeys from their homes to the hospitals, and that mileage should be paid to all whole-time officers for journeys from their homes to hospitals on emergency visits, and between hospitals.

Superannuation

66. The Committee has considered a number of matters affecting the superannuation rights of consultants and specialists.

Representations have been made to the Ministry that an option to remain outside the N.H.S. Superannuation Scheme and to receive the Government's 8% contribution towards the maintenance of approved insurance policies should be granted to specialists in the same way as to general practitioners. This option is of most value to the senior practitioner who, already heavily committed for life insurance, is unable to qualify for a pension.

Transferred officers had the option within the first three months of the Service to decide whether to retain the rights of superannuation schemes to which they were contributing before July 5 or to transfer to the N.H.S. scheme. Representations have been made that this option should be extended until the practitioners concerned can consider the position adequately in the light of the permanent terms.

The Minister has rejected both of these requests, and the Committee has decided to renew its representations.

The Committee has also decided that the following points should be raised with the Ministry (a) that specialists practising in partnership should be entitled to have their superannuation contributions and benefits adjusted on the basis of their partnership shares, as in the case of general practitioners; (b) that where the services of a specialist are retained beyond the age of

65 he should be entitled to continue to make contributions to the superannuation fund, and to receive the additional benefits accruing therefrom; and (c) that specialists who upon retirement are not entitled to any benefit under the Superannuation Regulations should receive the Government's 8% contribution in addition to the return of their own contributions with interest.

Hardship Caused by Interim Terms

67. In November last the Ministry announced that where it was clear, by reason of the seniority of a specialist performing eight or more sessions that his eventual remuneration would be substantially higher than the £1,600 laid down in the interim arrangements, and where meanwhile the temporary limitation involved him in financial hardship, he might ask the Regional Hospital Board or Board of Governors for an increase in the interim payment.

Representations were accordingly put forward that a similar concession should be made in the case of specialists of senior status who were performing less than eight sessions per week, but without success.

Financial Position of Junior Hospital Staff

68. Some months ago the attention of the Ministry was drawn to the acute financial hardships caused to registrars and junior house officers by reason of the deduction of superannuation and national insurance contributions from salaries already grossly inadequate. The Ministry had stated that it hoped the introduction of the permanent terms would not be long delayed and that for this reason it was anxious to avoid any temporary adjustment.

In view of the extension of the interim period the Ministry has again been urged to adjust the salaries of house officers provisionally and with retrospective effect to July 5, 1948, on the basis of the proposed new salary scales. It is regretted that despite repeated representations no action has yet been taken by the Department to mitigate the financial hardship to the classes of practitioner referred to in this paragraph.

Lectures to and Examination of Nurses

69. With a view to securing a uniform scale of payment to specialists for undertaking lectures to and the examination of nursing staff, the Committee has recommended to the Joint Committee that the following fees be accepted as a basis for negotiation with the Ministry: Each lecture, £3 3s.; examinations, 10s. 6d. per candidate, with a reduction of 33% where no viva voce examination is required.

Domiciliary Visits

70. Repeated representations have been made to the Ministry for the abolition of the limitation upon payment for domiciliary visits, but the Ministry has consistently refused to waive the maximum quarterly payment, although it states that in comparatively few cases has the maximum been exceeded.

Pending the introduction of the permanent terms specialists are advised to keep a careful record of all domiciliary visits which they make.

Domiciliary Visits in Nursing-homes

71. The domiciliary visiting arrangements do not extend to patients in private nursing-homes, except in the case of patients permanently resident in such homes—e.g., elderly infirm persons in a home for aged people. The services of an Emergency Obstetric Unit (including the services of a specialist) are, however, available in a nursing-home as elsewhere. Having regard to the special position of maternity cases, where the patient often receives treatment in a nursing-home because of the unsuitability of her home or the lack of hospital accommodation, the Committee has recommended that domiciliary visits should be permitted to patients in nursing-homes in emergency obstetric and neonatal cases.

Trainee Specialists

72. The Committee is recommending that hospital management committees should consult with the medical staff committee of the hospital (or with the medical staff where there is no staff committee) in appointing practitioners to trainee specialist posts.

It also proposes that appropriate machinery should be established to maintain adequate standards in the training and appointment of trainee specialists, and that this should be the responsibility of the Regional Hospital Board.

Fees for Medico-Legal and Other Work

73. There are a number of services carried out by specialists in connexion with their hospital duties which in the past have been regarded as being undertaken in a personal capacity, the fees being retained by the specialist. These include medico-legal work, the examination of intending immigrants and blind persons, special reports for outside bodies, and lectures to and examination of nurses.

The view of the Committee is that the fees for services of this nature should continue to be retained by the individual specialist irrespective of whether he is a whole-time or a part-time officer. The Ministry's proposals on the subject are included in the proposed terms of service now published, and the matter will now receive further consideration by the Committee.

Candidates for Hospital Appointments

74. Representations have been made to the Ministry that candidates attending for interview in connexion with hospital appointments should receive subsistence allowance in addition to their railway fares in cases where they are necessarily detained away from their homes overnight.

Supplementary Ophthalmic Service

74a. Shortly after the introduction of the National Health Service the Ministry of Health, being perturbed at the total fees paid to practitioners participating in the Supplementary Ophthalmic Service, collected information from a number of local executive councils which led it to believe that the original estimate on which the fee of £1 11s. 6d. had been based—namely, an examination lasting on the average half an hour—was incorrect.

The Ministry therefore proposed that there should be an immediate provisional reduction in the fee, to be followed by an impartial and comprehensive factual inquiry into the timing of ophthalmic examinations, in the light of which the fee would again be reviewed. The Ministry was persuaded at discussions in December, 1948, that the first step should be to carry out the proposed inquiry. The preliminary arrangements for an inquiry broke down, and on these grounds the Ministry again proposed at a further meeting in February, 1949, that the fee should be reduced immediately, further steps to carry out a full and impartial inquiry being made as soon as practicable.

The Ministry was again urged to take no action to modify the fee until the original estimate on which the fee had been based had been verified. On Feb. 14, however, the Minister announced that as from April 1 the fee would be provisionally reduced to £1 5s. on the basis of an average timing of 24 minutes, with an assurance that if a subsequent investigation revealed that the reduction was not fully justified an appropriate adjustment would be made in the fee eventually fixed.

The Ministry has now intimated that it has been able to make fresh arrangements for an inquiry, and has invited the Association, jointly with the Faculty of Ophthalmologists, to nominate representatives to a working party in association with the statistician who will carry out the investigation.

Throughout the discussions it has been maintained that a factual inquiry into the time actually taken by ophthalmic practitioners in the examination of their patients should precede any question of a reduction in the fee, and a protest was made to the Minister at the course adopted, particularly in view of the fact that arrangements for such an inquiry were already in hand. Nevertheless, bearing in mind the assurance that the reduction is provisional, and that an appropriate adjustment will be made if the inquiry reveals the reduction not to be fully justified, the Council proposes to co-operate in the inquiry, and, with the concurrence of the Faculty, has nominated representatives to the working party.

Central List of Ophthalmic Medical Practitioners

The Executive Council Regulations, 1947, provide for the establishment of a committee to advise the Minister of Health

to the practitioners who have the "prescribed qualifications" entitling them to participate in the Supplementary thalamic Service.

The Minister has approved a committee of seven medical practitioners nominated jointly by the Association and the Ministry, and this committee has been housed in B.M.A. House, and its secretarial and clerical work has been undertaken by the Association's staff. During the past eight months the committee has dealt with the applications of well over 30 practitioners.

PRIVATE PRACTICE

Examination of Recruits to the Territorial Army

5. The Annual Representative Meeting (Min. 91) instructed the Council to press for the retention or re-establishment of military medical boards for the examination of recruits for the Territorial Army. The Council had already urged the War Office to adopt the procedure, but the Department, while agreeing that this method would be preferable, held that it would be impracticable to put it into effect. The Council thereupon pressed that the fee payable to individual practitioners for carrying out the examinations be increased from 5s. to 15s. in each case, and that the overriding maxima be abolished. The Department agreed to increase the fee to 10s. 6d., but was unwilling to make any concession on the overriding maxima. The Council is not satisfied with the present position: the fees are totally inadequate in view of the nature of the examination required, and there appears to be no practical difficulty in the way of arranging for the examination of the great majority of recruits for the Territorial Army to be carried out by medical boards.

These views have been communicated to the Department, which has been urged to establish medical boards without delay. In the event of exceptional reasons it is impracticable for the recruit to be examined by a medical board the Council has urged that a fee of £1 11s. 6d. should be paid to the examining practitioner.

Mileage Payments to Members of Medical Boards

76. Discussions have taken place with representatives of the Ministries of Labour, Pensions, and National Insurance on the subject of the payment of mileage to members of medical boards. The Departments have for a long time resisted these payments, claiming that the sessional fees have always been recognized as an inclusive payment. This view is not accepted by the Council. A more difficult circumstance to overcome, however, arises from the Ministries' practice of "spreading" medical board work among members of the profession without regard to proximity to the boarding centre, and the Departments now state that if mileage is to be introduced it will be necessary to "prune" the panels of medical board members. The Council recognizes this difficulty while still holding to the principle that mileage should be paid. To meet the position it is suggested that there should be a mileage allowance limited, say, to £1. This it is felt would compensate the busy practitioner, who, in general, would be within a reasonable distance of the boarding centre, without depriving his colleagues at a greater distance—to whom the time factor could not be of any significant importance—from sharing in the work.

The Departments have now indicated that they are prepared to pay mileage allowance at the rate of 1s. a mile each way for every mile outside a radius of two miles, subject to a maximum of 20s. for each return journey and subject, also, to the payment of a lower sessional fee where arrangements are made for less than three cases to attend the boards. The proposals of the Departments have been accepted by the Council.

Recruiting Medical Boards

77. The Annual Representative Meeting referred to the Council a motion by Gateshead that, in view of the recent introduction of the Pulheims system of classification, a considerable reduction should be made in the number of candidates called for examination by recruiting medical boards.

The Council ascertained from the Department that National Service medical boards are expected to examine 20 men or 15

women during a 2½-hour session. These numbers were temporarily reduced while the boards were gaining sufficient experience in the new procedure, but it now appears that they can be dealt with without undue pressure during the prescribed session.

The Council has decided that unless further complaints are received no action be taken to obtain a reduction in the numbers of candidates called for examinations by National Service medical boards.

Future Designation of the General Practice Committee

78. In the Council's view it is desirable that the name of the General Practice Committee should be changed now that a General Medical Services Committee has been set up to deal with all questions affecting general practitioners under the National Health Service Acts. The Council proposes that the General Practice Committee should be renamed the Private Practice Committee and that it should consider questions in the field of private practice not specifically referred to other committees. The proposed amendment to the Schedule to the By-laws to give effect to this change appears in Appendix IV of this Report.

Remuneration of Civilian Medical Practitioners Employed by Service Departments

79. The War Office has agreed that the revised rates of remuneration payable to civilian practitioners engaged on whole- and part-time duties should be applied retrospectively to April 1, 1947. The Air Ministry has also revised the fees payable to civilian practitioners to bring them into line with those agreed with the War Office.

The Council has stressed to the Air Ministry that the fee for the re-examination of regular and non-regular Air Force personnel for fitness to fly, where carried out by civilian practitioners on contract with the Department, should be increased from 9s. 6d. to £1 11s. 6d. The Department has now increased the fee to £1 1s. with mileage at the rate of 1s. per mile beyond a radius of two miles, but the Council is continuing to press for a fee of £1 11s. 6d.

Advisory Panels under the Disabled Persons (Employment) Act, 1944

80. Following representations from the Council, the Ministry of Labour offered to increase the sessional remuneration of members of Advisory Panels established under the Disabled Persons (Employment) Act, 1944, from £1 11s. 6d. per session to £2 5s. for sessions of 1½ to 2½ hours, and to introduce a reduced sessional fee of £1 10s. for sessions with a normal duration of less than 1½ hours. The Council informed the Ministry that the fee of £1 10s. should be restricted to sessions of not more than one hour, and that if the Ministry wished to make provision for sessions of 1 to 1½ hours it should pay a fee of £1 15s. therefor. The Department has now agreed to pay a fee of £1 15s. for a session of less than 1½ hours, and has also agreed to pay a mileage allowance at the rate of 1s. a mile each way outside a radius of two miles, subject to a maximum allowance of 20s. for each return journey.

Independent Referees of the Ministry of Labour

81. Following negotiations with the Ministry of Labour the Department has increased the fee payable to independent referees for reports upon persons referred for examination with a view to determining fitness for a particular employment from 5s. in undisputed cases and 10s. 6d. in disputed cases to 12s. 6d. in either case, with effect from Aug. 1, 1948.

It has also been agreed with the Ministry of National Insurance that a fee of 12s. 6d., plus travelling expenses where indicated, should be paid for the completion of a similar form in cases where there is doubt as to the capability of a claimant to unemployment benefit and the claimant is referred to a medical referee for medical examination.

Remuneration of Medical Officers at Government Training Centres

82. After negotiations with the Ministry of Labour the following revised rates of remuneration have been agreed for

medical officers at Government Training Centres, including those at which rehabilitation units are established, with retrospective effect to Jan. 1, 1948:

Attendance up to $\frac{1}{2}$ hour	..	..	£1 0s.
over $\frac{1}{2}$ hour up to 1 hour	..	..	£1 10s.
over 1 hour up to $1\frac{1}{2}$ hours	..	..	£1 15s.
over $1\frac{1}{2}$ hours up to $2\frac{1}{2}$ hours	..	..	£2 5s.
over $2\frac{1}{2}$ hours up to 3 hours	..	..	£2 15s.

Allowances to Medical Witnesses in Criminal Cases

83. The Home Secretary has issued new regulations amending the maximum allowances payable to medical witnesses appearing to give evidence in criminal cases. The regulations embody the recommendations of the Departmental Committee and provide for a maximum allowance of £5 per day, subject to not more than half this sum being payable for an attendance of less than four hours unless the witness appears in more than one case on the same occasion. The regulations provide for the first time for the payment of a night allowance in cases where the witness is necessarily detained away from his home overnight.

Experience has already shown that allowances are being offered to medical witnesses which are considerably below the maximum laid down in the regulations. Further, no allowance is being paid where the practitioner giving evidence holds a full-time salaried appointment. The Council is discussing both questions with the Home Office.

Doctor's Signs on Cars

84. Further consideration has been given to the question of the use of a distinctive sign to indicate membership of the Association, and specimen badges have been inspected. The Council is advised that even if a special badge were used no official recognition could be given, and the Home Office would not instruct the police to give any preferential treatment to doctors displaying the badge. The Council is of the opinion that no action should be taken to encourage the use by members of the Association of a distinctive motor badge.

Fees for First-aid Lectures

85. The St. John Ambulance Association and the British Red Cross have increased the fee for lectures in first-aid given by members of the profession from £1 1s. to £1 11s. 6d. in accordance with the decision of the Representative Body in 1948. The fees for examinations have also been increased from £1 1s. per class of 20 to £1 1s. per class of 12, with an additional 1s. 6d. for each candidate in excess of 12. The St. John Ambulance Association has also adopted the mileage rate of 1s. per mile (each way) beyond two miles.

Police Surgeons

86. The contracts of certain Metropolitan divisional police surgeons who did not enter the National Health Service were terminated at the appointed day on the ground that they would be unable to undertake the treatment of police officers.

A strong protest was addressed to the Home Office on the subject of this discrimination against practitioners remaining in private practice, and a question has also been raised in the House of Commons. The attitude of the Department was that in future the title of divisional surgeon would be an honorary one attaching to those practitioners who indicated that they were prepared to accept police officers as patients under the National Health Service and who were also prepared to carry out "station calls" at the request of the police. It has been pointed out to the Department, however, that it is no longer the duty of the police surgeon to render treatment, and that there is no justification for debarring those practitioners who have hitherto efficiently undertaken services required by the police authority from continuing to do so merely on the ground that they are not eligible to treat police officers as public patients.

The matter has been vigorously pursued with the Department, and it is understood that the practitioners concerned will not be debarred from having their names included in the lists of available doctors maintained at police stations in the Metropolitan area.

Life Insurance Examinations—Supplementary Reports

87. Agreement was reached with the Life Offices Association some time ago that the fees payable for life insurance examinations should be £1 11s. 6d. where the standard form of report was required and 10s. 6d. where the report was on the short form normally used for policies of less than £300. A number of practitioners subsequently sought guidance as to the fee, if any, which should be payable for additional reports which some companies required from time to time to supplement the information contained in the original report.

After discussions with the Life Offices Association the Council has agreed that, except where the additional information is required in consequence of an omission in the original report or to elucidate statements made therein, a fee shall be payable in such cases, the amount to be left for arrangement between the practitioner and the company on the understanding that no "token" fee shall be offered and that normally the fee shall be not less than 10s. 6d.

National Coal Board

88. The National Coal Board has been asked to recognize the Association as the representative body with whom it should discuss the salaries and conditions of service of the medical officers in its service. The Board has now given an undertaking that as a general principle it is prepared to consult the Association on the matters referred to and that the Association can, if it at any time desires to make representations on the salaries and conditions of service of the Board's medical officers, approach representatives of the Board on such matters. The Board has asked for comments on suggested scales for its medical officers, and this question is under consideration by the Council.

Examination of Candidates for Civil Service Appointments

89. Since the inception of the Treasury Medical Service the Council has urged the Treasury to raise the fee for this examination from £1 1s. to £1 11s. 6d. (the fee for a full life insurance examination). The Treasury agreed to increase the fee to 25s., and the Council has decided to accept this fee for a trial period of one year.

Examination of Candidates for Appointment under Regional Boards, Local Executive Councils, etc.

90. The Ministry of Health has been urged to standardize the fee for the examination of candidates for employment with regional hospital boards and executive councils. The Department stated that although no medical examination is required for such appointments under the Superannuation Regulations, the Minister considered it desirable that such an examination should be made a condition of permanent appointment.

The certificate which the examining doctor is asked to complete is that the candidate is "free from any physical defect or disease which now impairs his capacity satisfactorily to undertake the duties of the post for which he is a candidate." The Council considers the fee of one guinea to be appropriate for an examination and report in the form described.

Medical Officers to Public Schools and Private Boarding Schools

91. In the large majority of cases public schools and private boarding schools have made arrangements for the treatment of scholars under the National Health Service, the scholars being placed on the public list of the school medical officer. The duties of these practitioners normally include services which are outside the range of service under the National Health Service—e.g., the examination of scholars and the giving of advice on school hygiene, etc.—and for which the practitioner is not debarred from receiving a fee. The Council recommends that the remuneration for such duties should be not less than £1 1s. per scholar per annum.

Medical Officers to Approved Schools

92. The Council has discussed with the Home Office the remuneration of medical officers of approved schools.

Apart from actual medical treatment covered by capitation payments under the National Health Service, the work includes

GREATER STABILITY
with
'AVLON'
brand
CRYSTALLINE
PENICILLIN POTASSIUM SALT

Pure crystalline *potassium* salt of penicillin — the most stable penicillin yet produced — is now available in Great Britain for the first time.

Manufactured by Imperial Chemical [Pharmaceuticals] Ltd., this new potassium salt is much less hygroscopic than the sodium derivative, and can be exposed to a moist atmosphere for long periods without deterioration. It is particularly suitable for use in tropical climates.

*'Avlon' Crystalline Penicillin Potassium
Salt is issued in vials of 0.1, 0.2, 0.5 and
1 mega unit.*

IMPERIAL CHEMICAL [PHARMACEUTICALS] LTD.

(A subsidiary company of Imperial Chemical Industries Ltd)

MANCHESTER





safer sulphonamide therapy with

TRADE MARK **'SULPHATRIAD'** BRAND
compound sulphonamide tablets

sulphathiazole	..	0.185 gramme
sulphadiazine	..	0.185 gramme
sulphamerazine	..	0.130 gramme

Since the solubility in the urine of each of the constituents of 'Sulphatriad' is not affected by the presence of the other two, the risk of crystalluria during the treatment with this combination of sulphonamides is greatly reduced.

'Sulphatriad' may be employed whenever chemotherapy with sulphonamides is indicated and is available in containers of 25, 100 and 500 x 0.5 gramme tablets.

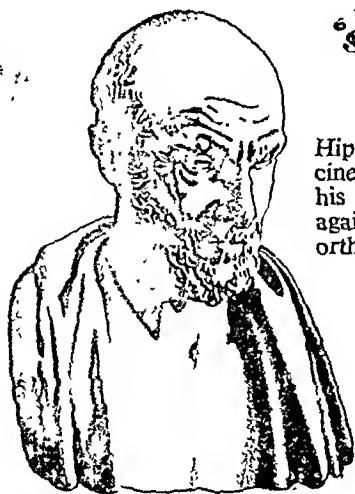


Manufactured by

MAY & BAKER LTD

distributors

PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD., DAGENHAM



'sacred disease'

Hippocrates, 'Father of Medicine,' was centuries ahead of his time when he insisted against the opinion of all orthodox Greek medicine that 'sacred disease' (Epilepsy) resulted from natural causes and was not due to possession by the gods.

Even in the present scientific age there is much about epilepsy that remains a mystery; but in 1938 an important

advance was made by the discovery of 'Epanutin,' a drug that enables many epileptics to live a normal life, and, in practically all cases of 'grand mal,' reduces the number of fits to a manageable proportion.

'EPANUTIN'

'Epanutin' (the original phenytoin sodium) is a powerful anti-convulsant with little or no hypnotic effect.

Available in bottles of 100 and 1000 1½-grain and ½-grain capsules.

Parke, Davis & Co., Hounslow, Middx.

Telephone: Hounslow 2351 (11 lines)

Inc. U.S.A. Liability Ltd.

KAYLENE SALINE

is a combination of the toxin adsorbent Kaylene and the laxative salts necessary for carrying it through the intestinal tract

It is slightly effervescent and sweeps the intestinal tract free from toxin waste. It operates in the stomach, duodenum, small intestine and colon, and is most effective when administered in the early morning a full half-hour before breakfast. Kaylene Saline is widely prescribed in the treatment of toxic conditions which are associated with constipation.

Formula: Kaylene (Colloidal Kaolin) 60.579%, Saline 39.421%

Samples and literature on request

KAYLENE LIMITED



Sole Distributors: **ADSORBENTS, LTD.,**
WATERLOO ROAD, LONDON, N.W.2

a visit to the school at least once a week, examination of every pupil on admission and discharge, the quarterly inspection of the whole school, and the general supervision of the health of the pupils. The Department has suggested that in computing the salary for the quarter the number of pupils should be considered as being the nearest ten above the average number of the school register for that quarter, and should provisionally be at the rate of 15s. per annum per pupil for the first 100 pupils, 13s. per pupil for the second 100 pupils, and 9s. per pupil for the third 100, with a minimum salary of £30 per annum for 40 pupils or less.

This mode of computing the salary would make for convenience in meeting the considerable fluctuation that sometimes occurs in the number of pupils on the school register. In addition the medical officers to the approved schools would receive the capitation fees under the National Health Service Act and the fees for notifying the immunization of pupils against diphtheria. The Council regards this arrangement as satisfactory.

Locums for Representatives at Meetings

93. The Annual Representative Meeting (Minute 199) suggested that through the columns of the *Journal* or in other ways members of the Association should be invited to volunteer to do part of the professional work of representatives during B.M.A. meetings. The Council has given publicity in the *Journal* to this most useful suggestion.

Dr. J. W. Bone

94. The Council placed on record its great appreciation of the services of Dr. J. W. Bone, who as a member, Chairman, and latterly as Treasurer of the Association, served on the Medico-Political and General Practice Committees for a total of more than twenty-five years.

Doctors' Cars

95. The Council has considered Minutes 62 and 86 of the A.R.M., 1948:

62. Proposed by BUCKINGHAMSHIRE: That, in view of the difficulty of transport experienced by doctors, priorities for cars be given to those who apply to, and satisfy, their Executive Councils as to their need.

RESOLVED: That this matter be referred to the Council.

86. RESOLVED: That this meeting is not satisfied that there is any improvement in the position in regard to the obtaining of doctors' cars, and urges the Council to secure definite priority, with specific preference to doctors with a high annual mileage; and to advise the profession from time to time what makes and models of new cars are available for the home market.

The Council is satisfied that members of the profession receive a measure of priority in securing new cars and that everything possible is being done by the Association not only to remind motor manufacturers of their obligations in this matter but also to assist individual practitioners. Recently, as a result of co-operation by the Ministries of Health and Supply, an attempt has been made by the trade to reduce the accumulation of orders outstanding for considerable periods. It is hoped, by this means, to make more effective the normal procedure for allocation priority. Responsibility for giving preferential delivery to doctors, has been accepted by the motor manufacturers in cases where a practitioner has difficulty in fulfilling his professional commitments for lack of reliable transport. The role of the Association through its central or local machinery is to appeal and advise on the grounds of urgency of professional need; it cannot, of course, express an opinion as to the condition of doctors' old cars.

The Council does not consider it practicable to advise members regarding the models most readily available, as the situation changes from time to time, and it feels that any such action would not be supported by the manufacturers.

OCCUPATIONAL HEALTH

Duties of and Ethical Rules for Industrial Medical Officers

96. The Representative Body in 1937 approved a statement of the Duties of and Ethical Rules for Industrial Medical

Officers. The Council has reviewed this statement in the light of experience, and now submits, in Appendix II, a revised statement for approval. In Appendix III the existing version is given for comparison.

Recommendation: That the revised statement of the Duties of and Ethical Rules for Industrial Medical Officers be approved.

Occupational Health Service

97. The Council understands that certain Government Departments are now investigating the question of a comprehensive Occupational Health Service, and it is therefore preparing for approval by the Representative Body an interim report on this subject in which proposals will be made as to the broad framework of such a service.

National Dock Labour Board

98. The National Dock Labour Board has established a medical service at the Avonmouth Docks, and two medical officers employed by the Bristol Corporation have been allowed by the Corporation to make a personal contract with the Board to act as medical officers to the Docks while continuing to carry out the same work as they performed in the past as whole-time public health medical officers. The Council represented to the National Dock Labour Board that these appointments should be advertised in the medical press, but the Board did not accept this suggestion.

The Council had understood that the service would be confined to a first-aid and accident service for dock-workers, but it now appears that it is not so restricted and that it is available to other persons in the area of the Docks. The Council is concerned about the possibilities of encroachment on the work of local practitioners, and has decided to refuse publication of any future advertisement of medical appointments under the National Dock Labour Board unless a satisfactory assurance is received as to the scope of the work to be undertaken. The Council is opposed in principle to public health medical officers being allowed to undertake such extraneous duties, and is considering what further action can be taken in the matter.

The National Insurance (Industrial Injuries) Act, 1946

99. The Council has considered the provisions of this Act in the light of an exposition of the Act kindly given by the Chief Medical Officer to the Ministry of National Insurance. The Act has replaced the Workmen's Compensation Act and has altered the whole approach to the subject of compensation for industrial injury. Compensation is assessed on the basis of loss of faculty, not loss of earnings; and to a large extent the provision of injury and disablement benefits by the State as a social service is likely to remove the subject from the arena of litigation, although an injured workman may still sue his employers at common law if he can prove negligence.

A workman totally incapacitated by an industrial accident or a prescribed industrial disease receives injury benefit at the rate of 45s. a week for a maximum period of 26 weeks. This rate is much higher than that of the ordinary sickness benefit provided under the National Insurance Act. If at the end of 26 weeks there is any residual permanent disablement the case is referred to a medical board for assessment for pension, the loss of faculty being assessed on a percentage basis.

The initial diagnosis in cases of suggested prescribed industrial disease is obtained by referring the claimant for examination by an examining medical practitioner, and the Appointed Factory Doctors have been invited to undertake this work. The medical board consists of not less than two doctors engaged in active practice. There is a right of appeal from the findings of the board to a medical appeal tribunal composed of an eminent lawyer as chairman and two medical members of consultant rank. The tribunal is the final arbiter. The pneumoconiosis problem is dealt with separately by means of boarding panels of whole-time medical officers.

The Council is considering certain problems connected with the diagnosis of industrial dermatitis, and hopes to have an early opportunity of discussing these problems with the Ministry of National Insurance.

Cabinet Committee on Industrial Productivity

100. At the Annual Meeting of the Association in 1948 Sir George Schuster, Chairman of the Panel on Human Factors of the Cabinet Committee on Industrial Productivity, was the principal speaker at the first meeting of the Section of Occupational Health. He opened a discussion on the contribution that the medical profession can make to industrial productivity through human relations. He appealed for the help of the profession in the work of his Panel and seemed anxious to make contact with industrial medical officers.

Problems of mutual interest have been discussed with Sir George Schuster and members of his Panel, and the Council hopes that opportunities of fruitful co-operation will be found.

Joint Councils on Industrial Medicine

101. One of the developments in the field of Occupational Health is the establishment in various parts of the country of Joint Councils on Industrial Medicine. At the present time there are seven such Councils in existence and in four other areas the establishment of Joint Councils is under consideration. These Councils, which are advisory in character, consist of representatives of employers, employees, and the medical profession. They aim to discuss problems of common interest associated with industrial health, and experience has shown that their deliberations have tended to promote a better understanding between all concerned.

As a result of an approach to the Trades Union Congress, the General Council of that body has approved in principle the establishment of Joint Councils, subject to discussion of their precise functions and organization. The support of the British Employers Confederation in the establishment of Joint Councils is now being sought.

Prescribing by Industrial Medical Officers

102. In certain areas where the majority of the doctors are part-time medical officers to local factories it has been found that during the sessions at the factories the medical officer has been asked to see another doctor's patient, who obviously should go home and would benefit from a prescription being given that day. It has been suggested that the industrial medical officer should prescribe for such a patient and write a brief note to the patient's doctor, to be handed to him when he visits the next day. The Council has examined this suggestion and considers that it is undesirable that industrial medical officers should prescribe in these circumstances.

Nurses in Industry

103. The Council is considering the training of nurses for industry and the problem of effecting economies in the use of State-registered nurses in this field. It believes that wider use, under supervision, of enrolled nurses and specially trained first-aid attendants could reduce the claims of industry for State-registered nurses without lowering the standards of service.

NURSING

104. The Council has considered certain proposals for nursing legislation submitted by the Ministry of Health. It found some of these proposals unacceptable, and its constructive criticisms were communicated to the Ministry and were discussed with representatives of the Ministry at a conference held in October, 1948.

Revised proposals were later submitted for comment, and the Council again suggested a number of amendments. The proposals are confidential and cannot be disclosed at present. It is understood, however, that they will be incorporated in a Bill which will shortly be presented to Parliament, and the Council hopes to be able to make a further statement on the subject in its Supplementary Report.

PUBLIC HEALTH

Salaries in the Public Health Service

105. The recommendations for permanent scales of remuneration for whole-time medical officers in the public health

service were forwarded to the Ministry of Health and the Department of Health for Scotland in July, 1948, and were passed to the associations of local authorities. It was anticipated that discussions would begin in the autumn and be a part of the general negotiations on remuneration under Whitley machinery. Owing to the unwillingness of the associations of local authorities to participate in any negotiations under the machinery recommended by the Government, a prolonged delay resulted. In January the Council felt it had become necessary to inform the Ministry and the Department of Health for Scotland of the great dissatisfaction and disappointment of the profession regarding the position, and the Council accordingly decided

(a) That the Ministry be informed of the serious unrest and dissatisfaction among members of the public health service occasioned by the continued delay in the opening of negotiations on new scales and conditions of service.

(b) That the Ministry be informed that if negotiations through approved Whitley machinery have not begun by Feb. 28, 1949 advertisements from local authorities will not be accepted by the *British Medical Journal* unless the salaries offered are in conformity with the Association's own proposals for new scales.

(c) That negotiations be conducted on a national basis covering England, Wales, and Scotland.

The Council hoped that there would be no further postponement of the negotiations, but as by the end of February it became clear that co-operation from the local authority associations was unlikely the Council decided to take action in conformity with para (b) above. The Council desires to acknowledge the co-operation of the *Lancet*, the *Medical Officer, Public Health*, and *Medical World* in this matter.

Fees Payable by Local Authorities for Part-time Work

106. The scales of remuneration for sessional and part-time work undertaken by specialists and general practitioners for local authorities reported in the last Annual Report have been generally accepted. It was evident, however, that certain fees, such as remuneration of medical officers in charge of homes of varying types, police surgeons' fees, fees for medical officers to fire brigades, fees for certain certificates, etc., were not fully covered. The Council has given consideration to this problem, and its recommendations have been forwarded to the associations of local authorities. It is hoped that negotiations will begin at once.

Equal Pay—Consolidation of Salaries and Bonus

107. During the last year a large number of authorities have consolidated salaries and bonus and have accepted the Association's policy of equal remuneration for medical men and women. It was known, however, that in certain authorities there was still inequality and especially in those authorities where no consolidation had taken place and where unequal bonus continued to be paid. The Council decided to decline to publish in the *British Medical Journal* advertisements from local authorities in England, Wales, and Scotland who do not pay an equal bonus to men and women medical officers.

The result has been that in practically all areas equality of remuneration has now been gained.

Midwives Act—Fees for Attendances and Post-natal Examinations

108. The Council has made representations to the Ministry with a view to extending to three months the period during which claims under the Midwives Act may be submitted by practitioners.

Milk

109. The Council has made representations regarding the Milk (Special Designations) Bill, 1949. Representatives of the Public Health Committee gave evidence before the Parliamentary Medical Group and presented certain amendments which it is hoped will be incorporated in the Bill during the Committee stage.

Consideration has been given to the Milk and Dairies Regulations, 1949.

The Council has invited the National Veterinary Medical Association to participate in a joint committee with the following terms of reference :

That before the following A.R.M. resolution on milk is sent to the Ministries a copy be sent to the National Veterinary Association, and also a copy of the following A.R.M. resolution on foods of animal origin, together with a proposal that a joint committee of the B.M.A. and the National Veterinary Association, with equal representation, be appointed to consider and report, and formulate representations for transmission to Government departments, on the problem of providing safe milk of high quality for the community and the supervision of production and distribution of other foods of animal origin.

A.R.M. Resolutions referred to

146. "That this Meeting is dissatisfied with the present position in the production and distribution of milk and requests the Ministries of Food, Agriculture, and Health to consult with a Committee of the Association in order that safe milk of high quality be provided for the community and that the matter be treated with the utmost urgency."

148. "That this Meeting is not satisfied with the present supervision of production or distribution of foods of animal origin and asks the Council of the Association to approach the National Veterinary Association in order that a Joint Committee of the two bodies may investigate the matter and report to the proper authorities."

The joint committee is now at work and is discussing ways in which the policy of both Associations on "safe milk" can be implemented.

Children Act, 1948

110. Representations on the Children Bill which were made by Council, the main objects of which were to secure the adequate supervision by local authorities of all homes and institutions where deprived children are maintained, and the health and welfare of such children, have resulted in certain minor amendments in the Bill, which has now passed into law.

Civil Defence Act

111. The main objections raised by Council have been met by amendments to the Bill, which has now received the Royal Assent.

Report on Working Party on Midwives

112. This report, which is of wide interest to all branches of the profession, is now under consideration by the Council.

"BRITISH MEDICAL JOURNAL"

113. In the autumn of 1948 the circulation of the *British Medical Journal* reached for the first time the figure of 70,000. This was not due to a sudden increase, as the circulation has increased steadily each year since 1939. But the circulation has now reached a level which imposes a severe strain on the present mechanism of production and on the capacity of the *Journal* to include between its covers enough printed matter to keep the medical profession fully informed of the multifarious activities which concern it. The quantity of paper which the *Journal* is allowed to use is fixed, and out of this fixed quantity the increase in the circulation has to be met. The demand from Branches and Divisions, supported by the Council of the B.M.A., that more space should be given in the *Supplement* to medico-political information could not have come at a more inopportune time, when space had to shrink to allow for a circulation nearly double what it was in 1939. Nevertheless space was found at the expense of other sections of the *Journal*, and an attempt was also made to make the *Supplement* more attractive. The increase in the number of advertisements for posts and vacancies in the National Health Service has presented those responsible for the conduct of the *Journal* with still another problem, the solution to which can be found only in a larger allocation of paper from those who control the distribution of this commodity.

With the circulation of the *Journal* at its present size it is also becoming more and more difficult to produce it fast enough for distribution on time to members and subscribers. The Council has therefore decided that as soon as it can be arranged the *Journal* should, as before the war, be printed on

rotary machines, and not, as at present, on flat-bed machines, a method of printing that had through force of circumstances to be adopted in 1941. When this decision is implemented the rate of printing will be speeded up tenfold, and it will also be possible to have the *Supplement* stitched separately from the rest of the *Journal*.

Difficulties of production, shortage of paper, and mounting costs have been uppermost in the minds of those responsible for the *Journal* and the other twelve publications issued by the B.M.A. With one or two exceptions, there is no longer any delay in the publication of the ten quarterly journals. The cost of production, again owing to a steady increase of the prices of commodities and services, has, however, caused the Publishing Subcommittee some concern, and the Council has decided to increase the annual subscription of each quarterly journal to 30s., the present subscription having remained unchanged since 1926.

The two monthly journals *Abstracts of World Medicine* and *Abstracts of World Surgery, Obstetrics and Gynaecology* continue to provide the medical profession with a wide but selective survey of the world's medical literature, and the periodicals received for this service exceed in number that of any other medical institution in Britain.

FINANCE

114. The year which ended on Dec. 31 last has been one of heavy expenditure, and for the first time for 20 years the income and expenditure account shows a deficit on the year's working. A large proportion of this expenditure is attributable to the action taken by the Association prior to the introduction of the National Health Service Act. This expenditure is non-recurring, but the cost of new and important services provided for our members will have to be faced in 1949 and the succeeding years, and unless the income from subscriptions is increased further deficits must be anticipated.

For the purpose of the balance-sheet the assets of the Association have been depreciated at the generous scale followed in past years.

The investments held as a backing for the Reserves stood at a market value of £174,446 on Dec. 31, 1948. This figure does not include the shares of Scholastic, Clerical, and Medical Association now in voluntary liquidation. These shares, which were purchased at a little over £10 each, are expected to realize a substantial profit when the liquidation is completed.

Cheques drawn in the last weeks of the year but not presented for payment amounted to over £14,000, but the bank account was not overdrawn, and consequently no liability for interest was earned. The accounts were subsequently met by the membership subscriptions collected in the first weeks of 1949.

Apart from the liability for income tax and the provision for Depreciation and Loss of Subscriptions, the published accounts for the year show that a sum exceeding £178,000 has been spent on maintaining and improving the services given by the Association to its members.

On Grants to Home and Overseas Branches, and direct expenditure on the periphery, including the establishment costs of Regional Offices, the Association spent £32,295 during the year. The cost of holding meetings of the Representative Body, the Council, and Committees amounted to £21,000. On General Expenses, to which are added the cost of the Empire Medical Advisory Bureau, the Medical Practices Advisory Bureau, and the Film Library, the Association spent £24,231. These services must necessarily lead to a substantial increase in the annual expenditure of the Association.

In addition to the cost of new books, the sum of £4,500 was spent on the Library. The balance of the year's expenditure included the cost of the Central Staff (£60,887), the Miscellaneous Printings, Stationery, and Postages (£16,296), which were much heavier than usual because of the circularization of the whole of the profession and the plebiscite undertaken prior to the introduction of the National Health Service Act, and the cost of maintaining the premises at Tavistock Square (£18,739).

As regards the income of the Association the membership at the close of 1948 reached a new record of 60,218, and the revenue from subscriptions increased to £145,000.

The interest realized on investments was greater during the year, but this was offset to some extent by a diminution in the rental income and in the dividend paid by the British Medical Bureau. In total, however, the income of the Association for the year was £171,847, as compared with £166,556 in the preceding year.

The Journal Account again shows a substantial increase in the revenue from Advertising and Publishing. Although the cost of production was considerably greater than the previous year the amount transferred to the Income and Expenditure Account was over £26,000.

The financial position of the Office Staff Superannuation Fund is sound, the market value of investments at Dec. 31, 1948, standing at nearly £60,000. The quinquennial valuation of the Fund will be carried out by the Actuary at the close of the present year.

Prizes have been awarded by the Funds for which the Council acts as Trustee. It is anticipated that the Investment Income of these Funds will be sufficient to meet the cost of the awards to be made during the coming year.

Subscriptions and donations to the Medical Charities have been maintained, and substantial allocations have been made to the Benevolent Funds.

It was decided to use the balance standing to the credit of the Central Contingency Fund to meet the major part of the cost of the administrative expenses of the Independent Fund.

Estimate of Receipts and Expenditure for the Year 1949

115. The following estimate of the probable income and expenditure for the current year is based on the accounts for 1948. Allowance has been made for probable reductions and for non-recurring items, and provision for new expenditure on activities which have already been approved by the Council.

Receipts	1948 Actual £	£	1949 Estimated £
Subscriptions ..	145,035	2,965 increase	148,000
Investments and Rents ..	26,713	2,713 decrease	24,000
Sundries ..	100		100
	<u>£171,848</u>		<u>£172,100</u>
Expenditure	1948 Actual £	£	1949 Estimated £
Central Meeting Expenses ..	20,839	3,139 decrease	17,700
General Expenses ..	24,232	6,768 increase	31,000
Remises ..	18,740	760 increase	19,500
Capital Grants, Regional Offices, etc.	32,296	2,296 decrease	30,000
Library Expenses ..	4,508	242 increase	4,750
Central Staff ..	60,887	2,813 increase	63,700
Printings, Stationery, and Postage ..	16,296	2,596 decrease	13,700
Work of Works and Architects' Fees ..	448	252 increase	700
Insurance ..	11,710	10 decrease	11,700
Provision for loss on Colonial Subscriptions	1,500		1,500
Provision for loss on Arrears of Subscriptions ..	3,000		3,000
Depreciation and Amortization ..	13,576	76 decrease	13,500
	<u>£208,032</u>		<u>£210,750</u>
Less Grant towards cost of Central Medical War Committee (£7,000) and Balance transferred from Journal Summary Account (£21,469) ..	28,469		27,728
	<u>£179,563</u>		<u>£183,022</u>

Estimated deficit for 1949

10,922
£172,100

Membership Subscription

116. The Annual Representative Meeting in July, 1947, passed the following resolution:

"That this meeting is of the opinion that the time has now arrived when an increase in present subscription rates should be considered."

The Council on consideration of the financial position of the Association as disclosed by the accounts for the year 1947 decided not to recommend an increase in the membership subscription, but undertook to consider the matter each year.

The question has again been reviewed by the Council in the light of the financial position of the Association as shown by the Annual Financial Statement for the past year. The Council is convinced that the time has come when it is necessary to increase the subscription of members of the Association. The Council proposes that the subscription of ordinary members at home should be increased from three to four guineas, with proportionate increases in the case of certain of the special groups of members. The Council anticipates that the additional revenue realized from subscriptions will meet the increase in the annual expenditure. If the A.R.M. approves this recommendation the Council will raise the non-members' subscription to the *British Medical Journal* from three to four guineas per annum.

The Council recommends—

Recommendation: That as from Jan. 1, 1950, the membership subscription rates be as follows:

Members Resident in Great Britain and Northern Ireland			
Ordinary subscription ..	£4	4	0 per annum
Not less than 40 years' membership ..	£2	2	0 per annum (no change)
Retired from practice with not less than 10 years' membership ..	£2	2	0 per annum (no change)
Whole-time non-professional member of teaching staff of a University or Medical School ..	£2	12	6 per annum
Engaged whole-time in investigation of scientific problems as distinguished from routine laboratory work ..	£2	12	6 per annum
Newly qualified practitioner elected within two years of registration ..	£2	2	0 per annum (for period of four years following registration)
Husband and wife residing together ..	£5	5	0 per annum jointly
Members resident outside Great Britain or Northern Ireland			
..	£1	11	6 per annum (no change)
Service members, wherever resident ..	£2	12	6 per annum

The necessary amendment to By-law 16 consequent on the above recommendation is set out in Appendix IV to this report.

BUILDING

117. Considerable progress has been made during the past year with the repair and decoration of the Association's House. With the exception of the south wing, all the damage to the building by enemy action has been made good.

The Association has been successful in obtaining permission to complete the south wing, and in November last a licence was obtained for the carrying out of the first stage of the work, which includes the repair of the war damage and the completion of the structural work to roof level. It is estimated that this work will cost approximately £28,000.

A licence to cover the internal structural work will be applied for before the first stage is completed in order to ensure continuity of operations. The cost of this work is estimated at £34,500, making a total of £62,500 in all. Of this sum £16,000 will be recoverable from the War Damage Commission.

It is anticipated the south wing will be ready for occupation by September, 1950, providing no serious delays are made through prolonged frosts or shortage of materials.

A licence was also obtained for the reconditioning of the basement garage under the north wing, which is now in operation and provides free parking facilities for members visiting B.M.A. House, together with a valeting and light repair service at approved charges. Messrs. G. J. Shaffer, Ltd., who have been appointed to manage the garage, have installed at their

own expense equipment which includes petrol pumps and a greasing and oiling pit.

With the surrender by the Ministry of Works in December last of the accommodation held by them under requisition on the ground floor, Tavistock House South, there now remains only one suite of offices under requisition. This comprises practically the whole of the third floor, Tavistock House North, and every effort is being made to obtain its early return to the Association. When this accommodation is freed it has been decided it will, in the first instance, be made available to the Editor for reorganization of his departments.

The Council has approved a number of minor alterations and repairs to the Scottish House. The Scottish Committee, however, has been asked to prepare a comprehensive scheme of alterations which will improve the present office accommodation and amenities for the members using the Scottish House.

The Council has under consideration the lighting of the Garden Court Wing, and plans for the improvement of the common room and members' lounge facilities in B.M.A. House have been reviewed during the past year. For the convenience of members attending conferences, committees, and other meetings, a bar has been installed in the common room.

MEDICAL ETHICS

Ethical Problems Arising Out of the National Health Service

118. The Council has considered a number of ethical problems which have arisen since the introduction of the National Health Service. A point of some importance on the question of professional secrecy was raised in connexion with the many forms which have to be completed by members of the profession who are rendering service under the Act. The Council has reiterated its long-considered view that professional information, including that given on various forms and questionnaires, should not be divulged by practitioners without the consent of the patient.

The opinion of the Council has been sought about the steps which might be taken when local rumour or the report of an executive council has caused an inaccurate statement regarding a doctor's practice or retirement to be published in the local press. The Council has advised against any publication of a correction and has recommended the circularization, under cover, of the facts to the patients of the practitioner.

The Council has expressed the opinion that while the position in law appears to be that a practitioner suitably qualified may enter his name on two or more lists under the National Health Service—for example, as a general practitioner, an optician, or a pharmacist—this possibility is to be deplored on the grounds that it is beneath the dignity of the profession so to act and may promote unethical practices; also, that it is undesirable for a medical practitioner to have his consulting-rooms in premises occupied by a chemist or optician or for a chemist or optician to have his shop in premises occupied by a medical practitioner.

The Council has reviewed the arrangements made by certain industrial firms for the ophthalmic examination of their employees and has expressed disapproval of any arrangements which do not safeguard the general practitioner's recognized custom of referring his patients to the specialist of his own choice. The Council regards as particularly undesirable arrangements which tend to operate to the exclusion of other ophthalmic practitioners in the area.

Entries in Telephone Directories

119. The Council has examined the general question of entries in telephone directories which relate to medical practitioners and has raised no objection to the inclusion of medical practitioners' names under the heading of "Physicians and Surgeons" in the Classified (Trades and Professions) Directory. The Council has, however, expressed the opinion that it is undesirable for the specialties of medical practitioners to be published in telephone directories.

Rules of Procedure Governing Ethical Matters: Rules for Medical Inspectors

120. The Rules of Divisions and Branches governing procedure in ethical matters were adopted in 1919 and a revision of these Rules has become necessary so as to bring them up to

date in the light of existing conditions. The Ethical Rules for medical inspectors also need revision. The Council hopes to deal further with these matters in its Supplementary Report.

The Medical Practitioners' Handbook

121. Before the war the Association published a *Medical Practitioners' Handbook*. This was of particular value to recently qualified practitioners, as it contained much useful information on the practical aspects of medical work. The Council has decided to prepare a new edition of this *Handbook*, but pending its publication it is proposed to prepare a short pamphlet on medical ethics for issue to newly qualified practitioners.

Dr. N. E. Waterfield

122. The Council has placed on record its appreciation of the valuable service rendered to the Association by Dr. N. E. Waterfield as chairman of the Central Ethical Committee for the period 1936-48.

CORONERS' ACTS

123. The Council has given further consideration to certain recommendations contained in the Report submitted to the A.R.M. in 1948 on the working of the Coroners' Acts.

Mortuary Accommodation and Pathological Facilities

Paragraph 118 of the Annual Report of Council, 1947-8, relating to mortuary accommodation and pathological facilities, contained the following clause:

(iv) That mortuaries be established at central points in each Coroner's jurisdiction, under the control of the Local Health Authority, equipped with refrigeration and a separate viewing-room for relatives, the post-mortem rooms being furnished with good lighting, heating, and an ample supply of running water, and with facilities for histological examinations and the proper collection of specimens for toxicological examinations; that the assistance of trained mortuary attendants be made available; that adequate transport facilities for bringing cadavers to the central post-mortem establishment from outlying mortuaries be provided.

The Council is of the opinion that this should be amended to read as follows:

(iv) That mortuaries be made available at central points in each Coroner's jurisdiction, equipped with refrigeration and a separate viewing-room for relatives, the post-mortem rooms being furnished with good lighting, heating, and an ample supply of running water, and with facilities for the collection of specimens for histological and toxicological examinations; that the assistance of trained mortuary attendants be made available; that adequate transport facilities for bringing cadavers to the central post-mortem establishment from outlying mortuaries be provided; and that exception be not taken to the use of the local hospital mortuaries for the conduct of necropsies, provided the pathologist nominated by the coroner is given facilities to use these premises for that purpose.

Mobile Laboratories

The Council has reconsidered the following recommendation contained in paragraph 119 of the Annual Report of Council, 1947-8, and referred back by the Representative body (Minute 182):

That as an interim measure urgent consideration be given to practical steps for mobilizing pathologists and enabling them to travel to the various outlying mortuaries with fully equipped motorized laboratories.

The Council has decided to substitute the following for the recommendation quoted above:

That as an interim measure urgent consideration be given to the adoption of practical steps for mobilizing pathologists and enabling them to travel to the various outlying mortuaries, but that whenever practicable the cadaver be brought to the pathologist for examination.

Implementation of Report on Coroners' Acts

The Council proposes that its report on the medical aspects of the Coroners' Acts, amended in accordance with the decisions of the Representative Body, shall be officially

submitted to the Home Office, the Coroners' Society, and the Association of Clinical Pathologists with a view to implementation.

ORGANIZATION

Election of Central Council of the Association

124. During the session the Council has examined its present constitution and has had regard to the desire expressed from several quarters that a greater proportion of its members should be directly elected by members in the Divisions and Branches. A study of the problem showed that many of the existing electoral areas are too extensive to allow members of Council to have effective contact with their constituents, and that what is needed is the division of the country into more compact electoral areas for the purposes of election to the Association's Central Executive. If this principle be accepted it must inevitably lead to an increase in the number of members directly elected to Council and, if the size of the Council is not to be greatly increased, to a reduction of the number of members appointed or elected by other means. The Council has considered the following suggestions:

(a) That the arrangements under which twelve members of Council are elected by grouped representatives, and eight members are elected by the Representative Body as a whole, should be discontinued; and

(b) That there should be a reduction in the number of *ex-officio* members of the Council.

Elected Members

As regards the first proposal, the Council, after careful consideration, has come to the conclusion that there are advantages to the Association in electing to the Council an adequate number of members on their experience and knowledge in the medico-political field and not as representatives of any given area. It also feels that the Representative Body should have an opportunity of electing to the Council "elder statesmen" and any member of the Representative Body who has gained the confidence of the meeting.

The Council proposes, therefore, that the number of members to be directly elected by members in the Branches and Divisions of the Association in Great Britain and Northern Ireland should be increased from 22 to 37; that the arrangement under which 12 members of Council are elected by Representatives of constituencies of Branches and Divisions in Great Britain and Northern Ireland should be discontinued; that the Representatives of constituencies in Scotland should elect 2 members of Council; that the Representatives of constituencies in Wales should elect one member of Council; and that 10 members should be elected by the Representative Body as a whole. The effect of this plan would be that Scotland, Wales, and Northern Ireland would respectively elect 6, 3, and 2 members to the Council (as at present) but that the number of members elected by England would be increased from 23 to 29.

The Ex-Officio Members of the Council

There are at present 10 members of the Council, *ex officio*. The Representative Body agreed in 1948 that the chairman of the Central Consultants and Specialists Committee should be a member, *ex officio*, of Council, and the Council proposes that this plan should apply also to the chairman of the General Medical Services Committee.

The Council is of the opinion that the number of *ex-officio* members of the Council should be reduced. In its view it would not seem to be important to retain amongst the list of *ex-officio* members the immediate past chairman of the Representative Body, the deputy chairman of the Representative Body, and the past treasurer, as it will still be open to these officers to secure election from among the members of Council elected by the Representative Body as a whole.

Representation of Branches of the Association Overseas

The Branches in India and Pakistan have, to a material extent, ceased to function, with the result that the number of members elected by Branches overseas will be reduced from 8 to 7.

Effect of the Foregoing Proposals on the Future Constitution of the Council

If the foregoing proposals are approved their effect on the constitution of the Council would be as follows:

Existing Constitution	Proposed future Constitution
<i>Ex officio:</i>	<i>Ex officio:</i>
10 President	9 President
President-Elect	President-Elect
Immediate Past President	Immediate Past President
Chairman of Representative Body	Chairman of Representative Body
Immediate Past Chairman of R.B.	Chairman of Council
Deputy Chairman of R.B.	Immediate Past Chairman of Council
Chairman of Council	Treasurer
Immediate Past Chairman of Council	Chairmen, Central C. & S. Committee
Treasurer	Chairman, G.M.S. Committee
Past Treasurer	
22 directly elected by Members in Great Britain and Northern Ireland	37 directly elected by Members in Great Britain and Northern Ireland
12 elected by Grouped Representatives	2 elected by Representatives of constituencies in Scotland
8 elected by Representative Body as a whole	1 elected by Representatives of constituencies in Wales
8 elected by Branches outside Great Britain and Northern Ireland	10 elected by Representative Body as a whole
2 elected by Public Health Service members	7 elected by Branches outside Great Britain and Northern Ireland
3 Service representatives	2 elected by Public Health Service members
1 elected by women members	3 Service representatives
	1 elected by women members
66	72

"The Six-year Rule"

The Council has considered a proposal that one-third of the members of Council should retire annually. It does not favour this plan. The present position is that a member of Council who has served for six successive years as the representative of a group or class of members is ineligible for one year to represent that group or class. The Council is of the opinion that this rule, the "six-year rule," should be abolished provided there is an annual election, except in the case of members of Council elected by overseas Branches, who will be elected (as at present) for a three-year period.

Plan for Grouping for Direct Election of 37 Members of Council

The Council submits the following provisional plan for the grouping for direct election of 37 members of Council. The Council is giving further consideration to this plan and may suggest minor modifications before the Annual Representative Meeting.

Group	Area in terms of B.M.A. Branches or Divisions	Proposed No. of seats	Membership
(i) England and Wales			
A	Divisions of North of England	2	1,764
	Branch in North Eastern Region		
	Cumberland		
	Westmorland (part)		
B	East Yorkshire Branch	2	2,767
	Yorkshire Branch		
C	Divisions of Lancashire and Cheshire Branch in Liverpool	1	1,432
	Hospital Region (St. Helens, Liverpool, Southport, Birkenhead, Chester, Warrington, Wallasey)		
D	Divisions of Lancashire and Cheshire Branch covered by Manchester Hospital Region	3	2,873
	Isle of Man		
	Western part of Westmorland (Alternatively Lancashire and Cheshire and Isle of Man should be 1 Group electing 4 Members.)		

Area in terms of B M A Group Branches or Divisions	Proposed No of seats	Member- ship
E Lincolnshire Branch	2	1,599
Derbyshire Branch		
Nottinghamshire Branch		
Leicestershire Branch		
F Birmingham Branch	2	2,473
Staffordshire Branch		
Worcester and Hereford Branch		
G Berks, Bucks, and Oxford Branch	1	1,309
Northamptonshire Branch		
H Cambs and Hunts Branch	1	995
Norfolk Branch		
Suffolk Branch		
I Metropolitan Counties Branch	2	1,915
(Divisions in Middlesex)		
J Metropolitan Counties Branch	4	5,273
(Divisions in London, Stratford, and S W Essex)		
K Hertfordshire Branch	1	1,395
Essex Branch		
Bedfordshire Branch		
L Surrey Branch	2	1,838
M Kent Branch	1	1,271
N Sussex Branch	1	1,062
O South Western Branch	1	999
Dorset and West Hants Branch		
P Bath, Bristol and Somerset Branch	2	1,618
Gloucestershire Branch		
Wiltshire Branch		
Q South Western Branch	1	999
R North Wales Branch	1	699
Shropshire and Mid Wales Branch		
S South Wales and Monmouthshire Branch	1	1,293
(ii) Scotland		
T Aberdeen Branch	1	1,333
Dundee Branch		
Northern Counties of Scotland Branch		
Perth Branch		
U Edinburgh and South East of Scot- land Branch	1	1,544
Fife Branch		
V Glasgow and West of Scotland Branch (Glasgow Division)	1	1,157
W Border Counties Branch (Dumfries and Galloway)	1	1,569
Glasgow and West of Scotland Branch (6 County Divisions)		
Argyllshire		
Ayrshire		
Dumbartonshire		
Lanarkshire		
Renfrewshire and Buteshire		
West Wigtownshire		
Stirling Branch		
(iii) Northern Ireland		
X Northern Ireland Branch	2	1,212

Recommendation: That the Representative Body approve the principle that the number of members of Council directly elected by members in the Branches and Divisions of the Association in Great Britain and Northern Ireland should be increased

Recommendation: That the number of members to be directly elected by members in the Branches and Divisions of the Association in Great Britain and Northern Ireland be increased from 22 to 37

Recommendation:

(i) That two members of Council be elected by Representatives of constituencies in Scotland;

(ii) that one member of Council be elected by Representatives of constituencies in Wales, including Monmouthshire, and

(iii) that 10 members of Council be elected by the Representative Body as a whole

Recommendation: That the following cease to be members, *ex officio*, of the Council. (a) Immediate Past Chairman of Representative Body; (b) Deputy Chairman of Representative Body; and (c) Immediate Past Treasurer.

Recommendation: That the number of members elected by Branches of the Association not in Great Britain or Northern Ireland should be reduced from 8 to 7 consequent on the dissolution of the majority of the Branches of the Association in India and Pakistan

Recommendation: That the following proviso to By-law 61 (1) be abolished:

that a person who has served as the representative on the Council of one and the same Branch or Group of Branches or group or class of Members for six years successively shall for one year be incapable of being elected as such representative

Recommendation: That the Chairmen of the General Medical Services and Central Consultants and Specialists Committees be members *ex officio*, of the Council

The appropriate amendments to the Articles and By-laws are embodied in Appendix IV

Association Membership

125 The Council submits the following report upon the membership of the Association for 1948

New members		4,112
Resignations withdrawn		58
Reinstated		2
S.A.M.A. resumed membership		30
		4,602
Removed in arrears	2,162	
Less paid arrears	1,117	1,045
Resignations, etc		533
Deaths		524
Erased from Register		1
		2,103
		Increase 2,499
Membership, Dec 31, 1947		57,719
Membership, Dec 31, 1948		60,218

The total number of practitioners resident in the United Kingdom, including Services, is estimated to be 58,303, and of these 44,340 were members of the Association at the end of 1948. This represents an Association membership in the United Kingdom amounting to 76% of the total profession. If retired practitioners be excluded the percentage of Association membership is 78.7% of the working profession in the United Kingdom.

The membership on March 23, 1949, was 60,341

Relationship of the Association to the Profession in India and Pakistan

126 The Council has under consideration proposals for affiliation with the Indian Medical Association and hopes to enter into similar arrangements with the Pakistan Medical Association as soon as the opportunity occurs

Election of Chairmen of Standing Committees

127. By-law 79 provides that, with certain exceptions, each Standing Committee shall appoint from its own number a member of Council as chairman. In the case of the excepted committees each committee has power to appoint any member of the committee as chairman, but where the member appointed as chairman is not a member of Council the committee is required to appoint from its own number a member of Council as deputy chairman.

The Council is of the opinion that every Standing Committee should be entitled to appoint any member of the committee as its chairman, and it proposes that By-law 79 should be amended to meet this position (see para 137 below)

Business at Representative Meetings

128. The Council has under consideration the general question of the method of dealing with the business at Representative Meetings

The Council hopes to submit a detailed report on the subject in its Supplementary Report

Regional Development

129. An important new development during the year has been the establishment of regional offices of the Association in various parts of the country. The function of the regional office

is to provide clerical facilities for the honorary secretaries of Branches and Divisions and of the Regional Consultants and Specialists Committees. The regional office will undertake the preparation and issue to members of notices of meetings and other information which honorary secretaries may wish to circulate. Secretaries of local units are strongly urged to make use of the facilities of the regional offices in order to relieve themselves of clerical work.

Regional offices are now functioning in London, Manchester, Cambridge, Leeds, Oxford, and Sheffield. Another office will shortly be opened at Liverpool.

The arrangement whereby each assistant secretary has a special interest in the Branches and Divisions in areas, usually comprising about three hospital regions, has continued during the year. There is ample evidence that the advice given to officers of Divisions and the visits paid to meetings are proving helpful and are appreciated. The increasing number of letters addressed to assistant secretaries by individual members to whom they have been introduced on their visits to the periphery is an indication of the value of the personal contacts thus afforded.

While assistant secretaries will encourage the development of the regional offices and the expansion of their activities, it is clear that they can best serve the members in their areas if they themselves are intimately concerned with the work at Headquarters and are responsible for central committees.

Constitution of Ceylon Branch

130. With the change in the constitutional status of Ceylon, a desire has been expressed by the Ceylon Branch that it should become an incorporated body within the terms of Article 13 and By-law 21. The Council has submitted proposals to the Branch to give effect to such an arrangement.

Formation of New Divisions: Areas of Branches

131. The Council has formed the following new Divisions in response to the wishes of the members residing in the areas concerned: Caithness, Sutherland, Sutton Coldfield, Wembley, West Derbyshire, and West Wigtownshire.

The Council has also had under consideration the general question of the areas of the Branches of the Association. Whilst the Council is convinced that it would not be desirable to attempt to relate the Branches of the Association as a whole to areas of Regional Hospital Boards, it seems probable that a modification of the areas of a number of Branches may become necessary. This is essentially a problem which concerns the members in the Branches affected, and the Council prepared to take such steps as are considered desirable by them to improve the local organization of the Association.

Amendment of Association's Constitution Consequent on the Companies' Act, 1948

132. The passing of the Companies' Act, 1948, will necessitate certain modifications in the constitution of the Association. These modifications are largely of a technical nature, and the necessary amendments, drafted by counsel, are embodied in Appendix IV of this Report.

Deputy Chairman of Representative Body

133. By-law 70 provides that whilst holding office the chairman of Representative Body shall not act personally as the representative of any constituency, and to meet this situation the constituency which the chairman represents at the time of his election is represented by a deputy representative. The Council is of opinion that a similar procedure should apply in the case of the deputy chairman of the Representative Body. The necessary amendment to the By-law is set out in Appendix IV of this Report.

Representation of Divisions in Representative Body

134. The Council has decided that the grouping of Divisions for the election of Representatives to the Representative Body, 1949-50, shall be on the same lines as for 1948-9, except that the newly formed Sutton Coldfield, Wembley, and West Derbyshire Divisions have been made independent constituencies.

The Honorary Secretary

135. The period covered by this report has been one of considerable activity for the Association, and the Council, on behalf of the general body of members, desires to express the great debt which the Association owes to honorary secretaries of the Divisions and Branches without whose loyal co-operation the Association could not function as an efficient organization.

Conference of Honorary Secretaries

136. A Conference of Honorary Secretaries of Divisions and Branches will be held on Tuesday, May 10, at 11.30 a.m.

Amendments to Articles and By-laws

137. The proposals made by the Council in the foregoing paragraphs of this Report will involve amendments to the Articles and By-laws. The Council recommends:

Recommendation: That the Annual Representative Meeting approve and adopt the amended Articles and By-laws set out in Appendix IV of this Report, and that the Council be instructed to submit the amended Articles to an Extraordinary General Meeting of the Association for adoption as Articles of Association.

NUTRITION

138. The special committee appointed by the Council to consider the problems of nutrition in this country has examined reports received from four subcommittees which were set up to investigate different aspects of the subject.

The report of the committee, based on the findings of the subcommittees, is now being prepared.

SCIENCE

Association Prizes

Nathaniel Bishop Harman Prize

139. The prize of approximately £100 initiated by the late Mr. N. Bishop Harman in 1939 for research in consulting practice was awarded in 1948 and, although these awards should as a rule be granted biennially, the Council considered that the amount standing to the credit of the Fund justified an award being made in 1949.

Katherine Bishop Harman Prize

An essay competition for the Katherine Bishop Harman Prize for the encouragement of study and research into the disorders incident to maternity was opened in 1948. Prizes of certificates and cheques for £75 each have been awarded to Dr. Roberta Irene Hutchinson (Birmingham) for her essay "On the Significance of the Less Well-known Strains of Haemolytic Streptococci (Lancefield Groups B, C, D, and G) in the Pregnant and Puerperal Woman and her Attendants," and to Dr. Charles Spencer Swan (Mitcham, South Australia) for a paper on "Rubella in Pregnancy as an Aetiological Factor in Congenital Malformation, Stillbirth, Miscarriage, and Abortion."

Sir Charles Hastings Clinical Prize

The annual Sir Charles Hastings Clinical Prize, consisting of a certificate and a cheque for 50 guineas for the promotion of systematic observation, research, and record in general practice, has been awarded to Dr. Charles Ernest Lewis Burman (Pietermaritzburg, Natal) for an essay entitled "A Survey of Records of Surgery in General Practice."

Middlemore Prize

The Middlemore Prize is given triennially from a fund endowed by the late Mr. Richard Middlemore, F.R.C.S., of Birmingham, for the best essay or work on any subject which the Council may select in any department of ophthalmic medicine or surgery. The Council in 1948 opened an essay competition for the Prize on the subject "The Value of Orthoptics in the Treatment of Squint," and has awarded to Dr. Alastair Alexander Douglas (Birmingham) a certificate and a cheque for £50 for his entry.

Prizes for Nurses

140. The Council has decided that the subjects for essays to be submitted in connexion with the Association's prizes for nurses in 1949 shall be as follows, prizes of 20 guineas and 10 guineas respectively being awarded for the best and second best entries in each category: (i) Student nurses—"What discipline do you think necessary in the training of nurses?"; (ii) State-registered nurses working in hospital—"What part of nursing duties can be delegated to others with safety?"; (iii) State-registered nurses not working in hospital—"The care of old people in their own homes."

Prizes for Medical Students

141. The subject chosen by the Council for entries submitted for the national and regional prizes of the Association's essay competition for medical students to be awarded in 1949 is "The Value of Observation in the Training of the Medical Student."

Research Scholarships

142. The following scholarships have been awarded, tenable for the twelve months beginning Oct. 1, 1948:

Walter Dixon Memorial Scholarship (£200): R. P. Jepson, M.B., Ch.B., F.R.C.S., of Manchester. An investigation into the mechanism and treatment of intermittent claudication in arteriosclerosis and Raynaud's disease.

Ernest Hart Memorial Scholarship (£200): J. Brodie, M.D., D.P.H., of Dundee. An attempt further to elucidate the mechanisms involved in the differential inhibition of coliform bacilli and rough variants of intestinal pathogens.

Ordinary Research Scholarships (£150 each): E. J. Field, M.D., M.S., of Bristol. Study of the structure and innervation of the conducting system in the heart of the rabbit, sheep, monkey, and man, and the histological and electrocardiographic effects of cardiac hypertrophy resulting from experimental aortic stenosis.

C. W. C. Gough, M.B., D.M.R.E., Major, R.A.M.C., in B.A.O.R. Increase of the brilliancy of the x-ray screen by television principles.

E. S. Jones, M.B., Ch.B., M.R.C.P., of Liverpool. (a) Determination of the importance or otherwise of the hyaluronidases in rheumatic states affecting man; (b) application to human problems of experimental work already carried out by others on animals; (c) study of the inhibitory effects of salicylates and para-aminobenzoic acid on the spreading factors.

Frances B. Robinson, M.B., Ch.B., of Bristol. An investigation of the effects of different anaesthetics on the adrenal cortex.

The first award of the Insole Scholarship (£250) for research into the causes and cure of venereal disease was made in 1948, but the scholar subsequently withdrew his acceptance. The Council has invited applications for the award of this scholarship, which is normally given biennially, in 1949.

Education of the Public in Health Matters

143. The Council has considered the part the Association could take in the promotion of health education amongst the general public. It is of the opinion that much can be done at Divisional level to encourage an interest in this subject and that Divisions should hold meetings to discuss the problems involved with medical officers of health. The Secretary of the Central Council for Health Education has stated that he or other representatives of the Central Council would be willing to attend Divisional meetings to assist in such discussions.

The role of health centres in the health education of the public will be discussed in the Council's report on health centres. It may be mentioned here, however, that the opinion of the Council is that the only kind of health education appropriate to a health centre is that private education which is inseparable from personal medical attention. It considers that any attempt to use health centres for public health propaganda should be actively discouraged in the experimental period.

Systematic health education cannot, in the opinion of the Council, be carried out in hospital. It has been suggested that the organization of discussions with groups of in-patients might be useful, but the Council considers that this is better done by the doctor, ward sister, or almoner in conversation with the individual patient.

So far as health education in schools is concerned the Council considers that members of the profession should interest themselves in the education of children in health

matters, both directly and indirectly through teachers. It suggests that discussions between teachers and others concerned might be arranged under the aegis of local authorities or by the particular school authorities, and that teachers so instructed should deal with the matter in the course of their ordinary work rather than as a special subject. It is strongly of the opinion that if health education to schools is to be effective it is essential that it should be given against a background of similar education amongst members of the general public in order to ensure that a child will not encounter in its home opposition to health concepts learned in school.

Foreign Corresponding Members

144. It is within the power of the Council to elect as Foreign Corresponding Members of the Association any persons who (a) are not eligible for ordinary membership of the Association, (b) are not British subjects or ordinarily resident in Great Britain or the Commonwealth, and (c) are in the Council's opinion distinguished by eminent services rendered to medical science or to the medical profession. On the occasion of the Centenary of the Association in 1932 twelve such members were elected. Other appointments were made from time to time until 1939, but since that date no other elections have been made. The Council has accordingly invited the following to accept Foreign Corresponding Membership of the Association:

Dr. Georg Domagk (Germany), Pharmacologist and Bacteriologist, I.G. Farben Industrie. Nobel Prizewinner.

Dr. Bernardo Alberto Houssay, M.D. (Argentina), late Professor of Physiology, University of Buenos Aires. Nobel Prizewinner, 1947. Honorary Member, Physiological Society. Foreign Member, Royal Society.

Professor Elliot Proctor Joslin, A.M., M.D., Sc.D. (U.S.A.). Emeritus Professor of Medicine, Harvard Medical School.

Professor Einar Key, M.D. (Sweden). Emeritus Professor of Surgery, Caroline Medico-Surgical Institute, Stockholm. Honorary F.R.C.S.

Professor René Leriche, M.D. (France), Professor, Collège de France. Honorary F.R.C.S.

Professor Einar Meulengracht, M.D. (Denmark), Professor of Clinical Medicine, University of Copenhagen. Honorary LL.D. (Aberdeen). Corresponding Member, Royal Society of Medicine.

Professor Adolf Meyer, M.D., LL.D., Sc.D. (U.S.A.), Professor of Psychiatry, Phipps Institute, Baltimore.

Professor George Richards Minot, M.D., Sc.D., F.A.C.P. (U.S.A.), Professor of Medicine, Harvard Medical School. Nobel Prizewinner, 1934. Moxon Medal, Royal College of Physicians, 1933. Distinguished Award, American Medical Association, 1945. Honorary F.R.C.P. (London and Edinburgh). Honorary F.C.P. (Philadelphia).

Dr. Emil Novak, M.D. (U.S.A.), Associate in Clinical Gynaecology, College of Physicians and Surgeons, Baltimore.

Professor Alfred Newton Richards, A.M., Ph.D., Sc.D., M.D. (U.S.A.). President, National Academy of Science, Washington. Recently Professor of Pharmacology and Vice-President, University of Pennsylvania. Honorary LL.D. (Edinburgh). Honorary Fellow and Foreign Member Royal Society. Croonian Lecturer, Royal Society, 1938.

Dr. Francis Peyton Rous, M.D., D.Sc. (U.S.A.). Pathologist, Rockefeller Institute. Honorary Fellow, Royal Society of Medicine. Foreign Member, Royal Society. Walker Prize, Royal College of Surgeons, 1941.

Dr. Arvid Johan Wallgren, M.D. (Sweden), Chief Paediatrician, Children's Hospital, Gothenburg. Corresponding Member, British and French Paediatric Societies.

Professor Allen Oldfather Whipple, M.D., Sc.D. (U.S.A.). Professor of Surgery, College of Physicians and Surgeons, Columbia University. Honorary F.R.C.S.

B.M.A. Lectures

145. The Council thanks the following, who have given B.M.A. Lectures during the period March 1, 1948, to Feb. 28, 1949: Dr. Evan Bedford, Dr. D. J. Guthrie, Dr. J. R. Rees, Professor Lambert Rogers, Professor Robert Platt, Sir Heneage Ogilvie, Professor L. J. Witts, Dr. R. M. B. MacKenna, Sir Alexander Fleming, Professor Wilfrid Gaisford, Professor

F. J. Browne, Dr. E. A. Carmichael, Miss Meave Kenny, Dr. Margaret Moore White, Sir Hugh Cairns, Mr. A. Dickson Wright, Dr. William Evans, Professor H. L. Sheehan, Professor A. M. Boyd, Professor A. A. Moncrieff, Dr. Horace Joules, Professor E. B. Astwood, Mr. R. C. Brock, Dr. Harold Dodd, Mr. A. J. Wrigley, Lord Horder, Mr. Alan Brews, Mr. W. J. H. M. Beattie, Professor Mathew Steward, Mr. John Barron, Professor Ian Aird, Dr. Henry Yellowlees, Professor R. McWhirter, Dr. Wilfred Sheldon, Dr. W. Lister, Mr. A. M. A. Moore, Dr. Lee Lander, Mr. E. W. Riches, Professor J. Glaister, and Dr. K. Hermann.

Divisions and Branches are reminded that they may have one "B.M.A. Lecture" during the course of a year. The lecturers are nominated by the Division or Branch and an honorarium of ten guineas with first-class railway fare and incidental expenses are paid to the lecturer by the Council from central funds.

Library

146. The Library of the Association was moved to more commodious quarters in November, 1947, and the statistics for the first complete year in the Garden Court Wing show increases in all departments of Library activities. A considerable number of new journals have been added, and the collection of current medical periodicals is now one of the finest in the country. Members are reminded that any journal, excluding the current issue, can be borrowed. The Library endeavours to cater for the practical everyday needs of the practising doctor. Important new books are added as published, and reference copies of standard textbooks are available. The Recordak microfilm reader is installed, and may be used by any member. A microfilm section is in process of development.

The new reading rooms are light and quiet, and many members have passed favourable comments on them. All members are requested to visit the Library when in B.M.A. House.

PUBLIC RELATIONS

National Health Service

147. On the medico-political side the past year has been one of exceptional difficulty in respect of the Association's public relations. The introduction of the National Health Service was accompanied by many misconceptions among the public. The Public Relations Department has striven, through the Press and by other means, to clear up these misconceptions. Thus charges made in Parliament against the conduct of some practitioners were countered by a statement which was issued in August, 1948, to every newspaper and given wide publicity. The Association's views on the inadequacy of the capitation fee, the hardships of the rural practitioner, the refusal of N.H.S. drugs to private patients, and many similar subjects have been continuously brought to the notice of the Press.

Public relations activity during the year has also tried to lighten the increased burden of work falling on the profession as a result of the Service. In newspaper articles, statements, letters to the Press, guidance for such bodies as the B.B.C. and the news-film companies, the need for restraint in the calls made on the doctor's time by the public has been consistently emphasized. A popular illustrated leaflet, "The New Health Service and You," was prepared for public distribution in order to emphasize this point and also to stress, in the words of the S.R.M. Resolution of May 28, 1948, that "for reasons outside the control of the profession the inception of the new Service cannot be followed for some time to come by all the improvements promised by the Government in the medical services of the country." Distribution of this leaflet was undertaken from B.M.A. House to every practitioner who asked for a supply. Over half a million copies of the leaflet were sent out.

A wide demand was also experienced for another leaflet, "The Private Patient and the National Health Service," which aimed at clearing up a double misconception: (a) that if a member of the public decided to remain as a private patient with his general practitioner he would not be entitled to the benefits of the Health Service, and (b) that the bulk of the public's weekly contribution was being spent on the Health Service.

A poster, "Help Your Doctor to Help You," appealing to the public not to burden the doctor with requests for needless visits and to make any necessary requests early in the day,

was also prepared and widely distributed. Many copies have been displayed in Local Executive Council offices.

Reference Book of Medical Scholarships

148. No full reference book of medical scholarships at present exists. Material for such a reference book is now being compiled at B.M.A. House. It is planned to give details of all scholarships and grants for medical training (entrance, in training, and postgraduate) awarded throughout the country. It is felt that such a reference book will be of great value to parents, careers' masters in schools, advice bureaux, and similar persons and organizations concerned with guiding those seeking entry to the profession. Medical schools, universities, and charitable organizations throughout the country have been approached and have promised their co-operation.

Information Service

149. The Information Service at B.M.A. House has made steady progress during the year, and the number of daily inquiries has greatly increased. There is every sign that this new facility for supplying information and guidance on health and medico-scientific matters, as well as on medico-political questions, is greatly appreciated by the Press and other organizations which are making use of the service.

An interesting feature of the year has been the large number of journalists and social workers from abroad, especially from the U.S.A., who have called to obtain information and opinions on the working of the National Health Service.

PSYCHIATRY AND THE LAW

150. The Council has received from the Joint Committee of the Association and the Magistrates' Association a memorandum entitled "The Criminal Law and Sexual Offenders." The memorandum was published in the *Supplement* of March 12, 1949. It has also been printed in pamphlet form. The memorandum deals with cases that appear before Magistrates Courts, and emphasizes the need for adequate remand to enable psychiatric examination to be undertaken and appropriate treatment to be given.

Consideration is now being given to the preparation of a memorandum on "The Delinquent Adolescent Boy." It is hoped to complete this memorandum during the present year.

ARMED FORCES

Rates of Pay of Service Medical Officers

151. In accordance with the undertaking given to the Representative Body in 1948, the Council has reviewed the rates of pay of medical officers in the Armed Forces in the light of the recommendations of the two Spens Committees on the remuneration of civilian medical practitioners. It considers that a difference between the pay of general duty officers and specialist officers, between the ages of 35 and 54, of the same order as the difference between the recommendations of the General Practitioner Spens Committee and the Specialist Spens Committee would be inappropriate in the Armed Forces. It is also of the opinion that the pay of medical officers in the Armed Forces should include an element of compensation for the disadvantages of their career, such as frequent changes of domicile and long periods of service overseas. The Council considers that pay in the Armed Forces at the earlier ages—i.e., 25 to 34—should be relatively generous in order to attract recruits.

The difference between the general duty and specialist rates recommended by the Council is 6s. a day (£110 p.a. for graded specialists and 9s. a day (£165 p.a.) for full specialists. The Council makes no recommendations for changes in the allowances. The allowances of a married officer have been included in the Armed Forces remuneration for the purposes of comparison with the Spens Reports.

Representations have accordingly been made to the Ministry of Defence that, in order to bring the remuneration of Service medical officers into relation with the levels of professional income in the National Health Service, the rates of pay of medical officers in the Armed Forces should be revised to ensure that married general duty and specialist medical officers receive total annual emoluments upon the scale set out below.

Rank	Total Annual Emoluments	
	General Duty Officer £	Specialist Officer £
Acting Surg. Lieut., R.N., Lieut., F.O.	855	
Surg. Lieut., R.N., Capt., Fl. Lieut.	965	
Do. After 3 years' commissioned service	1,074	
Do. " 5 " " "	1,184	1,294
Do. " 7 " " "	1,293	1,503
Surg. Lieut.-Com., Major, Sq. Ldr. "	1,458	1,623
Do. After 10 years' commissioned service	1,512	1,677
Do. " 12 " " "	1,567	1,732
Do. " 14 " " "	1,622	1,787
Surg. Com., Lieut.-Col., Wing Com.	1,831	1,996
Do. After 2 years' service as such	1,886	2,051
Do. " 4 " " "	1,941	2,106
Do. " 6 " " "	1,995	2,160
Do. " 8 " " "	2,050	2,215
Surg. Capt., Col., Group-Capt.	2,251	
Do. After 2 years' service as such	2,306	
Do. " 4 " " "	2,360	
Do. " 6 " " "	2,415	
Surg. Capt. (after 8 years' service as such), Brig., Air Cdre.	2,571	2,571
Surg. Rear-Admiral, Ma.-Gen. Air Vice Marshal	2,872	2,872
Surg. Vice-Admiral, Lieut.-Gen., Air Marshal	3,274	

A memorandum on this subject submitted by the Council to the Ministry of Defence is included at Appendix V.

The Council is also engaged, with actuarial assistance in a comparison of the pensions payable to officers of the Armed Forces with the benefits of the National Health Service Superannuation Scheme.

SCOTLAND

Chairman and Deputy Chairman of Scottish Committee

152. Dr. George MacFeat and Dr. I. D. Grant were appointed chairman and deputy chairman respectively of the Scottish Committee for the session 1948-9.

Organization of Consultants and Specialists in Scotland

153. In the Supplementary Annual Report for 1947-8 the Council reported proposals which had been made for the appointment of a Consultants and Specialists (including Hospitals) Subcommittee of the Scottish Committee, whose duty it would be to consider matters specially affecting those engaged in consultant and specialist practice in Scotland and all questions concerning hospitals. Subsequent events, however, made it apparent that this proposal did not go far enough, and that if consultants and specialists and the Royal Corporations in Scotland were to participate effectively in the machinery established in relation to the National Health Service, there must exist a body with power to determine its own policy on consultant and specialist matters in Scotland, though working within the framework of the Association. There has therefore been constituted a Central Consultants and Specialists Committee (Scotland). This committee largely retains the composition of the former subcommittee of the Scottish Committee, but its reference has been widened to give it power not only to report to the Central Consultants and Specialists Committee in London, on which it is directly represented, but to its constituent bodies, and to negotiate (within any negotiating machinery that may be laid down for the medical profession and in a manner yet to be defined) with the Department of Health for Scotland on matters specially affecting consultants and specialists working under the National Health Service (Scotland) Act. The relationship of the committee to the Scottish Committee of the Association is analogous to the relationship which exists between the Central Consultants and Specialists Committee and the Council.

On behalf of the Association the Council has accepted responsibility for the cost of the working expenses of this committee, including the provision of secretarial and clerical services and the provision of accommodation for meetings. The Scottish Secretary acts as its secretary. The committee has had under consideration various matters arising from the Spens Specialists Report in their relation to Scotland. It has also considered difficulties arising in connexion with (1) the status and remuneration of medical superintendents of hospitals and institutions in Scotland under the National Health Service, (2) interim payments for whole-time consultants and specialists holding dual appointments with a Regional Hospital Board and a university, and (3) status of local authority officers transferred

to the hospital and specialist service. All these matters have been discussed with representatives of the Department of Health for Scotland.

In addition to the appointment of the Central Consultants and Specialists Committee (Scotland) there is being appointed a Scottish Joint Committee of the Royal Scottish Medical Corporations and the Central Consultants and Specialists Committee (Scotland), parallel to the Central Joint Committee. This Joint Committee will have direct contact with the Secretary of State and the Department of Health for Scotland on consultant and specialist matters specifically related to the Scottish Act.

Organization in Respect of General Medical Services under National Health Service in Scotland

General Medical Services Subcommittee (Scotland)

154. Matters arising in connexion with the general medical service under the National Health Service in their specific relation to Scotland will be dealt with by a General Medical Services Subcommittee of the Central General Medical Services Committee. So far as the Scottish Committee of the Association is concerned this subcommittee will be autonomous in its own particular sphere and will report direct to the General Medical Services Committee and through the local medical committees in Scotland to the Annual Conference of Local Medical Committees.

With the authority of the General Medical Services Committee, a conference of representatives of Scottish Local Medical Committees was held on Feb. 10, 1949, at the Scottish House of the Association. The conference was composed of representatives of Scottish local medical committees and members of the General Medical Services Subcommittee (Scotland) under the chairmanship of Dr. W. M. Knox. The object of the conference was to consider: (1) the constitution and method of appointment of permanent local medical committees in Scotland and the desirability of the preparation of a model scheme; (2) the method of central representation of Scottish local medical committees; and (3) other relevant questions pertaining to the National Health Service in Scotland. A report of the conference was published in the *Supplement* of Feb. 26, 1949 (p. 109).

Training of Assistants Scheme

This matter has been discussed with the Department of Health for Scotland, and a scheme which differs in some respects from that set up in England and Wales for the purpose of the training of assistants under the National Health Service has been approved. The main difference is that whereas in England and Wales the selection of "trainer" practitioners is left in the hands of local medical committees, with the addition of a university representative, in Scotland the selection is delegated to committees on a regional basis. These committees are composed of general practitioner representatives nominated by the local medical committees in the regions, consultant and specialist practitioners appointed from a panel selected by the regional consultants and specialists committees in Scotland, with one member appointed by the appropriate university, and an independent chairman appointed by the Secretary of State for Scotland.

Health Centres and Group Practice

155. The general position regarding the provision of health centres and, in particular, the possibility of developing one or more forms of group practice in suitable areas in Scotland is at the present time the subject of discussion with the Secretary of State.

Highlands and Islands and Rural Practitioners

156. The position of Highlands and Islands and rural practitioners in Scotland under the National Health Service is being carefully watched. Notwithstanding the disappearance, under the National Health Service, of the Highlands and Islands Medical Service as such, there remain many problems in the Highlands and Islands (and particularly in the Islands) which differ from those of other rural areas of Scotland. In all cases, however, mileage forms a substantial part of the income and presents an even more difficult problem in Scotland than in England and Wales, as a much larger proportion of practitioners receive mileage payments. Statistics in respect of mileage are

being collected from all rural practitioners, whether Highlands and Islands or otherwise, with a view to determining what would be an equitable distribution of mileage in Scotland.

At the request of the Department of Health and with the assistance of the local medical committees concerned, a list of those practices deemed to have been saleable before July 5, 1948, has been prepared for the consideration of the Practices Compensation Committee in deciding which of those practitioners who formerly received grants under the Highlands and Islands Scheme are entitled to compensation.

Whole-time Medical Officers of Local Health Authorities

157. Proposals for the remuneration of whole-time medical officers of local health authorities under the National Health Service have been considered in their relation to Scotland. The question of Whitley Council machinery for these medical officers has also been considered and is covered in the following paragraph.

Whitley Council Machinery for Persons Employed in the National Health Service

158. Proposals for the establishment of Whitley Council machinery for persons employed in the National Health Service issued by the Ministry of Health and Department of Health for Scotland have been considered in their relation to Scotland. The proposal that there should be established a Scottish Council as an integral part of the Whitley machinery has been abandoned, but there would be nothing to prevent a Medical Functional Council under the general Whitley machinery appointing a Standing Scottish Committee with autonomous powers, if thought advisable.

The Council has agreed that it should be a condition of the Association's acceptance of the Whitley Council machinery (a) that it should cover all doctors employed under the National Health Service Acts, or in the employment of local authorities throughout the United Kingdom, and (b) that it contains provision for a Standing Scottish Committee of the Medical Functional Council, to which shall be referred, when appropriate, matters which require to be specially considered as specifically relating to the Scottish Act. There will also be provision for Scottish representation on any sectional subcommittees of the Medical Functional Council which may be appointed to deal with the various aspects of the National Health Service.

Medical Members of Statutory Bodies under National Health Service (Scotland) Act

159. At the request of the Department of Health for Scotland nominations have been made of medical members for appointment to various standing advisory committees of the Scottish Health Services Council and to the Tribunal appointed under section 43 of the Scottish Act (Disqualification of Persons providing Service).

Constitution of Scottish Committee

160. The question of whether any alteration is desirable in the constitution of the Scottish Committee as the result of the introduction of a National Health Service operated under a separate Act for Scotland has been considered. In view, however, of the formation of the Central Consultants and Specialists Committee (Scotland) and the General Medical Services Subcommittee referred to in foregoing paragraphs, it is not proposed to make any recommendation for alteration of the constitution of the Scottish Committee. The matter will be reviewed at a later stage in the light of developments.

Fees for Medical Witnesses and for Reports Required by Procurators Fiscal

161. After further discussion with representatives of the Crown Office a revised scale of fees for evidence and reports required by procurators fiscal in Scotland has been approved with operation as from Jan. 1, 1949. The Scottish legal system in this matter differs from that in England. Under the Scottish system the procurator fiscal is in general the Crown official responsible for fees which in England are the responsibility partly of coroners and partly of criminal courts, and for this reason identical scales in the two countries are not appropriate. The scale of fees now adopted, which offers a very substantial increase on the former fees (which had remained virtually unaltered since 1901), is as follows:

Day Allowances

Witnesses acting in a professional or expert capacity.

(a) For attending at precognitions and for making examinations and reports, conducting inquiries and investigations, and giving evidence:

Engaged not more than 2 hours, not exceeding .. £2 2s

[Note: This maximum must not be regarded as the normal fee. For short precognitions and attendances, formal certificates, etc., an allowance less than the maximum will often be sufficient.]

Engaged more than 2 hours but not more than 4 hours, not exceeding £3 3s

Engaged more than 4 hours but not more than 8 hours, not exceeding £4 4s

Engaged more than 8 hours £6 6s

(b) For a dissection specially sanctioned by Crown Counsel £3 3s

When more than one dissection is made in one day, for each dissection after the first £2 2s.

In computing the time engaged, time necessarily occupied in travelling shall be included.

Night Allowance

Every witness necessarily detained from home overnight shall be paid a reasonable allowance for subsistence, but not exceeding 20s a night.

This scale has been accepted on the understanding that the Association reserves the right to reopen negotiations on the basis of any revision which may be made in the fees payable in England and Wales under the Coroners Acts.

Departmental Committee on Medical Certificates

162. Information has been collected regarding those certificates which under Scottish law differ from those required under English law, and a statement on the matter has been presented to the Departmental Committee.

Report of Working Party on Midwives

163. A joint committee composed of representatives of the medical bodies in Scotland who have been invited by the Secretary of State to submit their views on the Report of the Working Party on Midwives has been appointed. The object of this joint committee is to prepare for submission to the Secretary of State an agreed statement of the views of the profession in Scotland on the Report.

Public Relations Machinery in Scotland

164. A part-time press officer for Scotland, Mr. George Donaldson, Parliamentary sub-editor of the *Scotsman*, has been appointed. The officer will assist in handling B.M.A. announcements or publicity material issued by the Central Public Relations Committee so far as the Scottish Press, national and local, is concerned. He will also be available to the Scottish Committee and the Scottish Secretary for advice on the means of obtaining the maximum publicity in Scotland for B.M.A. policy.

WALES

165. The Welsh Committee, which meets at Shrewsbury under the chairmanship of Dr. H. R. Frederick, has reviewed its constitution in order that it may more effectively represent the special interests of the profession in Wales. The new constitution would serve to bring the views of members in North Wales and South Wales into closer alignment with one another. The Council has decided to reconstitute the Welsh Committee as follows:

(i) The Officers of the Association *ex officio*;

(ii) Members of the Council representing Wales, including Monmouthshire.

(iii) The Secretaries of North Wales and South Wales and Monmouthshire Branches.

(iv) The Representatives in the Representative Body (or in their absence the Deputy Acting Representatives) of the constituencies in Wales, including Monmouthshire, and the Representatives in the Representative Body (or in their absence the Deputy Acting Representatives) of the Shropshire and Mid-Wales Branch if resident or practising in Wales, with power to co-opt not more than two members for special purposes.

There is a strong desire for the establishment of a Welsh B.M.A. House in Cardiff, and exploratory steps to this end are being taken.

OVERSEAS

Terms of Service in the Colonial Medical Service

166 Comments received from Branches overseas on the interim revisions of remuneration which have been effected in the medical services in various Colonies have made it clear to the Council that in many cases the revised terms are considered to be unsatisfactory. After careful consideration the Council has decided that, rather than undertake further negotiations with the Colonial Office on these interim terms of service, the most practical policy to pursue is to start negotiations for completely new post-war scales of remuneration related to professional income in the United Kingdom. The Council has accordingly reviewed the remuneration and conditions of service of Colonial Medical Officers in the light of the Spens Reports and of the terms which are being negotiated for the National Health Service in Great Britain. Full consideration has been given to the varying levels of taxation and cost of living in the Colonies to the pension schemes at present in force, and to the various advantages and disadvantages of the Colonial Medical Officer's life, and the Council has submitted the following proposals to the Colonial Office as comparable having regard to all the factors to the Spens recommendations:

Standard Scale	£850	£850, £900	£1,000 + £50—£2,000
Superscale Posts	Grade IV		£2,250
	III		£2,500
	II		£3,000
	I		£3,500

In framing these proposals the Council has used the betterment factors laid down by the Ministry of Health in calculating the remuneration of practitioners in the National Health Service. Any increase in these factors will necessitate a corresponding increase in the Council's proposals. The figures include an expatriation element, and are intended to be for whole-time service. The Council considers that the scale should be applicable to all territories but recognizes that in certain Colonies where conditions are peculiar (e.g., Malaya, Hong Kong) it will be necessary for certain salaries in the scale to be supplemented by a local allowance. The Council has submitted to the Colonial Office a memorandum on the remuneration of Colonial Medical Officers (see Appendix VI to this report), and has intimated to the Colonial Office that it wishes to open negotiations on the following other principal matters, besides remuneration, in the Colonial Medical Service: recruitment, personnel management, delay in filling higher appointments, and private practice.

Royal Commission on Health and Population in the African Colonies

167 The Council has sent to the Colonial Office a copy of the memorandum prepared by the Kenya Branch, to which reference was made in the Supplementary Annual Report of Council in 1948, recommending the appointment of a Royal Commission to inquire into the health and population of the African Colonies. The Kenya Branch has insistently drawn attention to the fact that the population of East Africa is rapidly outstripping the available food-supply. The Council is impressed by the gravity of the situation and has asked the Secretary of State to give the matter his earnest consideration.

Reorganization of the Malayan Medical Service

168 The Council of the Malayan Branch has accepted in principle the proposals for the new conditions of service in the unified Malayan Medical Service which were reported by the Council to the Representative Body in 1948. The Branch has made two provisos to its acceptance—(a) that a tribunal be set up to adjudicate on any case where an officer claims hardship and seeks compensation and (b) that means be found to overcome the difficulty of promotion to Grade A Superscale posts the chances of which in the new scheme appear to be halved. Information is awaited regarding the attitude of the Malayan Government to these two provisos. The Council continues to watch with care the negotiations on the unification of the Malayan Medical Service.

Visit to East African Branches

169 In January the Council sent an Assistant Secretary (Dr E. Grey Turner) to visit the Kenya, Sudan, Tanganyika and Uganda Branches. In a tour lasting three weeks the

Assistant Secretary met a large proportion of the members of these Branches addressed a number of meetings, and had discussions with leading members of the Governments of the Colonies visited. His report emphasized the importance of the Association as an Imperial link, embracing all territories and all races, and drew attention to the vital scientific and cultural role which the overseas Branches play in the life of their communities. The Council takes this opportunity of stating that it is fully conscious and proud of the fact that the Association has over 10,000 loyal members overseas and assures these members that their problems and difficulties are and have been very much in its mind despite the immense preoccupations of the Association in the United Kingdom. The Council considers that visits such as that of the Assistant Secretary to East Africa are necessary to unite the overseas Branches to the parent body, and expresses the hope that overseas members on leave in England, especially perhaps those from the smaller overseas Branches will make a point of calling at Headquarters.

Empire Medical Advisory Bureau

170 The Empire Medical Advisory Bureau was opened at B.M.A. House on July 13, 1948, by Lord Addison (Lord Privy Seal) in the presence of a distinguished gathering which included the members of the Advisory Committee. This committee is representative of the various Commonwealth Government Departments and societies interested in the welfare of Empire and overseas visitors.

The Committee of Management has met regularly in connexion with the organization and development of the Bureau. This is now well established and its work has steadily increased month by month.

Up to the end of January, 1949, 500 inquirers had made use of the Bureau either personally or by letter, and 282 of these had made a total of 494 visits to the Bureau.

About three fifths of the inquiries concerned various aspects of postgraduate education and experience including information on courses of instruction, examinations, appointments in and visits to hospitals, and medical registration. One-quarter of the inquiries related to accommodation, and the remaining inquiries—about one-sixth of the whole—extended over the very wide field of general information.

A "Summary of the Regulations for Postgraduate Diplomas and of Courses of Instruction in Postgraduate Medicine" has been prepared and copies have been dispatched overseas to all Branches of the Association, affiliated associations, deans of medical faculties, postgraduate committees, and editors of medical journals, for the information of intending visitors to this country.

Through the kindness and co-operation of port health officers many of the visitors are met on their first arrival in this country by a fellow medical man.

Social functions, at which overseas visitors have the opportunity of meeting fellow practitioners from other parts of the British Commonwealth and members of the profession in this country, including a few of our leading physicians and surgeons, are a regular feature of the Bureau's activities, up to date nearly 500 doctors and wives from overseas have attended "At Homes" arranged by the Bureau.

MEDICAL FILMS

171 The object of the Council is to develop and maintain a library of medical films primarily to serve Divisions and Branches of the Association, and a bureau to act as a central office of information on medical films, their production, appraisal, grading and history. A large amount of detailed inquiry is necessary, and consequently the task is difficult and must be planned as a long term policy. The film library is now in operation, and there has been a considerable demand for its services.

When the work of appraising the films is advanced a catalogue will be prepared and the approved films will be available to borrowers. During the year the Council has purchased an outstanding American film "Angina Pectoris" written and directed by Joseph E. F. Riseman, M.D., Boston, Mass. In addition the following films have been presented to the film library:

The Medical Motion Picture. Eye Surgery—Removal of Intra-ocular Foreign Bodies, presented by the American Medical Association.

Studies in Human Fertility (Medical Methods of Control of Conception), presented by the Ortho-Pharmaceutical, High Wycombe, Bucks.

Curare in the Treatment of Infantile Paralysis, presented by Dr. N. S. Ransohoff, New York.

Muscle Testing, presented by Sir Morton Smart.

A number of films have been made available to the Council for copying, and consideration is being given to the conversion of certain films from silent to sound editions and to their suitability for exchange for films from foreign sources. A 16-mm. Bell and Howell-Gaumont projector has been purchased, and during the year this has enabled a number of medical film demonstrations to be given to local Divisions of the Association. The Council has also approved the production of a film entitled "The Treatment of Infections of the Fingers and Hand," by A. G. Riddell, F.R.C.S., and steps are now being taken to produce the film as soon as possible.

H. GUY DAIN,
Chairman.

APPENDIX I RETURN OF ATTENDANCES OF COUNCIL

Name	Attendances	
	Actual	Possible
H. Guy Dain, Birmingham (<i>Chairman of Council</i>) ..	7	7
Sir Lionel Whitby, Cambridge (<i>President</i>) ..	3	7
E. A. Gregg, London (<i>Chairman of Representative Body</i>) ..	7	7
A. M. A. Moore, Upminster (<i>Treasurer</i>) ..	7	7
C. W. C. Bain, Harrogate (<i>President-Elect</i>) ..	3	7
J. A. Brown, Birmingham (<i>Deputy Chairman of Representative Body</i>) ..	3	7
Sir Hugh Lett, Walmer (<i>Immediate Past President</i>) ..	6	7
J. B. Miller, Bishopbriggs (<i>Immediate Past Chairman of Representative Body</i>) ..	5	7
J. W. Bone, Luton (<i>Immediate Past Treasurer</i>) ..	3	7
Abel, A. Lawrence, London ..	7	7
Aitken, Janet K., London ..	7	7
Anderson, J. H., Ruthin ..	4	7
Arthur, J. C., Low Fell ..	5	7
Beauchamp, A., Birmingham ..	4	7
Callander, L. Dougal, Doncaster ..	7	7
Carter, O. C., Bournemouth ..	7	7
Cottrell, J., Grimsby ..	7	7
Crozier, T. H., Belfast ..	4	7
Dahne, S. F. L., Caversham ..	3	5
Edgar, W. H., Alverstoke ..	1	7
Ellis, J. S., Newtownards ..	4	7
Emont, Mary, Aberdeen ..	6	7
ton, J., London ..	3	7
es, R., London ..	5	7
ederick, H. R., Port Talbot ..	7	7
Gibbons, P. J., Liverpool ..	6	7
Giff, J. H. P., Belfast ..	1	4
Golding, H. M., Bristol ..	7	7
Gordon, R. G., Bath ..	7	7
Gorsky, J. A., London ..	6	7
Gough, A. S., Watford ..	5	7
Gray, F., London ..	5	7
Hall-White, R., London ..	4	5
Hall, I. Simson, Edinburgh ..	2	7
Hamilton, J. G. M., Edinburgh ..	4	7
Horder, Lord, London ..	5	7
Howells, W. V., Swansea ..	6	7
Hunter, J. M., Portrush ..	1	2
Innes, I. G., Hull ..	7	7
Ireland, J. A., Shrewsbury ..	6	7
Jolly, R. H. H., Wolverhampton ..	4	7
Jones, Isaac, London ..	3	7
Jones, J. A. L., Vaughan, Leeds ..	7	7
Jope, W., High Blantyre ..	7	7
Kennon, R., Liverpool ..	5	7
Knob, W. M., Glasgow ..	6	7
Kyle, J., Wendover ..	7	7
Liston, R. P., Tunbridge Wells ..	6	7
MacFarr, G., Douglas, Lanarkshire ..	6	7
Newell, R. L., Cheddle, Cheshire ..	3	7
O'Farrell, P. T., Dublin ..	5	7
Owen, D. R., Chester ..	5	7
Perce, J. C., Diss ..	7	7
Permit, A. E., London ..	3	7
Pradham, J. A., Weymouth ..	7	7
Rowe, J. B., Harrow ..	7	7
Sutherland, T. H. D., London ..	7	7
Thwaites, J. G., Brighton ..	7	7
Tompkins, Sir Percy S., Purley ..	7	7
Victoria, H., Uxbridge ..	5	7
Ward, S., Birmingham ..	7	7
Waterfield, N. E., Little Bookham ..	7	7
Watts, William, Newcastle-upon-Tyne ..	6	7
Wright, A. Dickson, London ..	5	7

APPENDIX II

DUTIES OF AND ETHICAL RULES FOR INDUSTRIAL MEDICAL OFFICERS*

I. Duties

The duties which form the basis of the industrial medical officer's work vary considerably according to the needs of the occupational group in which he works. The following duties may be properly undertaken by industrial medical officers:

- (i) Examination of applicants for employment and advice as to their placement.
- (ii) Immediate treatment of medical and surgical emergencies occurring at the place of employment.
- (iii) Examination and continued observation of persons returning to work after absence due to illness or accident, and advice on suitable work.
- (iv) Health supervision of disabled persons.
- (v) Periodical examination of persons exposed to special hazards in respect of their employment.
- (vi) Maintenance of the efficiency of the nursing and first-aid personnel and equipment.
- (vii) The study of the work and working environment and their effects on the health of the employees.
- (viii) Advice to managements regarding:

- (a) The working environment in relation to health.
- (b) Occurrence and significance of hazards.
- (c) Accident prevention.
- (d) Statutory requirements in relation to health.

(ix) Health supervision of all employees with special reference to (a) young persons, (b) married women, and (c) elderly persons.

(x) Medical inspection of canteen facilities and medical supervision of the health and hygiene of canteen workers.

(xi) Advice to those committees within the factory which are responsible for the health, safety, and welfare of the employees.

(xii) The arranging and carrying out of such educational work in respect of the health and fitness of the employees as may be desirable and practicable.

(xiii) Advice to employees on all health matters relating to their work or working capacity.

ADVISORY NOTE

The industrial medical officer is advised to establish contact with other industrial medical officers and, where possible, with University Departments of Occupational Health and Government Departments concerned with the health of industrial workers. The latter include the Factory Department of the Ministry of Labour, which has on its staff a number of Medical Inspectors of Factories. The name and address of the Local Medical Inspector of Factories may be obtained from the District Inspector of Factories.

The Medical Research Council, at 38, Old Queen Street, London, S.W.1, has a number of special committees dealing with various aspects of industrial health research. Its work in this field is co-ordinated by the Industrial Health Research Board, and inquiries on research problems may be sent to the Secretary at the above address.

The Universities of Durham and Manchester have departments of industrial or occupational health, and the University of Glasgow a sub-department of occupational health, from which advice may be obtained. From time to time some of these departments conduct short courses of instruction in industrial medicine and hygiene.

II. Ethical Rules

Subject to statutory requirements these rules shall, where existing ethical rules or custom fail to cover the circumstances, govern the professional relationships of industrial medical officers with their medical colleagues in other branches of medical practice, with those employees under their professional care, and with managements. The rules apply not only to whole-time officers but also to those employed part-time or in any other capacity.

1. (i) When an industrial medical officer renders advice or treatment to an employee at the place of employment, and

*These Duties and Rules replace those approved by the Representative Body in 1937.

when in the employee's own interests he deems it advisable, he shall inform the employee's own doctor of the material facts.

(ii) When an industrial medical officer finds on examination that an employee is unfit for work, he shall advise the employee to consult his own doctor or he may, in emergency, send him direct to hospital.

(iii) If an employee is under the care of his own doctor or of a hospital, and if at the place of employment there are special facilities and equipment for continuing treatment, the industrial medical officer may arrange for such treatment with the approval of the doctor or hospital concerned.

2. When in the course of an examination of an employee for superannuation purposes, retirement or special duty, material clinical findings come to light, the industrial medical officer should with the consent of the person examined inform his doctor of the relevant details.

3. Except in emergency, an industrial medical officer shall not undertake any treatment that is normally the responsibility of the employee's own doctor, unless it be with his agreement.

4. In his capacity as industrial medical officer he shall not undertake treatment of any member of an employee's family who is not employed at the same place of work.

5. A part-time industrial medical officer shall not utilize his position to influence an employee to choose him as his medical attendant.

6. An industrial medical officer shall not, except in emergency, or where a prior understanding with local practitioners exists, send any employee direct to hospital. When he considers that attendance at hospital is necessary or advisable, he shall refer the employee to his own doctor, to whom he may make a suggestion to this effect. When, in an emergency, an industrial medical officer sends an employee to hospital, he shall inform the relatives of the patient is likely to be detained) and also the employee's own doctor, where known.

7. When an industrial medical officer is asked by his management to report on the condition of an employee who is absent from work for health reasons and under the care of his own doctor, the industrial medical officer, before examining the patient, shall first communicate with the employee's doctor, informing him of the time and place of his intended examination.

8. An industrial medical officer should, whenever possible, respond to an invitation for consultation with an employee's own doctor.

9. An industrial medical officer shall not carry out any personal preventive measure which is purely experimental without the consent of the employee, and, where desirable, the consent of the employee's own doctor.

10. The personal medical records of employees maintained by an industrial medical officer for his professional use are confidential documents. Access to them must not be allowed to any other person except with the consent of the industrial medical officer or with the consent of the employee concerned.

An industrial medical officer shall at all times be responsible for the safe custody of his records. On the termination of his appointment he shall hand over his records only to the industrial medical officer who shall succeed him in the appointment.

If there is no successor to his appointment, the industrial medical officer retains his responsibility for the safe custody of his records or for their destruction.

11. An industrial medical officer shall not disclose his knowledge of industrial processes acquired by virtue of his appointment except with the permission of his management or when so required in courts of law.

12. When an industrial medical officer has examined an applicant for employment, and as a result of the examination employment is subsequently refused, the industrial medical officer may disclose his decision to the applicant and, when authorized, may disclose the findings to his own doctor.

ADVISORY NOTES

(1) When an industrial medical officer addresses a communication to the employee's own doctor, and receives no reply within a reasonable time, he shall be at liberty to assume that the employee's own doctor takes no exception to the contents of his communication. It is important in the employee's interest that no opportunity of useful co-operation between the employee's doctor and the industrial medical officer should be neglected. Such co-operation may be of particular value when an employee is under treatment for an occupational

disease of which the industrial medical officer has special experience.

(2) Industrial medical officers should not make statements as to liability in the case of accidents at the place of work except when so required in courts of law.

APPENDIX III

DUTIES OF AND ETHICAL RULES FOR INDUSTRIAL MEDICAL OFFICERS

(As approved by the Representative Body in 1937)

I. Duties

The duties which form the basis of the industrial medical officer's work vary considerably according to the needs of the individual industry or commercial organization. In the following paragraphs are set out the duties which may properly be undertaken by industrial medical officers when so required:

(i) Examination of applicants for employment and advice as to their selection.

(ii) Immediate treatment of medical and surgical emergencies occurring at the place of employment.

(iii) Examination of persons returning to work after illness or incapacity.

(iv) Periodical examination of persons exposed to special hazards.

(v) Responsibility for the efficiency of the nursing and first-aid personnel and equipment.

(vi) Advice to the management regarding:

(a) The hygiene of the factory.

(b) The health conditions of the workers.

(c) The occurrence and risk of dangerous hazards.

(d) The accident prevention arrangements.

(e) Factory legislation concerning health and safety and the special diseases to which the particular industry exposes any worker.

(vii) Maintenance of close touch with the management with a view to ensuring that conditions are such as to produce the highest degree of mental and physical welfare of the workers.

(viii) Continued observation of all young persons with a recommendation, where necessary, for the provision of free meals or milk.

(ix) Continued observation of all persons returning to work after prolonged illness.

(x) The medical supervision of canteens to ensure the cleanliness, good quality, and physiological adequacy of the food.

(xi) Advice to the works councils, welfare departments, benevolent fund committees, etc., on any matter affecting the health of the workers.

(xii) The arranging and carrying out of such educational work in respect of the health and fitness of the workers as may be desirable and practicable.

(xiii) Ready accessibility to employees for medical advice upon matters relating to their work.

(xiv) Encouragement of supervisors to report signs of ill-health in any of their workers.

(xv) Advice to the management regarding fire and air-raid precautions.

II. Ethical Rules

Subject to statutory requirements these rules shall, where existing ethical rules or custom fail to cover the circumstances, govern the professional relationships between medical officers attached to industrial and commercial concerns, their colleagues in general practice, and the workers and staff under their professional care and charge. The rules apply not only to whole-time officers but to those employed part-time or in a casual consultative capacity.

1. In carrying out their duties industrial medical officers shall be guided generally by the following ethical code:

(i) The industrial medical officer shall render such emergency or first-aid treatment as is required at the place of employment, and shall inform the worker's own doctor of any treatment given. Where further treatment is deemed necessary, the worker shall be instructed to consult his own practitioner.

(ii) Where there are special facilities or equipment and suitable transport arrangements are available, if it is in the interests of the patient, continuing treatment may be given at the factory clinic with the consent of, and in consultation with, the worker's own practitioner. In these cases some such form as the following should be used:

"Date

Dear Sir,

Re:

Address

This patient has been sent home and advised to consult you. Should you consider that the special facilities of this clinic would be useful for the purpose of applying dressings or carrying out such treatment as you desire, I shall be pleased to arrange for this if you will instruct the patient to report to me.

Yours faithfully,

..... Medical Officer.

Remarks by patient's own doctor

This note may be handed back to the patient."

(iii) In cases where the industrial medical officer considers that by attending at the factory clinic for dressings or special treatment instead of obtaining such treatment elsewhere the worker might be saved loss of time and/or employment, he shall communicate with the worker's own practitioner and offer the facilities of his clinic.

(iv) The industrial medical officer shall not provide treatment in cases of disability, save in such instances as may be covered by an understanding with a committee representative of the local medical profession or where there is an *ad hoc* agreement with the worker's own practitioner. Such treatment shall be given only with the consent of the worker.

(v) The industrial medical officer shall consider and advise upon the occupation of any worker whose duties appear to be too heavy or otherwise unsuitable, and, where necessary, he shall consult the worker's own doctor.

(vi) The industrial medical officer shall (a) examine and advise concerning those workers engaged in hazardous or arduous occupations; also those about to be transferred to heavy or dangerous occupations, and shall communicate with the worker's own medical attendant at the earliest opportunity; and (b) examine and report to the works management upon those workers who appear suitable for early pension or retirement or in regard to the continuance of invalidity payments.

(vii) The industrial medical officer shall not carry out domiciliary treatment.

(viii) A whole-time industrial medical officer shall not treat any member of the worker's family who is not employed at the factory.

(ix) A part-time industrial medical officer shall not utilize his position to influence the worker to choose him as medical attendant or family doctor.

(x) The industrial medical officer shall not, except in an emergency, or where a prior understanding with the local practitioners is in operation, send any employee direct to hospital. Where he considers attendance at hospital to be necessary or advisable, he shall refer the employee to his own medical attendant and may make a suggestion to this effect to the latter.

Where, in an emergency, the industrial medical officer sends a worker to hospital, he shall advise: (a) the relatives (if the patient is detained); and (b) the worker's medical attendant.

(xi) Where an industrial medical officer has occasion to examine and to report to the management concerning the condition of any worker who is absent from his employment on account of illness and is being treated by his own medical attendant, he shall conform to the Ethical Rules for Medical Inspectors laid down by the Association. In this connexion an industrial medical officer shall, with the consent of his employer, place his special knowledge at the disposal of the attending practitioner, and *vice versa*.

(xii) The industrial medical officer should, where possible, respond to any invitation to meet the worker's practitioner in consultation.

(xiii) Except in emergency the industrial medical officer shall not carry out any individual preventive measure without the individual consent of the worker and prior agreement

with the worker's medical attendant. He shall in no way associate himself with experiments which involve the active participation of the workers without their consent and the prior notification of the workers' doctor.

(xiv) The medical records of the workers maintained by the industrial medical officer are confidential documents; they must remain in the custody of the industrial medical officer or of his deputy. Access to them must not be allowed to any other person save only to another registered medical practitioner, and then only at the request or with the consent of the worker.

(xv) The industrial medical officer shall at all times be responsible for the safe custody of his medical records. On terminating his appointment he shall make arrangements for the safe custody of his records until such time as it is possible to hand them over to his successor.

2. Where nurses are employed by the management the industrial medical officer shall instruct them to maintain the proper ethical code for nurses. Any professional matter must be treated as confidential and disclosed only to the industrial medical officer or to the worker's own medical attendant.

3. The term "consultation" in these rules shall be understood to include a written or telephonic communication addressed by the industrial medical officer to the medical attendant. In the absence of a reply within a reasonable time the industrial medical officer shall be at liberty to assume the other doctor's agreement.

APPENDIX IV

AMENDMENTS OF ARTICLES AND BY-LAWS

(i) *Article No. 1.*—By deleting the figures "1929" and by substituting therefor the figures "1948."

(ii) *Article No. 4 (1).*—By inserting before the word "voting" the words "receiving notices of General Meetings or of."

(iii) *Article No. 22.*—By deleting this Article and by substituting therefor the following new Article to be numbered 22:

"22. The Association shall in each calendar year hold a General Meeting as its Annual General Meeting in addition to any other meetings in that year. Not more than fifteen months shall elapse between the date of one Annual General Meeting and that of the next. The Annual General Meeting shall be held at such time and place as may be fixed by the Council, and if no time is so fixed, shall be held on Oct. 20 (or if that day be a Sunday on Oct. 21), and if no place is so fixed shall be held at the registered office of the Association."

(iv) *Article No. 24.*—By deleting this Article and by substituting therefor the following new Article to be numbered 24:

"24. The Council may whenever it thinks fit and (without prejudice to the provisions of the Companies Act, 1948) it shall upon a requisition made in writing as hereinafter provided by any one hundred or more Members convene an Extraordinary General Meeting."

(v) *Article No. 25.*—By deleting this Article and by substituting therefor the following new Article to be numbered 25:

"25. A requisition must state the objects of the meeting and must be signed by the requisitionists and deposited at the registered office of the Association, and may consist of several documents in like form each signed by one or more requisitionists."

(vi) *Article No. 26.*—By deleting this Article and by substituting therefor the following new Article to be numbered 26:

"26. If the Council does not within twenty-one days from the date of the deposit of a requisition proceed duly to convene an Extraordinary General Meeting, the requisitionists, or any one hundred of them, may themselves convene a meeting for the objects specified in the requisition, but any meeting so convened shall not be held after the expiration of three months from the said date. A meeting convened by the requisitionists shall be convened in the same manner, as nearly as possible, as that in which the General Meetings are to be convened by the Council."

(vii) *Article No. 27.*—By deleting this Article and by substituting therefor the following new Article to be numbered 27:

"27. In the case of an Annual General Meeting or of a meeting for the passing of a Special Resolution twenty-one clear days' notice at the least and in any other case fourteen clear days' notice at the least specifying the place, the day, and the hour of meeting, and in the case of special business the general nature of such business (and in the case of an Annual General Meeting specifying the meeting as such) shall be given in manner hereinafter mentioned to all the Members (other than those who under the provisions of the Regulations and By-laws are not entitled to receive the notice) and to the Auditors for the time being of the Association. The accidental omission to give notice to, or the non-receipt of notice by, any person entitled to receive notice shall not invalidate the proceedings at any General Meeting."

(viii) *Article No. 41.*—By deleting this Article and by substituting therefor the following new Articles to be numbered 41 (a) and 41 (b) respectively:

"41 (a). The Council shall be composed of the President of the Association, the President-Elect, the immediate Past-President, the Chairman of the Representative Body, the Chairman and (during the year immediately following his period of office as Chairman of Council) the Past Chairman of Council, the Chairman of the General Medical Services Committee, the Chairman of the Central Consultants and Specialists Committee, and the Treasurer, *ex officio*, and of members of the Association elected by the bodies and in the manner prescribed in that behalf by the By-laws."

"41 (b). No Member of Council shall vacate or be required to vacate his office as a Member of Council on or by reason of his attaining or having attained the age of 70 and any Member of Council retiring or liable to retire under the provisions of the Regulations or the By-laws and any person proposed to be elected or appointed a Member of Council shall be capable of being re-elected or reappointed or elected or appointed, as the case may be, as a Member of Council notwithstanding that at the time of such re-election or re-appointment or election or appointment he has attained the age of 70, and no special notice need be given of any resolution for the re-election or reappointment or election or appointment or approving the election or appointment as a Member of Council of a person who shall have attained the age of 70, and it shall not be necessary to give to the Members notice of the age of any Member of Council or person proposed to be re-elected or reappointed or elected or appointed as such."

(ix) *Article No. 50.*—By deleting this Article and by substituting therefor the following new Articles to be numbered 50 (a), 50 (b), and 50 (c) respectively:

"50 (a). The Council shall once at least in every calendar year lay before the Association in General Meeting an Income and Expenditure Account for the period since the preceding account, made up to a date not earlier than the date of the meeting by more than nine months. The Council shall also cause to be made out in every calendar year and to be laid before the Association in General Meeting a Balance-sheet as at the date to which the Income and Expenditure Account is made up. Every such Balance-sheet shall be signed on behalf of the Council by two of the Members of Council and shall have attached to it a report by the Council with respect to the state of the Association's affairs and the amount, if any, which they propose to carry to reserves. It shall also have attached to it the Auditors' report and such other documents as shall be required by the Statutes to be annexed thereto."

"50 (b). The Council shall also annually prepare an Estimate of the probable income and expenditure of the Association for the coming year and a Report of the proceedings of the Association for the past year and the Balance-sheet and Income and Expenditure Account and the said Estimate and Reports of the Council shall be presented to the Annual Representative Meeting."

"50 (c). A copy of each of the said documents shall be sent to the Secretary of every Branch and Division and published in the *Journal* not less than twenty-two days before the Annual General Meeting."

(x) *Article No. 51.*—By deleting from this Article the words "In addition to the above-mentioned Report."

(i) *By-law No. 10.*—Insert before the words "any vote" the words "receive notices of General Meetings or to."

(ii) *By-law No. 12.*—Insert before the words "any vote" the words "receive notices of General Meetings or to" and insert before the word "voting" the words "receiving notices of General Meetings or of."

(iii) *By-law 16 (1).*—(i) In line 1 delete the figures "1923" and substitute therefor the figures "1950." (ii) In line 5 delete the word "three" before "guineas" and substitute therefor the word "four." (iii) In Column 1 under the heading B (iii) insert the word "non-professional" between the words "whole time" and "member," and delete the words "or Government Department." (iv) In Column 2 of the table opposite each of the headings A, B (iii), and B (iv) in Column 1 insert after the

Name of Committee	Additional Members <i>ex officio</i>	Appointed Members			Duties Powers, etc
		By the Representative Body	By the Council	Otherwise Appointed	
General Medical Services	The chairman for the time being of the Conference of Representatives of Local Medical Committees called by the General Medical Services Committee of the British Medical Association	—	—	Registered medical practitioners appointed as follows: 6 such practitioners (being members of the Association) elected (in the manner prescribed by the Representative Body) by Representatives of the Constituencies formed for Great Britain and Northern Ireland under By-law 39, namely, 4 by all the Representatives (acting together) of the Constituencies so formed for England and Wales, 1 by all the Representatives (acting together) of the Constituencies so formed for Northern Ireland, and 1 by all the Representatives (acting together) of the Constituencies so formed for Scotland, together with 43 practitioners (whether members of the Association or not) to be nominated or elected as under, <i>viz</i> : 13 to be elected so far as possible on a territorial basis by the Local Medical Committees formed in Great Britain under the National Health Service Act, and by Local Medical Committees formed in Northern Ireland under the <i>Health Services Act (Northern Ireland)</i> , 1945; 6 to be elected by the Annual Conference of Representatives of Local Medical Committees; 2 to be nominated by the Central Consultants and Specialists Committee; 1 to be nominated by the Medical Women's Federation; 1 to be nominated by the Society of Medical Officers of Health	To deal with all matters affecting practitioners providing general medical services under the National Health Service Act and any Act amending or consolidating the same and to watch the interests of those practitioners in relation to those Acts The Committee shall have power to co-opt up to 4 members, if necessary, to secure a representation of a particular class of experience not otherwise represented on the Committee
Private Practice		4	4	1 by the Central Consultants and Specialists Committee; 1 by the Public Health Committee; 1 by the General Medical Services Committee	To consider and report on matters affecting the profession in the field of private practice not specially referred to other Committees. The Committee shall have power to co-opt three members

words "two guineas" the words "and a half." In Column 2 of the table opposite heading B (v) in Column 1 delete the words "four guineas and a half" and substitute therefor the words "five guineas." In Column 2 of the table opposite heading B (vi) in Column 1 delete the words "one guinea and a half" and substitute therefor the words "two guineas."

(iv) *By-law No. 23 (1) (a).*—Delete "22" and substitute therefor "37" and delete "12" and delete all the words after the word "belongs."

(v) *By-law No. 44 (3).*—Delete "twenty-two" and substitute therefor "thirty-seven."

(vi) *By-law No. 47.*—Delete "to consider the Annual Financial Statement and Balance-sheet presented by the Council; to consider Reports of the Council" and substitute therefor "to consider the Balance-sheet, Income and Expenditure Account, Estimate, and Reports presented by the Council; to consider."

(vii) *By-law No. 53 (a).*—Delete "twenty-two" and substitute therefor "thirty-seven."

(viii) *By-law No. 53 (b).*—Delete "eight" and substitute therefor "seven."

(ix) *By-law No. 53.*—Delete subparagraph (c) and amend the lettering of all subsequent subparagraphs.

(x) *By-law 53 (d).*—Delete the whole subparagraph and substitute therefor: "Thirteen being persons who have been members of the Association for at least the period aforesaid, at the Representative Meeting being elected as to two by the elected Representatives of the constituencies comprised in the Branches and Divisions in Scotland and as to a further one by the elected Representatives of constituencies comprised in the Branches and Divisions in Wales, including Monmouthshire, and as to the remaining ten by the Representative Body as a whole. All such elections shall be carried out at such time and in such manner as the Representative Meeting may decide."

(xi) *By-law No. 55 (1).*—Delete "twenty-two" and substitute therefor "thirty-seven."

(xii) *By-law No. 56 (1).*—Delete "eight" and substitute therefor "seven."

(xiii) *By-law No. 57.*—Delete and amend the numbering of all subsequent By-laws and all cross references in other By-laws.

(xiv) *By-law No. 58.*—Delete "twenty-two" and substitute therefor "thirty-seven."

(xv) *By-law No. 59.*—Delete "twenty-two" and substitute therefor "thirty-seven."

(xvi) *By-law No. 61 (1).*—Delete the words "in Great Britain and Northern Ireland" and substitute for such last-mentioned words "provided that the term of office of all members of the Council elected at the Representative Meeting shall expire at the close of the Annual Representative Meeting next following the date of their election," and all the words from and including the words "Provided that" to the end of the subparagraph.

(xvii) *By-law No. 61 (2).*—Delete all the words from and including the words "provided that" to the end of the subparagraph.

(xviii) *By-law No. 61 (4).*—Delete the whole of this subparagraph.

(xix) *By-law No. 70.*—Delete all the words from and including the words "the said Chairman" to the end of the By-law and substitute therefor "neither the Chairman nor the Deputy Chairman of the Representative Body shall while holding office as such Chairman or Deputy Chairman (as the case may be) act personally as the representative of any Constituency, but the Constituency which such Chairman or Deputy Chairman represents at the time of his election to the said office shall, during such time as he holds the said office, be represented by a deputy elected in manner provided by By-law 43."

(xx) *By-law No. 72.*—Delete "and for one year thereafter."

(xxi) *By-law No. 79.*—Delete the whole By-law and substitute therefor "Each Standing Committee shall appoint a Member of the Committee as Chairman, provided that, if the Member appointed as Chairman is not a Member of Council, the Committee shall appoint from among its own number a Member of Council as Deputy Chairman."

Schedule to the By-laws

Opposite the headings "Arrangements" and "Public Health." Delete "General Practice" and substitute therefor "Private Practice."

Opposite the headings "Central Consultants and Specialists," "Finance," and "Occupational Health." Delete "General Practice" and substitute therefor "Private Practice." Delete "Insurance Acts" and substitute therefor "General Medical Services."

Opposite the heading "Welsh." Delete from the column "Additional Members *ex officio*" the words "The Chairman and Secretaries of the Welsh Standing Contract Practice Subcommittee" and substitute therefor "The Representatives (or in their absence the Deputy Representatives) of the Constituencies in Wales (including Monmouthshire). The Representatives (or in their absence the Deputy Representatives) of the *Shropshire and Mid-Wales Branch* if such Representatives or Deputy Representatives, as the case may require, are resident and practising in Wales."

Delete all the words appearing in the column "Appointed Members Otherwise Appointed."

Headings "General Practice" and "Insurance Acts." Delete these headings and everything appearing opposite them.

Insert new headings and entries as shown in the Table on p. 203 as to "General Medical Services" immediately below "Finance" and as to "Private Practice" immediately below "Organization."

APPENDIX V

MEMORANDUM ON THE REMUNERATION OF MEDICAL OFFICERS OF THE ARMED FORCES

1. The Association has repeatedly stated (notably at the Annual Representative Meeting at Cambridge in June, 1948) that it would be necessary to review the remuneration of the medical officers of the Armed Forces in the light of the two Spens Reports. It is the Association's view that remuneration in the medical branches of the Armed Forces must conform broadly to that of medical practitioners in civil practice. The Spens Reports have laid down ranges of income which are recognized both by the Ministry of Health and by the Association, and which have been adopted by the Government as the basis for the remuneration of medical practitioners in the National Health Service. The Association has now completed its review and desires to present to the Ministry of Defence the results of its investigation.

2. It is well known to the Association that voluntary entry to the medical branches of the Armed Forces has lately been far from satisfactory. There is no need to point out that this position will deteriorate still further if the terms and prospects in the Armed Forces remain markedly inferior to those in civil medical practice.

3. In comparing the remuneration of medical officers of the Armed Forces with the recommendations of the two Spens Committees an immediate practical difficulty arose. The remuneration of medical officers of the Armed Forces must necessarily be on a scale related to age, service, and rank. The incomes of civilian medical practitioners, on the other hand, are not in general determined by age and length of service, but depend upon a number of factors, including the locations and types of their practices, into which there enters a large element of personal choice. The Association was therefore faced with the problem of translating the recommendations of the Spens Committees into some sort of an age and service scale. In the case of the specialist Spens Report this was relatively easy, because the recommendations are related to some extent to age. In the case of the general practitioner Spens Report a scale was prepared by setting out the arithmetic means of the incomes recommended for the various age groups in Table C of the Report. Above the age of 50 the arithmetic means of the higher incomes recommended in Table C were set out, because it was recognized that the majority of officers of those ages have been promoted to higher ranks by selection.

4. In both cases the net figures of the Reports were adopted, because it was recognized that the practice expenses of a

medical officer in the Armed Forces are not in general borne by himself. The betterment factors adopted by the Ministry of Health in translating the 1939 figures of the Spens Reports into present-day figures were used by the Association for this review, although it must be emphatically stated that the Association has never agreed that these factors reflect in any way accurately or adequately the change in the value of money for the professional classes which has taken place since 1939. Negotiations are at present proceeding on the betterment factor. Any increase which may result in the betterment factor will of course necessitate a corresponding increase in the Association's proposals contained in paragraph 8 below.

5. The Spens figures, increased in respect of betterment, were reduced by 6% for the purposes of this review, in order to take account of the fact that practitioners in the National Health Service must contribute 6% of their net remuneration towards superannuation, while the pensions of Armed Forces medical officers are non-contributory.

6. The figures for the remuneration of medical officers in the Armed Forces which the Association has compared with the recommendations of the Spens Committees were consolidated figures of pay and all allowances of a married officer. This was done because it was recognized that the Spens recommendations made no extra provision for marriage and that civilian practitioners are, in general, responsible for all their living expenses. The Association makes no recommendations for any alterations in the existing system and scale of allowances, as these are common to all officers of the three Services, but confines itself to proposals for increases in the basic pay of medical officers.

7. In comparing the remuneration of Armed Forces medical officers with that of civilian practitioners there are several factors to which great weight must be attached. These are: (a) frequent moves; (b) service in countries ill provided with the amenities of civilized life to which officers are accustomed in the United Kingdom, and sometimes in climates which are arduous and disagreeable; (c) maintenance of two homes for the purpose of educating growing children in the United Kingdom, which may involve heavy expenditure on travelling; and (d) payment of income tax at the British rate irrespective of rates of exchange and the local cost of living. The Association considers that there should be adequate compensation included in the remuneration of medical officers in the Armed Forces to offset these factors, and the figures proposed by the Association include this element.

8. The Association, therefore, as a result of its review, proposes the following rates of basic pay for general duty medical officers:

Rank	Daily Rate £ s.	Increase over Present Rate
Acting Surg. Lieut., Lieut., F./O.	1 5	3s.
Surg. Lieut., Capt., Fl. Lieut.	1 11	3s.
Do. After 2 years as such	1 17	6s.
Do. " 4 " "	2 3	9s.
Do. " 6 " "	2 9	12s.
Surg. Lieut. Com., Major, Sq. Ldr.	2 18	15s.
Do. After 2 years as such	2 18	15s.
Do. " 4 " "	2 18	15s.
Do. " 6 " "	2 18	15s.
Surg. Com., Lieut.-Col., Wing. Com.	3 16	18s.
Do. After 2 years as such	3 19	18s.
Do. " 4 " "	4 2	18s.
Do. " 6 " "	4 5	18s.
Do. " 8 " "	4 5	18s.
Surg. Capt., Col., Group Capt.	4 19	24s.
Do. After 2 years as such	4 24	24s.
Do. " 4 " "	4 24	24s.
Do. " 6 " "	4 24	24s.
Surg. Capt., Brig., Air Cdre.	5 14	27s.
Surg. Rear-Admiral, Maj.-Gen., Air Vice Marshal	6 8	15s.
Surg. Vice-Admiral, Lieut.-Gen., Air Marshal	7 10	15s.

9. The Association considers that a difference between the remuneration of general duty officers and specialists as great as the difference between the recommendations of the Spens Committees for remuneration of general practitioners and specialists would be inappropriate in the Armed Forces. The Association considers, for example, that there should be no marked discrepancy in the remuneration of two officers of equal rank who are carrying out different tasks—e.g., between the remuneration of a major filling an appointment as surgical specialist and a major commanding a company of a field

ambulance. It is considered, however, that specialist pay should be greater than it is at present, and further that the system of payment of specialists should be made uniform in the three Services. The Association recommends that it should be payable at the rate of 6s. a day for graded specialists and 9s. a day for full specialists.

10. The Association proposes that the new scales of remuneration should have effect from July 5, 1948. This was the date on which the National Health Service came into operation, and is clearly the appropriate date for the introduction of related terms of service in the Armed Forces.

11. In conclusion it must be stated that the Association's proposals represent the minimum which can be regarded as comparable with the terms and prospects of medical practitioners in civil life. No attempt has been made to emulate the maximum of £5,200 recommended in the specialist Spens Report. In drawing up its proposals the Association has used only average figures recommended for the incomes of general practitioners. The Association's proposals are therefore modest, and it can confidently be asserted that nothing less will be sufficient to attract recruits in competition with the National Health Service.

APPENDIX VI

MEMORANDUM ON THE REMUNERATION OF OFFICERS OF THE COLONIAL MEDICAL SERVICE

1. At the conclusion of the 1939-45 war it became clear to the British Medical Association that salaries of Colonial Medical Officers were seriously inadequate. Numerous and bitter complaints from members all over the Colonial Empire indicated that these salaries were seriously insufficient in view of the universal rise in the cost of living brought about by the war. The Association represented to the Colonial Office that interim percentage increases of salary should be granted, pending a full review of the remuneration of Colonial Medical Officers in the light of the terms which would be negotiated and laid down for the National Health Service at home. The Colonial Office agreed that increases were necessary, and, as a result of investigations carried out by various Commissions post-war increases of remuneration of members of the Colonial Service, medical and non-medical, have been put into effect. The Association has learned from its members that these increases are considered in many cases to be unsatisfactory and inadequate.

2. Quite apart from these interim post-war increases, the Association has repeatedly stated (notably at the conference at the Colonial Office on Jan. 9, 1948) that it would be its duty to undertake a thorough review of the remuneration of the Colonial Medical Service in the light of the two Spens Reports, when published. It is the Association's view that remuneration in the Colonial Medical Service must conform broadly to the remuneration of medical practitioners in this country. The Spens Reports (which have now been published) have laid down standards which are recognized both by the Ministry of Health and by the Association, and which have been adopted by the Government as the basis for the remuneration of medical practitioners in the National Health Service. The Association has now completed its review of the remuneration of the Colonial Medical Service in the light of the Spens Reports, and desires to present to the Colonial Office the results of its investigation.

3. The Association is fully aware that the terms of service of the Colonial Medical Service are not controlled exclusively by the Colonial Office, and that it is necessary for the latter to secure the agreement of individual Colonial Governments to any changes proposed. The Colonial Office carries a heavy responsibility, however, in that it is the agency by which doctors from Great Britain are recruited to the Service. There is no need to point out that the recruitment position will deteriorate if the terms and prospects in the Colonial Medical Service remain inferior to those in medical practice in the United Kingdom.

4. In comparing the remuneration of Colonial Medical Officers with the recommendations of the two Spens Committees, an immediate practical difficulty arose. The remuneration

of Colonial Medical Officers must necessarily be on a scale related to age and service. The income of a medical practitioner in the United Kingdom, on the other hand, is not in general graded in proportion to age and length of service, but depends upon a number of factors, including the location and type of his practice, into which there enters a large element of personal choice. The Association was therefore faced with the problem of translating the recommendations of the Spens Committees into some sort of an age-and-service scale. In the case of the specialist Spens Report this was relatively easy, because the recommendations are related to some extent to age. In the case of the general practitioner Spens Report, which was the more important for the purposes of this review, a scale was prepared by setting out the arithmetic means of the incomes recommended for the various age groups in Table C of the Report.

5. In both cases the net figures of the Reports were adopted, because it was recognized that the Colonial Medical Officer's practice expenses are not borne by himself. The betterment factors adopted by the Ministry of Health in translating the 1939 figures of the Spens Reports into present-day figures were used by the Association for this review, although it must be emphatically stated that the Association has never agreed that these factors reflect in any way accurately or adequately the change in the value of money for the professional classes which has taken place since 1939.

6. In comparing the remuneration of Colonial Medical Officers with that of practitioners in the home country, there is one important factor to which great weight must be attached. This is the fact that many Colonial Medical Officers live and work outside their home country. They live remote from their relations and from the surroundings in which they have been brought up, usually in countries which are ill provided with the amenities of civilized and sophisticated life such as are commonplace in Great Britain, and often in climates which are arduous and disagreeable. Further, Colonial Medical Officers must be prepared to undergo relatively frequent moves, and are generally faced with the expense of educating their children in the United Kingdom and perhaps with the necessity of maintaining two homes. The Association is aware that these heavy disadvantages are to some extent offset by the relatively low level of taxation in the Colonies. The Association has had before it figures of taxation levels in the principal Colonies and has given due weight to this factor. Figures of the cost of living have also been considered, however, and it is clear that in some cases the cost of living substantially reduces the advantage conferred by lower taxation. After careful consideration the Association concludes that the remuneration of Colonial Medical Officers recruited outside the countries in which they serve must include an adequate expatriation element to offset the disadvantages of their career.

7. The Association, therefore, as a result of its review, proposes the following scale of pensionable remuneration, which should be applicable to medical officers serving in all Colonies and Dependencies:

Standard Scale.—£850, £850, £900 (probationary period of two-three years), £1,000 × £50 to £2,000. (The top of this scale will be attained, in the absence of promotion to a superscale post, before the minimum retiring age is reached. Efficiency bars should be retained.)

Superscale Posts.—Grade IV, £2,250; Grade III, £2,500; Grade II, £3,000; Grade I, £3,500.

8. The Association considers that locally recruited medical officers should receive the above salaries less a proportion to be negotiated. The Association is aware that in some instances the salaries now proposed are lower than those which are actually in force. There is no suggestion that the remuneration of medical officers at present serving should be reduced as a result of the introduction of the Association's proposals, and, furthermore, it will be necessary in certain Colonies (such as Malaya and Hong Kong) to supplement the proposed salaries with a local allowance to meet peculiar local conditions. The Association considers that such local allowances, which would be payable to European and locally recruited officers, should be non-pensionable.

9. It is considered that medical practitioners entering the Colonial Medical Service should be eligible to receive increments above the starting salary in respect of special qualifica-

tions or experience. The Association has noted with satisfaction a proposal similar to this in paragraph 53 of the Report of the Harragin Commission and in paragraph 133 of the Report of the Holmes Commission.

10. The salaries proposed are based on the assumptions that the medical officer will be responsible for paying rent for his housing accommodation, and that they are for full-time employment.

11. The Association is aware that the process of abolishing private practice by Colonial Medical Officers has begun. The speed and character of this process must clearly depend upon local circumstances, and a fair measure of compensation must of course be paid to officers deprived of private practice. The Association considers that, should circumstances or the public interest oblige officers to give medical attention to private persons, they should retain the fees despite the fact that the right to private practice might have been abolished. There should be no suggestion of "farming out" by Government of a medical officer's services.

12. The Association desires to point out that the remuneration of medically qualified teachers in the medical schools of the Colonial Empire must necessarily be in step with that of Colonial Medical Officers and with that of medical practitioners in the home country if the medical schools are to retain the services of these teachers. There is no need to emphasize the disastrous effects upon the clinical and (not less important) the ethical standard of medical education that would be caused by the loss of medically qualified teachers. This is a danger to which the Association and the Royal Colleges have drawn urgent attention in the United Kingdom.

13. The Association proposes that the new scales of remuneration should have effect from July 5, 1948. This is the date on which the Spens recommendations are deemed to have taken effect in Great Britain.

14. In conclusion, it must be stated that the Association's proposals represent the minimum which can be regarded as comparable with the terms and prospects of medical practitioners at home. No attempt has been made to emulate the maximum of £5,200 recommended in the specialist Spens Report. In drawing up the suggested Standard Scale, the Association has used only average figures recommended for the incomes of general practitioners. The Association's proposals are therefore modest, and it can confidently be asserted that nothing less will be sufficient to attract recruits in competition with the National Health Service.

PROCEEDINGS OF COUNCIL

Wednesday, March 23, 1949

A meeting of the Council of the Association was held at B.M.A. House, London, on Wednesday, March 23. Dr. H. Guy Dain presided.

The Council endorsed a proposal that its Chairman and the Secretary should attend the Commonwealth Medical Conference meeting in association with the annual meeting of the Canadian Medical Association at Saskatoon in June, returning in time for the Harrogate meeting. The President, Sir Lionel Whitby, was unable to attend the Saskatoon meeting, but as he would be in the United States in the autumn a warm invitation had been extended to him to attend any or all of the divisional annual meetings of the Canadian Medical Association to be held in September. The Council expressed its desire that the President should act as ambassador of the Association at as many of these meetings as he could compass, and the President accepted the invitation.

The Association Balance-sheet

Mr. A. M. A. Moore, Treasurer, presented the financial statement for the year ended Dec. 31, 1948. He said that for the first time for 20 years a deficit was shown on the year's income and expenditure. This was largely due to the exceptional expenses incurred by the action which the Association took prior to and after the introduction of the National Health Service. A good deal of this expenditure would be non-recurrent, but the Finance Committee desired to warn the Council of the cost of the new and important services, which

the Association had undertaken. On the assets side the building and other fixed assets had been written-down quite generously. Central meetings expenses showed an increase of £6,000; this was due to the additional meetings of the Representative Body and Council and the formation of new committees. Among the general expenses was £3,400 for the Empire Medical Advisory Bureau. The subscription revenue was £145,000, as compared with £138,000 the year before. The membership to-day stood at 60,367—a highly satisfactory state of affairs. The Accountant also told him that the reminders which had to be sent out this year concerning subscriptions unpaid were 600 fewer than a year ago. The *Journal* account again showed a very substantial balance—over £26,000—transferred to the revenue. The financial statement was approved.

Increase in Subscription Rates

Mr. Moore reminded the Council that the Annual Representative Meeting, 1947, expressed the opinion that the time had arrived when an increase in the present subscription rates should be considered. The Finance Committee undertook to consider this matter each year, and it now felt that the time had arrived to recommend an increase. It was 26 years since the subscription of 3 guineas was fixed, and if it was considered how much the Association was doing for its members, how its services had increased during the last year alone, it was evident that a clear case could be made out for a raised subscription. The effect of the proposed increase, if the membership was maintained, would be to increase income by about £34,000.

The recommendations were that the ordinary subscription for members resident in Great Britain and Northern Ireland should be raised to 4 guineas; for newly qualified practitioners elected within two years of registration, 2 guineas; for husband and wife residing together, 5 guineas; for Service members wherever resident, 2½ guineas, and for whole-time non-professional members of teaching staffs of university or medical school and those engaged whole-time on special research, 2½ guineas. There would be no change in the 2 guineas for members of not less than 40 years' standing or members with not less than 10 years' membership who had retired from practice, or in the 1½ guineas for members resident outside Great Britain and Northern Ireland.

After a brief debate the recommendations were unanimously adopted.

Before the Council passed from finance the Chairman mentioned that the former Treasurer, Dr. J. W. Bone, was seriously ill. It had been hoped at a little ceremony to bestow on him the Gold Medal of the Association which had been awarded to him, but he was not well enough for this purpose. His illness would be followed with much sympathy by his many friends in the Association.

Mode of Election of Central Council

Dr. J. A. Pridham, chairman of the Organization Committee, again brought forward his committee's recommendations for a reconstituted Council. At a previous meeting these had been referred back to the committee in order that the details of the proposal might be further elaborated, and this had been done. Dr. Pridham said that the essence of the proposal was that members of Council should be elected from smaller constituencies and by smaller numbers of members. The main alterations affected England, not the rest of the Kingdom. At present 15 members were directly elected from constituencies in England, and it was proposed to raise this number to 29. The number who found their way to the Council by other avenues had accordingly to be cut down. It was proposed that the eight English members elected by grouped representatives should be reduced to four. Reductions were also proposed in the number of members elected by the Representative Body as a whole; and in the number of *ex officio* members.

Dr. O. C. Carter said he did not believe that there was any widespread demand for increased direct representation. It was a demand voiced chiefly by one Division. The election of direct representatives was the form of election in which least interest was taken by the general body of members. He believed that in 75% of the vacancies there was, as a rule, no contest, and that where there was a contest only 25 or 30% of members took the trouble to vote. Indeed, if any change

was to be made it would seem desirable to abolish this direct election altogether and to have the main elections through the Representative Body.

Dr. N. E. Waterfield said that one reason for electoral apathy was that candidates were not known to the constituencies owing to the large areas which the constituencies covered. This would be modified under these proposals. Dr. J. G. Thwaites said that Dr. Carter might argue on the same basis that the Representative Body should be abolished because the meetings to instruct representatives were attended by perhaps only 30% of the electorate. Current criticisms of the Council might be due largely to the fact that members were remote from many of their constituents. With smaller constituencies this would be altered.

Dr. Vaughan Jones and other members asked whether there was any widespread demand for this reform. Dr. R. G. Gordon said that they ought to be sure this was not the demand of a small number of enthusiasts. Dr. I. G. Innes mentioned indications of some widespread demand in Yorkshire and the North. Dr. J. B. Miller considered that the matter was one rather for the Representative Body than for the Council. When the constitution of the Association was last discussed it took five years before the final conclusion was reached, but this fundamental change in the construction of the Council was being hurried through. Dr. S. F. L. Dahne supported the proposals as likely to make the set-up much more democratic.

Dr. Frank Gray moved an amendment that the increase in the number of members directly elected should be approved only provided that adequate arrangements were made to maintain contact between these members and the electorate. A great shout on this subject had come from some Divisions, one of which had given some study to the subject; the others might have done but probably had not. On the other hand, there was a good deal to be said for better contact between members of the Council and the electorate. The Council representative should have the right to be on the executive of each Division in his constituency. Dr. J. A. Ireland said he had assumed that it was the duty of members of Council themselves to keep in touch with their constituency and its organizations. Dr. P. J. Gibbons said that up to now one-third of the Council had been elected by indirect vote, which was a bad method.

The Secretary, in reply to a request for information on the widespread demand, said the experience in the secretariat had been that for several years criticism had quite frequently been expressed that constituencies were too large; this was heard at election time each year. Apart from this there was the Winchester activity and the abundant information demonstrating the interest of other Divisions in the subject which Winchester had collected.

The amendment moved by Dr. Gray was lost, and the Council approved in principle that the number of members directly elected should be increased, so far as the Branches and Divisions in Great Britain and Northern Ireland were concerned, from 22 to 37.

The next recommendation of the committee was that the number of members elected by grouped representatives in the Representative Body be reduced from 12 to 7. Dr. S. Wand said they had to face the question of balanced representation and the necessity of getting knowledgeable people on the Council. For this purpose some method of co-option or some increase in number was necessary. The committee had put forward a geographical method of electing the seven members by grouped representatives, but it involved in one group the inclusion of counties as distant from each other as Lincolnshire and Shropshire, Suffolk and Staffordshire. He thought the geographical method here might well be abandoned, and that there might be one category of members elected by the Representative Body as a whole.

Dr. Pridham replied that the Representative Body seemed to be very much attached to some form of territorial voting, and here four members were provided for England, in roughly geographical areas, one for Wales, and two for Scotland.

Several members spoke in favour of the abandonment of grouped constituency voting in the Representative Body, elections being open to representatives voting as a whole, the manner in which eight seats on the Council have hitherto been filled. It was pointed out that this would give greater opportunity for the election of elder statesmen, whose services it was

desired should be continued, but who might not survive the chances of an election on a geographical pattern.

It was eventually agreed that it be recommended to the Representative Body that voting by representatives of grouped constituencies in the Representative Body should be abolished and that 13 members of Council should be elected by the representatives voting together, with the qualification that two of them should be elected by the Scottish representatives and one by the Welsh. It was further agreed that the immediate past Chairman of the Representative Body, the Deputy Chairman, and the immediate past Treasurer should cease to be members *ex officio*, but that the chairmen of the two new autonomous committees, General Medical Services and Central Consultants and Specialists, should be *ex officio* members. It was pointed out that in these two latter cases it was conceivable that the chairman might not be a member of the Association, but this possibility had existed ever since the Insurance Acts Committee came into being and had given rise to no difficulty. The number of members elected by Overseas Branches was reduced from eight to seven, consequent upon the dissolution of the majority of the Branches in India and Pakistan. The "six-year" rule, whereby a member was prevented from serving for more than six years successively as representative of the same Branch or group, was recommended for abolition on the understanding that there was to be an annual election (except in the case of overseas members, who are elected for three years).

Service Medical Officers

Sir Percy S. Tomlinson said that the Armed Forces Committee had practically completed its review of the rates of pay of Service medical officers in the light of the Spens Reports. It was essential, if the armed Forces were to have efficient medical services, that the terms should be sufficiently attractive to encourage recruitment. He submitted a schedule of revised rates of pay for all ranks in the three Services. Reduced to daily rates for general duty medical officers they involved an increase over the present rate amounting to 3s. in the case of acting surgeon lieutenant R.N., lieutenant, and flying officer; to 15s. in the case of surgeon lieutenant-commander, major, and squadron leader; to 18s. in the case of surgeon commander, lieutenant-colonel, and wing-commander, and 21s. in the case of surgeon captain, colonel, and group-captain.

He added that the committee had been in some difficulty about the remuneration of specialists. It felt that there should be no great gulf between the remuneration of specialists and general duty officers, but that nevertheless specialist pay should be greater than at present, and that the system of payment of specialists, at present varying in the different Services, should be uniform in all three. It was at first thought that a suitable rate would be 6s. a day, but after further reflection it was felt that this rate should apply to graded specialists (junior men), and that 9s. should be the rate for the full specialist.

The Council approved the memorandum and its submission to the Minister of Defence.

The Colonial Medical Service

Sir Hugh Lett introduced a report from the Colonies and Dependencies Committee on the remuneration of officers in the Colonial Medical Service. He said that at the present time the rates of remuneration varied considerably in different Colonies. It was desired to bring the remuneration up to a level comparable with that of general practitioners in this country. The committee wished to work out the remuneration on the basis of the Spens Report, but this gave rise to great difficulties because of the nature of the appointments and the conditions under which these officers worked. But a scale of pensionable remuneration for standard scale and superscale posts, applicable to medical officers serving in all Colonies and Dependencies, had been worked out. The committee had had the advantage of the assistance of officers from Tanganyika, Nigeria, Malaya, and the Falkland Islands. The Colonial Office had agreed to open negotiations on the matter.

He also referred to the recent visit to East Africa of the Assistant Secretary, Dr. E. Grey Turner (*Supplement*, Feb. 12, p. 70). The visit had illustrated the value of contact with the periphery. The Association had 10,000 overseas members, and it was important to consider the desirability of sending out to

the Colonies a representative from either the permanent staff or the Council, not merely when some special question arose, but at regular intervals.

Public Health

Dr. J. Fenton, chairman of the Public Health Committee, said that the policy of refusing local authority advertisements which did not comply with the Association's proposals concerning salaries of whole-time public health medical officers—a policy adopted in view of the delay in setting up Whitley machinery—was now in force. There was reason to believe that some local authorities might attempt to defeat the purpose of the Association by asking general practitioners to undertake the work of assistant medical officers, and part-time women doctors to undertake whole-time duties. He hoped that secretaries of Divisions would be alive to this possibility.

The committee brought forward a recommendation—which was adopted—pressing for the inclusion on the joint committee set up in 1946 to consider the question of equal pay in all its aspects, of representatives from the nursing profession, certain important teaching bodies, and medical auxiliaries. The policy of equal pay for equal work in all professions received the support of the Association on the understanding that any approach by the joint committee to political parties should be strictly non-political and non-selective.

Pay-beds

Mr. A. M. A. Moore brought forward a report from the Consultants and Specialists Committee. He said that the question of the proposed terms and conditions of service for hospital medical staff would be considered at a special meeting of the committee on April 28. One matter which had been before the committee, and was becoming increasingly difficult, was that of pay-beds in hospitals. The committee had strongly recommended to the Joint ("Whitby") Committee that the schedule of fees for operations should be abolished. It raised no objection to the provision in the regulations of an overall inclusive charge for all professional service rendered to a patient in a "ceiling" pay-bed, provided the Minister made a similar restriction on the payment for maintenance.

Doctors' Cars

On the report of the Private Practice Committee the question was again raised of doctors' signs on cars. The committee's recommendation was that no action be taken to encourage the use by members of the Association of a distinctive motor badge. Dr. J. A. Ireland moved the reference back which was seconded by Mr. Lawrence Abel, who said that there was no need for any prominent device, but only for something which would enable the police to give the same priority to the doctor's car as was given in other countries. The motion to refer back was lost and the recommendation approved.

On the amount of security which was necessary for dangerous drugs left in cars, in view of the amended Dangerous Drug Regulations, it was reported that a case was at the moment going to appeal, and further consideration of the matter would best await the judgment. In the meantime, to keep within the law, it appeared necessary to have drugs not merely in a locked car but in a locked receptacle, the car itself not being technically a "receptacle."

Regional Office for Wales

Dr. H. R. Frederick, on behalf of the Welsh Committee, asked the Council to approve in principle of the establishment of a B.M.A. House for Wales, with appropriate staff, to be situated in Cardiff, and that the necessary steps be taken to purchase and equip a suitable building. He said that they looked forward very keenly in Wales to the establishment of this regional office. The office, although it would be in South Wales, would also be much appreciated by North Wales. Steps were being taken in Cardiff to obtain suitable premises. He thanked the Finance Committee for its generosity in taking no exception on financial grounds to the proposal, provided the capital sum for the building and equipment did not exceed £10,000.

Association War Memorial

The Chairman brought forward the report of a committee appointed to consider the question of a memorial to members of the Association who fell in the 1939-45 war. After taking expert advice, the committee proposed that a fountain should be erected in the Court of Honour at B.M.A. House. The cost of the entire memorial on the lines proposed was expected to be in the region of £10,000, and an appeal would be made to members of the Association to meet the cost.

Dr. J. B. W. Rowe urged that, instead of a monument, scholarships be instituted for the education of the children of alien members. Mr. Abel suggested a more ambitious plan of improving the open space at Headquarters. The idea of a fountain, however, was supported by several other members and adopted.

Foreign Corresponding Members

Dr. R. G. Gordon, for the Science Committee, said that no Foreign Corresponding Members had been elected since 1939. At present only five such members were still alive—namely, Professor R. Bastianelli (Italy), Professor Jules Bordet (Belgium), Professor Gosta Forsell (Sweden), Professor G. Marañón (Spain), and Dr. C. F. Regaud (France). It seemed appropriate to elect some additional members to this rank. As many as 45 names had been suggested, but with the help of *Sir Henry Dale* the number had been brought down to 13. He recommended the following for election: Dr. G. Domagk (Germany), Dr. B. A. Houssay (Argentina), Professor E. Proctor (U.S.A.), Professor Einar Key (Sweden), Professor René Leriche (France), Professor Einar Meulengracht (Denmark), Professor Adolf Meyer (U.S.A.), Professor G. R. Minot (U.S.A.), Dr. Emil Novak (U.S.A.), Professor A. N. Richards (U.S.A.), Dr. Peyton Rous (U.S.A.), Dr. Arvid Johan Wallgren (Sweden), and Professor A. O. Whipple (U.S.A.).

The election of those named above was agreed to.

Health Education

The report of the Science Committee contained also a reference to the education of the general public in health matters, following upon the report of a subcommittee which was appointed last autumn. The committee felt strongly that the proper place for health education was the school. The question of a popular health journal was considered and referred to the Journal Committee and the question of films to the Film Committee. In all its considerations the committee had been helped by Dr. Sutherland, secretary of the Central Council or Health Education. A series of recommendations were agreed to. One of them urged Divisions to hold meetings to discuss the promotion of interest in health education. Another discouraged public health propaganda in health centres during the experimental period, and not at all if it was likely to be at the expense of the personal relationship between doctor and patient. Other recommendations favoured the encouragement of members of the profession to interest themselves in the education of children in health matters.

International Relations

A recommendation of the International Relations Committee, presented by Dr. Pridham, aroused some discussion. In view of inaccurate American reports of British experience of the National Health Service, the Council was asked to express the opinion that British doctors who made statements on the service to the American profession or press should be careful to emphasize that they were giving their personal views only. Lord Horder said he would agree that no one of them knew enough about the workings of the N.H.S. to express any other opinion than his own. There had been representations made in America from the Association as to the position of the N.H.S. in this country, and he did not remember that the recommendation on the subject carried with it the caution expressed here. Mr. Abel suggested that some factual official document could be got out which could be used by those who had to speak to audiences abroad or had contacts with the foreign press.

The Secretary said that there was a tendency in some quarters in America consistently to misrepresent the position in this country. He referred as an example to a statement in the

Journal of the American Medical Association that general practitioners in this country were writing out their prescriptions and orders for treatment before actually seeing their patients. This sort of thing was not new: it went back to N.H.I. days. Those who spoke or wrote on the subject should be on their guard lest unwittingly they confirmed a false impression.

The recommendation was adopted.

Other Committees

The revised duties and ethical rules of industrial medical officers, brought forward by the Occupational Health Committee, were approved.

The Chairman of Council introduced a report on the N.H.S. Amending Bill. The amendments proposed will be found set out in the Annual Report of Council.

On the recommendation of the Central Ethical Committee it was agreed to request the World Medical Organization to afford its member bodies an opportunity of discussing and commenting upon the proposed draft oath prepared by the Assembly with the suggested title "Declaration of Geneva."

Dr. O. C. Carter presented a report of the Journal Committee with recommendations to facilitate more rapid printing of the *Journal*.

Mr. Dougal Callander brought forward a report of the Building Committee concerning various improvements and amenities at B.M.A. House.

Other routine or progress reports were submitted on behalf of the General Medical Services Committee (including a recommendation to raise the number of directly elected members from 27 to 33), the Scottish Committee, the Joint Committee on Psychiatry and the Law, the Ophthalmic Group Committee, the Public Relations Committee, and the Film Committee.

Dr. J. Fenton and Dr. H. H. D. Sutherland were appointed delegates to attend the Annual Conference on Maternity and Child Welfare, to be held in London in June. With regard to the Canterbury Commemoration of the science and art of healing, on June 25, the date conflicting with the Annual General Meeting, it was left to the Chairman of Council and the Chairman of the Representative Body to enrol the expected B.M.A. representation.

The final act of the Council was to approve the draft Annual Report, which appears in the *Supplement* at p. 174.

SPECIAL REPRESENTATIVE MEETING

DECISIONS ON GENERAL PRACTITIONER REMUNERATION

A Special Representative Meeting, called on the requisition of the Council, was held in the Great Hall of B.M.A. House, London, on March 29. Its business was to consider the question of remuneration to general practitioners under the National Health Service Acts.

The chair was taken by Dr. E. A. Gregg, Chairman of the Representative Body, who was supported by Dr. H. Guy Dain, Chairman of Council, Dr. S. Wand, Chairman of the General Medical Services Committee, Mr. A. M. A. Moore, Treasurer, and Dr. Charles Hill, Secretary.

Dr. Dain said that the General Medical Services Committee, which represented general practitioners, was an autonomous body, with power to go to the Minister, but it was also a standing committee of the Association. The report of the committee on remuneration had been approved by the recent Conference, and the purpose of the present meeting was to show that the full weight of the Association was behind the case for the general practitioner.

Report of General Medical Services Committee

The principal document before the meeting was the report on the remuneration of general practitioners (*Supplement*, Feb. 19, p. 83), which had been accepted without amendment by the Conference of Local Medical Committees (*Supplement*, March 12, p. 129).

Dr. Wand moved:

That the fullest support be given to the Conference of Local Medical Committees in seeking an adjustment of general practitioner remuneration on the basis of the report prepared by the General Medical Services Committee.

Dr. Wand said that there had been a great deal of dissatisfaction among general practitioners about remuneration. In the Association they were always anxious to have a properly documented case before they took action. Inquiry had been made by the Association in certain survey areas into the income of practitioners, and it was found that, although Spens was implemented for those in the 40-49 age group—on the assumption of a betterment of 20%—yet over the whole range there were groups which were not receiving what Spens said they ought to receive—in other words, there was maldistribution.

Three points were wrong: (1) The betterment bore an inadequate relationship to the present-day value of money; (2) while Spens was based on 17,900 in the Service, the figure was two or three thousand higher than that; (3) there were errors in distribution. In this Service so far the profession had done a proper job of work. Neither the public nor the Minister could complain that they had failed in their part of the bargain. Under harassing conditions and for unreasonable hours they had carried out their contract. Had practitioners not been willing to put up with exceptional conditions and strain the Service would have broken down. Had the Government carried out its part of the contract? Spens stated that the value of money must be brought up to present-day values. But what had happened? For 20s. in 1938 practitioners were now receiving only 24s. Did that adequately represent the altered money values? The altered value of money was represented by a figure of 185 as compared with 100 pre-war. But it was not felt to be reasonable to ask for 185 when other comparable sections of the community were not getting that full amount. Therefore it was recommended that a betterment factor of 170 should be attached to the 1938 values. It was also the view of the committee that, having regard to the difficulties of the lower- and middle-income groups, the fairest method would be to attach any new moneys to the first thousand on the practitioner's list.

Dr. A. Fyfe (Oldham) moved an amendment to Part I of the Report which concerned the adequacy of the Central Pool:

That this meeting is of opinion that practitioners should receive an actual payment of 30s. per head for each patient on their lists and that payment be retrospective to July 5, 1948.

There was no fairness in a scheme of payment which resulted in the present wide variations, and such discrepancies could only be got over by a fixed capitation fee. Oldham realized that its suggestion would mean a departure from the Spens recommendations, but as Dr. Cockshut had said in a letter to the *Journal* on Jan. 8, "If Spens gives us poor remuneration, then away with Spens."

Dr. Wand said that Oldham's suggestion would cost between £26 million and £27 million. The committee had attached itself to the pool method.

The Oldham amendment was lost by an overwhelming majority.

Maximum Number on Lists

Dr. Stevens (Huddersfield) moved a reduction to 3,000 instead of 4,000 as the maximum number of patients allowable under one doctor. His Division felt that 3,000 was as many as a doctor could manage adequately and efficiently.

Dr. Howie Wood (Isle of Wight) said that 3,000 should be the maximum number which a practitioner single-handed should be expected or allowed to look after. There were exceptional cases, but the average had to be considered.

Dr. J. C. Arthur (Gateshead) was surprised at "the outbreak of trade unionism and restrictive practices in the Isle of Wight." If the bricklayers did what the doctors proposed to do we should not get many houses. By passing this amendment we should be penalizing the most efficient and hardworking doctors and depriving patients of free choice.

Dr. R. W. Cockshut (Hendon) asked who were they to say to a patient who preferred one four-thousandth part of a doctor's time rather than one two-thousandth part that he should not have it? To adopt 3,000 would be dangerously near putting them all on the same level—all having the same number of patients.

Dr. W. Jope (Glasgow) said that the population of Great Britain was approximately 48 millions. There were 20,000 general practitioners available. When the number of general practitioners was increased it might be possible substantially to reduce the number on doctors' lists. Making allowance

for sparsely populated areas and other factors, young and active practitioners must be expected to look after a larger number than 3,000.

Dr. W. N. Leak (Cheshire) said that this was much too early in the Service for such an element of compulsion to be introduced.

The Huddersfield amendment was lost by a large majority.

Dr. H. H. Goodman (Newcastle) moved that the ceiling limit on doctors' lists should be reduced in accordance with the amount of extra money which the Minister agreed to add to the pool. This was the only opportunity they would have of broaching this particular subject, which must come up ultimately, without causing a split in the profession. This would solve the problem of the redistribution of doctors.

Dr. Wand said they were now making an application for a betterment increase dated back to July 5. An inquiry into the amount of work of the general practitioner was now taking place. This matter of size of lists was not bound up with betterment but with extra work. The Newcastle rider would be an obstacle which would cause embarrassment at a time when they were not discussing this particular problem at all.

The Newcastle rider was lost by an overwhelming majority.

Dr. W. J. Poole (Ashton-under-Lyne) moved that an approach be made to the Minister with a view to securing an immediate interim rise in the capitation fee in order to relieve the widespread financial distress existing throughout the profession, and that the Council be empowered to decide upon an adequate increase in the light of the knowledge now available. There were only two courses of action open to them: either to go all out for a high figure, or, in the terms of this amendment, to approach the Minister with a reasonable demand for a rise in pay to relieve the obvious distress which was afflicting a great number of practitioners. This distress was very real. There were only two sorts of general practitioners to-day: those who were trying to do too much and those for whom general practice was practically no longer an economic proposition.

Dr. J. A. Ireland (Council) said that no useful purpose would be served by this amendment. The point was amply covered by the report of the committee.

Dr. Dain said the fact that Ashton-under-Lyne should turn up with this amendment filled him with amazement. One of the first Divisions to protest against the inadequate capitation fee was Ashton-under-Lyne, but when the figures were investigated it was found that the incomes of practitioners there were not too bad. They now came up and asked that the figures which had been prepared in support of the practitioners' case should be scrapped and that they should go to the Minister without any argument whatever and see whether he would be kind enough to give them a little more of the money which he had to spare. Anything more defeatist he could not imagine.

Dr. Poole said it was clearly stated in the Ashton-under-Lyne amendment that they were seeking an interim rise pending the adoption of a final figure. He indignantly denied that his Division was defeatist.

The Ashton-under-Lyne amendment was lost.

The Betterment Factor

Amendments calling for a betterment factor of 185 were on the paper in the name of Bishop Auckland; Hampstead, Harrow, Paddington, Halifax, Folkestone and Dover, Brighton, and Finchley Divisions. Dr. F. Lishman (Bishop Auckland) said that his Division could not understand why a betterment factor of 170 should be asked for when the extra figure for 1948 was 185. Dr. J. Kennedy (Hampstead) said that no case had been made out for not accepting the advice of the expert economist who had investigated the question of betterment and had arrived at the figure of 185. The profession had had a raw deal. Dr. J. B. W. Rowe (Harrow) supported 185. The Harrow Division considered that it was time they got really tough and asked for what they deserved. Dr. G. de Swiet (Paddington) said that the publication of the terms for specialists had made general practitioners' remuneration, unless they got this enhanced betterment, "look like chicken-feed." Dr. D. L. S. Johnston (Halifax) considered that the recent Conference was weak in not pressing for 185. It suggested that they did not trust their own figures. Moreover, what was 185 a year ago might be 225 to-day. Dr. Fletcher

(Finchley) considered the policy of the Council to be one of expediency rather than what was best for the profession.

Dr. R. W. Cockshut (Hendon): The heavy expense ratio they were able to show when the Spens estimate was calculated included locumtenents and assistants. There had been a fall in drug expenses. Did they think that an investigation into their total income to-day would show that out of £134 received they had to spend £62 in expenses to get it?

Dr. Frank Gray (Council): If they got 185 they would be tied to that figure. The sellers' market was changing to a buyers' market. There was a likelihood that prices would fall. If they were tied to 185 it meant automatically that on such a fall the capitation fee must be reduced. If they did not go out for the full figure they would have a margin or buffer, and it would not be possible for the Government to call for an immediate decrease on a fall in the cost of living. Dr. H. H. Goodman: We should ask our negotiators to stand by 170, a figure which we could really substantiate.

Dr. Wand hoped the meeting would not instruct its negotiators on a figure which was vulnerable. The figure of 170 applied to the whole income was fair and reasonable.

The amendment to press for a betterment factor of 185 was lost by a large majority.

In speaking in opposition to a Gloucestershire amendment, which, he said, embodied a threat of resignation if 170 were not obtained, Dr. Wand said that at this time there was no mandate on that issue. He had promised that they should go back to local medical committees with the results of their conversations with the Ministry. This was an inappropriate moment to pass binding resolutions. There would be another opportunity to discuss these matters.

It was agreed to pass to the next business. The same course was taken with an amendment in the name of Barrow-in-Furness.

Dr. J. Ewart Purves (Bromley) moved approval of the Council's recommendation without prejudice to such adjustments as might be suggested by a further investigation of the application of the Spens recommendations in the southern half of England. An investigation in the county of Kent had shown that, although Spens was being implemented over the higher range of salaries, in the lower ranges it was not being implemented. He did not think that Lancashire multiplied by 20 was representative of the whole country.

The amendment was referred to the committee.

Dr. P. A. McCallum (Torquay) moved: "That the best argument for extra pay is that we are doing extra work."

Dr. J. A. Brown (Birmingham): There were many better arguments to put to the Minister than this. The first was that they had never been properly paid for any work they had done. There was never a time when the best men in general practice were more needed. The opportunities to-day in general practice were far greater than in specialism. It would be deplorable if the attractions of specialism robbed general practice of men of the calibre who formerly went in for it. To say that the best argument was that more work was being done was sheer nonsense.

Dr. Wand: It is our intention to investigate the burden of work at a later date.

The Torquay amendment was decisively negatived.

Distribution of Revised Pool

The meeting then turned to Part II of the report, on which Sheffield moved an amendment urging that not until it was known what additional funds the profession was going to receive from the Ministry should the distribution of this money be decided, and whatever decision was made should be open to review in two years' time.

Dr. Wand: Sheffield seemed to think there was some other method of doing it than the one the committee suggested. On balance the attachment of the extra money to the first 1,000 was the most effective in serving the purpose they had in view and administratively the most easy to carry out.

The Sheffield amendment was lost.

A Uniform Fee

Harrow, Coventry, and Hartlepool had amendments calling for a uniform capitation fee, with no loading of particular groups.

In reply to various arguments Dr. Wand said that an equal increase over the whole range of lists would mean a complete distortion of the Spens recommendations without any relief to hardship cases.

Dr. W. Jope (Glasgow) and others continued the debate, after which an amendment for a uniform capitation fee with no loading was lost.

The First 2,000

Dr. A. Brown (Cambridge and Huntingdon) moved that if the increase in the total pool is under £10 million it should be utilized for the first 1,000 on the individual doctor's list; if over that amount, then for the first 2,000.

Mr. Staveley Gough (Council) thought it reasonable that the increase should be distributed over a larger group.

Dr. Wand: If this extra money were attached to the first 2,000 it would be so watered down that the help it was desired to give would not be forthcoming.

Dr. Dain: Everyone in practice had certain fundamental expenses that could not be escaped, whatever his income, and it was not unreasonable that people with small lists should have a larger sum of money because they would have to meet expenses very nearly as large as those with the larger lists.

The Cambridge and Huntingdon amendment was lost, and this completed the matters arising on Parts I and II of the report. The motion proposed by Dr. Wand at the beginning, calling for the fullest support to be given to the Conference of Local Medical Committees in seeking an adjustment of general practitioner remuneration on the basis of its proposals, was put to the meeting and carried apparently unanimously.

The Chairman of Council, in moving a rider to the resolution, said he thought that the meeting should express disapproval of the delay by the Ministry in implementing the profession's requirements, and he therefore moved:

"That the Representative Body expresses its great concern that the Minister, having received the general practitioners' representations on the betterment factor more than two months ago and the case set out in M.22 on March 4, has not conceded the necessary adjustments to the pool to implement Spens at present-day values in time for the increased payments to be made in this quarter's payments. This delay shows disregard for the serious hardship now being experienced by many general practitioners in the Service and is seriously prejudicing its success."

He said if the claim had been dealt with at the beginning of this month it would have been possible to receive in the cheques they were to get at the end of the week the increased payment. The delay had rendered this impossible.

The motion was carried unanimously.

Dr. F. M. Rose (Preston) had a motion expressing anxiety at the serious financial position created by the N.H.S. for many general practitioners, and supporting the efforts of the committee to obtain an adequate betterment factor. This was carried.

Dr. D. A. Robertson (Reigate) asked that it be made clear that the profession was at present obtaining a 120 betterment factor applied to income and 155 factor applied to expenses, and that what was now being asked for was a factor of no more than 135 applied to income only as between the years 1938 and 1948. The Public Relations Department should see that these figures were emphasized in any statements issued to the Press.

Dr. Wand pointed out that there was an inaccuracy in the figures, and he suggested that Reigate would be satisfied if the Representative Body noted the point and left it at that.

Dr. Robertson agreed and with permission withdrew the motion.

Dr. J. C. Arthur (Gateshead), while accepting the proposed loading for the first 1,000 as the simplest method of meeting present conditions, moved to reaffirm the conviction that remuneration should be related to amount of work done and responsibilities undertaken, and this was carried.

Dr. Agnes S. Nutt (Sheffield) drew attention to the fact that the sum now available in the Sheffield area for distribution through the Local Executive Council represents a sum of 17s. 0½d., instead of the anticipated 17s. 5d., and asked that the matter be pressed on the Minister with a view to its rectification. This was referred to the General Medical Services Committee.

Dr. Wand said that there had been a great deal of dissatisfaction among general practitioners about remuneration. In the Association they were always anxious to have a properly documented case before they took action. Inquiry had been made by the Association in certain survey areas into the income of practitioners, and it was found that, although Spens was implemented for those in the 40-49 age group—on the assumption of a betterment of 20%—yet over the whole range there were groups which were not receiving what Spens said they ought to receive—in other words, there was maldistribution.

Three points were wrong: (1) The betterment bore an inadequate relationship to the present-day value of money; (2) while Spens was based on 17,900 in the Service, the figure was two or three thousand higher than that; (3) there were errors in distribution. In this Service so far the profession had done a proper job of work. Neither the public nor the Minister could complain that they had failed in their part of the bargain. Under harassing conditions and for unreasonable hours they had carried out their contract. Had practitioners not been willing to put up with exceptional conditions and strain the Service would have broken down. Had the Government carried out its part of the contract? Spens stated that the value of money must be brought up to present-day values. But what had happened? For 20s. in 1938 practitioners were now receiving only 24s. Did that adequately represent the altered money values? The altered value of money was represented by a figure of 185 as compared with 100 pre-war. But it was not felt to be reasonable to ask for 185 when other comparable sections of the community were not getting that full amount. Therefore it was recommended that a betterment factor of 170 should be attached to the 1938 values. It was also the view of the committee that, having regard to the difficulties of the lower- and middle-income groups, the fairest method would be to attach any new moneys to the first thousand on the practitioner's list.

Dr. A. Fyfe (Oldham) moved an amendment to Part I of the Report which concerned the adequacy of the Central Pool:

That this meeting is of opinion that practitioners should receive an actual payment of 30s. per head for each patient on their lists and that payment be retrospective to July 5, 1948.

There was no fairness in a scheme of payment which resulted in the present wide variations, and such discrepancies could only be got over by a fixed capitation fee. Oldham realized that its suggestion would mean a departure from the Spens recommendations, but as Dr. Cockshut had said in a letter to the *Journal* on Jan. 8, "If Spens gives us poor remuneration, then away with Spens."

Dr. Wand said that Oldham's suggestion would cost between £26 million and £27 million. The committee had attached itself to the pool method.

The Oldham amendment was lost by an overwhelming majority.

Maximum Number on Lists

Dr. Stevens (Huddersfield) moved a reduction to 3,000 instead of 4,000 as the maximum number of patients allowable under one doctor. His Division felt that 3,000 was as many as a doctor could manage adequately and efficiently.

Dr. Howie Wood (Isle of Wight) said that 3,000 should be the maximum number which a practitioner single-handed should be expected or allowed to look after. There were exceptional cases, but the average had to be considered.

Dr. J. C. Arthur (Gateshead) was surprised at "the outbreak of trade unionism and restrictive practices in the Isle of Wight." If the bricklayers did what the doctors proposed to do we should not get many houses. By passing this amendment we should be penalizing the most efficient and hardworking doctors and depriving patients of free choice.

Dr. R. W. Cockshut (Hendon) asked who were they to say to a patient who preferred one four-thousandth part of a doctor's time rather than one two-thousandth part that he should not have it? To adopt 3,000 would be dangerously near putting them all on the same level—all having the same number of patients.

Dr. W. Jope (Glasgow) said that the population of Great Britain was approximately 48 millions. There were 20,000 general practitioners available. When the number of general practitioners was increased it might be possible substantially to reduce the number on doctors' lists. Making allowance

for sparsely populated areas and other factors, young and active practitioners must be expected to look after a larger number than 3,000.

Dr. W. N. Leak (Cheshire) said that this was much too easy in the Service for such an element of compulsion to be introduced.

The Huddersfield amendment was lost by a large majority.

Dr. H. H. Goodman (Newcastle) moved that the ceiling limit on doctors' lists should be reduced in accordance with the amount of extra money which the Minister agreed to add to the pool. This was the only opportunity they would have of broaching this particular subject, which must come up ultimately, without causing a split in the profession. This would solve the problem of the redistribution of doctors.

Dr. Wand said they were now making an application for a betterment increase dated back to July 5. An inquiry into the amount of work of the general practitioner was now taking place. This matter of size of lists was not bound up with betterment but with extra work. The Newcastle rider would be an obstacle which would cause embarrassment at a time when they were not discussing this particular problem at all.

The Newcastle rider was lost by an overwhelming majority.

Dr. W. J. Poole (Ashton-under-Lyne) moved that an approach be made to the Minister with a view to securing an immediate interim rise in the capitation fee in order to relieve the widespread financial distress existing throughout the profession, and that the Council be empowered to decide upon an adequate increase in the light of the knowledge now available. There were only two courses of action open to them: either to go all out for a high figure, or, in the terms of this amendment, to approach the Minister with a reasonable demand for a rise in pay to relieve the obvious distress which was afflicting a great number of practitioners. This distress was very real. There were only two sorts of general practitioners to-day: those who were trying to do too much and those for whom general practice was practically no longer an economic proposition.

Dr. J. A. Ireland (Council) said that no useful purpose would be served by this amendment. The point was amply covered by the report of the committee.

Dr. Dain said the fact that Ashton-under-Lyne should turn up with this amendment filled him with amazement. One of the first Divisions to protest against the inadequate capitation fee was Ashton-under-Lyne, but when the figures were investigated it was found that the incomes of practitioners there were not too bad. They now came up and asked that the figures which had been prepared in support of the practitioners' case should be scrapped and that they should go to the Minister without any argument whatever and see whether he would be kind enough to give them a little more of the money which he had to spare. Anything more defeatist he could not imagine.

Dr. Poole said it was clearly stated in the Ashton-under-Lyne amendment that they were seeking an interim rise pending the adoption of a final figure. He indignantly denied that his Division was defeatist.

The Ashton-under-Lyne amendment was lost.

The Betterment Factor

Amendments calling for a betterment factor of 185 were on the paper in the name of Bishop Auckland; Hampstead, Harrow, Paddington, Halifax, Folkestone and Dover, Brighton, and Finchley Divisions. Dr. F. Lishman (Bishop Auckland) said that his Division could not understand why a betterment factor of 170 should be asked for when the extra figure for 1948 was 185. Dr. J. Kennedy (Hampstead) said that no case had been made out for not accepting the advice of the expert economist who had investigated the question of betterment and had arrived at the figure of 185. The profession had had a raw deal. Dr. J. B. W. Rowe (Harrow) supported 185. The Harrow Division considered that it was time they got really tough and asked for what they deserved. Dr. G. de Swiet (Paddington) said that the publication of the terms for specialists had made general practitioners' remuneration, unless they got this enhanced betterment, "look like chicken-feed." Dr. D. L. S. Johnston (Halifax) considered that the recent Conference was weak in not pressing for 185. It suggested that they did not trust their own figures. Moreover, what was 185 a year ago might be 225 to-day. Dr. Fletcher

(Finchley) considered the policy of the Council to be one of expediency rather than what was best for the profession.

Dr. R. W. Cockshut (Hendon): The heavy expense ratio they were able to show when the Spens estimate was calculated included locumtenents and assistants. There had been a fall in drug expenses. Did they think that an investigation into their total income to-day would show that out of £134 received they had to spend £62 in expenses to get it?

Dr. Frank Gray (Council): If they got 185 they would be tied to that figure. The sellers' market was changing to a buyers' market. There was a likelihood that prices would fall. If they were tied to 185 it meant automatically that on such a fall the capitation fee must be reduced. If they did not go out for the full figure they would have a margin or buffer, and it would not be possible for the Government to call for an immediate decrease on a fall in the cost of living. Dr. H. H. Goodman: We should ask our negotiators to stand by 170, a figure which we could really substantiate.

Dr. Wand hoped the meeting would not instruct its negotiators on a figure which was vulnerable. The figure of 170 applied to the whole income was fair and reasonable.

The amendment to press for a betterment factor of 185 was lost by a large majority.

In speaking in opposition to a Gloucestershire amendment, which, he said, embodied a threat of resignation if 170 were not obtained, Dr. Wand said that at this time there was no mandate on that issue. He had promised that they should go back to local medical committees with the results of their conversations with the Ministry. This was an inappropriate moment to pass binding resolutions. There would be another opportunity to discuss these matters.

It was agreed to pass to the next business. The same course was taken with an amendment in the name of Barrow-in-Furness.

Dr. J. Ewart Purves (Bromley) moved approval of the Council's recommendation without prejudice to such adjustments as might be suggested by a further investigation of the application of the Spens recommendations in the southern half of England. An investigation in the county of Kent had shown that, although Spens was being implemented over the higher range of salaries, in the lower ranges it was not being implemented. He did not think that Lancashire multiplied by 20 was representative of the whole country.

The amendment was referred to the committee.

Dr. P. A. McCallum (Torquay) moved: "That the best argument for extra pay is that we are doing extra work."

Dr. J. A. Brown (Birmingham): There were many better arguments to put to the Minister than this. The first was that they had never been properly paid for any work they had done. There was never a time when the best men in general practice were more needed. The opportunities to-day in general practice were far greater than in specialism. It would be deplorable if the attractions of specialism robbed general practice of men of the calibre who formerly went in for it. To say that the best argument was that more work was being done was sheer nonsense.

Dr. Wand: It is our intention to investigate the burden of work at a later date.

The Torquay amendment was decisively negatived.

Distribution of Revised Pool

The meeting then turned to Part II of the report, on which Sheffield moved an amendment urging that not until it was known what additional funds the profession was going to receive from the Ministry should the distribution of this money be decided, and whatever decision was made should be open to review in two years' time.

Dr. Wand: Sheffield seemed to think there was some other method of doing it than the one the committee suggested. On balance the attachment of the extra money to the first 1,000 was the most effective in serving the purpose they had in view and administratively the most easy to carry out.

The Sheffield amendment was lost.

A Uniform Fee

Harrow, Coventry, and Hartlepool had amendments calling for a uniform capitation fee, with no loading of particular groups.

In reply to various arguments Dr. Wand said that an equal increase over the whole range of lists would mean a complete distortion of the Spens recommendations without any relief to hardship cases.

Dr. W. Jope (Glasgow) and others continued the debate, after which an amendment for a uniform capitation fee with no loading was lost.

The First 2,000

Dr. A. Brown (Cambridge and Huntingdon) moved that if the increase in the total pool is under £10 million it should be utilized for the first 1,000 on the individual doctor's list; if over that amount, then for the first 2,000.

Mr. Staveley Gough (Council) thought it reasonable that the increase should be distributed over a larger group.

Dr. Wand: If this extra money were attached to the first 2,000 it would be so watered down that the help it was desired to give would not be forthcoming.

Dr. Dain: Everyone in practice had certain fundamental expenses that could not be escaped, whatever his income, and it was not unreasonable that people with small lists should have a larger sum of money because they would have to meet expenses very nearly as large as those with the larger lists.

The Cambridge and Huntingdon amendment was lost, and this completed the matters arising on Parts I and II of the report. The motion proposed by Dr. Wand at the beginning, calling for the fullest support to be given to the Conference of Local Medical Committees in seeking an adjustment of general practitioner remuneration on the basis of its proposals, was put to the meeting and carried apparently unanimously.

The Chairman of Council, in moving a rider to the resolution, said he thought that the meeting should express disapproval of the delay by the Ministry in implementing the profession's requirements, and he therefore moved:

"That the Representative Body expresses its great concern that the Minister, having received the general practitioners' representations on the betterment factor more than two months ago and the case set out in M.22 on March 4, has not conceded the necessary adjustments to the pool to implement Spens at present-day values in time for the increased payments to be made in this quarter's payments. This delay shows disregard for the serious hardship now being experienced by many general practitioners in the Service and is seriously prejudicing its success."

He said if the claim had been dealt with at the beginning of this month it would have been possible to receive in the cheques they were to get at the end of the week the increased payment. The delay had rendered this impossible.

The motion was carried unanimously.

Dr. F. M. Rose (Preston) had a motion expressing anxiety at the serious financial position created by the N.H.S. for many general practitioners, and supporting the efforts of the committee to obtain an adequate betterment factor. This was carried.

Dr. D. A. Robertson (Reigate) asked that it be made clear that the profession was at present obtaining a 120 betterment factor applied to income and 155 factor applied to expenses, and that what was now being asked for was a factor of no more than 135 applied to income only as between the years 1938 and 1948. The Public Relations Department should see that these figures were emphasized in any statements issued to the Press.

Dr. Wand pointed out that there was an inaccuracy in the figures, and he suggested that Reigate would be satisfied if the Representative Body noted the point and left it at that.

Dr. Robertson agreed and with permission withdrew the motion.

Dr. J. C. Arthur (Gateshead), while accepting the proposed loading for the first 1,000 as the simplest method of meeting present conditions, moved to reaffirm the conviction that remuneration should be related to amount of work done and responsibilities undertaken, and this was carried.

Dr. Agnes S. Nutt (Sheffield) drew attention to the fact that the sum now available in the Sheffield area for distribution through the Local Executive Council represents a sum of 17s. 0½d., instead of the anticipated 17s. 5d., and asked that the matter be pressed on the Minister with a view to its rectification. This was referred to the General Medical Services Committee.

Dr. A. B. Robinson (Buckinghamshire) called upon the meeting to instruct the Council to advise mass resignation of general practitioners from the Service if an adequate capitation fee is not obtained by an early date.

Dr. Wand said that this was not the meeting at which a decision of this kind would normally be made. There could be no complaint that doctors had acted in a hurried manner; they had felt frustration for the whole period of the Service in the financial sense. They had now put up a reasonable case, and it was hoped it would be met in a reasonable way. If it was not, further action would have to be decided upon at that stage. At this moment it was hoped that in the interests of this great Service the Minister would see the importance of meeting the profession in the way indicated.

It was moved from several parts of the meeting to pass to the next business, and this was agreed to.

Mileage

Dr. G. H. Edgecombe (Westmorland) moved that a much larger sum than £2 million should be set aside for mileage payments in view of the special difficulties of rural practitioners. He said that the average size of list was 1,400 patients, and the doctors with small lists found their work hard and time-consuming. The income therefrom was not such as made a living possible. The mileage grant covered only the cost of cars, and in these hard districts deterioration was rapid.

Dr. F. M. Rose (Preston), whose Branch had a similar motion on the agenda, said that the matter should go back again to the General Medical Services Committee for further consideration.

Dr. J. C. Pearce (chairman, Rural Practitioners Subcommittee) said that the fund had not been entirely distributed, the matter was still under consideration, and when a scheme had been drawn up it was hoped to have a meeting with the Minister to discuss it, particularly from the point of view of the difficult areas.

Dr. Wand said that it might prove that the new mileage sums would be adequate; the whole of the increase was being attached to the first 1,000 patients, which meant a substantial addition to the income of the rural practitioner.

After Dr. Edgecombe had made a brief reply the motion was carried.

A motion by Reading called attention to special difficulties in Berkshire, and Dr. Wand said that there was evidently some local hitch which would be investigated.

Dr. M. E. P. Kitlard-Leavey (Barnstaple) considered that areas with geographical difficulties, such as existed in North Devon, should be given greater payment for mileage. Dr. Wand said that this was in process of being dealt with.

Dr. R. Rose (Reading) called upon the meeting to press for the inclusion of a mileage grant within the framework of the maternity service. Dr. W. N. Leak supported this, and Dr. H. B. Muir complained of conditions respecting mileage in Scotland.

Dr. Wand said that they had got half a million from the Ministry for mileage. This included mileage for maternity cases. He hoped they would not start asking for little bits here and there. They should be realists in this matter. An increase of 200% was not unreasonable for a trial period such as they were going through. Dr. G. P. Williams (Caernarvon), Dr. Fletcher (Cumberland), Dr. R. H. McColl (Denbigh and Flint), and Dr. Hughes (South-west Wales) gave their own experience of mileage allowance inadequacy.

Dr. Wand: They were getting figures quoted on this mileage problem that afternoon which were so different from those used at the Ministry by an experienced rural practitioner that he wanted some further facts.

Dr. J. C. Pearce (chairman of Rural Practitioners Subcommittee) said he could only wish that speakers who had presented their difficulties that afternoon had let his subcommittee know about them when they were collecting information. There were so many conditions that it was impossible even for rural practitioners in other parts of the country to be able to deal with them all.

Dr. Rose (Reading), in reply, was grateful to his rural practitioner colleagues for relating their experiences. One further fact: practically 100% of "truly rural" practitioners had lost precisely 100% of their private cases.

It was agreed that the motion should be referred to the General Medical Services Committee.

Dr. L. R. Routledge (Hexham) urged a material increase in the rural practitioner's dispensing allowance.

Dr. J. A. Pridham (Council) and Dr. J. R. Baker (Scunthorpe) contributed to the discussion, and the matter was referred to the committee.

Denbigh and Flint had a motion that in the case of partnerships the total number of capitation units in the practice should be distributed among the partners in their appropriate share, irrespective of the numbers on their individual lists, and the "loading" of the first thousand in each case to be in accordance with the amount available under betterment.

Dr. Wand: In the case of a partnership there would be a "loading" of the first thousand in respect of each partner, provided there were enough patients in the partnership to go round. A partnership of 2,000, however distributed between the two partners, would carry two loadings.

The Denbigh and Flint motion was declared by the Chairman carried.

Superannuation

Dr. Scott Webb (Woolwich) moved that the pension and other superannuation rights of practitioners should be calculated on income averaged over the three or five years of maximum income, as is, in effect, the case with almost all persons participating in statutory superannuation schemes. The calculation of the pension and other superannuation benefits on income averaged over all the years of service was most prejudicial.

Dr. Wand: They were satisfied, as a result of advice given by their actuary, that the funds received or about to be received by the profession for superannuation were a very fair return for the money paid in; but this matter of years of maximum earnings was fully discussed, and the matter had been taken care of by the increase from 1½ to 1¾%.

Dr. Scott Webb expressed himself still dissatisfied.

The Secretary (Dr. Hill) said that the objection on the Government side to this "maximum earnings" basis was that a practitioner might indulge in unusual efforts for the three or five years selected for the purpose of calculation. The basis adopted was, they were assured by the actuary, no less satisfactory than the method adopted in the case of the whole-time officer.

The Woolwich motion was lost.

A motion by Trowbridge asked that attention be drawn to the fact that regional boards, in making payments to general-practitioner specialists, were not empowered to allot superannuation benefits in proportion to partnership shares in the case of practitioners in partnership in the same way as executive councils were empowered—a situation which caused great difficulties in certain partnerships. It was agreed to refer this matter to the committee.

Mr. J. G. R. Murray (Exeter) asked for adequate payment for the treatment of temporary residents from the central fund.

Dr. Howie Wood (Isle of Wight) asked for an assurance that moneys would be forthcoming from the central fund which would give a just and proper fee for those areas where temporary residents were treated.

Dr. Wand: For the first two quarters of the Service a sum was being deducted from central funds equal to 8s. for temporary residents. The whole problem was being investigated before a permanent scheme was agreed.

The motion was referred to the committee.

Holidays: Study Leave

Dr. P. H. Rosedale (Marylebone) moved that it would be beneficial for regular arrangements to be made for holidays with pay and periodical study leave.

Dr. J. A. Brown said that if it was the intention to ask the Government to make the arrangements it would be a step towards a whole-time service.

Dr. Howie Wood (Isle of Wight) and Dr. D. E. Yarrow (Tunbridge Wells) spoke in support of the motion and Dr. A. Beauchamp against. Dr. Wand deprecated this and similar motions in the name of other Divisions. What the committee was asking for was an adequate pool.

The Marylebone motion was lost, and other motions on the subject were withdrawn.

Monthly Payments Requested

Dr. Stevens (Huddersfield) asked for capitation fees to be payable monthly instead of quarterly.

Dr. Wand: If this was passed it might be sympathetically considered by the Ministry. But there were certain possible disadvantages in respect of dates on which taxation payments became due. The motion that capitation fees be paid monthly was lost by 66 to 78.

Autonomy of Sectional Committees

Dr. P. A. McCallum (Torquay) drew attention to the need for carefully considering and if possible correlating the points of view of the committees concerned respectively with general practitioners and with specialists and the public health group. While agreeing that the greatest possible autonomy should be accorded to each section, any decisions of such committees affecting the policy of the Association should not be announced to the public and the Ministry until finally ratified by the Representative Body. Let each section, while developing its own interest in particular, strive by friendly co-operation to help the others.

Dr. James Fenton (chairman, Public Health Committee): It was desirable that all three sections—general practitioners, consultants and specialists, and public health officers—should work together as one. As representing the public health side he was very anxious that this should be done.

Dr. J. C. Arthur (Gateshead) said that while these committees were autonomous they should be able to correlate and co-ordinate their actions when matters affecting the profession came up.

The Chairman of Council hoped the meeting would not pass this resolution, which suggested that it was expected that the autonomous bodies would do things of which the main body would disapprove. "Don't query the autonomy of these bodies. Leave it to them to bring their problems to us and leave it to us to deal with them in a common-sense way as we have always done in the past."

It was unanimously agreed to pass to the next business.

The meeting terminated at 5 p.m.

CONSULTANTS AND SPECIALISTS

TERMS AND CONDITIONS OF SERVICE

A meeting of the Central Consultants and Specialists Committee was held at B.M.A. House, London, on March 24, Mr. R. L. Newell presiding.

Since the last meeting of the committee the Ministry's proposals concerning terms and conditions of service of hospital staff have been received by the Joint Committee (the committee presided over by Sir Lionel Whitby, of which the Central Committee is one of the constituent bodies) and referred for regional consideration and report. It was decided to devote a special all-day meeting on April 28 to the consideration of this document.

In some brief discussion it was stated that the Joint Committee was in no way committed to any part of the proposals. The views which the Joint Committee had put forward were in general the views of the Central Committee. It would be for the Central Committee to examine the proposals strictly on their merits, and instruct its representatives on the Joint Committee accordingly.

A member said that before making any decision on the betterment factor it was desirable to have some communication with the general practitioner side of the profession, so that the two branches would act in liaison. The chairman assured the committee that this was already being done.

Dr. Rowland Hill then submitted a report from the Executive Committee on matters referred to it and other matters which had arisen between meetings. One recommendation which had previously been referred back concerned the liability of full-time specialists to undertake domiciliary visits. A revised recommendation, which was agreed to, laid it down that in principle full-time specialists should not undertake domiciliary visits

except where there is no part-time specialist available to provide the necessary services or where the character of the specialty is such as to necessitate the attendance of a whole-time specialist. It was further agreed that a full-time specialist who desired to engage in domiciliary work should have the right to transfer to a part-time basis at the maximum number of sessions.

Full-time Specialists and Private Practice

A discussion took place on this subject, particularly in relation to the treatment of patients in private hospital beds. Attention was called to a communication from the Ministry explaining the manner in which patients might be referred from one specialist to another—that is, either as private or as "public" patients. It appeared that the Ministry envisaged a situation in which part-time specialists might contract to render treatment to patients in pay-beds without the right to charge the patients a fee. To this the committee was strongly opposed. It felt that here, as in the case of domiciliary visits, it should not be part of the duties of full-time officers to undertake the treatment of private hospital patients where part-time specialists were available for the purpose.

The propositions eventually agreed to by the committee were to the effect that full-time specialists should not be required to undertake the treatment of patients in private hospital beds, but that they should be permitted to do so (without fee) when their services were sought by a professional colleague; and also that full-time specialists who wished to participate in the treatment of private patients should have the right to transfer to a part-time basis at the maximum number of sessions. It was also agreed that in no circumstances should a specialist undertaking to perform part-time services be offered a contract containing a clause requiring him to treat patients in pay-beds without the right to charge professional fees. It had been suggested that the Government contemplated that part-time officers might agree to accept remuneration through additional sessions from regional boards in lieu of charging private patients.

Payments by Private Patients

Instances were brought forward from various areas of private hospital patients seeking to evade payment for the professional service they had obtained. One regional committee had suggested that a form which would be a legally binding contract to ensure payment be devised for signature by any patient admitted to a pay-bed. Such a form had been devised by the solicitors to the Association. It set out that the signatory, having read the relevant sections of the Act, agreed to pay the charges for accommodation and the cost of any services rendered by a practitioner in accordance with the scale in force.

The committee passed a resolution that a person who had agreed to receive hospital treatment privately, and had been admitted to a pay-bed, should not subsequently be allowed to claim the specialist services rendered on that occasion as a "public" patient.

On the question of the confidential nature of medical reports, on which some anxiety had been expressed by specialists, the committee agreed that outside bodies—it was explained that Government Departments and other third parties were in view—should not be permitted to have access to, or copies of, hospital records regarding the treatment or condition of patients without the knowledge and permission of the responsible clinician and the consent of the patient.

Representation of Full-time Specialists

A letter from the Association of Whole-time Specialists expressed some concern lest with the setting up of the Joint (Whitby) Committee and the disappearance of the previous Negotiating Committee the representation of the views of full-time specialists should be absent from the body which doubtless would undertake the final negotiations on the permanent contracts. Some feeling had been expressed that the part-time specialist was more favoured in the draft terms than the full-time salaried specialist. It was recognized that the interests of full-time specialists did at certain points diverge from those of part-time specialists, though there was no real conflict and

no consciousness of opposing interests on the Whitby Committee. At the same time it was felt that in the absence of adequate representation of full-time specialists it was possible that some interest of theirs might be overlooked, and it was agreed to ask the representatives of the Central Committee on the Joint Committee to consider the desirability of whole-time specialists' representation.

On the proposition of Dr. James Fenton the Central Committee agreed to co-opt to its membership Dr. N. J. England, who would be able to speak from his experience as a tuberculosis officer. Mr. J. P. Cocker had been nominated by the British Dental Association as a liaison officer to attend the meetings of the committee in the capacity of an observer.

Many other subjects occupied the committee during a long sitting, and some were referred for further exploration to the Executive.

B.M.A. LECTURES ABROAD

B.M.A. lectures have been given abroad in the last few months by Mr. N. R. Barrett on chest surgery (Denmark), Dr. J. S. Heller on pharmacology (Austria), Professor Geoffrey Jefferson, F.R.S., on neurology (Austria), Professor M. J. Stewart on pathology (Czechoslovakia), and Mr. C. Price Thomas on chest surgery (Spain).

Dr. Heller reports that though the number of medical students in Vienna is decreasing there are still far too many. If they continue to qualify at the present rate, many doctors will be unemployed in the near future.

There is a stock of pre-war apparatus comprising very costly items, usually of German make. (It appears that none of these things have been looted, though the departments of biochemistry and physiology have lost some electrical apparatus through bomb damage.) The main difficulty is the lack of simpler pieces of equipment—e.g., glassware and chemicals. Professor Wessely (biochemistry) complained particularly about the lack of ground glass. Analytically pure chemicals were obtained almost exclusively from German firms. Some departments live on their stock of chemicals, and purification on a small scale is also done, but an inland source of supply is needed.

At present Austria lacks even the simplest drugs such as aspirin. Only the supply of penicillin seems fairly adequate, owing to gifts from the occupying armies. Some drugs for research purposes are obtained through personal connexions of medical research workers with English, American, and Swiss firms. Free gifts of small amounts of new preparations would be much appreciated. The departments obtain an occasional dog, cat, or rabbit, but they cannot keep rats, mice, or guinea-pigs because they lack feeding stuffs. Not only certain types of research but also the biological standardization of drugs suffers.

Very little research in biochemistry is done, and even that is less biochemical than purely organic chemical work. No "experimental" physiology is being done. The pharmacology department seems to be the only one where research is done on a larger scale. All the apparatus bought by the late Professor R. Rossler has been saved and is in good working order. Dr. Brucke, the provisional head of the department, is working with certain Swiss firms, who provide some chemicals and journals. The work is handicapped by the lack of animals, but interesting work is done—e.g., investigations on the effect of drugs (sulphonamides, folic acid) on the metabolism of micro-organisms, and on the structure of cholinesterases.

Apparently there is no research in pathology. Even material for urgent diagnostic work is said to be lacking. Cover-slips, for instance, have to be used again and again. The famous pathological museum is intact.

In Professor Fellinger's unit haematological problems are being studied—e.g., the mechanism of action of urea on leucocytes. Professor Lauda's unit is interested in antihistamine substances, but lacks the appropriate preparations from British or American firms.

Mr. Price Thomas found that all the young doctors in Madrid and Barcelona are learning English. The greatest shortage appeared to be of x-ray films, so that most of the radiological investigations are by fluoroscopy. This seemed to be a handicap, and chest surgery is not as advanced there as in Britain.

RELEASE OF MEDICAL OFFICERS FROM H.M. FORCES

The Central Medical War Committee has been advised by the Service Departments of the following arrangements for the release of medical officers from H.M. Forces during the second quarter of 1949 :

Royal Navy

April	..	..	..	Group 101 and Group 102
May	..	..	..	Group 103 and Group 104
June	..	..	..	Group 105 and Group 106

R.A.M.C.

April 1-14	..	..	..	Group 106
April 15-28	..	..	..	Group 107
April 29-May 13	..	..	..	Group 108
May 14-28	..	..	..	Group 109
May 29-June 12	..	..	..	Group 110
June 13-27	..	..	..	Group 111
June 28-July 10	..	..	..	Group 112

R.A.F.

April	..	..	..	Group 101 and Group 102
May	..	..	..	Group 103 and Group 104
June	..	..	..	To be announced later

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-County Borough Councils.—Dartford, WallSEND.

Urban District Councils.—Denton, Droydsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

B.M.A. LIBRARY

The following books have been added to the Library :

- Abely, A. M. P., Assailly, A., and Laine, B.: *Les Facteurs Vasculaires et Endocriniens de l'Affectivité*. 1948.
Acquisitions Médicales Récentes (Les). 1947.
 Allen, F. H.: *Psychotherapy With Children*. 1947.
 American Public Health Association: *Diagnostic Procedures for Virus and Rickettsial Diseases*. 1948.
 Beattie, J. M., and Dickson, W. E. C.: *Textbook of Pathology*. Fifth edition. 2 volumes. 1948.
 Beger, H.: *Leitfaden der bakteriologischen Trinkwasseruntersuchung*. Zweite Auflage. 1948.
 Bérillon, E.: *La Science de l'Hypnotisme*. 1946.
 Boquet, P.: *Venins de Serpents et Antiveniens*. 1948.
 Bourne, G.: *An Introduction to Cardiology*. 1949.
 Brill, A. A.: *Lectures on Psychoanalytic Psychiatry*. 1948.
 Butler, C., and Erdman, A.: *Hospital Planning*. 1946.
 Calewaert, D.: *Conception Physique de la Vie*. Deuxième édition. 1947.
 Christian, H. A.: *Bright's Disease*. 1948.
 Conybeare, Sir J. (Editor): *Textbook of Medicine*. Ninth edition. 1949.
 Corner, G. W. (Editor): *Autobiography of Benjamin Rush*. 1948.
 Crile, G. (Editor): *George Crile: an autobiography*. 2 volumes. 1947.
 Curies del Agua, A.: *El Colapso Circulatorio*. 1946.
 Curran, D., and Guttman, E.: *Psychological Medicine*. Third edition. 1949.
 Daniels, F.: *Outlines of Physical Chemistry*. 1948.
 Deshaies, G.: *Psychologie du Suicide*. 1947.
 Dunlop, D. M., et al. (Editors): *Textbook of Medical Treatment*. Fifth edition. 1949.
 Florian, I.: *Les Varices*. 1947.
 Fulton, J. F.: *Aviation Medicine in its Preventive Aspects: an historical survey*. 1948.
 Fundación Lucas Sierra, Hospital de Vina del Mar: *Jornadas Clínicas de Verano*. 1947.
 Gil Vernet, S.: *Patología Urogenital: Tomo I. Cáncer de Prostata*. 1944.
 Goia, I.: *L'Infection de Foyer ("Focal Infection")*. Deuxième édition. 1946.
 Govea, J.: *Corazón Pulmonar e Insuficiencia Coronaria*. 1948.
 Grant, J. C. B.: *A Method of Anatomy*. Fourth edition. 1948.
 Hazlett, T. L. (Editor): *Introduction to Industrial Medicine*. Second edition. 1947.
 Hogarth, R. G.: *The Trent and I Go Wandering By*. 1948.
 Klein, M.: *Contributions to Psycho-analysis 1921-1945*. 1948.
 Lapide, M., and Rondcpiere, J.: *Contribution à l'Etude Physique, Physiologique et Clinique de l'Electro-choc*. Deuxième édition. 1947.

Correspondence

Exchange Control Medical Advisory Committee

SIR,—I have recently had some correspondence with the Financial Secretary to the Treasury (the Rt. Hon. W. Glenvil Hall, M.P.) on the functioning of the Exchange Control Medical Advisory Committee, and I have his permission to send you the following extracts from his letter, in the hope that the explanation given and the statements therein made will help to clear up a certain amount of misunderstanding about this committee.

"The Exchange Control Medical Advisory Committee has no powers to make grants of any kind. What it does is to advise the Treasury on all applications for health treatment abroad, and it recommends whether or not the necessary foreign currency should be provided. It has nothing to do with who puts up the sterling to meet the expenses.

"In practice, the majority of cases with which the committee deals are tuberculosis cases, and most of the members of the committee (which is a panel of independent consultants) are, in fact, leading tuberculosis specialists. So far as tuberculosis cases are concerned, the great majority of all applications which come before them are approved. The approximate figures since the committee was set up in December, 1947, are 1,000 approvals out of 1,100 applications.

"The way that the committee works is that any sick person in the country can apply through his own doctor to the committee. The doctor furnishes full medical reports, and these reports are considered by two members of the committee, and, in the event of their disagreement, by the chairman as well. The criterion under which the committee works is that treatment abroad must be essential to the recovery of the patient's health, and that such treatment cannot be obtained anywhere else in the Sterling Area. How this works out in practice is, of course, for the committee to decide, but, as I understand it, the committee would not normally approve applications in cases of tuberculosis which were too far advanced for treatment abroad to hold out any hope of recovery. I am sure you know, in certain types of case, high-altitude treatment would do more harm than good by causing the disease to flare up. In any case it would be a disservice to the country, and no kindness to the patient or to his family, to allow a sufferer to go abroad and to incur extremely expensive treatment in foreign sanatoria with no hope of ultimate recovery.

"I think you can take it that the committee takes its duties very seriously, and that its members will always give the application the benefit of any doubts that they may have. I feel confident that in any case where the committee thinks that the patient has any real chance of recovery by going abroad currency will be provided. Of course, even leading tuberculosis specialists may make mistakes, but I think it is also fair to say that the members of the committee are as a rule in a better position to judge from the general nature of the case whether or not treatment abroad will be beneficial than is the doctor who puts forward the application. It would be clearly impossible for the committee to see the patients themselves, nor is it their function to do so; but if they are in any doubt they are at liberty to ask the doctor for further information, and they do not hesitate to do so."

—I am, etc.,
House of Commons.

WALTER ELLIOT.

SIR,—One hears that Mr. Douglas Jay, M.P., has been defending the Exchange Control Medical Advisory Committee against adverse criticism. It may interest your readers who have had no experience of this body to know of the method by which (so far as pulmonary tuberculosis is concerned) it reaches its conclusion upon whether or not to grant currency permits. The doctor—usually the chest physician of the area in which the applicant lives—sends the medical case history and the latest x-ray film of the patient to the secretary of the committee, and upon this slender evidence the case for or against is judged. The opinion of the physician in charge of the case, who knows the patient from long acquaintance and from every aspect, and which may be considered to be of the first importance, appears to carry no weight and to be ignored.

It is an axiom of medical practice especially applicable to the disease of tuberculosis, and particularly to pulmonary tuberculosis, that no one part of the whole investigation of a case can be exalted above the rest, that the lesser cannot be made to include the greater. But that is what the committee does. Without knowledge of the applicant's mental, physical, and clinical attributes it decides upon the case history and

upon the shadows in an x-ray film the question an unfavourable answer to which may have the most serious repercussions upon the sufferer. In short, it reaches a decision upon evidence that not one member of the committee would accept as sufficient in his private practice to discharge his duty to his patient. One might as well expect a court of law to decide innocence or guilt without hearing both sides and without a jury.—I am, etc.,

Folkestone, Kent.

B. G. EDELSTON.

Betterment on Mileage

SIR,—At a recent meeting at Reading we were told that the Mileage Fund has been increased threefold, but that, as it has to be spread over a list of patients that has increased about two-and-a-quarterfold, the effect in Berkshire is to increase the mileage unit from 2s. 1d. to approximately 2s. 6d.—i.e., about 20%, which we considered inadequate.

The Mileage Fund was not intended as a motor-car expenses fund but as an increase in the capitation fee to balance the time-distance factor. Surely, then, we should press for the Mileage Fund to be increased sufficiently to raise the mileage unit in the same proportion as the raising of the capitation fee—namely, to 170% or 185%.—I am, etc.,

Crowthorne, Berks.

H. D. FORBES FRASER.

Senior Hospital Officers

SIR,—Examination of the Minister's proposals for remuneration raises immediately the question, Who or what are senior hospital officers? The answer will, it appears, lie in the empirical foundation of an establishment of specialists for each region, and thus for each hospital.

Considerable numbers of specialists are likely to find that their particular post is not included in the establishment and that they will therefore be mustered and paid at the very much lower level of senior hospital officer.

To enforce the acceptance of these posts is, I submit, one of the purposes to be served by the induction of financial stress by delayed settlement. I submit that it must be the duty of the Negotiating Committee to ensure that the specialist establishment is both elastic and personal.—I am, etc.,

Burton-on-Trent.

RANDLE LUNT.

Breach of Terms of Service

SIR,—Under "Medico-Legal" in the *Journal* of Feb. 26 (p. 371) I read of one of our colleagues who has been convicted and heavily fined (150 guineas) for giving a post-dated intermediate certificate on Form Med. 2A, and an unsigned, undated final certificate on Form Med. 2B. Admittedly this is a breach of the regulations, but surely the penalty is out of all proportion to this purely technical offence, and comparable to "hanging a man for stealing a sheep."

In considering the recommendation to the executive council the Medical Service Committee "took into account the practitioner's attitude in this case," which to me is quite irrelevant and should have no bearing on the case at all. We are not children to be treated in this way.

Also, what happens to the 150 guineas? Does it go back into the central pool? In which case, do we all get a bite out of it?—I am, etc.,

Nottingham.

T. GORDON TRESIDDER.

•• The 150 guineas is not returned to the central pool. This money is saved by the Exchequer, in that it is not paid to anyone.—ED., *B.M.J.*

Demands on the Table

SIR,—We are in great danger of being drowned in our own verbosity. We are being inundated by a spate of Spens, betterment factors, graduated capitation fees, global sums, and pools (or puddles). In fact we are creating a situation that the Minister loves—in his opponents.

Let us put our demands—yes, demands, like coal miners and bus conductors—on his table, and if they are not fulfilled I suggest that we just refuse to sign any State certificates. We must see and attend to our patients. I should imagine that the Act would last about two weeks.—I am, etc.,

Coventry.

JOHN HALE POWER.

United Action

SIR,—In all the correspondence published in the *Journal* since July last year very little mention is found of the two most fundamental problems facing the profession to-day. These are, first, the need to educate the general public in how the new Service should be used, and, secondly, how to overcome the apathy in the profession itself towards its fight for security.

Patients are tending more and more to consider their doctor as a universal provider of various remedies which they, the patients, think may do them good. The old approach used to be, "Doctor, I have a pain in my back; will you please advise me?" Now it is, "Doctor, will you give me a belladonna plaster for my back and a few aspirins, and as I'm here I might as well have a chit to get my eyes tested and a few pills for my wife's constipation."

Calls late in the day for patients who have been ill for a week, unnecessary night calls, and every conceivable dodge to avoid the queue at the surgery—all these are making the average general practitioner's life a constant struggle against unreasoning demand. This struggle would be greatly eased if the Government would run a campaign in the national Press. We've had "Keep death off the road": why not "Keep the doctor in bed"—at night at any rate?

The apathy in the profession is a problem in the solution of which we deserve and can demand no outside help. At a recent meeting of the local B.M.A. Division at which the motion for discussion was whether we should insist on 185 as the betterment figure, or whether we will accept the figure of 170 to be put to the Minister, there were present not more than 30 members out of a possible total of several hundred. It is significant that a similar meeting a year ago would have produced ten times this number. Are we all so fed up with the long-drawn-out negotiations that we feel that it is of no avail to continue the fight? If so, the outlook for the profession is indeed grim and the path downwards to a completely controlled State service steep and short.

If our leaders do not inspire our confidence and rouse our enthusiasm we must replace them. If, on the other hand, we believe that they are really prepared to fight for our just demands we should give them the necessary backing in the Divisions so that they can negotiate with the knowledge that they have the full weight of the profession behind them. "United we stand, divided we fall"—never was this so true as it is to-day.—I am, etc.,

Lewes, Sussex.

J. P. MATTHEWS.

Graduated Capitation Fee

SIR,—At the risk of being unpopular with the "have-nots" I think the subject of the proposed graduated capitation fee demands consideration. I trust the profession will consider the effects carefully before agreeing to such a method of payment. I for one object to subsidizing the income of a practitioner who may be a part-time specialist, anaesthetist, business man, ardent golfer, or just lazy. Surely the capitation fee is already graduated by income tax. I have taken the trouble to work out the net spendable income per caput after deduction of expenses and income tax, and assuming that we obtain the proposed increase of £16½ million in the pool. I have made the following assumptions:

(1) The doctor has a wife and two children. (2) Average mileage fee of £45 per 1,000. (3) Maternity cases per annum equal 20 per 1,000. (4) Expenses of £400 for 1,000, £600 for 2,000, £800 for 3,000, £1,000 for 4,000.

Making allowance for superannuation and income tax the fee per caput is:

	Uniform Capitation Fee of 25s.		Capitation Fee of 35s. for First 1,000 and Thereafter 18s.	
	s.	d.	s.	d.
For first 1,000	15	9	22	0
For second 1,000	14	5	9	8
For third 1,000	9	10	7	1
For fourth 1,000	8	4	6	4

It will be seen from these figures that if the fee for the first thousand is to be raised then I think it should be approximately 28s. This would achieve a fairly severe graduation.

There appears to be a good deal of animosity to doctors with large lists who are now reaping financial reward. For many years these men have been slaving in unhealthy, sordid surroundings often for little or no financial reward, and for this reason have had to take on large lists. They have none of the pleasant benefits of practice in residential or country areas. The imputation that a doctor is incapable of attending to lists of 3,000-4,000 is untrue, and that as a result he should have a lower capitation fee. The converse could be argued. Does a miner, working overtime, work less effectively? He may, but he gets paid time and a half.

I think it is generally agreed that the rural practitioner is badly hit and that mileage should be much more heavily weighted. Subsidizing the doctor in residential areas is unfair. They should gradually move to under-doctored areas. One hears too often of the patient who was visited privately on regular occasions before July 5 but is now ignored.—I am, etc.,

East Wemyss, Fifeshire.

I. G. MEIKLEJOHN.

Retain Assistantships

SIR,—I have been waiting to see if some abler pen than my own would reply to certain letters appearing recently in your correspondence columns advocating the abolition of assistantships. These letters were a source of amazement to me. When I left hospital I went as assistant to two partners in a town in Cornwall. Within six months I was given a partnership. Recently my partner and I have found our practice much too big and looked around for an assistant with a view to making him a partner. We found a suitable man. The salary is £750 and free house. He worked so well we gave £100 bonus, and in April he will become a partner with a quarter share. My present partner and I share the other three-quarters evenly. In five years he will be a full and equal partner.

How on earth do those who advocate abolition of assistantships think a young man is going to learn his job? Do they really think that what they learn as students and in house jobs is going to fit them for the onerous specialty of general practice? Do they think that in a large practice with, say, 12,000 patients the partners are going to accept some stranger appointed by a board? I have spoken to our local authorities, and the view is that in such cases the appointments board would appoint a man selected by the firm of doctors concerned—which is only right, for an unsuitable partner is a source of irritation and weakness to the team. I have no doubt that there are ageing men who seek to postpone retirement to abject poverty by employing an assistant. There is no compulsion to stay on, is there?

Before this Act certain young men (and women) objected to buying houses and practices. Now apparently they object to learning their job before being allowed to attend the public.—I am, etc.,

A. B. C.

Registrars Group at Bristol

SIR,—May we, through the courtesy of your columns, announce the formation by the registrars of the hospitals in the Bristol area of a Registrars Group? It is hoped to extend invitations to join this group to registrars in the South-west Region, and would those interested please write to the secretary?—We are, etc.,

W. R. BLACK.

T. J. BUTLER.

163, Wellington Hill West,
Westbury-on-Trym, Bristol.

JOHN H. CHALLENGER.

FRANK L. DYSON.

J. E. MALCOLM,
Secretary, Subcommittee
Registrars Group.

Effect of Income Tax

SIR,—I wonder whether some of the people with very large lists have had time to stop and consider the income tax they will have to pay in 1½-2 years' time. Put briefly, the facts are these. On a net, not gross—repeat net—income of:

£2,500* the last £500 is worth £235 to the individual
£3,000 the last £500 is worth £212 10s. to the individual
£3,000—£4,000 the last £1,000 is worth £375 to the individual

and so on proportionately downwards very steeply until you are earning only sixpence in the pound. Very few G.P.s are

likely to do this out of general practice alone. In plain language the last 1,000 patients would only be worth 8s. 4d. per head per annum. A married man with one child and a net income of £4,000 would pay £1,781 10s. tax.

Now there may be doctors who like to do this. It is obvious that every G.P. must work out for himself the point at which it becomes economically not worth his while to take on new patients and do more work for less money. At the present rate of remuneration the number of patients required to enable a doctor working very hard to maintain his standard of living is higher than he can do with due regard to good medicine.

If Spens is implemented as is suggested in M.22 a doctor with a list of 4,000 would have an income approaching £6,000 a year gross. With allowances of £2,000 per annum expenses this would mean £4,000 a year net, and so he would come into the tax range outlined above. This would mean, I think, that lists would tend to come down to nearly 3,000 in densely populated areas. In sparsely populated areas the new scale would make life much easier and maintain the standard of life due to the individual—the patient and the doctor. It would also again help that enormous pool of young doctors who at the present moment cannot get into general practice, because it would encourage G.P.s to take on partners once their lists were over 3,000. Furthermore, it would help those patients who have at present to wait so long in the waiting-rooms in densely populated areas.

These, Sir, are a few ideas for consideration by the profession at large. I think they do contain food for thought both to the medical profession and also, and by no means least, the Ministry itself.—I am, etc.,

Hadlow, Kent.

J. B. MARSHALL.

General Practitioner Surgeon

SIR,—I am grateful to Mr. John C. Nicholson (*Supplement*, March 12, p. 143) for restating the more or less stock arguments of full-time surgeons to the practice of surgery by general practitioners, but he views the problem from too narrow an angle. As he says, the welfare of the patients is involved, and this must come first. Now, while I admit that practitioners as well as other surgeons make mistakes—even more mistakes to start with—there is no reason why, with an experienced colleague working with them—which in their earlier years they certainly ought to have—these mistakes should have any dire results. If the worst came to the worst and a doctor found himself confronted with something that he could not tackle he can at least sew the patient up, pocket his pride, and get a more experienced man to operate later. But in fact such occasions very, very seldom arise, for the following reason.

As I stated in my first letter, a general practitioner has to live with his mistakes, and one or two slips teach him to be extra careful of his diagnosis, quite apart from any right fear that he might start doing something that he could not perform. He may not have the skill at prompt diagnosis of the more practised surgeon, but he usually has the inestimable advantage of having seen the case many times before and so getting a dynamic instead of a static view of the disease, which may often more than compensate for lack of skill and diagnostic facilities. 90% of major surgery performed by practitioner surgeons consists of appendicectomies and a few other things which may require care but do not, in fact, require vast skill for competent performance. Nor, as performed in small hospitals, do they require all the complicated paraphernalia which is quite rightly employed in larger institutions where conditions are quite different.

Then, as I also mentioned, in such hospitals the patient comes much earlier to operation because he is a human being and not a guinea-pig, and, however anxious and persuasive the doctor, patients do persist in clinging to him rather than to the more experienced stranger, and their wishes and those of their families always have to be considered. The net result is that the practitioner surgeon has a much less complicated task to perform, and, owing to his combined responsibility and practice while every detail is fresh in his mind, his skill in making an exact diagnosis and judging when to operate rapidly increases. The further result is that practitioners who practise surgery see less and less acute surgical emergencies,

for they have been treated earlier, and although I have no statistics to quote I have little doubt that most of the emergencies and late surgical cases which are sent into our big hospitals are sent in by practitioners who do no surgery, and for that very reason. If we wish to save these lives and the disability and human misery that these late cases cause we shall do it not by preventing practitioners from doing surgery, as Mr. Nicholson wishes, but by raising their standards and providing better facilities and safeguards so that still more can take an active share in such work, with due precautions against abuse.

May I draw two analogies which really are germane to the subject? No one disputes the wonderful work that can be done by our giant telescopes, but you do not need to go to an observatory to see if the stars are shining, for our senses are in fact much more sensitive than all but the most elaborate instruments; and a doctor who has learnt to listen to the patient's sensations and to use his own senses has in 90% of cases (probably more) no need to refer to x rays or other instrumental means of diagnosis. If he cannot be sure of his clinical diagnosis without these aids he certainly ought to send his case to a more experienced operator.

My second analogy is that no one in his senses would try to make all the roads of this country into main roads. If he did, the result would be colossal expense and the destruction of many of the amenities that people have learnt to enjoy. But it is on just such a task that the hospital authorities seem bent. Parliament and people have begun to gasp at the expense involved. They will soon begin to weep at the hospital services that will follow, for patients are not just material for surgeons to cut about, they are human beings with powers of vitality and response which are seldom or never evoked in large hospitals but which are the everyday experience in our more intimate smaller ones, where some personal word about the family or local life puts new life into the patients and more than makes up for our lack of surgical skill. If Mr. Nicholson doubts these things he and his fellow surgeons should just come and look round our hospitals intent on learning instead of criticizing, and with all their faults—which I am the first to admit—he would find much to make him hesitate before destroying instead of improving a system that has done so much for patients and for medicine in so many of our smaller towns. There is ample scope for both types of surgeons as well as hospitals, and it is a pity that some surgeons are not as eager to learn from practitioners as we are to learn from them, for at least we see much more of the end-results of their operations than they are ever likely to do. Co-operation rather than domination or opposition is the road to successful working, and surgery is more than mere operating.

I have deliberately omitted mention of urgent surgery, but this also comes into the picture.—I am, etc.,

Winsford, Cheshire.

W. N. LEAK.

POINTS FROM LETTERS

Health Centres

Dr. HAROLD H. SANGUINETTI (London, W.8) writes: . . . How much longer are we to wait for health centres providing x-ray examinations and pathological investigations for the general practitioner direct? What about physical treatment centres? What about closer association of the general practitioner with the work of our hospitals? Are none of these things worth fighting for? Judging from a letter circulated to general practitioners and just received from the London Medical Committee this committee has little conception of what a health centre should be. Where not less than three and not more than six practitioners are grouped together we have *ipso facto* a health centre, but surely not the health centre envisaged by the late Lord Dawson of Penn. By all means see that we are properly paid, but at the same time do not let us miss the opportunity of reorganizing the profession.

Panel of District Nurses

Dr. HERBERT SIMON (London, N.3) writes: . . . I suggest that the Minister should with all speed and with the help of the local authorities establish a panel of district nurses, or at least a panel of men and women sufficiently trained in elementary home nursing, who should be available at any time of the day or night. The names and telephone numbers of such personnel should be available at any time at the local police station.

H.M. Forces Appointments

ARMY

Colonel (Temporary Major-General) E. B. Marsh, M.C., late R.A.M.C., has retired on retired pay and has been granted the honorary rank of Major-General.

Colonel (Local Brigadier) D. C. Monro, C.B., C.B.E., late R.A.M.C., retired, re-employed, has been restored to the rank of Major-General on ceasing to be re-employed.

Colonel W. M. Cameron, O.B.E., late R.A.M.C., having attained the age for retirement, is retained on the Active List supernumerary to Establishment.

Colonel A. R. Ross, late R.A.M.C., has retired on retired pay. Lieutenant-Colonels P. F. Palmer, O.B.E., C. E. Eccles, O.B.E., and D. Bluett, O.B.E., from R.A.M.C., to be Colonels.

ROYAL ARMY MEDICAL CORPS

Lieutenant-Colonel J. J. O'Dwyer, C.B.E., has retired on retired pay and has been granted the honorary rank of Colonel.

Lieutenant-Colonel J. M. Mackenzie, C.B.E., M.C., has been restored to Establishment.

Majors R. H. Hunt, O.B.E., E. J. Pryn, P. L. E. Wood, D.S.O., M.B.E., G. M. Denning, and J. J. Sullivan to be Lieutenant-Colonels.

Captain R. M. Vanreenen to be Major.
Short Service Commissions (Type "B").—Captains P. T. Harper, P. K. Murphy, L. W. H. Bertie, H. P. Swan, J. Aitchison, and G. J. O'Connor to be Majors.

REGULAR ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Captain (War Substantive Major) J. S. Richardson, from Supplementary Reserve of Officers, to be Major, and has been granted the honorary rank of Lieutenant-Colonel.

Captain E. I. B. Harvey, from Supplementary Reserve of Officers, to be Major, and has been granted the honorary rank of Colonel.

Captain A. C. Stevenson, from Supplementary Reserve of Officers, to be Major, and has been granted the honorary rank of Lieutenant-Colonel.

Captains E. A. Heaslett and A. C. Kanaar, from Supplementary Reserve of Officers, to be Majors.

Captain (Acting Major) J. A. Chapel to be Brevet Major.

INDIAN MEDICAL SERVICE

Major (War Substantive Lieutenant-Colonel) D. J. P. Parker has retired, and has been granted the honorary rank of Colonel.

Lieutenant-Colonel E. C. A. Smith has retired.
Major W. J. F. Young, D.S.O., M.B.E., has retired and has been granted the honorary rank of Lieutenant-Colonel.

Major F. W. Whiteman, O.B.E., has retired but continues to be borne on the Special List (ex-Indian Army) British Army while employed with the Pakistan Armed Forces.

War Substantive Major H. R. Cara has relinquished his commission and has been granted the honorary rank of Lieutenant-Colonel.

COLONIAL MEDICAL SERVICE

The following appointments have been announced: J. A. Byrne, M.B., F. C. Harris, M.R.C.S., and T. A. Martin, L.R.F.P.S., Medical Officers, Gold Coast; J. C. G. Lockyer, M.B., B.M., L. F. B. Delany, M.B., and T. W. Robson, M.R.C.S., Medical Officers, Tanganyika; E. Robinson, M.B. and B. A. Payne, M.R.C.S., Medical Officers, Nyasaland; J. Belej, M.D., Temporary Medical Officer of Health, Gold Coast; Z. P. Walczah, M.B., Supernumerary Medical Officer, Leeward Islands; P. J. Bourke, L.R.C.P.S., L.R.F.P.S., Senior Medical Officer, Nyasaland; E. Bradbury, M.B., D.T.M.&H., Senior Medical Officer of Health, Sierra Leone; A. B. Brereton, M.B., D.M.R.E., Radiologist, Gold Coast; C. N. Latham, M.B., D.T.M.&H., D. W. McLaren, M.B., D.T.M., W. McLelland, M.B., D.T.M.&H., C. P. Murray, M.B., and J. L. McLetchie, M.B., D.T.M.&H., Senior Medical Officers, Nigeria; B. D. Molesworth, M.B., Medical Superintendent, Leper Settlement, Federation of Malaya; W. S. Urniston, M.B., D.T.M.&H., Deputy Director of Medical Services, Gold Coast; W. R. Phillips, M.B., D.T.M.&H., Surgical Specialist, Gold Coast; A. L. Shield, F.R.C.S., D.T.M.&H., Tuberculosis Specialist, Federation of Malaya; K. R. Stenson, M.B., Deputy Director of Medical Services, Fiji; J. H. Strahan, M.B., D.P.H., D.T.M.&H., Professor of Social Medicine and Hygiene, Singapore; H. Wands, M.B., Deputy Director of Medical Services, North Borneo; G. Watt, M.B., D.T.M.&H., Assistant Director of Medical Services, Gold Coast; G. F. Baxter, M.R.C.S., Senior Medical Officer, Jamaica; L. J. Chwatt, M.D., D.T.M.&H., Senior Malariologist, Nigeria; G. V. Harty, F.R.C.S., Senior Surgeon, Jamaica; A. A. Reece, M.D., Medical Officer, Grade B, Trinidad; C. E. E. Stevens, M.B., Medical Superintendent, Cunningham Hospital, Leeward Islands; R. D. P. Eaton, M.B., and D. McKinley, M.R.C.S., Medical Officers, Sierra Leone; I. H. Gordon, M.R.C.S., Pathologist, Nigeria; C. R. C. Rainsford, M.D., D.T.M., Senior Medical Officer in Charge, Zanzibar; A. W. Williams, M.D., D.T.M.&H., Medical Superintendent, Mulage Hospital, Uganda; A. A. Bonner, M.D., D.P.H., Medical Officer (Health), Jamaica; R. M. L. Sull, M.R.C.S., Medical Superintendent, Mental Hospital, Barbados.

Association Notices

RADIOLOGISTS GROUP

A meeting of the Radiologists Group will be held at B.M.A. House on Monday, April 25, at 2 p.m. to receive a report from the Group Committee and to discuss matters of interest to members. It is hoped that as many members of the Group as possible will attend this meeting.

Diary of Central Meetings

APRIL

- | | |
|-----------|---|
| 4 Mon. | Joint Committee of B.M.A. and National Veterinary Medical Association, 2 p.m. |
| 5 Tues. | International Relations Committee, 2 p.m. |
| 6 Wed. | Remuneration Subcommittee, 11.30 a.m. |
| 6 Wed. | Regulations and Standing Orders Subcommittee, 11.30 a.m. |
| 6 Wed. | Executive Subcommittee, 2 p.m. |
| 6 Wed. | Health Centre Committee, 2 p.m. |
| 7 Thurs. | Journal Committee, 2 p.m. |
| 11 Mon. | Pathologists Group Committee, 1.30 p.m. |
| 11 Mon. | Armed Forces Committee, 2 p.m. |
| 12 Tues. | Proprietary Medicines Committee, 11 a.m. |
| 12 Tues. | Planning Subcommittee, 11 a.m. |
| 13 Wed. | Charities Committee, 2 p.m. |
| 20 Wed. | Private Practice Committee, 2 p.m. |
| 21 Thurs. | Joint Subcommittee on Report of Working Party on Midwives, 11 a.m. |
| 21 Thurs. | Committee on Psychiatry and the Law, 2 p.m. |

Branch and Division Meetings to be Held

BARNSELY DIVISION.—At St. Helen's Hospital, Wednesday, April 6, 8.30 p.m. Film: "Angina Pectoris."

BISHOP AUCKLAND DIVISION.—Thursday, April 7, Annual dinner.

GREENWICH AND DEPTFORD DIVISION.—At Chiesmans Restaurant, 33, Lewisham High Street, London, S.E., Thursday, April 7, 7 p.m. Annual dinner and dance.

GUILDFORD DIVISION.—At Royal Surrey County Hospital, Guildford, Tuesday, April 5, 8.30 p.m. Address by Lord Horder.

KESTEVEN DIVISION.—At George Hotel, Thursday, April 7, 7.30 p.m. for 7.45 p.m., Dinner. 8.30 p.m., Address by Mr. W. Buckley: "Some Aspects of Thoracic Surgery."

RICHMOND DIVISION.—At Royal Hospital, Richmond, Tuesday, April 5, 9 p.m. Professor H. V. Dicks: "The Role of the General Practitioner in Mental Hygiene."

ROCHESTER, CHATHAM AND GILLINGHAM DIVISION.—At All Saints' Hospital, Chatham, Thursday, April 7, 8.30 p.m. Clinical meeting. All practitioners in the area of the Division are invited.

WESTMINSTER AND HOLBORN DIVISION.—At City Hall, Charing Cross Road, London, W.C., Thursday, April 7, 8 p.m. Special meeting to hear reports of Representatives to Special Representative Meetings held on March 29 and 30.

Meetings of Branches and Divisions

PLYMOUTH DIVISION

Professor Lambert Rogers gave a B.M.A. Lecture on "Sciatica" on March 11. He said that the last twenty years had brought about great changes in our views of the cause and treatment of sciatica. He was not speaking of symptomatic sciatica due to malignant disease in the pelvis or elsewhere, but of the so-called idiopathic variety, of whose cause many and varied views had been held in the past. Seventeenth-century writers called it "hip-gout," and Shakespeare associated it with the hip. Other joints, such as the sacro-iliac, had been held responsible. Then the great sciatic nerve had been described as reddened and swollen in sciatica, but, as Sir Charles Symonds had pointed out, no one had ever seen it in this state. Wiedhoff in 1927 had demonstrated that anaesthetic blocking of the sciatic nerve failed to relieve the pain but that sacral anaesthesia did so, and that therefore the lesion was higher up.

They now knew that it was a root lesion that caused sciatica, and any irritant lesion of the long roots which made up the nerve might cause it. Instances had been cited of both extra- and intra-dural tumours causing sciatica, and also of a foreign body in the cauda equina. The commonest cause, however, was a lesion of an intervertebral disk. A history of injury could not always be obtained, and disk degenerations and nuclear extrusions might be due to other factors such as dietetic deficiency (F. L. Gollia), or a congenital displacement of the notochord, as had been suggested by Craig Mooney. It was necessary to exclude the presence of tumours or massive disk herniations in cases of persistent sciatica. If they were excluded, conservative measures were indicated, and surgery should be reserved for intractable cases which had failed to respond to such measures.

A discussion followed. The chair was taken by Dr. H. G. Ludolf, and a vote of thanks to the speaker was proposed by Mr. H. F. Vellacott and seconded by Dr. T. T. P. Murphy.

BRITISH MEDICAL JOURNAL

LONDON SATURDAY APRIL 9 1949

MEDICAL FITNESS FOR AIR TRAVEL

BY

Sir HAROLD WHITTINGHAM, K.C.B., K.B.E., LL.D., F.R.C.P.

Air Marshal, R.A.F. (ret.); Director of Medical Services, British Overseas Airways Corporation

A. BUCHANAN BARBOUR, O.B.E., M.R.C.S., F.R.Ae.S.

Chief Medical Officer, British European Airways Corporation

AND

J. C. MACGOWN, D.F.C., M.D., Ch.B.

Wing Commander, R.A.F.V.R.; Medical Adviser, British South American Airways Corporation

Those who are not well acquainted with the physiological problems of flying, particularly of long flights on a world-wide basis, doubtless find difficulty in assessing the fitness of certain individuals for air travel. To help the practitioner to advise on such cases as may be referred to him a tabulated statement has been prepared, based on experience gained in commercial and Service aviation, especially in connexion with the transport of casualties during and since the war.

In the first column of the accompanying Table the commoner medical conditions on which an opinion is likely to be required regarding suitability for air travel are listed and arranged in alphabetical order for ease of reference. In the second column the limiting factors of the disease are given: any person whose condition falls below the standard set here should be advised against travelling by air, except possibly on short flights of about an hour's duration at low altitudes under good flying conditions. Essential facilities to be provided and precautions to be taken by the passenger concerned during flight are indicated in the third column, and in the fourth column there is a note on the advisability of air travel for those suffering from each disease in question.

The advice given in the Table is in general terms and is particularly applicable to flights of over four hours' duration in public air transport flying at altitudes between 5,000 and 9,000 ft. (1,524 and 2,743 m.) and for short times at 15,000 ft. (4,572 m.) or above to circumvent a bad weather front or to avoid high ground. When the journey is by pressurized aircraft it can be assumed that the air condition of the cabin will be similar to that of an altitude of 8,000 ft. (2,438 m.) with respect to atmospheric pressure and oxygen content even if the aircraft is actually flying at 20,000 ft. (6,096 m.). The proportion of passenger aircraft which are pressurized is steadily increasing, so that in a year or two most will be of this type. Certain cases which might be rejected for public air transport might be acceptable in an air ambulance or in a privately chartered aircraft where the patient's condition would cause no offence to fellow passengers and the altitude and length of each stage of the flight could be arranged to suit the patient.

Every case must be assessed on its merits, bearing in mind the following points: (1) the medical condition and psychological make-up of the patient; (2) the effect of the patient's disability on fellow passengers; (3) the necessity or otherwise for a qualified attendant to travel with the patient; and (4) the conditions of air travel—that is, (a) the type of aircraft, particularly whether it is pressurized or not; (b) the length of the journey envisaged and the duration of the various stages, which may be as long as 10 hours when crossing the Atlantic; (c) the expected weather conditions at the time of the year, and the altitudes likely to be attained; and (d) the availability of oxygen.

Limiting Factors and Precautionary Measures

Though modern air travel is very comfortable and acceptable to the vast majority of invalids, long flights may be fatiguing even to the robust.

Patients with anaemia, even of moderate degree, suffer from anoxia at the altitudes usually flown by civil airlines, and they should have a blood transfusion to bring the haemoglobin above 50% (7 g. per 100 ml.) if an air passage is essential. Patients with acute leukaemia should not travel by air, as they readily suffer from anoxia, and haemorrhage is likely to occur with the lowered oxygen tension at altitude. If it is essential to transport such cases they should be given a blood transfusion to raise the haemoglobin level to 80%. Chronic types with pronounced splenomegaly experience respiratory distress.

Individuals who have cardiac and pulmonary lesions are apt to react badly to effects of low pressure, even at altitudes below 10,000 ft. (3,048 m.), particularly those who have had attacks of angina pectoris or coronary occlusion, as well as cardiac and renal asthmatics, chronic bronchitis, and those suffering from pulmonary tuberculosis, especially refill cases.

Patients with active tuberculosis should not travel by air unless their sputum is free from tubercle bacilli and any cavity is controlled by collapse therapy, but not within a week of a refill. If the mediastinum is fixed, the lung must be at least three-quarters expanded. Pneumo-peritoneal refill cases should not have more than

Medical Contraindications to Air Travel

Condition	Limiting Factors	Essential Facilities and Precautions in Flight	Whether Advisable to Travel by Air
1. Blood and Lymphatic System Diseases			
(i) Anaemias	Less than 3,000,000 R.B.C. per c.mm.; less than 50% Hb. (May need transfusion before flight)	Maximum altitude 5,000 ft. Oxygen must be available	Inadvisable unless aircraft is pressurized to 5,000 ft.
(ii) Leukaemias	Less than 3,000,000 R.B.C. per c.mm.; less than 50% Hb. Gross enlargement of spleen. Haemorrhages. (May need x-ray therapy before flight, which should not be within 4 weeks of the x rays)	Maximum altitude 5,000 ft. Oxygen must be available	Acute cases should be rejected, unless Hb is raised to 80% by a blood transfusion. Chronic cases inadvisable unless aircraft is pressurized to 5,000 ft.
(iii) Lymphadenoma	Enlargement of mediastinal lymph glands revealed by x-ray film. Fever of the Pel-Ebstein type	Oxygen must be available	Cases to be considered on their merits
2. Cardiovascular Diseases			
(i) Angina pectoris	Frequent or recent attacks. Electrocardiogram to exclude coronary occlusion	Maximum altitude 5,000 ft. Oxygen must be available. Movement in aircraft should be limited to minimum	Inadvisable unless in aircraft pressurized to 5,000 ft., and attack provoked only by brisk walk of about ½ mile
(ii) Coronary occlusion	Symptoms within 12 months	Maximum altitude 5,000 ft. Oxygen must be available. Movement in aircraft should be limited to minimum	Inadvisable unless in aircraft pressurized to 5,000 ft.
(iii) Valvular lesions			
(a) Compensated	Degree of anaemia	Maximum altitude 8,500 ft. Oxygen must be available	If flight is under 8,500 ft.
(b) Uncompensated	Signs of congestive failure	—	Reject
(c) Congenital	Evidence of veno-arterial shunt (cyanosis), heart block, or severe hypertension	Maximum altitude 8,500 ft. Oxygen must be available	If flight is under 8,500 ft.
(iv) Myocardial lesions	Active disease or bradycardia. In post-diphtheria cases 6 months must have elapsed since illness	Maximum altitude 5,000 ft. Oxygen must be available	Cases to be considered on their merits
(v) High blood pressure	B.P. 200/120 mm. Hg or above. Headaches or loss of weight. Pulsus alternans. Cardiac asthma. Unsatisfactory condition of optic fundus. Albuminuria more than 2%. Cellular casts in urine	Maximum altitude 8,500 ft. Oxygen must be available	Inadvisable except in pressurized aircraft
3. Diabetes			
	Other than moderate types without cardiovascular disease, which must be stabilized by diet or insulin. Should have a recent blood-sugar estimation and report. Fasting blood-sugar level should be below 250 mg. per 100 ml.	Must adhere strictly to prescribed hours of meals and insulin injections. Not to move about at altitude more than necessary. Oxygen must be available. Hyoscine to prevent air-sickness	Only milder and moderate cases acceptable—that is, those not needing more than 50 units of insulin a day
4. Elderly			
	Unsatisfactory cardiovascular condition. In the case of a patient over 65 who is undertaking a long flight, it is advisable that a medical examination be carried out to eliminate anaemia or cardiovascular conditions. An electrocardiogram may be necessary where doubts exist	Not to move about at altitude more than is necessary. Oxygen should be available in non-pressurized aircraft	Depends on physical condition. Pressurized aircraft advisable (maximum altitude 8,500 ft.) for the very elderly
5. Gastro-Intestinal Diseases			
(i) Peptic ulcer			
(a) Quiescent and old perforation	As proved by absence of: (i) symptoms of activity; (ii) occult blood in faeces; (iii) x-ray evidence of active disease; (iv) proneness to travel sickness	Not over 8,500 ft. Hyoscine to prevent air-sickness. Carminatives for flatulence	Preferably by pressurized aircraft (8,500 ft.).
(b) Active	Pain. Occult blood in faeces. X-ray evidence. Proneness to travel sickness	Not over 5,000 ft. Limit movements in aircraft. Hyoscine to prevent air-sickness. Carminatives for flatulence. Follow dietetic advice	Normally reject. Pressurized aircraft if journey essential
(ii) Post-operation			
(a) Appendicectomy	At least 10 days must have elapsed since the operation	Not over 8,500 ft. shortly after operation. Hyoscine to prevent air-sickness	Flight should be under 8,500 ft.
(b) Herniotomy	At least 10 days must have elapsed since the operation	Not over 8,500 ft. shortly after operation. Hyoscine to prevent air-sickness	Flight should be under 8,500 ft.
(c) Other resections and wounds	Depends on condition of gut, fluid in abdomen, etc. Unable to go to lavatory unaided	Not over 5,000 ft.	Inadvisable except at 5,000 ft. maximum in pressurized aircraft
(d) Colostomy	Effect on fellow travellers	—	Reject
(iii) Haematemesis and melaena	—	—	Reject
6. Genito-Urinary Diseases			
(i) Calculus	If attacks of renal colic are frequent	Hyoscine to prevent air-sickness	Normally acceptable
(ii) Nephritis	Systolic blood pressure over 200 mm. Hg. Degree of anaemia (see Anaemia). Ascites or hydrothorax. Unsatisfactory condition of optic fundi. Albuminuria more than 2%. Cellular casts in urine. Blood urea more than 60 mg. per 100 ml.	Maximum altitude 8,500 ft. Oxygen should be available	Normally acceptable, but consider each case on its merits
(iii) Venereal	Must be free of active lesions, especially those of skin or buccal infections	—	Reject till non-infectious
7. Infectious Diseases			
	While infectious	—	Reject
8. Liver Diseases			
(i) Abscess	Those liable to burst	Maximum altitude 8,500 ft. Oxygen must be available	Normally reject. If essential, travel below 8,500 ft.
(ii) Cirrhosis	Evidence of congestive failure. Haemorrhages. Ascites or hydrothorax	Maximum altitude 8,500 ft. Oxygen must be available	Normally reject
9. Mental and Nervous Conditions			
(i) Brain tumours	Pressure symptoms. Incontinence	Maximum altitude 5,000 ft. Doctor or nurse in attendance	Normally reject
(ii) Epilepsy	Frequently occurring fits	Attendant advisable. Suitable sedative. No alcohol	Inadvisable except in milder cases
(iii) Mental disease	Non-quiescent state. Lack of control of bowel and bladder. Homicidal or suicidal tendencies	Attendant essential. Calmed with suitable sedative	Normally reject
(iv) Poliomyelitis	Not less than one month after onset (i.e., must be non-infectious). Unable to walk to lavatory. Respiratory involvement during illness	Attendant, if patient is not freely mobile. Oxygen must be available	Acceptable
(v) Other palsies	Lack of control of bowel and bladder. Unable to walk to lavatory	Attendant, if patient is not freely mobile. Oxygen must be available	Decide each case on its merits

Medical Contraindications to Air Travel—(continued)

Condition	Limiting Factors	Essential Facilities and Precautions in Flight	Whether Advisable to Travel by Air
10 Pregnancy	Must not be beyond 8th month of pregnancy. Evidence or history of repeated or threatened abortion, eclampsia, or travel sickness	Ensure that retention belt is round pelvis, not abdomen, at take off and landing. Sit in backward-facing seat, if available. Oxygen must be available. Hyoscine to prevent air sickness	If medical certificate is satisfactory and weather conditions are favourable for smooth flight at altitudes under 9,000 ft. Oxygen available. Pressurized aircraft advisable
11. Respiratory Diseases			
(i) Asthma	Severe attacks. Cardiac or renal basis	Maximum altitude 5,000 ft. Oxygen must be available. Move about as little as possible	Consider each case on its merits
(ii) Emphysema and bronchitic conditions	Dyspnoea. Cardiac lesion. Offensive sputum	Maximum altitude 5,000 ft. Oxygen must be available. Move about as little as possible	Normally reject. Consider each case on its merits
(iii) Fibrosis of lungs	Extensive	Maximum altitude 5,000 ft. Oxygen must be available. Move about as little as possible	Normally reject. If essential, travel in aircraft pressurized at 5,000 ft.
(iv) Lobectomy and pneumonectomy	Must be more than 3 months since operation. Breathlessness on moderate exertion	Maximum altitude 5,000 ft. Oxygen must be available. Move about as little as possible	Normally reject. If essential, travel in aircraft pressurized at 5,000 ft.
(v) Pleurisy			
(a) Dry	Pain and extent of lesion. Fever	Maximum altitude 5,000 ft. Oxygen must be available. Move about as little as possible	Normally reject. If essential, travel in aircraft pressurized at 5,000 ft.
(b) Wet	If one side of chest is more than half filled (Tap if necessary)	Maximum altitude 5,000 ft. Oxygen must be available. Move about as little as possible. Doctor or nurse in attendance	Normally reject. If essential, travel in aircraft pressurized at 5,000 ft.
(vi) Pneumonia	Must be more than a month since recovery	Maximum altitude 5,000 ft. Oxygen must be available. Move about as little as possible	Normally reject. If essential, travel in aircraft pressurized at 5,000 ft.
(vii) Pneumothorax (spontaneous)	Refill must have been done more than 7 days ago. Degree of displacement. If mediastinum is fixed, lung must be not less than three-quarters expanded. Bilateral involvement	Maximum altitude 5,000 ft. Oxygen must be available. Move about as little as possible	Normally reject. If essential, travel below 5,000 ft.
(viii) Pneumoperitoneum	Renals must not be more than 2,000 ml. at each site, and must have been done more than 7 days ago	Maximum altitude 5,000 ft. Oxygen must be available. Move about as little as possible	Normally reject. If essential, travel below 5,000 ft.
(ix) Tuberculosis			
(a) Active	Danger of haemoptysis and spread of infection	Maximum altitude 5,000 ft. Oxygen must be available. Move about as little as possible	Reject unless sputum is free from tubercle bacilli, or any cavity is controlled by collapse therapy
(b) Healed	As proved by: (i) Recent examination of sputum showing no evidence of tubercle bacilli. (ii) X-ray film of lungs. (iii) Clinical condition	Maximum altitude 8,500 ft. Oxygen must be available	Acceptable if flight below 8,500 ft. can be guaranteed
12 Tumours	Depends on site and presence of metastases and nature of complications	As required by symptoms	Depends on case

2,000 ml. of air introduced into each site. Moreover, the altitude of the flight should never exceed 5,000 ft., and oxygen must be available for immediate use in all pulmonary disease cases, whether tuberculous or otherwise. Lobectomy and pneumonectomy cases do not travel well by air, especially within three months of operation: normally they should be rejected, the degree of breathlessness on exertion being a good guide.

Those suffering from angina pectoris must have the condition adequately controlled with trinitrate, and an electrocardiogram should be done to exclude infarction: such cases can be accepted if the angina is provoked only by a brisk walk of half a mile. Cases with congenital heart lesion can be accepted for low-altitude flights if there is no veno-arterial shunt as evidenced by cyanosis, or if there is no heart-block or severe hypertension resulting from coarctation of the aorta. Cases of high blood pressure are acceptable if the systolic pressure is not over 200 mm. Hg and the diastolic is less than 120, provided they have flown before and there is no pulsus alternans, cardiac asthma, gross albuminuria, or cellular casts in the urine: those who have not flown before may be upset by nervous tension.

Diabetics in whom the level of the fasting blood sugar is higher than 250 mg. per 100 ml. should not travel for long distances by air or at altitudes greater than 8,500 ft. (2,590 m). Acceptable cases should be fully stabilized and keep strictly to the clock in respect of *insulina* and meals. They should not alter the time by their watch during the flight, but inform the chief steward of their hours of meals and their diet requirements, and have by them an adequate supply of sugar to take in the event of air-sickness. They can adjust their diabetic life to the change of time on arrival at their destination.

Elderly persons travel well at altitudes up to 10,000 ft., provided they are free from organic disease: it is advisable, however, that oxygen should be available, and where possible they should journey in a pressurized aircraft. In cases of doubt an electrocardiogram should be taken. Obese persons should be examined carefully to assess whether the fatty changes have affected the cardiovascular system, and advised accordingly.

Those with active ulcerative conditions of stomach or intestines should be warned against air travel owing to the danger of gaseous distension causing a haemorrhage or perforation. Cases of perforation or haemorrhage of the gastro-intestinal tract should not travel by air within two months of the occurrence, then only at an altitude not greater than 5,000 ft. It is essential in public air transport that all passengers should be mobile enough to go to the lavatory, aided by an attendant if necessary. Colostomy, urinary incontinence, and other odorous cases are obviously unacceptable in the confines of a public aircraft. When nephritis is present it is necessary to exclude severe anaemia, gross albuminuria, ascites, and hydrothorax before advising air travel. Infectious cases are rejected for obvious reasons. Those with cirrhosis of the liver should be rejected if there is evidence of congestive failure, haemorrhage, ascites, or hydrothorax.

Mental patients are not accepted normally, as their presence would worry the passengers and aircrew: when transported by air, they must be in a quiescent state vouched for by a mental specialist, and be accompanied by a doctor or nurse with suitable sedatives. Flying at altitude may precipitate fits in epileptics, so that only mild cases are acceptable: it is important that they should not take alcohol. Paretic cases must have full control of their bowels and bladder, and be able to walk to the lavatory,

aided if necessary. Hyperthyroidism of moderate degree is not adversely affected by air travel unless there is fear of flying, in which case sedatives should be prescribed: those with auricular fibrillation should not fly. Would-be travellers suffering from acute inflammations of the upper respiratory tract, or of the middle ear, should not fly until after the condition has subsided, as the changes in atmospheric pressure may lead to spread of infection to the paranasal sinuses and the middle ear. Those with chronic blockage of the paranasal sinuses or Eustachian tubes are unable to adjust the air pressure in their middle ears during descent, and should be advised not to fly.

It is important that expectant mothers should undergo a medical examination and obtain advice before undertaking a journey by air, and that the doctor consulted should know the proposed flight plan, its expected duration, and the altitudes likely to be attained. The difficulties of attending to a confinement or an abortion while in flight will be appreciated, so that the question of the date of expected delivery and the possibility of abortion must be carefully assessed. International airlines accept pregnancy cases up to the eighth month provided they are in good health and that oxygen is available, whether the aircraft is pressurized or not. It is important to be assured that reasonable weather conditions are forecast to avoid the danger of air-sickness or the need to use a retaining belt except at taking off and landing. Pregnancy cases should sit in backward-facing seats where these are available, so that the retention belt need not be tight at taking off and landing. They should be instructed to place the belt as low down as possible on the abdomen—just above the groins.

Children, infants, and babies travel well by air, but need oxygen at the same altitudes as do healthy adults. It is difficult to instruct very young children and babies how to equalize the pressure on either side of the ear drums on descent from altitude, so mothers should be told to feed a baby during descent and to give an older child a sweet to suck or some gum to chew to open the Eustachian orifice. If this is not done there will be pain in the ear and the child will cry: crying fortunately opens the orifice and relieves the condition.

Prevention of Air-sickness

Air-sickness is not a common occurrence in civil passenger flying, unless in "bumpy" weather. It is important, however, to take steps to prevent diabetics, expectant mothers, and those suffering from gastro-intestinal diseases (including post-operation cases) from being air-sick. The best preventive measure is to give hyoscine hydrobromide (1/100 gr.—0.65 mg.)* by mouth about an hour before flight, and to repeat this two hours later if necessary: for children the dose should be 1/200 gr. (0.32 mg.). Patients should be so advised and informed that after the first stage of the journey they will probably become acclimatized to flying and will not need any more tablets, unless bumpy weather is encountered. These anti-air-sickness tablets can be obtained from flight stewards and stewardesses in aircraft.

A number of factors predispose to air-sickness, such as fatigue, type of meal, noise, vibration, and cold. Advice should therefore be given regarding the need for sound rest the night before a flight, proper evacuation of the bowels, a light meal about an hour before taking off, and small light meals during the trip. In addition, those prone

to travel sickness should wear suitable clothing so as to be warm but not overheated and should protect their ears against aircraft noise by means of moistened cotton-wool plugs as provided on board. If they feel sick during flight they should be advised to relax and lie back in their seats, looking upwards, so as to minimize stimulation of the sensory hairs of the utricles by the otoliths (see Diagram)

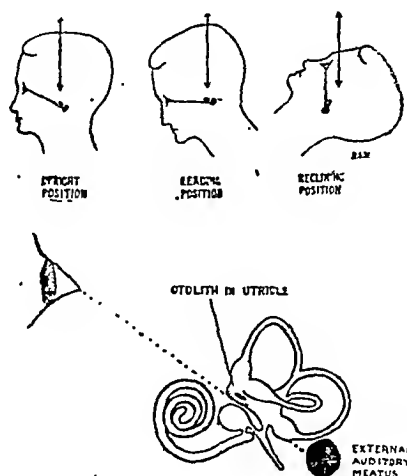


Diagram to show position of otolith in the utricle in relation to vertical movements when the head is in various positions. Repeated vertical movements, whether accompanied or not by swaying, press the otolith on the sensitive nerve filaments in the floor of the utricle, leading to excessive stimulation and probably to travel sickness.

Travel Regulations

For international air travel the passenger has to carry certain inoculation certificates, depending on the destination and the countries to be traversed. The would-be traveller must have been vaccinated against smallpox within one to three years, and, if the journey is to be through a yellow-fever zone, immunized against that disease. Moreover, some countries still insist on inoculation against typhoid, typhus, plague, and cholera. Details of immunization requirements can always be obtained from the Medical Department, British Overseas Airways Corporation, Stratton House, Stratton Street, W.1 (tel.: Mayfair 6611, extension 134); these are published periodically in tabular form in the *British Medical Journal* under the heading "Air Travel." These requirements must be borne in mind when advising a patient regarding travel, as the immunizing procedure may have an adverse effect on the patient's condition.

The doctor concerned should see that the patient has all drugs and appliances necessary for the journey, and that he or she fully understands any action necessary en route. To this end, instructions should be written clearly. Apprehensive individuals and those who sleep badly when travelling should be given a sedative, which also will help to ward off travel sickness. If desired, the drugs and appliances can be handed to the chief steward of the aircraft for custody and control of medication. Air stewards and stewardesses have had a training in first aid and are normally in charge of the first-aid outfits. Any medical attendant or nurse required to accompany the patient must be provided by the passenger.

In any case of doubt the medical practitioner is advised to consult the appropriate airline medical authority—B.O.A.C., Stratton House, Piccadilly, W.1 (tel.: Mayfair 6611); B.E.A., Northolt Airfield, Middlesex (tel.: Ruislip 6061); B.S.A.A., Dr. J. C. Macgown, 21, Wimpole Street, W.1 (tel.: Langham 3243). To help the authority to make

* "Dramamine" (β -diaminoethyl benzohydryl ether 8-chlorotheophyllinate) is claimed by the Army Medical Department of the U.S.A. to be more efficient than hyoscine.

decision the medical practitioner should provide a statement covering the following points:

Name, age, address, and telephone number of invalid.....

 Diagnosis of condition.....
 Manifest symptoms.....
 Severity of disability (mild, severe)*.....
 Whether infectious or non-infectious.....
 Where under treatment—if in a hospital or nursing-home.....

 Nature of treatment.....
 Whether treatment effectively controls symptoms.....
 Whether treatment is necessary during the air journey.....
 Whether an attendant is necessary.....
 Whether patient can walk unaided.....
 Whether patient can travel in sitting position.....
 Any other points.....
 In my opinion..... is fit to travel by air
 from..... to.....

Signature of doctor

Address and Tel. No.

Clinical findings referred to in a Table as possible limiting factors, including the systolic and diastolic blood pressures, should be added.

THE PHYSIOLOGICAL BASIS OF VAGOTOMY

BY

A. DAVIS BEATTIE, F.R.C.S., F.I.C.S.

Surgeon, Leicester General Hospital

The surgical treatment of peptic ulcer has recently become a matter of some controversy. The place held so long by subtotal gastrectomy in the treatment of all types of gastro-duodenal ulceration is now being challenged by vagotomy, and it is therefore of some importance that the physiological principles underlying the newer procedure should be generally appreciated.

Aetiology of Peptic Ulcer

There is little fundamental difference between the factors mainly responsible for gastro-duodenal ulceration and those producing similar lesions elsewhere. Trauma is probably the usual initiating factor; though toxæmia, localised vascular spasm, and even trophic neuritis may occasionally play a part in its onset. When an acute ulcer results from the action of one or more of these factors the natural reparative processes of the body attempt to induce healing, but their action is opposed both by the physiological peristaltic activity and by the digestive nature of the gastric secretion. Dragstedt (1942) has shown that these alone are not sufficient to delay physiological healing and to lead to chronic ulceration in a normal individual. The stomach and duodenum are readily digested by pure gastric secretion, particularly if the latter has a high acid content, but they are rarely exposed to such action in a normal individual. The acid content of the stomach is actively low unless provoked by the presence of food, which itself acts as a diluent, and it is still further lowered during digestion by the periodic regurgitation of duodenal contents. Moreover, all living tissues display a considerable resistance to digestion by the gastric juices owing to the

protection afforded by their mucous surface secretions. It is only when these protective mechanisms are overcome that a typical peptic ulcer develops in experimental animals.

Past Attempts at Physiological Surgery

Hyperacidity has long been recognized as the main factor responsible for the abnormal persistence of the ulcerative process and the consequent development of a chronic ulcer. From the introduction of gastro-enterostomy by Wolfier in 1881, successive attempts have been made to deal surgically with this problem along physiological lines. None of them has proved entirely successful, however; even the various modifications of subtotal gastrectomy, which have so far formed the most certain approach, being not without certain drawbacks and a proportion of failures.

The rationale of these operations is the resection of a sufficient area of the acid-secreting portion of the stomach to prevent subsequent hyperacidity, and, since this will obviously vary from individual to individual, their success depends on striking a correct balance in each case. To leave too much stomach will obviously defeat the whole object of the procedure, whilst the removal of too much may lead to possible anaemia and the development of "small stomach" symptoms afterwards. The latter are, in fact, responsible for the majority of poor results following modern techniques, as the tendency is towards over-removal of gastric mucosa in an attempt to prevent subsequent ulcer recurrence. Recent figures show that a surprisingly high percentage of patients who have had apparently successful gastric resections are unfitted for full economic life afterwards by the intermittent gastro-intestinal upsets which follow and the impossibility of returning to normal dietetic existence.

Gastrectomy has other disadvantages also. The operative mortality, though surprisingly low in expert hands, is necessarily higher in the older age groups—the very patients in whom the complications of ulcer have themselves such a high death rate. Moreover, it is a mutilating operation and, while a physiological proceeding so far as the ulcer problem is concerned, leaves an unphysiological and deformed upper digestive tract in its wake.

The Ulcer Diathesis

The relative failure of all past surgical attempts to deal really successfully with peptic ulcer has recently resulted in careful reconsideration of the problem of the ulcer diathesis and its underlying factors.

It has long been recognized that a true ulcer diathesis does exist. The typical ulcer patient belongs to Goldthwait's (1915) asthenic type. He is a thin, lanky, narrow-chested individual with a "lean and hungry look"—driving, ambitious, emotional, and tense. The psychic make-up accompanying these physical characteristics often determines the choice of occupation, with the result that certain professions and trades—such as engineering, law, and surgery—are particularly ulcer-prone. There are, however, quite a number of ulcer patients who do not fall into this main group. These individuals belong more to the sthenic type. They may exhibit a most deceptive external calm and seem to keep their nervous stress hidden well beneath the surface. It is interesting, as Moore (1946) points out, that this type of individual tends to suffer from ulcers which bleed rather than from typical ulcer pain.

To whichever group the ulcer patient belongs, however, he shows the same reaction towards his environment. Most intelligent patients can correlate definite exacerbations of their symptoms with such events as prolonged nervous stress, fatigue, overwork, or irregular meal hours. Sex also seems to play a contributory part in ulcer development.

The relative incidence in males is rising steadily in response to the greater stress of modern life, which normally affects men more than women. In a series of 9,000 necropsies performed on chronic ulcer cases up to 1923, Stewart (1923) found chronic ulcer to be twice as frequent in males, and approximately the same sex-incidence ratio was present in 4,000 necropsies disclosing acute ulcer; whereas the admission rate to E.M.S. hospitals of ulcer cases for operation in the period 1942-3 shows a 10:1 male preponderance in the 15-35 age group and a 4.6:1 ratio in patients over that age.

It appears that the ulcer diathesis is rather the result of nervous stress on a particular psychosomatic type than a mere accident of physical build. This is further supported by the evidence of Simnitzky (1926, 1927) and Fokin (1925), who showed the presence of parasympathetic hyperactivity in a high percentage of peptic ulcer cases.

Results of Recent Research

A considerable amount of recent research has therefore been directed to the investigation of the mechanism through which this vagotonia modifies normal gastric secretion.

A. Influence of the Vascular Supply

Little work appears to have been done on the relationship between vascular supply and gastric secretion, but it is reasonable to suppose, as Le Veen (1948) points out, that it is similar to that of other glandular structures which have been more carefully investigated, such as the salivary glands and the kidney.

It has been shown in fully denervated experimental preparations of these organs that their secretion is directly proportional to the volume of blood flow; and it is known from work on the voluntary muscles and heart that muscle contraction is similarly dependent on its vascular supply. Since gastric secretion is undoubtedly increased by hyperperistalsis, vasodilatation of the stomach vessels may therefore influence it by both these mechanisms.

B. Chemical Factors

It was first shown by Komarov (1945) that when extracts of the pyloric antrum and the first part of the duodenum are injected into the blood gastric secretion results. This secretion, which is identical with the juice of the chemical phase of gastric digestion, differs from that of the nervous phase by its high acid content and relative deficiency in pepsin. It is unaffected by atropine, and must therefore result from a purely chemical stimulus to the gastric glands. The extract responsible for this response does not contain histamine, and its causal component appears to be a polypeptide known as "gastrin." There seems little doubt that this is in fact the normal mechanism by which the chemical phase of gastric secretion is produced, and that the latter is the result of the action of the absorbed products of the early nervous phase of digestion on the glands of the pyloric antrum.

Contributory evidence of the purely chemical action of this mechanism and of its lack of dependence on any neurogenic stimulus is provided by the results of antrectomy. This operation, in which the mucosa of the pyloric antrum and first part of the duodenum is resected without any other surgical procedure, results in profound modification of the secondary phase of the gastric secretion; whereas complete gastric neurectomy affects the latter only relatively slightly.

C. Influence of the Nerve Supply

The detailed work of Swann (1834), Kollmann (1860), McCrea (1924), and Mitchell (1940) on the anatomy of the vagus nerves has not yet found its way into the standard textbooks on anatomy. They form an intricate plexus on the thoracic oesophagus from lung roots to diaphragm, and

re-form into their main abdominal trunks only at the aortic level. They constitute the parasympathetic supply of stomach, small intestine, and caecum, and give branches to the liver, spleen, and pancreas. As in the case of sympathetic, they act on the bowel by modifying the tone of the two intestinal plexuses, which are primarily responsible for both movements and secretion.

The actual mechanism by which these plexuses operate is still imperfectly understood, but the work of Tyrrell-Gibson (1936) provides the most plausible explanation. He suggests that the primary movement of the bowel is a small recurrent rhythmical wave of contraction initiated by ganglionated cells of the plexuses. The presence of a fecal bolus simultaneously stimulates Auerbach's plexus, producing a deep peristaltic contraction behind it, and Meissner's plexus, resulting in a preceding wave of relaxation. Recent work on the "peristaltic gradient" of the intestine supports this hypothesis.

Modern research has added considerably to the knowledge of the function of the gastric nerve supplies. It was first suggested by Carlson (1913) and confirmed by McCrea (1924) that gastric peristalsis is governed entirely by the vagus acting through the local plexuses, and that the muscular "tonus," upon which the peristaltic movements are superimposed, is separately controlled by the sympathetic. McSwiney (1931) has shown that the sympathetic nerves carry both stimulator and inhibitor fibres, and McCrea's work indicates that the former are concerned with the maintenance of gastric tone and the latter with peristalsis. The sympathetic is therefore not a true antagonist of the vagus, as is so often taught. The sympathetic supply to the stomach, as elsewhere in the body, controls the vascular tone, and it also forms the pathway for sensory impulses. Moore *et al.* (1946) have shown that painful stimuli can be produced by the inflation of an intragastric balloon after complete abdominal vagotomy. Latarjet's work proves that the pain of gastric crises, unaffected by vagotomy, ceases after complete gastric sympathectomy (Latarjet 1922; Latarjet and Wertheimer, 1923). Grimson *et al.* (1947) have demonstrated that the vagus does not carry sensory tracts, and Dragstedt (1947) has shown that recurrence of ulcer pain can be reproduced after complete vagotomy by the ingestion of sufficient quantities of strong hydrochloric acid. This work is in keeping with that of Bentley and Smithwick (1940), who showed that many of the afferent pathways from the duodenum, gall-bladder, and biliary tract are via the sympathetic supply of the organs.

It therefore seems probable that the sympathetic supply of the stomach and duodenum plays little part in the aetiology of peptic ulcer, apart from any secondary action similar to that which may be produced by the local anaemia resulting from an abnormally high sympathetic tone. The vagal supply, on the other hand, is known to be directly concerned with gastric secretion, in addition to any indirect effect on this which it may produce through its action on peristalsis. The psychic secretion which precedes the ingestion of food is due to vagal stimulation of the gastric glands. The same reflex occurs within 10 to 15 minutes of "sham feeding," apart from any psychological stimulation, and is probably the result of a vagal reflex from deglutition and mastication. The gastric secretion which results from this psychic or neurogenic stimulation is present in both pepsin and hydrochloric acid, and persists for some time independently of the succeeding chemical phase.

Cushing (1932) showed the existence of a nerve pathway between the cerebral cortex and the upper gastro-intestinal region. From combined clinical and pathological evidence he showed that a definite nerve tract connected the va-

centres with the cortex, and that irritative lesions along this tract resulted in ulceration of the stomach and duodenum. He demonstrated, further, that this was due to hyperactivity of the vagal centres and that the same result was produced by the action of psychic stimuli on the area of cerebral cortex at which this tract began. His important work, the full implications of which have only recently been realized, confirmed the investigations of previous workers on experimental dogs. Stahnke (1924) had already produced typical peptic ulcers in these animals as the result of the increased neurogenic gastric secretion following vagal stimulation. Hartzell (1929) had shown that complete vagal section resulted in permanent reduction of the gastric acidity, though this effect was only transient if section was incomplete; and Beaver and Mann (1931) had completed this chain of evidence by demonstrating that the only dogs to escape peptic ulceration after a Mann-Williamson (1923) physiological gastro-enterostomy were those in which complete vagotomy had also been performed.

The neurogenic secretion of gastric juice is not entirely limited to psychic stimulation, although Pavlov's (1910) original views to this effect are still regrettably present in many textbooks. Carlson (1923) showed, after intensive animal and clinical experiment, that there is normally a small continuous secretion of gastric juice even in prolonged fasting, and that this secretion is of the same type as that of the psychic phase of normal digestion though less in degree. Dragstedt and Schafer (1945) showed that this secretion was present to an excessive extent in the typical ulcer patient even during sleep, and that it was accentuated in emotional states and nervous stress. Wolf and Wolff (1942), studying a man with a permanent gastric fistula and complete traumatic oesophageal occlusion, have shown that the excessive acid secretion resulting from emotional conflict produces typical ulcer symptoms associated with definite changes in the gastric mucosa. When such physiological stimuli were prolonged the consequent hyperchlorhydria resulted in intense mucosal hyperaemia, with the development of small petechial haemorrhages, and the affected mucosa showed an increased tendency to macroscopic erosions through quite trivial trauma. If these erosions were then exposed to free hydrochloric acid small acute peptic ulcers rapidly developed.

The Development of Vagotomy

An analysis of all this evidence suggested that the most rational physiological approach to the problem was to be found in vagotomy, and a number of attempts had been made along these lines before Dragstedt and Owens's first reported successes. Most of these had been made through an abdominal approach and were reviewed by Hartzell (1929). The first transthoracic approach was made by Pieri and Tanferna (1930), but their cases were not uniformly successful, and it was left to Dragstedt and Owens (1943) to elaborate a suitable technique. A year later Dragstedt (personal communication) was also the first to evolve the modern abdominal approach, which he afterwards described in detail. Since then a voluminous literature from many sources has grown up on the technique and after-results of vagotomy, and a great deal of detailed research has been made into the physiological end-results of this operation. Nearly 1,500 successful cases have now been reported from the U.S.A., Scandinavia, and Britain alone, so that the operation can no longer be considered an experimental method of treatment.

The majority of surgeons employing vagotomy confine its use to the treatment of uncomplicated duodenal ulcer in the younger age groups, and of recurrent ulceration

following more radical procedures. But there is a strong case for carrying it out as a routine, as a concurrent procedure, whenever gastrectomy or gastro-enterostomy is performed for peptic ulceration; and I believe that it may also have a place as the sole treatment of some types of gastric ulcer. There is a justifiable tendency to avoid vagotomy in gastric ulcer through fear of later malignant change or of missing early carcinomata. But this does not apply in the same degree to small subacute lesions of the lesser curvature which fail to respond rapidly to energetic medical treatment, or to the high cardiac ulcers which are otherwise so difficult to deal with surgically. My own series of more than 160 vagotomies includes a number of successful operations in this type of case.

Apart from the effects on the stomach and duodenum, which are described below, division of the vagus nerves appears to produce few physiological sequelae in the other abdominal viscera. It has been shown by several investigators, including Ivy (1934), that vagotomy is followed by a slightly decreased secretion of bile and pancreatic juice; Pfeiffer *et al.* (1940) have described a temporary post-operative drop in blood calcium similar to that found to occur in experimental dogs; and the occasional occurrence of the "dumping syndrome" after operation suggests that there may also be some temporary alteration in the amount of insulin secreted. But all these are minor effects, and the absence of any more definite sequelae is in accordance with the clinical results following high subtotal gastrectomy and lower oesophagectomy, in which a concurrent complete abdominal vagotomy is almost always unwittingly carried out.

Clinical Results of Vagotomy

The most dramatic effect of vagotomy is the immediate relief of all pain and other ulcer symptoms, together with a rapid increase in weight. The psychological reaction of the patients after operation is highly satisfactory, and the majority of them are enabled to return to full economic life within six weeks.

There has been no proved case of ulcer recurrence following a complete neurectomy, as checked by insulin test meal. This test, first described by Hollander (1944), depends on the fact that the hunger pains consequent on hypoglycaemia are associated with excessive gastric secretion. This was originally demonstrated by Roholm (1930); and Okada *et al.* (1929) and La Barre and de Cesp  des (1931) showed that the hypersecretion is dependent on the integrity of the vagal pathway. The acid response of the stomach is very great where this pathway is normal, but it is abolished after complete vagotomy. As might be expected, another effect of vagotomy is to lower both the total volume and the acidity of the gastric secretion. Thornton *et al.* (1946) and Grimson *et al.* (1946) have both drawn attention to these changes in the night fasting juice, which are similar to those previously described by Hartzell in the fractional test meal. I have shown that the free hydrochloric acid secreted during a fractional meal test is reduced to one-third of the pre-operative quantity, but that the general character of the curve remains otherwise unaltered (Beattie, 1948). This drop in acidity is undoubtedly the main factor responsible for the disappearance of the previous ulcer diathesis after vagotomy.

As the result of the immediate paralysis of the stomach and small intestine, which only gradually recover their tone and power of movement, certain unpleasant retention symptoms occur. Almost complete gastric paralysis persists for two to three days and peristalsis then gradually returns, though it probably never reaches the same frequency and amplitude as previously. Moore *et al.* (1946) and Grimson *et al.* (1947) have investigated this subject

by means of repeated radiological examinations and pressure-recording intra-intestinal balloons. The latter workers have shown that there also is a gradual increase in muscle tone, which may reach two or three times its pre-operative strength within three years. Despite this, however, some degree of gastric dilatation often occurs—the probable result of pylorospasm from the unopposed action of the sympathetic nerve supply at the pylorus. This has been checked radiologically by Moore *et al.* (1946) and by Lawson (personal communication), and it has been shown by Grimson *et al.* (1947) that similar minor alterations in muscle tone and movement also occur in the duodenum and jejunum.

In addition to the immediate gastric paralysis there is nearly always some degree of temporary dysphagia following operation. This is the result of cardiospasm secondary to the trauma inflicted on the lower oesophagus and to interference with its nerve supply. It always passes off spontaneously within a few weeks, but while it exists it increases the tendency to gastric distension already present by the aerophagy which it encourages.

These retention phenomena, which present themselves clinically as occasional attacks of flatulence associated with eructation of foul gas towards evening or in the early hours of the morning, may be accompanied by mild regurgitant vomiting and followed by transient diarrhoea. In the majority of cases they are relatively mild and are regarded by the patient as of only minor importance, but they may be more severe and last for many months. They tend to subside eventually as the stomach recovers its tone and peristalsis, but may be so persistent that further operation becomes necessary. Dragstedt (personal communication) has pointed out that even in the milder cases there is a tendency for similar attacks of the same character to occur throughout the subsequent lifetime of these individuals. Such attacks occur during the same emotional crisis and nervous stress as would previously have produced ulcer exacerbations, and are probably due to the unopposed action of the sympathetic system in the new gastro-intestinal response to the nervous impulses consequent on psychic stimuli.

Recent work on certain choline derivatives has produced drugs which have a relatively selective action on the gastro-intestinal part of the parasympathetic system, and I have found the administration of these to be of value in reducing the severity of the retention symptoms in some cases. Unfortunately they do not yet appear to be equally effective in all instances, though it seems probable that further research in this direction may eventually prove more successful.

Conclusion

There seems little doubt that the final solution to the ulcer problem lies along medical lines. It should not be beyond the limits of future possibility for suitable drugs to be developed to control the vagotonia which is the underlying cause of the ulcer diathesis.

Till then, however, the failure of medical treatment in a certain proportion of cases will continue to result in chronic ulceration, which can be dealt with successfully only by surgical means. There is little doubt that vagotomy will ultimately come to be accepted as the routine surgical treatment for chronic duodenal ulcer and for the complications of anastomotic and jejunal ulcer after gastrectomy or gastro-enterostomy. It may even find a place in the treatment of some varieties of chronic gastric ulcer. It has a much lower operative mortality and post-operative recurrence rate than the more radical procedure of gastrectomy, and gives a higher proportion of full economic successes. But it is still relatively in its infancy, despite the

six-year post-operative records of the earlier cases that are now available; and it requires further technical development to eliminate its occasionally severe retention sequelae before it can be regarded with complete confidence.

BIBLIOGRAPHY

- Beattie, A. D. (1948). *Ann. R. Coll. Surg. Engl.*, 2, 248.
 Beaver, M. G., and Mann, F. C. (1931). *Ann. Surg.*, 94, 1116.
 Bentley, F. H., and Smithwick, R. H. (1940). *Lancet*, 2, 389.
 Carlsson, A. J. (1913). *Amer. J. Physiol.*, 32, 369.
 — (1923). *Physiol. Rev.*, 3, 1.
 Cushing, H. (1932). *Surg. Gynec. Obstet.*, 55, 1.
 Dragstedt, L. R. (1942). *Arch. Surg.*, 44, 438.
 — (1947). *Canad. med. Ass. J.*, 56, 133.
 — and Owens, F. M. (1943). *Proc. Soc. exp. Biol., N.Y.*, 53, 152.
 — and Schafer, P. W. (1945). *Surgery*, 17, 742.
 Fokin, V. V. (1925). *Russk. Klin. Mosk.*, 3, 891.
 Goldthwait, J. E. (1915). *Boston med. surg. J.*, 172, 881.
 Grimson, K. S., *et al.* (1946). *Sth. med. J.*, 39, 460.
 — *et al.* (1947). *J. Amer. med. Ass.*, 134, 925.
 Harzell, J. B. (1929). *Amer. J. Physiol.*, 91, 161.
 Hollander, F. (1944). *Gastroenterology*, 3, 463.
 Ivy, A. C. (1934). *Physiol. Rev.*, 14, 1.
 Kolmann, J. (1860). *Z. wiss. Zool.*, 10, 413.
 Komarov (1945). Quoted by S. Wright, *Applied Physiology*, 8th ed. Oxf. Univ. Press, London.
 La Barre, J., and de Cespèdes, C. (1931). *C. R. Soc. Biol., Paris* 106, 480, 1249.
 Latarjet, A. (1922). *Bull. Acad. Méd., Paris*, 87, 681.
 — and Wertheimer, P. (1923). *Pr. méd.*, 31, 993.
 Le Veen, H. H. (1948). *Surg. Gynec. Obstet.*, 86, 164.
 McCrea, E. D'A. (1924). *J. Anat., Lond.*, 59, 18.
 McSwiney, B. A. (1931). *Physiol. Rev.*, 11, 478.
 Mann, F. C., and Williamson, C. S. (1923). *Ann. Surg.*, 77, 409.
 Mitchell, G. A. G. (1940). *J. Anat., Lond.*, 75, 50.
 Moore, F. D. (1946). *Bull. New Engl. med. Center*, 8, 193.
 — *et al.* (1946). *New Engl. J. Med.*, 234, 241.
 Okada, S., *et al.* (1929). *Arch. intern. Med.*, 43, 446.
 Pavlov, I. P. (1910). *The Work of the Digestive Glands*. Griffen London.
 Pfeiffer, C., *et al.* (1940). *Amer. J. Physiol.*, 129, 756.
 Pieri, G., and Tanferna, U. (1930). *Rif. med.*, 46, 323.
 Roholm, K. (1930). *Acta med. scand.*, 73, 472.
 Simnitzky, S. (1926). *Klin. Wschr.*, 5, 1545.
 — (1927). *Ibid.*, 6, 991.
 Stahnke, E. (1924). *Arch. klin. Chir.*, 132, 1.
 Stewart, M. J. (1923). *British Medical Journal*, 2, 955, 1021.
 Swann, J. (1834). *Demonstration of the Nerves of the Human Body*. Longmans, London.
 Thornton, T. F., *et al.* (1946). *J. Amer. med. Ass.*, 130, 764.
 Tyrrell-Gray, H. (1936). In *Maingot's Postgraduate Surgery*, vol. 1 p. 1185. Med. Pub., London.
 Wolf, S., and Wolff, H. G. (1942). *J. Amer. med. Ass.*, 120, 670.

NOTES ON EXPERIMENTS ILLUSTRATING NORMAL TEMPERATURE REGULATION IN YOUNG MEN

BY

SAMSON WRIGHT, M.D., F.R.C.P.

John Astor Professor of Physiology, Department of Physiology
Middlesex Hospital Medical School

It has been the custom for some years in the department of physiology for our students to carry out a series of experiments which illustrate some of the more important facts about body temperature and its regulation in man. The experiments are conveniently performed during the vacation in the student's own home, as they require no special apparatus but do need a good deal of time and access to a bathroom. In this paper brief particulars are given of these experiments for the benefit of teachers who might care to use them. Some illustrative results are also shown graphically; most readers may find these graphs more instructive than a statistical analysis of the results. All the observations on which this report is based were carried out on healthy young men during the summer vacation; the readings are given in °F. I am greatly indebted to the students whose results I have used.

Temperature in the Mouth, Groin, and Axilla

The subject, using a so-called "half-minute" thermometer, is instructed to read the temperature at half-minute

intervals at these sites until a steady maximum reading is obtained; this maximum is an approximate measurement of blood temperature. Two illustrative sets of curves are given in Fig. 1. They show that in the mouth the steady maxi-

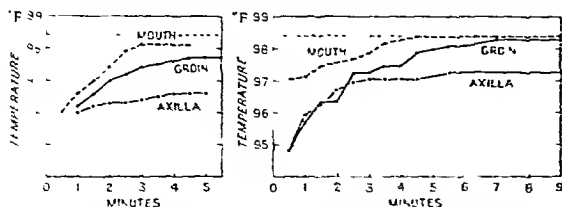


FIG. 1.—Time taken to get a constant temperature reading in mouth, groin, and axilla.

mum is attained after some three or four minutes, while in the groin and axilla a longer time is necessary—up to five or even seven minutes. The curves also show the well-known fact that generally the maximal temperature in the axilla is lower by 1°F (0.55°C) or more than that in the mouth; the maximal temperature in the groin approximates more closely to that in the mouth.

It is perhaps unfortunate that the clinical thermometers in common use have inscribed on them "half-minute" or "two minutes." The person using the thermometer is thus misled into believing that when it is kept in the mouth or elsewhere for the specified time it records accurately the body (i.e., the blood) temperature. The figures on the thermometer do accurately indicate its physical properties under specified test conditions outside the body; thus the figures give the time that it takes the thermometer to record accurately the temperature in a thermostatically controlled bath of water. But when the thermometer is used clinically under very different physical conditions we must allow enough time to elapse to permit the thermometer in the mouth, groin, or axilla to attain temperature equilibrium with the blood; the curves in Fig. 1 show that the thermometer must be kept in position for three minutes or longer to achieve this end.

I venture to suggest that clinical thermometers should be relabelled as "rapid" and "slow" to indicate their relative physical sensitivity, and that the thermometer should be inscribed with an instruction that it should be kept in the mouth for not less than three minutes or until a constant temperature reading is obtained. I fully appreciate that if such instructions were faithfully followed it would take one nurse equipped with one clinical thermometer nearly one hour to record the temperature of ten patients; but this difficulty could be overcome by using several clinical thermometers simultaneously or, as suggested by a correspondent in the *Lancet*, by recording the temperature only of those patients in whom temperature disorders are known to be present or are suspected. It is obviously undesirable for the nursing staff to spend a good deal of time carelessly taking many inaccurate readings. The same remarks apply to temperature-recording in a busy surgery or during the rush of home visits.

Effect of (i) Hot and (ii) Cold drinks on Mouth Temperature

(i) The subject is told to drink one cup of hot tea, and in a second experiment two cups, at a temperature of $140\text{--}150^{\circ}\text{F}$ ($60\text{--}65.5^{\circ}\text{C}$). (ii) The subject is told to drink 1 litre of ice-cold water. In each case the mouth temperature is read at half-minute intervals until it returns to the control level; in these experiments the "half-minute" thermometer used is initially recording changes in the temperature of the mucous membrane of the mouth and not changes in blood temperature.

(i) Fig. 2a shows that after one cup of hot tea the mouth temperature may rise rapidly to 101.4°F (38.55°C), and after two cups to 102.6°F (39.2°C). It then falls to control level in five minutes after one cup and in about

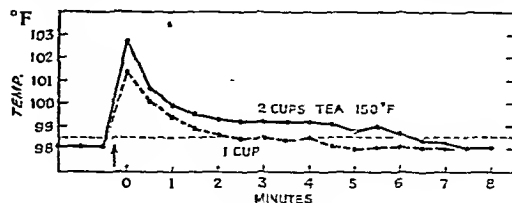


FIG. 2a.—Effect of a hot drink on mouth temperature.

eight minutes after two cups of hot tea. A hot drink may thus sometimes be the cause of an unexplained clinical "pyrexia."

(ii) Fig. 2b shows the effects of drinking the cold water as quickly as possible, and Fig. 2c of drinking it over a period of 12 minutes. The mouth temperature may fall

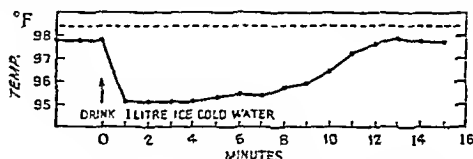


FIG. 2b.—Effect of a cold drink on mouth temperature.

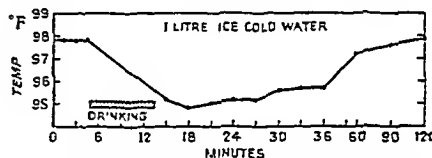


FIG. 2c.—Effect of a cold drink on mouth temperature.

from 97.8 to 95°F (36.55 to 35°C) or less; it remains round about this low level for 8 to 20 minutes and slowly recovers as the oral mucosa is warmed up again by the circulating blood.

Diurnal Variation

The subject is asked to record his mouth temperature every hour throughout the day and night for 72 hours, taking the precautions called for from the preceding observations. In quite a number of cases the instructions were followed literally. The only way to get regular night readings is to have at the bedside an alarm clock suitably set to wake the subject up each successive hour. The value of the temperature readings is considerably enhanced if a careful note is made at the time of what the subject is doing, with special reference to work, food, sleep, room temperature, heart rate, and respiration. Illustrative records are set out in Figs. 3a, 3b, and 3c.

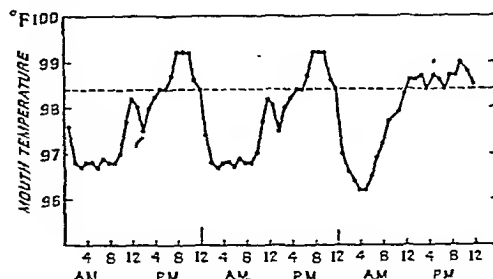


FIG. 3a.—Diurnal variation of body temperature.

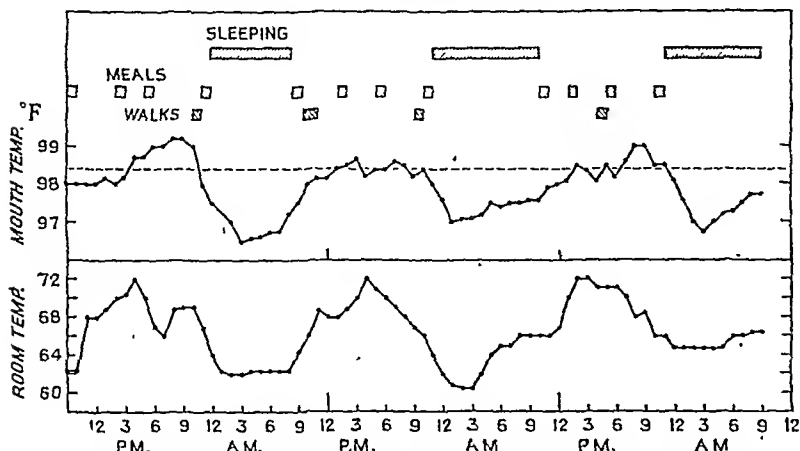


FIG. 3b.—Diurnal variation of body temperature in relation to external temperature and bodily activities.

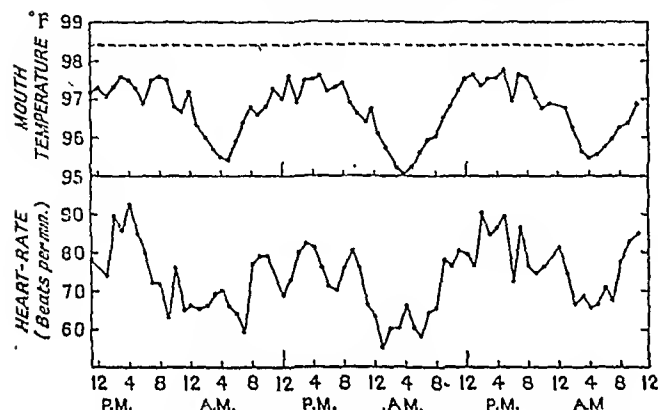


FIG. 3c.—Diurnal variation of body temperature and heart rate.

Such experiments are of great value in teaching the student the extent of the range of the normal, in himself and his friends, of several so-called "physiological constants." The student also learns to appreciate the fundamental difference between an average value and a normal range, a distinction which is of the utmost importance in many branches of physiology and medicine. The examples of diurnal variation here illustrated show in Fig. 3a a range between 99.2 and 96.2° F. (37.3 and 35.7° C.), in Fig. 3b between 99.2 and 96.5° F. (37.3 and 35.85° C.), and Fig. 3c between nearly 98 and 95° F. (36.7 and 35° C.). A daily fluctuation of 3° F. (1.66° C.) may thus occur in any one normal person. The possible extent of the "tolerated" daily fluctuation is not fully appreciated, because it is very unusual to take records steadily during the night, and it is commonly at the inconvenient hours of 2 to 6 a.m. that the minimum temperatures are generally observed.

Fig. 3c shows a beautiful correlation between mouth temperature and heart rate, incidentally confirming the well-known clinical dictum that the heart rate varies by 10 beats per minute for every 1° F. change in body temperature. The curves also illustrate the wide range of the heart rate in a normal person even at rest; the range at rest in this instance is from a so-called "bradycardia" (pulse rate of 60) to a "slight tachycardia" (pulse rate of 90), according to the time of day and the associated body temperature.

Fig. 3b shows that the diurnal variation is fundamentally related to the rhythm of sleeping and waking. The temperature falls progressively during the earlier hours of sleep, but begins to rise once more in the later hours. In this example there seemed to be a considerable relationship between the variations of external temperature and those of body temperature.

The question may be fairly asked: Why have a mark on clinical thermometers opposite 98.4° F. (36.9° C.)? In one person such a temperature at any time of the day may represent pyrexia; in another the maximum normal temperature may be almost 1° F. higher. A mark of this sort probably misleads the public into supposing that a temperature reading over 98.4° F. at any time represents pyrexia; in time even the doctor may begin to believe that too. It might be better to have no mark on the thermometer at all and rely on suitable instructions being given to the public. It might be explained that a temperature over 99.5° F. (37.5° C.), taken with the precautions previously explained, probably represents pyrexia; but it should also be made clear that ideally one should be familiar with a person's temperature range in health, because in people with a lower temperature range an apparently "normal" temperature reading may represent pyrexia.

Effect of a Hot Bath on Temperature, Respiration, and Heart Rate

The subject gets into a hot bath and stays in it for about five or six minutes; observations are made while in the bath and after getting out of the bath until the control

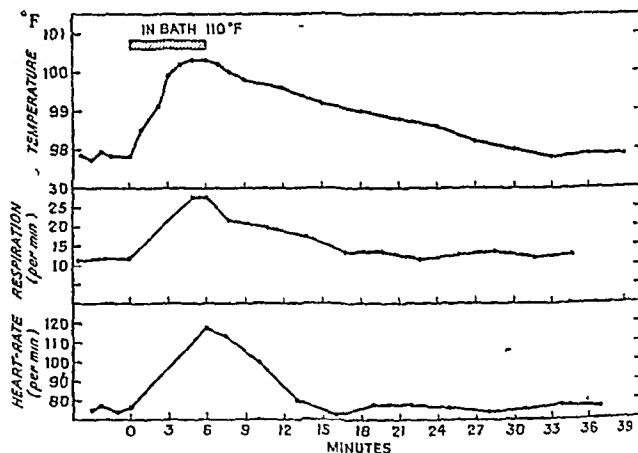


FIG. 4.—Effect of a hot bath on body temperature, respiration, and heart rate.

levels are reached. Fig. 4 shows that in a bath at 110° F. (43.3° C.) the mouth temperature may rise from about 97.8° F. (36.55° C.) to over 100.3° F. (37.95° C.); the heart rate may increase from 75 to 115 and the respiration rate from 12 to 28 per minute. Mouth temperature may subsequently take some 30 minutes to return to normal though respiration and heart rate recover rather more rapidly.

This experiment shows clearly the limitations of normal temperature regulation, and how it can break down quickly under conditions of stress. In a bath at 110° F. (43.3° C.) heat is being taken up by the immersed part of the body and heat loss depends mainly on evaporation of sweat from the exposed part of the body. As the atmosphere in the bathroom is very humid, evaporation of sweat is probably minimal. Body temperature is therefore raised by the heat released by the metabolism as well as by the heat taken up from the surrounding medium. This experiment is of clinical interest in showing that the body and mouth temperature may be raised for a considerable time after a hot bath.

Effect of Exercise

The subject is asked to take a sharp

walk for about 15 minutes.

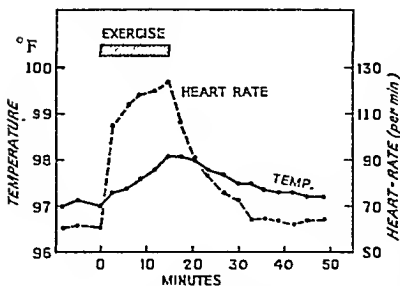


FIG. 5.—Effect of exercise on body temperature and heart rate.

rate from 60 to 125. Severe exercise in a hot, humid climate may produce pronounced pyrexia.

Effect of (i) Standing Naked in Front of a Window for 20 Minutes and (ii) a Cold Bath

(i) These experiments were all conducted in the summer, when the external temperature was of the order of 60° F. (15.5° C.). Fig. 6a shows a number of results. Usually

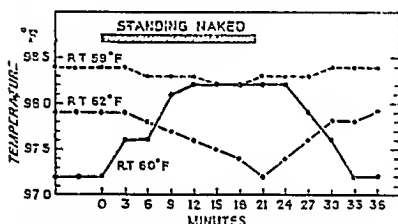


FIG. 6a.—Effect on body temperature of standing naked in front of an open window for 20 minutes.

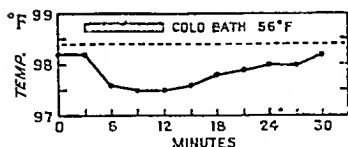


FIG. 6b.—Effect on body temperature of a cold bath at 56° F. (13.3° C.).

35.85° C.). Fig. 6a also shows that sometimes, during the period of exposure to cold, body temperature may rise by nearly 1° F., presumably because of an overswing of the compensatory mechanisms.

Fig. 6b shows the modest temperature-lowering effect of a cold bath at 56° F. (13.3° C.).

Summary

Simple experiments are described which illustrate the more important facts about normal temperature and its regulation in man.

Attention is drawn to the undesirability of having a mark on clinical thermometers opposite the 98.4° F. (36.9° C.) level, and of inscribing clinical thermometers with the words "half-minute" or "two minutes."

The Nursery School Association has started a new quarterly magazine called *Young Children* with the purpose of fostering a fuller understanding of children. The first number includes some of the evidence given by the late Dr. Susan Isaacs before the Curtis Committee. The price of the magazine is 1s. 6d.; it is obtainable from the Association at 1, Park Crescent, Portland Place, London, W.1.

USE OF DIPARCOL IN PARKINSONISM

BY

R. S. DUFF, M.B., F.R.F.P.S., M.R.C.P.

Late Medical Registrar, Southern General Hospital, Glasgow

A synthetic drug, "diparcol" (diethylaminoethyl-N-thio-diphenylamine hydrochloride), was found useful in the treatment of all forms of Parkinsonism by Sigwald *et al.* (1947) and by Bovet *et al.* (1947) in France. A limited supply was made available at this hospital by the courtesy of the manufacturers, May and Baker, Ltd., and a clinical trial of the drug was carried out in eight cases of post-encephalitic chronic Parkinsonism of varying degrees of severity. A ninth case, of malignant hypertension with the Parkinsonian syndrome, was given the drug for a short time before death; its effect, if any, could not be assessed, and the case was excluded from the series.

It is notoriously difficult to provide satisfactory criteria of change in the state of patients suffering from chronic disorders of locomotion. Evaluation of treatment therefore depends to a large extent upon the subjective opinions of the physician and of the patients and those around him, but it is advantageous to base opinions so far as is possible upon objective measurements. Carmichael and Green (1928) devised an apparatus to measure rigidity in resting limbs, and used the ergograph to record the performance of simple repetitive motions rather than of individual movements; but in the present study an attempt was made to consider each patient in terms of the following ten modal activities, which together involve automatic, impulsive, and deliberate movements of different degrees of complexity: (1) turning in bed, rising from and returning to bed; (2) dressing and undressing; (3) performance of the toilet, especially shaving in men; (4) eating; (5) walking; (6) turning around corners; (7) climbing stairs; (8) speaking; (9) writing; and (10) movements of facial expression as reflecting mood and interest.

The procedure was to observe each patient over a period of two to three months while they were receiving adequate dosage of the customary drugs (stramonium, hyoscyne, belladonna) in such combination as produced the maximum benefit. In each patient the state of the ten modal activities varied, but an attempt was made to assess the efficiency of each according to the following scale:

- 0 = No activity on account of contractures or rigidity
- 1 = Activity grossly restricted or completely ineffective
- 2 = Moderate restriction, especially by rigidity
- 3 = Moderate restriction, especially by tremor
- 4 = Activity approaching normal, but slow and clumsy
- 5 = Activity practically normal, or at least effective

Throughout the test any lasting changes in the tremor or hypersalivation were recorded, but it was felt that little was to be gained from the observance of minute changes, especially in tremor, which so noticeably varies from hour to hour with the attitude and mood of the patient. In view of the failure of several authorities (Neal *et al.*, 1942) to find regular amelioration of oculogyric crises by treatment otherwise effective, a particular note was taken of the incidence of these and of "emotional" and "laryngeal" crises.

Diparcol was then given according to the scheme first recommended by the manufacturers, dosage being gradually built up over a period of five to six weeks, with simultaneous gradual withdrawal of the solanaceous drugs. Except in Case 1, the drug was given in the full dosage of 1 g. daily for a period of ten weeks, after which the effect of slightly varying the dose was studied. When the

most beneficial dosage was found, each case was reassessed in terms of the ten modal activities, and improvement or deterioration recorded. Slight improvement meant an increment of 1 unit, considerable improvement 2 units; conversely, slight deterioration was measured by a down-scaling of 1 unit, and so on. The results are shown in the table.

Modal Activity	Case 1		Case 2		Case 3		Case 4		Case 5		Case 6		Case 7		Case 8		Net Change
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	
Turning in bed ..	0	1	4	5	4	5	4	5	4	5	1	2	5	5	3	5	8+
Dressing and undressing ..	0	0	4	4	4	5	3	4	3	4	0	0	4	5	3	4	5+
Toilet ..	0	0	3	4	4	5	3	4	3	4	0	1	4	5	3	4	7+
Eating ..	0	0	4	5	4	5	3	4	3	4	0	2	4	5	3	4	8+
Walking ..	0	0	3	4	5	5	3	4	3	5	0	1	4	5	3	4	7+
Turning corners ..	0	0	3	4	4	5	2	2	3	4	0	0	4	5	3	3	4+
Climbing stairs ..	0	0	3	4	4	5	3	3	4	4	0	0	4	5	3	3	3+
Speaking ..	1	2	3	4	3	4	3	3	3	4	1	2	3	4	3	4	7+
Writing ..	0	0	3	3	2	2	2	2	2	2	0	0	4	4	2	3	1+
Facial expression and mood ..	0	0	3	4	4	5	2	3	2	3	0	2	3	4	3	4	8+
Total change in each patient ..	2+		8+		8+		6+		9+		8+		8+		9+		58+
Notes and clinical impressions	Died during treatment		Striking benefit		Considerable benefit		Fainting turns		Fairly severe case gaining benefit		Subjective improvement marked. Bedridden		Moderate benefit		Salivation aggravated		

A = During control period with solanaceous drugs. B = During period of administration of diparcol. 0 = No activity. 5 = Practically normal activity.

In order to reduce the suggestive influence of a new and promising treatment three patients (Cases 2, 3, and 8) were gradually returned to the former regime of the solanaceous drugs, whereupon a notable relapse occurred, while reintroduction of diparcol once more brought favourable results. The substitution of inert tablets, mixtures, or injections to provide a control in the treatment is rarely of value, inasmuch as patients with even a mild degree of Parkinsonism soon become aware of the deception.

Results of Treatment

As will be seen from the table, all the patients derived a little benefit from diparcol as compared with previous treatment. Except in Case 1, in which death occurred suddenly, the numerical benefit in each case was about equal; this contrasts with the erroneous clinical impression that had been gained that the less severely affected patients were the most improved. The reason for this impression was the striking facilitation of normal or almost normal activities in those in whom such activities had been only slightly or moderately restricted. The importance of thus evaluating and tabulating the results is manifest.

In general it would seem that the more skilled activities, such as writing, walking round corners, and climbing stairs, were improved to a smaller degree than more "primitive" acts like turning in bed or eating, but such generalizations are hardly justified in such a small series.

Improvement in the feeling of well-being was quite noteworthy in several patients; this was to some extent included in the tenth modal activity (expression).

In respect of ambulant patients any improvement, however small, in the performance of simple domestic or social tasks represents a considerable boon. The loosening up of a rigid bedridden patient, while less spectacular, was reflected in a decrease in nursing requirements.

Oculogyric crises were not significantly influenced by the drug, but in one patient there seemed to be relative freedom from "laryngeal crises" during the administration of full doses.

Undesirable Effects.—(1) Hypersalivation was not well controlled by diparcol in four of the cases, in which the addition of small doses of belladonna became necessary. (2) Faintness and "fainting turns" occurred in two patients,

but were absent when the dosage was slightly reduced. (3) Paraesthesiae consisting of creeping or burning sensations referred to the head and upper trunk were mentioned by two patients. This feature tended to pass off after reassurance, despite continuance of the drug. (4) Transient blurring of vision was noted in one case. (5) Undue drowsiness was complained of by one patient: three others

reported that they were sleeping better. (6) Weekly blood counts were carried out in half the cases in view of the death of one of Sigwald's patients from agranulocytosis (which was not thought to be related to treatment by the drug). There was a tendency for the white cell count to fall to 4,000 per c.mm. during the initial weeks, with subsequent rise to former levels. No case of true leucopenia occurred. In one patient a slight iron-deficiency anaemia was noted; this responded well to ferrous sulphate.

Illustrative Case Histories

Case 1.—A debilitated woman aged 30 was suffering from progressive Parkinsonism which followed an attack of encephalitis lethargica at the age of 7. She was almost completely bedridden on account of rigidity of the limbs and trunk; the upper limbs were maintained in flexion, with the lower limbs partially extended. Hypersalivation and seborrhoea were excessive, and she was subject to frequent oculogyric and laryngeal crises; speech was infrequent and practically unintelligible. After receiving diparcol for a month, with little benefit, she developed pyrexia associated with respiratory symptoms and was taken off that drug, full doses of stramonium and hyoscine being substituted. Five days later she died suddenly. Necropsy revealed only bronchopneumonia, but it was noted that rigor mortis of the viscera had persisted longer than usual. According to Hall (1943), sudden unexpected death is not rare in young women with Parkinsonism. Perhaps the sudden withdrawal of the diparcol resulted in a paroxysmal autonomic crisis leading to fatal peripheral circulatory failure and bronchopneumonia. Similar crises have been reported by Ostow (1943) and Oller (1946).

Case 2.—A labourer aged 36 first developed oculogyric crises at the age of 29, after which the full Parkinsonian picture slowly became manifest. He was ambulant, but experienced particular restriction of fine movements, largely from rigidity. His general health was good. Following treatment with diparcol he obtained uniform benefit in almost all locomotor functions, gratefully attested by his relatives. During the administration of large doses he complained of occasional paraesthesiae and faintness. Only laziness prevented him from undertaking simple remunerative employment.

Case 3.—A retired lamp-lighter aged 64 had suffered from encephalitis lethargica in 1919 at the age of 35. Considerable disability of gait had been present for at least three years, together with gross tremor and rigidity of the limbs, which considerably restricted all motor activities. Rigidity of the trunk, which prevented his turning in bed at night, was a constant source of annoyance to him before receiving diparcol.

Fairly uniform amelioration of his rigidity brought much satisfaction, although tremor was not noticeably abated and an excess of mouth-dribbling demanded the addition of belladonna. This patient, whose general physical state was below normal, developed an anaemia which responded to iron. He complained also of transient blurring of vision while receiving diparcol.

Conclusions

Diparcol seems to offer some advantages over the tropane series of alkaloids (exemplified by stramonium) in the treatment of Parkinsonism of all grades.

It is advisable to start with small doses, and gradually to increase dosage up to a maximum of 1 g. daily until significant benefit is obtained. Withdrawal of the solanaceous drugs should be correspondingly slow; indeed, it is probably wise not to deprive patients of belladonna or stramonium completely.

It was found that treatment with two 0.25-g. tablets upon waking, followed by one tablet at noon and one at about 5 p.m., brought the greatest reduction of rigidity, there commonly being a spontaneous improvement (apart from treatment) in the evening.

Summary

The advantageous and untoward results of the drug diparcol in the treatment of eight cases of Parkinsonism are reported, and the use of the drug is discussed.

A method of recording and evaluating the results of treatment of patients with chronic disorders of locomotion is described.

I am happy to acknowledge my indebtedness to Drs. Snodgrass, Ostler, and Scott, under whose care the patients were treated, and to Dr. Mackay for permission to publish.

REFERENCES

- Bovet, D., Fournel, J., and Charpentier, P. (1947). *Thérapie*, 2, 115.
Carmichael, F. A., and Green, F. H. K. (1928). *Quart. J. Med.*, 22, 51.
Hall, Sir A. (1943). *Lancet*, 1, 193.
Neal, J. B., et al. (1942). *Encephalitis: A Clinical Study*. Lewis, London.
Oller, C. J. (1946). *Arch. Neurol. Psychiat.*, Chicago, 55, 388.
Ostow, M. (1943). *Ibid.*, 50, 342.
Sigwald, J., Durel, P., and Dumont, G. (1947). *Thérapie*, 2, 108.

SUCCESSFUL TREATMENT OF TYPHOID CARRIER WITH PENICILLIN AND SULPHAMERAZINE

BY

C. A. RUMBALL, M.R.C.P., D.P.M., D.T.M.&H.
K.H.P.

Group Captain, R.A.F.

AND

L. G. MOORE, M.B., B.Ch., B.A.O.

Squadron-Leader, R.A.F.

(From Princess Mary's R.A.F. Hospital, Halton, Bucks)

The problem of treating the chronic faecal carrier of typhoid fever has always been unsatisfactory. Infection of the gall-bladder (Boyd, 1944) is one of the most important features of the chronic carrier state. It forms the basis for advising cholecystectomy in an effort to eradicate bowel infection in chronic faecal carriers; but cholecystectomy is not uniformly successful for this purpose, and there are many who have submitted to the operation without deriving the anticipated benefit. It is clear that the gall-bladder is not the only focus in the alimentary tract where chronic infection can reside for many years.

The combination of sulphathiazole and penicillin was advocated by Bigger (1946), who noted, during *in vitro*

experiments, that a combination of 4 units of penicillin and 10 mg. of sulphathiazole per 100 ml. would sterilize broth containing 70,000 typhoid bacilli per ml., and that one unit of penicillin and 10 mg. of sulphathiazole would sterilize broth containing 7,000 typhoid bacilli per ml.

Based upon Bigger's observations, the combination of penicillin and sulphathiazole has been tried during the acute typhoid illness and upon the chronic carrier state. The result of therapy during the acute illness has been disappointing; some observers record no improvement, though McSweeney (1946) noted that the toxæmia appeared to be lessened and that there were no complications due to ulceration of the bowel.

The successful treatment of two chronic faecal typhoid carriers, one of whom had previously submitted to cholecystectomy without change in his carrier state, was reported by Comerford, Richmond, and Kay (1946), who subsequently had the opportunity of carrying out a necropsy (Comerford, Richmond, and Kay, 1947) upon one of these patients who died from an unconnected cause. No cultures of *Salmonella typhi* were obtained from gut, biliary tract, urinary tracts, spleen, or lungs.

Fry, Jones, Moore, Parker, and Thomson (1948) treated 17 faecal typhoid carriers with massive doses of penicillin and moderate doses of sulphathiazole. They reported apparent cure in only three cases.

We would like to record a case treated with two separate courses of penicillin and sulpha drug, in which failure attended the first course, when the blood level of sulpha drug was low, and success followed the second course, in which it was high: the total penicillin dosage was practically the same in each course. It seems possible that previous failures by one of us (C.A.R.) in similar cases may be explained by an inadequate blood concentration of sulpha drug.

Case Report

A corporal aged 24 contracted severe typhoid fever in Egypt in January, 1946. He developed a faecal carrier state, for which he was given full doses of sulphathiazole (the exact amount was not stated), but there was no change in his carrier state. He was released from the R.A.F. eight months later, and was notified to his M.O.H. as a faecal carrier. He rejoined the R.A.F. the following year without disclosing that he was a chronic carrier. He had remained well, and had put on 2 stone (12.7 kg.) in weight.

In November, 1947, when examined for fitness for service abroad, he volunteered the information that he was a chronic carrier. His stool culture yielded a profuse growth of *Salm. typhi*, and he was admitted to this hospital. He was physically fit. Blood sedimentation rate, 3 mm. in 1 hour (Westergren). Fourteen daily specimens of urine yielded no typhoid bacilli. *Salm. typhi* was isolated from his bile obtained by duodenal intubation, and from consecutive specimens of faeces. Agglutinations were negative with "O" suspensions of *Salm. typhi* and *Salm. paratyphi* A and B, but gave a 1 in 20 agglutination with a VI suspension of *Salm. typhi*.

The man was anxious to remain in the R.A.F., but considered that cholecystectomy was too high a price to pay. In view of the uncertainty of response in clearing up the carrier state by surgery his refusal seemed reasonable. It was decided to try the effect of combined sulphamezathine and penicillin. Stools were examined immediately before beginning therapy and a profuse growth of *Salm. typhi* was isolated.

He was given 500,000 units of penicillin intramuscularly at four-hourly intervals, and 2 g. of sulphamezathine orally for two doses, followed by 1 g. four-hourly to a total of 32 g. Blood levels of sulphamezathine were carried out to determine the minimum concentration, which was anticipated to occur six hours after an oral dose of the drug. This assay showed 1.5 mg. of free sulphamezathine and 1.8 mg. of total sulpha drug per 100 ml. of blood. On completion of treatment the stools yielded a profuse growth of *Salm. typhi*.

Failure was attributed to the low blood levels of sulphamerazine, and it was decided to repeat the course, using sulphamerazine in place of sulphamezathine, since it allowed higher blood concentrations to be reached without excessive dosage. For various non-medical reasons nearly two months elapsed before starting the second course on Feb. 2, 1948.

Sulphamerazine, 2 g., was given orally at eight-hourly intervals for two doses, and subsequently 1 g. eight-hourly for seven days, to a total of 25 g. Penicillin, 400,000 units intramuscularly, was given concurrently three-hourly night and day, to a total of 24,000,000 units for the same time.

Assay of the blood for penicillin, tested three hours after an injection, yielded a concentration of 3.2 units of penicillin per 100 ml. of blood.

Assay of the blood for sulphamerazine, tested at eight hours after an oral dose—i.e., just before the next dose—yielded a concentration of 12 mg. of total sulphamerazine and 7 mg. of free sulphamerazine. Stools were cultured daily for fourteen days after cessation of the course, and all were negative for *Salm. typhi*. Stool examinations were continued for the next nine months; three daily specimens were pooled and examined each week, making a total of 117 stools cultured.

All cultures were negative for *Salm. typhi*, and it seems probable that the patient has been freed from the carrier state, though he will remain under observation for a further three months to complete a year's observation. It is noteworthy that his agglutination titre against a VI suspension of *Salm. typhi* had fallen from 1 in 20 to nil.

Discussion

The largest series of faecal carriers submitted to the synergistic action of penicillin and sulphathiazole consists of 17 cases reported by Fry *et al.* (1948); of these only three remained negative for long periods—two were still negative at 36 weeks and one at 48 weeks. Eight of their failed cases received a course identical with that successfully employed by Comerford *et al.* (1946) upon two cases. Such evidence suggests that the result of treatment is capricious and unpredictable.

Success in a single case has no particular significance, and it is published only because it may draw attention to the value of estimating blood levels during treatment. It is difficult to avoid the conclusion that blood sulpha levels in excess of 10 mg. per 100 ml. may be necessary to obtain the synergistic effect of penicillin. It is possible that the same therapeutic doses may give different blood levels in different individuals, and what seems an adequate oral dose may not create an adequate blood concentration. Sulphamerazine has the merit of giving high blood levels with moderate oral doses, and it has a minimum of unpleasant side-effects.

It is suggested that in any future series of cases treated by combined penicillin and sulpha drug the blood levels should be estimated during treatment to note what relation exists between blood concentration and successful treatment.

We wish to thank Air Marshal P. C. Livingston, C.B., C.B.E., F.R.C.S., K.H.S., Director-General of Medical Services, Royal Air Force, for permission to publish this paper.

REFERENCES

- Bigger, J. W. (1946). *Lancet*, 1, 81.
 Boyd, W. (1944). *The Pathology of Internal Diseases*, 4th ed., p. 293. London, Kimpton.
 Comerford, C. H., Richmond, H., and Kay, W. W. (1946). *Lancet*, 2, 343.
 — (1947). *Ibid.*, 2, 808.
 Fry, R. M., Jones, R. E., Moore, B., Parker, M. T., and Thomson, S. (1948). *British Medical Journal*, 2, 295.
 McSweeney, C. J. (1946). *Lancet*, 2, 114.

"MYANESIN" IN THE TREATMENT OF TETANUS

BY

M. H. ARMSTRONG DAVISON, M.D., D.A.

A. B. WARD, M.B., B.S.

AND

E. A. PASK, M.A., M.D., D.A.

(From the Department of Anaesthesia, Royal Victoria Infirmary, Newcastle-upon-Tyne)

The use of myanesin in tetanus was reported by Belfrag (1947) in two cases. Two further cases are described below, and these may be of interest in that they throw some light on the production of haemoglobinuria, a complication which has been reported in about twenty cases after myanesin.

Pugh and Enderby (1947) observed three cases of haemoglobinuria. The first urine passed after injection was discoloured, but no haemoglobinuria was found after two days. A death from renal anoxia after use of myanesin was reported by Hewer and Woolmer (1947), but it was pointed out by Mallinson (1948) that there were reasons for considering that myanesin was not the cause of death. A number of other cases have been described, but all were symptomless and cleared up spontaneously.

Hunter and Waterfall (1948) found myanesin useful in the control of epileptiform fits, a finding which is slightly at variance with those of Berger and Bradley (1946) that myanesin in non-paralysing doses had a powerful effect on strychnine-poisoning by depressing the reflex excitability of the spinal cord, but that the relative lack of antagonism to leptazol showed the midbrain to be influenced only when large doses were given. They thought that as myanesin does not affect consciousness or cause prenarcoctic excitement it had no action on the cerebral cortex.

Davison (1948) suggested that the action was on the internuncial neurones in the spinal cord, because of the production of relaxation, apparently by reduction in muscle tone, without marked interference with respiration or voluntary movements. Berger and Bradley (1946) found that paralysis in animals was of longer duration in the hind half than in the anterior portion.

Case 1

A farm labourer aged 40 suffering from tetanus was admitted to the Royal Victoria Infirmary on June 8, 1948. He had received a small splinter wound on the palm of the hand nine days before symptoms developed. A curious but probably entirely irrelevant fact was that he stated that his brother had died in childhood of "lockjaw." There was severe generalized muscular hypertonia, affecting particularly the gluteal muscles, abdominal muscles, and the muscles of respiration and there was also very marked neck rigidity. The characteristic tetanic spasms occurred only half a dozen times. He was treated with sedatives, mainly intramuscular paraldehyde but after about a fortnight his tolerance to these drugs had increased so much that they were practically valueless. Soon after admission, when the muscle tonus was very pronounced and was interfering greatly with respiration, he was given *d*-tubocurarine chloride ("tubarine") 7½ mg. intravenously and an equal dose intramuscularly. This abolished his muscle tonus but also paralysed all muscles of respiration. Artificial respiration was carried out with the Oxford insufflator for more than an hour. When subsequently he developed spasms these were treated with *d*-tubocurarine chloride, and artificial respiration was always necessary if sufficient was given to control the muscular movements. This was difficult, because the patient was edentulous and it was hard to secure effective inflation. On the fifth day after admission he developed a

Executive councils are included among the bodies on whom no development charge under the provisions of the Town and Country Planning Act, 1947, will be levied. They will make no claim against the £300,000,000 provided as compensation for loss of development rights in Part VI of that Act. Any claim which has already been submitted to the Central Land Board should be withdrawn.

cough, and two days later he had signs of patchy consolidation at both lung bases. These persisted for nine days. At a subsequent date myanesin in doses of 5 to 10 ml. was administered intravenously, with beneficial results. The abdominal and intercostal muscular rigidity disappeared for periods up to an hour after each injection, and respiration became much easier, but at no time did myanesin relax the rigidity of the posterior neck muscles or have much action upon the glutei. A total of 58 ml. of myanesin was given in 60 hours; haemoglobinuria was not seen.

In addition to the above treatment the patient was fed through a Ryle's tube, received penicillin to minimize the danger of respiratory infection, and was given massive doses of A.T.S. He recovered.

Case 2

A more serious case was admitted to the Royal Victoria Infirmary on June 18, 1948. The beneficial results obtained with myanesin in the previous case seemed to warrant its use, and in addition it was hoped to avert pulmonary complications by avoiding marked respiratory depression.

The patient, a man aged 58, had had an arthrodesis of the left knee performed four weeks previously, and was admitted about twenty-four hours after symptoms of tetanus made their appearance, the first being inability to insert his false teeth. An attempt to pass a nasal catheter failed on account of spasm of the pharyngeal muscles. He was given 200,000 units of A.T.S. Eight hours after admission the muscle spasms were recurring every two or three minutes; myanesin, 10 ml. intravenously, was given with considerable benefit, but a further 5 ml. became necessary thirty-five minutes later. A Ryle's tube was now passed with ease and glucose was given through it at hourly intervals. Penicillin was also given intramuscularly. An intravenous drip was set up containing 5% glucose in N/5 saline, to which myanesin was added in varying amounts as seemed to be dictated by the condition. It was found that the addition of more than 70 ml. of myanesin in 540 ml. of glucose-saline produced a white flocculent precipitate.

During 26½ hours the patient received 265 ml. of myanesin. The muscle spasms were completely controlled for considerable periods and the patient slept. At other times spasms occurred, but their severity was reduced. The continuation of these spasms in spite of the continuous intravenous myanesin drip necessitated the introduction of myanesin in quantities of 5-10 ml. from time to time; no sedatives were required. After 26½ hours haemoglobinuria occurred, the urine being deep red in colour. The intravenous drip was changed to glucose-saline without myanesin, and within a few minutes the muscle spasms became more frequent and more severe. Paraldehyde was administered intramuscularly, but failed to control the spasms, which increased in severity during the next two hours and terminated fatally.

The final spasm was extremely severe and caused marked cyanosis; *d*-tubocurarine chloride was given and artificial respiration undertaken with the Oxford insufflator, but without effect. At necropsy the naked-eye findings included the following:

1. The bladder contained about a quarter-pint (140 ml.) of urine, which was only slightly smoky in appearance; the colouring matter had decreased considerably in the two hours before death.
2. The kidneys were normal in appearance, colour, and consistency, and showed no abnormality on section. This is surprising in view of the softening which is likely to occur in the kidneys of patients dying from tetanus.
3. In spite of the haemolysing action of tetanus toxin and of post-mortem changes, little or no haemoglobin could be detected by the naked eye in serum removed at necropsy.
4. There were many severe haemorrhages into muscle, including particularly the left quadriceps femoris and the two psoas muscles.
5. The surgical wound in the left knee appeared healthy, but on bacteriological examination a growth of tetanus bacilli was obtained.

Discussion

The first case apparently had an incubation period of nine days, but there is some doubt about this because the site of infection was not definitely proved. It is very

probable that the infection occurred through the splinter wound of the hand, but it was noticeable that no local symptoms of tetanus were associated with it.

In the second case these local signs were fairly marked, spasms of the left leg being severe enough to produce considerable muscular haemorrhages.

It is a generally accepted statement in the textbooks that the toxin of tetanus acts upon the ventral horn cells of the spinal cord. If this be true, the efficacy of myanesin suggests here that its main action is upon the spinal cord, since there is reason to believe that in normal doses it does not act peripherally. Certainly, in the second case, to which such a large dose of myanesin was administered, there was no dulling of consciousness, although sleep did occur from fatigue.

The four-weeks incubation period in the second case was surprising in view of the severity of the illness. It is possible that the million units of penicillin which he had received after operation may have lengthened the incubation period without comparable mitigation of the attack. It may be remarked that, although penicillin destroys the bacillus of tetanus *in vitro*, it is unlikely to do so *in vivo*, because, the bacillus being anaerobic, it flourishes in areas cut off from blood supply and consequently inaccessible to penicillin. Various sources of infection have been considered: the grey wool with which the limb was packed before being put into plaster was "stoved" before use and was separated from the wound by complete sterile dressings and bandages; the sulphanilamide powder which was introduced into the wound was alleged to be sterile; and no other cases have occurred, which suggests that the catgut was not at fault. There remains the possibility that infection had occurred during a previous injury to the knee, of which many were sustained at football, and had lain dormant until activated by the interference with the blood supply which may have occurred following operation.

These cases, although one of them unfortunately ended fatally, indicate not only that myanesin acts efficiently in controlling the spasms of tetanus but also that its use in massive doses will bear further investigation. Tolerance did not develop, which was in marked contrast to the reaction of the first case to sedative drugs.

Haemoglobinuria occurred in the second case, but in the short space of two hours which the patient lived after the myanesin was discontinued the urine had become almost free from haemoglobin. This supports the view that the haemoglobinuria may be temporary and might perhaps be disregarded. The most important practical attribute of myanesin was its ability to control muscle spasms and to relax hypertonus without paralysing the muscles of respiration, so that artificial respiration was unnecessary.

Summary

The reported cases of haemoglobinuria after myanesin are mentioned. Death has probably never resulted from this complication.

The evidence concerning the site of action of myanesin is recapitulated, and its value in tetanus supports the belief that it acts on the spinal cord.

Two cases of tetanus are reported. The first patient was treated mainly by sedatives and *d*-tubocurarine chloride ("tubarine") and received 58 ml. of myanesin. He recovered and had no haemoglobinuria. He did, however, have signs of pulmonary consolidation. The second, a much more severe case, was treated solely with myanesin, which efficiently controlled the spasms until haemoglobinuria developed, after 265 ml. had been given in 26½ hours. The myanesin was then discontinued; sedatives were ineffective, and he died two hours later. During these two hours haemo-

globinuria almost disappeared, and the kidneys were normal to the naked eye and on section.

The entry point of the infection is discussed.

Further investigation of myanesin in the treatment of tetanus seems to be warranted.

We wish to acknowledge the courtesy and promptitude with which a large consignment of myanesin was dispatched to us by British Drug Houses, Ltd., in response to the urgent action of Mr. Foggan, the chief pharmacist.

BIBLIOGRAPHY

- Belfrage, D. H. (1947). *Lancet*, 2, 889.
 Berger, F. M., and Bradley, W. (1946). *Brit. J. Pharmacol.*, 1, 4; 265.
 Cowen, J. (1948). *Lancet*, 1, 965.
 Davison, M. H. A. (1948). *British Medical Journal*, 1, 544.
 Hcwer, T. F., and Woolmer, R. F. (1947). *Lancet*, 2, 909.
 Hunter, A. R., and Waterfall, J. M. (1948). *Ibid.*, 1, 366.
 Mallinson, F. B. (1948). *Ibid.*, 1, 41.
 Ogilvie, T. A., et al. (1948). *Ibid.*, 1, 947.
 Pugh, J. I., and Enderby, G. E. H. (1947). *Ibid.*, 2, 387.

A "MINOR" INJURY OF THE TERMINAL PHALANX

BY

F. I. POWELL, B.Sc., M.B., B.Ch.

Late House-surgeon, Fracture and Orthopaedic Department,
Royal Infirmary, Cardiff

Terminal phalangeal injuries are often regarded with a great deal of indifference and, indeed, sometimes scorn. They are the Cinderella of hand injuries, and yet these injuries are amongst the commonest in casualty departments, causing as they do a varying amount of pain, discomfort, and unemployment to the patients.

The particular injury under review here is a common one, a crush injury to the terminal phalangeal area, usually caused by a heavy weight—e.g., an oxygen cylinder or metal bar falling on to the finger. The finger is caught by the object and crushed against the floor or a wall, the lesion produced being somewhat characteristic. There is always a degree of "dislocation" of the nail; the proximal end may be dislocated wholly or partially from the nail-bed, the cuticle usually being damaged with this uplift as well. The soft tissue is split, the amount of laceration varying a great deal; there is some oozing of blood; and the radiograph may show a fissure or an appreciable fracture of the terminal phalanx.

I would like to advocate here a procedure that has yielded good results even with the most badly crushed fingers, the essential feature being the removal and replacement of the nail.

Method

The hand is cleansed of any grit and oily material by a good soak and "scrub" in C.T.A.B. Procaine 2% is then injected by a fine needle lengthwise along the margins of the nail (Fig. 1). When the finger is anaesthetized the nail is lifted or cut clean off and placed in C.T.A.B. and then manicured and trimmed with scissors.

On examination of the nail-bed area the amount of laceration and dirt is often surprising. There is always free oozing of blood, and a fracture of the terminal phalanx may be clearly visible. If bleeding is severe the usual attempts to stop it—haemostats or topical thrombin—are made. After cleaning the area with C.T.A.B., suturing of soft tissue is carried out and the nail-bed is sprinkled with sulphanilamide or penicillin powder. The clean nail is then placed in its correct anatomical position and sutures of either horse-hair or silkworm-gut are passed through the

nail at about four points to anchor it to the finger (Fig. 2). The whole is then covered in "tulle gras," a firm dressing is put on, and a plaster shell is finally applied.

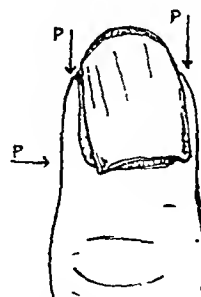


FIG. 1.—A schematic drawing of an injured phalanx. Sites of procaine injection (P). The nail is avulsed proximally, showing the nail-bed.

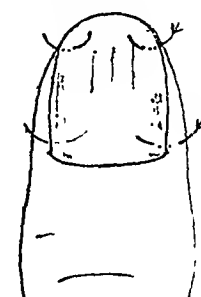


FIG. 2.—Nail replaced in correct position by four sutures.

An injection of A.T.S., A.G.G.S., and 250,000 units of penicillin is given. The dressing is removed a week later, when it will be found that the sutures can be removed without difficulty: the nail does not drop off, as might be expected, but stays on for a variable but appreciable time. There is usually a small haematoma under the nail, but the whole finger is pleasingly free from pain and infection. A powder dressing, with or without another plaster shell is applied for another week. At the end of about three weeks the patient's finger is quite satisfactory and the cosmetic result good. A new nail will eventually form.

On the other hand, in cases in which the nail has been left dislocated proximally excessive granulation tissue constitutes a troublesome complication at the break, and often pus forms under the nail. Where the nail is avulsed and not replaced there is often oozing of blood for a few days, for which repeated dressings of the area may be necessary, and even after two weeks the finger may be very tender.

Recently a man received this type of injury when working in a dockyard. The finger had not been cleaned, but was placed straightway in a plaster cap with just a gauze dressing. When we saw him a month later, he having moved from the town where he sustained the injury, his finger was still in plaster, and on its removal the terminal phalanx was one mass of foul-smelling slough. It took many weeks to get anything like a satisfactory result for him. The method outlined in detail for these injuries is a satisfactory one; it is simple to perform and can be carried out with a slight amount of material. It is well within the range of minor surgery work of general practice, and it can be performed with complete confidence on the practitioner's part.

A memorandum issued by the Department of Health for Scotland states that under the National Health Service hospital almoner should be released as far as possible from office duties and allowed to concentrate fully on the medical social work for which they have been specially trained. The duties of the almoner should properly include investigation and interviews to provide understanding of the social and personal background of the patient, and in particular to give the doctor information of this kind which is relevant to diagnosis and treatment; social action to minimize personal anxieties; helping the patient in his adjustment to home life, to resume employment, or to a continuing disability; and advising on the planning of facilities for patients. At present the supply of trained almoners is well below demand, and it is therefore particularly important that their services should be confined to these tasks for which they have special qualifications. The salary of an almoner holding the certificate of the Institute of Almoners is on a scale of £340—£390 per annum. Head almoners earn up to a maximum of £660.

Medical Memoranda

Dangerous Symptoms after Injections of Heroin (Diamorphine)

It is thought that two recent experiences of the dangers of heroin should be added to the available information.

CASE 1

A woman aged 40 spent a fatiguing day in town with her daughter. She travelled 230 miles by rail, dined on the train, did not fancy the meal, and reached home very tired. Next day she vomited repeatedly, diarrhoea developed, and by evening she appeared to be seriously ill. She sent for X.Y.Z., who had known her well for twenty-five years. He found her pale and rather limp. Her pulse was rapid, the systolic pressure 115 mm. Hg, and the breathing shallow and rapid. She stated repeatedly that she felt very ill. There was no rise of temperature nor any signs in abdomen or chest. He decided to give a morphine sedative to check the vomiting and diarrhoea, and chose heroin, as it is said to be less liable than morphine to cause nausea. In three or four previous cases he had injected 1/6 gr. (11 mg.) of heroin with little apparent effect. He therefore took two tablets of this dose, specially prepared for injection, dissolved them in water, and injected them subcutaneously.

He waited (fortunately) to see the patient comfortable, and was at first gratified to note that her distress diminished; she was soothed and felt sleepy; she remarked drowsily, "It's coming over me." Then, 10 to 15 minutes after the injection, almost suddenly, she became deeply unconscious and unrousable. Inspirations became rapidly shallower, with longer and longer intervals; there was deep cyanosis, with complete muscular relaxation and an imperceptible pulse. The pupils were very small—not quite pin-point. X.Y.Z. reversed his therapeutics. He injected nikethamide 0.5 g., removed the pillows, raised the foot of the bed, sent a very urgent message for another doctor, and began artificial respiration. I arrived in ten minutes. By then respiration had entirely ceased, there were no reflexes, and the extremities were cooling. The only hopeful sign was that the heart sounds were faintly audible and the pulse was occasionally perceptible. A catheter specimen of urine was free from albumin, sugar, and ketones. Lobeline 0.003 g. was injected. Artificial respiration was continued and rhythmic traction was applied to the tongue. Oxygen and carbon dioxide were sent for. The former arrived in fifteen minutes, and its administration quickly lightened the cyanosis and seemed to produce some general improvement. After about twenty minutes the patient began to make very feeble respiratory gasps at long intervals. The intervals gradually diminished and the respirations deepened, so that after another twenty minutes artificial respiration could be stopped, though the oxygen was continued a little longer. By the time the carbon dioxide arrived its use was thought unnecessary.

About four hours after the injection of heroin the patient could be roused sufficiently to recognize her husband and to be spoon-fed with strong coffee. The pupils were still minute, and she continued to be extremely drowsy. Three hours later the respirations again became alarmingly shallow and infrequent and there was cyanosis, but recovery took place without major measures.

Next day the patient was drowsy, weak and feeble, and had contracted pupils. There was much nausea, with some vomiting. Coffee and glucose were given per rectum. Recovery proceeded evenly for five days; then there was some return of nausea, vomiting, weakness, and a feeling of respiratory oppression. In another five days recovery was practically complete.

No further light was obtained on the original illness. No more signs developed; the temperature was never raised; and no albumin, casts, inflammatory cells, or blood corpuscles were found in the urine. Agglutination tests were completely negative for *Salmonella paratyphi* A and B, *Bact. sonnei*, *S. typhi murium*, Gaertner's bacillus, and *Br. abortus*. No non-lactosing-fermenting bacilli were obtained in cultures of the faeces. The daughtier was unaffected.

CASE 2

This patient, a woman aged 65, had arteriosclerosis, a systolic blood pressure of 230 mm. Hg, and was liable to attacks of severe epistaxis. X.Y.Z. was summoned at 2 a.m., with a report of very severe vomiting for an hour, the face being drawn to one side, and numbness of the right hand. On arrival he found no anaesthesia or paresis, and could not ascertain to which side the face was thought to have been drawn. The patient and her relatives were very restless, anxious, and alarmed. X.Y.Z. injected 1/6 gr. of heroin subcutaneously, taking a tablet from a fresh tube. The patient seemed inclined to settle.

He returned in half an hour and found the patient unconscious, pale, and pulseless. Her jaw was dropped, her features relaxed, her

eyes half open, and the pupils very small. She was breathing only by spasmodic stertorous inspiration at long intervals. Artificial respiration was started, and this, with various vigorous sensory stimuli, roused the patient sufficiently to ensure automatic breathing. She remained very drowsy till next morning, but no more alarming symptoms developed.

These two cases do not form an extensive series, but further experience is not being invited. I have to thank X.Y.Z. for collaboration in this note.

CRANSTON WALKER, M.D.

Skull Closure by Acrylic Plates

This note describes two cases of large frontal skull defects treated in India by means of acrylic plates. The method of Small and Graham (1945) was adopted with minor simplifications. The impression material used was dental wax, sterilized by heating to smoking temperature then autoclaving. A rim of lead was used to hold the wax, and allowed of firm pressure. No undercutters were reproduced—an advantage in this particular work. The plate was of skull thickness, perforated, and curved by eye to fit a model of the skull.

At the first operation the skull defect was step-cut by a cylindrical dental burr and a chisel, and a key was introduced at two points. At the second operation, performed a month later, the completed plate was wired in with stainless steel. The plates were sterilized by scrubbing with soap and water, followed by immersion in 1% mercuric chloride in water for three days. This method produced no warping or softening of the acrylic substance and no deposition of heavy metal on the plate. These Indian patients were transfused with whole blood at the first operation to keep up a satisfactory level of haemoglobin, and chemotherapy and aspiration of fluid were employed on the first, third, and fifth days.

CASE HISTORIES

Case 1.—This patient, a Gurkha, had lost about two-thirds of his left supraorbital margin, the anterior portion of the orbital roof, and a large area of frontal bone. Following the wounding he had had a fungus cerebri for about six months. At the first operation a rotation flap was used to cover the defect with sound scalp. The result remained satisfactory when he was last seen three months after the second operation.

Case 2.—This was a Sikh who had lost a large portion of the fronto-temporal region. Debridement by Major G. M. Lunn, R.A.M.C., 72 hours after the wounding, secured first-intention healing. The plate was inserted three months later, and continued to be satisfactory during two months' observation.

Acrylic resin, of all inert materials, has a strong claim for suitability in frontal defects, where by its use admirable cosmetic results can be achieved by the exercise of ordinary operative skill. The limiting factor in regard to size is the tension of the overlying scalp, not the durability of the plate. Granulation tissue grows through perforations in the plate and improves blood supply to the scalp, but ties it down and reduces its mobility.

Thanks are due to Sergeant Dewar, A.D. Corps, for preparing the trays and plates, and to Major N. Reichman, R.A.M.C., for his aid with the anaesthetics and the drilling operations.

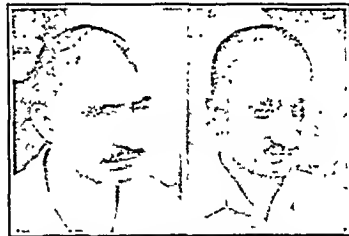
E. A. TURNER,
Major, R.A.M.C.

G. FOSTER,
Major, A.D. Corps.

REFERENCE

Small, J. M., and Graham, M. P. (1945). *Brit. J. Surg.*, 33, 106.

Dr. Barnardo's Homes state that they admitted 1,108 boys and girls in 1948.



Case 2.—Before and after operation

Reviews

THE ANNUAL MEETING, 1948

Proceedings of the Annual Meeting, 1948. British Medical Association. (Pp. 415. £1 15s., postage 1s. 3d. extra.) London: Butterworth and Co. 1949.

The B.M.A. is to be congratulated on following a precedent, set at the Cambridge meeting in 1919, of publishing in one volume the papers given at the Association's meeting last summer. Between Sir Lionel Whitby's presidential address on "The Changing Face of Medicine" and Sir Henry Dale's popular lecture, "Accident and Opportunism in Medical Research," are sandwiched the proceedings of the nineteen scientific sections. To read the titles of the papers reveals the breadth of the discussions and the comprehensive manner in which all the growing points of medical science were reviewed.

From such a wealth of material it is difficult to choose communications for special comment. In the combined meeting of the Sections of Medicine and Surgery, Dr. R. H. Smithwick's review of his results from the surgical treatment of hypertension will be read with interest. Mr. W. L. Harnett's statistical survey of the results of treatment in carcinoma of the breast is an actuarial *tour de force* of outstanding importance, and will provide a yardstick for assessing the value of treatment for years to come. Additional random selections, such as the discussions on neonatal mortality and morbidity, on the radiological changes in the small intestine in nutritional disorders, and on the antihistamine substances, show the wide scope and the topical character of the Sections' deliberations. All who attended the Association's first annual meeting since 1939 will be anxious to possess this book, both for the scientific value of the communications it contains and as a reminder of the peaceful charm and gracious hospitality of Cambridge.

R. BODLEY SCOTT.

B.C.G. VACCINATION

Vaccination par le B.C.G. par Scarifications Cutanées. By L. Nègre and J. Bretey. Preface by Professor A. B. Marfan. Second edition, revised and enlarged. (Pp. 116; 10 figures. 180 francs.) Paris: Masson et Cie. 1947.

Most of the early work on vaccinating human beings with B.C.G. was done by the oral route. The disadvantage of this method was that only about one-third of the vaccinated subjects became sensitive to tuberculin after it. The introduction of the intradermal method, now so widely used in Scandinavia, remedied this defect but brought with it disadvantages such as local ulceration and occasional glandular enlargement. Rosenthal, in Chicago, experimented with multiple-puncture and reported very favourable results with it, obtaining early development of tuberculin sensitivity and absence of any unpleasant local reaction. Dr. Nègre and Dr. Bretey, in Paris, modified this method, replacing skin puncture by scarification. This monograph records their findings.

The method is simple and resembles that used with smallpox vaccine lymph. The skin is cleaned, a few drops of a fresh suspension of B.C.G. containing 75 mg. of organisms per ml. are placed on it, and a suitable number of scarifications are made through the drops with a sharp needle. The number and length of the scarifications vary from four scratches each 0.5 cm. long in the newborn infant to ten scratches each 1.5-2.0 cm. long in the adult. A simple compress soaked in the remains of the B.C.G. in the phial is applied to the site of inoculation and removed 24 hours later. The small scabs become detached in four or five days. After three to four weeks the scratches become red and swollen, looking rather like a keloid. This inflammatory reaction gradually disappears, and in two to five months a barely perceptible linear scar remains. A focal glandular reaction is rare; it has been reported 30 times in 70,000 vaccinations.

Tuberculin sensitivity develops three to four weeks after vaccination. The figures provided are incomplete, but they suggest that about 90% of vaccinated persons react to 0.1 ml. of 1/100 tuberculin in one to three months. Revaccination is

recommended if Mantoux-conversion does not occur. Infants born into tuberculous families should be segregated, tested with tuberculin twice at two months' interval, and not vaccinated unless both tests are negative. They should not be returned to their families until they have become tuberculin-sensitive. Every six to twelve months they should be retested, and vaccinated again if they become negative. The scarification method has the double advantage of simplicity and innocuity; provided experience shows it to confer as high a degree of allergy as that following intracutaneous inoculation or multiple puncture, it may well be adopted as the method of choice.

G. S. WILSON.

HOMOSEXUAL BEHAVIOUR

Sex Variants. A Study of Homosexual Patterns. By George W. Henry, M.D. With sections contributed by specialists in particular fields. Sponsored by Committee for the Study of Sex Variants, Inc. (Pp. 1,128; illustrated. £2.) New York: Paul B. Hoeber, Inc. London: Hamish Hamilton. 1948.

This ponderous volume adds one more to the numerous and interesting American studies on variations in sex life. The subject is not perhaps quite so important to warrant such an enormous expense of labour. Such studies as have been made of marriage, for instance, have shown that deviations less extreme than homosexuality from the average pattern of sexual behaviour are of less consequence for success or failure than are the temperaments of the partners. The medical significance of sex deviations is even less than their social importance; it has yet to be shown that homosexuals are more liable to psychiatric illness than are normal people. American psychologists and psychiatrists seem to be constantly holding up their hands in wonder at the great range and variety of human sexual behaviour, and to have a tireless delight in cataloguing its details. Once the point is taken—and it was made many years ago by Havelock Ellis—that so-called perversions of all kinds are shown to a minor degree by a considerable proportion of healthy and socially valuable members of the public, there seems little possibility of further advance along the line of mere description.

Dr. Henry's book is almost purely descriptive. By far its greater part is taken up by long, intimate, and detailed histories of forty homosexual men and forty homosexual women. This is a great improvement on the usual convention of obtaining data by questionnaire, on whose reliability little confidence can be placed. He gives the family histories *in extenso*, with fairly vivid sketches of the personalities of the nearer relatives and of early emotional life. The life history of the subject, not only its sexual aspects, is fully described, and there are anthropometric records of skeletal measurements and secondary sex characters. The last are the only findings dealt with statistically; and it is disappointing, if not unexpected, that so little emerges.

Dr. Henry provides no discussion and no conclusions, but he has six pages of "Impressions." He believes that the homosexual is in part a by-product of civilization, and is so because of his inability to maintain a home and rear children. The deviation from normality is due to constitutional deficiencies, to the influence of family patterns of sex adjustment, to lack of opportunity of normal development. Tendencies to femininity in the males and to masculinity in the females of a family are likely to result in the appearance of homosexuals in the next generation. People are more and less of one and the other sex, and not scientifically classifiable as fully male or female. The male is more vulnerable than the female to distortions of psychosexual development. This is practically all that is said on the subject of aetiology.

The main role in both causation and prophylaxis is assigned to sex education. He makes some sensible if unoriginal remarks on social aspects. He condemns present legal defences; society should classify homosexuals into those who are and those who are not apt to offend, and have different methods for dealing with either. Finally, in his comment that males should be encouraged in tendencies to masculine aggression, females in the converse attitude, Dr. Henry makes an interesting reflection on American society. Gorer has discussed the American system of educating boys almost exclusively by school-mistresses, and puts down to it male lack of dominance

and homosexual tendencies which need constant defence; and according to the Kinsey Report 37% of American males have some homosexual experience. So it may be there is force in Dr Henry's recommendation.

ELIOT SLÄTER.

PHYSIOLOGY FOR STUDENTS

Human Physiology. By F. R. Winton, M.D., D.Sc., and L. E. Bayliss, Ph.D. Third edition. (Pp 592; 248 illustrations 25s) London: J. and A. Churchill. 1948

This work was deservedly popular with medical students in its earlier editions, but the last one has been out of print for some time, and the appearance of the new edition has been hopefully awaited by students and teachers because there is a lack of small textbooks of physiology that can help the student by presenting the subject simply and in good perspective so that it can be seen as a whole. Teachers in general are fully aware of the recommendations, so often made, to review their courses often and to prune them of unnecessary detail and of material irrelevant to the medical student. A similar duty is laid upon the authors of textbooks.

"Winton and Bayliss" is a work with a point of view. According to the preface the book is intended to present a "coherent picture of the whole subject" to the medical student, in whom the "attitude of an alert explorer" is to be encouraged, and on this claim it must be judged. It seems to be less successful in its aim than the previous editions were. The book is longer, although there are fewer pages because of resetting and the use of smaller types, it is well up to date. Many of the diagrams have been redrawn and new ones added, and yet one has some uneasiness about its worth as a whole to the medical student. There is much factual information; indeed, in some chapters, particularly in those on the nervous system and renal function, a conflict between the necessity of including facts and a desire for brevity may have made understanding difficult for the average student. The authors discuss the various systems in fairly conventional fashion, but there seems to be a lack of balance between different chapters in the treatment and in the amount of material included. This is probably because, besides the two named authors, there are thirteen other contributors who have written one or more chapters on the subjects in which they are specialists. This is a trend which has appeared already in the compilation of larger textbooks, and it is noteworthy that two standard American works have now become collections of monographs. The reason given, of course, is that it is impossible for any one individual to keep in touch with the advance of knowledge on all fronts. Nevertheless, if a book is to be written by a committee it seems desirable that it should come from one laboratory and have a common viewpoint, or alternatively that editors should overwrite contributions quite ruthlessly. As it is, the chapters in this book seem to lack a freshness and individuality that might have been expected—only one or two of them are likely to inspire the student—and the authors have not supplied the thread to bind them into a whole.

The book will be popular because of its moderate size and its former reputation, but opportunities have been missed of introducing students to physiological thought and outlook by relying too much on experts and diversity of interests.

A HEMINGWAY.

It is somewhat paradoxical that the authors of *Milk Products* (Dr Wm Clunie Harvey and Mr. Harry Hill, F.R.San.I., second edition: H. K. Lewis: 30s.) should have chosen to re-edit their book on milk products at a time when so many of the articles they discuss are unobtainable in this country. Ice-cream is but a caricature of its real self, cream is unobtainable, and the processed milks are in short supply. And what the effect on cheese-lovers will be of reading about the mode of manufacture of Lancashire, Wensleydale, Stilton, or Blue Vinney among the English cheeses, or of Prie, Limburger, or Pont l'Évêque among the foreign, is difficult to conjecture. However, the book is primarily intended not for lovers of good food or for the nutritional expert but for public-health workers who are responsible for controlling the hygienic quality of the finished product. For their need it caters well. The new edition, which has been brought fairly well up to date, contains 80 illustrations of manufacturing plant, and should be particularly useful to sanitary inspectors.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Collected Papers of the Mayo Clinic and the Mayo Foundation Edited by R. M. Hewitt, B.A., M.A., M.D., and others Vol. 39 (Pp 871. 63s) London: W. B. Saunders 1948

Papers presented during 1947

Racial Variations in Immunity to Syphilis By C. N. Frazier, M.D., and Li Hung-Chiung, M.D. (Pp 122. 14s) London: Cambridge University Press 1949

A study of the different responses to syphilitic infection in Chinese, Europeans, and Americans

Studies of Chronic Pylonephritis. By F. Raaschou (Pp. 269 Kr. 20.) Copenhagen: Ejnar Munksgaard 1948

A translation of the original Danish monograph

The Achievements of BCG Vaccination. By G. Hertzberg (Pp. 224 No price) Oslo: Johan Grundt Tanum 1948

A study based on the work of the Tuberculosis Department of the Oslo Public Health Service

Physics and the Surgeon. By H. S. Souttar, D.M., M.Ch., F.R.C.S. (Pp 60 7s 6d) Oxford: Blackwell Scientific Publications 1948

Physics applicable to surgery

Les Fondements de la Géographie Humaine. By Max Sorre Vol. 2 (Pp. 608. 1,100 francs) Paris: Armand Colin 1948

A treatise on the adaptation of man to his environment

Exposés Annuels de Biochimie Médicale Edited by M. Polonovski. 9th series (Pp 318. 1,000 francs) Paris: Masson et Cie. 1948.

A collection of twelve lectures in biochemistry from the Faculty of Medicine of Paris

Twenty-third Meeting of the Northern Surgical Association. Official Transactions Edited by E. Dahl-Iversen, M.D. (Pp 502 Kr. 24) Copenhagen: Ejnar Munksgaard 1948.

Collected papers

La Physiologie Post-Traumatique de l'Articulation By J. Marié (Pp 77 5 Swiss francs) Basle: Benno Schwabe and Co 1948

A monograph on arthritis

Science News. No 10 Edited by J. L. Crammer (Pp 160. 1s 6d) London: Penguin Books 1949

Popular science

Max Neuburger. By E. Berghoff. Vol 3 (Pp 144 Sch 40) Vienna: Wilhelm Maudrich 1948

A biography.

Das Weltbild der Medizin von Heute. By H. Glaser (Pp 140 Sch. 28) Vienna: Wilhelm Maudrich 1949

An account of some recent advances

Mononucleosis Infectiosa. By J. J. P. Maca and P. V. Marce (Pp. 444. No price) Barcelona: Ediciones Byp 1948

A short Spanish monograph

Penicillin in der Inneren Medizin. By K. Scheidler (Pp 64 M 3 30.) Berlin: Berliner Medizinische 1948

A short description of penicillin treatment

Das Panaritium. By W. Pohl. (Pp 192 S5) Vienna: Wilhelm Maudrich. 1948.

An illustrated description of the treatment of hand infections

Die Lungentuberkulose. By W. Roloff. (Pp 138 M 9 60) Berlin: Springer. 1948

An introduction to the study of tuberculosis

Ear, Nose and Throat Nursing. By J. H. Neil, C.B.E., D.S.O., F.R.A.C.S., F.A.C.S., and T. H. Neil, D.L.O., F.R.A.C.S. 4th ed. (Pp 157. 9s) London: H. K. Lewis 1948.

Notes for sisters and housemen

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY APRIL 9 1949

SICKNESS IN ENGLAND AND WALES

When the second World Health Assembly meets in Rome on June 13 this year a comprehensive programme and budget for 1950 will be submitted to it by the WHO Executive Board. The main attack is on communicable diseases in under-developed areas of war-devastated countries, and other proposals are concerned with the promotion of maternal and child health and mental health, the prevention and treatment of tuberculosis and of venereal diseases, health education and nutrition, sanitation, and occupational hygiene. Among the subsidiary projects is an extension of WHO's work in health statistics. Perhaps this is rightly classed as subsidiary, and certainly many persons would regard it as prosaic and dull, yet much of the fundamental work listed above must inevitably be based upon sound vital statistics. Without them the selection of the most urgent problems to attack is seriously handicapped, and the measure of the effects of that attack is almost impossible. This, indeed, was clearly recognized by the first Assembly in its adoption of the Sixth Revision of the International List of Causes of Death, now greatly expanded to cover causes of sickness as well.

It is in this latter field—the frequency and nature of illness—that an extension of work in health statistics is to be most desired, and such a development is in fact being given much attention in many countries. "The health of the nation was never better" is, perhaps, true, but it would be more convincing if we knew how often it was ill as well as the rate at which it died. To collect comprehensive statistics of sickness is not, however, an easy task. We have already discussed the proposal of the Ministry of National Insurance to study a sample of the sicknesses leading to claims to benefit¹; whatever the value of these records—and it may prove considerable—the resulting statistics can relate only to the working population and only to those who lose time from work (usually for four days or more) because of their illness. The Ministry of Health is experimenting with sample returns of patients entering hospital; taken alone, these can show only a small part of the picture of the incidence of illness. Some of the advantages and disadvantages of these statistics were argued at length at a meeting of the Royal Statistical Society.² Three other sources of national figures—the notification of infectious diseases, the sickness investigation conducted by the Social Survey, and the food rationing figures—are discussed by Dr. Percy Stocks with customary statistical skill and imagination in the second of the

occasional publications issued this week by the General Register Office.³

The best known of these sources is undoubtedly the first group—the notifiable diseases—the statistical value of which was greatly increased in 1944 by the publication of the quarterly returns for different age groups for each sex. It is well known that notification is not complete, and Stocks compares the recorded rates of attack with other available data to assess the degree of completeness. Thus at the notified rates of scarlet fever in 1944–7 approximately 10% of children would be attacked before age 15; this figure agrees reasonably well with the number of children whose histories have revealed an attack of scarlet fever before their fifteenth birthday in such different places as English public schools, the borough of St. Pancras, and towns in the U.S.A. On the other hand, from the notifications of whooping-cough it could be calculated that only 13–14% of children are attacked before the age of 15, whereas all available data on the history of previous attacks collected in the U.S.A. and this country indicate that the true figure is 60–70%. By these and similar means Stocks is led to conclude that notification is fairly complete for acute poliomyelitis, cerebrospinal fever, diphtheria, and scarlet fever, and that the notifications of other diseases are about 90% of the total in the case of respiratory tuberculosis, 80% in the enteric fevers, two-thirds in measles, one-third to one-quarter in pneumonia, one-quarter to one-fifth in whooping-cough, and a merely fractional amount in the case of dysentery. He is here, of course, thinking of illness in terms of typical clinical cases and excluding sub-clinical attacks, doubtful cases, and evidences of infection without definite clinical symptoms. He speaks with some emphasis about the last, stressing that the criterion for notification is that the person is "suffering from" the disease and that "any departure from this criterion is likely to lead to confusion not only in statistics but in administration." Diagnosis can be greatly aided by bacteriological, biological, and radiological tests, but the tests themselves are not measures of disease incidence. Clearly the distinction must sometimes be very hard to draw. He maintains, for instance, that "thoracic shadows on a skiagram" do not constitute the presence of disease "unless accompanied by symptoms attributable to the disease." This may lead to some awkward problems. For instance, two patients might be found by mass radiography to have early pulmonary tuberculosis, neither having any symptoms or knowledge of departure from health; one then goes to a sanatorium and the other refuses treatment. Are both, one, or neither notifiable? With such tests the notifications of some diseases may well rise artificially, since cases are more easily detected, while the numbers of others may rise if in the new Service the doctor's help is more frequently invoked than in the past. Study of recent weekly returns provides no evidence in the case of the common infectious diseases of childhood that that is yet happening.

The technique of the Social Survey investigation into sickness incidence is the interviewing at the beginning of each calendar month of small but representative samples of the whole civilian population aged 16 and over. A note is made of the illness and injuries reported by each person to have taken place during each of the two preceding

¹ *British Med. J.* 1949, 1, 533.

² *Re Statist. Soc.* 1948, 111, 14.

³ *S. Lower in the Population of England and Wales in 1944–1947, 1949.* London: H.M.S.O.

calendar months. From this material Stocks calculates a number of rates. Thus in the year 1946-7 each 1,000 men aged 16 or over reported an average of 1,169 illnesses and injuries per month, while the corresponding rate per 1,000 women was 1,617. Alternatively, the number of persons ill during the month may be used in place of the number of their sicknesses; this reduces the above rates to 619 per 1,000 men and 713 per 1,000 women. To another figure Stocks gives the rather unattractive name of the *aegrescence rate*, which he defines as the number of persons who started an illness during a defined period of time; it leaves out of account those who continued to suffer from an illness starting previously. Thus in 1946-7 out of each 1,000 civilians an average of 44 men and 51 women per month started a defined illness (other than minor), and 275 men and 336 women started a minor or ill-defined complaint. The mean days of incapacity and the numbers of medical consultations can also be computed. At these adult ages the latter figure was about five consultations per person per annum, rising from four per person at ages 16-45 to seven or more at ages over 65.

While it is clearly necessary at present to experiment with various forms of calculation and presentation, there does seem to be some risk of obscuring the wood with too many trees. It is to be hoped it will be possible in time to set out the basic sickness incidence in perhaps a couple of rates without any serious loss. Some workers might feel that it would be no serious loss if the mass of very minor or ill-defined illness was eliminated instead of, as at present, frequently dominating the picture. On the other hand, it can be retorted that the whole *raison d'être* of the Social Survey approach lies in these minor illnesses, since they call for no medical attention or sickness benefit, and their contribution to the record of ill-health can be found in no other way. The statistics to which they lead indicate, for instance, that one person in eight developed a cold during the average month—a figure suggesting that each adult has an average of 1.4 colds per year—that about one in 500 developed migraine in a month, one in 2,000 herpes, one in 6,000 ringworm, one in 14,000 scabies, and one in 17,000 mumps.

Stocks endeavours to check the accuracy of diagnosis in these self-reported illnesses by comparing the rates of incidence calculated from these figures with the rates calculated from figures obtained from the priority food rationing scheme or from notifications of disease. On the whole the agreement is encouraging, though the comparison necessarily lies only in the field of serious and well-defined complaints; much more work is necessary on other illnesses. These statistics of priority allowances were kept by the Ministry of Food at the request of the Food Rationing (Special Diets) Advisory Committee of the Medical Research Council. The diseases upon which Stocks reports are active tuberculosis, gastric, duodenal, and anastomotic ulcers, dyspepsia due to other causes, diabetes mellitus, and thyrotoxicosis; for all of these extra allowances of milk were allotted. At the end of 1947 there were registered in England and Wales just under 100,000 diabetics, or 231 per 100,000 population; 118,000 cases of respiratory tuberculosis, or 278 per 100,000; and nearly 670,000 cases of ulcer or dyspepsia (roughly divided into

the ratio of 2:1). Allowances for thyrotoxicosis numbered 4,467, or 11 per 100,000 persons—women predominating in the ratio of $3\frac{1}{2}$:1. The incidence of this complaint in the northern counties was considerably below that reported in London and the South. In the present report, however, Stocks limits himself almost entirely to the assessment of sickness in the population as a whole. Its measurement in local communities is of more particular interest to many persons—the medical officer of health, for instance—and this, the Registrar-General promises in his preface, is not being overlooked.

AIR TRANSPORT OF THE SICK AND INJURED

The credit of being the first to transport a wounded man by air belongs to a French pilot, Captain Dangelzer, who flew a wounded Serbian airman to safety during the retreat of the Serbian army in 1915.¹ The French were also the first to introduce air ambulances; this was in Morocco in 1918. The Royal Air Force first transported casualties by air in 1919, during the war against the Mad Mullah in Somaliland, when three patients were moved, one at a time, 175 miles on stretchers placed inside the tail-end of the fuselage of a DH9.² The R.A.F. began to develop air ambulances during the years 1920-2 and put them into use in Iraq in 1923, when 359 patients were transported—198 of them being cases of dysentery among British troops operating in Kurdistan. Even then most of the casualties were taken in troop-carrying aircraft convertible into air ambulances at short notice. The first organized R.A.F. air-ambulance service in this country was based at Halton during 1925 and 1926 and served a radius of 100 miles; it was disbanded in 1927. From that time until the outbreak of the war of 1939-45 the number of Service patients transported each year by air (mainly in the Middle East and India) varied between 66 and 418. In 1937, when the R.A.F. general hospital in Bagdad was moved some 90 miles to Habbaniya, the majority of the patients were transported by air. It was found, however, that to reserve aircraft solely for ambulance purposes was uneconomic, and consequently until the outbreak of hostilities in 1939 troop-carriers were used as air ambulances when required.³

At the beginning of the war there was no organized air-ambulance service, but in 1941 a service was established in the Western Desert and another in the United Kingdom for the benefit of the garrisons in the outlying Scottish islands. The air-ambulance service in the Western Desert operated with aircraft provided by the Australian Air Force, the South African Air Force, and the R.A.F., and during the campaigns of Wavell, Auchinleck, and Montgomery about 60,000 patients were moved by air from forward areas to the base. From then onwards the transport of casualties by air in the various theatres of war increased rapidly, so that by V.J. Day the R.A.F. had carried approximately 400,000 sick or wounded patients, most of whom were in the Army. This fine performance

¹ Munro, D., *Proc. R. Soc. Med.*, 1924, 17, 7.

² Armstrong, H. G., *Principles & Practice of Aviation Medicine*, 1943, London, p. 494.

³ Whittingham, H. E., *Proc. Cardiff med. Soc.*, 1945, 44.

⁴ Jackson, R. C., *Lancet*, 1945, 2, 543.

was carried out without a single mishap, though over 30,000 separate flights were made and much of the flying was done from forward landing strips near the enemy, over jungle, mountains, and sea, and in all conditions of weather. The maximum number of casualties transported in a single day during the Western Desert campaign was 400, and during operations in Normandy 934.^{3 4}

The air-ambulance service did much to maintain the high morale of our Forces. The patients selected for transport to appropriate treatment centres were those for whom early treatment was necessary either to secure a successful result or to ensure their early return to duty. Priority was given to patients with facio-maxillary injuries, burns, perforated wounds of the globe of the eye, fractures of the limbs and spine, and head injuries. Patients suffering from certain conditions were not considered suitable for air transport until after appropriate treatment in forward areas: among these conditions were shock, recent abdominal and thoracic wounds, recent severe haemorrhages, gas gangrene, lobar pneumonia, pneumothorax, angina pectoris, and coronary occlusion. Oxygen and blood transfusions were given as required *en route* by specially trained nurses and nursing orderlies. During the war all the helicopters available were needed for operational duties in the field. This type of aircraft can now be safely employed for the transport of casualties back from the most advanced landing strips, and the Royal Air Force is using them to develop a casualty evacuation service. In war, air ambulances have other advantages besides getting the wounded back to a casualty clearing station or hospital in the shortest possible time with the minimum of discomfort; they reduce the numbers of doctors, nurses, and orderlies employed on the evacuation of casualties and they free the lines of communication from road ambulances and ambulance trains.

For civilian sick an air-ambulance service was inaugurated in 1933 by Scottish Airways to serve the isolated Western Isles of Scotland; ordinary passenger planes, based at Renfrew, were used. Patients were taken to hospitals in Glasgow, or doctors and nurses were taken to the patients. In 1935 certain Scottish county councils agreed to bear part of the cost of air ambulances used in cases of emergency. The Department of Health for Scotland now operates this scheme through the regional hospital boards and British European Airways. The number of patients transported each year is about 300. Just before the war began an air-ambulance service was established for the transport of patients from the Channel and Scilly Isles. In 1941 the Air Transport Auxiliary formed an air-ambulance service, using stretcher gear built into passenger-carrying aircraft. The number of aircraft in this service rose to 60, and these carried nearly all the Service sick and wounded who were transported by air within the British Isles.

Mainly as a result of the lessons learned during the war the British Airways Corporations have been able to work out a policy for the benefit of all invalids proposing to travel by air. In a paper appearing elsewhere in this issue the chief medical officers of the three British Airways Corporations—Air Marshal Sir Harold Whittingham, Dr. A. Buchanan Barbour, and Wing Commander J. C. Macgown give authoritative information about how a patient's fit-

ness for air travel should be assessed. It is interesting to note that in the future most aircraft will be "pressurized"; this means that the majority of invalids will be able to travel by air with as great, if not greater, comfort than by road, rail, or sea.

NATIONAL TRIAL OF B.C.G.

At the London meeting of the International Conference of Physicians in 1947 Professor W. H. Tytler remarked that Great Britain had "the questionable distinction of being the only one of the major countries which has contributed little or nothing to B.C.G. vaccination."¹ According to recent and widespread reports in the daily press it appears that this situation is shortly to be righted, though the announcement of national trials is, we understand premature and an official statement is not to be expected for another two or three weeks. It is, however, known that early last year the Ministry of Health set up a distinguished committee to advise it on the nature and scope of the trials of this vaccine, and the details of this committee's conclusions will be awaited with great interest. According to the parliamentary correspondent of *The Times*² volunteers are to be sought among nurses and medical students and among young persons in contact with tuberculous patients in their homes.

Nurses, of course, have long been considered a group in need of special protection, and it is certain, therefore, that they would be brought into any trial in this country. The difficulty may be to secure enough in numbers, particularly as some hospitals will not be in a position to take part in the experiment at all. For example, there are hospitals which do not allow tuberculin-negative nurses to work in their tuberculosis wards. If the volunteers are to be divided into two groups—those to be vaccinated with B.C.G. and those to be held as controls—then the unvaccinated group in hospitals with such a regulation would not be allowed in contact with cases of tuberculosis and the vaccinated group would be in contact with them. A comparison between groups exposed to such different risk would clearly be of little value. Any effective trial with nurses and medical students requires two groups that will subsequently have a comparable exposure (on the average arbitrarily divided into the vaccinated and unvaccinated).

Another likely field of inquiry would be young adolescents leaving school and going into factories or offices—particularly, perhaps, young women, in whom the peak of mortality from tuberculosis lies in the early adult age groups. Here again the inquiry will need to be widespread and to cover many thousands of persons. The attack rate from tuberculosis in this country is such that decisive differences between vaccinated and unvaccinated are not likely to be revealed in any study with small numbers. This line of investigation might well be linked up with the mass-radiography campaign. The volunteers must agree to take part in what is, it must be made clear, a national experiment.

¹ *Lancet*, 1947, 2, 438.

² *The Times*, March 31, 1949.

³ *British Medical Journal*, 1948, 1, 274.

⁴ *Ibid.*, 1946, 2, 125.

⁵ *Ibid.*, 1948, 1, 1126.

⁶ *Ibid.*, 1948, 1, 1129.

A third group of great importance comprises babies and young children in homes where there is a case of open tuberculosis. To include these in a controlled trial would be very difficult, for according to the advocates of B.C.G. the child must be removed from the home, proved to be uninfected, and then made tuberculin-positive before return. What of the controls? They too must be removed from the home and proved uninfected; they will not become tuberculin positive, for no vaccine will be given them. Can they be returned to a still infective home, even allowing for doubts about the efficiency of B.C.G.? As Professor Bradford Hill pointed out³ in this *Journal* last year, such demands may, too, in everyday life "materially reduce the field in which B.C.G. can operate, since it necessitates pre-detection of the tuberculous household and removal of the infant at birth for some months." It may be, therefore, that B.C.G. should be tested under the normal conditions of life without removal of the child from the home. That might not be ideal, but it is realistic.

A fourth group in this country might be found among mental defectives or the mentally deranged in institutions. Such patients have relatively high death rates from tuberculosis and, being in institutions, can easily be followed up after vaccination. The follow-up, indeed, is likely to be one of the major difficulties in this national trial. Very large numbers of persons must, as we have said, be brought into it, and they must be followed up for at least 3-5 years. Uniform tuberculin-testing, uniform x-ray photography, and, above all, uniform statistical records of illness and death must be developed and maintained. Uniformity is the paramount issue. Regional hospital boards and local authorities might, as has been suggested in the Press, administer the schemes, but if they are not centrally guided and controlled it is almost certain that the schemes will fail. It would seem wiser, as was indeed suggested in 1946,⁴ to place such a difficult but practically important piece of research in the hands of some such official body as the Medical Research Council, which has the necessary field experience of such trials.

Professor Wallgren,⁵ of Stockholm, has pleaded that B.C.G. be given a fair trial, and H. Malmros⁶ recently described in this *Journal* his experience with it in Sweden. This country now has the opportunity, and will, we trust, make both a fair and a statistically sufficient trial; otherwise we shall merely add to the many reports that collectively provide presumptive but not wholly convincing evidence.

THE BRITISH MEDICAL GUILD

The second of the Special Representative Meetings held last week in B.M.A. House had before it a report of the Council on the constitutional position of the B.M.A., a report drawn up in response to a request by the Representative Body in Cambridge last year that the Council should explore the possibility of setting up a body equivalent to a trade union.

This Report has been published,¹ and comment on it appeared in these columns in the *Journal* of Feb. 26, 1949.

The Special Representative Meeting, after an interesting debate, accepted the Council's recommendation

"that for the better protection of the interests of the medical profession in disputes with public authorities and other bodies, a new organization be established in the form of an independent board of trustees with power to organize and finance collective action by the profession and to provide financial compensation to practitioners suffering financial hardship through participation in such collective action."

This new organization, which is to be called "The British Medical Guild," will be constituted in accordance with the Trust Deed drafted by the Association's solicitors. The trustees of the Guild will be members of the B.M.A. Council for the time being. The Guild, in fact, will be a legitimate and almost identical twin of the B.M.A., and its policy will be that laid down by the Representative Body. As a separate legal entity it will be able to do those things which by its constitution the B.M.A. is unable to do. It will be, in effect, a Trust Fund supported by voluntary contributions, and the trustees will be able to use the money thus collected as a financial weapon in disputes and as a source of compensation for medical men who may suffer financial loss as a result of taking action advised by the Guild. The Guild will not have a separate membership but will be organized centrally and locally in much the same way as was the Independence Fund set up last year. If the Association's armoury is to be well stocked it is essential that those members of the profession other than general practitioners should subscribe to this Fund so that in an emergency it can indeed be effective. The general practitioners under N.H.I. have for years had their own Defence Trust and continue to subscribe to it in the present National Health Service. This Fund is under the control of trustees who are members of the General Medical Services Committee, and no doubt the trustees will consider the question of making a contribution from its Fund to the Trust Fund under the British Medical Guild.

Although the Representative Meeting passed the Council's motion by a very large majority many doubts were expressed about the wisdom of the course in a series of excellent speeches. The representative of the Lothians Division ably supported an amendment to the effect that the Association as at present constituted was competent to undertake any necessary negotiations on behalf of the profession. The B.M.A., he believed, stood as one of the greatest democratic institutions of this country, and the fact that it could not coerce its members in times of difficulty was a source of strength to it. Another speaker considered that the proposed Guild was as near to a trade union as the Council could desire without incurring legal difficulties, and it was obvious from the discussion on motions advocating the formation of a trade union that this was something the Representative Body did not want. One speaker drew attention to the fact that the B.M.A. had approved using the Whitley machinery for negotiations on the remuneration of the profession. If negotiation breaks down, then the matter would be submitted to arbitration. If two parties submit a matter to arbitration it is assumed that they agree in advance to accept the decision of

¹ *British Medical Journal Supplement*, 1949, 1, 95.

the arbitrators, and from this the conclusion would seem to follow that the Trust Fund would not be used to resist such a decision. Dr. H. Guy Dain, the Chairman of Council, however, pointed out that the Whitley machinery covered only certain aspects of the contract between various sections of the medical profession and those who pay them. Attaching his remarks closely to the motion submitted by the Council, Dr. Dain gave cogent reasons for the establishment of a British Medical Guild, and when the three propositions of the Council's motion were put to the Meeting each one was passed by more than the necessary two-thirds majority. It now remains for the medical profession to back up the policy approved by the Representative Body and to subscribe to the Fund when the proposed methods of doing this are made public.

The constitution of the B.M.A. has been moulded in response to the new situation in which the medical profession has found itself since July of last year. Some aspects of this were commented on at the Special Representative Meeting which considered the question of remuneration of general practitioners. The General Medical Services Committee, while a Committee of the B.M.A., is nevertheless autonomous, and, acting for the general practitioners in the N.H.S., submitted to the Ministry of Health the case for an increased betterment factor. The Consultants and Specialists Committee of the Association is also autonomous. At first glance it would seem that these two autonomous bodies might detract from the authority of the Representative Body as the policy-making organ of the B.M.A. For years the Insurance Acts Committee was similarly an autonomous body and yet there was never any point of conflict between it and the Representative Body. So on the basis of this experience there would seem to be no reason to expect marked divergence of views and actions between the two new autonomous committees and the Representative Body. Nevertheless, the situation is to some extent changed by the fact that a large majority of the medical profession is now working under the National Health Service Act, and the Representative Body will watch the evolution of these two new committees with interest and sympathy. No doubt as time goes on their motives, decisions, and actions will become more and more closely interlocked, and the Representative Body will be eager to lend its powerful support to the actions of any one section of the profession whether general practitioners, consultants and specialists, or those working in the Public Health Service. And for all these groups there will be the economic instrument provided by the British Medical Guild, legally separate from, but closely parallel to, the British Medical Association.

REMUNERATION OF GENERAL PRACTITIONERS

The Special Representative Meeting to consider the remuneration of general practitioners under the National Health Service Act met in B.M.A. House last week and had presented to it the Report of the General Medical Services Committee which had been accepted by the

Conference of Local Medical Committees on March 12. Dr. S. Wand, Chairman of the G.M.S. Committee, moved that the S.R.M. should give its fullest support to the Conference of Local Medical Committees in its request to the Ministry of Health that the betterment factor of 70% should be applied to the gross remuneration of general practitioners. Dr. Wand stressed three points: (1) that the betterment of 34% applied to gross remuneration by the Government bore no relation to the present-day value of money; (2) that there were now two or three thousand more doctors in the Service than the 17,900 on which the Spens recommendations were based; and (3) that there were errors in distribution. He stressed that general practitioners had, under harassing conditions and working unreasonable hours, carried out their part of the contract and asked whether the Minister of Health had carried out his. This dissatisfaction with the Minister's attitude was again expressed later on in the Meeting in the form of a rider moved by the Chairman of Council to the effect that the Representative Body expressed its great concern that the Minister, having received the general practitioners' representations more than two months ago, had not yet made the necessary adjustments to implement the Spens recommendations so that the increased payments could be made in this quarter. "This delay shows disregard for the serious hardship now being experienced by many general practitioners in the Service and is seriously prejudicing its success."

Several speakers urged that the betterment factor should be 85%, thus tying it to the expert's estimate of the increase in cost of living for the professional and middle classes. The Meeting, however, was evidently convinced by the arguments put against this by other speakers, not the least of which was that the medical profession should not expect immunity from the consequences of the country's present financial position. The amendment to press for a betterment factor of 85% was lost by a large majority.

There was again discussion on how the increase to the Pool should be distributed, and the S.R.M. finally accepted the recommendation that it should be used to increase the capitation fee of the first 1,000 on a doctor's list. More was heard about the question of restricting the numbers on a doctor's list below the present maximum of 4,000. In a discussion on this the Meeting was once more brought up against the fact that the limitation of a list to, say, between 2,000 and 3,000 would interfere with the free choice of doctor to patients; once this interference is made, a first step will be taken towards the introduction of a whole-time salaried service. Several rural practitioners enlivened the debate with vigorous first-hand accounts of their own experiences, and made it clear why there has not been more overt approval of the Association's success in obtaining half a million pounds of new money for the Mileage Fund. It seems that though this has not sufficiently relieved the position of many practitioners in rural areas; at the same time, if the betterment factor now being asked for is obtained and applied to the first 1,000 on a doctor's list, rural practitioners should be among the first to benefit, as from the nature of their work the numbers of patients on their list cannot be large.

Although the Meeting had to go over the same ground already covered by the General Medical Services Committee and the Conference of Local Medical Committees, new facts were brought to light, fresh emphasis was given to familiar aspects of the same problem, and, what is perhaps more important, the S.R.M. with representatives from all branches of the profession gave its solid backing to the case already made by the G.M.S. Committee on behalf of general practitioners working in the National Health Service. It is to be hoped that the Minister of Health will not delay much longer in making known to the medical profession his decision, and that of the Treasury, on the betterment factor to be applied to the remuneration of general practitioners.

TEMPORAL ARTERITIS

In 1890 Jonathan Hutchinson¹ described the case of a man of 80, father of a London Hospital beadle, who found wearing his hat painful. Painful and swollen temporal arteries accounted for his symptoms, which in due course disappeared. Forty years passed before Schmidt² described a similar case; and in 1932 workers at the Mayo Clinic, unaware of previous cases, described the apparently new disease "temporal arteritis." This disease has recently been the subject of two critical reviews, one by Harrison³ in this country, and the other by Protas and Saidman⁴ in the U.S.A. The British author has discovered 75 cases in the literature compared with the Americans' 34. The number of recorded cases is probably mounting rapidly; neither of the papers referred to includes the four cases recently reported by Jennings⁵ in this *Journal*. The disease is obviously rare, though, since it was not properly recognized until 1932, it has only a few years' history. Cases in the U.S.A. and Great Britain comprise the recorded majority; there have been, however, reports from the European continent. It is, like many another rare condition, a disorder which accumulates around medical teaching centres. In certain respects it is a clear-cut entity; it is a disease of senility in both sexes, for nearly all the cases are aged 60 or over; it runs a six months' course; all the cranial arteries may be affected, and indeed many large arteries elsewhere in the body; blindness due to retinal ischaemia from involvement of vessels behind the globe is found in one-third of the cases; and death from cerebral haemorrhage often occurs. The histological appearances are typical: the medial arterial coat is infiltrated with lymphocytes, plasma cells, and, outstandingly, giant cells, from which one name of the disorder is derived.

The questions which might reasonably be asked about this condition include whether it is really a separate entity, how it differs from polyarteritis nodosa, and whether it has been correlated with rheumatic conditions (some patients with temporal arteritis have been arthritic, but at their age, they might well be). It would also be relevant to inquire what comprises a clinical entity. A syndrome has been defined as a disorder with three symptoms and not less than three recorded cases; and temporal arteritis fully satisfies these criteria. But there is little to show that it is not polyarteritis in an older age group. Classical polyarteritis is a disease of men more than of women, and the age of the patients is usually between 25 and 45.

Eosinophilia and albuminuria are often present, and neither is seen in temporal arteritis. Finally, the histology differs, as does the prognosis: the majority of patients with polyarteritis die. Jennings considers that temporal arteritis is part of a generalized arteritis in old people, and experienced histologists to-day recognize widespread arterial disease, affecting arteries of medium size and arterioles, far more frequently than in the past. Many allergic conditions fall in this group, and it would be premature to accept "temporal arteritis" with certainty as a distinct entity, though it has passed the acid tests of being described by a British physician, being forgotten, and being redescribed and annotated in the U.S.A.

HORMONES AND ENZYMES

Underlying the physiological changes brought about by hormones are biochemical changes, and the mode of action of hormones will remain obscure until more is known about how they modify biochemical processes. Some recent experiments have shown that the amount of an enzyme called by Mendel pseudocholinesterase in different tissues is altered by the action of hormones. If this enzyme plays some part in ordinary metabolism the amount present would be expected to be the same in both sexes, but in 1940 Birkhäuser and Zeller¹ showed that the livers of female rats contained three to five times more than the livers of male rats. Pseudocholinesterase differs from the cholinesterase present in the central nervous system, which is known as true cholinesterase and which is almost certainly concerned with the hydrolysis of acetylcholine. Though pseudocholinesterase is able to hydrolyse acetylcholine, this is not likely to be its function, which still remains undiscovered.

Poisoning with carbon tetrachloride reduces the amount of pseudocholinesterase in the livers of rats, and similarly in liver diseases the amount is low. The enzyme is also present in serum or plasma, and there it is associated with the albumin. Administration of oestrogens augments both serum cholinesterase and serum albumin. From these several observations it seems clear that pseudocholinesterase is produced in the liver² and is present in the blood. Sawyer and Everett³ have shown that after castration the plasma pseudocholinesterase in the female rat falls to 40% of its initial value, while in the male it rises to 50% above its initial value. When pellets of oestradiol are implanted in the female the amount of pseudocholinesterase in the plasma is trebled, and when testosterone is injected into male rats the amount is halved. Recently Hawkins, Nishikawara, and Mendel⁴ have shown that after thyroidectomy the amount of pseudocholinesterase in the plasma of rats rises from a normal value of 41 to 97. If thiouracil (which prevents the formation of thyroxine by the thyroid gland) is given to rats the pseudocholinesterase value rises to 117. On the other hand, when healthy rats are given thyroxine the pseudocholinesterase value falls below normal to 28. No similar changes were found in true cholinesterase values in any of these experiments. The biochemical process in which pseudocholinesterase takes part must be one which is greatly augmented or reduced in intensity by the circulating hormones, and the interesting observations already made will stimulate further search for the function of this enzyme. The conception that hormones act at least in part by modifying the production of enzymes in the liver is a new one, and further examples of this action are likely to be heard of soon.

¹ *Arch. Surg., London*, 1890, 1, 323.

² *Brain*, 1930, 53, 489.

³ *J. clin. Path.*, 1948, 1, 197.

⁴ *Med. Ann. Distr. Columbia*, 1948, 17, 34.

⁵ *British Medical Journal*, 1948, 1, 443.

¹ *Helv. chim. Acta*, 1940, 23, 1460.

² *Endocrinology*, 1946, 39, 307.

³ *Amer. J. Physiol.*, 1947, 148, 675.

⁴ *Endocrinology*, 1948, 43, 167.

TUBERCULOUS MENINGITIS TREATED WITH STREPTOMYCIN

Experience in Scotland

The interim report of the Streptomycin Subcommittee* of the Scottish Scientific Advisory Committee describes how 81 cases of tuberculous meningitis were treated at the five Scottish streptomycin centres between September, 1947, and May 31, 1948. The results of treatment were assessed after a minimum survival period of four months (122 days) from the date of admission. The diagnosis of tuberculous meningitis was confirmed by isolation of the tubercle bacillus from the cerebrospinal fluid in 77 cases, in 75 of them during life and in two at necropsy. The remaining four cases, not bacteriologically proved, have been included in view of the very strong presumptive evidence of the disease. The series includes a number of patients who developed clinical signs of meningitis while undergoing streptomycin treatment for miliary tuberculosis. Such an occurrence might indicate that a "silent" involvement of the meninges had been part of the original miliary spread.

Results of Treatment after a Minimum of Four Months' Observation and Treatment in those who Survived

Age on Admission	Total Admissions up to May 31, 1948	Condition on Sept. 30, 1948		
		Dead	Stationary Relapsed Deteriorating	Progressing Favourably
Under 4 years ..	21 (100%)	13 (62%)	3 (14%)	5 (24%)
4-17 years ..	36 (100%)	14 (39%)	1 (3%)	21 (58%)
Over 17 years ..	24 (100%)	18 (75%)	1 (4%)	5 (21%)
Total ..	81 (100%)	45 (56%)	5 (6%)	31 (38%)

The following classification was used in assessing the clinical state: *Early*.—Minimal physical signs; no neurological signs; not badly confused. *Intermediate*.—Definite meningeal and neurological signs present; confused but able to be roused. *Late*.—In coma; many neurological signs.

Results According to Clinical Condition on Admission

Clinical Condition on Admission	Total Admissions up to May 31, 1948	Condition on Sept. 30, 1948		
		Dead	Stationary Relapsed Deteriorating	Progressing Favourably
Early ..	21 (100%)	7 (33%)	3 (14%)	11 (53%)
Intermediate ..	44 (100%)	24 (54%)	2 (5%)	18 (41%)
Late ..	16 (100%)	14 (88%)	0	2 (12%)
Total ..	81 (100%)	45 (56%)	5 (6%)	31 (38%)

Treatment

In this series no case of meningitis responded for any length of time to intramuscular streptomycin alone, and in common with other workers it was agreed that all cases require streptomycin by both the intramuscular and the intrathecal routes.

Intramuscular Therapy.—The daily dose of streptomycin used intramuscularly was 1.5 to 2.0 g. for adults and 20 mg. per pound body weight for infants and children. At the beginning of the trial this amount was given in four doses at six-hourly intervals, but later the interval was lengthened to 12 hours. This lengthened interval seemed to be equally effective, since at the end of 12 hours the blood level of streptomycin was generally above 0.5 µg. per 100 ml., which was regarded as adequate. Intramuscular injections were usually continued for a period of three months and sometimes longer.

Intrathecal Therapy.—The scheme of dosage for intrathecal streptomycin varied more than that for intramuscular therapy. The one most frequently used was a daily intrathecal injection of 100 mg. for two or three weeks. This was given continuously or on alternate weeks with a rest period intervening; in other cases injections were given on alternate days. For children under the age of 12 the dose was sometimes reduced to 50 mg. and for those under the age

*Professor D. M. Dunlop was chairman of this committee, and the other members were Professors J. W. S. Blacklock, C. Cameron, S. Graham, and G. L. Montgomery, with Drs. T. Anderson, D. Bell, D. G. McIntosh, and J. D. Ross. Dr. I. M. Macgregor was medical secretary and Mr. G. Robertson secretary.

of 3 years to 25 mg. At the end of the initial intensive therapy streptomycin was injected into the theca whenever the cerebrospinal fluid was removed for examination. This was usually done once a week for several months.

The toxic signs observed, roughly in order of their frequency, were fever, vertigo, rashes, vomiting, deafness, and nephritis. The minimum period of observation was seven months in 52 of these patients; 20 (38%) have survived, and 17 (33%) of them are progressing favourably.

The report concludes by pointing out that the results at present are impressive for a disease which formerly was universally fatal, but final conclusions in regard to the real rate of cure must await an extended period of observation.

MENTAL HEALTH WORKERS IN CONFERENCE

FIRST EXPERIENCES OF NEW LEGISLATION

A conference on mental health was held on March 17 and 18 in London and attended by delegates from local health and education authorities in all parts of the country and by representatives of voluntary agencies. The summoning body was the National Association for Mental Health, whose patron, the Duchess of Kent, formally opened the conference, at which first experiences of the recent social legislation and its implications for mental health were discussed.

Sir WILSON JAMESON, Chief Medical Officer of the Ministries of Health and Education, in an introductory address, spoke of the continuing value of voluntary organizations, able and willing to experiment and to indicate ways in which the official services could profitably develop. He begged mental health workers to address themselves to measures which seemed likely to cut down admissions to hospitals or to shorten stay. He looked forward to a closer liaison and interchange of staff between general and mental hospitals.

Dr. J. R. REES, who was president of the International Congress on Mental Health held last August, said that recommendations formulated by the Congress had been sent to the appropriate United Nations agencies, especially the World Health Organization, whose executive at its recent meeting had adopted a very large number of them and was proposing a considerable budget—about a million dollars—for mental health work next year. These recommendations had to be endorsed by the World Health Assembly to be held in Rome in June. This progress was the more noteworthy because a large proportion of the members of the executive of WHO were public health men, and this was the first occasion on which, in international public health work at any rate, more than lip service had been paid to mental health.

The State and the Individual

The discussion on the effect in particular of the National Health Service Act was opened by Professor D. R. MACCALMAN, Nuffield Professor of Psychiatry in the University of Leeds. The official attitude towards mental health, he said, was still over-anxious about care and control, especially the control of persons of unsound mind. Clinics for the treatment of neurosis were too much burdened with minimizing the nuisance factor to society of the maladjusted, and child guidance was most frequently concerned with behaviour problems, many of which could have been prevented by reasonably good upbringing and imaginative education. As one who had approached the National Health Service Act with caution and even scepticism, he acknowledged that the more he had seen of its working—as a member of a regional hospital board and for a short time as a member of an advisory committee in another region—the more gratitude and admiration he felt for its architects. The danger was that the Act might be so interpreted and administered that emphasis would be placed here again on methods of care and treatment rather than on the investigation of fundamental causes. For research under the National Health Service "money should be poured out like water." It was the one field in which they should never economize. He also stressed the harm which might result from

the State doing too much for the individual. The child whose parents lavished on him anxious and indulgent care grew up unattractive and unbalanced in character, and there was some anger of a too benevolent and over-protective Government vitalizing its citizens.

These remarks brought to the platform Dr. H. B. MORGAN, I.P., who said that in former days too much was done for certain spoiled citizens in privileged positions in order that they might acquire wealth at the expense of the community. The object of the Health Act and the National Assistance and Insurance Acts was to set up a standard below which the ordinary citizen should not be allowed to fall.

Dr. R. SESSIONS HODGE said that the research for which Professor MacCalman had pleaded was not necessarily a question of big battalions; some of the best research work had been done by individuals and small units. He suggested a system of clinical assistantships whereby men in general practice who had the right temperament and personality might do their local areas work in association with those engaged in psychiatry. Dr. J. STEVENSON LOGAN deplored the attitude of some sections of the medical profession towards institutionalism. They did not fully apprehend what the mental hospitals could now offer, and were not disposed to play their part in securing mental hospital treatment for their patients.

Psychiatric Social Workers

Miss MARJORIE BROWN, psychiatric social worker in the department of Psychological Medicine, University of Durham, said that psychiatric social workers now numbered 330. About one-third worked in mental and general hospitals and clinics, one-third in child-guidance services, and one-third in other forms of mental health work. About 50 students were trained each year. She thought that local health authority psychiatric out-patient clinics, which were points of contact between the regional board and the local health authority, should be a decisive force in the mental hygiene of the future. Only a few of these clinics had been established so far, and there were a large number of unfilled posts, most of them in adult work—a number which, owing to the demands of the Act, was increasing. The shortage was partly due to the general lack of social workers, but also to competition with other more attractive forms of social work and training courses.

Dr. WYNDHAM DAVIES mentioned the difficulty in obtaining mental health staff, particularly in counties like Cornwall. They were now reduced to hargaining for candidates and had to compete with the demands for social workers in other fields. Even worse, the National Association for Mental Health had had to close down some of its regional organizations which had been of very great value in recent years. (It was explained that this closing down of the National Association's activities was in no way a voluntary withdrawal, and that the Association had protested and pleaded in vain against such closure.) The result was that those at the periphery were left to their own resources. Voluntary associations, of course, were pioneer bodies and sooner or later must withdraw from the scene, but it is time for their withdrawal was not yet.

Many good points were made by lay speakers in this discussion. One parent referred rather resentfully to the health worker who, after her week-end leave—parents did not get week-end leave—called on Monday morning at the home and talked in a rather superior way to the overburdened mother. His speaker suggested the recruitment of social workers from postgraduate mothers—"mothers whose children were off their hands, and who could get down to 'kitchen-sink level' with the women they visited.

Art of Consultation

The second day of the Conference was devoted to a widely ranging discussion on the need for understanding of the individual as part of the training and function of doctors, nurses, and teachers. Professor J. C. SPENCE, Professor of Child Health, University of Durham, said that the doctor needed to have a basic, expert, and specialized understanding of the individual if he was to work with success.

"The real work of a doctor is only faintly realized by many lay people, and I am more disposed to say this now that we see how

ill designed are some of the plans for its conduct. It is not an affair of health centres or public clinics or operating-theatres or hospital beds. These techniques have their place in medicine, but they are not medicine. The essential unit of medical practice is the occasion when, in the intimacy of the consulting-room or sick-room, a person who is ill, or believes himself to be ill, seeks the advice of a doctor whom he trusts. This is a consultation, and all else in the practice of medicine derives from it. The purpose of a consultation is that the doctor, having gathered his evidence, shall give explanation and advice. . . . The explanation is pursued further with what the Greeks call *pronoia*, which is something more than prognosis. It is knowing all about a person without being told. With this the doctor uses his understanding of the individual and of his disease to prepare him and his near relatives for the hospital, for the technical treatment in the hospital, and for his life after hospital. It is not difficult to realize something of the intimacy, the courtesy, and the understanding which are required in this work."

Some doctors, Professor Spence continued, did not like this way of medicine. They were more interested in things than in people, and would find their places in the laboratory field or in technical therapeutics. The art of consultation was best practised in out-patient departments. In his own hospital consultations were given by the most experienced members of the staff. Two or three students were allowed to watch and listen with as much self-effacement as possible. The students were told that before explanation and advice could be given to a patient they must make three diagnoses—namely, of the disease, of the concept of the disease in the mind of the patient, and of the patient's capacity to understand the explanation and follow the advice. With this preliminary explanation students were quick to see the significance of consultation, and some of them confessed that through these experiences they realized for the first time what the practice of medicine meant.

Professor BRIAN STANLEY, Director of the Institute of Education, University of Durham, followed on the same lines from the point of view of the teacher, and Miss MAY IRVINE, tutor for psychiatric social work at Manchester University, from that of the social worker. Miss OPIE, of King's College Hospital, remarked that in spite of the shortcomings of the nursing profession they did try hard in their educational system to lay emphasis on the importance of the individual. In two big London hospitals at any rate the nurses were told to give welcome and reassurance. Nurses found that it was easy to be patient with the patient, but less easy with the patient's relatives.

Dr. SAWLE THOMAS, speaking as psychiatrist to a regional board, pleaded for an understanding of the doctor by those who were responsible for hospital administration. Most, if not all, doctors who had achieved positions in administration had graduated through years of clinical work, and might be expected to have sympathy and respect for the clinician; but this was not always evident, because the doctor who went in for administration was perhaps overweighted on the side of tidiness, or, it might be, had surrendered to the temptations attached to a position of authority. In some of the mental hospitals under the old dispensation the staffs were so frustrated that all initiative was killed. Autocratic local authorities, too, had failed to allow for freedom in carrying out new ideas. In working with the National Health Service, however, his experience was that these dangers had been avoided. The regional hospital board had delegated its power to management committees, and they in their turn to house and advisory committees, and in this way all groups had an opportunity of expressing their views and putting forward plans which were assured of sympathetic consideration.

Child Care

Much was heard during the Conference on the subject of child care. Miss P. ARMSTRONG, children's officer of the East Suffolk County Council, spoke of some of the difficulties in obtaining foster-homes, and startled the assembly with her description of some dubious private schools catering for parents (her script said of the wealthy classes, but in reading it she altered it to the middle classes) who desired to conceal and be relieved of their unwanted children. Dr. LESLIE HOUSDEN referred to the increase in juvenile delinquency, and suggested that it was impossible to change the mental attitude of parents on a scale wide enough to affect the sum total of mental

ill-health in the country, and that the only practicable step was to concentrate on the younger generation. Dr. C. O. STALLYBRASS spoke of the need for the nurture and protection of home life. Unhappy marriages brought a heavy penalty to the partners, but a heavier penalty to the children.

Finally, Dr. T. C. GRAVES mentioned the physical factor in mental illness. He described the case of a schoolboy aged 16 whose mental disturbance was at first ascribed to over-study, but afterwards he was diagnosed as a schizophrenic and treated accordingly. Eventually on physical examination he was found to have infective conditions of the nose and throat, with gross impaction of wisdom teeth. Within a month of these conditions being attended to he had recovered, and his recovery had been sustained over a period of fifteen years. Dr. Graves pleaded strongly for an integrated medicine.

The chairmen at the successive sessions were the Rt. Hon. R. A. BUTLER, M.P., Professor A. N. SHIMMIN, of the University of Leeds, and Dr. G. B. JEFFERY, director of the University of London Institute of Education.

SOCIAL MEDICINE

Rockefeller Foundation Director's Address

Dr. John B. Grant, the Director for Europe of the International Health Division, Rockefeller Foundation, addressed the annual meeting of the Institute of Almoners on March 25. The chair was taken by Professor Alan Moncrieff.

Medicine in all western countries, said Dr. Grant, was moving from the individual to the family as the unit. In a sense men like Pasteur and Koch had retarded medical development for half a century by increasing interest in the minutiae of scientific medicine. Only now were we emerging into the broader conception. Social welfare legislation was a comparatively new thing. The first country to introduce family allowances was Belgium in 1930, and in the succeeding 20 years 30 countries had legislated in that direction. Two forces had been responsible for the new pattern of health and social welfare legislation—political forces and advances in scientific knowledge.

Five non-medical measures were necessary for providing adequate health care: (1) legislation for social welfare other than medical care, with particular reference to family allowances, training of the disabled, maternity benefit, and home helps; (2) a housing policy based on population needs rather than rental values; (3) a national food policy; (4) provision for mental, social, and physical recreation through community centres; and (5) educational measures for the development of "health-consciousness." To these must be added three medical measures: (1) removal of economic barriers to health care; (2) provision of sufficient health personnel properly distributed; and (3) a high degree of technical excellence in both personnel and equipment.

The eventual quality of health care in any community, Dr. Grant went on, would be determined at the level of the health community centre—not at the hospital. He did not think it was enough to have a health centre as projected in the British National Health Service. It must be tied up with a community centre. Unfortunately health centres had not reached a satisfactory stage experimentally anywhere in the world. The first country to investigate what a health centre might be was Great Britain—in the report of the late Lord Dawson of Penn, published in 1920. He believed that that report would increasingly be the corner-stone of all health services, whether in England, the United States, or Soviet Russia; yet in 1949 there was not one example of such a health centre in England.

The rapid development of medical technology had brought into existence an army of what he called "para-medical workers." Legislation would not provide adequate medical care until these para-medical workers were available in sufficient numbers and their training and supervision were well organized. He travelled all over the world in 1945-7 and found every country bringing out White Papers, but the only country he went to where anybody had got down to the subject and said, "Maybe we will require such and such a number of workers," was Australia.

Group Practice

Dr. Grant believed that in future the medical practitioner would find it increasingly to his advantage to practise in group at a centre where he would be provided with all necessary tools. At present the general practitioner concentrated on the relief of pain and the re-establishment of organ function. His responsibility in the future would be to establish the functional capacity of the patient in expectation of his return to his community as a socially useful person. The family rather than the individual would be the unit of practice. There would be unification of health care in a continuous programme from cradle to grave. Teams would be captained by the general practitioner and supported where required by specialists and institutional facilities. The team would be responsible not only for diagnosis and treatment but for the provision of measures for the protection of the individual and the family against forces which interfered with maintenance and development of full mental and physical capacity. Social medicine in the sense in which it was known in England was one hundred years old. Virchow and others in Germany nearly a century ago were doing what Professor Ryle was now doing in this country. The pattern of health services was already clear. Economic barriers to medical care would be removed by insurance or taxation. Distribution of care would be increasingly improved through institutions, regional areas based as far as possible on teaching hospitals integrated with non-teaching hospitals and health centres.

In conclusion Dr. Grant said that a satisfactory level of practice of social medicine would depend to a very large degree upon the availability of adequate numbers of well-trained medical and psychiatric social workers. The immediate problem was to define the relationship of the social worker to other workers in the team providing health care from health community centres.

THE KING'S HEALTH

Long Convalescence

The following bulletin was issued on March 30 from Buckingham Palace:

The King continues to make good progress after his recent operation. In order to secure the continuation of the natural process of formation of collateral circulation which has been encouraged by the operation, we have advised His Majesty that a prolonged period of convalescence will be necessary.

MAURICE CASSIDY.	J. R. LEARMONTH.
THOMAS DUNHILL.	J. PATERSON ROSS.
HORACE EVANS.	JOHN WEIR.

It is understood that this will be the last bulletin to be issued for the time being. Others will be issued should occasion arise but not regularly.

A. CANTERBURY COMMEMORATION

On the afternoon of June 25, the first day of the Canterbury Festival, there is to be a service at the cathedral which will take the form of a commemoration of the science and art of healing. The Dean of Canterbury, Dr. Hewlett Johnson, who presided over a meeting in London at which the arrangements for the commemoration were discussed, explained that the occasion was intended to be not diocesan but national, and indeed world-wide, for representatives of medical services in other countries would be invited to attend. One whom he very much desired to see present would be Dr. Albert Schweitzer. So much was owing to the medical services in every land that the Friends of Canterbury Cathedral wanted to make the service as representative as possible of all branches of medicine and nursing and the sciences allied to them. It was hoped that the procession would include representatives of the Royal Colleges, the universities, and all the services and organizations, such as the British Red Cross and Order of St. John, concerned with the art of healing. Miss Margaret Babington, who is the honorary manager of the Festival, said that the late Archbishop

Lang had left a legacy to the Friends of Canterbury Cathedral to be used for music and furnishings, and it was proposed to ask a well-known musician to compose an anthem for the service. It was hoped that an eminent medical man would read the lesson and another deliver the address. After the service there would be a performance in the chapter-house of Miss Dorothy Sayers's play, "The Zeal of Thy House."

Reports of Societies

TREATMENT OF BREAST CANCER

American Experience

Dr. FRANK ADAIR, of the Memorial Hospital, New York, lectured to the Section of Surgery, Royal Society of Medicine, on March 23 on "Surgery, Radiation, and Hormones in the Treatment of Breast Cancer." He began with an acknowledgment of the value of British work in cancer research.

Experience had shown, said Dr. Adair, that to give a sufficient dose of x rays to kill breast cancer, using x rays only, was not feasible, owing to the great damage caused to the skin and other tissues. In his work, therefore, x rays had come to be used *only in inoperable cases*. He criticized the employment of radiation to cover inadequate surgery. The value of pre-operative x-ray therapy was still in doubt and the results were not easy to assess; there was less doubt about the value of post-operative irradiation. At the Memorial Hospital patients in whom no involvement of the axillary glands could be detected microscopically were treated by surgery alone; when there was such involvement post-operative x-ray therapy was undertaken.

The proportion of five-year survivals after radical mastectomy, when the cancer was limited to the breast, was 74% during the period 1934-9 at the Memorial Hospital. During the period 1940-4 it was 82% and there was a corresponding increase in "cures"—cases in which there was no trace of cancer after five years. It was difficult to estimate the value of post-operative irradiation, but he thought it might add 3 to 5% to the survival figure. For any such assessment, of course, they had to depend upon comparisons between different clinics, where the techniques might not be identical.

Turning to hormone therapy, Dr. Adair, after a reference to the work of British investigators on the oestrogens, referred to a study arranged in America by a subcommittee of the Therapeutic Trials Committee. Supplies of androgen and oestrogen had been distributed to about twenty groups of workers who reported periodically. In his own practice he had been much impressed by the occasional response to the injection of testosterone, particularly in cases where there were metastases in bone. Cases of breast cancer treated with testosterone ceased to menstruate for from three to six months, and in those women near the menopause this amenorrhoea might be permanent. Of 21 cases with metastases in bone, 15 showed a significant drop in serum calcium during the first three months' treatment with testosterone. Cases in which there were secondaries in the liver, with jaundice, had cleared up temporarily under testosterone therapy. Large doses of testosterone induced male characteristics, and in that way possibly inhibited further mammary growth. The dosage of testosterone was 100 mg. three times a week, given over an indefinite period. Here he noted that the age ranges of patients who came up for treatment for breast cancer showed two peaks, one at about 45 as the menopause was approached, and the other at about 60, when there began to be no hormones present at all.

A "hormone team" had been organized at his hospital, including clinicians, a chemist and a biochemist, a radiologist, a full-time nurse, and a full-time social worker. The most satisfactory oestrogen was found to be stilboestrol. Under the microscope there appeared to be no difference between mammary cancer destroyed by oestrogens and that destroyed by irradiation. In some cases undergoing prolonged oestrogen therapy no indication of cancer remained. Their experience with oestrogen, however, had not been as striking as with testosterone. Oestrogen therapy in some cases required months before improvement took place. He looked

forward to the introduction of new chemical substances having the same beneficial effect as the hormones now in use but without the distressing features which sometimes accompanied them. There were approximately 600 chemical compounds which should be investigated, and the chemists and the endocrinologists must take the lead in this investigation. He believed that the life history of breast cancer had already been profoundly modified and that a further great contribution might be made during the next few years.

There was no discussion following the address, but Sir STANFORD CADE voiced the thanks of the Section.

ABDOMINAL EMERGENCIES

A meeting of the Liverpool Medical Institution was held on Feb. 3, with the president, Professor CHARLES WELLS, in the chair.

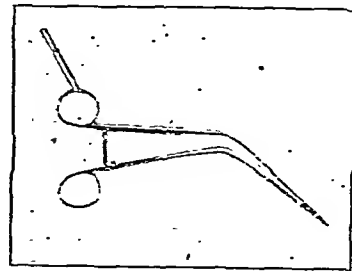
Mr. W. M. BEATTIE read a paper on a consecutive series of 598 emergency abdominal operations, performed at Smithdown Road Hospital by five surgeons during a period of two years. The total mortality was 10.7%. In 347 cases of acute appendicitis the mortality was 2.3% (0.3% in unperforated and 7.6% in perforated cases). Diagnostic mistakes were discussed, and it was pointed out how often patients who had pain in the right iliac fossa only had a normal appendix at operation. The mortality of 19% in 67 cases of perforated peptic ulcer was analysed, and the well-known unfavourable factors of advanced age, delay in operation, associated haematemesis, and a deranged mental state were stressed. Other figures showed that strangulated hernia was a hazard of old age, 60% of the 75 cases occurring in patients over the age of 60 and 35% in patients over the age of 70.

The number of cases of cholecystitis was limited because treatment was conservative whenever possible; the mortality in those who required immediate operation was 62.5%, and the average age of the fatal cases was 75. Three cases of pancreatitis and 8 cases of perforated diverticulitis were also described. At the same meeting Mr. A. McKIE REID read a short paper on some recent advances in ophthalmology.

Preparations and Appliances

DIATHERMY PRONG FORCEPS

Mr. A. WILFRID ADAMS, M.S., F.R.C.S., writes: This forceps is for use by the surgeon or assistant to seal vessels in subcutaneous and parietal tissues. In the depths, too, thanks to its length, it replaces ligatures of minor vessels, but is to be used warily near vulnerable viscera. The point of bleeding must be displayed and located exactly and the forceps applied with precision. Being angled, the handle does not block the view of the tip, which is specially small to concentrate and



intensify the coagulating current. The instrument acts vicariously as a tenaculum forceps or aids swabbing in deep recesses.

It is, in the main, a combination of Mollinson's tonsil and Hey's diathermy forceps, and I acknowledge my debt to these inventors as well as to Messrs. Down Bros., who make this new type of haemostat.

Correspondence

Cancer of the Breast

SIR,—Animal experiments show that for carcinoma of the breast to develop in the mouse it is necessary that suckling should have taken place from a mother or foster-mother capable of transmitting a virus-like material known as the milk factor. If mice are not so suckled carcinoma of the breast does not develop.

I am anxious to start a long term—very long term—investigation into this matter in the human subject, and for this purpose I wish to collect the names and addresses of female children or adults of whom it is known that they have never suckled at a human breast. Family doctors and obstetricians may know of such cases where, because of the death of the mother or for other reasons, it can be *absolutely guaranteed* that the child has never consumed milk from a human source. ("Humanized milk" does not, of course, count.) If, with the permission of the appropriate person, doctors would be kind enough to forward the name, age, and address of such a child or adult, together with the name of her surviving parent or guardian in the case of a child, such an investigation could be put into operation. The card or letter should be addressed to the Secretary of the Mastitis Clinic, Guy's Hospital, London, S.E.1. It is hoped by this means to collect the names and addresses of a large series of females who could not have received the human "milk factor," if such exists, and the investigation would proceed as follows.

On receipt of the name, the child's parent or guardian would receive the following letter:

"Dear ———,
"Dr. ——— has, with your permission, sent me the name of ——— who, he assures me, has not been nursed by her mother or by a foster-mother. Doctors believe now that such children, when they grow up, may be less likely to develop serious disease of the breast than other people, and this possibility you might regard as making up for the lack of what is otherwise the best method of nursing a baby. Nevertheless it is vitally important that this theory should be tested out, and I should be most grateful to you for your co-operation, which might in the future save many lives. All that I shall do is to send you once a year a stamped addressed post-card asking you whether there has been a change of address or whether ——— has now left home. When she grows up and leaves home I or my successor will keep in touch with her in this way, and after explaining to her that we believe that she is less likely to suffer from serious breast disease than her friends, ask her whether she will reply year by year on an addressed card as to whether she is still free—as we expect—from any trouble in the breast. It is perhaps only by finding out these things, which as you will appreciate is bound to take many years, that the problem of cancer will eventually be solved.

"If, when ——— grows up, she does not wish to co-operate in this matter she can either ignore the post-card, which, after two years without a reply, will not be sent again, or she can write and tell us not to send her any more, but I hope that she, like you, will feel that by helping in this matter she is really doing her bit, and at such small cost, to alleviate human suffering and advance knowledge.

"Signed ———."

A letter in similar vein, and with appropriate modifications, will be sent to adults.

I, Sir, can see no other way in which this matter, vital to the welfare of the human race, can be settled. That the results of this experiment cannot be seen by anyone reading these lines makes it all the more important that we should start now, and be sure of answering at least one fundamental question about human breast cancer by the year 2030.—I am, etc.,

H. J. B. ATKINS,
London, S.E.1. Director of Surgery, Guy's Hospital.

Diabetic Coma

SIR,—In your issue of April 2 (p. 565) Drs. Lee, Naidoo, and Torrens compare the treatment of diabetic coma with and without the early administration of glucose, and conclude that treatment with glucose significantly increases the mortality. I cannot agree that their data warrant this conclusion. True, the gross mortality in the group of glucose-treated cases is 40% and in the group of saline-treated cases 11%; but the

two groups are not comparable, and when similar cases are abstracted from each group and compared the difference disappears.

It is generally agreed that the prognosis in diabetic coma becomes worse with increasing age of the patient, with increasing depression of the alkali reserve, and with increasing fall of the blood pressure. In the group of glucose-treated patients, 3 of the 10 cases are over 50 years of age; in the group of saline-treated only 2 out of 18. The average age of the fatal cases in the glucose group is 51 years; in the saline group 32 years. If we exclude the patients over 50 years of age, it is found that the mortality rates in the two groups are the same.

The average value for the alkali reserve on admission of the patients who died in the glucose-treated group is 9.8 vol. CC per 100 ml.; in the saline group 12 vol. per 100 ml. The average value for those who recovered in both groups is 14.8 vol. per 100 ml. In each group there were four patients whose systolic blood pressure on admission was under 100 mm. Hg and of these one died in each group. In my opinion, therefore, the data provided show no difference between the results of the two treatments.

Nevertheless we should all agree that the results of treatment of diabetic coma, particularly in the elderly, provide no grounds for complacency. That derangements of water and electrolyte metabolism and circulatory collapse are at least potent factors in such deaths is generally recognized, and if any method of treatment can be shown to contribute to these it should be carefully examined from this point of view. It is known that in dehydration much potassium and phosphorus is lost from the body, that these are derived from the cells, and that with their loss intracellular dehydration occurs. When sugar is being removed from the blood either under the influence of extra glucose or insulin—and *a fortiori* when the two influences are combined—a rapid fall of the plasma potassium and phosphorus occurs, and this in depleted patients may lead to serious symptoms. The extent and potential seriousness of potassium and phosphorus deficits and associated disturbances in diabetic coma have been the subject of a recent investigation by Butler *et al.* (*Trans. Ass. Amer. Phys.*, 1947, 60, 102). If these views are correct, then the rapid correction of the disordered carbohydrate metabolism in diabetic coma may precipitate acute disturbances in the electrolyte balance of a body already depleted. It is perhaps significant that it is only in respect of severe and advanced cases of dehydration in diabetic coma that any suggestion has been made that glucose may have a deleterious influence. But the remedy for this state of affairs is not to abandon a potent weapon—glucose—for the correction of the disordered carbohydrate metabolism, but, as indicated by Butler, to provide the surprisingly large amounts of potassium, phosphorus, and other electrolytes required to remedy the depletion of these substances.—I am, etc.,

London, W.C.1.

H. P. HIMSWORTH.

Height of Hospital Beds

SIR,—As the hospital population grows older, an increasing proportion of my patients fall out of bed or while getting out of bed, blackening their eyes or even breaking their bones. Hospital beds are too high and too mobile for safety and they are commonly placed on well-polished floors. Beds are made high to spare the nurses' backs, but it should not be beyond the wit of man to devise a cheap bed which could be raised to table level for making and lowered to divan level for sleeping.—I am, etc.,

Oxford.

L. J. WITTS.

Tumour Agents

SIR,—I write to ask the following questions because of the views expressed by Professor W. E. Gye (March 26, p. 511). Why is he so sure that the agent of the Rous fowl tumour (and other similar tumours) is a particular virus? What are the exact implications of his remarks in the concluding paragraph on the meaning to be attached to the word "virus"? How exactly (and in detail) does he imagine that the "agent" brings into being the sarcoma cell? Is it by virtue of its possessing a "carcinogenic potency"? How does he explain the rigid specificity of type in the tumours produced? How in view of this specificity, does it come about that the implantation of a mouse carcinoma (presumably caused by a "specific

CROOKES

Lacto-Calamine

PACKINGS

Lacto-Calamine Lotion is supplied in 4 oz. bottles. It is also available in the form of Cream (1 oz. pots) and Talcum Powder (Sprinkler tins).

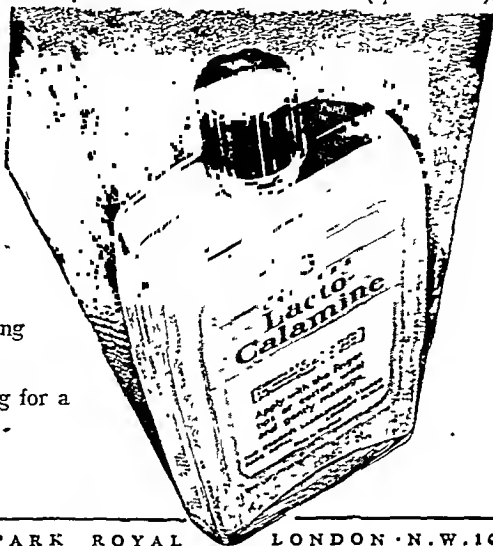
LACTO-CALAMINE presents high-grade colloidal calamine of exceptional covering and protective power, in a specially evolved lotion base. Semi-emollient, it avoids the drying effect of the ordinary calamine, yet, being non-greasy, it clings without cloying to the normal surface of the skin.

FOR ROUTINE USE, invaluable against sunburn and excessive sunshine and cold, dry winds.

IN THE NURSERY against chafing and for teething rashes.

IN SKIN CONDITIONS from acne to urticaria calling for a mildly stimulating yet soothing application.

A very present help for hypersensitive skins.



THE CROOKES LABORATORIES LIMITED · PARK ROYAL · LONDON · N.W.10

Stimulant action in emergency

Anacardone (Injection of Nikethamide B.D.H.) should be at hand in the surgery and in the doctor's bag ready for immediate use.

Nikethamide B.D.H. exerts a rapid stimulatory effect on the respiratory and vasomotor centres thus raising the depth and rate of respiration and improving the blood supply to the heart in acute collapse.

Anacardone is available in ampoules as Injection of Nikethamide B.P. and as a 25 per cent. solution, flavoured, for oral administration.

ANACARDONE

Trade Mark
(INJECTION OF NIKETHAMIDE B.D.H.)

Details of dosage and other relevant information on request
MEDICAL DEPARTMENT

THE BRITISH DRUG HOUSES LTD. LONDON N.3
Phone: Clerkenwell 3000 Grams: Tetradome Telex London

And E 36



terms of TONIC VALUE

First and foremost, Minalex is a *children's* tonic. It takes the short cut to a child's favour with its delightful orange tang . . . ensures 'patient co-operation' right from the start. Yet Minalex is a tonic in the truest sense of the word. It contains the protective vitamins A and D not just in nominal amounts but in therapeutic doses; it provides iron to aid formation of healthy blood; and, in addition, the glycerophosphates of calcium, potassium, sodium and manganese, together with copper sulphate. N.H.S. prescriptions are revealing more and more preference for Minalex . . . and are showing that doctors realise how the same qualities that commend Minalex for the youthful patient are just as valuable to grown-ups!

GLAXO

in 6 oz. and
12 oz. bottles

Syrup MINALEX

Each fluid ounce contains Vitamin A 16,000 i.u. Vitamin D 3,000 i.u.
Iron and copper each 10 grains. Calcium glycerophosphate 2 grains
potassium, sodium, and manganese glycerophosphates 10 grains each

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX. BYR 2434

An anti-histamine of wide application



HISTOSTAB is one of the most satisfactory antidotes for histamine now available.

In the treatment of a wide range of allergic conditions Histostab has few undesirable side-effects. It may be given orally, or by injection when rapid action is required. It will control allergic urticaria and eczema, and will relieve the itching in certain cases of pruritis. It has proved of value in cases of sensitivity to Insulin, Liver and Penicillin, suppressing the unpleasant effects and allowing treatment to be continued.

As Compound Solution of Histostab it is available for nasal and ocular instillation in vasomotor rhinitis and hay fever.

Histostab Tablets. Bottles of 25 x 0.1 G. tablets.

Injection of Histostab. Boxes of 6 ampoules of 2 ml. (0.1 G.).

Solution of Histostab Compound. Bottles of $\frac{1}{2}$ fl. oz.

HISTOSTAB

Literature and further information gladly sent on request to the Medical Department

BOOTS PURE DRUG CO. LTD.

NOTTINGHAM, ENGLAND



S.35



The Choice of an Antacid

THE serious disadvantages attending the administration of alkalis in the treatment of the dyspepsias are now well recognized. Recent reports, however, have again confirmed that the use of aluminium hydroxide obviates the secondary rise of acidity and the danger of 'alkalosis' which are associated with treatment.

'Alocol' is a colloidal aluminium hydroxide, administered as a routine in the treatment of dyspepsias and conditions associated with hyperchlorhydria. 'Alocol' neutralizes excess gastric acidity to the most favourable degree without provoking the danger of 'alkalosis,' thus producing a markedly soothing effect on the gastric mucosa, with the prompt relief of pain and discomfort.

'Alocol' is available in the form of Powder, Tablet and Cream.

Powder.—The normal dose is 1 gramme before and after meals.

Tablets.—Each tablet contains Alocol, 0.5 gm.; P. Sacch. Alb. 0.4 gm.; Cocoa Powder, 0.035 gm.; Excipient, q.s. The normal dose is 2 tablets before and after meals.

Cream.—Formula: Alocol 60 parts approx; Glycerin 50 parts; Ol. Menth. Pip. 0.005 parts; Aq. Chlorof. 40 parts; Aq. Dest. to 1000 parts. The normal dose is 1 to 3 teaspoonfuls between meals and at bed-time.

Complete chemical history of 'Alocol' with convincing clinical reports and supply for trial sent free on request.

A. WANDER Ltd,
42, Upper Grosvenor
St., Grosvenor Sq.,
London, W.1

ALOCOL

M328

Colloidal Hydroxide of Aluminium

Painless INTRAMUSCULAR INJECTIONS

e.g. of PENICILLIN, LIVER EXTRACTS, ARSENO-BENZOLS, BISMUTH, etc.

Many substances create some pain on intramuscular injection. Novutox injected at the same time will prevent this pain.

Most substances are compatible with Novutox, which is also non-destructible to penicillin during the time that the latter is undergoing absorption.

Mixtures with Novutox should be made immediately before use ONLY.

NOVUTOX

Self-Sterilising

Local Anaesthetic

Each cc. of Novutox 2% contains 0.02 gm. ethocaine hcl., 0.00002 gm. epinephrine and 0.00002 gm. capryl hydrocupreine toxin hcl. Other strengths of Novutox contain these elements (with or without epinephrine) in varying proportions.

PHARMACEUTICAL MANUFACTURING CO. LTD.
THE LABORATORIES, CHELTENHAM, GLOS.

virus") into a mouse can nevertheless bring about a sarcomatous transformation of the supporting stroma? And how, especially in view of this last query, does he regard the fact that no such agent or virus has so far been found in epithelial tumours in spite of intense search for such a body?

The reasons for my asking these questions will be found in an article (with references) by myself in the *Edinburgh Medical Journal* (1941, 48, 305).—I am, etc.,

Aberdeen.

J. P. MCGOWAN.

Ankylosing Spondylitis

SIR,—I was sorry to see the suggestion put forward by Dr. C. B. Heald (March 26, p. 546) that it is possible to arrest spondylitis deformans by x-ray treatment given early in the course of the disease. I do not believe that this is ever possible, but the patient (if he is already in his thirties when first attacked—an age when the evolution of the condition is usually slow) may have to be kept under observation for several years before recrudescence of symptoms and extension of the physical signs become manifest.

At St. Thomas's Hospital all patients found by me to show clinical signs of subacute sacro-iliac arthritis are treated at once by radiotherapy. This has meant that some cases have completed the course of x-ray treatment at a time when no radiological signs of any disorder were yet discernible. Nevertheless, within one to two years the other sacro-iliac joint was attacked and the typical sclerosis had now appeared on the radiograph of the joint first affected.

It is obviously impossible to start treatment earlier than during the clinical and pre-radiological stage of sacro-iliac invasion. Failure to arrest the disease even in such favourable circumstances shows that x-ray therapy, however effective it proves in abolishing pain (at times for several years), is palliative, not curative.—I am, etc.,

London, W.1.

JAMES CYRIAX.

SIR,—Dr. C. B. Heald (March 26, p. 546) raises several most interesting points. He lays stress on the value of early x-ray examination of the sacro-iliac joints and suggests that more frequent early examination of these joints would lead frequently to a much-needed earlier diagnosis in this condition. This is very true. But apart from radiological diagnosis it is interesting how long such patients can suffer, openly and obviously, from ankylosing spondylitis and still escape the notice of the clinician whose eye is only open to diseases of more popular systems.

The most obvious cases are missed frequently in busy out-patient departments even though the complaint that took that patient to hospital may have been directly due to spondylitis. The following history is by no means unusual.

A man, now aged 56 years, suffered his first symptoms while in the trenches in 1916 at the age of 22. He experienced great pain in the buttocks, the right more than the left, which greatly interfered with his walking. Alternating "sciatic" pains and stiffness and pain in the left shoulder further incapacitated him. He received little sympathy and no treatment. The condition worsening, he was finally discharged from the Army as a man of poor moral fibre. From that time on relapse and remission alternated, though the latter never lasted longer than three months at a time. Any change of weather upset him; usually the cold suited him better than the heat. His spine gradually became flexed, his chest sunken, and his abdomen lax and atonic. Feelings "as though bands were pulling tight round the chest" became a major symptom. At no time were peripheral joints affected. He attended hospital several times and was seen in 1947 in a general medical out-patient department of a teaching hospital, where notes read that he was complaining of tight feelings round the chest, that his chest expansion at nipple level was only 1 in. (2.5 cm.), and that he was suffering from bronchitis and emphysema. On Nov. 30, 1948, 32 years after his first symptoms, the correct diagnosis was first made in a case so obvious that it could have been diagnosed across the Horse Guards Parade.

Such a history is not unusual. But no clinician who will not notice the obvious will bother to order a skiagram of the sacro-iliac joints. Ankylosing spondylitis is a condition that is often just not considered in the differential diagnosis of exertional dyspnoea, transient or persistent backache, alternating sciatic pains, sternal pains and tenderness, or even pyrexia of unknown origin. In our ex-Service patients the average time between onset of symptoms and correct diagnosis is 2 years

11 months; in our civilian cases it is nearer three times that figure. Yet few patients give such typical histories or show such obvious physical signs.—I am, etc.,

London, W.1.

F. DUDLEY HART.

SIR,—The enthusiasm of your correspondent, Dr. C. B. Heald (March 26, p. 546), for the early diagnosis and x-ray treatment of ankylosing spondylitis needs tempering. If he consults the literature of the disease, which comprises some hundreds of papers, he will discover that success was usually claimed in the treatment of early cases before x-ray therapy became popular.¹⁻⁴ He will also find that there is no evidence that deep x-ray therapy arrests the disease, though it does appear to relieve the pain, at least temporarily, in most cases.

That the sacro-iliac joints should be studied for early diagnosis has been advocated for at least twenty years.^{5,6} Buckley⁷ was the first worker in this country to draw attention to the early changes in the sacro-iliac joints. Dr. Heald refers to "this crippling disease" which affects the "most normal healthy physiques." These two ideas were popularized in Gilbert Scott's monograph,⁸ which in my opinion contains many other unsubstantiated statements. Only some 10 to 20% of patients seen in general hospital practice can be described as "cripples," and the disease affects people of most diverse physiques.

If we had a cure for the disease and money to spare, Dr. Heald suggested mass miniature radiography of the sacro-iliac joints of young adults might be worth while. As it is, we cannot afford to deal with the far graver matter of pulmonary tuberculosis. Dr. Heald speaks of the x-ray changes being "so diagnostically significant." Personally, in studying large films of the sacro-iliac joints of patients' relatives who have suggestive symptoms (such as the pre-spondylitic thigh pains described by Davies-Colley in 1885⁹), using the radiographs of some 40 normal students as controls, I often find it difficult to decide whether the appearances are significant or not.

Finally, Dr. Heald approves of a skin dose of 2,500 r. I doubt whether one is ever justified in irradiating the sacro-iliac joints of a young woman with such a dose unless harmful effects on the ovaries can be avoided with certainty.—I am, etc.,

Bristol.

H. F. WEST.

REFERENCES

1. Walsby, S. C. *Ann. Rheum. Dis.*, 1942, 1, 127.
2. *Quart. J. Med.*, 1942, 33, 31.
3. *Quart. J. Med.*, 1942, 33, 31.
4. *Quart. J. Med.*, 1942, 33, 31.
5. *Quart. J. Med.*, 1942, 33, 31.
6. *Quart. J. Med.*, 1942, 33, 31.
7. *Quart. J. Med.*, 1942, 33, 31.
8. *Quart. J. Med.*, 1942, 33, 31.
9. *Quart. J. Med.*, 1942, 33, 31.

Obstetrics in Great Britain and Ireland

SIR,—The statement of Dr. Bethel Solomons (March 26, p. 545) "that from an obstetrical point of view we consider that Great Britain and Ireland are one" is so completely at variance with the facts that I cannot let it pass without the strongest protest. As an ex-assistant-master of the National Maternity Hospital, Dublin, I know that the practice of obstetrics in relation to such matters as (1) so-called therapeutic abortion, (2) craniotomy, and (3) sterilization is the direct contrary to that obtaining in many centres in this country. Convinced as I am from the medical point of view—apart altogether from ethics—that such operations are not necessary in the best interests of patients, I feel that the practice of obstetrics in England would be greatly improved by the adoption of the Irish practice in relation to these various matters. However, the point is that these fundamental differences in the practice of obstetrics in England and Ireland do exist, and no one knows this fact better than Dr. Solomons; therefore his statement quoted at the outset of this letter is misleading and gives a wrong impression of obstetrics as practised in Ireland.—I am, etc.,

Sheffield.

TIM BOLAND.

Fulminating Meningococcal Septicaemia

SIR,—I was interested in the article by Drs. P. Turner and R. V. Dent on fulminating meningococcal septicaemia (March 26, p. 524), more especially because I recorded findings in a series of 173 cases of meningococcal infection occurring in a recruiting depot in East Africa.¹

Owing to the fact that we were dealing with African natives we had to rely upon examination of the conjunctivae for the presence of petechiae. Of the whole series, 78 (45%) presented this sign, many of them before meningism supervened. These latter suffered, as Drs. Turner and Dent describe, from collapse associated with rise of temperature and rapid feeble pulse; a number of them also had loose incontinent stools, which was a bad prognostic sign. Penicillin was not yet available, and I was unaware of the value of adrenal cortical extract, but all cases were immediately put on sulphonamide as a routine. There were 25 deaths (14.5%) in all—21 of the patients dying on the day of admission.

The mortality rate threw some light on the value of petechiae as a prognostic sign. The figures for this series were: total number of cases with petechiae 78, deaths 25 (32%); total number where no petechiae were observed (all verified cases by lumbar puncture) 95, deaths *nil*.

It may be of interest to mention that two cases in the series had persistent meningism with turbid C.S.F. for several weeks. Both cases made uneventful recoveries soon after the intravenous injection of T.A.B. (100 million), followed by a 200-million dose two days later.—I am, etc.,

Kirkby-in-Ashfield, Notts.

J. D. DURANCE.

REFERENCE

¹ *J.R. Army med. Cps*, 1945, 84, 280.

Fibrositis

SIR,—Surely Dr. J. H. Young (March 19, p. 499) is right. No one need doubt that Stockman and Steinberg demonstrated small areas of polymorphonuclear infiltration in incised fibrous tissue; also no one doubts that Copeman and Ackerman, when dissecting the lumbar muscles of subjects selected at random, really found fatty lobules there. The question is not, Are these findings factual? but, Are they relevant?

It is futile to examine the myofascial tissues for evidence of the cause of the disorder unless previous clinical examination has shown that the fault lies in those tissues. Since clinical examination on accepted lines shows that patients with conditions called "fibrositis" are in fact suffering from articular disorders, examination of the myofascial tissues is pointless. However many little patches of inflammation or fatty lobules may be found, these must not be thought to represent significant deviations from the normal. Still less can they be regarded as in any way causative of the patient's symptoms. Careful clinical examination must point to the structure at fault, which structure should then be examined for the nature of the lesion.—I am, etc.,

Rickmansworth, Herts

M. C. WOODHOUSE.

Whither Tuberculosis?

SIR,—There have been numerous letters in the *Journal* on this subject, but so far the question of its prevention and control does not appear to have been stressed. The real aim of the profession must be the control and prevention of this foul disease.

About 1930 it was definitely shown in the U.S.A. that tuberculosis of bovine origin could be prevented by the eradication of tuberculosis in cattle and the pasteurization of milk. At that time some 2,000 persons, mainly infants, were killed each year by that form of tuberculosis in this country. If the profession had then insisted on the eradication of tuberculous cattle we should not have to-day some 1,500 deaths each year from this form of tuberculosis. Since 1930 only 16% of our herds have been certified free from tuberculosis. To prevent human tuberculosis of bovine origin we must insist on the complete eradication of tuberculous cattle so that there will be no living germs of tuberculosis in the milk; and then, if it is considered necessary, pasteurize the milk to make it doubly safe.

For the control and prevention of tuberculosis we must know who has been infected and who has so far escaped infection. This is most necessary, as at 20 years of age 80-85% of our population is said to have been infected. The only way to learn the truth about infection is by the tuberculin test, which is reliable in over 95% of persons tested.

Some really effective chemotherapeutic agent must be found that will kill the tubercle bacillus in the human body, and if used as soon as infection has been discovered, and before it has developed into a case of clinical tuberculosis, we shall be nearer our aim of controlling this disease.

Those persons who are still found to be free from infection urgently need protection, and B.C.G. should be made available for these cases. These two methods would save the spending of hundreds of millions on our sanatoria.

The public should be given the following information about our sanatoria: (1) How many beds were available in 1948? (2) How many patients were treated in those beds during 1948? (3) How many of these patients were discharged in 1948 with the disease "arrested." Has any record been kept of the fate of these "arrested" cases after their discharge, and, if so, with what result? (4) Were any patients discharged in 1948 with the disease definitely "cured"? If so, how many have been cured? (5) What was the cost of this sanatorium service in 1948?

The publication of the above facts would show the value of this sanatorium service and raise the question, Can we to-day afford it?—I am, etc.,

Itchingfield, Sussex.

SYDNEY GORDON TIPPETT.

Trilene as an Analgesic in Labour

SIR,—With the recent focus both in Parliament and in the Press on analgesia in childbirth, I think that the lay public should have a note of warning sounded in their ears. The hysteria among the members of committees, both male and female, is almost akin to that aroused by the word "vivisection."

Gas-and-air analgesia is extremely safe, is employed in my unit, and its use taught to midwives. On the other hand, the indiscriminate use of inhalation analgesia with the less safe "trilene" is not unattended by risk. In the last six months I have had cognizance of two maternal deaths in which trilene has been used—in one case as an anaesthetic and in the other as an analgesic.

There has been considerable correspondence recently expressing the view that trilene should be used by midwives in the same way as the Minnitt apparatus. I feel that the findings of the committee who made a recent report for the Royal College of Obstetricians and Gynaecologists should be viewed with considerable respect. These are the deliberations of intelligent and senior men, and, while the gas-and-air apparatus is the safest form of inhalation analgesia, I feel that the indiscriminate use of trilene, both as an analgesic and as an anaesthetic in domiciliary midwifery and minor surgery, should be very seriously investigated.

It is not unknown for practitioners to give one of these self-administering apparatuses to a patient and leave her with it, entirely alone—an extremely dangerous practice. Finally, to stress the danger of trilene, I have knowledge of four cases within the last twelve months in which death has been associated with trilene as an anaesthetic.—I am, etc.,

Irvine, Ayrshire.

RICHARD DE SOLDENHOFF.

Pain in Childbirth

SIR,—I was very interested to read the report of the Medical Women's Federation on "Pain in Childbirth" (*Journal*, Feb. 26, p. 333). As a woman doctor with two small children I have had the interesting experience of having had the first in England in 1946 and the second in 1948 in America, where analgesics in childbirth are more extensively used.

Having given a good deal of time and thought to the problem of muscle control and relaxation I approached my first confinement with an open mind. The labour, however, proved to be excessively painful, and little relief was obtained from either pethidine or nitrous oxide, though "trilene" inhalations did give a measure of relief.

In comparison, the second confinement was a pleasure. Four hours after labour started I had a dose of barbiturates sufficient to cause me to doze almost painlessly through the second and third stages. The infant was born healthy and strong, and

was unaffected by the drugs. I was well and got up two days later.

You suggest that the reactions of the medical mothers may have been abnormal. I do not think so. With their knowledge one would expect them to have a more normal approach to labour than women who have not studied its mechanism. A number of non-medical women have said how painful their labours have been and how little relief has been given.

Let it be recognized that for the majority of women labour is painful, if not an agony, and, unless there be contraindications, the benefits of science should be given to those who wish it.—I am, etc.,

Farnham Royal, Bucks.

MARY HERFORD.

Marriage Neurosis

SIR,—It must be in the experience of other psychotherapists as well as myself to discover in the course of analysis that they are treating the wrong member of a married couple. The one who has been sent for treatment proves to be a more stable and worth-while personality than the one who remains aloof. Such a state of things might well be called the marriage neurosis, although the patient readily falls into the category of one or other of the anxiety states.

I think it worth while to call attention to this, since it is easily overlooked if any short cut in therapy is being attempted. The patient, almost always a woman, is extremely likely to make mental reservations when asked to talk of everything which comes into her head, and, since so much material relevant to her anxiety or guilt complex is produced, it may be easy to take at its face value her assertion that all is well with her marriage. A few illustrative cases will make my meaning clear:

A woman was sent for treatment because she had attempted suicide. Her husband refused to come and discuss the situation, and she took all the blame on herself for domestic incompatibility. A few months later he blatantly paraded another woman, and in many ways showed himself to be almost totally devoid of moral responsibility. In another case the woman had an obsessional fear of harming her children. It became apparent that in addition to the usual determinants she had a husband who, although a "decent chap," was decidedly immature and emotionally a drain on her. Another case was a woman who had been driven all her life by an intolerant super-ego, but who had made adequate adjustments and had a successful career until she married. She then broke down with a guilt complex. Her husband proved non-cooperative, but his history and the story of their married life show him to be victim of a possessive mother and quite unable to accept the responsibilities of a married man.

All these women had in common a very high ideal of what a marriage partnership should be, and their breakdown, though determined by the usual childhood experiences, was precipitated or aggravated by an unwillingness to face the fact that their marriage was proving a failure. Once they were brought to overcome the sense of disloyalty they felt in criticizing their husbands they found relief in facing the realities of the situation. My last illustration is somewhat different:

The woman was sent to me because in five years of married life the marriage had never been consummated. The reason given was her fear both of intercourse and of pregnancy, amounting to a phobia. A very few talks succeeded in clearing this up. Her phobia was based on sexual ignorance and childish fantasies. After three or four talks she left me as eager as any young bride. Nothing happened, however. Her husband still remained aloof, and it proved that all he wanted in marriage was the comfort of a home and a wife who was a substitute for a mother; and he was not prepared to face the disruption of his life which the advent of a child would cause.

Other men can no doubt quote parallel cases from their own practices, but my further reason for calling attention to them is that in three of the cases E.C.T. had been recommended as the appropriate treatment, and one of them actually had a course of ten shocks, with devastating effect to her morale and a worsening of her symptoms. The serious thing is that the advocates of E.C.T. made no attempt to understand the cases, and thus were turning their backs on all we have learned about the origins and meaning of neurosis during the last fifty years. I find myself daily appalled by the cases which come under my notice in which shock therapy has been the first, instead

of the last, resort. In properly selected cases it has value, but used as indiscriminately as appears to be becoming more commonly the case it ceases to be a scientific procedure and is equivalent to "Let's shake the nonsense out of her." When it is seriously suggested, in cases like the above, that after a failure of E.C.T. leucotomy is the next step I begin to despair of psychiatry.—I am, etc.,

Birmingham.

R. MACDONALD LADELL.

Aftercare of the Hospital Patient

SIR,—Dr. J. Greenwood Wilson (March 19, p. 502) tends to adopt the attitude so often displayed by those outside the two professions concerned who discuss what they seem to regard as the rival functions of health visitors and almoners. With regard to the Cardiff scheme for the follow-up of diabetic patients Dr. Wilson says he "would take leave to doubt the ability of almoners anywhere to undertake some important aspects of the work"—i.e., the technical instruction. Almoners themselves would be the first to agree with him. They, however, would not agree that their own specialized training, following the social science course, means that they in any way duplicate the visit of a health visitor "just for social case-work." The health visitor and the almoner, in visiting a patient in his or her own home, do so for different reasons, each fundamentally bound up with the separate and complementary functions they seek to perform.

Earlier in the letter Dr. Wilson actually goes right to the root of the matter when he says, "There is no conflict between health visitors and hospital almoners in Cardiff." I submit that in principle there never need be conflict nor overlapping of function. In effect, there very seldom is where members of the two professions are allowed to work together for the good of the patient without third-party interference.—I am, etc.,

London, W.C.1.

M. STEEL.
Secretary, The Institute of Almoners.

Treatment of Varicose Veins

SIR,—Dr. H. M. Hanschell (March 19, p. 500) makes a scathing attack on the use of sclerosants in the treatment of varices. He says that varicose veins left alone carry no mortality, whereas injection with or without ligation may be fatal. "Who dares counter with the sop that varicose veins may become so harsh an affliction of man's estate on earth as to warrant the risk of death in seeking relief?" My reply to his question is that I do, and herewith venture to make a few comments.

First, it is not true that varicose veins left alone carry no mortality. Embolism from untreated varices is on record, and the fact that they are a "harsh affliction" has been and still is recognized by those dealing with the condition. Two hundred years ago Sir Everard Home tells us, "No surgical complaint incident to the soldier has deprived His Majesty's Services of so many men as that of ulceration of the leg." Again, Birger in 1941 states that in Sweden leg ulcers are a greater cause of disability than both tuberculosis of bones and joints and of diabetes put together. Again, I have called attention to the fact that 10% of the admissions to the E.M.S. hospitals during the war consisted of varicose veins and their complications. Confirmation of the "harshness" of the affliction may be obtained by a very short visit to any varicose clinic, where stinking sloughing ulcers associated with oedematous and painful limbs speak for themselves.

Although the conservative treatment of varices is commendable, active treatment with all the weapons at our disposal is essential in many cases. Sclerosants are a valuable proven adjunct in the destruction of the varix. The mortality occasioned by their proper use is infinitesimal, and the "risk of death" to which Dr. Hanschell refers may virtually be disregarded. I claim that nothing but harm can be done by Dr. Hanschell's reference to sclerosants being dangerous and useless and by his statement that they are used with incomplete knowledge, lack of controls, and without a proper follow-up. Such accusations cannot be made against any properly run clinic.

It is of interest to note that one of the many makers of a popular sclerosant tells me that he supplies over 1,000 litres

of this substance annually. This fact emphasizes the widespread acceptance of the value of these substances. I personally have used sclerosants for nearly a quarter of a century, and, whilst appreciating their limitations and the care necessary in their use, can but deprecate this attack on such a valuable weapon.

Dr. Hanschell's alternative to sclerosants apparently consists in multiple incisions running the length of the varix together with the evulsion and resection of portions of the vein. This treatment was well described by Celsus in A.D. 53 and practised by Galen some 200 years later. Since that time it has been revived and given up by various operators throughout the centuries. Dr. Hanschell says, "If the whole vein is extirpated there is, of course, no recurrence." An inspection of the anatomical ramifications of the superficial venous system should be adequate to convince any operator of the optimism of this statement.

However, all discussion regarding this fascinating subject of varices is of value, since it serves to bring out its great importance. I submit that sclerosants should be used with care and that their dosage may be further diminished in operative work by a proper prior scarification of the venous intima. Again, a special limitation of dosage should occur in all those cases presenting a previous history of deep-vein thrombophlebitis, since in such cases the intima of the deep vein may be sensitized to the effect of sclerosants. Given these and other precautions, the sclerosant is an essential and safe part of modern everyday varicose therapy.—I am, etc.,

London, W 1

R. ROWDEN FOOTE.

Brachial-plexus Block Analgesia

SIR,—Dr. J. V. Fiddian's article, "Simultaneous Embolism in Both Arms" (March 19, p. 480), raises an interesting question from the anaesthetist's point of view. The author states that he exposed the site of embolism in the right axillary artery (presumably the third part) under brachial-plexus block analgesia.

The incision in the conventional approach to the third part of the axillary artery is made through an area of skin mainly innervated by the intercostobrachial nerve (T2 and T3), and only to a lesser degree by the medial cutaneous nerve of the arm from the medial cord of the brachial plexus. According to anatomical textbooks the latter may be entirely absent.

Dr. Fiddian does not mention any additional anaesthesia or analgesia having been employed, and it would be interesting to know whether he was indeed able to perform the operation under brachial-plexus block alone, which, on purely anatomical grounds, would appear to be doubtful.—I am, etc.,

Hull.

GORDON M. WYANT.

The Mind and the Skin

SIR,—In his excellent article, "The Mind and the Skin" (March 19, p. 472), Dr. I. B. Sneddon states that he does not agree with psychiatrists that irritation of the anus and vulva always has some deep, dark, sexual significance, but acknowledges that trivial infection, tears in the mucosa, etc., may start a pruritus if the individual is at the time facing some conflict.

He then describes two cases by way of illustration, both of which have an obvious sexual basis. In the first, an obsessional, ultra-clean man gave a detailed description of his anus and perineum "which showed that he had been studying the matter closely"; and in the second, an attractive and well-dressed woman aged 36 developed pruritus when she discovered that her husband had been unfaithful to her.

Few experienced psychiatrists insist that irritation of the anus and vulva "always" has some deep sexual significance, but many, however, would agree that a certain number of pruritus cases have that significance, and certainly would not consider the two cases quoted by Dr. Sneddon as evidence to the contrary.

Dr. Sneddon suggests that even with expert psychiatric treatment, such as analysis, success is unusual in cases of pruritus in those who derive some erotic pleasure from scratching, the psychiatric explanation of which, according to Dr. Sneddon, is

a form of masturbation. This is an unscientific and unduly despairing observation, which one would not expect from such an experienced and psychologically minded dermatologist as Dr. Sneddon. Even those of us who are not psycho-analysts will not agree that it is difficult to convert erotic scratching into pruritus-free masturbation.—I am, etc.,

London, W.1.

ELLIS STUNGO.

Yearly Re-examination by Mass Radiography

SIR,—It has now been possible to analyse the results of the 1948 visit to the factory group whose yearly re-examination by mass miniature radiography was reported in the *Journal* of April 10, 1948 (p. 689). This analysis is shown in the following table. While the incidence among new employees (Group OO) remains the same as for the general population that for employees with a normal miniature film at the previous survey (Group EX) continues to be about one-third of this figure. Group EO contains those persons employed but not fluorographed at the previous visit. The volunteer response had risen to 80%.

Group	No. Examined	Observation Cases	Treatment Cases	Total (O + T)	Percentage
EX	1,351	3	2	5	0.4
EO	476	4	1	5	1.05
OO	366	5	0	5	1.4
Total ..	2,193	12	3	15	0.7

All cases were minimal in extent, with the exception of one of the treatment cases in Group EX. This was a girl, aged 2 who had had symptoms for six months. She had moderate advanced disease with a cavity in her left lung. In addition one known case was found to have relapsed.

These figures appear to reaffirm the value of the yearly re-examination of such groups.—I am, etc.,

Denham, Bucks.

W. POINTON DICK.

B.C.G. Vaccination in Finland

SIR,—In a recent publication Professor Severi Savonen¹ has given an account of B.C.G. vaccination in Finland since its introduction there in 1941. In 1942 a total of 2,500 tuberculin-negative persons were thus vaccinated, whereas in 1947 as many as 61,200 persons were thus treated. Early in 1948 the Finnish National Association for Combating Tuberculosis (which has been responsible for B.C.G. vaccination in Finland all the time) entered on a campaign of mass vaccination of every tuberculin-negative person between the ages of 15 and 2 years.

This campaign was preceded by the despatch of a personal letter, accompanied by an informative leaflet, to everyone of the above age. The recipients of these letters were requested to present themselves for tuberculin testing and, in the event of their being tuberculin-negative, for B.C.G. vaccination. The association put 21 nurses at the service of this campaign, and it was only nurses who undertook this vaccination. By the end of September, 1948, this campaign had been successfully brought to an end in more than 350 of the some 480 administrative rural districts in Finland. About 30% of the Finns of the above-mentioned age were found to be tuberculin-negative. The association's plan of campaign for 1949 is to vaccinate every tuberculin-negative person in Finland between the ages of 0 and 15 years. It is the ultimate ambition of the association to ensure that everyone in Finland is tuberculin positive.

The tuberculin testing in Finland is being carried out as a modification of the method described in 1929 by the Italian Bruno Trambusti. The B.C.G. vaccine is flown by air mail once a week from Gothenburg to Finland, and the tuberculin is supplied in the form of old tuberculin by the State Serum Institute in Copenhagen.—I am, etc.,

Sunfjord, Bergen, Norway.

CLAUDE LILLINGSTON.

REFERENCE

¹ *Kvinsk. Svensk. Nat. Fören. Tuberk.*, 1948, 4, 54.

POINTS FROM LETTERS

Analgesia in Childbirth

Dr. O. CAIGER SMITH (Nottingham) writes: In view of the popular and parliamentary interest in the matter of analgesia in childbirth it is surprising that one simple apparatus, already existing primarily for this purpose, has not received more mention. The Young-Simpson inhaler is scarcely mentioned in the books and is rarely described. Consisting of a Woulfe's bottle, a rubber tube, and a face-mask with a variable outlet valve, it delivers to the patient an amount of analgesic commensurate with the amount of pain. Air is drawn through the long metal tube of the Woulfe's bottle, through the anaesthetic, through the short metal tube via the rubber tube to the face-mask. Expired gases pass without obstruction through the simple valve on the face-mask. The valve is so arranged that gentle breathing prevents it from working and pure air only is drawn in. The effect of all this is that severe pain induces a deep breath and provides the patient with a relatively large amount of analgesic at once, while a lesser breath, induced by a lesser pain, draws over a lesser amount of analgesic. The pain centre makes direct arrangements with the respiratory centre. "Trilene" is the anaesthetic of choice; at the moment and suits this apparatus very well, though I have had no trouble with chloroform. The apparatus is light and portable, and has an additional advantage over the N_2O machines in that the reserve supplies of anaesthetic can be easily seen, so that there is no danger of the drug running out in the height of battle. I have had no trouble in teaching the use of this apparatus to midwives in a few minutes, and many have wondered why it is not more universally used. I have employed it myself for twelve years to the great satisfaction of patients and myself. The two important rules to ensure absolute safety and effectiveness are: (1) Do not put more than about one inch of trilene in the Woulfe's bottle, and (2) Make sure that the patient has the mask sufficiently firmly applied so that on inspiration air is heard bubbling through the Woulfe's bottle. A loose application to the face means little or no analgesia.

Child Welfare in Africa

Dr. J. O. SHURCORE (Fort Johnston, Nyasaland) writes: Mr. Norman Emblin's paper entitled "5,000 Consecutive Deliveries without a Maternal Death due to Pregnancy" (Feb. 12, p. 260) is a splendid example of what can be achieved by thorough organization and administration. It may not, however, be out of place—especially as African affairs are now to the forefront—to refer those interested to the *Tanganyika Territory Annual Medical Report of 1928* (pp. 105-115), in which detailed statistics are given. In this connexion a paragraph from a "Memorandum on the Improvement of Physique of the Native" by the director of medical services of the day (1930) refers to that report as follows: "The death rate for the first ten days of life at the Kahama Clinic, at which 1,129 children were born during 1928, was less than 30 per 1,000." Miss Allardes, nursing sister and health visitor, later matron of the nursing service, was in charge, and she, together with a staff of six African female assistants trained by her, dealt with the whole of that number in the year. The Kahama Clinic was situated at a small district headquarters 80 miles north of Tabora and 35 miles directly west of the Tabora-Mwanza railway, on a road frequently cut off during the rainy season—"out in the blue."

Vitamin A for Iridocyclitis

Dr. DOROTHY MATTHEWS (Johannesburg) writes: During the past four years I have had four attacks of iridocyclitis. These were apparently precipitated by periods of over-work, and no source of infection was found to account for them. The first attack lasted about two months, but the next two were shorter. Sulphonamides and penicillin seemed to have helped a little in these two; during the first only local heat, atropine, and analgesics were used—morphine being necessary for the worst part of the attack. The last bout occurred just over two months ago. I wondered if it might have a dietetic origin, as I dislike fats in general. I took 350,000 units of vitamin A orally immediately, and 60,000 h.d. for the following three days. Within 24 hours of the first dose there was marked improvement. I had inserted no atropine, and the photophobia had gone. There were still physical signs of iridocyclitis, confirmed by an ophthalmologist. Previously I associated vitamin A therapy with corneal conditions only, but in the light of this experience I wonder how many idiopathic cases of iritis may not benefit by similar treatment.

The Ministry of Health states that over 380,000 blood donations were received by the National Blood Transfusion Service last year—90,000 more than in 1947. More blood was used in hospitals in England and Wales last year than in 1944, the peak year of the war. Nearly 100,000 new donors joined the National Blood Transfusion Service in 1948, making a total of 373,778 donors in England and Wales. But to provide for future needs and to reduce calls on existing donors another 200,000 are wanted.

Obituary

PROFESSOR ERNST SCHMIEGELOW

Professor Ernst Schmiegelow, of Denmark, who died on Feb. 28, was a remarkable figure in the world of otolaryngology. Not only was he the first in Denmark to hold a professorship in this field, but he was also the first in his younger days to wrest otolaryngology as a specialty from the general surgeons. He was born on Oct. 13, 1856. When, a few years ago, at the age of 90, he published his autobiography, based on his diary, he succeeded in painting a vivid picture of the world of medicine in a great part of two centuries. An indefatigable traveller and participator in international medical conferences, this urbane Dane came to know and to be known by the leading medical men throughout the world, and his younger fellow-countrymen soon learnt how letters of introduction from him opened countless doors abroad. When in 1883 Schmiegelow opened a polyclinic for patients with diseases of the ear and throat in Denmark the surgeons did their best to put him out of countenance. In 1929 Schmiegelow's standing in his own specialty was officially recognized by his selection as president of the First International Oto-Laryngological Congress in Copenhagen.

Dr. VICTOR DAMIAN PENNEFATHER died in Southampton on March 25 at the age of 53. In 1917 he qualified in Singapore, and after working there and at Dar-es-Salaam he came to England and became a student at the London Hospital. He served as a captain in the R.A.M.C., and in 1922 obtained the Conjoint diploma. He then worked at Lyndhurst, in the New Forest, for a number of years, and finally took over a busy practice in Southampton. The strain of overwork during the recent war was a factor in the development of the illness which forced him to retire two years ago. Dr. Pennefather was conscientious and able, and he was an active member of the B.M.A. and the Southampton Medical Society. He was well liked by his patients and colleagues, and will be missed by many. He showed great fortitude and patience during his prolonged and trying illness, and the sympathy of his colleagues and friends will be extended to his wife, who nursed him during his illness—S. N. L.

Dr. HERBERT EBENEZER EDLIN died at his home in Levenshulme, Manchester, on Feb. 23 at the age of 86. Dr. Edlin was educated at Manchester Grammar School and at Owens College, qualifying in 1884. In that year he succeeded to his father's practice and was also appointed medical officer of health for Levenshulme, an appointment which he resigned only in 1909 after twenty-four years' service. He was interested in the work of the St. John Ambulance Brigade and was for many years a lecturer and examiner in first-aid. During the 1914-18 war he acted as honorary secretary to the local Red Cross hospital, and was also on the staff of the military hospital at Alma Park. In the recent war he took charge of a first-aid post at Stanley Grove, and he only retired from practice in October, 1947, a few months after his 85th birthday. Dr. Edlin had lived in Levenshulme since early childhood, and he saw it grow from a village with a population of about 2,500 to its present size. He was popular with his patients and greatly esteemed by his colleagues. The sympathy of all who knew him will be extended to his widow and his son.

Mr. ARTHUR HERBERT BUCK, who died at Dereham, Norfolk, on March 9 at the age of 79, had a distinguished surgical career in Sussex up to his retirement in 1921. As a boy he had a voice of great heauty and was a chorister of King's College Chapel, Cambridge. He perhaps inherited some of the musical talent of his grandfather, Zachariah Buck, the renowned organist of Norwich Cathedral. After qualifying from St. Bartholomew's Hospital in 1892, the year in which he won the Brackenbury Scholarship, he became senior house-surgeon at the Royal Sussex County Hospital, Brighton, and remained there for three years. He was elected assistant surgeon to the hospital in 1899, two years after he had taken the F.R.C.S.Ed., and full surgeon in 1909. Buck was full of zeal for the then new aseptic technique and was the first to practise it in Brighton. He soon became known as a bold and dexterous surgeon, and for many years he and the late Mr. Reginald Jowers shared between them most of the surgical work of Brighton and mid-Sussex. Buck was also surgeon to the Brighton and Sussex Throat and Ear Hospital from 1901 onwards. Though of all-round ability, his special leaning was towards abdominal

surgery, in which he excelled. He took great pains with his after-treatment, often employing original methods, some of which stood the test of time while others did not. Buck was attached to the 2nd Eastern General Hospital during the 1914-18 war, with the rank of major. After the war ended he retired at a somewhat early age and took himself and his family to Vancouver Island, where they spent twelve happy years. He had always been an enthusiastic yachtsman, sailing on the south coast and the Norfolk Broads, and he was an equally fine fisherman. These two hobbies he was able to enjoy to the full from his home on the Island. When the time came for his son, John, to start his medical studies in Edinburgh, the family returned to England. Some financial losses had been suffered, and with characteristic resolution Buck decided to get into harness again. Surgery held no prospects after twelve years' absence, so he proceeded to do "locums" in Norfolk and elsewhere until his son had qualified. Six years ago Buck was stricken by a fatal illness and underwent several operations. These and their attendant discomforts and anxieties he met with much fortitude, always cared for by his devoted wife. Her sudden death, eighteen months ago, shattered him, and the end came with a kindly hand. His life had held both storm and sunshine, and in all circumstances his outstanding virtue was courage.—H. N. F.

Dr. HENRY COLIN MACLAREN, who died in Carlisle on March 17 at the age of 37, was honorary anaesthetist to the Cumberland Infirmary and the Carlisle group of hospitals. He was born in Carlisle, and was the youngest son of the late Norman Maclaren, F.R.C.S., who was honorary surgeon to the Cumberland Infirmary, Carlisle. He was educated at Oundle, Trinity College, Cambridge, and St. Bartholomew's Hospital. He graduated in 1937 and took the D.A. in 1940. After resident appointments at St. Bartholomew's Hospital and at Winchester he returned to Carlisle and was appointed anaesthetist to the Cumberland Infirmary in 1939. From 1942 he served in the R.A.M.C. as a specialist anaesthetist in North Africa, Italy, and Austria. On demobilization in 1946 he took up practice in Carlisle again. Dr. Maclaren was honorary secretary of the Border Counties Branch of the British Medical Association, and had previously been honorary secretary of the Cumberland Division. With the death of Colin Maclaren, Carlisle has lost a man of great promise. He had a happy personality, and he proved in his last long illness how great was his courage. He is survived by a widow and two young sons, to whom the sympathy of many friends and colleagues will be extended.—F. J. S.

Dr. THOMAS MORRISON CLAYTON, who died on March 21 after a long illness, had a distinguished career as medical officer of health and school medical officer of Gateshead. Dr. Clayton was born at Felling in 1870, graduated at the University of Durham in 1894, and practised in his native town for some years, becoming its medical officer of health in 1896. Six years later he succeeded Dr. R. Greene as the fourth whole-time medical officer for Gateshead, a town which shared the unenviable reputation of industrial Tyneside generally as an unhealthy area. He belonged to the generation for which preventive medicine was mainly directed to improvements in environment and the control of infectious diseases. He became an expert epidemiologist, with considerable experience of outbreaks of smallpox and typhus, being much concerned with the last two local outbreaks of the latter disease in 1907 and 1910. It was also in 1907 that Dr. Clayton initiated school medical inspection in Gateshead, and he organized the maternity and child-welfare clinics there in 1919. Throughout his service he was medical superintendent of Sheriff Hill Isolation Hospital, and he started the extension of the Gateshead municipal hospitals with the opening of Whinney House Sanatorium in 1925. In the sphere of hospital development Dr. Clayton was gravely handicapped by the poverty of the town, which became a "distressed area" in the post-war slump, and he had retired from active work before the grants from the Special Areas Commissioner became available for the building of the new municipal hospitals, which were the logical result of much of his work. His retirement in 1936 brought to an end his thirty-four years' service in Gateshead. Clayton was an authority on infectious diseases and one of the earliest to criticize the theory of the aerial convection of smallpox, ascribing the apparent examples of such spread rather to human contact, a thesis which in 1905 he put before the leading sanitarians of the country. In 1908 he was elected a fellow of the Royal Society of Edinburgh. An excellent raconteur, he had the knack of smoothing out administrative and other difficulties with a well-timed and pointed anecdote. He is survived by two daughters and three sons; one son is a veterinary surgeon and two are medical officers of health. To all his family the sympathy of his colleagues and friends will be extended.—J. G.

Dr. C. Lillingston writes: Dr. J. R. Conner (March 26 p. 549) used to describe himself as a literary hack. To those who knew him well this was an understatement with vengeance. To be sure, he was a master of the technical side of medical journalism, and he took infinite pains in practising and teaching the reporting of medical news in concise English, purged of all that was slipshod. Such redundancy a "curiously enough" was anathema to him. Why, he would ask with intense exasperation, do you drag in "enough" when you know quite well that here it means nothing at all, at all? The *Medical Review*, which Conner owned and edited for many years, was devoted exclusively to abstracts of original articles published at home and abroad. Here he revelled in the delicate and responsible task of sifting the wheat from the chaff. At later stage he was the tireless and efficient editor of the *Clinical Journal*. Conner was still less of a literary hack in the part he played as the regular London correspondent of the *Journal of the American Medical Association*. Here he had full scope for his talents as a shrewd observer of, and commentator on, the world of medicine. As a reporter of events he was impartial and objective. He was so, too, as a biographer. But when, as happened occasionally, the subject of a medical biography inspired him, he came out of his shell, a self-confessed hero worshipper. He did so in prose of a quality which recalled the saying that it takes an Irishman to write the best English. Conner was Irish to the marrow, from his ancestry to his brogue. But he was very appreciative of the Anglo-Saxon character, though when he referred to the Anglo-Saxon's love of compromise he did so rather as the detached observer of a natural phenomenon than as a breathless admirer of it. For truth to tell, Conner had no taste for compromise when the rights and wrongs of a case were self-evident. Indeed, his uncompromising rectitude must often have troubled him as much as it won the admiration of the friends who knew him best.

Medico-Legal

N.H.S. TERMS OF SERVICE

Doctor Censured

The Derbyshire Executive Council at its meeting on Feb. 1 unanimously approved a report from the Medical Service Committee recommending that a doctor should be severely censured and that a sum of £10 should be withheld from his remuneration.

The committee had investigated a complaint made against a medical practitioner by the father of a baby girl, aged 1 month, who died on Nov. 27, 1948. The substance of the complaint was: (1) that although three urgent requests for visit by the doctor were made on Saturday, Nov. 27—namely at 7.55 a.m., 4 p.m., and 5.30 p.m.—no doctor arrived until 6.30 p.m.; (2) that no examination was made until Saturday Nov. 27, 1948, when an assistant doctor examined the child. The complainant attended the hearing and brought with him as witnesses his wife and mother-in-law. The respondent doctor (who is in partnership with another doctor and has two assistants) attended but did not bring any witnesses.

It was accepted in evidence that the name of the doctor was included in the Council's Medical List, and that, having signed Form E.C.16, he had undertaken to accept service and to be bound by the terms of service in operation in the area; also that the deceased child was accepted by the doctor and registered on his list with effect from July 5, 1948.

The father stated that on Tuesday, Nov. 23, his child started to vomit and pass a green motion; that on Wednesday, Nov. 24, 1948, he telephoned to the doctor's surgery; that one of the assistant doctors arrived at the house and prescribed tablets but did not make any examination. On the night of Thursday Nov. 25, the child started to breathe heavily, and on the following morning the father again telephoned to the doctor's surgery. The other assistant came to the house, saying that the child's condition was due to the effect of the tablets and that there was nothing to worry about. The father was emphatic in stating that on the occasion of both visits no examination was made. On Saturday, Nov. 27, on returning from work at 6.30 a.m., the complainant said his wife and mother-in-law told him they had been up all night with the child, and at 7.55 a.m. he went to the house of the doctor, whose wife answered the

door, and told her his daughter was very ill and breathing heavily. The doctor's wife said she would speak to the doctor. The father asked her to inquire of the doctor if it would be all right to give the child a drop of brandy. The doctor's wife came back with the message "not to give any brandy but that the doctor would come along." At 4 p.m., as the child was gasping for breath and no doctor had arrived, the father said he again telephoned the doctor, whose wife answered the telephone and said one of the doctors would call. The father went on to say that at 5.30 p.m. still no doctor had arrived, and he telephoned again and was answered by the doctor's wife, who said, "Hold on whilst I speak to the doctor," and that when the doctor's wife again answered she said it was one of the assistant doctors' "off-duty" day but that the other assistant would call. At 6.30 p.m. the assistant doctor arrived, examined the child, and said it was pneumonia. At about 7.30 p.m. the same night an ambulance arrived and the child was taken to hospital, arriving there about 9 p.m. The child died between 10.30 and 11 p.m. the same evening from bronchial pneumonia. The complainant's statement was corroborated in evidence by his wife and mother-in-law.

The respondent doctor in his statement maintained that there was no neglect and that by prescribing sulphapyridine tablets the necessary precautions had been taken. The doctor further contended that there was no serious condition of the child until the morning of Saturday, Nov. 27, and that following the early-morning call by the complainant he left a note on the assistant's desk so that it would be seen immediately on the assistant's arrival for the morning surgery. He made the admission, however, that he had quite forgotten it was the assistant's "off-duty" day. The doctor stated that directly after returning from visiting patients at 6 p.m. one of the assistants went to see the child.

After a lengthy hearing the committee found as follows: (1) That it was not until approximately 6.30 p.m. on Saturday, Nov. 27, 1948, that the assistant doctor visited the child, although the complainant personally delivered an urgent message at the doctor's house at 7.55 a.m. that day, followed by two further telephonic requests made by the father at approximately 4 p.m. and 5.30 p.m. (2) That up to Saturday, Nov. 27, the committee found no evidence of inattention. (3) That there was a degree of negligence on the part of the principal doctor in not responding more promptly, either personally or by deputy, to the father's request made on the morning of Saturday, Nov. 27, 1948.

The committee recommended: "That the doctor be severely censured and warned to exercise more care in the observance of his terms of service under the National Health Service Act, and that representations be made to the Minister that, owing to the failure of the doctor to comply with the terms of service, a sum of £10 be withheld from his remuneration."

Medical Notes in Parliament

Psychiatric Treatment of Homosexual Offenders

Replying on March 28 to Mr. WILKINS, Mr. EDE stated that no psychiatrists were employed full-time in the prison service. Six were engaged in a part-time capacity. Five prison medical officers possessed special psychiatric qualifications, and many others had mental hospital experience. There were now 412 prisoners serving sentences for homosexual offences. Prisoners convicted of these offences who in the opinion of the medical officer might benefit by psychiatric treatment were transferred to the prisons at which there were psychiatric clinics if their sentences were long enough. During the past six months 40 homosexual offenders received psychiatric treatment at these centres, and, of those at present under sentence, 35 additional cases had received psychiatric examination and guidance at other prisons. Arrangements had also been made to extend the psychiatric service available to prisoners who might benefit from treatment but could not be removed to the special centres. Research, partly therapeutic in character, into the psychological and endocrinological aspects of homosexuality was being conducted at two selected prisons, and homosexuals might also benefit from research now in progress into psychopathic personalities.

Universities and Colleges

UNIVERSITY OF LIVERPOOL

S. Ghouseuddin has been approved for the D.P.H. (Part I).

UNIVERSITY OF LEEDS

The following candidates have been approved at the examinations indicated:

M.D.—R. C. Gledhill, J. S. Thorburn.
CH.M.—R. A. Hall, R. E. Shaw.
FINAL M.B., CH.B.—Part III (Medicine, Surgery, Obstetrics and Gynaecology, Therapeutics): Nora E. Brown, D. Burrell, Hazel M. Coleridge, R. S. Colwyn, E. L. Copley, Frances M. Collam, P. H. Daley, W. P. Goodyear, Ida Mather, J. E. Miller, Anne B. Neil, Cynthia M. Perlman, K. Platts, Mary C. Robertson, J. Sagar, M. H. Singer, Dorcas W. Steinbrecher, D. J. Stephens, Joyce M. Tensdale, Margaret Winton. Part I (Pathology and Bacteriology, Pharmacology): Margaret Anderson, Cynthia Barnett, Audrey M. Bolton, Dorothy Broomhall, Jean M. Burnell, E. M. Calverley, J. I. Currie, T. G. Dobie, D. Duncalf, M. Dunsby, W. G. C. Forrester, Mary Hollowell, Marion Hanson, J. G. M. Harrison, Anne E. T. Haw, Marjorie Haw, T. E. Heath, J. M. Hirst, B. R. G. Hutchinson, Margaret Hyde, Mary McMillan, R. J. Mahabir, P. Mellor, E. Morton, K. A. Naylor, A. Nugent, Margaret Penny, Mary G. Pullan, Margaret Rogers, R. E. Rossall, P. B. Rowe, Audrey W. Scothorne, J. A. Sharp, M. W. Sharp, S. Sheffrin, P. D. Sinclair, K. Stewart, K. R. Thomson, F. W. Turner, D. C. Twist, Barbara M. Wadsworth, E. R. Watson.

1 Distinction in Pharmacology. 2 Distinction in Pathology and Bacteriology.

The following Scholarships and Prizes have been awarded: *Medical Scholarship*, R. Beaumont. *McGill Prize in Clinical Surgery*, E. L. Copley. *Waddington Prize in Anatomy*, D. N. Laurence.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

The Croonian Lectures, on "Malaria, with Special Reference to Recent Experimental, Clinical, and Chemotherapeutic Investigations," will be delivered by Dr. N. Hamilton Fairley, F.R.S., before the College (Pall Mall East, S.W.) on Tuesday and Thursday, May 3 and 5, at 5 p.m.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Professor Robert I. Harris, Associate Professor of Surgery in the University of Toronto, has been elected an Honorary Fellow of the Royal College of Surgeons of England. He will be admitted as an Honorary Fellow on April 29, when he will deliver before the College (Lincoln's Inn Fields, London, W.C.) a Hunterian Lecture on "Spondylolisthesis."

SOCIETY OF APOTHECARIES OF LONDON

Professor E. C. Dodds, F.R.S., presided, as Master, at recent meetings of the Court of Assistants. Dr. J. P. Hedley was re-elected to represent the Society on the Central Midwives Board for a further year from April 1. The Society's Gilson Scholarship in Pathology will in future be awarded every third year, beginning in 1952, in the sum of £500. It was resolved to confer the Honorary Freedom of the Society upon Sir Charles Harington, F.R.S., in recognition of his work in the field of biochemistry and chemical pathology. The Gold Medal of the Society for 1949 will be bestowed upon Professor Jacques Tréfoüel, Director of the Institut Pasteur, Paris, in May, in commemoration of his contribution to scientific advancement in the field of therapeutics. The report of the death in a railway accident of Dr. Francis S. Curd, Gold Medallist, was received with regret. A further course of ten lectures on modern therapeutics will be given in the week beginning Dec. 5 next.

The Diploma of Mastery of Midwifery was granted upon examination to G. Bridge.

The following were granted the Diploma in Industrial Health upon examination: N. Graham, T. G. Jones, G. M. MacBain, T. E. M. Wardill.

The Diploma of L.M.S.S.A. was granted upon examination to the following successful candidates: H. H. B. Perkins, C. M. D. Davies, M. A. R. Stilson, H. D. Isaacs, A. Paes, M. J. Beilin, J. A. A. R. Venniker, E. G. Dimopoulos, M. Callier, J. K. Jones, M. G. Kaye, T. Bell, J. R. Deacon, D. L. Stilson, J. D. Whittall, T. Brearley, J. R. Dyson, T. Pimblett, C. Jones, R. W. E. Brain, R. Raynham, N. H. Porter, R. F. Maddox, D. L. Stewart, A. P. Caspers, R. Payne, G. Williams, H. G. Damant, B. E. L. Thompson, N. H. Bamford, E. F. Stafford, M. H. Symes, E. A. Brown.

The High Commissioner for Eire has asked that when it is found desirable to transfer patients to hospitals in Eire the transfer should be arranged through his office and not directly with the hospital in Eire. Hospitals which are arranging to transfer patients should send full particulars, including a medical report and information about the district to which the transfer is desired, to the High Commissioner at 33-37, Regent Street, London, S.W.1. The High Commissioner's Office will then make whatever arrangements are possible for the reception of the patient.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended March 19.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included) (b) London (administrative county). (c) Scotland. (d) Eire (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London) (b) London (administrative county). (c) The 16 principal towns in Scotland (d) The 13 principal towns in Eire (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	57	5	15	1	1	49	5	23	1	1
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	114	9	28	3	1	173	19	53	15	5
Deaths	—	—	—	—	—	—	—	—	—	—
Dysentery	35	4	13	—	—	170	17	30	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	—	—	—	—	—	1	—	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	29	13	5	—	—	49	7	6
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	—	—	—	—	—	—	—
Deaths	37	4	6	18	3	59	4	11	13	—
Measles*	16,275	1231	292	118	168	10,034	1716	505	112	17
Deaths†	—	—	—	—	1	—	—	2	—	—
Ophthalmia neonatorum	56	4	15	—	—	92	5	9	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	2	—	—	—	—	2	1	—	(B)	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	1,524	66	23	20	9	963	53	7	5	5
Deaths (from influenza)‡	360	31	6	3	6	20	7	2	1	1
Pneumonia, primary	488	71	247	46	21	232	40	295	24	7
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-encephalitis, acute	—	—	—	—	—	2	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-myelitis, acute	18	—	1	1	—	20	2	1	2	—
Deaths§	1	—	—	—	—	2	—	—	—	—
Puerperal fever	—	—	13	—	—	—	1	14	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia||	104	8	5	2	—	145	6	11	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,209	63	179	138	44	1,847	118	302	37	59
Deaths†	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	3	—	—	3	—	6	—	1	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,790	221	272	57	62	3,304	246	61	46	10
Deaths	15	1	2	5	2	91	21	—	—	2
Deaths (0-1 year)	333	40	42	36	14	357	57	50	9	10
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	7,429	1094	744	230	195	4,941	839	616	192	132
Annual death rate (per 1,000 persons living)	—	—	14.9	14.3	—	—	12.4	12.0	—	—
Live births	8,103	1256	967	339	260	8,366	1347	1057	400	228
Annual rate per 1,000 persons living	—	—	19.4	21.0	—	—	21.3	25.0	—	—
Stillbirths	202	23	27	—	—	222	33	27	—	—
Rate per 1,000 total births (including stillborn)	—	—	27	—	—	—	—	25	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

Smallpox

A passenger aged 69 who became ill about March 21 on board the *s.s. Mooltan* during a voyage from Australia died at sea on April 1. The fatal illness, at first believed to be chicken pox, was later found to be smallpox. The ship arrived in the Port of London on April 2 with 953 passengers and 441 crew. All except two of these persons were either vaccinated or revaccinated before leaving the ship on April 3. Local health authorities are being advised of the names of these persons and of the addresses to which they have gone, also of the names and addresses of a number of persons coming to the United Kingdom who left the ship at Marseilles on March 25 without being vaccinated. The widow of the passenger who died was taken ill on April 3 and has been removed to a smallpox hospital. Passengers and crew on the ship were at risk of being infected by smallpox for about a week before they were vaccinated or revaccinated. The vaccination of contacts after exposure to infection cannot be relied upon to afford complete protection, and there is a likelihood that further secondary cases may appear during the next fortnight. Medical practitioners called to see any passenger or member of the crew from the *s.s. Mooltan* during the next few weeks are asked to consider the possibility of smallpox, and if in doubt to inform the local medical officer of health, who will be prepared if necessary to obtain the advice of a consultant.

Influenza

There were 327 deaths in the great towns in the week ended March 26 as against 360 in the previous week. The numbers increased in the Midlands, but decreased elsewhere. The majority of the deaths occurred in old people. This fall in the weekly total of deaths brings to an end an increase that has continued over the past seven weeks. An exceptional feature of the present outbreak has been the persistence of a rising mortality so late in the year. The latest period for a maximum figure during recent years was the eighth week in 1940. The number of deaths occurring in the first eleven weeks of this year is the largest for the past ten years except for 1941 and 1946.

Provisional Figures for 1948

Provisional figures given in the Registrar-General's return for the quarter ended Dec. 31, 1948, show that the general death rate in 1948 was the lowest ever recorded in this country. It was 10.8 per 1,000 total population, compared with 12.0 in the previous year and the previous lowest figure of 11.4 in 1930 and 1945. The infant mortality rate was 34 per 1,000 related live births. This is the first time the annual rate has fallen below 40 and is an improvement of 7 per 1,000 on the previous lowest in 1947. The improvement in infant mortality in this country in recent years compares favourably with the experience of other countries, although some still have lower rates—for example, the provisional 1947 rate for Sweden was 25. The proportion of stillbirths to total births was 23.1 per 1,000, or 1.0 lower than the best previous figure, which was also in 1947.

There was a fall in the birth rate from 20.6 per 1,000 total population in 1947 to 17.9 in 1948, but the effective reproduction rate (provisional) is still above one. Included in this return are three graphs which give a comparison of the numbers of live births, deaths, and marriages during and after the two world wars.

The total population of England and Wales at June 30, 1948, is given as 43,502,000 (males 21,091,000, and females 22,411,000). Projections of the total population of England and Wales by sex and age to mid-1950 and mid-1960 give the total population at those dates as 43,685,000 and 44,906,000 respectively: these projections are, of course, made upon certain assumptions—for example, that births will be at the rate of 700,000 per annum to mid-1955 and at the rate of 650,000 thereafter. A summary of these projections shows how the proportions of children and of people over 45 years of age in the population are expected to increase at the expense of the younger adult population.

Discussion of Table

In England and Wales an increase was recorded in the notifications of whooping-cough 169, scarlet fever 31, cerebrospinal fever 22, and diphtheria 13. There was a decrease in the incidence of measles 1,030 and dysentery 14.

The largest falls in the notifications of measles were Staffordshire 196, Southampton 164, Cheshire 126, Warwickshire 114, Yorkshire West Riding 113, and Worcestershire 104. The incidence of measles increased in London and the surrounding counties in contrast to the remainder of the country; the largest rises were London 197 and Kent 92.

Oral therapy for urogenital analgesia

'PYRIDIDIUM' administered orally in a dosage of 2 tablets t.i.d., promptly relieves such symptoms as painful, urgent, and frequent micturition, nocturia, and tenesmus. 'Pyrididium' acts directly on the mucosa of the urogenital tract; its characteristic

analgesic effect is entirely local, and it is not associated with or due to systemic sedation or narcotic action. Therapeutic doses of 'Pyrididium' may be administered with virtually complete safety in most cases of infection or irritation of the urogenital tract.

Samples and literature on request

● *Pyrididium is the registered trade mark of the Pyrididium Corporation of New York to designate its preparation of phenyl-azo-a-a-diamino-pyridine hydrochloride. Each tablet contains 0.1 g.*

'PYRIDIDIUM' TABLETS

MENLEY & JAMES, LTD., 123 COLDHARBOUR LANE, LONDON, S.E.5

UAC4



CONTINUOUS PERFORMANCE

In Gelusil* Tablets the recognizedly prompt and effective antacid virtues of aluminium hydroxide are fortified by magnesium trisilicate to provide sustained neutralization in peptic ulcer and related hyperchlorhydric states.

Gelusil contains a specially processed, partially dehydrated alumina which is virtually incapable of reacting to produce soluble chloride; "alumina constipation" is thus practically eliminated. Gelusil provides prompt, uncomplicated and continuous antacid therapy.

GELUSIL

*TRADE MARK REG.

Each tablet—Mag. Trsil. 7½ grs
Alum. Hydrox. gel 4 grs

Wm. R. WARNER and Co. Ltd. POWER ROAD, LONDON, W.4

THE INTRAVAGINAL TAMPON IN MENSTRUAL HYGIENE

An important clinical study

*Significant facts
obtained by the close
observation of 25 parous
and nonparous women*

In view of the increasing use of the intravaginal tampon for the absorption of the menstrual flow, the following important study was undertaken to determine whether or not this method of sanitary control is safe and not prejudicial to health.

Twenty-five women—parous and nonparous—were selected and were under daily institutional observation during two successive catamenial periods. Ranging in age from twenty-one to forty-five, some had previously used tampons, others had not.

The following summary indicates clearly the findings of the study.

1. In not a single instance was there any evidence of local irritation brought about by the use of the tampons.

2. No uterine cramps, suggestive of block of the uterine flow or damming back into the tubes were reported in any case of this series.

3. No bladder irritation was reported.

4. The average number of tampons used in a period was ten.

5. In cases in which a cervical erosion was present, neither the amount of bleeding nor the character of the erosion was altered by the use of the tampons.

6. There was no appreciable difference in the bacterial flora of the vagina and

cervix, as determined by smear and culture, before menstruation and after the use of the tampons during the menstrual period.

7. There was no appreciable difference in the pH of the vaginal or cervical secretions before menstruation and after the use of the tampons during the period.

8. Absolute comfort and complete absorption of the flow was obtained by the proper correlation of the size of the tampon with the length and calibre of the vagina.

9. The evidence is conclusive that the tampon method of menstrual hygiene is safe, comfortable and not prejudicial to health.

TAMPAX

If you are not acquainted with Tampax, descriptive literature and samples of both absorbency sizes will gladly be sent on request.

MEDICAL INQUIRIES: TAMPAX LTD., 110 JERMYN ST., S.W.1

THELESTROL HEXESTROL + PHENOBARBITAL

Compressed tablets each containing
3 mgs. of Hexestrol (Dihydrodiethyl
Stillbestrol) and 20 mgs. of Phenobarbital

*Tablets are scored to facilitate
dosage reduction*

Indicated in the treatment of menopausal
syndrome including nervous manifestations

Bottles of 20, 50 and 100 tablets

*Professional samples available to
members of the Medical Profession*

G. W. CARNRICK CO.

Distributors:

BROOKS & Warburton, Ltd.
232-242, VAUXHALL BRIDGE ROAD, S.W.1



Watson X-Ray Apparatus WORKS RELIABLY AND WELL

Long experience has taught us how to make X-ray apparatus on which the user may rely implicitly. Electrically and mechanically, it is built for continuous use under all climatic conditions with the minimum of interruption for maintenance.

Radiologists throughout the world specify Watson equipment certain in the knowledge that it embodies the best features of contemporary design.

We will gladly submit proposals for the layout of modern X-ray departments on request.

WATSON
British Made
X-RAY EQUIPMENT

WATSON & SONS (Electro-Medical) Ltd., SUNIC HOUSE, PARKER STREET
KINGSWAY, LONDON, W.C.2

The largest local variation in the notifications of scarlet fever was an increase of 24 in Essex. Notifications of diphtheria increased by 9 in Lancashire. The largest rises in the incidence of whooping-cough were Yorkshire West Riding 44 and London 32.

Only 35 cases of dysentery were notified—the lowest weekly total since December. The 57 notifications of cerebrospinal fever provided the largest total for over a year; the cases were scattered throughout the country.

In Scotland increases were reported in the notifications of measles 128 and whooping-cough 41. The 13 notifications of dysentery gave the lowest figure for over a year. Notifications of scarlet fever increased by 16 in the south-eastern area but declined in the other areas.

In Eire there was a fall of 19 in the notifications of measles and a rise of 36 in the incidence of scarlet fever. Only 18 cases of diarrhoea and enteritis were notified, the lowest total during recent months. The chief centres of scarlet fever were Dublin C.B. 72 and Donegal, Stranlar R.D. 31. Of the 118 cases of measles 95 were notified in Dublin C.B.

In Northern Ireland a fall was reported in the notifications of measles 14, and there was a rise in the incidence of scarlet fever 22. The notifications of measles rose by 24 in County Antrim and fell by 42 in County Down. The rise in the incidence of scarlet fever was general throughout the country.

Health of Scotland in 1948

Infant mortality in 1948 reached the record low level of 44.7 per 1,000 compared with 55.8 in 1947 and 59 as the average of the past five years. The general mortality was 11.8 per 1,000. Deaths from respiratory tuberculosis numbered 3,417, which was 28 more than in the preceding year. The increase in the notifications of respiratory tuberculosis continued. The provisional figure for 1948 is 8,010, which may be compared with 4,657 in 1939. The figures for non-respiratory tuberculosis showed an improvement; deaths and notifications were 221 and 250, respectively, fewer than in 1947.

Week Ending March 26

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,357, whooping-cough 2,978, diphtheria 117, measles 15,307, acute pneumonia 1,547, cerebrospinal fever 39, acute poliomyelitis 15, dysentery 34, paratyphoid 7, and typhoid 3.

Medical News.

Proceedings of the Annual Meeting, 1948

The volume of the *Proceedings of the Association's Annual Meeting* at Cambridge last year has been published (Butterworth and Co., London) and is reviewed on p. 620. Between Sir Lionel Whitby's presidential address, with which the book opens, and the lecture on "Accident and Opportunism in Medical Research," by Sir Henry Dale, O.M., F.R.S., with which it ends, leading authorities on the science and practice of medicine, including surgery and obstetrics, discuss the recent advances in their own specialty. The book is attractively produced and contains a subject index.

Dr. Garrett Brownrigg

Dr. Garrett Brownrigg, formerly President of the Newfoundland Medical Association and Physician at Government House, Newfoundland, has been appointed C.B.E. (Civil Division).

Women in the Community

The Liberal Party Assembly recently discussed women's place in the community and in the health services. Mrs. Wendy Wills moved that there should be a common portal of entry into the nursing profession with 18 to 24 months' basic training. Passing an examination at the end of the course would give the right to State registration as an "enrolled nurse." An advanced course would be taken for qualification as a State-registered nurse. Efforts should be made to attract and train as "nursing aides" women who cannot undertake the full basic training but wish to be associated with the care of the sick. She had found that only a small minority felt a call to enter the nursing profession; the choice was often governed by the important factor that the training was largely free. Hospital posts were hard to fill mainly because hours of work, pay, and personal freedom compared unfavourably with conditions offered in public health and welfare services and in industrial nursing, where applicants outnumbered vacancies. Mrs. Doreen Gorsky emphasized that men and women must be regarded as equal partners in marriage, and moved that more adequate maintenance allowances should be made legally possible, particularly where there are young

children. The wife and children should have greater protection from the man who tries to evade his obligations for maintenance, and the courts should be able to give both parties an equitable share of the contents of their home and savings acquired by their joint effort during marriage.

Blood Transfusion Research Committee

The Medical Research Council has decided to reconstitute its Blood Transfusion Research Committee to advise and assist it in dealing with new problems arising in the course of work on dried blood and dried-blood products. The following have been appointed as members of the new committee in the first instance and have agreed to serve: Dr. A. D. Drury, F.R.S. (chairman); Dr. R. J. Drummond, Regional Blood Transfusion Officer, Cardiff; Mr. R. A. Kekwick, D.Sc., the Lister Institute; Dr. J. F. Loutit, Director of the M.R.C. Radiobiological Research Unit, Harwell; Dr. R. G. Macfarlane, clinical pathologist, Radcliffe Infirmary, Oxford; Dr. M. Maizels, clinical pathologist and University Reader, University College Hospital; Dr. d'A. Maycock, the Lister Institute, adviser on blood transfusion to the Ministry of Health; Dr. P. L. Mollison, Director of the M.R.C. Blood Transfusion Research Unit; and Dr. R. R. Race, Director of the M.R.C. Blood Group Research Unit.

Trained Nurses' Salaries

In view of the dissatisfaction felt by trained nurses throughout the country on delay in arriving at a decision about revision of their salaries the Staff Side of the Nurses and Midwives Whitley Council state that proposals for certain revisions were submitted to the Management Side on Feb. 1. A meeting with the Management Side was arranged and was later postponed at the request of the Management Side. The postponed meeting fixed for a later date was also cancelled by the Management Side. On the Staff Side's approaching the Minister it was learned that the claim, which raises issues of considerable financial importance, is being considered, and it is hoped that the Management Side will shortly be in a position to reply to the Staff Side's proposals.

Care of Whalemeat

The Food and Drugs (Whalemeat) Regulations, 1949, which came into operation on March 20, govern the importation of whalemeat into England and Wales and the conditions for storing and selling it. The regulations require a veterinary certificate for whalemeat and whalemeat products intended for human consumption. The whalemeat must have been inspected and produced in accordance with conditions satisfactory to the Minister of Food. The regulations are to be enforced by port health authorities and local authorities. A memorandum has also been issued setting out the conditions for transporting, packing, and storing whalemeat and the provisions for inspecting it. The memorandum will be reviewed in the light of experience gained during this season's whaling expeditions in the Antarctic.

Wills

Dr. John Bruce, a former provost of Forres, left £37,122. Dr. Frederick John Blackley, of Southampton, left £27,211; and Dr. Edward John Cross, of Eynesbury, Hunts, £7,043. Mr. Albert Edwin Hayward Pinch, formerly director of the Radium Institute, London, left £27,924; after making a number of bequests he left the residue of his estate to his wife for life, with remainder as to half to the Medical College of St. Bartholomew's Hospital, to help necessitous students, and half to the Faculty of Medicine of the University of Bristol, similarly.

COMING EVENTS

Regional Consultants Committee for Oxford

A meeting of the Oxford Region Consultants and Specialists Committee will be held at Radcliffe Infirmary, Oxford, on April 10, at 3 p.m., to discuss the proposed terms and conditions of service of hospital medical and dental staff.

British Orthopaedic Association Meeting

The Spring meeting of the British Orthopaedic Association will be held at Nottingham in the Great Hall of the University on April 22-23. The programme includes the following papers. April 22: Mr. D. Trevor on "Spontaneous Rupture of Extensor Pollicis Longus Tendon following Colles' Fracture"; Mr. N. W. Roberts on "Osteochondritis Desiccans of the Elbow Joint"; Mr. T. Rowntree on "Anomalies in the Innervation of the Muscles of the Hand"; Mr. R. G. Pulvertaft on "Tendon Surgery in the Hand" (film). April 23: Mr. P. C. Elmes on "Fractures of the Neck of the Femur"; Mr. R. C. Murray on "Trochanteric Fractures of the Femur"; Mr. J. Rowland Hughes on "Radiological Diagnosis of Recent Lesions of the External Lateral Ligaments of the Ankle"; Professor J. Delchev on "Nerve-root Pain of Vertebral Origin not Dependent on Disk Prolapse"; Mr. E. Mervyn Evans on "Pronation Fractures of the Forearm with Special Reference to the Anterior Monteggia Fracture"; Mr. W. B. Foley on "Ischio-femoral Arthrodesis of the Hip by Posterior Open Approach" (film).

International Congress on Rheumatic Diseases

Among the speakers at the International Congress on Rheumatic Diseases to be held in New York on May 30-June 3 will be Lord Horder on "Rheumatism, a National Problem," and Dr. William Tegner on "Some Aspects of Psychogenic Rheumatism."

International Hospital Congress

The International Hospital Federation will hold its first International Hospital Congress in Holland at Amsterdam and Groningen on May 30-June 4. The design of hospitals and the training and duties of hospital administrators are among the subjects to be discussed. Further particulars may be obtained from Captain J. E. Stone, King Edward's Hospital Fund for London, 10, Old Jewry, London, E.C.2.

SOCIETIES AND LECTURES**Monday**

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, London, W.—April 11, 8.30 p.m., Discussion: "*Acute Cholecystitis*," to be introduced by Dr. E. R. Cullinan and Mr. Guy Blackburn.

Tuesday

MIDDLESEX COUNTY MEDICAL SOCIETY.—At West Middlesex Hospital, Isleworth, April 12, 2.45 p.m., general meeting.

Wednesday

SOCIETY OF CHEMICAL INDUSTRY: FOOD GROUP.—At Royal Sanitary Institute, 90, Buckingham Palace Road, London, S.W., April 13, 6.30 p.m., 18th annual general meeting "*Some Thoughts on the Food Group*," by Dr. E. B. Hughes.

APPOINTMENTS

BURN, A. TELFORD, M.B., B.S., D.P.H., Medical Officer of Health for the Borough of Sale and the Urban District of Lymm, and Divisional Medical Officer to the Cheshire County Council.

NEWNS, G. H., M.D., M.R.C.P., Dean of the Institute of Child Health, University of London, in succession to Dr. W. G. Wyllie, who has resigned.

BIRTHS, MARRIAGES, AND DEATHS**BIRTHS**

Ashwell.—On March 20, 1949, at The Willows Nursing Home, Bramley, Leeds, to Evelyn (née Hogg) wife of Dr. Colin S. Ashwell, Sharlston Common Wakefield twin daughters (premature)—Elizabeth and Susan.

Whalley.—On March 21, 1949, to Dr. Annette Whalley (née Brooks), wife of Dr. Hugh Whalley, 21, Burton Crescent, Leeds, a son.

MARRIAGE

Havelock.—Buck. —On March 19, 1949, at Ealing Methodist Church, Brian J. R. Havelock to Joyce M. Buck, M.B., B.S.

DEATHS

Armstrong.—On March 28, 1949, at Royal Free Hospital, London, W.C., Kathleen Jane Armstrong, M.R.C.S., L.R.C.P.

Brown.—On March 24, 1949, at Pau, B.P., France, Francis Leonard Brown, M.D., aged 84.

Brown.—On March 22, 1949, at Ramsgate, John Brown, M.R.C.S., L.R.C.P., formerly of Flixton and North Wales.

Budden.—On March 25, 1949, at Staneside, Roman Road, Dorking, Tice Fisher Budden, M.D., aged 82.

Cawston.—On March 19, 1949, at 345, Vause Road, Durban, Natal, South Africa, Frederick Gordon Cawston, M.D.

Clayton.—On March 21, 1949, Thomas Morrison Clayton, M.D., D.P.H., of Gateshead.

Coates.—On March 23, 1949, at 22, College Gardens, Belfast, Foster Coates, M.D., D.P.H., aged 67.

Fagge.—On March 26, 1949, at the War Memorial Hospital, Melton Mowbray, Robert Hilton Fagge, M.R.C.S., L.R.C.P., J.P., aged 77.

Fraser.—On March 27, 1949, John Henry Pearson Fraser, D.S.O., M.C., M.B., B.Ch., of Jersey previously of Southampton, aged 76.

Green.—On March 26, 1949, at 22, Church Street, Prescott, Lancs, Samuel Morris Green, M.R.C.S., L.R.C.P., D.P.H., aged 72.

Hill.—On March 9, 1949, James Lorimer Hill, M.B., B.Ch., D.P.H.

Legge.—On March 26, 1949, as the result of an accident, Sydney Buxton Legge, M.D., J.P.

Pennfather.—On March 25, 1949, at 79, Portwood Road, Southampton, Victor Dam an Pennfather, M.R.C.S., L.R.C.P.

Stoker.—On March 21, 1949, at Guy's Hospital, London, S.E., George Morris Stoker, M.R.C.S., L.R.C.P., of 7, Sireatham Road, Mitcham, Surrey, aged 50.

Thambiah.—On Feb. 18, 1949, Rao Bahadur Capt. Saravanamuttu Thambiah, M.C., F.R.C.P.Ed., D.T.M.&H., F.D.S.

Thomas.—On March 22, 1949, at Brampton Kinlet, Canford Cliffs, Bourne-mouth, Frank Griffith Thomas, M.B., B.Ch., late of Maes-yr-Haf, Swansea, aged 76.

Ward.—On March 23, 1949, suddenly, while walking home, George Stafford Ward, M.B., B.S., of 12a, Malford Court, London, E.

West-Watson.—On March 20, 1949, at Victor Lodge, Manningsham, Bradford, William Norman West-Watson, M.D.

Wood.—On March 27, 1949, at 684, Lordship Lane, Wood Green, London, N., Frederic Charles Wood, L.M.S.S.A., D.P.H., aged 83.

Young.—On March 24, 1949, Harold Godfrey Young, M.B., B.Ch., of North Goldings, St. Albans Road, Hatfield, Herts.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Pethidine, "Trilene," and Chloroform in Labour

Q.—I have found that pethidine by injection, followed by "trilene" given with a Freedman inhaler, is not sufficient in every labour to overcome the pain during birth of the head. Is it safe to follow pethidine and trilene with a small amount of chloroform?

A.—Pethidine is an antispasmodic and analgesic drug which has proved valuable in relieving pain and aiding relaxation in the early stages of labour. Its great advantage is that there is little if any effect in depressing respiration in the baby. Trilene, or trichloroethylene, is similar in its action to chloroform and the two are not incompatible. There is thus no reason why pethidine and trilene should not be combined with a small amount of chloroform during the birth of the head; this combination should be perfectly safe provided only small amounts of both trilene and chloroform are used.

The Royal College of Obstetricians and Gynaecologists, in its report on trilene as an analgesic for childbirth, was unable to recommend that midwives working alone should give trilene through the Freedman inhaler, which was used in the extensive trials on which the report is based. The chief risk is of overdosage; it is shown in the report that shaking the bottle or a rise in temperature in the room causes a great increase in the amount of trilene received by the mother, and that there is consequently a real danger of overdosage and of the occurrence of surgical anaesthesia. These facts should be borne in mind when using trilene for analgesia in midwifery. It is important not to allow a too prolonged use of the Freedman inhaler and to see that overdosage does not occur. For some comment on the report of the Royal College of Obstetricians and Gynaecologists see *Journal*, March 26, p. 537.

Effect of Flying on Pneumothorax

Q.—A patient who had an artificial pneumothorax induced nine months ago wishes to fly to South Africa. Are there any contraindications, and should any special precautions be taken?

A.—When a patient with an artificial pneumothorax ascends to high altitudes he may become short of breath owing to the increase in volume of the air in the enclosed space of the pleural cavity which occurs as the atmospheric pressure is reduced. It is therefore advisable for such a patient to undertake the journey by air just before a refill is due, and to arrange for another refill as soon as possible after reaching his destination. From the work of Todd and of Lovelace and Hinshaw it may be stated that flying by persons with a pneumothorax should be discouraged until the lesion is reasonably quiescent. Where patients have to make frequent journeys by air, any pleural adhesion that is likely to rupture should be divided and a reasonable time allowed to elapse before the flight is made. It is difficult to state the height to which a patient may fly with safety, but as a general rule it is wise not to exceed 6,000 ft. (1,800 metres), for it should be remembered that 1,000 ml. of air saturated with water vapour at 37° C. at sea level will become 1,500 ml. at an altitude of 10,000 ft. (3,000 metres). Allowance must be made for this change in volume if it is essential for a patient with a pneumothorax to travel by air.

Tender Swellings of the Heel

Q.—What is the treatment for the painful gross thickening of the skin and subcutaneous tissues behind the heel seen in so many young women? What are the faults in the ready-made shoes which cause them?

A.—These tender swellings behind the heel are usually due to inflammatory changes in and around an adventitious bursa behind the tendo Achillis, or in the bursa which is normally present between the tendo Achillis and the os calcis. The inflammatory changes result from friction of the tissues against

the shoe. In some cases there is a circulatory element in the aetiology, for the condition tends to be more troublesome in winter and is often associated with chilblains and allied disorders. In other cases there may be an irregular bony prominence at the posterior aspect of the os calcis which aggravates the trauma arising from friction. The faults attributed to ready-made shoes probably lie in the selection of size and fitting rather than in the design itself. Nevertheless there is sometimes a tendency for the back of the shoe to curve forwards rather too much at the top. This may lead to friction against the tendo Achillis during the flexion-extension movements of the ankle which occur during walking, for with each contraction of the calf muscles the tendon becomes tightened like a bow-string and is pressed backwards against the top of the shoe. Treatment should be conservative in the first instance: the principle is to relieve the friction caused by the shoe. This may be achieved by the use of protective pads of felt applied over the swelling; by raising the affected area of the heel above the shoe by means of a "sorbo" rubber pad beneath the heel; or by the wearing of soft-backed or cut-away shoes. These measures are usually adequate for the acute or subacute type of case; but, if the symptoms are chronic and persistently troublesome, operative treatment may be advisable. This consists in removal of the affected bursa, combined where necessary with trimming of the underlying bony prominence.

Treatment of Superficial Burns

Q.—What is the most satisfactory treatment for superficial body burns in children with or without the formation of blisters? These often give much trouble through infection, although they cannot be considered serious enough for hospital treatment, especially in a widely scattered rural practice.

A.—The difficulty about superficial body burns in children is almost entirely one of effectively and continuously covering them during the ten days or so required for healing. Without plenty of crêpe bandages, supplemented by thin strips of surgical strapping (or, better, a thin shell of plaster-of-Paris over the bandages), it is almost inevitable that such burns will become infected if blisters form—whatever the local application. Assuming that crêpe bandages and strapping are available, the burn should be first cleaned by gentle rubbing with cotton-wool soaked in 1% "cetavlon" solution, or soap and sterile water, then dried, smeared with penicillin cream (200 or 100 units per gramme) or with sulphanilamide cream, and covered with gauze and wool. If these dressings remain intact they should not be touched for ten days. If crêpe bandages are not available, and if the burn is not very large and is truly superficial, it will probably do best if the surface is dried up with tannic acid or silver nitrate; but this treatment should not be used if there is any doubt about the depth of the burning. Whatever treatment is adopted, the doctor or nurse should first put on a face-mask and should carefully wash his or her hands.

Deep X Rays for Oat-cell Carcinoma of Lung

Q.—Would deep x-ray therapy help in an advanced inoperable case of oat-cell carcinoma of the lung in a middle-aged man? If this is inadvisable, is any alternative treatment available?

A.—There is considerable disagreement among radiotherapists about the value of deep x-ray therapy in an advanced case of oat-cell carcinoma of the lung. In the writer's opinion, in all except the most advanced cases palliative x-ray therapy should be attempted, and is often useful, especially to relieve pain. In a case such as this the radiotherapy should be planned as palliative, and it usually seems to be unwise to attempt radical x-ray therapy. Palliative x-ray treatment does not increase the length of survival, but clinically there can be no doubt of its usefulness in a substantial proportion of cases.

With regard to alternative therapy, the use of bis-nitrogen mustard by intravenous injection is sometimes of limited palliative value, especially in the more advanced cases, but it has the disadvantage of toxicity and the beneficial effects are very short-lived. The usual unit dose is 0.1 mg. per kilo of body weight, given in 10 ml. of normal saline intravenously, particular care being taken not to allow any solution to escape outside the vein. The best plan of dosage appears to be three or four unit doses on alternate days. It is desirable to arrange for daily blood counts

during the course of injections, and then less frequently for the following four weeks. It is important to watch the haemoglobin concentration and the absolute lymphocyte count.

Auricular Fibrillation in the Elderly

Q.—What is the best treatment for paroxysmal auricular fibrillation in a man of 64? Radiographs of the heart show no enlargement or disease, and the blood pressure is normal. The attacks are very incapacitating, although between them he is well.

A.—Thyrotoxicosis must be excluded first, and this may not be easy. A specialist's opinion should be obtained. If it is reasonably certain that there is no known organic disease underlying the rhythm change, and if the nature of the rhythm change has been established as auricular fibrillation by electrocardiography, the only drug likely to prevent attacks is quinidine 3 to 5 gr. (0.2 to 0.32 g.) three times a day indefinitely. Auricular fibrillation in elderly subjects without apparent cause generally becomes persistent, and finally resists efforts to restore normal rhythm by means of quinidine. In such cases the condition is often best stabilized when permanent auricular fibrillation is accepted, and treated with a maintenance dose of digitalis if the ventricular rate is rapid, or left untreated if it is below 90.

Duration of Psycho-analysis

Q.—Can you inform me if there is any recognized time limit for psycho-analysis? For example, if a stammer has been cured by this after, say, five years, may not continued treatment tend to foment introspection and a too great reliance on the psycho-analyst?

A.—There is no specific time limit for psycho-analysis, and the extent of treatment depends on what is aimed at. The mere abolition of the symptom is often a simple process, and in some cases this is enough to break a vicious circle—for instance, in the case of a paralysed "shell-shocked" man whose paralysis is an unconscious desire to get out of the fighting but persists long after the war because it has produced a morbid autosuggestion that he cannot walk. If, therefore, he is made to walk by whatever means (persuasion, suggestion, or analysis), this may be sufficient to break the vicious circle, to abolish the morbid autosuggestion, and to fit the patient for ordinary civilian life. But it has to be remembered that the symptom is only an indication that there is something wrong with the personality and the patient's attitude towards life; in many cases, unless this is rectified, the patient is still ill adjusted and may relapse. That is why, even after the symptom is abolished, the analyst as a rule strives to produce a radical change in the individual's personality, so that he not only has no symptoms but is mentally healthy and capable of meeting all his responsibilities happily. In other words, the aim of treatment is not merely to abolish the symptom but to cure the morbid attitude in the personality which caused it and restore the patient to complete health. At the same time common sense must be brought to bear on the whole business. From one point of view the patient could be submitted to analysis all his life, as there are always residues of ill adjustment that might be corrected; not only so, but there are rare cases in which the individual prefers to wallow in his emotional state, and it is for the analyst to determine whether this is the case. The patient is of course not well so long as he is doing this, but merely to allow him to continue is not helping towards cure. The questioner would be well advised to seek for information from the psycho-analyst about the precise situation in the case he has in mind.

I.D.E. Test for Syphilis

Q.—May I have details of the I.D.E. test used by the Nigerian Medical Services for the diagnosis of syphilis?

A.—The I.D.E. test as originally described (*J. Lab. clin. Med.*, 1936, 21, 1190) is carried out as follows:

To prepare the antigen, beef heart freed from fat, fibrous tissue, and blood vessels is finely minced, and 20 g. of this are mixed with 100 ml. of 95% alcohol and kept in a corked container in a water-bath at 60° C. for seven weeks; the mixture is shaken twice a day and finally cooled, filtered, and kept in a dark place. Fluid I is prepared by adding 0.2 g. of cholesterol to 10 ml. of this stock solution and warming for 10 minutes at 56° C.; Fluid II consists of

5% gum benzoin dissolved in the stock solution; Fluid III is a 1% alcoholic solution of crystal violet; and Fluid IV is a 1% alcoholic solution of azure II. For use in the test 100 ml. of Fluid I are added to 5 ml. of Fluid II and mixed; 1 ml. of Fluid III and 1 ml. of Fluid IV are mixed and 1 ml. of the resultant solution is added to the mixture of Fluids I and II. This constitutes the antigen. To carry out the test, place one drop (approximately 0.03 ml.) of the patient's blood in the concavity of a hollow slide, add one drop (0.05 ml.) of 3.5% saline and stir well, spreading it all over the surface of the depression. Prepare diluted antigen by adding 0.6 ml. of 2.5% saline to 0.2 ml. of the antigen, mix thoroughly by shaking, and add one drop (0.03 ml.) to the blood-saline mixture on the slide; place the slide on a flat surface and rotate vigorously for 3 to 4 minutes. The reaction is read by means of a microscope with a magnification of about 50, the examination being directed towards the periphery of the hollow in the slide: a positive reaction is indicated by purplish-blue-coloured clumps, the size of which is roughly proportional to the strength of the reaction. The slide should be covered with a slip and the reading carried out within 15 minutes.

Various workers have from time to time introduced modifications of the test. Thus, Rein and Hazay (*J. Lab. clin. Med.*, 1938, 23, 954) found that the test was more sensitive if sera were heated; they used paraffin-ringed slides in preference to those with hollow depressions, and stated that 8 minutes was the optimum time for rotation. Timms (*E. Afr. med. J.*, 1945, 22, 27) points out that, owing to evaporation in a hot climate, it is necessary to cover the preparation before shaking, and advises fixing the cover-slip with petroleum jelly or a rubber band. Presumably this precaution would be necessary in Nigeria.

Disseminated Sclerosis and Vaccination

Q.—A patient with disseminated sclerosis was recently successfully vaccinated. This has been followed by a severe flare-up of her condition, so that she is unable to use a cup or even walk unaided. Is there any connexion between the two, and is there any drug which will alleviate her symptoms?

A.—Exacerbations of disseminated sclerosis are likely to follow any acute systemic disorder, and they are known to be precipitated by injections of foreign proteins, particularly if these give rise to generalized disturbance. There is, however, no known connexion between the virus of vaccinia and disseminated sclerosis. The best way to help a relapse of this sort is to secure absolute rest in bed until recovery starts and then to institute re-education exercises.

Allergy to Fluorescent Light?

Q.—Is there any evidence that allergy to fluorescent lighting exists? I have a patient who for the past 18 months has developed an urticarial rash after exposure to fluorescent lighting; she is free from it when she has not been so exposed.

A.—The writer knows of no reference to urticaria from fluorescent lighting. Allergic urticarial reactions may follow exposure to ordinary daylight; it is, of course, localized to exposed parts. The light from fluorescent lamps shows a similar spectrum with some emphasis of the mercury lines (the source being mercury vapour) and some near ultra-violet radiation. A patient sensitive to such light in a physical sense should be sensitive to normal daylight.

Ectopic Gestation and Future Pregnancy

Q.—A patient aged 30, with one child of 3½ years, had an operation for ectopic pregnancy three years ago. She now wants another child. (a) What are the best instructions to give her? (b) Are vitamin E or the hormones useful, and if so in what dosage? (c) What are the chances of conception? The other tube and ovary were normal when examined after the operation.

A.—It is not clear from the question whether the recent relative sterility has been voluntary or involuntary. If the former, no special advice other than to practise coitus during the fertile period seems necessary. If, however, the patient has tried and failed to conceive, there is nothing in the history to indicate treatment with either vitamin E or hormones. Full investigation should be carried out; hysterosalpingography is especially important, for the tubal factor is likely to be concerned in the lowered fertility. The previous occurrence of tubal pregnancy (it is assumed that it was tubal in site and

that salpingectomy was carried out) is itself evidence of disturbed tubal function, and the remaining tube may well be abnormal. Even if it is not, the removal of one tube lowers the chances of pregnancy by approximately one-half. When an ovum is produced by the ovary on the side of the previous operation (and this is likely to occur, on the average, during half the cycles), it can be fertilized and implanted only if it undergoes external migration. If, however, the ovary as well as the tube was removed at the previous operation the chances of pregnancy should be somewhat higher, because ovulation must then always take place in the ovary whose oviduct remains intact. For one reason or another only about 35% of women conceive again after once having an ectopic pregnancy. In the event of another pregnancy taking place the risk of its again being ectopic has been estimated at 1 in 10.

Psoriasis and Stilboestrol

Q.—I have read an article on the treatment of psoriasis by stilboestrol. Is this a good method?

A.—This is not a good treatment and has no rational basis, and should therefore not be employed. Endocrine factors sometimes enter into the aetiology of a particular case of psoriasis or a particular phase or type of eruption, as in menopausal cases. The indications for treatment and dosage then follow general lines.

NOTES AND COMMENTS

Deafness and Tinnitus.—Mr. W. H. B. MAGAURAN (London, W.1) writes: The answer to the question on deafness and tinnitus (Feb. 26, p. 378) gives the impression that labyrinthine fenestration is of little value in the relief of tinnitus in otosclerosis. This is not my experience, as I find that, if highly neurotic patients are excluded from operation, the prospect of the relief of tinnitus is good in otherwise suitable cases. Indeed, I have had cases of otosclerosis with fairly marked nerve deafness where troublesome tinnitus has been relieved by operation. The relief of a distracting tinnitus will, of course, in itself help the hearing. I have found that the relief of tinnitus, when it takes place, usually occurs soon after operation, but in rare cases it may be delayed for months.

As regards the relief of deafness, the answer given is that in many cases the restored hearing is lost from closure of the new fenestra or from serous labyrinthitis. I have found, however, that many cases retain the restored hearing; but in the event of the fenestra closing it can be readily re-established, at another operation, with restoration of the improved hearing. For example, one of my patients, in whose case the fenestra closed within a few months, has now excellent hearing a year after the re-establishment of the fenestra. Healing after such a reopening takes place in much less time than after the original operation, and I have noted that there is less vertigo.

The serous labyrinthitis mentioned is in my opinion caused by traumatic labyrinthitis, due to instrumentation or pressure of the dressing. This is not frequent in my experience, and its incidence should lessen in frequency as the skill and experience of the surgeon improve. The fact that the operation, in skilled hands must be one of the safest in major surgery is also worthy of mention.

Calculi in a Paraplegic.—Mr. NORMAN GIBBON (Liverpool) writes: In your answer to the question on calculi in a paraplegic ("Any Questions?" Feb. 26, p. 377) you recommend the regular use of ammonium chloride to acidify the urine. I think it worth while to point out that this substance increases the urinary calcium output so that the solubility of the calcium salts may not be increased. On the other hand it has recently been shown by Cordonnier and Talbot (*J. Urol.*, 1948, 60, 316) that the oral administration of acid sodium phosphate (5.8 g. a day) to such cases reduces the urinary output of calcium by about 50%, in addition to lowering the pH. It would seem that this is the drug of choice in these cases.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atitologi* Western, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads*, Western, London. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra*, Western, London. B.M.A. SCOTTISH OFFICE: 7, Drumheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY APRIL 9 1949

THE SECRETARY REPORTS

COMPLAINTS

There is an elaborate disciplinary code under the new Service for dealing with complaints by patients against their doctors. But there is no reciprocal procedure such as that which obtained under the N.H.I. to enable a doctor to raise questions as to the conduct of a patient while under treatment. The Service Committees and Tribunal Regulations, 1948, require that any complaint by a person against a medical practitioner in respect of an alleged failure to comply with the terms of service shall be investigated by the Medical Service Committee. The Regulations, however, contain no such provision as appeared in the Medical Benefit Regulations under the National Health Insurance Act, 1936, requiring any question arising between an insurance practitioner and a person . . . in respect of the conduct of the person while receiving treatment . . . to be investigated by the Medical Services Subcommittee. Indeed, the matter goes somewhat deeper. In National Health Insurance laws there were rules for the conduct of insured persons printed in the medical card. One rule was that the patient "shall not make unreasonable demands upon the professional services of the practitioner attending him." Another was that the patient "shall not summon the practitioner to visit him between the hours of 8 p.m. and 8 a.m., except in cases of serious emergency." Another was to the effect that, where the circumstances of the case permit, the practitioner should be informed before 10 a.m. on the day on which the visit is required. There are no such rules on the modern medical card. In their place advice is given under the heading of general information: "Please do not ask the doctor to call unless the patient is too ill to attend his surgery"; "Please do not call in the doctor between the hours of 8 p.m. and 8 a.m. unless you really need him." Presumably the absence of penalties follows from the substitution of gentle advice for explicit rules. In this modern age when so much stress is laid on equality of treatment it would appear reasonable that as the doctor, under risk of penalties, has to observe rules, so the patient, also under risk of penalties, should be similarly required to observe rules to govern his conduct in relation to his doctor.

Removal from the Medical List

Another curious omission in the Act is the lack of any provision for removing from the list of a local executive council the name of a doctor who is no longer working in the area. Enormous trouble has been taken to regulate entry to the medical list. The new entrant must apply for permission to enter his chosen area and he must obtain consent from various official bodies. But those who framed the Act seem to have overlooked the question of a doctor's removal from the list. It is true that a doctor may remove himself. He may also be struck off if the disciplinary tribunal feels that his continued inclusion would be prejudicial to the efficiency of the Service. But there is no provision by which the name of a doctor who, say, has moved without notifying his move can be removed from a list. This point also has been submitted to the Minister for inclusion in the amending legislation.

Medical Staffs of Transferred Hospitals

One is frequently hearing of anxiety among specialists on the staff of hospitals involved in "change-of-user" proposals. Within the past few weeks this office has been approached by the staffs of four hospitals, each of which is in association with a teaching hospital, and in each case the teaching hospital desires not to take over the staff of the smaller hospital in its entirety. There is involved here a principle of substantial importance. It is worth repeating what the Minister expressly undertook, in relation to the staffs of hospitals taken over on the appointed day—that the boards "will offer new appointments to their staffs either in their existing or other hospitals, which they will be free to accept or refuse as they will." The straightforward interpretation of this undertaking, which formed part of the Minister's replies to the B.M.A. in April, 1948, is that the onus lies with the boards to offer other appointments. We should be glad to be informed of any similar difficulties arising in different parts of the country.

The Armed Forces and the Colonial Medical Service

The repercussions of the Spens Reports are only just beginning. The first-fruits, which may perhaps be regarded as not quite ripe, have been seen in the professional field. An effort to bring forth fruit is being made by the Association in the public health field. Others are now beginning in the no less important field of the armed Forces and the Colonial Medical Service. The Annual Report of the Council, published in last week's *Journal*, includes detailed recommendations which have now been made to the Services and to the Colonial Office to secure the appropriate application of the Spens standards to medical officers in the Services and the Colonial Medical Service. There are other groups remaining to be considered, including the medical officers in the Civil Service and the administrative medical officers of regional hospital boards. It may be a long job, but it is the Association's clear duty and intention to press for the revision of rates of remuneration in all organized medical services so as to bring them into line with the Spens Reports.

Dental Anaesthetics

The recent decision of the Minister to impose a 50% cut in the gross remuneration of dental practitioners whose earnings exceed £4,800 a year has not been without its repercussions. The Association has learnt that here and there dental practitioners are dispensing with the services of the general practitioners who formerly gave dental anaesthetics for them and are administering the anaesthetic themselves or undertaking extractions under local analgesia. The reason is that the fees for these services are included in the dentists' gross remuneration, now subject to a ceiling.

The General Medical Services Committee, believing that it is detrimental to the dental services of medical practitioners should be able for the giving of dental anaesthetics, the Department that dentists the fees paid to practitioners for anaesthetics in dental cases should not be

National Health Service

GENERAL PRACTITIONERS AND HOSPITAL WORK

The Council has set up a joint committee, composed of representatives of the Central Consultants and Specialists, General Medical Services, Health Centre, Private Practice, and Public Health Committees, to consider the question of the association of general practitioners with hospital work, for a new position has arisen under the National Health Service Act. At its first meeting on March 22 the committee considered the problems generally and agreed that there is a danger of a division between the hospital consultant and the general practitioner which is bad for the profession as a whole and would operate to the disadvantage of the patient.

The Joint Committee recognizes the difficulties in formulating policy on this matter, which will affect the future relation of general practitioners with the teaching of medicine and hospital work generally. It attaches great importance to the representation of the views of consultants and specialists on the subject and has invited the Central Consultants and Specialists Committee to appoint to the Joint Committee such members as will adequately cover the whole field of consultant and specialist practice. The Central Consultants and Specialists Committee has accordingly increased its representation on the Joint Committee from three members to six.

Membership of the Committee is as follows: Mr. A. Stavely Gough (Watford), part-time consultant (chairman); Mr. A. Lawrence Abel (London), senior surgeon, Princess Beatrice Hospital, surgeon, Royal Cancer Hospital; Dr. A. Beauchamp (Birmingham), general practitioner; Dr. James Fenton (London), medical officer of health; Dr. E. W. Goodwin (Leicester), general practitioner; Dr. T. Rowland Hill (London), consulting neurologist; Dr. D. F. Hutchinson (London), general practitioner; Dr. R. H. H. Jolly (Wolverhampton), medical officer of health; Dr. C. F. R. Killick (Williton, Somerset), general practitioner; Mr. G. Lowe (Tiverton), general practitioner; Mr. O. E. J. McOustra (Cheltenham), honorary surgeon and surgeon, Genito-Urinary Department, Cheltenham General Hospital; Mr. R. L. Newell (Manchester), honorary consulting surgeon, Manchester and Salford Hospital for Diseases of the Skin; Dr. Wyndham Parker (Worcester), medical officer of health; Dr. A. Talbot Rogers (Bromley), general practitioner; Mr. N. Ross Smith (Bournemouth), orthopaedic surgeon, Royal Victoria and W. Hants Hospital; Dr. H. D. Sutherland (London), general practitioner; Dr. S. Wand (Birmingham), general practitioner; Dr. E. C. Warner (London), physician, Charing Cross Hospital.

WAGES OF MANUAL WORKERS

The average weekly earnings of manual wage-earners employed in manufacturing industries generally and in a number of the principal non-manufacturing industries were in October, 1948, about double what they were in October, 1938. This is shown by investigations carried out by the Ministry of Labour, the results of which were published in the *Ministry of Labour Gazette* for March, 1949. The following Table shows a comparison between the average weekly earnings of various groups of manual workers for the two months cited, and the percentage increase for each group.

Average Weekly Earnings			
	1938	1948	% Increase
Men 21 and over ..	69s. 0d.	137s. 11d.	100
Youths and boys ..	26s. 1d.	58s. 9d.	125
Women 18 and over ..	32s. 6d.	74s. 6d.	129
Girls ..	18s. 6d.	49s. 3d.	167
All workers ..	53s. 3d.	117s. 4d.	120

The wages shown are gross earnings before deductions are made for income tax or contributions to the national insurance schemes. The hourly earnings are rather higher because fewer hours a week were worked in 1948 than in 1938. The percentage increase of average hourly earnings was as follows: men, 104; youths and boys, 136; women, 140; girls, 182; all workers, 126.

Figures for the increased earnings of professional men and women are not available for 1948, though rough figures for 1946 for some professions were given in the *Supplement* of Nov. 27, 1948 (p. 192). The betterment factor at present being used by the Government in the remuneration of general practitioners in the Service gives an increase of 34% over pre-war gross remuneration.

JOINT TUBERCULOSIS COUNCIL

At the last meeting of the Joint Tuberculosis Council the position of tuberculosis medical staffs in the National Health Service was again discussed, and the council decided to seek an interview with the Ministry of Health in the hope of obtaining some clarification of the Ministry's proposals on the future status of tuberculosis officers and sanatorium superintendents. The council also decided to press strongly upon the Ministry of Health the need for appointing or co-opting on to the Standing Tuberculosis Advisory Committee a representative of the tuberculosis services engaged in field work.

The council also considered the draft of a Memorandum on the Notification of Tuberculosis which had been prepared with a view to its issue to the medical profession by the Ministry of Health. The council felt that the memorandum as drafted would not bring about the desired improvements in notification, and asked the new Standing Advisory Committee on Tuberculosis to consider the whole question, including the council's previously published report advocating two separate stages—i.e., intimation and notification.

Dr. Peter W. Edwards was elected chairman of the council in succession to Dr. D. P. Sutherland.

FACULTY OF OPHTHALMOLOGISTS

The Honorary Secretary reports that at the Council meeting on Feb. 18 the reduction of the fee from £1 11s. 6d. to £1 5s. as from April 1 (*Supplement*, Feb. 26, p. 92) was discussed. It was decided that the Negotiating Committee should be urged to protest against the reduction, and that each individual member of the Faculty should receive a copy of the Minister's letter with a letter explaining the position.

It was decided to send a circular letter to the senior administrative medical officers of regional hospital boards urging them to set up ophthalmic advisory committees if they had not already done so, and giving an outline of the constitution of such a committee. It was further arranged that representatives of the Faculty should call upon the senior administrative medical officers of regional hospital boards and explain any points if necessary.

There were many points in the memorandum from the Joint Emergency Committee (Optical Profession) on the Ministry of Health directive, H.M.C.(48)63, B.G.(48)66, to which the Council took exception, notably those arising out of the assumption that the report of the joint subcommittee of the Faculty and the Joint Emergency Committee represented the views of the Faculty, when in fact the Council had repudiated the report. The Honorary Secretary was instructed to write to this effect to the senior administrative medical officers of the regional hospital boards and to the secretary of the Joint Emergency Committee (Optical Profession), and to inform the Ministry that he had done so.

The Council felt that no action could be taken in the matter of priority prescriptions for glasses in view of the fact that the machines in the country were already working to capacity.

Mr. Law reported that the Ministry was interested in the question of corneal-graft donors and would be glad to meet representative members to discuss the situation. The following were appointed: Mr. R. C. Davenport, Mr. J. H. Doggart, and Mr. A. Lister.

British Medical Association

SPECIAL REPRESENTATIVE MEETING

Wednesday, March 30, 1949

FORMATION OF BRITISH MEDICAL GUILD APPROVED

Special Representative Meeting of the Association was held March 30 at B.M.A. House, London, to consider the constitutional position of the Association. This was a separate meeting from the one which had taken place on the previous day on the question of remuneration, the proceedings of which were reported in the *Supplement* of April 2 (p. 209). Dr. E. A. G. again presided.

Before the main business came forward Dr. John Etheridge (Morpeth) asked that it be made plain by resolution of the meeting "that the fear of an injunction against the B.M.A. should be ignored." This was seconded by Dr. J. Ewart Purves (Morpeth), and supported by Dr. E. C. Warner (Marylebone). Dr. A. V. Russell (Wolverhampton). The last-named said the profession was in a stronger position than it was a year ago, and he very much doubted whether any Government would go to the length of applying for an injunction against the Association; even if it did he could not conceive anything so likely to unite the profession or to gain the support of the public.

Dr. Frank Gray (London) said that the Representative Body had always shown a sense of responsibility. Here was a motion which asked, before the business for which the meeting was called had been taken, before any arguments had been considered, that the question of an injunction should be put on one side. It was the most reckless and irresponsible proceeding.

He was amazed that a succession of speakers should have come to the platform and have said, "Don't worry about an injunction. Say you are not afraid of it, and it does not matter." Apart from any actual risk of injunction, it had a serious effect to have this threat hanging over them all the time. He hoped that this proposal would be turned down. Dr. J. A. Gorsky (Westminster and Holborn) asked the meeting to turn this down without further discussion. To be a list was not to lack courage. There was grave risk of an injunction if they went on as they had done.

The Chairman of Council said that fear had nothing to do with the proceedings to-day. They were there to take sensible cautions on certain points.

Dr. Etheridge, the mover, replied that the motion had been brought forward in the most responsible manner. That this had existed in the past could not be denied. The resolution was overwhelmingly defeated.

Need for a New Organization

Dr. H. Guy Dain, Chairman of Council, then presented a report of the Council on the constitutional position (*Supplement*, Feb. 26, p. 95), and moved the following recommendation:

That for the better protection of the interests of the medical profession in disputes with public authorities and other bodies, a new organization be established in the form of an independent board of trustees with power to organize and finance collective action by the profession and to provide financial compensation to practitioners suffering financial hardship through participation in such collective action;

That the new organization be entitled the British Medical Guild; That the new organization be constituted in accordance with the deed as drafted by the Association's solicitors."

Dr. Dain said that the present meeting was a consequence of the proceedings of the last Annual Representative Meeting, at which a number of resolutions were on the agenda designed to strengthen the Association's hands in undertaking collective bargaining. The Council appointed a Constitution Committee which had gone into the possibilities with great care. There were two features of the present constitution which were source of danger to effective action. These arose from uses 3 and 4 of the Memorandum of Association, which were

compulsorily inserted by the Board of Trade. The Association had not the protection afforded to a trade union and could not use its funds to support members who suffered for their adherence to its policy. It was found to be impossible to change the present constitution of the Association into a trade union without winding it up, distributing the assets among the members, and starting afresh. That would be a very unwise step to take. Was it possible, then, to establish another trade union by the side of the Association? On considering the powers of a trade union as such it was found that great legal doubt existed as to the possibility of a trade union of doctors proving effective in a time of struggle.

There were two trade unions of doctors already registered, but the test of their efficiency in collective bargaining had never been made. A trade union must consist of workmen or masters combined for trade protection purposes, and there was a difference of opinion among lawyers whether doctors could be considered either masters or workmen. They had been advised that a doctors' trade union would not get the protection of the Trade Disputes Act, because they would not be defined legally as workmen. The Medical Practitioners' Union was advised by counsel that it had that protection. On hearing this the Council took further counsel's opinion, which confirmed the original opinion given to the Association. Following this a meeting was arranged between the Association's counsel and the counsel of the Medical Practitioners' Union, but each counsel reaffirmed his original opinion, so this was a matter of the opinion of one or more eminent counsel against eminent counsel on the other side. On looking at the problem of trade unionism the Council decided first of all that the Association would not be turned into such a union, and that even if it could it was doubtful whether it would afford the protection which a workmen's trade union possessed under the Trade Disputes Act.

In the early days when the Insurance Acts Committee was established a National Defence Fund was formed, and with that example in front of them the Council looked to see whether any better method could be devised. The Council was now offering a set of proposals for a Guild on the lines of the National Insurance Defence Trust. They had looked into the question of creating by the side of the B.M.A. a parallel organization with membership, but such a body would have power only to protect its own members, and what was wanted was an organization which could protect all the doctors engaged in the Service, whether members of any particular body or not. There were, of course, a great many members of the Association who would be completely opposed to the establishment of a trade union and, for good reasons in their own cases, would refuse to join. It was proposed that the British Medical Guild should not have a membership but should proceed by means of trustees centrally appointed who would hold the funds of the Guild and carry out its policy. He understood that if proper care were taken in the election of the trustees of the Guild, if they were separately appointed and the organization was separately run by its own officers, paying its own expenses, even if the trustees might be members of the Council or of executives of the Divisions, the capacity of the Guild for action would not be invalidated.

The general practitioners working the National Insurance Act had had a Defence Fund established for many years, and it was now for other branches of the profession in the National Health Service to make similar arrangements to enable funds to be created to cover all those engaged. There would be no question of a practitioner subscribing twice, once to the existing Defence Fund and once to the Guild; practitioners who had been subscribing to the Defence Fund would continue to do so and the trustees of that fund would make the money available to the Guild when need arose. For the rest it would be necessary to set up machinery for collecting money, and that problem had been referred to the appropriate committees of the Association for their consideration.

Supposing a trade union of doctors were properly constituted and found to be effective under the Trade Disputes Act, what, after all, would the trade union be able to do that the Guild could not do? A trade union was protected against action against itself or its members for anything done in the course of a dispute which might be considered in restraint of trade. They

in the profession, however, were not interested in the "closed shop"; their policy had been against the "closed shop" principle, and he hoped it always would be.

Dr. D. L. S. Johnston asked whether it was possible legally to pass over the National Defence Fund to another fund which might be established.

Dr. Dain said that the trustees of the Defence Fund were not inhibited by the same difficulties as the Council or its committees. The money would remain in the hands of the trustees of the Fund, with the same freedom to act as they had always possessed, and they would, as he assumed, act in concert with any body formed for the protection of general practitioners in any conflict that might arise.

Rejection Moved

Several motions were on the agenda expressing the view that the British Medical Association as at present constituted is competent to undertake any necessary negotiations, and calling for the abandonment of the Council's proposal. Others asked that owing to the conflict of legal opinion the matter should be taken back for further consideration.

Dr. G. W. Ireland (Lothians) moved:

"That this meeting is satisfied that the British Medical Association, as at present constituted, is competent to undertake any necessary negotiations on behalf of the profession, and that the proposal to establish a British Medical Guild be abandoned."

He said that no one could read the carefully prepared memorandum put forward by the Council without appreciating that much detailed work and thought had been put into it. But there was a certain unsoundness in its arguments, and one was left with the impression that the Council were not very sure of themselves and had an instinctive dislike of the whole business. The trustees of the Guild would be the Council. It was a somewhat nebulous conception. The Council had seized upon the one road which seemed to be open, and without knowing where it would lead they were asking the rest of them to march along it. The reasons that had been given for the new organization were extremely poor and the thing itself was poorer still. In contrast they had the B.M.A., which had stood the test of time and had gone from strength to strength. It stood as one of the greatest democratic institutions in this country. It existed for the honour and interests of the medical profession, honour having precedence.

There were two things the Association could not do: it could not coerce and it could not finance its members when in difficulty. But he believed that the absence of those powers made the Association richer and stronger. The Council could continue to carry out all the necessary negotiations. He asked the meeting to maintain the prestige of the Council and in doing so to uphold the honour and dignity of the profession.

Dr. D. S. Robertson (Edinburgh) said that the Council's proposals had been rejected by his Division by a substantial majority. To a few of them the objection was that the Guild was not a trade union, but to the great majority the overriding cause for opposition was the belief that the proposed Guild savoured too much of a trade union, that it was as near an approach to a trade union as the Council could devise without incurring legal difficulties, and the concept of a medical trade union was still anathema to a great number of doctors. He would be greatly surprised if some sharp mind on the other side was not able to pick holes in this thin veneer of legality which was spread over the Guild.

Dr. Swainston (South Shields) was in complete agreement with the Lothians in its dislike of this proposed organization, but it did not approve the words "as at present constituted" in the Lothians amendment.

Dr. J. A. Pridham (Council) said that what they were doing was to extend over the whole of the profession the umbrella under which general practitioners had sheltered for twenty or thirty years. He hoped that the question of withholding service would never arise, but they all knew that when they went into negotiations it was a great advantage to feel that there was weight behind them.

Mr. Eric Steeler (Marylebone) said it was a time for plain speaking. Up to January, 1948, the B.M.A. had been in the unique position of having a moral leadership unquestioned in the profession, as was shown by the last-but-one plebiscite.

Now the Council were so unsure of their moral influence that they themselves suggested a parallel body to do their fighting for them. The rot set in when the Chairman of Council made his *volte-face* between a certain Saturday evening and the following Wednesday mid-day. How could the individual member be sure of the Council when the Council was obviously unsure of itself? This feeling of lack of confidence was shown in the results of the last plebiscite and also in the setting up of two autonomous organizations—the General Medical Services Committee and the Central Consultants and Specialists Committee—and now by the proposal to set up a kind of Siamese twin with the B.M.A. itself. In so far as this proposed Guild had any meaning it was merely a legal subterfuge designed hopefully to cover illegal action. The essential step was to restore moral leadership, and the Representative Body should consider what was necessary to have that leadership concentrated in the Council. The Council was the servant of the Representative Body. This proposed Guild was built on the fantasy of wish-fulfilment and it was to be the Council's alibi.

Dr. J. G. Thwaites (Council) said that the essence of the Lothians amendment was that the Association was competent to carry out negotiations. But the Council had found that there were definitely weaknesses in its constitution. The intention of the Guild as proposed was to provide that strength to the Association which the Association lacked at the moment in its constitution. It was not a separate body, it was another arm of the Association.

Lord Horder's Criticisms

Lord Horder (Marylebone) said they in Marylebone had put forward a similar amendment, but would not press it if the mover of the Lothians amendment was willing to substitute the words "[the Association] should be competent" for "as at present constituted is competent." The Marylebone amendment was positive, and not negative like the Lothians amendment. In January of last year the Association was given a mandate by the whole profession to advise against service under the Act. That mandate enabled the Association to exercise very considerable moral force, such force as would have compelled the Minister to yield some of the excessive power which he had concentrated in himself.

If it was necessary to effect some reconstruction of the Association so as to prevent a repetition of the "sacrifice," then let such reconstruction be effected. But the setting up of a parallel organization did not do this. It added no extra power of a recognizable kind to the power which the Association already held. It left the construction of the Association unchanged. He found it difficult to understand what this new organization could do or indeed what it was. It seemed to have no local habitation, though it had a name. Like Melchizedek, it had no father and no mother. It was to have a board of trustees and to be able to collect money. But so had and did the ill-fated Independence Fund. They were asked to give the Guild a status with legal sanction such as the Association itself might not enjoy. But who operated the self-starter of this organization? Who determined its policy? The answer was the Council of the Association, and so they were back to the point from which they had started. He could not see that the "big stick" was any more than a pole carrying a turnip with the light inside. Who carried the pole? The Chairman of Council. When the pole was dropped and the light failed and the holder of the pole was exposed, was the charge, if there should be a charge, to be made against the turnip? The whole thing was as silly as the ostrich with its head in the sand. Was the Representative Body giving its dictates to the Council, and was the Council performing its function of implementing the dictates of the Representative Body? He saw a danger here. On the previous day the Representative Body had had no option but to approve a Report of the General Medical Services Committee, because that Report had already been approved by the Conference of Local Medical Committees and had been sent to the Minister, so that all the Representative Meeting could do was to rubber-stamp what had been already decided. He admired the very unusual capacity displayed by Dr. Wand in his office as chairman of an autonomous committee, but if they lost sight of the function of the Representative Body, which was to control policy, and of the function of the Council, which was to carry

out the dictates of the Representative Body, then they were diffusing and weakening the power of the Association. The setting up of this Guild was an evasion of their responsibility. Let the Association speak clearly, with its natural and not with a ventriloquial voice.

Dr. A. J. Macleod (Outer Islands) supported the Lothians amendment. He also asked that they should drop this whole idea of fighting. They were not fighting, but negotiating.

Dr. J. C. Arthur (Gateshead) said that in negotiations with any Government, unless there was some backing of force, they got nowhere. Were they to abandon the only methods which had been effective in the past? He urged that the Lothians amendment be turned down.

Dr. J. Riddell (Edinburgh) said this proposal was to be deprecated. It had been agreed that there should be set up Whitley Council machinery for the profession, which involved, in the event of dispute between employer and employee, a recourse to independent arbitration. If they had a Medical Guild it would mean that they had a bludgeon should the arbitration go against them, and such a thing could do nothing but lower their prestige throughout the country.

The Chairman of Council's Reply

Dr. Dain said that a number of excellent speeches had been made, but many of them had not been directed to the amendment at all. If the Representative Body was prepared to say that the B.M.A. as at present constituted was competent to undertake any necessary negotiations it was directly contrary to the opinion which the same body had expressed at Cambridge. The Council had acted here, as on all occasions, as the servant of the Representative Meeting. The Representative Body gave instructions that this problem should be dealt with and the Council had brought before them its considered conclusions. If it were true that the Whitley Council covered all possibility of disagreement with the Government there would be no need for this new body. But the Whitley Council would cover only certain aspects of their contract and there would be a field outside Whitley Council procedure which must be covered by themselves.

Lord Horder had made an engaging speech, but he had not offered any practical proposals for dealing with the problem that the Representatives themselves had set the Council. He reminded them that they had to deal with two defects in the constitution—namely, that the Association could not act as if it was a trade union, and that it could not use its funds to support its members who suffered in consequence of its policy. They were advised that the Guild would not be liable to an injunction, although it would be liable to an action for damages if it did anything which was damaging to an individual, whereas a trade union in furtherance of a trade dispute would not be so liable.

Dr. Barbara Woodhouse (Harrow) said that a year ago they had not felt that the B.M.A. was competent to deal with the problem before them. She asked that the amendment be rejected, having in mind that there were on the agenda further motions which would enable this matter to go back to the Council for yet more consideration.

Dr. H. H. D. Sutherland (Council) supported the Lothians amendment in opposition to the view taken by many members of Council. What they had here was another organization in embryo which was really part and parcel of the B.M.A. It was not, as it stood at present, really independent, and it could be shot at legally. This would not give them the protection that they needed. Dr. Thwaites had pleaded for a strong right arm for the B.M.A., but a subsidiary company, which in effect this was, could be shot at legally just as much as the parent company.

Dr. O. C. Carter (Council) asked whether the Representative Body knew its own mind? If it was satisfied with the medico-political state of the profession then the Lothians amendment should be carried. Representatives had to make up their minds whether they wanted the Association to be efficient to fight a battle if it occurred. If they were satisfied that there was no battle ahead, then let them carry the amendment.

Dr. E. C. Warner (Marylebone) supported the amendment, saying that the formation of the Guild did not give any effective bargaining force for use against the Minister.

Mr. A. Staveley Gough opposed the amendment.

Dr. W. E. Dornan (Sheffield) said that the Guild was purely the establishment of a "pocket" into which the Association could put its band. He agreed that the mere establishment of the Guild would not be sufficient and that the response of the profession with subscriptions over a long period would be a necessary corollary. But he thought the recommendation of Council should be supported.

Dr. R. W. Cockshut (Hendon) had been convinced by the debate that to move in the direction of this Medical Guild would be a mistake. Mr. Steeler and Lord Horder had convinced him. The tone of the Marylebone speeches suggested the right road for them to follow, not the easiest road, but the one which in the future they would be proud to have taken.

Dr. G. W. Ireland, in reply, said that Dr. Dain seemed to indicate that the Council had been given a mandate to produce something. But the Cambridge resolution was "to explore the possibility." On the one side, in the Association itself, they had something that was proved and positive; on the other side, in the proposed Guild, something that was nebulous and negative.

In reply to a question he said he was quite prepared to drop the words "as at present constituted" from his amendment. They were not significant from the point of view of his Division. On a show of hands the meeting gave permission for this, 169 to 132.

The Lothians amendment was therefore put to the meeting in the following form:

"That this meeting is satisfied that the British Medical Association is competent to take any necessary negotiations on behalf of the profession, and that the proposal to establish a British Medical Guild be abandoned."

On a show of hands the amendment was lost by 107 to 217.

Reference Back Proposed

Dr. J. A. Gorsky (Westminster and Holborn) moved:

"That this meeting, while agreeing that a parallel body is necessary for the protection of doctors, considers that until the whole legal position is clarified, the question of the constitution of the Association should be referred back to the Council for further consideration."

There was a genuine difference of legal opinion on this subject and therefore he felt the matter should be referred back to Council. There were grave doubts as to the validity of this Guild, which was not an independent body. He was of opinion that another parallel body should be constituted in order to carry out what the Association could not possibly do.

Dr. R. P. Liston (Tunbridge Wells) supported the reference back. He agreed that a new body should be established for the better protection of the interests of the medical profession in disputes with public authorities and other bodies, but in view of the fundamental conflict of legal opinion on the constitutional position further consideration should be given to the matter.

Dr. S. F. L. Dahne (Reading) said the Council's motion was a shadow of what they really wanted. If more detailed consideration were given to the national, legal, and medico-political aspects it might be possible to build up the unity which they all needed to carry on the battle for the freedom of medicine. He asked that the matter be referred back for further consideration.

Dr. Frank Gray (Council) asked why they were present at that meeting to-day instead of waiting until Harrogate. It was because they felt at Cambridge last year that this question was vital and urgent. No doubt the members of this body slept well last night with roseate dreams of £16,000,000, but they had not got it yet. Snapping the Ministry did not agree to hand over that sum, what preparations had they for meeting the situation? They were faced with a dispute a year ago, and they had to sit down when they should have been doing something more important and hurriedly develop a fighting organization. When they should have been ready for battle they had to go back and build up their armaments. The Council's proposal was really a modest one to set up a piece of machinery which would do things which the Association could not do and be ready to function now in any dispute which might arise.

Dr. D. E. Yarrow (Tunbridge Wells) said that moral force could only be obtained by attracting substantial support from

the whole of the profession. This support would not be forthcoming for a British Medical Guild. This matter should be referred back to Council.

Dr. K. Watson (Rugby) said the matter should be referred back. It was said that the decision was urgent. But no one had yet suggested that the Guild would have any more power within a measurable distance of time than the B.M.A. already enjoyed. The only money on which their hands could readily be laid was the money in the National Insurance Defence Fund.

Dr. I. D. Grant (Glasgow) said that opinion in West Scotland was different from what it was in East Scotland. In Glasgow they were in full sympathy with the view that some such body should be formed—that some such organization should be grafted on to the B.M.A. At the same time they should not be in too great a hurry. It was necessary that this new body should have the full confidence of the profession, and for this purpose more education must go on at the periphery. If this was to be an umbrella for the whole profession, obviously the whole profession must be taught to shelter under it.

Mr. G. D. Falconer (Wallasey) and Dr. J. C. Robertson (Norwich) supported the motion to refer back.

The Chairman of Council said that in three months' time they would be in no better position to settle the legal argument than they were to-day. The machinery which had been in operation for the National Insurance Defence Trust had met the similar problem which had to be solved in the days of national health insurance. When such a Guild had been established and set going it could no doubt, on any alteration of the law, without much difficulty be converted into a trade union if and when the Representative Body thought that was a proper thing to do. But they would be no better off by postponement, and the sooner they started the better.

Dr. Gorsky, replying, said that all the limitations which were imposed upon the constitution of the Association would be reimposed upon the trustees if this proposal as it stood were put in practice. There was great doubt about the legality of the trust deed, and on that point alone he asked for the reference back.

The Solicitor (Mr. Taylor, of Messrs. Hempsons), in reply to a question, said that when the trust deed appended to the present report was prepared it was approved by counsel, and the trust deed of the Independence Fund, which was very similar, was approved by another counsel, and in the opinion of them both, as well as in his own opinion, actions by the trustees would not involve the Association, and the funds of the trustees were quite different from the funds of the Association.

Asked whether it would be possible for the B.M.A. to give away some of its money to the Fund, the Solicitor replied, No, it would not be lawful. Asked further what money would be available to defend the trustees in court should action be brought against them, the Solicitor said that the money in the hands of the trustees could be used.

The motion to refer the matter back was lost.

Support for a Trade Union

Mr. H. B. Bullen (Hastings) moved :

"That in view of the desirability of medical practitioners' having the full protection given by a trade union under the Trade Disputes Act, 1906, the formation of the Guild suggested in the Council's recommendation is quite inadequate to meet the situation, and the Council should make every endeavour to make a trade union available to the profession if this is legally possible."

He considered that the Guild would not be sufficiently strong to wage a fight against a determined Minister.

Dr. Pearson (Birkenhead) considered that if a trade union were started allied to the B.M.A. the profession would be given a far greater sense of security. To suggest that members of the medical profession were not "workmen" was a quibble. If his contract with the local executive council did not make him an employee he did not know what did.

The Chairman of Council agreed that the Guild might not be as effective as a full trade union would be if a trade union were possible and legal, but at the moment the Guild was the most effective method that could be offered to the profession. He was astonished at the last remark of the last

speaker. They had carefully arranged a service for general practitioners in such a form that the practitioner was employed by his patients; his contract was for each individual patient; and yet the speaker had assumed that he was the paid servant of the local executive council.

The Hastings amendment was defeated by a heavy majority.

Other Methods of Organization

Dr. A. Brown (Cambridge and Huntingdon) was of opinion that existing bodies should be used as the parallel organization, the General Medical Services Committee acting for general practitioners, and analogous councils or committees for other groups, with a central committee to act as the co-ordinating body. He moved an amendment to that effect.

Dr. Ff. Roberts (Cambridge) supported the amendment from the standpoint of consultants and specialists. Concerted action was difficult enough for the general practitioner, but almost impossible for the specialist. The organization proposed by Cambridge did seem to offer some advantage. Dr. K. S. Maurice-Smith (Isle of Ely) thought that what Cambridge was suggesting was a little bit better framed and more "visible" than a nebulous Guild.

Dr. H. H. D. Sutherland (Council) considered this amendment to be one of the star points of the meeting. In these days amalgamations of various kinds in the higher spheres of politics seemed to be important means of getting things done, and on their own level in what was now proposed they had, as it seemed to him, a grand opportunity for an affiliation arrangement with the Medical Practitioners Union and for an act of fraternization with the Fellowship for Freedom in Medicine. These bodies might have a part in the central committee.

Dr. C. W. Walker (Cambridge) said that their whole idea was one step at a time. Was it really suggested that, if there was a "row" over the 16½ million, the money in the National Insurance Defence Fund could not be used in the service of practitioners? What did they subscribe it for? The set-up of a Guild was not going to help at all.

The Chairman of Council said that Cambridge and Huntingdon had lost sight of the important fact that the committees of the Association could not be used for the purposes of the Guild. There was no intention to forgo the use of the National Insurance Defence Fund, but that could deal only with one part of the profession.

The Cambridge and Huntingdon amendment was lost.

Membership of the Guild

Dr. J. C. Arthur (Gateshead) moved that eligibility for membership of the British Medical Guild should be open to any member of the medical profession who agreed to the appropriate terms and conditions. It was objected that if they had a Guild of members the members would tend to outrun the Association, and thus a separate body, not merely in title and organization but in spirit and aim, would be created. But it was specified in his amendment that members must agree to the appropriate terms and conditions, and they would have their solid Council membership at the top of the organization. A Guild with membership would be a much more effective machine.

Dr. Frank Gray (Council) said this question of membership of the Guild was founded on a misapprehension. The proposal was to set up a parallel organization, with trustees who would be the same persons as the members of the Council. It might therefore be said that there were adequate means of ensuring that the trustees would be acquainted with the Council's views. It was true that the constitution of the Association could not be changed, but by setting up this Guild they would get perhaps as near to doing it as they might desire. The important thing was to have a machine which would work, and the question of membership was therefore completely irrelevant.

Dr. H. H. D. Sutherland (Council) said that surely this new body must have membership—hands to work, and feet to carry it—at the periphery.

The Chairman of Council said that the plan put forward maintained the Representative Meeting as the policy-making body, and it furnished a method for implementing the policy without having to use the machinery of the Association.

Dr. Arthur had said that people would not take an interest in the Guild if they were not members. The experience of the N.I.D.T. did not support that. Members of the profession subscribed to it, although they were not members.

The Gateshead amendment was heavily lost.

Dr. J. C. McMaster (West Somerset) moved that any agreement to the formation of the Guild should be conditional upon the money paid through the former insurance committees to the National Insurance Defence Fund being transferred to the Guild and the allocation to it of any future contributions to the Defence Fund.

Dr. S. Wand (chairman of the General Medical Services Committee) said that it would be improper to pass this amendment. It was not the business of that meeting to tell the trustees of the Defence Fund what they should do with the money which had been subscribed. He could assure them that the trustees would see always that the moneys subscribed for helping doctors were used to that way.

The amendment was withdrawn.

Dr. H. W. Pooler (Chesterfield) said that the idea of a trade union was anathema to many members in his Division, and a body by any other name would smell no sweeter. But in the end the Division had authorized him to vote for the Guild if its formation was agreed to by a two-thirds majority on a ballot of the profession.

The Chairman of Council said that it was much better that a decision on this point should be made by the Representative Body, which had been fully informed on the subject.

The proposal for a ballot of the profession was lost.

On a proposal by Winchester that the new organization should be entitled "The Guild of the Medical Profession" the meeting passed to the next business.

This exhausted the amendments, and the original proposal of the Chairman of Council, that a new organization be established for the better protection of the interests of the medical profession in disputes with public authorities and other bodies in the form of an independent board of trustees with power to organize and finance collective action, and that its name be the British Medical Guild, was then put to the meeting and carried by more than the necessary two-thirds majority.

Other Motions

Dr. R. H. D. Laverty (Coventry) moved to ask the Council to approach the appropriate bodies representing the dental and pharmaceutical professions with the suggestion that they be associated with the Guild.

The Chairman of Council said that the Council might look at this, but at first sight it did not look as if it would succeed.

The motion was lost.

Dr. J. C. Arthur urged the great importance of mobilizing immediately available funds for the starting of the Guild and establishing a skeleton organization at the periphery.

The Chairman of Council said that Dr. Arthur as a member of the Council would be able to take his part in furthering this. Matters were in hand, and they had only awaited the approval of that meeting to get along with things as rapidly as possible.

Several motions at this point were referred to Council. These included proposals for the financial target for the first year, the establishment of a minimum subscription, the deduction of contributions at source, and a suggestion by Burnley that in the event of an emergency out arising within ten years the accumulated funds should be applied to some form of endowment insurance for the benefit of subscribers. Worcester and Bromsgrove moved that provision should be made for extending the deed beyond the period stated (the lifetime of the longest liver of the issue now living of Edward VII and twenty-one years thereafter), but after the solicitor had explained the legal form for documents of this kind the motion was withdrawn.

Dr. J. A. Gorsky (Westminster and Holborn) moved "That this meeting calls upon the Minister of Health to include in the amending Bill a clause which shall state that registered medical practitioners are 'workmen' for the purposes of the Trade Disputes Act." The word "workman" must not be regarded in a derogatory sense. It was a legal word used in the Act in order to give workmen protection. This was a means by which in effect members of the medical profession could at a future date enjoy the privileges and protection of

the Act. A committee was now sitting on the amending Bill, and if the meeting wished the motion could be referred to that committee for further consideration.

Mr. C. F. Mayne (Plymouth) said that in this connexion there seemed to be a difference in status between different branches of the profession. Did a consultant or specialist who was paid by the hospital board, and who had part of his contributions to the National Insurance Fund deducted, not become a "workman" according to this definition, as opposed to the general practitioner who was self-employed?

The Chairman of Council said it would be unwise for that body, representing as it did the enormous majority of the profession, to ask the Minister to make them into "workmen" in order that they might fight him more successfully in time to come. It would be an impolitic move.

Dr. Gorsky urged that this should not be rejected out of hand. He could not see any reason why the Minister, who was favourable to trade unionism, should reject a request by the doctors to accept protection under the Trade Disputes Act. It would be an act of faith on his part, and he could introduce it into the amending Bill. It should be considered by the Amending Bill Committee. It would solve all those legal difficulties which they had had before them that day.

It was agreed to refer the motion to the Council.

The business of the meeting concluded with a vote of thanks to the chairman.

HEARD AT HEADQUARTERS

Association War Memorial

The memorial at B.M.A. House to members of the Association who fell in the recent war will probably take the form of a fountain to be erected in the Court of Honour. That is the suggestion of the committee which has been considering the subject under the chairmanship of the Chairman of Council. It is proposed that there should be a limited competition among three sculptors to be chosen by assessors for the design of the memorial. The fountain will bear a dedicatory inscription prepared by the Association, and the names of those it commemorates, like the names of those who fell in the earlier war, will be inscribed in a Book of Honour. The entrance gates to the court are a memorial to the 574 members of the Association who fell in the first world war. They were designed by Sir Edwin Lutyens and made by the Birmingham Guild. They are surmounted by a bronze shield with the words on one side "Memory and Praise" and on the other "Faithful Hath Been Thy Warfare." The new memorial is expected to cost £10,000, and an appeal will be made to members to bear the cost.

Gaiety Revived

The bygone gaiety of Tavistock Square will be revived on Thursday, May 26, when the Metropolitan Counties Branch is arranging a ball at B.M.A. House in aid of medical charities. For many years now little has been heard at Headquarters but the sound of typewriters and the murmur of conferences and committee meetings. Some may remember a festive occasion nearly twenty-five years ago when, on the evening of the day after the royal opening of the new house, the Metropolitan Counties Branch organized a similar occasion. The Great Hall is unique among the halls of London, with its high vault supported by rows of Corinthian columns of brilliant peacock blue, and makes a wonderful setting for revelry by night. In the Court of Honour outside, the proposed memorial fountain will not be in place, but the Minister of Fuel and Power has lifted his ban on display lighting in time to permit flood-lighting or other illumination. Perhaps some famous ghosts will be present. Just ninety-two years ago on this very spot Charles Dickens was the leading actor in a series of theatrical performances, when the four hundred guests included some of the highest in the land.

A Permit to be Ill

A long foolscap form came our way recently which had been elaborated by a group of Civil Servants. It looked like the

report of an examination for life assurance. It was headed "Application for a Permit to be Ill," and it began in the orthodox way: "I hereby make application for a permit to be ill." Then follows a long series of questions, as, for example: "I have broken my (a) arm, (b) leg, (c) neck, (d) engagement." Again: "During the last 12 hours I have been sick times. I expect to be sick again in hours." "I am afraid I shall (a) die, (b) live, (c) not die, (d) not live (strike out inappropriate words)." "The name of my (a) doctor, (b) veterinary surgeon is....." It is good to find Civil Servants with a sense of humour.

Transcontinental

Divisional meetings in this country seem brief and slight affairs compared with the way they arrange them in the Canadian Medical Association. A schedule we have received shows that the divisional meetings for Manitoba, at Winnipeg, for Alberta, at Edmonton, and for British Columbia, at Victoria, will each last four days, all in the latter part of September, and the divisional meetings for Nova Scotia and for New Brunswick, held a little earlier in the month, will each last three days. The entire programme, covering seven provinces from the Atlantic to the Pacific, involves twenty-one days of meetings. A warm invitation has been extended to the President of the B.M.A., Sir Lionel Whitby, to pay a visit.

Questions Answered

Unnecessary Calls

Q.—*Recently at 2.15 a.m. I was sent for by a registered patient for heart trouble. On arrival I found her very vocal, but examination showed no sign of cardiac distress. Neighbours were in, and tea and biscuits were much in evidence. I take it we are compelled to attend these calls, but in a case like this have we any remedy or any protection?*

A.—A practitioner is required to render to his patients all proper and necessary treatment and is required to visit and treat a patient *whose condition so requires* at any place where under the terms of his application for inclusion in the medical list he is under an obligation to visit such patient. Where a patient continues to call the doctor to the house unnecessarily it is open to the practitioner to ask to have the patient's name removed from his public list. In isolated areas, however, this step may prove difficult, and an amendment to the Act is being sought so that a practitioner may lodge a formal complaint against the patient under similar arrangements as existed under the National Health Insurance.

Compensation

Q.—*I and my two partners have been practising since before July 5 as anaesthetists. We are all three part-time employees under the State, but I am told no compensation is payable for the loss of the saleable value of the practice unless we join the scheme as G.P.s. Is this the case, and, if so, are any negotiations dealing with specialist partnerships in train at present?*

A.—General practitioners entering the National Health Service are deprived by the Act from selling the goodwill of their practices subsequently, and it is for the loss of this right that compensation is payable. No such restriction on buying and selling applies in the case of specialist practices, and the Ministry has stated it cannot accept liability for any loss in the saleable value of a specialist's practice arising from the introduction of the public service.

A practitioner engaged partly in general practice and partly in a specialty who entered the Service on the appointed day as a general practitioner would be unable subsequently to sell any part of his practice and would base his claim for compensation on the value of the practice as a whole. Normally a general practitioner entering the Service after the appointed day is not entitled to compensation, but it is proposed in the amending Bill to make provision for compensation for partners entering the Service after the appointed day but before a date yet to be specified.

Correspondence

Relations with the Local Press

SIR,—It may interest other Divisions to read of a meeting which this Division's officers arranged last week with representatives of the local Press, and it was so successful that news of it may stimulate others to arrange similar meetings in their Divisions.

It may be stated that the relations in our locality between the doctors and the Press have always been happy; nevertheless, it has been our opinion for some time past that only good results could follow a closer liaison and lead to a better understanding of the problems confronting both professions. As this was our first official approach, though the meeting was to be quite informal, we felt that our object would be appreciably facilitated by the presence of Mr. John Pringle, the Association's P.R.O., and it was. He emphasized in his talk the supreme importance of developing mutual confidence between the professions, for without it no closer contact would be possible; it would prevent "stunting" and discountenance lurid reports.

It quickly became obvious that the Division's suggestions to help the Press, through our secretary, to obtain up-to-date and factual knowledge on medical matters, whether of scientific or medico-political interest, were warmly welcomed. It was recognized by the Press that this represented a genuine desire of the Division to be co-operative. It was surprising to discover how deeply concerned were the local Press at their exclusion from the Group Hospital Committee, and they were anxious to know how far the influence of the B.M.A. might be brought to bear to remedy a state of affairs which they considered to be potentially dangerous. There were many other matters of mutual interest which were discussed but which do not require to be mentioned in this letter.

It is logical to suggest that the efforts which the P.R.O. is making at Headquarters to improve relations with the national Press should be backed up locally by Divisions with their own Press.—I am, etc.,

R. P. LISTON.
Tunbridge Wells Division

Fair Annual Income

SIR,—It is probable that the capitation fee will be increased in the very early future. Financial strain and the burden of increased work under the Health Service will strongly tempt most of us to accept the new figure provided the majority of the profession consider it reasonable. Before falling again easy prey to the cunning machinations of our overseers, let us not forget that, having once accepted the new figure, it is certain, with the rising tide of newly qualified doctors, that the present N.H.S. lists will be severely pruned to possibly 2,000 or 2,500 units. Concurrently, our annual income will be cut back in proportion and obviously will not then be anything like adequate.

The profession must then once again demand from the Ministry a further increase of capitation fee to compensate for loss of patients. The Minister will reply that he has already agreed, and the profession has accepted, one increase, and that to consider a second would not be practicable in the public interest. In short, we shall have "had it."

Assuming we accept an agreed increase of the present capitation fee, and that at some date subsequently and not too far distant Mr. Bevan demands this inevitable cut in lists, what will our *minimum* annual income be then? Will such income be fair in comparison with other professions not on 24-hour call throughout the year; and will the Ministry turn a deaf ear to a demand for an increase on a second occasion?

Before agreeing and accepting an increased capitation fee retrospective to July 5, 1948, let us imagine that on Mr. Bevan's instructions our list has already been cut to 2,000 or 2,500 units, and on *this* figure—and not on our present number—let us assess with the guidance of experts the annual value of our responsibilities to the public. With a list of possibly 2,000 units only, what is a fair annual income for a doctor?—I am, etc.,

Birmingham

G. A. POWELL-TUCK.

Dispensing Practices

SIR,—May I through your correspondence columns relate my own experiences in connexion with dispensing for N.H.S. patients, in the belief that most rural practitioners will find it a considerable financial advantage to adopt a similar system?

During the first quarter of the N.H.S. I accepted the drug capitation fee for patients on my dispensing list, and found that the sum I received barely paid for the drugs I had purchased during the quarter. The increment left over after the accounts were paid would certainly not have paid a dispenser. I decided to try payment by the alternative method of submitting prescription forms for every item dispensed and having these priced at the Pricing Bureau in much the same way as the pharmacist does. To my surprise and gratification I found the sum I was paid was rather more than double the amount I would have had from the capitation fee.

The way I have chosen does involve extra work, as I have to write out prescription forms when the day's work is done, copying from a rough dispensing book, but doctors whose practice is large enough to employ a dispenser should have no real extra work if they write out the prescriptions when they see the patient and send them to the dispenser for recording and to make up the medicine required.

My own experience and that of the pharmacists to whom I have spoken shows that the average value of a prescribed item is roughly 2s. The capitation fee is 6s. 2d. per annum. I assume that the Minister takes it that each person will require three items of medicine per annum on an average. My own figures suggest that the average will be eight or nine items per patient per annum, which is presumably the reason why I appeared underpaid on the capitation-fee method.

I consider that the capitation fee for dispensing is essentially immoral, anyway, as it encourages doctors to prescribe the cheapest remedy likely to keep the patient contented rather than that which will do him most good. Further, it penalizes the rural patient, because the town doctor can prescribe anything in reason, while the rural doctor has to watch his drug bills. Even if the Minister conceded a drug capitation fee double the amount at present paid I should hesitate to change from the present system; it would certainly require to be doubled before it would tempt me.—I am, etc.,

Allstree, Derby.

J. A. WARD.

Position of Registrars

SIR,—May I beg the courtesy of your columns to ask publicly exactly what the B.M.A. are doing on behalf of the chief assistant and registrar class in their negotiations concerning appointments and remuneration under the N.H.S. Act? Much appears to be written and said concerning the G.P. and consultant but little about this class, composed as it is mainly of ex-Servicemen. Grateful as we are for the war service grants which have enabled many of us to specialize who might not otherwise have done so, it is now nine months since the Act came into force, and despite the acquisition of higher diplomas and promises of new appointments we are still "supernumeraries." Further, because of superannuation contributions and deductions for N.H.I., our "grants" are getting less and the prospect of permanent and adequately paid posts more remote unless urgent action is taken to rectify matters. May I therefore urge upon the B.M.A. the following line of action:

- (1) To settle with the Government the question of remuneration and posts for registrars before those of consultants, few of whom are suffering hardship consequent upon the delay in implementing the Act.
- (2) To stop any further grants to intending specialists until those at present receiving them have been absorbed into permanent appointments, thus preventing the supply exceeding the demand when new establishments are finally decided upon.
- (3) To ensure that all posts advertised of a newly established nature and requiring a higher qualification are offered first to those who obtained their diplomas prior to July 5, 1948, thus ensuring that no registrar is penalized, through no fault of his own, for the lack of proper implementation of the Act on the appointed day.
- (4) To insist upon retrospective remuneration to July 5, 1948, according to experience and qualifications on that day (when we were led to expect the Service would embrace us).
- (5) To ensure that war service in the armed Services counts in some measure towards seniority in the new appointments (since it would appear obvious that it was easier to obtain higher diplomas at an earlier date after qualification outside the Forces than when in them).

Although some of my colleagues may not agree in entirety with all the points enumerated above, I feel nevertheless that they will agree wholeheartedly in urging the B.M.A. to "get on with it" and do something for the registrar class as well as for the G.P.s and consultants.—I am, etc.,

Manchester.

I. LANGDALE GREGORY.

* The Secretary of the B.M.A. states: Representations have been made to the Ministry of Health on two occasions that for registrars and those of similar status the new rates of remuneration should be brought into operation forthwith with retrospective application to July 5, 1948. So far the Ministry has taken no action. It has been pressed to take action in England and Wales without further delay.

Abolition of Partnerships

SIR,—May I reply to "Assistant" (*Supplement*, March 12, p. 140)? I can see both sides of the issue, because I entered practice when I left the Navy in 1945, became a partner in 1946, and have had an assistant since 1947. I agree that most assistants are far more competent than their principals. "Assistant" need not rub that in.

I am sure that the B.M.A. has adopted the right approach to the problem of too many assistants trying to enter non-existent possible partnerships. We, the principals, mostly desire a partner in place of an assistant (anyway, I do) because the patients prefer continuity instead of change of doctors. I have had four assistants in over two years, counting locums. The principal at present just cannot afford to take on a partner at £1,200 to £2,000 until the capitation rate is raised. The increased capitation rate will allow of the entry of new partners to overworked practices.

I should like to say a few kind words to "Assistant" about abolition of partnerships. It is somewhat easier for the incoming, unbefriended, possibly inexperienced, and wholly without-patients young doctor if he is working with the man who is overburdened and eager to introduce him to the nucleus of what will become his own individual practice. Personally I want to limit my own list to 2,500 or 3,000 and pass on a large block of excess patients to my new partner. I believe 3,000 is the maximum list that one can look after properly. I am sure "Assistant" does not realize what a long time it takes to work up a practice simply by putting up a plate, even if there is a local redundancy of patients sculling around.—I am, etc.,

ONE PRINCIPAL

The Cost of the N.H.S.

SIR,—It is well that Dr. Ffrangcon Roberts's provocative essay on the cost of the N.H.S. (*Journal*, Feb. 19, p. 293) has not gone unchallenged. Recognizing that the achievements of sociologists and of social medicine are a danger to his concept of civilization, Dr. Roberts easily disposes of them at the outset: "I can only reaffirm categorically that with the possible exception of tuberculosis none of the major diseases and few of the minor ailments are in any degree attributable to this cause [poverty]." One is reminded of Canute.

Upon this frail but bold assumption Dr. Roberts proceeds to construct his austerity budget for the N.H.S. In passing, it is remarkable that he does not appear to have realized the full magnitude of his opportunities once the bog of poverty is laid. For by dispensing with all those costly social services provided at the expense of the taxpayer (mistakenly, it seems) to keep the people alive and in good working health, what an enormous contribution could be made to "national prosperity."

The "remedies" Dr. Roberts proposes, the most unpleasant of which he does not divulge, referring to them darkly as "measures which, to put it mildly, will be anything but pleasant," seem to be as follows. Since all psychological disorders (or "imagined ill-health") are, he is convinced, due entirely to faults in the individual, having nothing to do with his environment, "determinist" folkies and extravagances in attempting to ameliorate the material and social conditions of the psychologically ill should cease forthwith. Presumably,

if such people seek their doctor's advice they should be told to pull themselves together. Or should we threaten them with Dr. Roberts's "anything but pleasant" measures?

Next, we should cease wasting money on all those who cannot be restored as productive workers. This sentence would be passed in the first place on those suffering from diseases which are permanently incapacitating, but would doubtless be extended to other categories of "undesirables." For Dr. Roberts civilization has gone far enough already, if not indeed too far; it now threatens "national prosperity" because of its profligate coddling of these uneconomic people. Have we so soon forgotten Hitler's extermination camps for the unfit?

Finally, Dr. Roberts has decided that "we are certainly moving towards a point" at which "national prosperity is threatened" by the further advance of medicine, which now only increasingly "promotes the survival of the unfit." We should therefore abandon our dangerous attempts to advance medical progress. Not content with abandoning the cause of medicine ourselves, we should teach our students that its advance constitutes the gravest threat to national prosperity, and that the people's desire for good health is in conflict with their country's well-being.

Such "solutions" as these would undoubtedly add to the list of "nations which have been decimated by disease." Such nations have often recovered, Dr. Roberts tells us, but changed in social structure. It hardly seems likely that this was the aim he had in mind.—I am, etc.,

Newbury, Berks.

J. ATKINS.

Health Centres

SIR,—Judging from your report of the Royal Society of Medicine discussion on "Health Centres" (March 19, p. 494) I did not make myself clear in my contribution. May I try to do so now? Referring to the West Ham scheme (for provision of a trial health centre in an adapted building), it is not "hoped to start in three months from now." I wish it was. If local hope, enthusiasm, and initiative counted for anything West Ham's centre would have been in operation before now.

My reference to "three months" was to the time that would be required to complete the centre after work had started. When, if ever, will this be? Ministerial policy was originally in favour of the early provision of some experimental health centres by adaptation of existing buildings. It would now appear to have dithered to the other extreme of "Woodberry Down," and to regard the one as excluding the other. But, Sir, are they mutually exclusive? Even if we are, for political reasons, to be fobbed off with one castle in the bracing air of Woodberry Down in two or three years' time, would not the development of this prototype be greatly assisted by the development of West Ham and other proto-prototypes, ready in much less time and at a fraction of the cost? In these could be learnt the art of cementing persons into a team—much more important even than that of bonding bricks and mortar into a building.—I am, etc.,

London, E.16.

HARRY BOYDE.

Graduated Capitation Fee

SIR,—Dr. J. W. O. Holmes's letter (*Supplement*, March 26, p. 164) is very much to the point, and a tapering fee is grossly unfair. I have some recollection of a doctor writing to the *B.M.J.* stating that he combined medical practice with sheep farming in Wales, and that the capitation fee from sheep was greater than that from his patients. He also stated the sheep were less trouble.

I personally live in the best English county. I have a considerable number of appointments outside the National Health Service, and during the summer am able to go trout fishing three afternoons a week. Is it just that the practitioners who devote the whole of their time to the National Health Service in places like Manchester and Glasgow should subsidize me and my sheep-farming colleague? If such a system is brought into force there will be a tendency for doctors to move from the industrial areas, and the price of farms and the cost of trout fishing will rise.—I am, etc.,

Fareham, Hants.

G. G. THYNE.

Association Notices

Diary of Central Meetings

APRIL

- | | |
|-----------|--|
| 11 Mon. | Pathologists Group Committee, 1.30 p.m. |
| 11 Mon. | Armed Forces Committee, 2 p.m. |
| 11 Mon. | Psychological Medicine Group Committee, 4 p.m. |
| 12 Tues. | Proprietary Medicines Committee, 11 a.m. |
| 12 Tues. | Planning Subcommittee, 11 a.m. |
| 12 Tues. | Ethical Rules Subcommittee, 2 p.m. |
| 13 Wed. | Compensation and Superannuation Subcommi
2 p.m. |
| 13 Wed. | Charities Committee, 2 p.m. |
| 14 Thurs. | Committee on Nutrition, 11 a.m. |
| 20 Wed. | Rural Practitioners Subcommittee, 11 a.m. |
| 20 Wed. | Private Practice Committee, 2 p.m. |
| 21 Thurs. | Joint Subcommittee on Report of Working Party
Midwives, 11 a.m. |
| 21 Thurs. | General Medical Services Committee, 11 a.m. |
| 21 Thurs. | Committee on Psychiatry and the Law, 2 p.m. |
| 21 Thurs. | Full-time Non-Professorial Medical Teachers, Lab
tory and Research Workers Group Commi
2.30 p.m. |
| 22 Fri. | Physical Medicine Group Committee, 2 p.m. |

Branch and Division Meetings to be Held

BOLTON DIVISION.—At Town Hall, Bolton, Wednesday, April 7.30 p.m. Combined meeting with Bolton Medical Society. B.M. Lecture by Mr. R. L. Newell: "Carcinoma of the Colon."

NORTH MIDDLESEX DIVISION.—At Prince of Wales's Hosp Tottenham, N., Tuesday, April 12, 9 p.m. Address by Dr. H. Ramsay: "Some Aspects of Miniature Mass Radiography," follo by films. Comments by Dr. Vernon Davies.

TUNBRIDGE WELLS DIVISION.—At Kent and Sussex Hosp Wednesday, April 13, 8.15 p.m. Dr. W. S. C. Copeman: "Moc Views and Therapy of Rheumatic Diseases."

Meetings of Branches and Divisions

LINCOLN DIVISION

A general meeting of the Division, which all practitioners in are were invited to attend, was held on March 17, with Dr. A. Maiden in the chair. Twenty members were present.

The chairman opened a discussion on the Report of Council on constitution of the B.M.A. Dr. McClure put forward a resolution that "This Division views with alarm and strongly deprecates proposal to set up a board of trustees or similar body which have any powers of sanction or punishment over members of medical profession." Dr. Friskney seconded, saying that, though minority should fall in with the views of the majority, in a professional association there should be no coercion. Dr. Robertson supported the resolution; he thought that anything in the nature of trade union was undesirable. Dr. Buchanan felt that the matter should be deferred till after the Representative Meeting. Dr. Lillic opposed the resolution; he thought that the hand of the B.M. needed strengthening; its weakness was shown by the poor attendance at the meeting. The chairman was also against the motion; thought that the B.M.A. as at present constituted was too tied to take effective action. To clarify the matter he proposed: "This Division is in favour of a guild or similar body, but is in favour of restrictive practices being applied to any member. This proposal was seconded by Dr. Robertson and was carried 18 votes to 2.

The meeting next considered remuneration. Dr. Robertson thought that it was wrong for the B.M.A. to remain tied to Spens. He thought that Spens could be implemented only in a salaried service. He was in favour of a fixed capitation rate which gave a better relationship to the amount of work done. Dr. O'Brien thought it to increase the capitation rate for the first 1,000 only was a mistake. Among other things, it would encourage everyone to take a part. Dr. Semple asked: "Do we want lists of 4,000 and an attack of coronary thrombosis, or lists of 2,000 and a high standard of medicine? Surely the latter was preferable." On the proposal of Dr. Sharrard, seconded by Dr. Buchanan, it was agreed with dissent that this Division support the resolution of the Conference of Local Medical Committees.

Annual Report of Council: Correction

Under the heading "Organization" and the subheading "Plan Grouping for Direct Election of 37 Members of Council" in Annual Report of Council at p. 193 in the *Supplement* of April 2 error occurred in listing the Southern Branch. It should read follows:

Group	Area in terms of B.M.A. Branches or Divisions	Proposed	
		No. of seats	Membership
O	Southern Branch Dorset and West Hants Branch	1	1,394

BRITISH MEDICAL JOURNAL

LONDON SATURDAY APRIL 16 1949

IN PRAISE OF IDLENESS*

BY

Sir HENEAGE OGILVIE, K.B.E., M.Ch., F.R.C.S.

Surgeon to Guy's Hospital

The distinction of delivering the Beyer Memorial Lecture in Johannesburg is the culminating-point of a train of events that started when I went from Oxford to Guy's in 1910. Here I found myself among South African students, and later I numbered many South Africans among my colleagues, my pupils, and my friends. It was therefore only natural thirty years later, when the world decided to evict Mussolini from his Ethiopian empire and entrusted the task of throwing him out to a small force whose medical and specialist services were largely South African, that I should be appointed Consulting Surgeon. In that East Africa Force, whose advance from the Juba to Addis Ababa has never been approached in brilliance by any other campaign before or since in military history, I met for the first time many South Africans, soldiers and doctors, who are my firm friends to-day. After the fall of Addis Ababa I eagerly seized the occasion to visit the wounded in the base hospitals and specialist centres of the Union.

South Africans come to Guy's to learn medicine and to play Rugby football. They are not merely excellent players, they are also able to tell each other in Afrikaans where the ball is coming, and whether they intend to pass or run on. This ruse failed, however, when we met our great rivals St. Bartholomew's Hospital in 1910, for playing back in the Bart's fifteen was a young South African, Christian Beyers, the man we are honouring to-day.

The students of other hospitals sometimes accuse those of St. Bartholomew's of giving themselves airs. They say, "You can always tell a Bart's man, but you cannot tell him much." Yet they all respect the oldest hospital in England, the medical school that trained Pott and Abernethy, Paget, Butlin, and Bowlby. No one could accuse young Beyers of superiority; he was the most sincere and the most modest of men. No one could call him a bookworm, yet he absorbed into his being the great traditions of his hospital. In Johannesburg he became a pillar of South African surgery. A nation asks of its surgeons that they shall be wise, honest, and skilful; Beyers was all of these, and he was also human and kind. When he died before his prime he left a company of colleagues who loved him as a man and a multitude of patients, who owed their restored health to his skill as a surgeon.

Beyers has left behind him a great record and a great example. South African surgery stands very high in the world to-day, and you have in this city of Johannesburg men whose reputation is international, men who spend their days in constructive work and their leisure in writing. A sermon in praise of idleness by one who comes to you from the more leisured atmosphere of an older country may therefore be opportune.

Proper Use of the Mind

We pride ourselves that we live in the age of science. The scientific method, based upon observation and experiment, was the intellectual habit of the Greeks. It vanished in the Dark Ages, swept away with beauty and culture by the barbarian tidal wave that swamped Europe. It reappeared with the Renaissance and has progressed ever since.

The scientific method has led to the unparalleled advance of medicine since the time of Harvey; it has, however, the limitation that it is worked by the human mind, a machine subject as all machines are to individual tricks and idiosyncrasies. Yet whereas the mind can make due allowance for faults when they are found in machines other than itself, towards its own faults it is apt to be blind, particularly when it is driven, as no machine should be driven, without rest periods for inspection, adjustments, and renewals.

Man insists on the alternation between work and idleness in the creatures of his own hands and brain. He plans to lay aside his cars at stated intervals to adjust the effects and to replace the ravages of wear. He applies the same principles to his fellow men. The Mosaic Law enjoined one day's rest in seven. Modern conditions, however, tend to interfere with this alternation between work and rest, particularly between mental work and mental rest; for, while the body cannot be driven beyond a certain point without rebelling and ceasing to function, the mind works with no measurable metabolism or consumption of energy, and can go on working without rest, further work often providing the stimulus to greater effort, till the bearings of the machine melt.

What we have come to call civilization has upset the proper use of the mind. In olden days men were individuals. Each man learned from his parents, his fellows, and his elders, but his thoughts were his own thoughts, worked out by him from his gleanings, from his observations of the sky, the sea, the trees, and the animals, into a personal store of knowledge and opinion. Each man worked for a master, but he received his task in the rough to work out according to his own ideas. The journeyman builder was given, not a blue-print to follow slavishly, but a piece of stone to shape into a pillar that should fit one corner of the church that was rising in the meadow, and if he was instructed to decorate the capital he was free to work out a design that included his favourite dog or a caricature of his foreman. Throughout the day his mind was engaged on varied and interesting tasks, and at the day's end it needed and valued rest.

Nowadays men are not asked or encouraged—indeed, are seldom allowed—to think. Their growing minds are

*The Beyer Memorial Lecture delivered at Johannesburg on Nov. 24, 1948.

moulded at school on Government-sponsored primers, and thereafter they receive their opinions from books or newspapers. Their work is no longer personal or intelligent, but some small portion of a whole of which they have no conception, repeated without the use of any mental process several times a minute for fifty-five minutes in the hour, eight hours in the day, five days in the week, and eleven months in the year.

Such a mind is permanently idle, and to it idleness does not mean rest. It has not been weaving patterns from rough materials, but has remained passive while ready-made and standardized patterns, mass-produced on the cheap to fit cortices of every grade and every race, were scribbled over it. When not so used it has no means of self-employment, no stores to lay down in the basement; and the primitive instincts of the herd—love, fear, hate, and greed—stir dimly in those caves of instinct and produce mass sentiments masquerading as thought, clichés and catchwords that form the conversation and the wit of the moron.

The active mind, on the other hand, may be working all the time and come to no harm if the work is congenial, interesting, and within its trained capacity. The artist can paint for hours without being aware of the clock; the surgeon can perform a four-hour operation of the greatest intricacy, at every stage of which he has to make decisions of prime importance, yet he feels no fatigue. But let the artist trudge round a picture gallery, or the surgeon try to watch a colleague for four hours, and both of them will be calling for a Guinness. The mind can work thus continually without tiring, and do so day after day, but it is not doing its best work. It is making decisions without storing them, collecting pictures without hanging them in the galleries, laying up a hoard of valuables which become treasures only when they are sorted out in relation to each other and properly displayed.

Constant use of the mind does not lead to exhaustion any more than constant idleness leads to refreshment. What exhausts is effort rather than use, the performance of tasks that are distasteful or that are beyond easy fulfilment, the fear of failure because the training is inadequate, the intelligence insufficient, the experience too small and too recent. Even so, an internal-combustion engine suffers little harm when it is run for long hours within its capacity or for short bursts at full speed, but when it is constantly set to do the work of a larger engine by operating at full load for hours on end it very soon gives out.

The Cerebral Cortex—the Last Refinement

But a simile that likens the human mind to a machine is over-simplified. The part of the brain that is machine-like is that part whose pattern was designed in the dim evolutionary past, the part that functions automatically while life lasts, whether the owner is directing those functions or not, whether he is asleep, drugged, or engaged in other business. We know that cats or dogs deprived of their cerebral cortex are still cats and dogs with many of their qualities intact. The dog has lost his affection and the cat his aloof cynicism, but both can run about the room in a manner that differs little from normal. Both can show fear and rage. The age-old machinery of the ductless glands, acting by a mechanism of chemical conduction that is but a refined version of the way in which the amoeba finds its food, the autonomic nervous system that recalls the central nervous system of the earthworm, the central ganglia standing at the head of the spinal cord like the cerebral ganglion of cyclostomes, will do all or nearly all that we need to do without conscious attention from us. They will breathe for us, keep our hearts going at the

required speed, adjust our circulation, look after our digestion; they will, with barely conscious guidance, conduct the intricate balancing movements required to ride a bicycle or the complicated calculations that tell us which foot will reach a bar fifty feet ahead when we are running for a long jump. The cerebral cortex, that gives a consciousness to the sorrows, hopes, and fears arising at these lower levels, is the last refinement, the part in whose development we pride ourselves as possessing something that distinguishes us from the lower orders of creation, the part whose highest advancement is the distinguishing mark of the man who stands above his fellows.

The old machine supplies the power, the cerebral cortex determines the direction and length of the journey and its speed, but the two functions of the mind—control and power—vested in different parts of the same machine, can never be entirely distinct as are a driver and his automobile. The driver may step out and go indoors, and while he is away the machine is at rest. The cerebral cortex relaxes its control during sleep, but the subcortical brain is ticking over in the garage, and at any time it may spring to life and race away. And when some part of the operating mechanism takes charge—fear, hunger, or, most dominant of all, sex—the machine is off at top speed and the owner must jump into the seat, seize the wheel, and do his best: he is in for a ride over which his control is not much more than illusory, a ride that may thrill him or lead him to disaster.

What We Lack To-day

When we sigh for the good old days we are immediately reproved by the social reformer, the politician, the statistician, and the leader writer. We are told that there were no good old days; that these distant periods are gilded for us by the mists of time and by the tendency of onlookers to mistake picturesqueness for happiness; that the fortunate few lived in luxury while the workers were poorly clothed and poorly housed, having none of the pleasures that the working-class enjoy to-day, uncomplaining because they knew no better. On the other hand we make a great mistake if we think that happiness consists in having a forty-hour week, a smart car, a television set, and a chromium-plated bathroom. Happiness consists in a job that provides a succession of varied and interesting tasks that demand skill and call for individual enterprise, that is useful to the community in which we live, that offers security if we do it conscientiously and advancement if we do it well, and, if not a belief in a future life, at any rate a confident belief in the future that this life holds for us. All these things the craftsmen and peasants of the Middle Ages had. All or nearly all of them we lack to-day.

The world is no longer full of opportunity. The adolescent must study the openings in a number of trades and finally choose one, knowing that he is on a path that he must follow for the rest of his days. He must work hard and wait long for advancement, which is the reward of uncomplaining waiting rather than of merit. And he is prevented by class and family pride, by the wish to start where his father left off, from making a home and starting a family till long after the age when such occupations are instinctive and physiologically desirable. Later we see him still more unhappy, frustrated because the chance for which he has been working has still not materialized, unable even to confess his fears or share his disappointment because both he and his wife have lived their own lives and put their own interests first for so long before they married that they have been unable to establish that mutual confidence and self-sacrificing comradeship that is the basis of happy marriage. Such men are, in the words of the old song, "all dressed up and no place to go." They have been

ining so long after achievement that strain has become and nature. They are so constantly keyed up to fight world that is trying to tread them down that they are a state of continual and futile preparedness. Their basal glia are tuned for combat in the day and rehearsing combat during sleep. Their autonomic system is driving in digestive mechanism beyond the needs of appetite and in their metabolism at a level they do not really require.

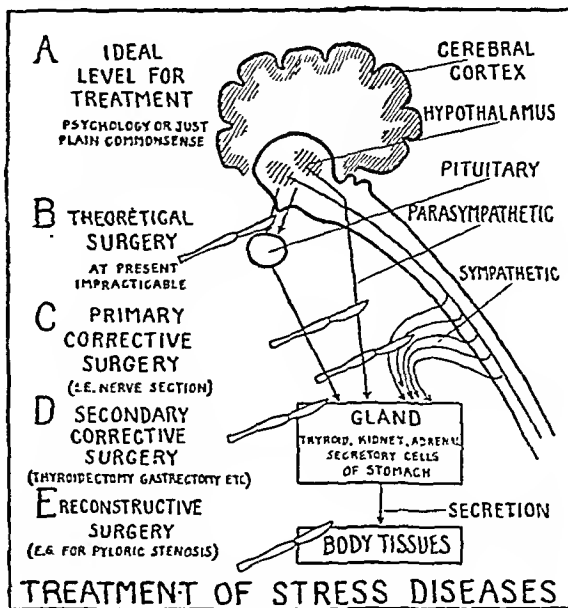
The mechanisms that are being called into play are all mal ones; the only abnormality is that they are being led on constantly. It is unlikely that any organ or system the body ever works anywhere near to capacity. The number of nephrons in the renal system is reckoned to be 100 times that required for normal excretion; it is probable that they work in turn and rest in turn. The brain, all organs in the body, shows perhaps the greatest surplus functional matter over requirements of function. Body and mind seem to have been designed with a tremendous reserve of essential machinery, so that in their normal work—labour and rest may alternate. In modern life they are forced to work abnormally.

Stress Diseases

These are the conditions under which a great proportion the inhabitants of the older and more civilized communities live, and these are the conditions that are causing them to break down and are producing a group of diseases that we may call the stress diseases. In the less stoutly built it is the mind itself that gives way. In the more stable mind remains coherent and calm and the mechanism working beneath it cracks under the strain. The primitive basal emotions that reside in the basal ganglia take charge. The autonomic and endocrine arsenals pour out their effluents to excess.

Three diseases stand out as striking and universally acknowledged examples of stress casualties: thyrotoxicosis, duodenal ulcer, and non-renal hypertension. These diseases, becomes a group that have a similar origin, have certain features in common. They were relatively rare till the beginning of the present century, but since that date their incidence has increased progressively. They are found in civilized countries, in the urban and industrial areas of those countries, and among the more intelligent, ambitious, and hard-working members of the communities. They are seldom encountered in the placid and the lazy, and are practically unknown among native races living under natural conditions. They are thus diathetic or psychosomatic diseases, disturbances of the normal relation of mind and body under overpowering circumstances, and for that reason calling for some general remedy. Yet at present all, except in their earliest stages, appear to be best treated by surgery of a somewhat crude nature. The rational aim of surgery would be to intercept one of the torch-bearers between the hypothalamus and the final recipient in the body tissues. This, unfortunately, is rarely possible, and we must endeavour to correct the defect in the final recipient tissue itself (see p. 648). Our treatment is thus local and destructive. It involves some part only of an activity that is essentially widespread, and tackles a manifestation rather than a cause of the disease; but nevertheless it leads to an improvement that is more satisfactory and more lasting than that produced, in the present state of our knowledge, by any other means.

Of all people we surgeons are most prone to these diseases. I can hardly claim that we are more intelligent, ambitious, and hard-working than any other section of the community, but we certainly shoulder as great a responsibility and must undergo as great an anxiety as any, and so long and so steep is the ladder to advancement, so many



the hands that clutch at its rungs, that we suffer frustration as an occupational risk. Acute hyperthyroidism is distressingly common, and apparently on the increase, among young medical men, usually those holding junior staff appointments and trying to stretch a slowly growing income to cover the needs of a rapidly growing family. Duodenal ulcer is the disease of the surgical registrar and junior surgeon, and an unannounced visit to the surgeons' room at any hospital will usually surprise one of the staff swallowing his glass of citrated milk and his alkaline tablet between operations. Hypertension affects surgeons in their fifties, and makes them one of the worst occupational risks from the point of view of insurance companies.

Rest Periods

To what extent are these risks avoidable? The young man who has carried all before him in his medical school, who has good brains, clever hands, and a stout heart, would be a traitor to himself if he did not plunge unafraid into the battle, prepared to give and to take hard knocks till he has won through. But when he has so won, when the clash of steel sounds fainter behind him and he stands bloody and unbowed with a few comrades equally tough on the upper slopes, he is apt to keep the same combative outlook from mere force of habit, to go on fighting for fighting's sake and working because he has never done anything else. It is this prolonged and no longer needed exertion that is harmful. It is unfair to all those cultural sides of his nature that have had to be laid aside for a time. It is unfair to his wife and his family. It is bad for his thyroid, his adrenals, and his cardiovascular system. Above all it is bad for his surgery.

It is to an audience of medical men, above all to an audience of surgeons, that a sermon in praise of idleness is necessary. We have seen that idleness is a part of function. The heart gives one gigantic heave that sends a dose of blood racing along the aorta; but systole lasts only one-third of a second, and for twice as long the heart takes a rest. A meal is followed by a period of rest during which the stomach and proximal small intestine take the food down to its elemental components, and the pancreas, and intestinal juices and the proximal colon absorb.

very much the same way. Impressions are constantly being received by the eyes, the ears, the nose, and the hands. Some of these produce momentary reactions and are gone. Some, repeated or received with special strength, are laid down in the association centres as memories. But for the best use of these impressions it is important that there should be periods when the mind has nothing to do but look over its stores and sort them out.

We can recognize among our students two types. At one extreme we have the overpowering enthusiast who attends all lectures and takes down every word from first to last. After a hurried meal he goes to the library and pores over a textbook till the time comes for a ward round, when he listens eagerly to every comment and again enters it in his book. At the other extreme is the footballer who strolls into the lecture a little late and does not really get into his stride as a listener till he has filled and lit his pipe and gets it drawing to his satisfaction. His notes are sparse, and at rounds he is attentive but not verbose. Yet when it comes to a practical task the second one approaches it with a common-sense outlook; when he is asked a question whose answer is not in the textbook he is able to see through the problem to its essentials and give an answer that may not be the right one but that embodies his personal experience; at examinations he beats his more studious fellow student, in the practicals at any rate, and when he goes into the world he makes a better doctor.

Most of us have passed through both of these phases, through spells of hard conscientious work and through spells of idleness. In the first we have acquired knowledge; in the second we have built up wisdom. In the first we have been worthy workers. In the second we have made, or started the train that has brought us to, those personal contributions by which we hope to be remembered when we are dead. For the human mind which has been driven hard does its best work when the tension is outspanned and it is allowed to find the natural paths that shape themselves in idle periods.

For many of us the war has provided such a sabbatical break. We have worked hard even in uniform, but for long times we have remained idle. Then it is that we have discovered to our joy that the disconnected visions of our student days are all fitting into a pattern. Figuratively, we have sprung like Archimedes from the bath in which we have been dozing and have shouted "Eureka."

I have enjoyed such periods of idleness more than most members of my profession. Since I became a surgeon I have twice been docked for six months for repairs—once after an illness, once after a motor accident. In addition I have spent more time in the forward surgery of war than any man. And war is the ideal alternative between feverish activity and leisure, between times when ideas crowd upon us and times when they can be worked out. It provides the tremendous stimulus of corporate loyalty, it brings the fundamental problems of injury and infection once again before us, and it gives us abundant opportunity to study them. Throughout my life I shall remember the entry into Addis Ababa in April, 1941, when I sat next to Dan Pienaar drinking the Duke of Aosta's wines in the Piccolo Gebbi, and the spell of idleness that followed in that grand and barbarous country. I shall think of weeks in the Western Desert when the clear air brought every faculty to life, when the distance at sunset took on every colour of brown, purple, and blue, and at night millions of stars shone with a brightness that seems to be seen only in the Egyptian sky.

Those happy days are past, but now, after three years of hard work in civil surgery, I have once again enjoyed the pleasures of idleness, the armchair existence of a five-days flight in a Plymouth flying-boat. And as it is the most

recent arrivals in the aerodromes of the brain that are still circling the association centres looking for a suitable strip on which to land and night-stop, so it is that the problems of these stress diseases have been turning over in the recesses of my subconscious mind seeking their own clarification while I have been consciously looking down on that wonderful panorama of alternating arid waste and prodigal fertility that is Africa.

Thyrotoxicosis a Stress Disease

That thyrotoxicosis is in most cases a stress disease few will deny. As the thyroid is particularly linked up with the female sexual and reproductive cycle, thyrotoxicosis is above all a stress disease of women, and seems to have its origin most frequently in some emotional disaster connected with a love affair. It is, however, by no means unknown in men, and I have met it several times in the war in young officers summoned to take high rank and responsible posts and asked to bear a load of authority beyond their years. It differs from the other two stress diseases I have mentioned in that, once started, it is self continuing, and no amount of idleness, no change of occupation or psychological adjustment, has any power to stop it. Though the thyroid gland is probably fourth in the chain of guilt, the basal ganglia, the hypothalamus, and the pituitary taking prior blame, it is responsible for most of the clinical manifestations of the disease, and in the reduction of its activity lies the only prospect of relief or cure.

The overactive thyroid may be damaged by x rays, poisoned with thiouracil, tricked into its own destruction by radioactive iodine, or pruned with a knife as required.

The results claimed for thiouracil show few grounds for satisfaction or even complacency. The mortality under treatment is at any rate 2%. Ten per cent. of patients are intolerant of the drug; of the remainder only 3% are cured—that is, remain symptom-free for a year or more after treatment has been stopped. The majority must remain for years under observation, with occasional return to a maintenance dose. Two per cent. develop agranulocytosis. In nearly all of them the goitre increases in size, it may become cystic and cause pressure symptoms, it may atrophy and lead to myxoedema, it may become malignant. Broders and Parkhill state that "thiouracil goitre is more of a cellular hyperplasia with mitoses very much in evidence, and so therefore more comparable to carcinoma."

The majority of patients treated with thiouracil eventually need operation because their thyrotoxicosis is not cured, because they dislike the disfigurement of a large goitre, because cysts or haemorrhages are pressing on the trachea or oesophagus. They present the surgeon with a task of considerably enhanced difficulty, for the thiouracil goitre is rigid, friable, haemorrhagic, and adherent, and remains so to some extent even after a long rest from the drug and a course of iodine. On the other hand, the mortality of operation in the hands of a practised surgeon working with a physician who shuns thiouracil is not more than 1%, and the proportion of patients cured—that is, able to return within a few weeks to a full and active life—is over 90%.

I have always felt that an operation secures the desired result more quickly, more certainly, and more safely than any other means, and, having within the last two years like Omar Khayyám, heard great argument about it and about, I still come out by the same door to register my vote in the same lobby: indeed, after a week's reflection in the relative anoxia of 12,000 feet and under the soporific drone of four engines, I am prepared to be almost dogmatic. I hold that thiouracil has had a fair trial and has failed miserably, that it has no useful place in reputable therapy, and that its use should be prohibited except

those cases of thyrotoxicosis where operation has been definitely abandoned or where it must be postponed till after the performance of another and more urgent operation, such as one for cancer.

Of the operation I will touch only on a few points that interest me. We all use the collar incision, but none of us, I hope, use the Kocher incision. The collar incision follows a natural crease and the scar is invisible in six weeks: the Kocher incision is strongly curved, with the ends turned up like the moustache of a bomber pilot, and it leaves the horrible scars that may be seen any day in the streets of many Continental cities. Some of us cut across the infrayoid muscles, some split them in the midline and retract them; I do the latter for no more than sentimental reasons. I have never seen any ill follow muscle cutting, but I do not believe access to the poles is helped appreciably thereby, for the first step in subtotal thyroidectomy is free mobilization of the gland by division of the subcricoid connective tissue fan that binds the upper border of the isthmus and the inner border of the two upper poles. I do not expose the recurrent laryngeal nerve, because I believe that to bare so fine a structure is to invite late involvement by scar, and because if I tie the inferior thyroid artery half an inch away from the gland and then cut in front of its branches in the sagittal plane I know the nerve is safe. I have not drained a thyroid for ten years. Drainage for bleeding is unnecessary, for no thyroid wound should be closed till haemostasis is beyond doubt. Oozing of serum may occur, for Nature abhors a vacuum and she abhors catgut even more, but when it occurs it occurs too late for a drain to help, and it can be removed by aspiration without disturbing the scar.

Duodenal Ulcer

Duodenal ulcer, again, is a stress disease. It is predominantly a disease of men, but it is getting commoner in women as they adopt men's clothes and habits and take their jobs; and whereas twenty years ago females formed no more than a tenth of any series, they now contribute a fourth. Unlike hyperthyroidism, duodenalism can be alleviated and occasionally cured if the stress is relieved and its source removed before scar tissue has converted the lesion into one incapable of satisfactory repair; but since to relieve stress in any particular case it may be necessary to change the man's business, to double his income, to stop his cigarettes, or to shoot his partner or his wife, cure by medical means is not always possible. Surgery is thus called on increasingly for the treatment of duodenal ulcer; but it can never provide a cure for the underlying stress, and must be looked on as no more than a treatment of complications. It is a good working rule that no duodenal ulcer patient should be sent to the surgeon until he is 45, or until perforation, stenosis, recurrent major haemorrhage, or constant pain in spite of treatment makes operation inevitable.

Whereas in gastric ulcer any operation that removes the ulcer and the scar around it is usually satisfactory, in duodenal ulcer no operation that does not permanently reduce the level of acid secretion to one of 20% N/10 NaOH or under is likely to give more than temporary relief or provide any safeguard against recurrent ulceration.

I hope I may, without further discussion, dismiss gastrojejunostomy and all forms of pyloroplasty as unsuitable for anything but a very old stenosis in a man old enough to die of natural causes before he gets a jejunal ulcer. I will dismiss vasoligation as summarily, for it is only necessary to visit the two places where it has been practised longest—Manchester and India—to learn how worthless it is. Two operations remain to be discussed—vagotomy and gastrectomy.

Vagotomy

Vagotomy comes to us with all the glamour of the laboratory and the personal recommendation of 57 professors. As I sat in the plane turning over the journals that the steward brought me I was constantly confronted by the advertisement of a face cream that was the final product of years of research and was now acclaimed by Hollywood stars and Mayfair beauties as the source of their loveliness. I seemed to recognize an old friend in Africa: "Vagotomy, I presume."

That vagotomy will reduce the volume and acid level of the gastric secretion in dogs, that it will stop the pain in all peptic ulcers in human beings and heal the majority, for a time at any rate, has been demonstrated beyond question. That it is a sound procedure, to be regarded as the first line of attack on the peptic ulcer problem, is as yet unproved.

A fundamental question that remains to be answered is how important the vagal mechanism of gastric secretion is in human digestion, and what part it plays in the aetiology of ulcer. Dogs have characters and habits very much like those of man—according to the French proverb, better; but they eat with a speed and an enjoyment that we can never hope to emulate. For them vagal secretion is all-important, for it provides an acid bath into which the eagerly awaited and hastily bolted meal drops. Men by custom turn their minds at meal-times to business or to love—in fact, to anything but food; they eat slowly, and the food remains in their stomachs for two hours or more. They need a vagal secretion for the first course, but they depend largely upon a hormonally activated secretion for the further digestion of their meal. Peptic ulcer patients differ from the normal not so much in the high level of their acid secretion as in its constant flow, which has no reference to the calls of meals. The fault with them is not that their acid is too high, but that it is poured into a stomach unbuffered by food.

Vagotomy cuts out completely the psychic flow of gastric juice, but it does nothing to abolish the chemically induced flow that comes later. If there is an ulcer it does not remedy the complications of that ulcer—the stenosis, the deformity, the fixation to surrounding structures; on the contrary, by diminishing gastric tone and delaying gastric emptying it precipitates the stasis which may still be latent, so that in most cases a short-circuit must be performed in addition to the vagotomy to prevent it. Once a fresh opening has been made the stomach is liable to be empty while the second uncontrolled wave of acid secretion is mounting, so that the new stoma is subjected to the dangers of unbuffered acid. In addition to these serious defects vagotomy brings in its train certain minor disabilities, belching and diarrhoea being the most constant, and now that results are coming to light it is clear that it is followed by recurrent ulceration more commonly than a well-performed gastrectomy. Vagotomy is certainly a simpler and, in the hands of those who should not be allowed to do major surgery at all, a safer operation than gastrectomy, but among competent surgeons it will probably come to be reserved for three groups of cases: for patients who have a return of pain or of ulceration after a radical gastrectomy well performed, for cases of gastro-jejunal ulceration to stop pain and bleeding and allow the patient to be made fit for a permanent reconstruction, and for old men with duodenal pain quite out of proportion to the very moderate ulcer that seems to be causing it.

Gastrectomy

Gastrectomy, on the other hand, is a big operation, and, when performed for duodenal ulceration, a difficult one. Yet it gives results that for excellence and permanence are

as yet unrivalled by any other method of treatment. To ensure such results five criteria must be satisfied:

1. The whole pyloric mucous membrane in which the secretory hormone is produced must be removed.
2. The acid-secreting mucous membrane must be ablated in those regions in which it is thick and rugose—that is, in the body of the stomach.
3. The lesser omentum must be divided right up to the cardia, in order to divide the left gastric artery at its origin and allow the lesser curve to swing free, and to interrupt the majority of the vagal fibres.
4. The stoma between the remaining stomach and the intestine must be no larger than the bowel into which it empties—that is, about $1\frac{1}{2}$ in. (3.75 cm.) in diameter.
5. The passage of food after leaving the stomach must be in an onward direction only.

None of the last three requirements is satisfied by the conventional Polya gastrectomy; all are fulfilled either by the modern Billroth I gastrectomy or by the valvular Billroth II gastrectomy.

Hypertension

Hypertension is not a new disease. It has killed many of the great men of history. Non-renal hypertension, or hyperpiesia, on the other hand, is a new disease and a stress disease. It is the price the millionaire pays for his directorships and the clerk for his failure. Its aetiology is unknown. A similar condition can be produced in dogs by clamping the renal pedicle; but, though in some instances human hypertension is associated with one damaged kidney and cured by its removal, such cases are curiosities; in most the renal function is normal, and the kidneys become involved only late in the disease.

The surgery of hypertension provides to-day one of the most interesting subjects for study and one of the most fascinating topics for discussion. Study is stimulated whenever a new problem appears or when a new discovery throws fresh light on an old one. Discussion is most enthralling when theories abound but proved facts are few.

Operations for the relief of the more distressing symptoms of hypertension are being performed in every country. You have done many here. Papers have appeared from the pens of many leading surgeons. You in Johannesburg have contributed some of the most interesting of them. I have done some operations myself, and was one of the first to do them in Britain, but I have spent far more time watching the work of others, reading their papers, listening to their discussions. And I speak to-day as one off duty, voicing those questions that disturb my idleness because I do not know the answers.

What is the cause of essential hypertension? I do not know, and if anyone does he has not told me. What justification is there for attempting to cure by a major operation a disease about which we are so ignorant? The justification of results: surgical treatment is admittedly empirical, but it does cure or improve patients who would otherwise get worse or die. In what way do we believe that blood pressure may be lowered by operation? Once more we do not know, and each surgeon has a different answer and modifies his operation according to the aim he has in view. There are at least five ways in which it may be suggested that the blood pressure can be lowered by operation on the sympathetic system: (1) by dilating the vessels of the lower limbs; (2) by dilating the vessels in the splanchnic bed; (3) by denervating the kidney; (4) by denervating the adrenals; (5) by dividing the sympathetic fibres to the heart.

Merits of Operation for Hypertension

What are the results of operation? Relief of the more distressing symptoms in nearly all cases; prolongation of

life in any series in comparison with a similar series untreated or treated medically; temporary lowering of blood pressure in many, permanent restoration of blood pressure to normal in a few. Can we select those most suitable for operation, or judge beforehand by tests the extent to which any patient is likely to benefit? No. Tests are so fallacious that many have abandoned them. Can we judge from the figures published by surgeons which of them is getting the best results? No; because surgeons differ fantastically in their selection of cases for operation and in their assessment of post-operative results. At one extreme we have Professor X., who will operate only on patients under 40 who have normal renal function, no eye changes, and show a good response to sedation; he has no operative mortality and a high cure rate, but many of his patients might have got well anyway. At the other end is Professor Y., whose chief indications for operation are progressive headaches and failing vision, and who is undeterred by poor renal function and doubtful cerebral and coronary circulation; he has a number of operative and still more post-operative deaths, and most of those who survive are dead five years later, but he saves untold misery and adds some months of productive life to many useful citizens.

The two most popular operations to-day are the Smithwick, in which the three splanchnic nerves and the sympathetic chain from the eighth dorsal to the first of second lumbar ganglion are removed through a trans-diaphragmatic extrapleural approach; and the transpleural, in which the thoracic chain from the fourth dorsal to the first lumbar ganglion, and the three splanchnic nerves in their thoracic portion, are removed through a wide thoracotomy opening. The anatomical reason for this lengthy ablation is that sympathetic fibres have been shown to leave the upper thoracic chain and travel down to the coeliac plexus on the aorta without traversing the splanchnic nerves.

Now I am going to take courage, from the fact that Edinburgh and Manchester are five thousand miles away and that Boston and Ann Arbor are seven thousand miles away, to voice a few beliefs and disbeliefs.

I believe that an operation for hypertension is effective chiefly in so far as it denervates the kidneys and adrenals, and that the vasodilatation it produces is variable in amount and secondary in importance. I do not believe that there is any significant difference in the relief of symptoms and the lowering of blood pressure obtained between a thorough subdiaphragmatic denervation and a Smithwick operation, or between either of these and the extensive transpleural operation now fashionable in England. I do not attach much importance to filament-chasing, nor do I believe that nerves ever regenerate across gaps; at any rate they are never known to do so when we want them to.

Holding these views, I cannot muster any enthusiasm for the Smithwick operation. It is a Peet-Adson hybrid. It often damages the diaphragm and holes the pleura, and it does so to no purpose if it gives results not differing appreciably from the subdiaphragmatic operation. Still less can I grow lyrical over the transpleural operation, which is less thorough than the Smithwick at the lumbar end (I believe the more important end) of the sympathetic chain and is more thorough chiefly in dilating the intercostal vessels. I doubt whether the aortic filament is more than an anatomist's bauble and whether a knowledge of its occasional existence should persuade us to adopt an operation that is not demonstrably superior to others and that is followed by severe pain in the incision in quite a large number of patients. Though I am fully aware that I risk censure by the high priests of hypertension, I will state my own views, which, I reiterate, are those of an idle man, of

one who leans over the railings watching others digging a hole in the road and sees where they are doing it wrong.

Personal Views

First I should accept my cases only from a medical colleague. There are many things other than surgery that may cure hypertension. I well remember George Heuer, of Cornell University, relating two such cases at the meeting of the American College of Surgeons in New York in 1938. Both patients had hypertension that had proved refractory to every form of treatment and had been selected for surgery. One had a serious motor accident on the way to hospital; the other collapsed under the anaesthetic after the laminae had been removed but before any nerve roots had been divided. Both were cured. Rather than choose my cases myself, therefore, or rely on any form of test, I would take only those that had been under the care of a wise physician and accept his judgment that no change of occupation and no drug treatment could help them.

Secondly, I should refuse none except those with myocardial changes. The man who needs a high pressure to push blood through his coronary arteries will die the minute it is lowered. The others—those with poor kidneys, with a rising blood urea, who are unable to work because of their headaches, who are going blind—are also poor operative risks. They are no good to the surgeon whose eye is on statistics. On the other hand, they need our help more than any, and we can promise to help them. Their world is falling in ruins round them. We may send them prematurely to the next, but if we do not we give them a joy they had ceased to hope for. And the improvement seems to be largely unrelated to the fall in blood pressure. An operation that, judged by the sphygmomanometer, is a failure may yet relieve the patient of all his distressing symptoms.

Thirdly, I should, as my main line of attack, perform a bilateral subdiaphragmatic operation through an incision resecting the twelfth rib. I should resect the sympathetic chain from the third lumbar to the twelfth or eleventh dorsal ganglion, following the chain up by splitting the crus. I should pick up the splanchnics where they leave the diaphragm, divide them where they enter the semilunar ganglia, and follow them as high as I could through the diaphragm before cutting them again. I should do this operation on one side, and if the anaesthetist reassured me I should then do it on the other; if the drop in blood pressure was considerable I should do the second side three weeks later.

Fourthly, I should send the patient home after he had recovered from the double operation and reassess him after three months. If it seemed advisable to lower his blood pressure still further I should attack the cardiac sympathetic fibres by removing the second, third, and fourth dorsal ganglia, first on the left side, later, if necessary and after an interval, on the right. I should not divide the diaphragm nor should I open the pleura.

Well, gentlemen, I have talked so long of idleness that I have exhausted you. I have strained your patience so much that your pressures must be near to apoplexy and your duodenal ulcers to perforating. My thesis is the very simple one that the man who works hard and conscientiously does his most important work when he outspans his mind and allows it to wander at its own pace round the paths over which it has been rushing, and that science is advanced further in a shorter time by the informal chatter of a few like-minded friends over cocktails than by the formal exchange of papers or by any number of congresses.

The figure was planned by my former House Surgeon, Mr. Alan Parks.

THE DISCOMFORTS OF CHILDBIRTH*

BY

GRANTLY DICK READ, M.A., M.D.

When I was a student "on the district" I attended a girl whose reaction to childbirth greatly impressed me. When the head started to crown and the effort syndrome became obvious, with the evidence of suffering, I offered her such anaesthetic as I was allowed to give, and she would not take it, but between the contractions she smiled happily. After her baby was born I inquired why she would not take any anaesthetic freely offered her, and her reply has always remained in my mind. She did not take her anaesthetic because she did not want it. "It didn't hurt, doctor," she said; "it wasn't meant to hurt, was it?"

From the teaching of Crile and Head it became obvious to me that the discomforts of childbirth depended largely on the emotional and not solely on the mechanical factors which one had been taught were the cause of the pain. The fact that in childbirth there is usually a woman present is not always remembered even to-day. The performance of the mechanism of parturition is undertaken with a magnificent apparatus, but the fact that the woman has a brain, a mind, an extremely sensitive nervous system from which the impulses act and react upon the mechanism, is not so freely understood.

I asked myself how a woman could be expected to be successful in the task of bearing a child if she was not equipped with adequate knowledge. Would it be expected that the secretary of a business man would be successful if she had never handled pencil and typewriter? Yet women are allowed to enter upon the most important task of their lives untutored, untaught, and unassisted. I began, therefore, to educate my patients much earlier in pregnancy. From the time the women came to report that they were pregnant they were tactfully, gradually, and carefully initiated into the job they were about to perform. Their preparation included not only the normal clinical care of the antenatal clinic but they were taught relaxation and respiratory exercises, and during their short periods of rest while they were under instruction they had the art of childbirth explained to them. They were told that they had a uterus in which the baby was growing, that the uterus was made of muscle and grew with the child, and at each visit they were told the relative size of the child. They were told that the child would move and how to expect to "feel" their baby at about 17 or 19 weeks, as the case might be; they were told the position and were even shown a diagram of it. They were also told that they were already feeding the child and that it was necessary that they themselves should take some care of their own diet. They were told what they should eat and what they should not eat.

My patients were delivered on their backs, propped up in a position equivalent to squatting, but leaning, because the average European is not accustomed to squat. They held their child's hands before the baby was fully born and took it in their arms as soon as the cord was severed. Their happiness and complete freedom from pain were remarkable. Their refusal of anaesthesia was noted, and not infrequently they scorned and rejected the idea that they should be unconscious at such a great moment.

Nerve Supply of the Uterus

The neurological explanation of the phenomena I was witnessing was important. Some years previously Beckwith Whitehouse, in Birmingham, had worked very seriously on

*The substance of a lecture delivered before St. Mary's Hospital Medical Society on Oct. 28, 1948, with Dr. G. W. B. James presiding.

the nerve supply of the uterus. He came to the conclusion that the different muscle fibres of the uterus lying in different directions were supplied one by the autonomic nerves and the other by the sympathetic nervous system, and that these groups worked in harmony in much the same way as opposing muscle groups work in harmony—that is to say, when one group contracts the other relaxes. That is the mechanism whereby the expulsive muscles of the bladder and rectum and the corresponding sphincters work. With the release of the sphincters the expulsive muscles come into play. With the nerve supply of the uterus it was the same story. The circular inhibitory fibres should be relaxed, loose, and acting in harmony with the expulsive longitudinal fibres whose enormous power at full term is sufficient to dilate the cervix for the child to pass through, when the dilating force is augmented by the great effort of expulsion to drive the child through the birth canal.

Thus again the story of Head's thalamic pain loomed very largely into the picture. If in the presence of fear, as Crile and others had pointed out, the sympathetic nervous system throughout the body created a state of tension—a great protective activity to fight or fly from that of which it was afraid—the fear of labour would bring about rigidity by sympathetic nerve-fibre stimulation and the muscles and organs supplied by that nervous system would also be in a state of tension. The outlet of the uterus would be relatively rigid and the cervix resistant to dilatation. Thus there would be tension not only in the person herself but also in the apparatus of reproduction. The presence of fear is therefore a direct cause of somatic manifestation giving rise to the real pains of labour. Sir Charles Sherrington found that the uterus had only two pain-recording nerve endings—those which recorded laceration and those which recorded excess of tension above the normal mean.

Put those simple observations together and see what we have. In the presence of fear the outlet of the uterus is in a state of chronic contraction. The longitudinal fibres of the uterus struggle to release or burst through that resistance of the circular fibres of the uterus, increasing enormously the tension within the organ itself and thereby stimulating the receptors of pain. It is very simple and far more important therefore to remove the fear and the tension, for thus the amount of suffering in labour becomes negligible in comparison with that endured by the woman who is afraid. It is not enough for the woman to say, "I am not afraid." There are subconscious fears, fears formed and based on past associations or ideas. If these can all be removed then the labour of the human female becomes as easy and as enjoyable, in spite of the work and effort involved and the call upon her higher qualities, as it is in the lower animals.

Emotional Phases

But that again is not enough, and in order to understand exactly what emotional changes occur in labour we must study a labour which is normal—that is to say, a labour in an unanaesthetized woman, where the natural function is carried out without interference. It became possible to study these labours in large numbers when this series of events was implemented, when the fear was removed, and when the woman herself was in a natural state of relaxation and had no desire for anaesthetics or sedatives, for which, indeed, there was no necessity. Thus the study of the normal emotional phases of labour became possible, and, perhaps more interesting than anything else, in this idea was the discovery that labour is not a purely mechanical affair at all, but is closely associated with varying emotional phases. The chemists will shortly, I hope, be able to prove

and demonstrate to us that many of the chemical constituents of the body vary with the emotions during labour. Particularly is that true of the blood sugar, as well as other biochemical factors.

But it is necessary to show how these emotional phase can be recognized, because one cannot conduct a labour to the full satisfaction of oneself and of the mother (and I am beginning to believe, of the newborn child) unless one understands more than the purely mechanical function of parturition. It is not enough to wait until the head is showing and then put on a mask and gown and get a friend to give some "dope" and stand at the other end of the bed. That is not obstetrics, but it still goes on. Obstetrics is the understanding of the mind as well as the body of a woman in order that she may produce her child in the most natural way with the least injury to both mind and body—certainly the minimum of injury to the mind.

First Stage of Labour

The first stage of labour is the stage of initiation and expectancy. The antenatal anticipation of labour is a very boring time. There is no more trying period in a woman's life than the last two weeks during which she is waiting for the baby to be born. She not only wants her baby but she wants to get rid of the pelvic burden and to be again a freely mobile person. Women will go into labour in a condition of considerable exhilaration and animation, and until the cervix is dilated to between one-fifth and two-fifths (I am speaking of the primiparous woman) they will retain that state if there has been an intelligent and proper approach to labour.

When the cervix dilates further there occurs a very marked change. At two-fifths dilatation the large majority of patients will offer two manifestations. They will become quieter, although cheerful between contractions, and they will develop a pronounced malar flush. I would look for the malar flush appearing on the woman's face at two-fifths dilatation, because one knows then that the labour is truly progressive. The woman then begins to realize that she is completely helpless in relation to her uterine contractions. She is in the power of forces over which she has no control. Mere man would be alarmed under those circumstances, but woman fortunately has a better mentality.

When the uterus gets to three-fifths dilatation the woman has become serious in her demeanour—I do not mean distressed—but many of them are uneasy in their minds. What they desire is company. It is not physical pain which gives rise to the distress at three-fifths dilatation. It is the first emotional menace of labour. That can be diagnosed clinically perfectly well, and it is at that time that no woman should be left alone. There is no greater obstetric error than to leave a woman in a room by herself at three-fifths dilatation and tell her, "You are not going to have your baby for perhaps ten or twelve hours. We have no time to look after you. Do not make a lot of noise, and we will come and see you from time to time." That is the way to ruin a woman's labour—indeed, a way to ruin her whole life, for pain and terror beyond control will give a psychological foundation to future experience that even time will not rectify.

If that phase is well cared for she will carry on with assistance and regain considerable confidence before the cervix is four-fifths dilated. This is the time when a sedative should be given, if it has to be.

Second Stage

Then we come to the transition from the first to the second stage. The transition is the great testing period

labour, for then the cervix is dilated to its fullest. Many women definitely have pain at this stage even in the most normal labours, because of the tension brought about at the ultimate dilatation of the cervix. This is the second emotional menace of labour. Here is a true test of the woman's faith and fortitude. It is a period fraught with anxiety and perhaps pain. This is the time in normal labour when there is backache in about 50% of all cases. It should be recognized as the *pain period of labour*, and the average normal labour in which there is any pain will exhibit it at this stage.

As that emotional storm abates the woman will pass into the second stage of labour with the establishment of firm contractions, and she will be astonished at the disappearance of the backache and the sense of tremendous relief at being able to help herself. She will also greatly rejoice in the ability to push her baby through the birth canal, but I do not want to allude to mechanical factors now.

The third emotional phase occurs when the head reaches the pelvic floor. Many women will be inclined to give up their labour at this point. They will complain of all sorts of things; they will show a desire to escape. They will use all their female arts and wiles to persuade their attendants to do something for them. I have seen women full of fear and "suffering the tortures of the damned," although their pulse actually remained at 70, they were not perspiring, and they were breathing freely. The same women have explained to me afterwards that it was not a question of physical discomfort but a terror of anticipation from which they suffered. These women are quite honest with you and tell you exactly what they have felt at this time. One woman obstetrician whom I attended told me after her baby was born that I had not emphasized sufficiently the alarm then felt.

The fourth emotional menace is a real one because it varies with the conformity of the woman. In many women the ultimate outlet of the vulva is elastic, particularly up to the age of 26 or 27. At the crowning of the head, if a woman is in full control of herself, including respiratory control, it is not painful. At ages of from 26 to 34 the indifferent elasticity of the vulva may bring about some difficulty and at about half-crowning there is the onset of a sensation which most women describe "as if they are about to burst." It is not a feeling of actual tension or tearing, but of burning. If you ask them to describe the pain they will say "they are burning or stinging down below."

That sensation has a neurological basis. It is very largely due to the fact that certain nerve receptors go out of action before others (epicritic before protopathic), leaving nociceptors to record certain sensations of vulval sensibility. But this disappears quickly in the large majority of women and there is almost complete anaesthesia of the perineum within one-half to three-quarters of an inch of the vulval margin. There is no sensibility whatever to the tear. There is no pain. The woman feels only a sudden release, and afterwards what appears to be a massive laceration, which if it occurred in any other part of the body would cause considerable pain, has been sustained almost without her knowledge, and she is disappointed when she is asked to submit to the insertion of stitches.

Therefore there are not only the physical factors but four emotional factors which intensify the stimulus. The mind, however, can usually be trusted to take charge of the situation without the necessity for anaesthetics or even sedatives. The more experienced one becomes in these matters the more easily can these emotional factors be controlled. But they are quite definite phases and similar in all primiparae, and can be recognized as discrete entities. In multi-

para it is a slightly different story, because the whole of a relaxed labour in a multiparous woman is so short that these phenomena run rather on the top of one another. Many women undertake parturition in the spirit which thinks of nothing except having the baby as soon as possible and with the greatest amount of happiness. Labours of two hours are no exception. There is no fear, and therefore only a desire for the child.

Third Stage

The third stage of labour is the only one which presents any anxiety to the normal obstetrician. It is the most difficult to carry out successfully. In a truly physiological labour the mother will be holding the hands of the child before the body is born. The head emerges and with the next contraction the shoulders are freed. The child is then rotated and lies upwards facing the mother. That rotation gives relief and takes the tension from the points where it has been at its greatest on the perineum. It is then we see an astonishing transfiguration of a hard-working woman employing the effort syndrome, which made her appear distressed, to a mother who suddenly becomes happy and smiling and sits up and waits for the baby to be fully born. Women in these circumstances will complain because the doctor is not yet able to tell them whether it is a boy or a girl. They will ask him to hurry, and I have to say to them, "I will hurry when you give me a contraction to hurry with." The sight of the infant brings on various emotional changes which are by some standards exaggerated. They speak of the child with fascinated wonder and enchantment. The most dull woman can burst out in exaggerated terms of delight at the sight of her child.

These children are all handed to the mother immediately the cord is cut. Every woman takes her child in her arms and holds it to her breast, not necessarily to suckle it. This stimulates a reflex contraction of the uterus which is definitely of physiological value. I think women were meant to take their babies when born. They will say what a funny-looking thing it is. "Is that the right colour, doctor?" "It really is like my husband."

Expulsion of the Placenta

Meanwhile the uterus contracts down to a firm solid ball. It is my custom to put a Spencer Wells forceps on to the cord close to the vulva, having a little tension on it, and hand the child to the mother. A basin is left underneath to receive the placenta. Not infrequently, as the mother plays with the child you will see the Spencer Wells drop into the receptacle and the cord lengthen five or six inches. It is not always sound practice to judge the position of the placenta by the height of the uterus. The placenta may be extruded and the height of the uterus not alter very much. But if the cord is seen to lengthen five or six inches, with possibly an ounce of haemorrhage, one may be sure that most of the placenta is in the vagina.

The mother is given a hot drink and the baby put in the crib at her side. Twenty minutes is the minimum time to expel the placenta. During that time while the urge to expel the afterbirth is occurring the happy woman is subjected to another wave of anxiety as the uterus contracts, although she cannot feel anything. One might imagine the expression of anticipation on her face to be an expression of pain. But the passage of the placenta is a source of very great satisfaction. It conveys a sensation which the woman will explain as the end of a glorious episode. The contractions of the uterus are needed for the completion of the function of childbirth, and there is nothing which takes place in childbirth without reason or cause.

Conclusion

Childbirth is being conducted in this manner in many parts of the world. There is no evidence yet that any school which has applied the psychosomatic approach to labour has withdrawn. No man who has understood the emotional has returned to the purely physical conduct of childbirth. There is more in this than the production of the child. At present there is a great wave of fear in the United States of America that the psychological state of married women is so altering that a factor is creeping into society which in a few generations may have a deleterious effect upon the whole nation. Two years ago—when I was in America—I found that the “mind of woman” received little or no care either before or during labour. Now, however, the importance to the mother and baby of this approach to childbirth has been accepted and demonstrated by Professor Herbert Thoms, of Yale University; Dr. Blackwell Sawyer, of New Jersey; Drs. Volmer and Marsh, of San Francisco; the Maternity Center Association, of New York; and others who have adopted these procedures. Their recent publications bear out with remarkable accuracy the conclusions drawn from the work in this country. Complete anaesthesia or unconsciousness in normal childbirth is an offence against Nature. Children who have been born according to the laws of Nature will be evidence of its psychological value as they grow to maturity. It will be easy to recognize those who were born with instinctive maternal guidance in the first few moments of their lives. These factors cannot be overlooked.

In a series of cases recently reported by the first great American university to adopt the procedure here outlined it was stated that 80% of all women—including abnormal labours—were fully conscious of all the sensations of the birth of their babies. I have found that in over 90% of uncomplicated births the women refuse analgesic or anaesthetic. The normal healthy woman of to-day, with a normal healthy labour, will tell you that the birth of her child was “a joy she would not have missed for anything.” She sympathizes with those whom circumstances forced into insensitiveness or oblivion at that moment.

NON-SPECIFIC EFFECTS OF IMPURE PENICILLIN

BY

J. UNGAR, M.D.

(From the Research Division, Glaxo Laboratories, Ltd., Greenford, Middlesex)

It has occasionally been reported during the last three years that impure penicillin is a more effective chemotherapeutic agent than the purified crystalline material. This view was based on the laboratory study of various penicillin samples, using either the protection of animals (Hobby *et al.*, 1946, 1947; Welch *et al.*, 1947; Miller *et al.*, 1948) infected with streptococci, *Bact. typhosum*, or salmonella or the action on the motility of *Treponema pallidum* (Dunham and Rake, 1945). These observations seemed to indicate the presence in crude preparations of penicillin of a factor that increases its antibacterial action; this factor appeared to have so marked an effect on the action of penicillin that the term “enhancement factor” was thought justifiable. This reason probably also explains the suggestion, made in a recent annotation (*B.M.J.*, 1948), to take the retrograde step of reverting to the earlier production methods and the use of impure penicillin.

It should be noted, however, that the data available explain neither the nature of the “enhancement factor”

nor its action (Welch, 1947; Hobby *et al.*, 1947; Fischbach *et al.*, 1947; Pratt *et al.*, 1948). The individual observations are scanty and occasionally conflicting, but this much is certain, that the “enhancement factor” in the impurities is heat-stable, dialysable, and active in small amounts if added to purified penicillin G, K, or dihydro F (Welch, 1947; Hobby *et al.*, 1947). The issue is of importance to the whole problem of presentation, for penicillin may be distributed either as a pure product with specific pharmacodynamic properties or as a crude one in which largely unknown impurities are left. An investigation was therefore undertaken to determine (1) what part the impurities play in the activity of crude penicillin, and (2) the mechanism of any such activity.

With these objects in mind the main work of Welch *et al.* (1947) was first repeated, but using, on a units-per-weight basis, smaller doses of penicillin—just sufficient to protect mice against lethal infections with *Bact. typhosum* or streptococcus, which are those commonly employed in protective trials.

Materials and Animals Used

In this paper we are concerned with a substance or substances that may be present in certain samples of penicillin and are different from the essential therapeutically active constituents. It is therefore important to describe as precisely as possible the penicillin samples used in the experiments. There is some confusion in the penicillin literature owing to the various descriptions of materials used in laboratory and clinical investigations, descriptions that include such terms as “crystalline,” “pure,” “purified,” “crude,” “yellow,” “white.” It has been thought best to follow as closely as circumstances permit the description accepted in this country for the purposes of the Therapeutic Substances Act.

Two preparations were used, differing in “purity.” The first was “penicillin sodium salt,” containing not less than 80% of penicillin G (penicillin II, benzyl penicillin); the other 20% presumably consisted partly of penicillin and partly of material devoid of penicillin activity. It varied in colour from yellow to almost white, according as the impurities contained more or less of pigmented substance derived from the mould. The other material used was “crystalline penicillin G sodium salt”: it contained at least 95% of penicillin G and was a white macro-crystalline product.

For brevity the first type of product is referred to as IP and the second as CPG. The activities in international units were in conformity with accepted standards: the IP batches all had about 1,200 units per mg., the CPG 1,600 or over.

The mice used in the experiments were albinos of both sexes from an inbred colony derived from ancestors of the Strong A2 line. They weighed from 18 to 20 g. at the time of test. Rabbits, of no special strain, were used at body weights of 2.5 to 3 kg.; they received intramuscular injections of 10,000 units of penicillin.

Methods of Infection.—The procedure, including the method of infection, was similar to that of Welch *et al.* (1947), but differed from that of Hobby *et al.* (1947). Two different pathogens were used. A virulent strain of *Bact. typhosum*, having for our mice an LD50 of about 40,000,000 organisms, was injected, at ten times the LD50 of a 24-hour culture, by the intraperitoneal route. The other strain used was *β-Streptococcus haemolyticus* at ten times the LD50 of a 24-hour culture (blood agar), also intraperitoneally. Penicillin injections were given intraperitoneally in the morning followed two hours later by the bacterial suspension. Treatment was given twice daily for four days and the number of mice surviving after seven days was recorded.

Inactivation.—For control purposes all IP or CPG solutions were inactivated with a penicillinase preparation from *Bacillus subtilis* (Ungar, 1944) and then heated at 80° C. for 30 minutes.

Comparison of IP and CPG

Table I gives the results of some comparisons of the two types of penicillin preparation with both kinds of infection. IP (K283) was a fairly old batch of material. The CPG was material from current production. In the experiment recorded in Table I, moreover, the batches CPG 5015 and CPG 5207 consisted of high-potency material made from a part of the same metabolism fluids that yielded, respectively, batches IP 5015 and IP 5207 of less-purified product. Thus the latter may be regarded as consisting of the former together with the natural impurities. A number of experiments like the one summarized here but not involving the use of similarly comparable batches of IP and CPG were carried out during a period of some 12 months with 18 other production batches of penicillin IP.

TABLE I

Substance	Penicillin Dose (i.u.)	Infection	No. of Animals Used	No. of Survivors
CPG	10	Streptococcus	36	24
CPG + IP K283 inactivated ..	10	"	36	27
CPG	100	Bact. typhosum	36	5
CPG + IP K283 inactivated ..	100	"	36	15
CPG	50	"	12	0
CPG + inactivated IP 5015	50	"	12	2
P 5015 + inactivated CPG 5015	50	"	12	2
P 5207 + " CPG 5207	50	"	12	2
P 5015	100	"	24	12
"	450	"	24	23
CPG 5015	100	"	24	8
"	450	"	24	19
Control	—	"	12	0

From these experiments it would appear that mice treated with IP are sometimes better protected than mice treated with the same dose of CPG. The difference between their action in mice infected with streptococcus was not significant; indeed, in some tests mice treated with CPG showed a slightly higher survival rate than mice treated with IP. But our experiments confirmed the superior effect of IP in preventing *Bact. typhosum* infection of mice.

Blood Levels in Rabbits

The next series of experiments was designed to find out whether the estimation of blood levels of penicillin in rabbits after injection of IP would give an indication of the presence of the enhancement factor, as had been suggested by Welch (1947). Blood levels were estimated at 15-minute intervals for the first hour and then half-hourly. The rate of urinary excretion of penicillin was also estimated, to determine whether the less-pure penicillin had the effect of decreasing urinary excretion, as this might partly explain any higher penicillin blood levels.

All the penicillin samples which showed an enhanced activity in typhoid-infected mice were tested, as well as ordinary routine batches.

For each batch a group of four rabbits was used. The tests showed that the type of penicillin tested had no bearing on the levels of penicillin in the blood. Maximum levels were reached after 30–45 minutes; the levels began to fall after 60 minutes, reaching zero after three to four hours, irrespective of the kind of penicillin injected. It was found, however, that the levels of penicillin in the blood differed in individual rabbits, sometimes very considerably. This was apparent in two experiments in which groups of four rabbits were alternately injected with the same two batches of CPG and IP. On the first occasion the batch of IP gave higher blood levels in three of the four rabbits after 60 minutes than did the CPG. In the

second test the first group of rabbits were injected with CPG and gave higher blood levels than the other group now injected with IP. The blood levels clearly depend to a large extent on the individual rabbits. This observation is already well known not only to laboratory workers but also to clinicians, who often record a wide range of penicillin blood levels in patients receiving the same dose of penicillin.

The amount of penicillin excreted in the urine of the rabbits was estimated during the day on catheter specimens and at night on samples collected in metabolism cages. The rate of excretion of penicillin in the urine and the amount of penicillin excreted over 24 hours did not show any difference with the two types of penicillin; with either, between 40 and 90% was accounted for in the urine after 24 hours.

Effect on General Resistance

As the increased effect of IP in our material could be demonstrated with *Bact. typhosum* infection but not with streptococcus, it seemed possible that if the blood levels of penicillin in mice behave similarly to those in rabbits we were here concerned less with the bacteriostatic action of penicillin, which should be "enhanced" similarly against both types of infection, than with an effect on the host, whose neutralization of bacterial endotoxin is being stimulated by the IP. This notion is supported by the fact that the enhancement effect can be shown if the mice are pre-treated with IP; the optimal response occurs if the IP or the impurities present in IP plus CPG are injected into the peritoneal cavity before an injection of the infecting organism. In this event the impurities would be producing just the opposite effect to that of an intraperitoneal injection of mucin-coated bacteria, which enables micro-organisms of low pathogenicity (mainly endotoxin-containing bacteria) to cause a fatal infection in otherwise resistant animals (Miller, 1933). It is appropriate to mention that this effect of mucin is due to several factors, such as the inhibition of phagocytosis and an increased permeability of the barrier between the abdominal cavity and the blood stream (Olitzki, 1948).

To demonstrate, therefore, that the effect of the impurities is on the host rather than directly on the bacteria, we made a few experiments to compare any stimulating effect of the IP with that of colloidal substances known to have such an effect. For this purpose calcium oleate (a suspension of 0.75% calcium oleate in 0.5% gelatin) was used, and the experiments were performed on similar lines to those with IP and mice infected with *Bact. typhosum*. The mice were injected intraperitoneally in the morning with 0.05 ml. of calcium oleate and infected two hours later. The results are shown in Table II.

TABLE II

Substance	Dose in Units	No. of Mice Surviving out of 12
CPG + inactivated IP	100	9
CPG + " CPG	100	5
CPG + calcium oleate	100	12
IP	100	8
CPG	100	4
Calcium oleate	—	2
Control mice	—	0

Although the number of mice in each group was not large the results point to a positive enhancement effect of IP, whether inactivated or not, as well as of calcium oleate. The differences between the number of animals protected by CPG alone (4) and by CPG with inactivated IP (9) or with calcium oleate (12) are statistically significant at the 5% level.

Effect of Different Injection Routes

The method of treatment was next altered. One group of mice was treated intraperitoneally with CPG along with inactivated IP or calcium oleate. A second group was treated with CPG intraperitoneally and inactivated IP or calcium oleate subcutaneously. A third group was treated with inactivated IP or calcium oleate intraperitoneally and CPG subcutaneously (see Table III).

TABLE III.—50 Units of Penicillin Into Each of 12 Animals

Substance	Route of Administration	No. of Mice Surviving			
		A	B	C	Total
CPG + inactivated IP ..	Intraperitoneal	7	6	6	19
CPG + calcium oleate ..	"	6	6	5	17
CPG	"	11	10	6	27
Calcium oleate	Subcutaneous				
CPG	Intraperitoneal	10	10	6	26
Inactivated IP	Subcutaneous				
CPG	"	4	3	4	11
Calcium oleate	Intraperitoneal	2	3	3	8
CPG	Subcutaneous				
Inactivated IP	Intraperitoneal	4	—	—	4
CPG	"	8	—	—	8
IP	"	0	—	—	0
Control	—				

A, B, and C indicate contemporaneous tests.

Intraperitoneal injection of double doses (100 i.u.) of IP or CPG, each into 12 mice, produced about 50% protection; 12 unprotected negative controls all died.

From these experiments it seems justifiable to conclude that the simultaneous intraperitoneal injection of CPG and IP, or of CPG and the colloidal suspension, raises the survival rate of the infected mice above that of mice treated with CPG alone at the same dose level. It seems also that the subcutaneous injection of IP (or of the colloidal suspension) increases the effect of intraperitoneally injected penicillin above that produced by the IP and the penicillin injected at the same time by the intraperitoneal route.

Other Colloidal Agents

We also performed an experiment in which other colloidal suspensions, such as colloidal gold or copper (Crookes's "collosol"), were used in place of colloidal calcium oleate or IP. Sixteen hours before infection 60 mice were treated with 0.05 ml. of the colloidal suspension subcutaneously and 200 units of CPG intraperitoneally. Infection with *Bact. typhosum* by the intraperitoneal route followed, and treatment with the colloidal suspension subcutaneously and the penicillin intraperitoneally was given twice daily for four days. In this experiment, therefore, the period of pre-treatment was prolonged to 16 hours, and the treatment itself began about two hours after the infection.

The results after seven days showed that about 30% of the mice survived if pre-treated with the colloidal suspension or IP, but none survived if the colloidal suspension was given two hours after the infection. An injection of IP had an effect similar to that of pre-treatment with the colloidal suspensions, whereas CPG at the same dose as the IP protected only about 10% of the mice.

Leucocytosis in Peritoneal Fluid

The enhancing action of IP on CPG in the previous experiments can be partly explained by the results of the following investigation.

In the preliminary experiment with mice it was found that the normal amount of free peritoneal fluid was very small and that it varied considerably from mouse to mouse. It was therefore impossible to make even an approximate estimation of the leucocyte count in the peritoneal fluid. We therefore injected into the peritoneal cavities of mice

2 ml. of normal saline, killed the mice 40 minutes later, and estimated the number of leucocytes in the peritoneal fluid by the routine method of white-cell estimation in the blood, using 1% acetic acid as the diluent. The number of leucocytes found was about 900–1,200 per c.mm. of the diluted peritoneal fluid, or a total leucocyte count in the peritoneal fluid of about 1.8–2.5 millions, assuming that the leucocytes were evenly distributed.

Having established the normal leucocyte count, we investigated the effect of intraperitoneal injections of calcium oleate, IP, and CPG on it. Groups of three mice were injected intraperitoneally with 2 ml. of saline containing one of the three substances. One hour later the mice were killed, the peritoneal fluid was removed, and the leucocyte count was estimated, with the results shown in Table IV.

TABLE IV

Substance	Amount	Mean Value of Leucocytes (3 mice)
IP	200 units	2,300/c.mm.
IP inactivated	200 "	1,860/c.mm.
CPG	200 "	1,290/c.mm.
CPG inactivated	200 "	1,260/c.mm.
Calcium oleate	0.05 ml.	1,430/c.mm.
Saline control	2 ml.	960/c.mm.

In a second experiment, in which groups of six mice were used, the leucocyte counts in the peritoneal cavities were estimated over a period of three hours after the intraperitoneal injection of IP and CPG, with the results shown in Table V.

TABLE V

Substance	Amount	Mean Value of Leucocytes (6 mice)	
		After 1 Hour	After 3 Hours
IP	200 units	2,000/c.mm.	9,300/c.mm.
CPG	200 "	1,075/c.mm.	5,400/c.mm.
Saline control	2 ml.	1,066/c.mm.	2,800/c.mm.

From these results the justifiable conclusion seems to be that intraperitoneal injection of IP causes a pronounced local leucocytosis in the peritoneal cavity. This leucocytosis probably results in an increased phagocytosis of the bacteria subsequently injected into the same cavity. This stimulated phagocytosis may be one of the factors contributing to the "enhancement effect" of IP.

Discussion

These experiments indicate that IP has a greater protective effect than CPG on mice infected with *Bact. typhosum*. This increase in activity was about 20–40—i.e., 70 units of IP have the same effect as 100 units CPG. These results confirm the reports of Welch *et al.* (1947) and of Hobby *et al.* (1947). In the results of treatment of streptococcal infections, no appreciable difference between our two types of penicillin was recorded. The more pronounced effect of IP in mice infected with *Bact. typhosum* is also consistent with the finding of Miller *et al.* (1948) that IP has a greater neutralizing effect on bacterial endotoxin (from *Salmonella aertrycke*) when injected intraperitoneally. The increased leucocytosis in the peritoneal cavity after injection of IP is probably a contributory factor in suppressing the endotoxin-containing bacteria.

We have also found that the protective action of CPG in infected mice could be increased by simultaneous administration of colloidal suspensions of calcium, copper or gold. The method of action of the colloidal suspensions in the presence of CPG may be similar to that of the impurities in penicillin—through increased leucocytosis in the peritoneal cavity. This finding indicates that the "enhancement" effect of the impurities in IP is possible due to activation of certain defence mechanisms in the

most rather than to any direct action of the impurities on penicillin itself. This would explain why the enhancement effect cannot be demonstrated *in vitro*, and rules out any direct synergistic effect of the impurities on penicillin. We were not able to confirm that the enhancement effect of the impurities caused the higher penicillin blood levels reported by Welch (1947).

There are as yet no reliable clinical data to demonstrate that less-pure penicillin (from modern deep culture production) has any therapeutic advantages over pure products. Early favourable reports are based on observations with batches of uncertain penicillin content used in the treatment of venereal diseases, mainly gonorrhoea, which are known to respond even to small doses of penicillin. From the pharmacological point of view all the arguments are in favour of using the purest penicillin. It is better tolerated in high doses by sensitive tissues like those of the central nervous system and eye than are cruder products; it has less often been reported to produce allergic sensitization; and it is more stable.

Summary

It has been found that highly purified samples of penicillin G sodium salt were not so effective as less-purified material in protecting mice against infection with *Bact. typhosum*, but that the difference was not demonstrable with streptococcal infections. A suggestion is advanced that the enhancing effect of "crude" penicillin may be partly due to increased leucocytosis in the peritoneal cavity after injection of the impurities present, and it has been shown that certain colloids do produce this leucocytosis and the "enhancement" of purified penicillin.

REFERENCES

- British Medical Journal (1948). 1, 795.
Dunham, W. B., and Rake, G. (1945). *Amer. J. Syph.*, 29, 214.
Fischbach, H., Eble, T. E., and Levine, J. (1947). *Science*, 106, 373.
Hobby, G. L., Burkhardt, B., and Hyman, B. (1946). *Proc. Soc. exp. Biol., N.Y.*, 63, 296.
—, Lenert, T. F., and Hyman, B. (1947). *J. Bact.*, 54, 305.
Miller, C. P. (1933). *Science*, 78, 340.
—, Hawk, W. D., and Boor, A. K. (1948). *Ibid.*, 107, 118.
Ditzel, L. (1948). *Bact. Rev.*, 12, 149.
Pratt, R., Dufrenoy, J., and Strait, L. A. (1948). *J. Bact.*, 55, 75.
Ungar, J. (1944). *Nature*, 154, 236.
Welch, H. (1947). *Proc. Amer. Drug Manuf. Ass. Annual Meeting*, p. 137.
—, Randall, W. A., and Price, C. W. (1947). *J. Amer. pharm. Ass.* 36, 339.

3. Malignant disease when hepatic metastases are suspected.
4. Hepatic disease in which precise diagnosis is otherwise difficult: fatty infiltration, acute, subacute, and chronic hepatitis.
5. Obscure disorders possibly due to systemic diseases accompanied by morbid changes in the liver, when other methods of diagnosis have proved inconclusive: sarcoidosis, amyloidosis, haemochromatosis, Gaucher's disease, abdominal reticuloses, aleukaemic lymphatic leukaemia, glandular fever, kala-azar, and schistosomiasis.
6. Portal hypertension—to determine whether the obstruction is intrahepatic and whether lipotropic therapy is required before operation.
7. Constrictive pericarditis—to determine the extent of hepatic damage before operation.
8. The treatment of patients with fatty infiltration, smouldering infective hepatitis, or insulin-resistant diabetes.

The contraindications may be listed as follows:

1. Haemorrhagic states, failing to respond to therapy.
2. Marked anaemia.
3. Absence of superficial liver dullness.
4. Senility.
5. Lack of co-operation of the patient.
6. Refusal of the patient to enter hospital. Watson (1948) reports that some persons are carrying out liver biopsy as an ambulatory procedure.
7. The suspicion of liver abscess, hydatid disease, or active cholangitis.
8. Absence of specific indication.

Mortality

There is a widespread opinion that liver biopsy is too hazardous to be adopted as a standard investigation, but this seems to be based upon mortality figures which include series before the discovery of vitamin K. The following are the death rates recorded in modern series:

	Deaths	Biopsies
Gillman (1948)	1	1,000
Sherlock (McMichael, 1948)	2	400
Roholm, Krarup, and Iversen (1942)	2	297
Volwiler and Jones (1947)	1	278
Beek and Haet (1943)	0	300
Davis, Scott, and Lund (1946)	0	79
Herrera and Pardo (1947)	0	72
Hoffbauer (1945)	0	65
Baron (1939)	1	38
Beierwaltes and Mallory (1946)	0	30
Total	7 (0.28%)	2,469

This mortality should be assessed in relation to the many accurate diagnoses obtained, but for a fuller appreciation it is necessary to examine the individual deaths.

Gillman's patient bled from an aberrant superficial artery in a "huge tuberculous liver," and that author considered that the patient could have been saved if surgery had been available. Both Sherlock's patients died from haemorrhage and had such severe liver damage that puncture only precipitated the inevitably fatal issue. One had acute necrosis, and the other subacute necrosis, general paralysis of the insane, and rectal carcinoma (Dible, McMichael, and Sherlock, 1943). The two patients of Roholm *et al.* (1942) died from haemorrhage, and although a haemorrhagic state existed vitamin K was not given. One had obstructive jaundice due to carcinoma of the head of the pancreas, and the other glandular metastases in the portal fissure. Volwiler and Jones's fatality followed puncture of the right main hepatic vein 4.5 cm. from the surface of a friable amyloid liver; intrahepatic bleeding led to gross splitting of the liver. Baron's patient had metastases in the liver and elsewhere and bled from a tear 1 cm. long; the bleeding and clotting times were not estimated.

Thus these seven deaths occurred where the prognosis was already hopeless, and three might have been avoided had the haemorrhagic state been treated.

NEEDLE BIOPSY OF THE LIVER

WITH SPECIAL REFERENCE TO A MODIFIED GILLMAN TECHNIQUE

BY

RICHARD TERRY, M.D., M.R.C.P.

Medical Chief Assistant, St. Bartholomew's Hospital

In 1833, at St. Bartholomew's Hospital, Stanley punctured the liver in a case of suppurative hydatid disease. Ehrlich (Frerichs, 1884) obtained liver tissue by aspiration through a needle in research on diabetes, and Lucatello (1895) used a similar procedure for diagnosis. These early reports were followed by studies employing variations of the aspiration technique, but they were largely unsatisfactory. The present status of liver biopsy dates from the work of Iversen and Roholm (1939), and since then its value has become widely recognized.

Indications and Contraindications

The following circumstances have been judged to indicate the use of liver biopsy:

1. Jaundice.
2. Hepatic enlargement of unknown cause.

There have been other deaths, but they have been omitted in arriving at the percentage of 0.28%, either because they occurred prior to knowledge of vitamin K, as the two deaths in 100 biopsies by Bingel (1923) and the two deaths in 160 biopsies by Olivet (1926), or because they have been reported without reference to total biopsies.

Bingel's two deaths were from haemorrhage. One patient had carcinoma of the stomach with hepatic metastases, and the other pernicious anaemia with only 500,000 erythrocytes per c.mm. In neither was the haemorrhagic state investigated. Olivet's two patients died from haemorrhage: one had extensive liver metastases and the other pernicious anaemia with haemoglobin 15%, and again no examination was made of the haemorrhagic state.

Raby (1944) reported one death from puncture of a superficial branch of the portal vein in a woman aged 79 years with jaundice of obscure origin: 1.5 litres of blood were found in the peritoneal cavity; the clotting time was normal. He had a second death three days after biopsy of a man aged 85 years, at whose necropsy no cause of death was found. He felt that the age of these two patients was of some importance. Hoffbauer (1947) quotes an unreported death due to perforation of the colon: the subcostal approach was used although the liver was of normal size.

Thus since 1939 only three deaths have been reported in patients whose prognosis was not already hopeless: of these, two were in patients aged 79 and 85 years, and the third was associated with questionable technique. However, in spite of these reassuring findings, it is necessary to realize that these figures have been obtained by skilled operators constantly using the procedure and that the casual employment of liver biopsy must lead to disasters.

Choice of Method

Iversen and Roholm (1939) used a trocar and cannula 17 cm. long with 2 mm. bore, ending in three sharp points, with a syringe to aspirate the liver tissue. Their method entailed insertion of trocar and cannula into the liver, removal of trocar, further insertion of cannula, attachment of syringe to cannula, withdrawal of syringe plunger, and finally removal of syringe and cannula. These six manipulations required the presence of the cannula within the substance of the liver for 10-15 seconds, during which the patient had to hold his breath. The syringe and cannula occasionally became disconnected at critical moments and the liver tissue, being sucked into the syringe, often broke up. Sherlock (1945) used a similar instrument, but changed to a smaller bore after 126 biopsies with two deaths.

In the U.S.A. the instruments described by Roth and Turkel (1944) and by Silverman (1938) have been preferred. In the Roth-Turkel method a short trocar and cannula are introduced about 1 cm. into the liver, the trocar is removed, and the tissue is punched out by a second longer cannula passed through the first; finally, suction is applied with a syringe. Adapted to liver biopsy by Tripoli and Fader (1941), the Silverman needle differs from the Roth-Turkel in that the longer cannula is split longitudinally and both halves tend to spring apart. Having punched out the tissue with the split cannula passed through the short cannula, the latter is advanced until both tips are level, and then both are withdrawn together, no suction being necessary. These methods have the disadvantages of undue time spent within the liver, frequent failure, and, except for the Silverman method, fragmentation of the specimen.

Watson (quoted by Greene, 1944) failed to obtain tissue for examination in 40%, Iversen and Roholm (1939) in 22.5%, and Hoffbauer (1947) in 23% of his first 65 attempts. The problem of failure has usually been approached by modifying the end of the cannula; the cannula of Franseen (1941) merely had three sharp teeth instead of the three sharp points of the Iversen-Roholm needle. Herrera and Pardo (1947) describe an ingenious arrangement of thread which cuts through the core at its base.

The instrument evolved by Gillman and Gillman (1945) overcame these various defects, having only 5% of failures. The following report is based upon a modification of their instrument and technique: 72 biopsies have been carried out without complication, and failure has been experienced on six occasions.

Description of Modified Gillman Instrument

The instrument is a needle mounted upon a 20-ml. syringe with a stylet fitted to the plunger (Fig. 1). The incorporation of syringe, needle, and stylet in one instru-

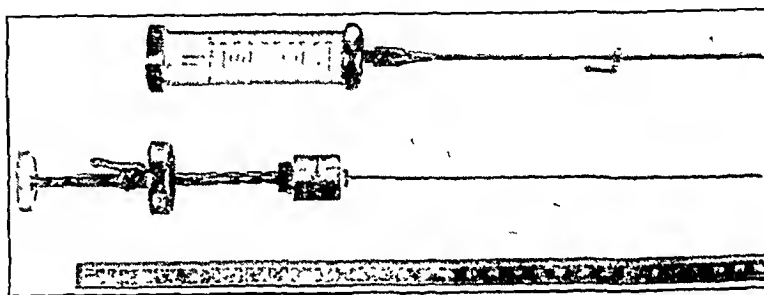


FIG. 1.—The liver biopsy instrument

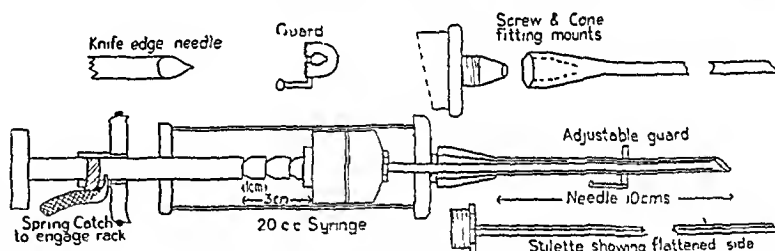


FIG. 2.—Showing details of construction

ment allows all the manipulations of the Iversen-Roholm method to be carried out in a single brief movement. Fig. gives details of construction. A 2-mm.-bore needle is used as a routine, but when there is any likelihood of undue bleeding one of 1.8-mm. bore is substituted. The needle has a bevelled point which produces a linear incision in the liver capsule, whereas blunt-ended cannulae make round hole. The whole circumference of the end of the needle is internally bored to give a knife edge. An adjustable depth guard is mounted on the needle. The stylet has a flattened side allowing pressures within the syringe to be transmitted to the needle. The spring catch fitted on the syringe cap engages notches on the plunger rod and maintains the plunger in position after suction is applied. These notches are placed at intervals of 1 cm. and permit variation in length of the liver core.

Method

Since the patient's co-operation is essential, a preliminary visit is made to gain his confidence, and the operation referred to in vague terms. No biopsy is done in the presence of increased prothrombin, bleeding, or clotting times. Vitamin K is given as a routine on the two days preceding biopsy and longer if necessary; with jaundic menaphthone 20 mg. is given intravenously, and withoi

adice 10 mg. t.d.s. by mouth. Two pints (1.14 litres) of blood are held available. Morphine, $\frac{1}{2}$ gr. (11 mg.) subcutaneously, is given 30 minutes beforehand and, if the patient is unduly nervous, phenobarbitone 1 gr. (65 mg.) as usual previously.

The biopsy is carried out in the ward. The patient lies prone with his right side close to the edge of the bed and his right hand behind his head. The superficial liver dullness is mapped out and a point selected one space below the upper level, usually the seventh intercostal space, in the anterior axillary line. This point is marked by pressure with the fingernail, and the area is swabbed with ether.

A 10-ml. syringe is used to introduce 8-10 ml. of 2% cocaine, at first with a No. 20 needle for the skin wheal then Nos. 14 and 1 for the deeper tissues. Care is taken to avoid infiltration of the diaphragm and liver capsule with the breath held in expiration. The field of operation is screened from the patient's direct view and the skin incised for about $\frac{1}{2}$ in. (0.8 cm.).

The piston is lubricated with sterile liquid paraffin, the instrument assembled, and smooth working confirmed. This interval allows the analgesic to take effect, gives the patient a moment's relaxation during which he can practise holding his breath in expiration, and permits one to see how long the skin incision bleeds.

The right hand grips the syringe barrel and the left guides the needle. With the bevels of needle and stylet in apposition, the point is introduced through the skin incision and advanced with a rotary movement. A "give" indicates penetration of the intercostal space, and, with the patient holding his breath, the point is advanced until further resistance is felt; the point is then retracted just clear of the liver. This manoeuvre allows one to judge the thickness of the parietes and to adjust the depth guard, and is especially important with ascites.

After further breaths the patient is told, "Breathe in, breathe out, stop breathing." ("Hold your breath" usually produces a further inspiration.) The biopsy is then carried out. The point is first advanced about 1 cm. into the liver, and then, with the left hand gripping the syringe handle and maintaining its position (and therefore the position of the stylet), the needle is advanced *sharply* into the liver by thrusting the syringe barrel forwards with the right hand. These are precisely opposite movements to those used in aspirating an abscess, when the barrel is held stationary and the plunger withdrawn. The barrel is advanced an average of 3 cm., which determines the depth of penetration into the liver. The left hand moves to the front of the barrel, and the whole syringe is quickly rotated through 360 degrees and immediately withdrawn.

The core is gently extruded into a glass tube 5 cm. long and of 3 mm. bore, and placed in 10% formal-saline. A dry dressing covers the skin incision.

Aftercare.—The patient remains semi-recumbent for six hours and in bed until the next day. Pulse readings are taken every 15 minutes for two hours and hourly for six hours. The general condition is closely watched. A mild analgesic is given one hour afterwards and a hypnotic in the evening.

Comment on Method

The intercostal approach has been adopted because it appears safe and easy provided the superficial liver dullness is carefully recorded. The costo-xiphisternal angle approach of Gillman and Gillman has not been used because most patients dislike punctures near the praecorium, and, while it is clearly a safe method in their hands, the inability to map out the liver in this area lessens one's confidence. Gillman and Gillman have expressed their fear that the intercostal route might lead to haemorrhage from

diaphragmatic vessels, but if the core is punched out beyond the liver capsule this risk must be small. Davis *et al.* (1946) advise the subcostal approach because of the danger of tearing the liver should the patient breathe with a needle fixed in an intercostal space, but the abdominal wall appears to grip the needle enough to tear a soft liver, while livers of normal consistency are unlikely to tear. The subcostal route has led most frequently to perforation of hollow viscera; Baron (1939), using this route, has reported a fatality from a tear of Glisson's capsule. The progress of the needle through the rigid resistant intercostal space is more easily judged and controlled than through the soft resilient abdominal wall. There is no need to restrict biopsy to patients with hepatic enlargement when the intercostal route is used.

The procedure should be painless. With imperfect analgesia, pain radiates to the right shoulder and epigastrium. General anaesthesia was employed only once, and it proved impossible to assess the patient's condition afterwards. The skin incision eases introduction of the cannula, avoids confusing the pathologist with skin fragments, and allows recognition of any bleeding state.

Failure may occur either because the core remains attached at its base or because the needle passes between the liver cells without punching out a core. Experiments on cadavers, passing the needle through the entire thickness of the lower part of the liver to eliminate the former possibility, demonstrated that failure always followed a slow passage of the needle, but when it was introduced rapidly a core was always obtained. Thus success depends upon thrusting the needle into the liver sharply, and it is useless to proceed unless the instrument is working smoothly. The cutting edge of the needle must be kept sharp. Removal of the core from the deeper part of the liver avoids leaving a bleeding gap in the capsule or cutting a hole in the diaphragm, and rules out misleading subcapsular histology.

Gillman and Gillman advise full withdrawal of the plunger after the needle has been advanced. This must stretch and may break the core; it adds a further manipulation and has not been found necessary. Nor has their method been followed of rotating the barrel on the plunger, rather than the whole syringe, through 360 degrees, as the rotation is more quickly achieved with both hands on the barrel. Since the stylet remains within the needle the core is not sucked into the syringe and so escapes damage.

The time spent by the cannula within the liver is seldom mentioned in the literature, but Volwiler and Jones (1947) recommend aiming at less than 10 seconds. Gillman and Gillman give 15 seconds, but this includes penetration of the abdominal wall. Stopwatch timing of the present method has given times of 1.5 to 3.5 seconds within the liver.

Difficulties.—Women are more apprehensive than men, and present extra difficulty owing to their deeper subcutaneous tissue and the frequent need to retract the right breast. Cirrhosis has special problems. A shrunken liver may be difficult to locate. Distortion may swing the gall-bladder into a vulnerable position. Fibrosis is the cause of many failures and ascites is a well-recognized obstacle, but they have not caused failure in the present series. Finally, the histology of the core may be normal in the presence of gross cirrhosis, a limitation to which Himsworth (1947) and Learmonth (1947) have drawn attention. The six failures in the present series were attributed to instrumental problems in four cases and inexperience in two; in all six patients the biopsy was successfully repeated.

Inspection of the Core.—The small glass tube protects the core, keeps it straight, and facilitates naked-eye

examination. In the present series the core from each case of obstructive jaundice has shown easily visible green spots scattered throughout, while in each case of parenchymatous jaundice the core has been uniformly coloured. Fragmentation of the specimen is suggestive of cirrhosis and has been observed where the histological report was normal, gross cirrhosis being found at operation for porto-caval anastomosis. Metastases show as pale homogeneous areas, and are found more often than might be expected; foci of lymphadenoma have the same appearance. The greasy appearance stated to characterize fatty livers has not yet been observed. Apart from these conditions, considerable variation in the appearance of the core is compatible with normal histology.

Sequelae

There is often slight aching in the right hypochondrium, and occasionally pain in the right shoulder. This pain seldom lasts more than 24-36 hours and causes no distress. Of the present 72 biopsies 47 have had this reaction. 21 cases denied any pain. In four there was more severe pain, starting suddenly 1-8 hours after biopsy; but no anxiety was caused, and one patient readily agreed to a further biopsy. No other complications have arisen. Chest radiographs of ten patients have shown neither pleural effusion nor pneumothorax.

Complications reported in the literature are infection, perforation of a hollow viscus, and haemorrhage. Infection has been rare. Perforations of the colon, duodenum, and gall-bladder have been reported, usually without any reaction, though non-fatal biliary peritonitis and one death from colonic puncture are recorded. Haemorrhage has followed a tear of the capsule or of a superficial hepatic vessel. Haemothorax requiring blood transfusion has been twice noted.

Summary

Some indications for liver biopsy are given.

A mortality of 0.28% is presented, occurring in 2,479 biopsies reported since 1939, and the published deaths are examined in detail.

A description is given of a method of liver biopsy which has been employed in 72 biopsies with neither death nor significant complication.

I am indebted to Dr. R. Bodley Scott for his encouragement and ready assistance; to Dr. Geoffrey Bourne and the physicians and surgeons of St Bartholomew's Hospital who have allowed me to carry out needle biopsy on their cases; to Mr. W. J. Ward, curator to St. Bartholomew's Hospital, and Mr. W. T. Harris, of W. H. Bailey and Sons, for their help in producing the biopsy instrument; to the photographic department of St. Bartholomew's Hospital for the illustration; and to the nursing staff of St. Bartholomew's Hospital for their careful reports.

REFERENCES

- Baron, E. (1939). *Arch. intern. Med.*, 63, 276.
Beck, C. van, and Haec, A. J. C. (1943). *Acta med. scand.*, 113, 125.
Beierwaltes, W. H., and Mallery, O. T. (1946). *Univ. Hosp. Bull., Ann Arbor*, 12, 13.
Bingel, A. (1923). *Ver. dtsch. Ges. inn. Med.*, 35, 210.
Davis, W. D., Scott, R. W., and Lund, H. Z. (1946). *Amer. J. med. Sci.*, 212, 449.
Dible, J. H., McMichael, J., and Sherlock, S. P. V. (1943). *Lancet*, 2, 402.
Franssen, C. C. (1941). *New Engl. J. Med.*, 224, 1054.
Frichs, F. T. (1884). *Ueber den Diabetes*, Berlin, p. 272.
Gillman, T. (1948). *J. Amer. med. Ass.*, 137, 243.
— and Gillman, J. (1945). *S. Afr. J. med. Sci.*, 10, 53.
Greene, C. H. (1944). *Arch. intern. Med.*, 73, 349.
Herrera, G., and Pardo, V. (1947). *Arch. Path.*, 44, 393.
Himsworth, H. P. (1947). *Lectures on the Liver and its Diseases*, Oxford.
Hoffbauer, F. W. (1945). *Lancet*, 65, 246.
— (1947). *J. Amer. med. Ass.*, 134, 666.
Iversen, P., and Roholm, K. (1939). *Acta med. scand.*, 102, 1.
Learmonth, J. R. (1947). *Ann. roy. Coll. Surg.*, 1, 299.
Lucatello, L. (1895). *Lav. Coner. Med. interna*, p. 327.
McMichael, J. (1948). *J. Amer. med. Ass.*, 137, 234.
Olvet, J. (1926). *Med. Klinik*, 22, 1420.
Raby, K. (1944). *Nord. Med.*, 24, 2161.

- Roholm, K., Krarup, N., and Iversen, P. (1942). *Ergebn. inn. Med. Kinderheilk.*, 61, 635.
Roth, A. A., and Turkel, H. (1944). *J. Urol.*, 51, 66.
Sherlock, S. (1945). *Lancet*, 2, 397.
Silverman, I. (1938). *Amer. J. Surg.*, 40, 671.
Stanley (1833). *Lancet*, 1, 189.
Tripoli, C. J., and Fader, D. E. (1941). *Amer. J. clin. Path.*, 11, 516.
Volwiler, W., and Jones, C. M. (1947). *New Engl. J. Med.*, 237, 651.
Watson, C. J. (1948). *J. Amer. med. Ass.*, 137, 242.

SEVERE RENAL FAILURE AFTER ADMINISTRATION OF APPARENTLY COMPATIBLE BLOOD

BY

A. C. BUCHAN, F.R.C.S.Ed.

Plastic and Jaw Injury Unit, Bangour Hospital, West Lothia

AND

JOHN WALLACE, M.B., Ch.B., B.Sc.

Glasgow and West of Scotland Blood Transfusion Service

The literature on the Rh blood group is vast, but the recent appeal (*British Medical Journal*, 1948, 2, 344) to publish observations on this subject has prompted us to record the case given below.

The development of irregular haemagglutinins after repeated blood transfusions is now well recognized. Calender and Paykoç (1946) reported that, out of 15 Rh-negative patients transfused with Rh-positive blood, only one developed rhesus antibodies, and Gunz (1946) observed that out of 10 Rh-negative patients who received multiple transfusions two were found to have developed antibodies. These observers point out, however, that had the tests for blocking antibodies (Race, 1944; Wiener, 1944) been performed the percentage of sensitized patients might have been higher. This suggestion is confirmed by Diamond (1946), who in a series of 2,500 Service men transfused under wartime conditions was able to demonstrate rhesus antibodies in the serum of about 50% of the Rh-negative individuals. Hattersley (1947), in a similar but smaller series, demonstrated rhesus antibodies in 11 (55%) out of 20 Rh-negative cases transfused under Service conditions. In all Hattersley's cases the antibodies were in the "blocking" or "incomplete" form, and direct compatibility tests of the patient's serum against saline-suspended Rh-positive cells would not have shown agglutination. However, in spite of this apparent compatibility the transfusion of Rh-positive blood to such a patient would result in a haemolytic reaction. It is for this reason that the following case is presented.

Case Report

A corporal aged 24 received a severe facio-maxillary injury on Jan 1, 1945. At that time he was given 5 pints (2.84 litres) of Group O blood in the course of 36 hours. His Service records make no mention of any reaction to these transfusions.

On July 24, 1946, a bone-graft operation was performed by Mr. A. B. Wallace. During the operation the patient's condition deteriorated, but a satisfactory rise in blood pressure followed the transfusion of 2 pints (1.14 litres) of Group O blood which appeared compatible on direct matching with the patient's serum.

On the morning of July 25 his condition was poor, his pulse rapid and of small volume, and his blood pressure 88/50. His collapse was attributed at the time to post-operative shock. One pint (570 ml.) of plasma and 1 pint of blood were given, and within four hours his general condition had improved, the blood pressure being 106/68. This latter blood was Group O, and appeared compatible with the patient's serum.

On the 27th he complained of nausea and vomiting, and his urine was blood-red in colour. The microscopical report

on the urine was: "Vast numbers of red blood cells and a few pus cells." The urinary output was 560 ml. in 24 hours.

By the morning of the 29th the urine was clear to the naked eye, but the microscopical report stated that a few red cells were present. The nausea and vomiting were more severe. Next day his general condition had deteriorated. Investigation of the blood chemistry gave the following results: urea, 340 mg. per 100 ml.; chlorides, 491 mg. per 100 ml.; uric acid, 4.1 mg. per 100 ml.; plasma albumin, 3.6 g. per 100 ml.; plasma globulin, 1.9 g. per 100 ml. Analysis of the urine showed: chlorides, 0.1 g. per 100 ml.; urea, 1.3 g. per 100 ml.; urinary output, 660 ml. in 24 hours. Because of the increasing vomiting a slow glucose-saline infusion was started on July 30.

The patient remained in a state of uraemia until Aug. 4, when a diuresis occurred, 5.25 litres being excreted in 24 hours. The specific gravity of the urine, which had remained constant at 1010 since the operation, now began to vary, thereby showing the return of the kidney's concentrating power. From this time the blood chemistry revealed a gradual return to normal. On Aug. 10 analyses showed: urea, 55 mg. per 100 ml.; uric acid, 4 mg. per 100 ml. The blood pressure on July 30 was 154/96 and on Aug. 3 it rose to 206/120.

Convalescence was slow. Renal function was investigated by the water concentration, the urea range, and urea-excretion tests in October, and all showed a normal degree of kidney function. Blood pressure was then 128/70.

Special Investigations.—Not until six weeks after the transfusions had been given were these performed, so a complete investigation was not possible. The results were: patient's blood group, O, Rh-negative (genotype rr); patient's serum contained anti-A agglutinin, titre 1/32, anti-B agglutinin, titre 1/16, and incomplete anti-D agglutinin, titre 1/8.

Compatibility Tests.—The routine test of the patient's serum against twelve random Group O cells suspended in physiological saline showed no agglutination. However, when the red-cell suspensions were prepared with AB serum instead of saline there was agglutination of the Rh-positive but not of the Rh-negative cells. Although no agglutination of the Rh-positive cells occurred in the saline suspension, these cells showed that they had been sensitized by a rhesus antibody when tested by the indirect anti-human globulin reaction (Coombs *et al.*, 1945).

In the accompanying Table the total fluid intake, urinary output, daily urinary excretion of sodium chloride and urea, and the level of the blood urea are shown.

Table Showing Urinalysis

Day after Transfusion	Total Fluid Intake (ml.)	Urinary Output (ml.)	Total Daily Urinary Excretion		Blood Urea (mg. per 100 ml.)
			Chloride (g.)	Urea (g.)	
1st ..	—	—	—	—	—
2nd ..	—	150	—	—	—
3rd ..	—	560	—	—	—
4th ..	2,490	600	—	—	—
5th ..	1,590	630	0.6	8.4	—
6th ..	2,180	660	0.7	8.6	340
7th ..	2,580	1,080	1.1	14.4	320
8th ..	2,730	1,380	3.5	18.4	340
9th ..	3,090	1,920	4.9	25.5	340
10th ..	4,050	2,970	9.9	39.6	340
11th ..	5,100	3,000	9.0	42.0	325
12th ..	4,740	5,250	6.8	73.5	270
13th ..	4,860	5,190	—	78.0	230
14th ..	5,010	4,890	6.2	92.0	210
15th ..	4,470	4,740	5.2	74.2	150
16th ..	3,840	3,870	—	—	—
17th ..	3,870	3,480	—	—	—
18th ..	4,080	3,390	4.1	66.0	55
19th ..	2,850	2,790	—	—	—

Before the onset of a copious diuresis on the twelfth day there had been a gradual daily increment in the 24-hour urinary output. For a few days after the onset of the diuresis the urinary output was greater than the total fluid intake. Muirhead *et al.* (1948) found that with the onset of diuresis not only was the water excretion markedly raised but the daily urinary excretion of sodium chloride was greatly increased. These workers suggested that the renal tubules had recovered sufficiently to allow for urine volume production, but that the recovery was not yet advanced enough to allow for the

conservation of water and salts. In the present case there was a marked increase in the daily excretion of urea, but the excretion of sodium chloride, while increased, remained within normal limits. It would seem that the kidney had recovered sufficiently to conserve sodium chloride. It has been emphasized (Muirhead *et al.*, 1948) that with the onset of the diuresis the kidneys may discard water and salts to the extent of causing pronounced dehydration or even death. It is therefore essential in the treatment of this phase to replace the water and salt lost from the body.

Discussion

The differential diagnoses considered at the time of the reaction were: (1) *Haemolytic transfusion reaction*:—This was considered unlikely on account of the careful compatibility tests made in the hospital laboratory and in the absence of the classical features, such as rigor, pain in the back, fever, or jaundice. There was no question of the blood having been overheated or being haemolysed by faulty or prolonged storage. (2) *Sulphonamide haematuria* can be excluded, as the patient was receiving penicillin but no sulphonamide drugs. (3) *Acute nephritis*:—This appeared the most likely diagnosis in view of the picture of uraemia associated with oliguria, red cells in the urine, and hypertension. Against such a diagnosis, however, was the absence of any recent infection, the absence of casts, and the low specific gravity of the urine.

As a haemolytic transfusion reaction was considered unlikely at the time, no special investigations were undertaken in the hospital, apart from checking on the ABO grouping of the patient and the donors and repeating the compatibility tests. These routine tests were satisfactory.

At the time of the special investigations six weeks later it was confirmed that the findings in the hospital laboratory were substantially correct, but the additional investigations revealed that the patient was Rh-negative and had "incomplete" rhesus antibodies in his serum. The development of these antibodies probably followed the original transfusion at the time of wounding in 1945. The transfusion of Rh-positive blood to an Rh-negative patient with "blocking" antibodies would then result in a haemolytic reaction, and it is believed that this is the explanation of the severe renal failure which developed.

There are several points about this particular case which seem worthy of mention.

1. Absence of the Classical Features of a Haemolytic Reaction

The absence of such reactions as tingling sensations of the skin, tightness in the chest, severe backache, dyspnoea, and cyanosis may be explained by the fact that the patient was anaesthetized during the transfusion of the first two bottles of blood. On the other hand, Mollison (1943) mentioned that reactions to incompatible transfusion seemed to be less severe than formerly, and Drummond (1944) describes a case of symptomless incompatible transfusion.

The presence of vast numbers of red blood cells and a few pus cells in the urine seemed to be in favour of a diagnosis of nephritis rather than of a haemolytic reaction. However, the presence of intact red blood cells in the urine is common, and white blood cells, often in clumps, are present during the oliguric period following an incompatible transfusion (Muirhead *et al.*, 1948). Pigment granules, often about the size and shape of a red blood corpuscle (for which they are not infrequently mistaken), are seen in haemoglobinuria (Bywaters and Dible, 1943).

2. The Severity of Renal Failure

In general, sensitization to the Rh antigen which occurs as a result of repeated transfusions develops slowly and early reactions are mild or inapparent (Mollison, 1948). In this case the reaction was severe after virtually the

second transfusion. The original transfusion of 5 pints of blood within 36 hours at the time of wounding can be regarded as a single antigenic stimulus. It is of comparative interest that Cappell (1948) has found that the first recorded manifestation of haemolytic disease of the newborn due to Rh incompatibility is usually one of the severer forms, contrary to the widely held belief that the first one or two affected children in a family show only mild symptoms.

Unfortunately, the volume of incompatible blood transfused in the case is not known with certainty, but the late Dr. Douglas Macrae, of the Edinburgh Blood Transfusion Service, informed us that at the time of the transfusion it was the practice to screen all Group O donors with a diagnostic anti-D serum, and, as it is certain that blood specifically marked Rh-negative was not given to this patient, the probability is that 1,600 ml. of incompatible Rh-positive blood was given. Bordley (1931) stated that cases receiving larger volumes of incompatible blood tend to be more serious—a conclusion with which Muirhead *et al.* (1948) are in general agreement. On the other hand, one of us (J. W.) has recently seen a Group O patient who had only a transient haemoglobinuria following a transfusion of 4 pints (2.27 litres) of Group A blood and did not develop renal failure. The anti-A titre of this Group O patient's serum four weeks after transfusion was 512,000. The probability is that several factors play a part in producing renal failure in such cases, the most important being renal anoxia (Macgraith *et al.*, 1945).

3. Compatibility Tests

The direct compatibility test in which the patient's serum is set up against saline suspensions of red cells will fail to detect the presence of blocking antibodies. To detect such antibodies the red cells must be suspended in AB plasma or preferably in 20% bovine albumin solution (Mourant, 1948). There is of course no proof that in this case blocking antibodies would have been detected in the patient's serum before transfusion. These antibodies may disappear after the original sensitization, but can be produced again very rapidly following the appropriate antigenic stimulus.

The two most important lessons to be learned from this case are (i) always to determine the Rh blood group of any patient previously transfused, and (ii) the so-called compatibility test is not an absolute safeguard against incompatibility.

4. Survival of the Patient

Many forms of therapy have been advocated in the treatment of haemolytic transfusion reactions—e.g., alkaline therapy, forced fluids, transfusion of compatible blood, splanchnic block, and decapsulation of the kidney (Kilduffe and De Bakey, 1942)—but opinions differ on the value of these methods. Few observers are in a position to study a large controlled series of such cases, and this renders assessment of a particular form of therapy difficult. According to De Gowin (1938) some patients recover spontaneously, while others die in spite of the therapeutic measures advocated. The present case illustrates that even severely damaged kidneys may recover completely without any heroic therapy.

Summary

A severe degree of renal failure from which the patient subsequently made a complete recovery occurred after a blood transfusion.

The transfused blood appeared to be compatible when tested against the patient's serum.

On investigation the patient, who had been transfused previously as a war casualty, was found to be Rh-negative and to

have rhesus antibodies of the incomplete, blocking, or albumin-agglutinating variety in his serum.

The importance of determining the Rh group in any patient previously transfused, and the danger of relying on the direct compatibility test only, are stressed.

The clinical features and treatment of haemolytic transfusion reactions are discussed.

We wish to thank Dr. W. M. McAlister, medical superintendent of Bangour Hospital, for permission to publish this case. We also acknowledge with thanks the help received from Dr. I. A. Purdie in the biochemical investigations and the helpful co-operation of Mr. A. B. Wallace, who was in charge of the case.

REFERENCES

- Bordley, J. (1931). *Arch. intern. Med.*, 47, 288.
Bywaters, E. G. L., and Dible, J. H. (1943). *J. Path. Bact.*, 55, 1.
Callender, S. T., and Paykop, Z. V. (1946). *British Medical Journal*, 1, 119.
Cappell, D. F. (1948). *Ibid.*, 2, 323.
Coombs, R. R. A., Mourant, A. E., and Race, R. R. (1945). *Lancet*, 2, 15.
De Gowin, E. L. (1938). *Ann. intern. Med.*, 2, 1777.
Diamond, L. K. (1946). *Proceedings of International Haematol. and Rh Conference*, Dallas, Texas.
Drummond, R. (1944). *British Medical Journal*, 1, 483.
Gunz, F. W. (1946). *Ibid.*, 1, 601.
Hattersley, P. G. (1947). *J. Lab. clin. Med.*, 32, 423.
Kilduffe, R. A., and De Bakey, M. (1942). *The Blood Bank and its Technique and Therapeutics of Transfusions*. St. Louis.
Macgraith, B. G., Havard, R. E., and Parsons, D. S. (1945). *Lancet*, 2, 293.
Mollison, P. L. (1943). *British Medical Journal*, 1, 529.
— (1948). *Med. Res. Council, Mem. No. 19*, p. 27.
Mourant, A. E. (1948). *Ibid.*, No. 19, p. 60.
Muirhead, E. E., Haley, A. E., Haberman, S., and Hill, J. M. (1948). *Blood*, Special Issue, No. 2, p. 101.
Race, R. R. (1944). *Nature*, 153, 771.
Wiener, A. S. (1944). *Proc. Soc. exp. Biol., N.Y.*, 56, 173.

DYSENTERY IN SOUTH PERSIA

BY

IAN S. STEWART, M.B., Ch.B.

Pathologist, Anglo-Iranian Oil Company

The control of this group of diseases, apart from the relief of the patients' discomfort, is of importance because they are productive of much time-wastage and inefficiency matters of outstanding interest to a commercial concern. Moreover, the opportunity of identifying and segregating the patients who continue to be infective after apparent recovery will bring about a steady reduction in the incidence of the dysenteries in the province of Khuzistan South Persia.

Accordingly arrangements were made in March, 1947 for all cases regarded as dysenteric, either on clinical grounds or from the initial examination of the stools in the laboratory, and arising among the company's 30,000 male artisan employees on Abadan Island, to be admitted to the Isolation Hospital, a segregated wing of which was allocated for this purpose. The project had been under consideration for two years but had been delayed by the restricted supplies of sulphaguanidine. The arrival of a hundredweight (50 kg.) of this drug in March was followed by the opening of a forty-bed ward on April 1, and the figures subsequently quoted relate to the admissions between April 1, 1947, and April 1, 1948.

The survey relates to a permanent and static civilian population and therefore has a value greater than that of a survey of the same diseases during the conditions of war when large masses of population are moved into abnormal sites and situations. Apart from its local value it has a bearing on the steadily increasing flow of short-term visitors of all nationalities drawn to the Persian Gulf by its

growing commercial importance. A proportion of these visitors will no doubt develop intestinal disturbances after leaving the area, and the rarity of amoebiasis in this particular area, shown in Table I, makes it unlikely that this disease will need serious consideration.

TABLE I.—*Diagnosis*

Amoebic dysentery in which vegetative <i>E. histolytica</i> was the sole agent found	52
Cases failing to respond to sulphaguanidine and in which <i>E. histolytica</i> was found later	2
Cases failing to respond to sulphaguanidine and treated as amoebic dysentery without proof	1
Balantidial dysentery in which <i>Balantidium coli</i> was the sole agent found	13
Pure bacillary infections:	
<i>B. dysenteriae</i> Flexner	353
" Schmitz	49
" Sonne	97
" Shiga	19
" Boyd	22
Mixed dysentery:	
<i>E. histolytica</i> and Flexner	3
" and Boyd	2
<i>Balantidium coli</i> and Flexner	2
" and Sonne	2
Bacillary type cases with negative culture responding to sulphaguanidine	698
Admitted late without laboratory investigation and responding to sulphaguanidine	115
Total	1,430

Table I is devoted solely to the dysenteries, the irrelevant admissions having been excluded. Such diverse conditions as diverticulitis, carcinoma of the colon, constipation, the acute diarrhoea of aestivo-autumnal malaria, and many more have inevitably arrived in the ward from time to time and have been redirected to the appropriate departments.

Proved amoebic dysentery therefore accounted for only 3.8%, whereas proved bacillary infections accounted for 37.3%, and 56.6% were of bacillary type but unproved. Balantidial and mixed dysenteries account for the balance.

The following facts are in favour of the bacillary origin of the cases in which no pathogen was seen or isolated: (1) A clinical side-room with a competent technician has been in existence close to the dysentery ward for four months and all cases slow in responding to sulphaguanidine have been reviewed. In only one case has *Entamoeba histolytica* been found. (2) The frequent use of test purges in these cases without result. (3) The absence of Charcot-Leyden crystals, the mucoid nature of the stools, and the characteristics commonly found microscopically in cases of bacillary dysentery. (4) The headache, the fever, and a colic relieved completely by the passage of a stool.

TABLE II.—*Carriers**

Organism	Carriers	Total Recorded	Percentage of Total
<i>B. dysenteriae</i> Flexner	21	358	5.9
" Sonne	8	99	8.1
" Schmitz	2	49	4.1
" Shiga	1	19	5.3
" Boyd	3	24	12.5
Total	35	549	—

* The medium used was SS ("disco") desoxycholate citrate agar adjusted to pH 7.

Table II resulted from the following procedure: Each case was detained in hospital for two days after sulphaguanidine therapy had ceased, the next stool passed was cultured, and the patient was discharged without waiting for the result. Those cases found to be positive were readmitted and given a course of 100 g. of the drug; all cases were then found to be free of infection. Multiple cultures would no doubt have revealed even more carriers, but the retention of so many recovered patients for six or seven days would not only have given rise to great discontent among the patients but added a further volume of work to the laboratory and put extra pressure on bed accommodation.

Treatment

Amoebic Dysentery.—All cases were given 4 g. of sulphaguanidine four-hourly, including the night hours, to a total of 20 g. Emetine hydrochloride in a dose of 1 gr. (65 mg.) was given daily for ten days and was followed by a five-day course of 0.25 g. of quinoxyl by mouth three times a day, and a retention enema of 5 g. in 200 ml. of saline each evening. Seven of the 54 cases were readmitted with a relapse in the course of the year.

Bacillary Dysentery.—Sulphaguanidine, 4 g. four-hourly, was given day and night until the patients were afebrile and symptomless. Table III shows the quantities required.

TABLE III.—*Sulphaguanidine Dosage*

Group	20 g.	40 g.	60 g.	80 g.	100 g.	120 g.	140 g.	Total
Flexner	116	87	50	58	24	17	1	353
Sonne	43	28	8	16	2	—	—	97
Schmitz	15	17	8	7	2	—	—	49
Shiga	11	5	3	—	—	—	—	19
Boyd	15	5	1	1	—	—	—	22
Clinically bacillary	364	181	98	41	10	4	—	698
No lab. investigation	66	24	14	4	7	—	—	115
Total	630	347	182	127	45	21	1	1,333

Expressed in units of 20 g., the average requirement of each group is as follows: Flexner, 2.5; Sonne, 2; Schmitz, 1.3; Shiga, 1.6; Boyd, 1.7; clinical dysentery, 1.8; no investigation, 1.8.

Complications.—The only major complication worthy of record is acute hepatitis, which may or may not have been amoebic in origin, ten cases developing while in hospital. One of them was admitted with a Sonne infection and one with a Flexner. The remainder had negative stool cultures. In none had amoebae or cysts been seen in the stools, but all responded satisfactorily to emetine.

Mortality.—No death occurred in the series. Two individuals who were not employees died with bacillary dysentery as a terminal event, one being a case of advanced rheumatoid arthritis and the other an old man with prostatic hypertrophy and acute retention.

Summary

An organization for the control of dysentery in a large industrial population is described, the frequency of the different forms assessed, and an analysis made of the quantities of sulphaguanidine required in the different bacillary types.

Acknowledgments are due to Dr. S. D. McClean, chief medical officer, A.I.O.C., for inspiration and advice; to Dr. M. A. Khorram for his co-operation in the conduct of the ward; and to Lieutenant-Colonel H. J. Bensted, director of the Standards Laboratory, for the supply of diagnostic sera.

The Minister of Food has made the Mineral Oil in Food Order, 1949, which came into force on April 9, prohibiting the use of mineral oils in the manufacture of food for sale to the public. The Ministry states that for some time past the Ministries of Food and Health and the Department of Health for Scotland have been concerned both on medical and nutritional grounds about the growing practice of using paraffins in the preparation of food. The Ministry also urges housewives not to use these substances in home cooking. The statement says that deposits of medicinal paraffin would not, so far as is known, be harmful in themselves, but the same could not be said for other mineral oils, many of which are known to contain harmful substances. "Too little is known about the fate of deposits of mineral oils in such organs as the liver for the medical profession to remain indifferent about them." The risks of consuming liquid paraffin were discussed in a leading article in this *Journal* in 1948, June 12 (p. 1141). It concluded with these words: "On the evidence available, therefore, the use even of refined liquid paraffin (B.P.) in the preparation and cooking of food is to be condemned. . . . The internal use of other (unrefined) mineral oils in any shape or form must always be condemned."

FURTHER EXPERIENCES WITH ETHINYL OESTRADIOL IN THE SUPPRESSION OF LACTATION

BY

T. N. A. JEFFCOATE, M.D., F.R.C.S.Ed., F.R.C.O.G.

AND

BETTY HARGREAVES, M.B., Ch.B., M.R.C.O.G.

(From the Department of Obstetrics and Gynaecology,
University of Liverpool)

In a previous communication (Jeffcoate *et al.*, 1948) it was mentioned that some writers had suggested that ethinyl oestradiol when administered orally has a more prolonged action than other oestrogens. To test the validity of this suggestion further clinical trials have been carried out, the suppression of lactation again being the test object. The total dose administered was of the same order as in the previous trials, but it was all given in one or two days instead of being spread over seven days. Single doses were impracticable, since it would have meant that a patient took a very large number of 0.05-mg. tablets at one time. In one scheme the total dose was given during one day and usually within twenty-four hours of delivery; in the second the same total dose was given, half during the first day and half during the fourth day of the puerperium. Thirty-seven patients were treated, and the results are classified as excellent, good, fair, or poor, according to the criteria set out previously.

Scheme I

(a) *Technique*.—Eleven tablets (0.55 mg.) during the first day, administered in three doses at four-hourly intervals. *Results*: Six patients were treated, two with excellent results. Two had fullness of the breasts with pain on the fourth and fifth days, one had free secretion of milk on the fourth and fifth days, and a sixth complained of fullness and pain on the sixth day. A supplementary course of treatment with 0.1 mg. of ethinyl oestradiol was necessary in these four cases. (Two excellent, four poor.)

(b) *Technique*.—Fifteen tablets (0.75 mg.) during one day, administered in three doses at four-hourly intervals. *Results*: Seven patients were treated, one with excellent result. Two experienced fullness of the breasts with slight discomfort—on the second day in one case and on the fourth day in the other. In the latter, treatment did not begin until the second day of the puerperium. Four patients showed a poor response. In two of these, symptoms arose on the sixth and seventh days and necessitated further treatment. The two others started treatment on the second day and had pain and fullness on the following day. (One excellent, two fair, four poor.)

(c) *Technique*.—Twenty tablets (1 mg.) during the first day, administered in four doses at four-hourly intervals. *Results*: Four patients were treated, one with excellent result. A second patient had pain and fullness on the fourth day, a third had similar symptoms on the eighth day, whilst a fourth had a free flow of milk from the sixth to twelfth days. (One excellent, three poor.)

Scheme II

(a) *Technique*.—Six tablets (0.3 mg.) first day, five tablets (0.25 mg.) fourth day—total, 11 tablets (0.55 mg.). *Results*: Six patients were treated, three with excellent results and two with good results. Of the latter, one had slight secretion on the fourth and the other on the fifth day. A sixth had minimal discomfort on the second day only. (Three excellent, two good, one fair.)

(b) *Technique*.—Eight tablets (0.4 mg.) first day, seven tablets (0.35 mg.) fourth day—total, 15 tablets (0.75 mg.). *Results*: Seven patients were treated, two with excellent results. Four cases had moderate fullness of the breasts on the fourth day,

relieved by the second dose, whilst the seventh case had fullness and pain on the fourth day. (Two excellent, four fair, one poor.)

(c) *Technique*.—Ten tablets (0.5 mg.) first day, ten tablets (0.5 mg.) fourth day—total, 20 tablets (1 mg.). *Results*: Seven patients were treated, with excellent results in three cases and with a good result in another two. The remaining two cases had pain and fullness of the breasts—one on the fourth and the other on the sixth day. Both required further treatment. (Three excellent, two good, two poor.)

Conclusions

The results of these trials may be summarized by saying that ethinyl oestradiol in relatively large doses given over a short period or at long intervals is unreliable in suppressing lactation, whereas in divided doses spaced over several days it was previously shown to give excellent or good results in a high percentage of cases. With a total dose of 0.55 to 0.75 mg. given during the first seven days of the puerperium an excellent or good response was noted in 24 out of 27 cases in the previous trials. In this series, 0.55 mg. to 1 mg. administered during a period of 12 hours produced only four good or excellent results in 17 cases. When it was divided and given half on the first day and half on the fourth day of the puerperium the effect was satisfactory in 12 out of 20 cases.

The results reported here compare so unfavourably with the earlier ones that it seems permissible to conclude that they offer little evidence to support the idea that ethinyl oestradiol is absorbed or utilized comparatively slowly and that its effect is prolonged. If it has these properties, then they are not so strongly developed as to make the administration of single massive doses, or large doses at infrequent intervals, an efficient method. As in the case of other oestrogens, smaller doses given regularly during several days are the most effective.

REFERENCE

Jeffcoate, T. N. A., Hargreaves, Betty, Lister, Ursula M., and Roberts H. (1948). *British Medical Journal*, 2, 809.

METATARSUS QUINTUS VALGUS

BY

HORACE DAVIES, Ch.M., M.Ch.Orth., F.R.C.S.

Orthopaedic Surgeon, St. Catherine's Hospital, Birkenhead,
and Whiston Hospital, Lanes

Much individuality appears to exist in the shape of the fifth metatarso-phalangeal junction. Rarely do we see a foot with its outer border prolonged straight forward along the little toe. The head of the metatarsal interrupts this line by protruding outwards, and the axis of the little toe is usually directed inwards. Most feet therefore exhibit a bunionette, or, as it has been called, a tailor's bunion, to a greater or less degree. Rarely, however, does it give rise to symptoms. A bunionette is not uncommonly seen in combination with pes and hallux valgus and general splaying of the forefoot, and is therefore regarded as a secondary deformity in these cases. Chronic irritation due to pressure upon the lateral surface of the foot in the cross-legged or sartorial position is also to be considered as a causative factor, for it was this that gave rise to the name "tailor's bunion." The case of bilateral bunionette described below appeared as a primary and independent deformity, and the suggestion is made that such a condition can occur as a distinct clinical syndrome.

A girl aged 9 came to the clinic complaining of painful swellings at the bases of the little toes. They had been



noticed about two years previously, but had remained symptomless until the last six months. Examination revealed unusually prominent swellings over the fifth metatarsophalangeal joints, with the little toe directed inwards, following the axial deviation of the outer three digits. Radiographs show a varus position of the little toe, adaptive changes in the basal phalangeal and metatarsal epiphyses, and outward splaying of the fifth metatarsal. Clinically and radiologically the condition therefore resembles metatarsus primus varus.

Aetiology

In considering the cause of this condition we must refer to the embryology of the foot. The mesodermal concentrations destined to be the metatarsals are laid down radially, diverging towards the convex border of the limb bud. This fanwise arrangement persists up to about



the 20-mm. stage. At this time we see the differentiation and development of the transverse metatarsal ligament, and its restraining rein thrown across the heads of the developing metatarsals appears to exert a converging influence. Development proceeds with the metatarsals assuming the more parallel positions they occupy in the adult. Imperfect attachment of the transverse metatarsal ligament to the fifth metatarsal could allow primitive divergence to persist, which I would suggest is the primary error in this condition.

In the early stages the developing digits radiate from the convex border of the limb bud, following the lines of the diverging metatarsals, and their realignment to the adult position is difficult to explain. It would appear, however, that two factors are at work: (1) the inherent human pattern responsible for the blue-print of our shape and size, and (2) mechanical forces.

In considering these mechanical forces we see that the changing shape of the developing foot plays an important part. The convex border of the embryonic foot presents at first a large arc of a small circle. As development proceeds this arc expands, gradually transforming itself into a wider arc of a larger circle, with predominant expansion of the pre-axial side. This expansion of the arc brings the radiating toes into more parallel positions. Coinciding with this, the developing intrinsic and extrinsic muscles begin to exert their influence. The flexor longus digitorum, pulling from the inner margin of the foot, has an adducting effect upon the third, fourth, and fifth toes. This pull is

exerted mainly upon the terminal phalanges. The toes are pulled into their parallel positions, but in many individuals this pull continues beyond the normal, and the terminal phalanges are adducted and flexed. The intrinsic muscles, especially the pedal interossei, should prevent this, as one of their little-appreciated functions is to extend the two terminal phalanges. There thus develops a minor tug-of-war between the strong adduction flexing action of the long flexor and the relatively weak degenerating interossei. Now if the primitive divergence of the fifth metatarsal persists the obliquity of the flexor pull is increased and the whole fifth digit becomes adducted.

Treatment.—Rarely do these cases require active treatment other than the provision of well-fitting shoes. Bunionectomy or trimming of the lateral surface of the metatarsal head may be necessary in pronounced cases with clinical symptoms. If the primary factor is the abduction of the metatarsal shaft, osteotomy should theoretically be the treatment of choice, but in practice, as for metatarsus primus varus, this procedure is both unnecessary and often unsatisfactory.

Summary

Unusual prominence at the fifth metatarsophalangeal joint is either a primary or a secondary deformity. If it occurs as an independent condition it constitutes a syndrome, which should be described as metatarsus quintus valgus. The underlying basic congenital error is the persistence of the embryonic splaying of the fifth metatarsal, probably due to incomplete or imperfect development of the transverse metatarsal ligament.

Medical Memoranda

Sprue-like Mouth and Swelling of Lips as a Manifestation of Streptomycin Sensitivity

Many toxic manifestations of streptomycin have been described, but the following experience seems to add one more to the list of "dangers."

CASE HISTORY

A man aged 57, a wine merchant of moderate habits, was recently seen by me for chronic pulmonary tuberculosis. There was infiltration of both lungs, with cavitation on the right, and it appeared from the history and from his subsequent response to conservative treatment that he was going downhill. It was therefore decided to try streptomycin. The streptomycin used was streptomycin calcium chloride complex, and the amount given was 1 g. daily in two doses. One month later the E.S.R. still remained high (95 mm. in one hour), but there was considerable subjective improvement. He, however, complained of some temporary giddiness following injections which did not amount to vertigo.

Five weeks after the beginning of treatment he complained of slight weakness of the legs, particularly noticeable on climbing stairs, and on the same day there was a feeling of numbness of the lips with a slight swelling of the mucous membranes. Within two days the patient complained of a feeling of thickness of the tongue, which subsequently became furred and after a few days ulcerated; at the same time there was some superficial ulceration of the inner aspects of the cheeks, the whole picture resembling severe sprue except that the lips were swollen.

Professor G. Ransome saw him at this stage and suggested that a vitamin-B deficiency factor might be contributory. Sensitivity was suspected in view of the lip-swelling. The streptomycin was stopped and the patient was given daily five 4-ml. injections of "plexan" and an adequate dosage of vitamin-B complex. The condition slowly subsided over a period of three weeks, during which time he experienced considerable pain.

Three weeks after stopping streptomycin it was decided to try a test dose to establish whether or not this was indeed a manifestation of streptomycin sensitivity. Three hours after injection of 0.5 g. the lips and tongue swelled, the pulse rate increased, and the patient felt warm all over and itchy. There was a migraine-like headache. Two mg. of adrenaline in oil was given and 50 mg. "benadryl" thrice daily, this being continued for a few days. The immediate distress was relieved within a few hours, but the swelling of the lips and

tongue remained for a week. The dorsum of the tongue again ulcerated and took a further fortnight to heal.

It seems clear, therefore, in view of the fact that fungous and bacillary infections were ruled out, that this was a surface necrosis of the mucous membrane of the tongue, cheek, and lips directly due to streptomycin.

A. W. S. THEVATHASAN,
L.M.S. Singapore

Death from Lightning-stroke, with Multiple Injuries

Textbooks of forensic medicine are unanimous in stating that lightning-stroke may be accompanied by signs suggestive of great mechanical violence, but in actual practice gross injuries other than burns seem to be comparatively uncommon. Peterson, Haines, and Webster (1923) state that Schneider was among the first to record the fact that bones may be broken and blood vessels ruptured; while Rhodes, Gordon, and Turner (1945) say that the lesions vary in extent and nature and usually

been torn off. In fact, the tree-trunk had the appearance of have been clawed by a giant animal.

There had been two occupants of the hut—the dead man and his elder brother, the latter sleeping in a bed and the former on a mat adjacent to the wall nearest to the coconut tree, and within a foot of the bed. There was no direct evidence about the patient's position at the time of the fatal flash. The surviving occupant stated that his brother left the hut at daybreak to go to the latrine and returned about two minutes before the flash. The survivor was practically unhurt, but was somewhat dazed and unable to give an account of the accident. He was unaware whether his brother had been standing, sitting, or lying down at the actual moment.

The body was found lying at full length on the remains of the sleeping-mat with the head resting on a folded fez cap. The mat itself appeared to have been blown to pieces: some fragments were found adhering to the under surface of the thatched roof. The body was naked, and it is of some interest to know that it was occupying exactly the same position and adopting the same attitude as would have been the case had death occurred in sleep and if the shock had not disturbed the body to the slightest degree. The surviving brother and other villagers were quite definite that no one had touched the body after death. This is probably true because, besides the native reluctance to touch a body slain in this manner, he would never consider the corpse's comfort to the extent of folding a cap and placing beneath the head. It is suggested therefore, that all the injuries were due solely to the blasting action of the lightning, and it would seem that the man, having returned to his hut, had lain down on his mat again and made himself comfortable pending the ending of the storm.

The injuries are well illustrated in the photograph. On the left side of the neck all the soft tissues between the trachea and cervical vertebrae had been blown out, leaving a gap in which a closed fist could be placed. The wound on the left shoulder involved the whole of the deltoid region and showed a double fracture of the humerus, one at the neck of the bone and the other 4 in. (10 cm.) down the shaft. The separated portion of bone was lying free in the wound completely denuded of muscle. There were scattered superficial wounds and abrasions of the face and chest, on the right side of the abdomen was slate-grey in colour, the skin being dead and parchment-like. No actual burning or singeing could be seen. Superficial wounds in the pubic region involved the penis and scrotum, and

on the inner sides of both thighs deep lacerated wounds extended from the groins to within 2 in. (5 cm.) of the knees. There was a lacerated wound of the right big toe, with smaller wounds on the dorsum of the foot.

The scalp was uninjured, but a fracture of the left side of the frontal bone proceeded outwards and downwards to the base and a fracture of the right parietal bone passed backwards over the occipital bone to the foramen magnum. The base of the skull was shattered by multiple fractures, with displacement of the fragments. The brain showed no macroscopic signs of injury.

D. A. SKAN, M.B.E., M.B., B.S., D.T.M.&H.,
Senior Pathologist, Tanganyika Territory.

REFERENCES

- Glaister, J. (1945). *Medical Jurisprudence and Toxicology*. Edinburgh.
Lyon, I. B. (1935). *Medical Jurisprudence for India*. Calcutta.
Mann, J. Dixon (1922). *Forensic Medicine and Toxicology*. London.
Peterson, F., Haines, W. S., and Webster, R. W. (1923). *Legal Medicine and Toxicology*. Philadelphia.
Rhodes, W. F., Gordon, I., and Turner, R. (1945). *Medical Jurisprudence (S. Africa)*. Capetown.
Simpson, Keith (1947). *Forensic Medicine*. London.
Smith, Sydney (1940). *Ibid.*
Taylor's *Principles and Practice of Medical Jurisprudence* (1948). Ed. by S. Smith. London.

CASE HISTORY

On March 22, 1948, at half-past six in the morning, there was a sudden sharp thunderstorm accompanied by heavy rain. As is common in this part of the world, the electrical manifestations of the storm may be limited to one or two vivid flashes accompanied by heavy crashes of thunder, and in this particular instance the only significant flash was responsible for this one fatality.

I accompanied the police officer to a small native hut in which the occupant had been killed. The hut, consisting of a single room, was constructed of sticks and mud with a low thatched roof. The walls and thatch were dilapidated, but there was little evidence of recent damage. About 9 in. (22.8 cm.) from the rear wall there was a coconut tree, which showed signs of the effects of recent lightning. The top was damaged and at intervals down the trunk the bark had



take the forms of burns of different degree, but that deep-tissue destruction with fractures of the bone occurs in certain cases.

Dixon Mann (1922) quotes a case in which there was a compound fracture of the right tibia and a comminuted fracture of the os calcis; there were also extensive burns. He goes on to say that fractures of the bones, including those of the skull, have occurred, but only exceptionally. Lyon (1935), quoting Tidy, states that fractures are rare but have been found in a few cases. Glaister (1945) describes a case of fractured base and in another a compound fracture of the tibia.

Taylor (1948), Sydney Smith (1940), Keith Simpson (1947), and other authorities make similar statements, but I have not been able to find a published case exhibiting the degree of injury shown in the accompanying photograph.

The Ministry of Health and the motor industry have agreed on a scheme for speeding delivery of cars urgently required by domiciliary midwives. A midwife who already has a car must produce evidence that it is not reliable. Local supervising authorities will certify the urgent need for a car. Similar certificates must be obtained from nursing associations or hospitals who have ordered cars for domiciliary midwives. The scheme does not apply to home nurses who do not undertake midwifery or to health visitors.

Reviews

HOSPITAL ADMINISTRATION

A Study of Hospital Administration. Studies in Public Administration. By Frank Hart and A. J. Waldegrave. (Pp. 188. 15s.) London: Stevens and Sons. 1948.

The growth of hospitals in Britain has been extraordinarily aphazard and comparatively unrelated to the overall needs of the local community. Consequently administration throughout the hospital field is very variable, and a complete description of the variations is almost impossible within the limits of a somewhat brief study. However, those interested will find an up-to-date account of methods of administration at the general, voluntary, and local authority hospitals as they existed until July 5, 1948. The efficiency of members of regional boards and hospital management committees would be much increased if each possessed the knowledge contained within these pages; perhaps the Minister of Health may see it to present a copy to each member.

The authors discuss at length the vexed question of lay and medical administration, and the point of view which they express has a slight bias towards a lay head. Unfortunately, though the power of the medical staff is effectively safeguarded, they put forward no practical solution for meeting the medical needs of the local community, particularly in respect of difficult subacute and chronic cases. They emphasize the importance of medical staff committees, but though they give an excellent account of present nursing administration they do not suggest that nursing committees should be established in each hospital with powers equivalent to those held by their medical colleagues. They show that some hospital departments lack up-to-date business methods, particularly in relation to management of the staff and the facilities provided for them. If these defects were remedied, hospitals would not find the same difficulties in recruiting staff as they do to-day.

The chapter on planning gives some pointers to the future and refers the reader to several excellent reports on which such planning should be based. Here the great shortage of beds is emphasized, while elsewhere the authors frankly face the problem of insufficient nurses. This book can be highly recommended for the facts it contains, and we trust these will stimulate those who read to formulate a constructive hospital policy.

HORACE JOULES.

MANUAL OF DISSECTION

Ellis's Anatomy. Being a Manual of Dissection and Textbook of Regional Anatomy. Revised and edited by J. A. Keen, M.B., F.R.C.S. (Pp. 487. Illustrated by 216 of the original engravings, of which 79 are in colour. £2 2s.) Capetown: Stewart Printing Co. (Pty.), Ltd. London: John Murray. 1946.

This ancient manual of dissection by George Viner Ellis (1812-1900) was first published in 1840. Ellis occupied the chair of anatomy at University College from 1850 to 1877. Keen, through some inexplicable lapse, states in the preface to this new edition that "Professor Ellis, the original author of this book, was Emeritus Professor of Anatomy in University College, London, from 1850 to 1877, and thus an interesting link with the past is maintained." Ellis was professor at U.C.L. from 1850 to 1877, and lived in seclusion as professor emeritus to the end of the century. Even anatomists cannot look forward to half a century on the shelf.

Ellis was succeeded in the chair by Sir George Dancer Thane, who held it until 1919. Ellis had edited the 6th edition of *Quain's Anatomy* with William Sharpey, the dominating professor of physiology. Ellis's *Manual of Dissection* reached its high-water mark in its 10th edition by Thane in 1887. Keen states that all the important figures are based on the *Illustrations of Dissections* published by Ellis and G. H. Ford in 1867. Anyone acquainted with Thane's work in the 9th and 10th edition of the Quain would recognize the number of illustrations by his hand in the 10th edition of the Ellis—e.g., that of the brachial plexus (Fig. 5).

Thane steadfastly objected to splashes of colour as a means of showing the origins and insertions of muscle on badly

executed drawings of bones. Addison, who re-edited the Ellis in its 12th edition in 1905, introduced these vulgarisms. All their inaccuracies have been maintained. The vastus intermedius (Figs. 47 and 48) is shown arising from the whole of the shaft of the femur, with no trace of the bare area. Examples could be multiplied. The section on the autonomic system is unintelligible and contains such phrases as, "The nerve cell of the 2nd neurone is often called the cell station," and, "The second neurone is the nerve cell in a ganglion and its axon, the fibres being non-medullated." The marginal or shoulder index which was so valuable a feature of the 10th edition by Thane has been deleted. Small paragraphs of doubtful value have been added in various places under the heading "Applied Anatomy." There is no mention of radiological anatomy.

It is sad to think that Thane's 10th edition of the Ellis and the 10th edition of the Quain (1896) by Thane and Sharpey Schäfer mark the high water of the tide of British anatomy. This present edition by Keen is a sad ebb from Thane's purpose—"to maintain the efficiency of the work as a guide to the acquisition of knowledge by practical study." Thane was the last of the precisionists. We are now in the hands of the confusionists.

H. A. HARRIS.

CHILD GUIDANCE

Psychotherapy in Child Guidance. By Gordon Hamilton (Pp. 340. \$4.00 or 22s.) Columbia: University Press. London: Geoffrey Cumberlege (Oxford University Press). 1947.

In this book the author describes the methods and practice of the children's department of the Jewish Board of Guardians in New York. It is perhaps an unusual book in that it is written by a social worker and that in this clinic the social workers do the treatment in close collaboration with a psychiatrist. Since so many problems of behaviour in children are predominantly social, this is not illogical so long as the collaboration is really close, for the personal make-up of the child and his environmental situation are so closely blended. The treatment here described is eclectic and may be adapted to each individual problem. Although psycho-analytic theory is conspicuous in the book, the author does not consider that psychotherapy is synonymous with psycho-analysis or that it need be confined to medical methods. The psychiatrist, in fact, is regarded as a teacher and consultant rather than a direct therapist.

The author recognizes that in every case it is necessary to meet elemental social needs but that affect hunger may be as important as physical hunger. Both psychological and physical distresses are arcs of the same circle. The child is a growing organism and therefore adaptable, but both the social setting and the child's personality, which will always interact, may need adjustment. It should be remembered that a child's aggressiveness is always retaliation which to him seems justified. Many children have little experience of love, and so love is not worth seeking; the child feels that he must look after himself first. It is no use telling such a child to be good for a change; he and his circumstances must be changed if he is to be good. The anxious child is a neurotic child who uses his energy to repress infantile wishes. The resolution of such a conflict both increases energy and diminishes anxiety. Fortunately such a child wants to be helped and does not resist assistance. Severely disturbed children such as mental defectives and psychopaths are not very amenable to psychotherapy, but social adjustment may do much good. In direct treatment transference, catharsis, and relief through play are important, but social modification is generally necessary as well, and change of environment may alone restore the integrity of the personality.

Young children have many emotional vicissitudes to face, and they may react to them by disturbed behaviour, which in turn upsets the parents, so that a vicious circle is set up. Therapy must get beneath the aggressive and guilt reactions to the fundamental attitude, which is always that of a disappointed child. This is best done by play, because it is the little child's medium of communication and because it provides in a safe and natural way some of the instinctual gratification needed as he learns to meet the demands of reality. At the same time the parents, especially the mother, who are themselves neurotic need guidance and treatment. In older children the situation is more complex and can best be treated by transference,

interpretation, and verbalization, and again by increasing the understanding of the parents. In adolescence the strength of the urges and repressions is increased and the young person has at this stage to make entirely new adjustments to life. A strong, carefully managed transference is the best form of treatment so that the patient can be brought to understand and interpret his own difficulties.

In dealing with the family the social worker has to realize the complexity of the situation, for the parent is often projecting his own guilt or aggression or desire for punishment on to the child, and so the entanglement becomes very difficult to unravel. She has to establish transference with the whole family and so allow them to work out their difficulties and re-establish an integrated whole. To do this the social worker needs a long and elaborate training under expert psychiatric guidance, and she will of course learn both the social and psychological aspects of her task while undertaking the case work.

This is an interesting account of a successful venture in the care of difficult and delinquent children by methods rather different from those usually used in Britain. It is therefore worthy of the most careful study by those interested in the subject.

R. G. GORDON.

GLOMERULAR NEPHRITIS

Glomerular Nephritis: Diagnosis and Treatment. By Thomas Addis, M.D., F.R.C.P.Ed. (Pp. 338. £2.) New York and London: The Macmillan Company. 1948.

The impression which this book leaves with the reader is almost that of an autobiography, the summing up of one who has spent most of his life in the study of renal disease. Addis, we feel, is a man with a message who wants to give the medical world this record of his teaching and research. If the book is not wholly satisfactory it is perhaps because it tries to combine the two, while its autobiographic style is too discursive for either. Parts of the book are didactic and dogmatic, others strictly scientific and experimental; others again are practically in narrative form—as for instance the description of the life and death of a nephritic patient, which almost brings tears to the eyes. In spite of these defects—or should we say peculiarities?—Addis of course speaks with great authority and has much to say.

The chief subjects which he discusses are his rapid methods of biochemical and microscopical examination, specially designed to be suitable for use in an out-patient clinic, to give immediate answers to questions of prognosis and treatment; a description of the experiments which have been made by his team on the effects of removal of renal tissue in animals, and the inferences which can be drawn from this work; and a plea for low protein intake in the treatment of renal insufficiency. In America pendulums probably swing further than they do in this country, and it is evident that in many clinics all cases of renal disease irrespective of their clinical state have been given high protein diets. Addis, we think, brings conclusive evidence based on animal experiment to show that this is wrong, and that many cases of renal failure can be improved and kept leading useful lives for a long time on a suitably restricted protein intake. Most recent authors both here and abroad share this view. We found the experimental sections most interesting; there is information here which is difficult to find in convenient form elsewhere. Although, as we have observed, the book is not wholly successful either as a textbook or as a record of research, it must be read by all serious students of renal disease.

ROBERT PLATT.

The *Practitioner's Card-Index Guide to Treatment* is an ingenious file of notes on modern medical treatment of interest to the busy practitioner published by Devereaux (Medical) Publications Ltd., of 36, Maiden Lane, London, W.C.2 (5 guineas). The notes are filed on strong cards contained in a box, and the information is kept up to date by new cards distributed quarterly. The initial cost includes a year's replacement of cards; subsequently the cost of the replacement service is two guineas a year. The cards are arranged alphabetically and show the references in the literature to the treatment described.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Encyclopedia of Medical Sources. By E. C. Kelly, M.I.F.A.C.S. (Pp. 476. 41s.) London: Baillière, Tindall and Co 1948.

A collection of references to medical eponyms and original reports.

Bright's Disease. By H. A. Christian, A.M., M.D., LL.D., Sc.D. M.A.C.P., Hon.F.R.C.P.(Can.), D.S.M. (Pp. 327. 45s.) London: Geoffrey Cumberlege. 1948.

Reprinted from *Oxford Loose-Leaf Medicine*.

An Atlas of Bone-Marrow Pathology. By M. C. G. Israë M.Sc., M.D., M.R.C.P. (Pp. 79. 30s.) London: Heinemann. 1948.

An illustrated account of the marrow in health and disease.

Detailed Atlas of the Head and Neck. By R. C. Truex, M.S., Ph.D., and C. E. Kellner. (Pp. 162. 75s.) London: Geoffrey Cumberlege. 1948.

Anatomical illustrations.

The Family and Democratic Society. By J. K. Folsom. (Pp. 755. 30s.) London: Routledge and Kegan Paul. 1948.

A comprehensive study of family life in the modern democracy.

Rational Medicine. By J. W. Todd, M.D., M.R.C.P. (Pp. 378. 25s.) London: Simpkin Marshall. 1949.

Medicine regarded from an original approach.

A Short Practice of Surgery. By H. Bailey, F.R.C.S., F.A.C.S., F.I.C.S., F.R.S.Ed., and R. J. McNeill Love, M.S., F.R.C.S., F.A.C.S., F.I.C.S. 8th ed. Part 4. (Pp. 179. 52s. 6d. for five parts, not sold separately.) London: H. K. Lewis. 1949.

Part 4 deals with the surgery of the head, spine, peripheral nerves, breast, thorax, larynx, and hand.

Health Instruction Yearbook 1948. By O. E. Byrd, Ed.D., M.D. (Pp. 320. 20s.) London: Geoffrey Cumberlege. 1948.

Information collected from health articles published in the last year.

A Guide to Pacific Island Diets. Edited by J. C. R. Buchanan, M.D., F.R.C.P.Ed., D.T.M.&H. (Pp. 75. No price.) Suva, Fiji: Pacific Board of Health. 1947.

A handbook for dietitians and doctors of the South Pacific.

Röntgen Studies of the Lungs and Heart. By N. Westermark, M.D. (Pp. 216. 35s.) London: Geoffrey Cumberlege. 1948.

A fully illustrated account.

Manual of Clinical Laboratory Methods. By O. E. Hepler, Ph.D., M.D. 4th ed. (Pp. 387. 45s.) Oxford: Blackwell Scientific Publications. 1949.

A book of reference for laboratory and clinical workers.

The Invert and His Social Adjustment. By Anomaly. 2nd ed. (Pp. 290. 8s. 6d.) London: Baillière, Tindall and Cox. 1948.

An enlarged and revised edition of a book first published in 1927.

Demonstrations of Physical Signs in Clinical Surgery (Part IV). By H. Bailey, F.R.C.S., F.A.C.S., F.I.C.S., F.R.S.Ed. 11th ed. (Pp. 121. 8s. 6d.) London: Simpkin Marshall. 1949.

The fourth part of this well-known book for students.

An Introduction to Clinical Orbitonometry. By A. C. Copper, M.D. (Pp. 125. Paper 11s. 6d., cloth 14s. 6d.) Leiden: H. E. Stenfort. 1948.

English translation from the Dutch.

Experimental Immunochemistry. By E. A. Kabat, Ph.D., and M. M. Mayer, Ph.D. (Pp. 567. 45s.) Oxford: Blackwell Scientific Publications. 1949.

Deals mainly with laboratory technique.

The Renal Origin of Hypertension. By H. Goldblatt, M.D., C.M. (Pp. 126. 15s.) Oxford: Blackwell Scientific Publications. 1949.

A short monograph.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY APRIL 16 1949

NATURAL CHILDBIRTH

At a time when the topic of analgesia in labour has aroused not only public interest but political feeling, a recent address by Dr. Grantly Dick Read, the substance of which appears in our columns this week, serves as a reminder that there is another approach to the pains and discomforts of childbirth. Dr. Read has pertinaciously and with enthusiasm advocated for over fifteen years the case for "natural childbirth," and though many obstetricians would deny to his thesis the importance which he himself accords it he has not lacked adherents and followers on both sides of the Atlantic; and a recent report^{1,2} on his methods from the Yale University School of Medicine supports his contention that normal labour, by which is implied a vertex presentation with the occiput anterior and no mechanical obstacle, should be virtually painless.

The basic argument is that fear, conscious or subconscious, causes a sympatheticotonia which shows itself locally as a resistant lower segment and cervix. This, he says, is because the circular inhibitory fibres of the cervical "sphincter," which are innervated by the sympathetic and which should be relaxed when the longitudinal fibres of the upper segment exert their detrusor action, are thereby stimulated to chronic contraction. In turn the longitudinal fibres in an effort to overcome the obstacle increase their tension, and thus the threshold of pain is overstepped. "A tense woman means a tense cervix and a tense cervix means a prolonged and painful labour."

Not everyone will agree that this argument is scientifically correct on anatomical and physiological grounds, but its advocates claim that it can be accepted because in practice the results are successful. It is admitted, however, that the application of the principles cannot be universal, because there is a small proportion of women who are "unteachable." In brief, instead of the more commonly employed method of breaking the fear-tension-pain sequence by analgesic and anaesthetic drugs in labour, the cycle is interrupted at the first stage of fear by antenatal education. This is not an entirely new doctrine. In 1932 Fairbairn³ wrote: "The presentation to the woman's mind of childbirth as a natural process must be a guiding principle throughout all talks and examinations. Many women approach pregnancy and labour with a view distorted by what they have heard or seen of the terrors of labour. These difficult cases require careful consideration from the psychological side and will benefit by confidential talks in which may be revealed hidden dreads that might interfere with normal function." And in fact, after a phase in ante-

natal obstetrics in which the attendant was unduly preoccupied with the recognition of mechanical difficulties and the early detection of abnormalities, it is now true to say that there is more emphasis on the normal, on the teaching of techniques of relaxation, on the explanation of the mechanism of labour, and on how best to aid the natural forces. Obstetrics, as Dr. Read says, is the understanding of the mind as well as the body of the pregnant woman. In labour his practice—based on the recognition of the successive emotional phases—is to keep the patient informed of her progress, to ensure that she is not left alone without either doctor or nurse trained in these methods, and to reinforce the previously taught techniques of relaxation at the crucial times.

The advantages which are claimed for natural childbirth lie in the increased proportion of spontaneous labours in which the risks of anaesthesia and analgesia are avoided, and in the psychological satisfaction which the sense of achievement brings to the mother and indirectly to the baby. Natural childbirth is based primarily on an intimate doctor-patient relationship. And in this lies both advantage and disadvantage, for the personality of the individual doctor must be a very potent factor in the assurance of success, and unless the doctor is present during most of the labour many patients will lose control and experience pain. It is unfortunate that the present combination of district antenatal clinics with institutional delivery largely precludes the same doctor supervising both pregnancy and labour, and these and other practical difficulties are well illustrated by the disappointing results obtained by Rodway⁴ in a controlled experiment on the value of antenatal exercises. The general-practitioner obstetrician has the greatest opportunity for putting these principles into practice and assessing their value.

As with all doctrines, Dr. Read's argument and practice will have adherents but will not lack detractors. Many of his principles, especially his emphasis on the effect of the emotional factor on the course of labour, are universally accepted, though the exact mechanism may be debated; and, if some consider that he has oversimplified the problem and been too optimistic about its solution, others will be encouraged to take up a more personal form of obstetric practice which alone will achieve results satisfying to both doctor and patient.

DUE CARE AND SKILL

Mr. John Hunter's successful appeal against Mr. Justice Birkett's judgment awarding an ex-patient £6,300 against him for negligence raises again the perennial question of what in law constitutes negligent diagnosis or treatment. We have already published full accounts of the proceedings at first instance¹ and on appeal.² Briefly, Mr. J. F. Whiteford, an American consulting engineer of about 65, was in the care of Dr. S. R. Gleed, a general practitioner of Finchley, who called in Mr. Hunter. He drained the patient's bladder suprapubically on March 22, and operated on April 5, 1942. He found in the base of the bladder an indurated mass which, after he had inspected and handled it for a quarter of an hour or twenty minutes,

¹ Goodrich, F. W., and Thoms, H., *Amer. J. Obstet. Gynec.*, 1948, 56, 875.

² Thoms, H., *J. Obstet. Gynec. Brit. Emp.*, 1949, 56, 18.

³ *Practitioner*, 1932, 129, 313.

⁴ *J. Obstet. Gynec. Brit. Emp.*, 1947, 54, 77.

he decided was an inoperable cancer. Subsequently Mr. Hunter informed the patient that he had not long to live. Mr. Whiteford then returned to the United States to put his affairs in order. In September he was seen by a New York urologist, Dr. B. S. Barringer, of the Memorial Hospital, and Mr. Hunter's diagnosis was proved wrong by biopsy and also by the survival of the patient. Mr. Whiteford returned to England and sued Mr. Hunter and Dr. Gleed for negligence. The judgment against Mr. Hunter was given in July, 1948, the action against Dr. Gleed being dismissed. At the recent appeal the judgment was reversed, and leave was given to Mr. Whiteford to appeal to the House of Lords. As the case is still *sub judice*, it would not be proper to comment in such a way as to prejudge the issue, but it is permissible to inquire what that issue is, and to examine the approach to it made by the trial judge and by the Court of Appeal.

The question which the courts had to decide was not whether Mr. Hunter's diagnosis was wrong—that was admitted. The issue before them was whether, on the evidence, Mr. Hunter had failed to use the skill and care which could reasonably be expected of a practitioner in his position. The standard expected of such a well-known senior consulting surgeon is a very high one, but it still does not require him to be infallible. It was pointed out in the Manchester swab case,³ just before the war, that "it is not every slip or mistake which imports negligence, and in applying the duty of care to the case of a surgeon it is peculiarly necessary to have regard to the different kinds of circumstances that may present themselves for urgent attention." Accordingly the courts had to consider the standing of Mr. Hunter, the skill which he offered to the public, the quality of the services which a patient had a right to expect of him, and then, so far as possible putting themselves in his place and visualizing the situation in which he found himself, they had to judge whether on a reasonable view he did all that could have been expected of him in that situation. The trial judge found that he did not, and the Court of Appeal found that he did, use able skill and care in the circumstances.

The issue was in fact narrowed down to two questions:

1. Should Mr. Hunter have used a cystoscope? and, Should he have performed a biopsy? There was no dispute that clinically the submucous inflammatory condition from which the patient was suffering may be practically indistinguishable from cancer. In his own evidence Mr. Hunter said that he did not habitually use a cystoscope in cases of this kind. At the operation itself there would have been no opportunity for using it, as he was about to see the bladder directly. When asked why he did not perform a biopsy, he replied that he had decided not to do so for three reasons. He

The *Practitioner's Cave* had to cut so deeply that there would be no room for notes on modern medicine. The busy practitioner published by the Law Society, Ltd., of 36, Maiden Lane, London, W.C.2, are filed on strong cards containing the text of the law, kept up to date by new cards distributed annually. It includes a year's replacement of cards; the replacement service is two guineas a year, plus postage and show the references to the treatment described.

satisfied, for he would have suspected that he had not taken the specimen from the right part of the lesion. Expert witnesses supported Mr. Hunter.

Apart from the cross-examination, the only medical evidence for the patient was that of Dr. Barringer. This had to be taken in New York on commission, a process which is open to obvious and inevitable disadvantages. Counsel for both sides pose questions in examination and cross-examination as in court, but the evidence suffers from being taken outside its proper context in the trial, and nearly always lacks answers to essential questions which probably would have occurred to counsel and to the judge if the witness had been present in the ordinary way. Dr. Barringer's evidence suffered from these disadvantages, and this trial is to that extent prevented from being a clear-cut object-lesson in the law of medical negligence. The chief difference between the trial judge and the Court of Appeal was in their respective assessment of the evidence taken on commission as it appeared in the official record. Mr. Justice Birkett laid great stress on Dr. Barringer's statement that the diagnosis should have been verified by a complete examination with the cystoscope and through the open bladder, with a pathological examination of any questionable areas. He accepted this statement against Mr. Hunter's reasoning, and accordingly held the mistake in diagnosis to have resulted from lack of reasonable care, particularly in not using the cystoscope and in not undertaking a biopsy.

The Court of Appeal, on the contrary, could not support the trial judge's finding that the cystoscope should have been used on April 5, when the inside of the bladder was going to be observed by direct touch and sight, and regretted that this point had not been put more clearly to Dr. Barringer by counsel in New York. Their Lordships said, too, that, far from being clear and unambiguous, Mr. Justice Birkett described some of Dr. Barringer's evidence, it contained many ambiguities, and they pointed out several omissions of points with which they wished counsel in New York could have dealt. They felt that in several respects Dr. Barringer had been directing his attention, not to the condition which Mr. Hunter had had to deal with, but to the very different condition which Dr. Barringer himself had found several months later. They therefore held that the trial judge should not have accorded such decisive importance to Dr. Barringer's evidence, and they could not support his finding that Mr. Hunter had been negligent in not carrying out a cystoscopy and biopsy.

The circumstance that the chief evidence for the patient had to be taken on commission has another bearing apart from the quality of that evidence. Normally a witness observed under examination and cross-examination, will not readily differ from the trial judge on his assessment of the value of their evidence. In the present case, as the trial judge did not see this important witness nor have the opportunity of questioning him, the Court of Appeal could feel itself just as well able as the trial judge to examine the record of his evidence and to assess its value. The two courts differed fundamentally over the interpretation of that record, and if the case goes

o the House of Lords judgment will doubtless be brought o bear upon it afresh. Upon that judgment the ultimate result of the case is bound in large measure to depend.

THE BUDGET AND HEALTH

The cost of the social services was the recurrent theme in Sir Stafford Cripps's Budget speech. He rebuked those who, while demanding costly social services, at the same time asked for reduction of taxation. "Last year," he said, "the people of this country enjoyed an unexampled national dividend in the form of a free National Health Service at the cost for nine months of its duration of £208 million. Next year, for 12 months, it is estimated to cost £268 million." The education and health services in England and Wales and Scotland, national insurance, and national assistance would provide benefits amounting to £763 million. This, the Chancellor said, must be reckoned as a real saving to the individual. "But the cost in 1949 was not the end." At present 60,000 hospital beds were out of use because of want of staff; to make them available once more would cost £15-£20 million. These services had to be paid for out of direct and indirect taxation. He gave the warning, however, that the speed at which the social services expanded must be moderated in accordance with "our progressive ability to pay for them by an increase in our national income."

The N.H.S. is an important part of what the Chancellor called "a permanent and continuing obligation which automatically increased as those services inevitably developed." Seeing, and perhaps fearing, this automatic and inevitable increase, he hinted that next year he might have to impose "some special charge or tax in connexion with the health services . . . this might help to make people more economical in their use of the services." In discussing the supplementary estimate in the *Journal* of Feb. 19 this year we wrote: "The Government may yet consider it wise to ask the patient to make token payments for a doctor's services and for prescriptions. If this were considered feasible it would deter people from making unwarranted calls upon the doctor's time and unnecessary demands for pills and potions." With increasing control of infectious diseases—witness the slackening of work in the fever hospitals as a result of the diminution of diphtheria—and the promotion of health, the increase of medical services should not need to be "automatic" and "inevitable." Automatic and inevitable increase is more likely to occur in the administration of the services; establishments grow like coral reefs. The medical profession will want to keep a sharp eye on the size and cost of the administrative machine. To take two items—how many thousands of pounds will be spent in one year to enable the Spens Awards Committee to distribute its prizes? How many valuable medical man-hours will be spent unprofitably in interminable committee meetings?

Sir Stafford Cripps made one comment in his broadcast on April 6 which seemed to imply that the present Government had contributed to the fall in infant mortality. "And these improved social services—the better care of our

children in particular—have," he said, "had remarkable results. Do you know that infant mortality is now less than two-thirds of what it was ten years ago? . . . We have very deliberately chosen this most sure way of increasing the health and happiness of our people. . . ." Can Sir Stafford Cripps really be ignorant of the fact that the infant mortality curve has fallen steadily and evenly for the past fifty years,¹ years in which Labour Governments have been conspicuous by their absence. He might just as well, and with equal relevance, have attributed "to these improved social services" the increase in juvenile delinquency.

LIGATION OF THE INFERIOR VENA CAVA

Ligation of the inferior vena cava is a certain method of preventing pulmonary embolism in all but a few cases, since more than 95% of such emboli come from the lower limbs and the majority of other emboli arise in the pelvic veins. Thebaut and Ward¹ have reported a series of 36 cases of ligation of the inferior vena cava and recommend this as the treatment of choice in patients with thrombo-embolism. While many would not entirely agree with this recommendation there can be no doubt that in selected cases ligation of the inferior vena cava is a valuable operation. The four deaths in Thebaut and Ward's series were in advanced cases in which the operation was undertaken too late, and two of their patients died at operation before the vena cava had been tied.

For those who rely solely on the anticoagulant drugs or on vein interruption at lower levels ligation of the inferior vena cava may seem an unduly radical method of treatment. Ligation of the superficial femoral and of the common femoral veins is, however, followed by embolism in a small proportion of cases, these emboli arising either from the deep femoral veins, the pelvic veins, or from the ligated veins at a higher level. Theoretically a strong case can be made out for ligation at the highest possible level, but against this must be set the undoubted risks of the operation in some of those cases in which the indications for it are strongest. Ligation of the inferior vena cava just above its origin is technically no more difficult than an extraperitoneal lumbar ganglionectomy on the right side and, as in that operation, is most easily accomplished through a transverse incision at the level of the umbilicus. The intraperitoneal operation is more difficult and dangerous, and it should be reserved for those cases in which the vena cava is ligated in the course of some other abdominal operation.

Swelling of the legs after ligation of the vena cava is often seen, but usually is not permanent. Persistent oedema in those few cases in which it occurs is rarely severe enough to incapacitate the patient. Much of this swelling may be due to further thrombosis rather than mechanical interference with the circulation, and adjuvant treatment with anticoagulant drugs is therefore essential in some cases. Despite the apparent profusion of the alternative venous channels available,² careful anatomical study has shown that the arrangement of the venous valves, directing blood flow towards the parent vessels, frequently bars the use of certain anastomotic channels until they have become so distended that the valves are rendered incompetent.³ Interesting studies of the venous pressure in the legs have

¹ Surg. Gynec. Obstet., 1947, 84, 365.

² Homans, J., *ibid.*, 1944, 78, 70.

³ Edwards, E. A., and Roback, J. D., *ibid.*, 1947, 85, 547.

⁴ Burch, G. E., and Winsor, T. (1943). *Proc. Soc. Exp. Biol., N.Y.*, 1943, 53, 135.

⁵ Thorpe, Ray C., and Burch, G., *Arch. Intern. Med.*, 1947, 80, 557.

⁶ O'Neill, E. E., *New Engl. J. Med.*, 1945, 232, 641.

⁷ Collins, C. G., Jones, J. R., and Nelson, E. W., *N. Orleans med. Surg. J.*, 1943, 85, 324.

⁸ *New Engl. J. Med.*, 1946, 235, 1.

¹ Martin, W. J., *British Medical Journal*, 1949, 1, 438.

been made,^{1,2} and it has been shown that despite greatly increased pressure oedema is usually slight. Furthermore, though the oedema tends to disappear after several months, the venous pressure may remain high for several years. The circulatory adjustments seem adequate, and no detrimental effects are seen; but the compensatory mechanism involved is incompletely understood.

If ligation of the inferior vena cava is to be used more generally it is important that cases should be carefully selected. When embolus has already occurred and there is an undoubted or possible pelvic thrombosis the operation is clearly indicated; satisfactory results have been recorded in gynaecological cases,⁶ and the ovarian veins too have sometimes been ligated.⁷ When an embolus arises from an unknown source and vein interruption is indicated, the vena cava is the site of election. A further indication for the operation is recurrent embolism after ligation of the femoral veins. Prophylactic ligation of the vena cava may be justifiable during an abdominal operation such as ureteric transplantation for carcinoma of the bladder on the grounds that two major operations constitute a special risk.

Delay in undertaking operation may greatly increase its danger in cases of repeated embolism. Thus death occurred in 9 out of 21 cases reported by Moses,⁸ and, while it is certain that some of the survivors would have died from embolus had operation been withheld, it is likely that there would have been fewer fatalities if the only treatment adopted had been the administration of anticoagulant drugs. Before deciding on an operation of this severity the surgeon must be convinced that the treatment is not more risky than the condition which it sets out to control. There can be no doubt, however, that ligation of the inferior vena cava, wisely and properly practised, will prove a valuable weapon in the conquest of pulmonary embolism on those few occasions when anticoagulant therapy is impracticable or impossible. With adequate supplies of heparin available it would seem unlikely that ligation of the inferior vena cava will be widely practised by surgeons in this country.

SYNTHETIC CHLORAMPHENICOL (CHLOROMYCETIN)

Although some penicillins have been synthesized and new penicillins have been created by the chemists, the processes involved are complex, and synthetic penicillins have not yet come into general use. Controulis, Rebstock, and Crooks,¹ however, have recently synthesized chloromycetin, to which the name chloramphenicol has now been given.

We have already referred to early reports on the use of this drug in infections in man.^{2,3} Encouraging results have been obtained in typhoid fever,⁴ typhus fever,⁵ scrub typhus,⁶ and Rocky Mountain fever.⁷ The synthetic product, the structural formula of which is here shown, is (1) ψ -1 *p*-nitrophenyl-2-dichloroacetamidopropane-1:3-diol; it has apparently the same physical and chemical properties as the chloramphenicol produced by

the mould *Sireptomyces venezuelae* n.sp. Smadel and his colleagues⁸ have reported that the synthetic product has an action on rickettsiae and viruses in developing hens' eggs,

mice, and human beings which is identical with that of the product produced by the mould. In developing hens' eggs two doses of the synthetic and natural products produced prolongations of the lives of the chick embryos the mean values of which were practically identical. This was true for: *Rickettsia prowazeki*, *R. mooseri*, *R. rickettsi*, *R. akari*, and two strains of *R. tsutsugamushi*, as well as for lymphogranuloma venereum and two strains of psittacosis virus. Mice infected with the Karp strain of *R. tsutsugamushi* receive a single daily intraperitoneal injection of solutions of the two types of the drug varying in amount from 0.375 to 2.5 mg. per day per mouse; both types effectively prevented death. Similarly, feeding both types of drug to mice infected with psittacosis virus gave results which were identical with those obtained with the natural antibiotic. Finally, two patients with scrub typhus in Kuala Lumpur have been treated with synthetic chloramphenicol. Both patients received the drug orally over a period of 16 hours; the initial doses were 3.0 or 4.0 g. followed by 0.25 g. at three-hourly intervals. The clinical response was the same as that observed in other cases of scrub typhus treated with the natural antibiotic, and there were no toxic reactions. Synthetic chloramphenicol is now being tested prophylactically against scrub typhus in Malaya.

The synthesis and clinical use of an antibiotic obviously an event of considerable importance, since it opens up fresh fields for the ingenuity of the synthetic chemist. Incidentally, it will be necessary to enlarge the scope of the word antibiotic unless it is to be dropped altogether. Hitherto the term has been applied only to naturally occurring substances endowed with chemotherapeutic powers and produced by micro-organisms during their growth and metabolism.

THE TONGUE IN VITAMIN-B DEFICIENCY

Dietary deficiencies of nicotinamide, riboflavin, pyridoxin and biotin are each reported to have caused lesions of the tongue, which are also common in diseases associated with nutritional disturbance, such as pernicious anaemia, sprue, and other intestinal disorders. These lesions can now be detected at an early stage by inspecting the tongue under ultra-violet irradiation screened with Wood's glass. The appearance of the normal tongue under irradiation was described 20 years ago by Bommer,¹ who observed a red fluorescent coating on the lingual dorsum. Laidlaw, Radley and Grant² reported that the mucous membrane of the tongue shows a greyish or yellowish-white fluorescence, while towards the back the fluorescence is often red or orange. The possible nutritional significance of the fluorescence, however, was not at first realized, though Costello and Littenberger³ were aware of reports that the fluorescent coating disappears in vitamin-B deficiency. In following up this clue Hagerman and Hirschfeld⁴ have recently examined over 543 patients attending a dermatological out-patient clinic. In 155 patients the fluorescence extended over the entire lingual dorsum, and in another 174 at least half the area was covered. These 331 cases were considered normal, while the remaining 212 cases, in which the fluorescent coating was defective or absent, were considered abnormal.

All the cases, without reference to the fluorescence of their tongues, were next divided into two groups according to whether their skin diseases were or were not considered

¹ J. Amer. chem. Soc., 1949, in press.

² British Medical Journal, 1948, 2, 428.

³ Ibid., 1948, 2, 1113.

⁴ Woodward, T. E., et al., Ann. Intern. Med., 1948, 29 (O.S. 33), 131.

⁵ Smadel, J. E., et al., Proc. Soc. exp. Biol., N.Y., 1948, 68, 9.

⁶ Science, 1948, 103, 160.

⁷ Pircoff, M. C., Ann. Intern. Med., 1948, 29, 656.

⁸ Proc. Soc. exp. Biol., N.Y., 1949, 70, 191.

¹ Acta derm.-venereol., Stockh., 1929, 10, 253.

² Fluorescence Analysis in Ultra-Violet Light, 1935. London.

³ N.Y. St. J. Med., 1944, 44, 1778.

⁴ Acta derm.-venereol., Stockh., 1947, 27, 369.

⁵ Amer. J. Dis. Child., 1947, 74, 657.

be associated with vitamin-B deficiency. Unfortunately the authors do not clearly describe the method used to come to a decision in each case, but fungous infections, dermatomas, and infestations were considered not to be related to vitamin-B deficiency. When the two groups were compared the proportion of cases with abnormal fluorescence of the tongue was found to be significantly greater in those with diseases supposed to be associated with vitamin-B deficiency than in those with the other skin diseases. In addition, the authors observed that the tongues of patients who had been dosed with B vitamins before coming to hospital usually showed normal fluorescence, irrespective of the nature of their skin disease. They therefore gave vitamin-B preparations, either orally or by injection, to 196 of the patients with abnormal fluorescence of the tongue; in 141 of these the abnormality disappeared. Parenteral therapy appeared to give better results than oral, and vitamin-B preparations containing pantothenic acid were much more effective than those not containing this factor.

Possibly this method of examination could be used for the diagnosis of the vitamin-B deficiency, but further careful investigation will be necessary before the significance of defective fluorescence is fully understood. It is not clear, for example, whether the abnormality results from deficiency of one particular B vitamin, presumably pantothenic acid, or whether it may also be caused by lack of other B vitamins. However, the possible effects of age and other factors unrelated to nutrition must not be overlooked. Similar difficulties have arisen in attempts to distinguish abnormalities of the tongue visible in ordinary light which are thought to be associated with vitamin-B deficiency. Thus Bakwin and his colleagues² examined the tongues of 60 children over an extended period and classified the lesions as acute glossitis, glossitis migrans, mild swelling of the tongue, and fissures of the tongue. The diets of these children were not demonstrably different from those of similar children without tongue lesions. In some of the children with swollen and fissured tongues improvement followed the administration of nicotinamide, though none were completely cured even after prolonged treatment. Glossitis migrans was unaffected by nicotinamide, and acute glossitis improved spontaneously or after chemotherapy. From these observations they conclude that the lesions of the tongue commonly seen in children in the U.S.A. are not due to deficiency of nicotinamide, though its administration may be beneficial. The conclusions reached by the Swedish and American workers, therefore, differ both in the degree of importance which should be ascribed to dietary deficiency in causing tongue abnormalities and in the selection of the B vitamin to which special importance is attached. With the wide differences present in the ages, diets, and circumstances of the groups of patients examined an explanation of this divergence of view might not be hard to find. It is obvious, however, that this is a complex problem, and the results of these and similar investigations must be interpreted with caution.

DUPUYTREN'S CONTRACTURE

Though Sir Astley Cooper¹ appears to have been aware in 1822 that the deformity now known as Dupuytren's contracture was confined to the palmar fascia, Dupuytren² was the first surgeon to investigate this condition by dissection and thereby reveal its true site. Since then various theories have been advanced to explain its nature, and recently Tord Skoog³ has made a special study of the deformity at Sir Archibald McIndoe's plastic surgery unit at East Grinstead and at the University of Uppsala in

Sweden. His investigations have shown that the palmar aponeurosis is most strongly developed on its ulnar aspect and that this tissue has a poor blood supply and is sparsely supplied with nerves. In movements of precision the plentifully muscled radial part of the hand is mainly used, while the ulnar side acts as a support and is thus more exposed to repeated and sustained trauma.

The condition occurs mainly in men, only 15% of the patients being women, and nearly all the patients are over the age of 40. The lesion becomes more severe with advancing years. It is mainly bilateral in incidence, and the ring and little fingers are chiefly affected, the appearance of a subcutaneous nodule in the palm being the first sign. The thumb is rarely involved, since in most hands the palmar fascia does not extend to this digit. The condition progresses slowly if untreated, and though it remains confined to the palmar aponeurosis it produces secondary changes in the contracted joints. Skoog gives evidence that trauma is the most important aetiological factor. Histological examination shows richly cellular areas of connective tissue containing blood pigment in the fascia; as the connective tissue degenerates with advancing age it loses its elasticity and is replaced by dense collagen bundles; thus the retraction characteristic of the condition is produced. Skoog mentions the association of Dupuytren's contracture with knuckle pads, and he believes that the frequency with which the condition occurs in epileptics may be connected with the prolonged administration of phenobarbitone. There is also undoubted evidence of a hereditary factor depending on dominance of low penetrability which is sex linked. Other aetiological theories have little to support them.

The best treatment is removal of the affected palmar fascia by operation, and Skoog favours Sir Archibald McIndoe's procedure. A transverse incision is made in the neighbourhood of the distal palmar crease. Where the fingers are affected a Z-shaped incision is used on the palmar surface of the finger over the proximal phalanx in order to lengthen the skin in this area. A tourniquet is essential to permit an accurate, gentle, and complete dissection. To remove completely the deep extensions and to avoid damage to the flexor tendons, vessels, and nerves, longitudinal incisions are made over these structures, which should first be identified outside the contracted mass of fibrous tissue and carefully followed through this tissue. Secondary changes in the finger joints will require prolonged and careful after-treatment, and in this connexion active movements must accompany splinting in extension. Splinting alone is dangerous, since the fingers quickly become stiff and the result of treatment is worse than the disease itself. The chief dangers to be avoided are post-operative haematoma and sepsis. Provided severe secondary changes have not already occurred the results of operative treatment have proved to be excellent. Many attempts have been made to find a reliable method of treating this condition without operation. A correspondent⁴ in the *Journal* recently drew attention to the value of radiotherapy.

Skoog also describes a similar condition affecting the plantar fascia in its medial part, in the region of the base of the first metatarsal and first cuneiform. Operative removal is rarely required, but when this is necessary excision should be confined to the diseased area. The dissection should not be widespread as in the palm owing to the danger of interfering with the integrity of the arches of the foot.

¹ *A Treatise on Dislocations and Fractures of the Joints*, 1822, London, p. 524.

² *Leçons orales de clinique chirurgicale faites à l'Hôtel-Dieu de Paris*, Paris, 1832. Translated into English in *Lancet*, 1834, 2, 222.

³ *Acta chir. scand.*, 1948, 96, Suppl. 139.

⁴ *British Medical Journal*, 1947, 2, 942.

SOME OBSERVATIONS ON THE TEACHING OF PATHOLOGY IN THE U.S.A.

BY

K. R. HILL, M.D.

(From the Department of Pathology, Medical School, King's College, University of Durham, and the Royal Victoria Infirmary, Newcastle-upon-Tyne)

The recent report of the B.M.A. Medical Curriculum Committee (*The Training of a Doctor*, 1948; Butterworth, London) has raised many controversial points which will be disturbing to some and welcome to others engaged in the teaching of medicine. It may be of interest at this time to study methods of teaching in other countries, and it is proposed, therefore, to comment on teaching in America, confining myself to one subject only, pathology. I recently spent a year in the pathology department of a well-known American teaching hospital, and during this time was able to visit and study methods at five other widely separated teaching institutions, two of them State university medical schools.*

At the outset it must be mentioned that in the U.S.A. medical students (excluding ex-Service men) are, on the average, three years older than their British counterparts. Most American students have taken a degree in arts or science (often including physics, chemistry, and biology) before entering medical school, which they do at the age of 21 or over. Probably as a consequence of being older and having had a university education, American students are more mature in outlook and have a more lively sense of the value of their studies in pathology and its application to medicine than English students. There was no evidence of previous cramming, and the scientific knowledge garnered in preceding years was often applied to the problems of pathology with an eagerness which led students into research projects as undergraduates.

Whether or not it is desirable to insist on a university degree as a necessary qualification before taking up a medical training is debatable. Although this is generally done in America, it is interesting to record the fact that wherever I went I found that the English medical student (and doctor) had a high reputation for general culture. The batch of undergraduates who were trained in the U.S.A. during the war enhanced the reputation of British students immeasurably. Further, one eminent pathologist and teacher told me that the English system of going straight from school to medical training was the best, as it enabled the student to get rid of his factual training quickly and then settle down to doing real useful thinking and worth-while work (e.g., research, postgraduate specialization) before the age of 30.

After entrance the general medical course consists of four years' graded instruction, at the end of which an examination for the M.D. degree is taken; then follows a year's internship. The four-years course is carefully integrated as a whole, and generally consists of: first year, anatomy and physiology; second year, pathology and associated subjects; third and fourth years, clinical subjects. During the preclinical and very often during the clinical period of training, instruction is carried on throughout the academic year of about eight months with very little break for vacation. Often the long vacation is filled in taking an extra elective course—e.g., obstetrics, pathology, or a research problem—but it also may be occupied in doing a job ("working one's way through college") or a military commitment.

Undergraduate Training in Pathology

Pathology is generally taught in the second year, and, though on paper it may be considered a preclinical subject, it is in practice never taught without the association of a hospital background, and the correlation between lesions and functional alterations is constantly stressed. Although the main course is in the second year, in many schools there is often systematic training also in the third year, and in all cases pathology is kept constantly in the students' minds during their clinical training by clinico-pathological conferences, pathology

staff conferences, special gynaecological pathology, etc., pathology, and "grand rounds."

Bacteriology, chemical pathology, haematology, and clinical biology (serology) are taught as separate subjects in their departments and not, as a rule, with pathology. The course in pathology may extend throughout the whole academic second year or may, as in some schools, be compressed in two terms.

In nearly all schools visited a systematic course of lectures was given. In one or two schools the lectures departed from the usual scheme and dealt only with recent theoretical or research aspects not yet appearing in the textbooks or aspects not generally emphasized by the textbooks—e.g., collagen-vascular diseases, deficiency diseases, etc.

One eminent authority told me that systematic lectures were a waste of time and that their only use was to give practice to the junior members of the staff in preparing their subjects and in lecturing before an audience.

Besides lectures there were classes in morbid anatomy and histopathology. In conducting these a feature which was quite common was the effort to bring together teacher and student in close personal relationship. The classes were divided into small groups, comprising not more than a dozen students, and a large number of instructors ensured attention to the requirements of the individual student.

Specimens representing each disease or group of diseases were concentrated in separate rooms, where for about four weeks they were studied by a group of students in turn under their instructors. In some cases the instructors remained with their particular group of students throughout the academic year, circulating through the different rooms with them. In others, specialists in the branch of pathology represented the specimens in the particular room dealt with each group of students as they came through.

The first method is much more personal—more akin to the "supervision" or "tutor system" that prevails in older universities. It leads to a more intimate relationship which helps to iron out the difficulties of the individual, and in practice particular groups put on a demonstration and discussion with their tutors which lasts into the late hours of the evening—often to finish up in the local beer-parlour! The advantage of the second method is that specialists are brought directly into contact with the student: neuropathology is taught by neuropathologists, gynaecological pathology by gynaecologists with an interest in the pathological side, and so on.

The specimens in the rooms were from necropsies going back many years, preserved in large jars of formalin. Thus in one room cases representing tuberculosis were collected; in another cardiovascular diseases, in a third genito-urinary diseases, and so on. The specimens were loose and were handled both by demonstrators and by students.

Mounted specimens were also used in these rooms for demonstration purposes. Some institutions had a museum of mounted specimens for teaching purposes, but I gained the impression that, generally, museums were for the housing of historical specimens and oddities rather than for teaching.

There was always an efficient filing system, so that reference could be made to the history and the microscope slides relating to the cases in the gross-specimen rooms. A very useful exercise within the groups was for one student to present a series of cases compiled from the files to illustrate a special feature of pathology.

Microscope slides and protocol files were never sacrosanct. I asked once if there was no concern over the loss of slides in this sort of system. I was told it was better to have the slides used and lost rather than never used at all, and so far as I could see there were comparatively few losses considering the amount of use the collections were given.

Concurrent with the study of gross specimens, histopathology relating to the group of diseases studied in each particular room was carried out. Nearly always a member of the staff was present, and the procedure was to alternate between gross-specimen rooms and microscopy rooms.

As a rule the student was given 200 to 400 representative slides portraying pathological processes, and histological

*I held a Rockefeller Fellowship at the Johns Hopkins Hospital, 1947-8, and visited the Universities of Chicago, Cornell, Harvard, Maryland, and Illinois.

items were stressed rather than detailed cytology. As a consequence of this the micro-projector could be used, and is used extensively (in the U.S.A. the micro-projector always seems to be efficient); this I found was a distinct advantage indicating to the students the exact lesion under discussion. The micro-projector could be employed in this country much more extensively, not only by students but also for the purposes of illustrating lesions at clinical meetings.

Often the groups or the class as a whole had weekly recitations or "quiz" exercises similar to our "rags" or "bottle parties." They were a popular feature, and the students found them very instructive.

In all schools attendances at necropsies were given high importance. In schools using the group system of teaching, the group attended the necropsies performed by the group member of the staff. Embalming of bodies is often carried out in the United States, and as a consequence hospitals generally have a 24-hour necropsy service in order to accommodate the undertakers. It is not unusual, therefore, to see a group of students attending a necropsy into the small hours of the night with their staff member.

Generally the students assist the pathologist (doing the dirty work," such as the opening of the gut), but in some hospitals students may carry out complete necropsies under supervision. In several schools it was the practice for a team of four to take over a case, and later one would present the history, another would demonstrate gross specimens, another the histology, and a fourth would give the final commentary. The whole team was often responsible for the histology blocks being embedded, cut, and stained.

Often the necropsies of one day were presented next day or on specified days during the week, when the whole class or smaller groups attended. In general, specimens are preserved in formalin, although the use of the deep-freeze for gross specimens is on the increase; this method has the advantage of preserving the natural appearances when thawed.

One university makes extensive use of colour photography of gross specimens and has collected a very complete library of lantern slides, so that any disease can be quickly illustrated on the screen. Excellent though this may be, it has the very obvious danger of being so easy to use that it may exclude the seeing and handling of the actual diseased organs, which, to my mind, is so important in the teaching of pathology.

In passing it might be noted that, although many necropsy theatres have special galleries for students to watch the performance of a necropsy, I never saw one in use.

During all this time it is possible for a student, or several students together, to carry out a research problem, and many do so. This may consist of a compilation of post-mortem reports and material or pure experimental work on animals. I remember well at one institution, when Trueta's book on the renal circulation became so much talked about, two students approaching the professor of urology and asking if they could repeat some aspects of Trueta's work. They were told, "There is the lab.; get on with it." I asked if these students would get anywhere with the problem, and was told, "Probably not, but they will learn something and think for themselves. That is why they are here." This typifies the attitude of the whole medical staff of these teaching institutions, and it is an attitude which is not confined only to the pathology department.

In most of these institutions much more stress is put on experimental work than in England. More and more it may be said that the pathology taught in the States is functional pathology rather than just the study of "dead issues"—although morbid anatomy as taught by the German and Scottish schools is not neglected. To this end functional alterations are emphasized as much as the lesions for which they are the cause or with which they may be associated. As an example of this method of teaching, one institution names the practical part of its course "pathological anatomy and physiology," and states that the course is "meant to present systematically the anatomical, chemical, and functional changes which occur in the commoner human diseases." As a result the medical student is much more experimentally and research minded than his British counterpart.

Perhaps an extreme example of this has been reached at one institution where for one term groups of students are given experimental problems on animals—e.g., vascular occlusions, diet experiments, and so on—for the study of various cause-and-effect processes in pathology. This method of teaching functional pathology is as yet in its experimental stage, and its results are still *sub judice*. Opportunity for research is arranged for by the fact that courses are so planned that students are left with a third to a quarter of their course as free time.

One interesting aspect of the medical training is the elective course, in which a student voluntarily chooses to do pathology or some other subject. If he takes pathology he functions as a junior member of the staff (even though he be only a second-year student), performs necropsies (under supervision), and presents his completed case with the histology to the chief of the department. I was most impressed with this aspect, for I heard second-year students present their cases with the aplomb of many an experienced pathologist.

Throughout the clinical years the pathology department constantly influences the student in training. At least once a week, and often many times more, the student will view histological patterns of diseases shown on the screen by the micro-projector, see gross specimens, and bear them discussed at various hospital conferences. Further, he will attend special pathology classes, either compulsory or elective, in surgery, gynaecology, ophthalmology, dermatology, and neuropathology. One good method which is often practised is to bring in the clinician at these classes. The clinician reads out the case history, shows lantern slides and radiographs of the patient, and discusses prognosis; the pathologist in his turn demonstrates the gross specimen (or shows a lantern slide of it) and then discusses the histological pattern. This adds interest to an otherwise often uninteresting subject.

It is my impression that throughout his course the American student is much more histologically minded than his English counterpart. Certainly he does not have to learn a word-picture of a histological appearance from Boyd's textbook before his examination. These remarks also apply to the postgraduate in subjects other than pathology.

Postgraduate Teaching of Pathology

It is a not uncommon practice in the States for a student, after passing his M.D., to do his internship in pathology. It should be noted that up to the time of taking his M.D. he has had only two academic years of clinical training. To those who have gone through the gamut of the longer British training this early specialization in pathology after such a brief clinical training sounds incredible. I asked the doyen of American pathologists whether he thought this system was a good one; he replied, "It is unnecessary for embryo pathologists to waste time doing clinical jobs."

I formed the opinion that, in American teaching hospitals, once a specialist had completed his period of postgraduate training he tended to broaden his viewpoint by close association and frequent conferences with other departments. In England, on the other hand, although we insist on our specialists having a much wider background of initial training, perhaps they tend to tread the narrow path of their own specialty once they are established and the years roll on.

In my experience the training of pathologists was excellent. In the first place, juniors (or "residents") were accepted by the senior members of the staff as equals, although it was obvious that at first the senior members were talking right over their heads. This stimulus to, shall we say, self-respect and higher thinking paid dividends, and the progress of the trainee pathologists was phenomenal. Furthermore, the junior was straightway given a responsible job. For example, he would be sent to the surgical pathology department, for which he would be responsible for three months. His work was of course checked by a senior member of the department every day, but he was primarily responsible for the gross and microscopical descriptions of the specimens, and also did all the emergency frozen-section reports. A junior resident thus worked very hard, and during his tour of duty had almost a twenty-four hours day.

In the training of the pathologist necropsy work was all-important. The junior performed necropsies at first under supervision. A week after the necropsy he would present his report together with the gross specimens to a senior member of the staff, who in turn would dictate a further commentary. Some time later the junior would present the microscopical sections to this senior member of the staff; and, in passing, it may be noted that all special stains were done by the trainee pathologist himself. The senior member would write a final commentary or, if it was of particular interest, would put the case up for presentation at the weekly staff conference before the head of the department. At this conference the junior would present the case to the chief, who would write his final commentary. By this method of checking first at the gross-specimen stage, then at the microscopy stage, the facts were well inculcated; and when the chief discussed these facts and added his own observations emphasizing the importance of the pathological processes involved the case finally was nicely orientated within the resident's mind.

In addition to weekly conferences on necropsies there were intra- and inter-departmental conferences in which the junior members took part. One such conference was that of surgical pathology, at which the interesting histopathology of the preceding week was brought to the notice of the whole department. An excellent feature of this conference was the description of the patient given by a resident whose duty it was regularly to attend the tumour clinic where he had seen the patient. This resident at some other time would present the histopathology to the surgical staff of the tumour clinic.

The resident staff were also involved in the preparation and presentation of regular conferences held in conjunction with the paediatric and the obstetrical departments, at which infant and foetal deaths were reviewed respectively.

At one institution the pathology department would give a review of a particular disease or pathological process as it presented itself after examination of the hospital records. At the conference clinicians and pathologists would present their respective observations and conclusions (and these were often original) and a discussion would ensue. As the resident staff were often responsible for doing the "spade work" for such conferences they gained valuable experience in bringing together several aspects of pathology.

Within the pathology department one found, besides the trainee pathologists, trainee specialists from other departments, such as medicine, surgery, and radiology, who were there for instruction for one year. This added a leavening of "lin" 1 personnel which was very healthy and made liaison with other departments easier. At one institution the radiologists under training were utilized at all conferences to collect and interpret the radiographs, and I would strongly recommend this procedure.

Comments

The method of dividing pathology classes into small groups which, together with their tutors, circulate through special study rooms in which are concentrated specimens representing various diseases is recommended.

Pathology in America is taught with much more of a functional application than it is in this country. The importance of experimental pathology is stressed—in some cases perhaps too much, as students may occasionally think in terms of airy experimental theories rather than of the solid facts of morbid anatomy.

The micro-projector should be used much more in England, and, although one cannot teach detailed cytology by such methods, histological patterns of disease can be illustrated and be constantly put before the student of pathology as well as before clinical and postgraduate students. Pathology need not therefore be a watertight subject that too often is forgotten as soon as the pathology examination is past.

The American method of early specialization in pathology is open to criticism on the ground that students have had too brief a contact with the living patient (i.e., sometimes only two academic clinical years). In England the pathologist has had at least three full years' clinical experience before graduation, followed, very often, by a year or so of house jobs

The graded checking of the work of the trainee pathologist in the States is excellent, as is the early assumption of responsibility. The constant use of clinico-pathological conferences brings all aspects of medicine and surgery to the pathologist's notice, thus broadening his vision.

NEW POISONS RULES AMENDMENTS CONSOLIDATED

The Poisons Rules, 1949,* which were laid before Parliament on March 25, came into operation on April 11. This revision of the Poisons Rules (Statutory Instruments, 1949, No. 539) replaces the Poisons Rules of 1935 made under Section 23 of the Pharmacy and Poisons Act, 1933, and all the amendments to those rules which have been issued from time to time.

The Fourth Schedule again lists those substances required to be sold by retail "only upon a prescription given by a duly qualified medical practitioner, registered dentist, registered veterinary surgeon, or registered veterinary practitioner." Such substances will continue to be governed by the rule which lays down that a prescription shall:

(a) be in writing and be signed by the person giving it with his usual signature and be dated by him;

(b) except in the case of a health prescription, specify the address of the person giving it;

(c) specify the name and address of the person for whose treatment it is given or, if the prescription is given by a veterinary surgeon or practitioner, of the person to whom the medicine is to be delivered;

(d) have written thereon, if given by a dentist, the words "For dental treatment only" or, if given by a veterinary surgeon or practitioner, the words "For animal treatment only";

(e) indicate the total amount of the medicine to be supplied and, except in the case of a preparation which is to be used for external treatment only, the dose to be taken.

In an emergency an authorized seller of poisons may supply a doctor without a written order, say in response to a telephone request, if the practitioner gives an undertaking that such an order will be furnished within the next twenty-four hours.

The poisons listed in the Fourth Schedule are as follows:—

Allylisopropylacetylurea

Amidopyrine; its salts

Barbituric acid; its salts; derivatives of barbituric acid; their salts; compounds of barbituric acid, its salts, its derivatives, their salts, with any other substance

Dinitrocresols except agricultural or horticultural insecticides or fungicides; dinitronaphthols; dinitrophenols; dinitrothymols

6-morpholino-4 : 4-diphenylheptane-3-one; its salts

Para-aminobenzenesulphonamide; its salts; derivatives of para-aminobenzenesulphonamide having any of the hydrogen atoms of the para-amino group or of the sulphonamide group substituted by another radical; their salts, except when contained in ointments and surgical dressings

Phenylcinchoninic acid; salicyl-cinchoninic acid; their salts; their esters

Sulphonol; alkyl sulphonols

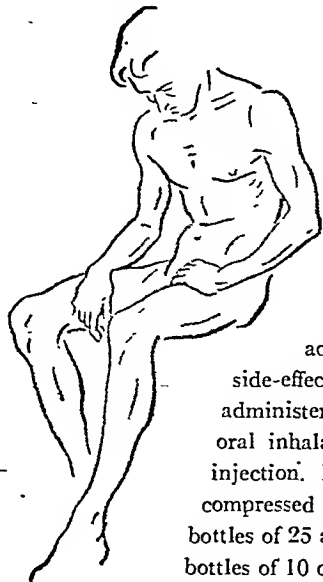
Tridione (3 : 5 : 5-trimethylloxazolidine-2 : 4-dione)

Most of these substances are better known to practitioners under trade or other names.

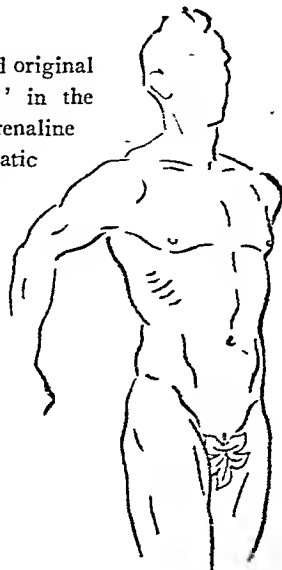
A prescription which comes under the Fourth Schedule must not be dispensed more than once unless the prescriber directs that it may be dispensed a stated number of times or at stated intervals. There must be noted on the prescription the name and address of the seller and the date on which the prescription was dispensed. The prescription must also be retained and kept on the premises for two years so that it is readily available for inspection. This last provision does not apply to a "health prescription," which is defined as a prescription given by a doctor or a dentist in accordance with the National Health Service Act, 1946, or the National Health Service (Scotland) Act, 1947, or given by a doctor or dentist upon a form issued by a local authority for use in connexion with the health services of that authority.

*Poisons: The Poisons Rules, 1949, H.M.S.O., price 9d.

AT THE FIRST GASP



Clinical experience has amply confirmed original reports on the value of 'Neo-Epinine' in the treatment of bronchial asthma. Equal to adrenaline and superior to ephedrine in anti-asthmatic activity, it is relatively free from the undesirable side-effects of both these drugs. 'Neo-Epinine' is administered simply, either sublingually or by oral inhalation, thereby avoiding the necessity for injection. Issued for sublingual administration as compressed products each containing 20 mgm., in bottles of 25 and 100; and as 1 per cent Spray Solution in bottles of 10 c.c.



'NEO-EPININE'

ISOPROPYLnorADRENALINE SULPHATE



BURROUGHS WELLCOME & CO. (The Wellcome Foundation Ltd.) LONDON

Why these two aids in infant care receive medical support



In the treatment and care of infants in recent years efforts have been persistent to reduce the incidence of skin irritations such as impetigo and urine rash.

Nothing has contributed more towards meeting this problem than Johnson's Baby Lotion. Wherever it has been used in hospitals, clinics and welfare centres skin conditions improved.

Johnson's Baby Lotion is a homogenized emulsion of specially compounded mineral oil and water with lanolin. It is antiseptic and forms a protective discontinuous film that allows

the normal function of the skin.

Together with Johnson's Baby Powder, here are two indispensable aids in baby care, not only while under your personal supervision but when mothers care for their babies at home.

If you are not yet personally familiar with Johnson's Baby Lotion we will gladly send you samples.

BABY LOTION

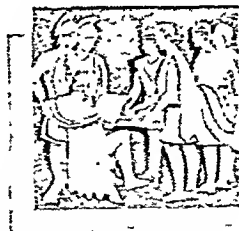
For nappie-change to avoid irritations.

BABY POWDER

For after babies' baths.

MULTIS TERRIBILIS CAVETO MULTOS (AUSONIUS)

Those that are a cause of fear to many should themselves avoid crowds. In Rome, do as the Romans do. But in modern times crowds are as difficult to avoid as the virus of the common cold. 'Endrine' nasal compound provides a simple method of treating coryza and catarrh. It contains ephedrine which shrinks the engorged mucosa, whilst the oily base brings soothing relief to the inflamed membranes. Free breathing becomes possible and droplet infection is prevented.



ENDRINE Nasal Compound

Formula: ephedrine 0.75% w/w; menthol 0.5% w/w; camphor 0.5% w/w; eucalyptol 0.5% w/w; clemastine 0.35% w/w; Light Eq. paraffin q.s. to 100

JOHN WYETH & BROTHER LIMITED
Clifton House, Euston Road, London, N.W.1
BEPLEX - ALUDRON - PETROLAGAR - PLASTULES

Johnson & Johnson (GT. BRITAIN) LTD. SLOUGH & GARGRAVE

Wyeth

'TRILENE'

A SAFE AND VALUABLE ANAESTHETIC

'Trilene' is now universally accepted as a safe and valuable anaesthetic for most operations. It can be used for induction or maintenance, or for maintenance with curare*. Notable advantages are the small quantities needed, the rapidity of recovery and the absence of vomiting and other unpleasant after-effects.

'Trilene' has also been used with great success to produce safe and reliable analgesia.

*An abstract of a report on these uses in over 40,000 cases is available.

Containers of 250 c.c., 500 c.c.

Crushable ampoules of 1 c.c., boxes of 5.

Ampoules of 6 c.c. in containers of 1, 5 and 25.

Literature and further information will be supplied on request from your nearest I.C.I. office: London, Bristol, Manchester, Glasgow, Edinburgh, Belfast and Birmingham.

IMPERIAL CHEMICAL (PHARMACEUTICALS) LTD.

A subsidiary company of Imperial Chemical Industries Ltd.

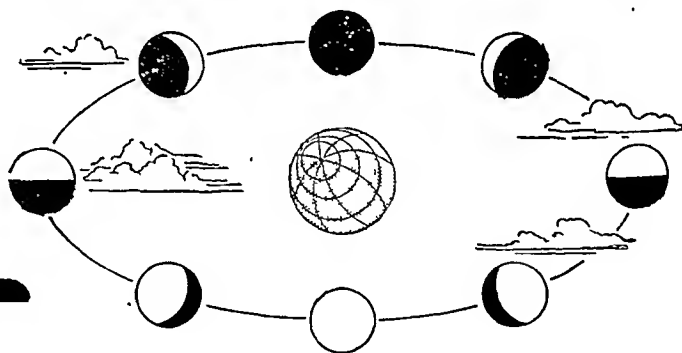
MANCHESTER



Ph.347

Aspriodine is acetyliodosalicylic acid—a chemical compound containing the equivalent of 41.5% iodine.

Administered orally, in tablet form, Aspriodine is rapidly assimilated and well tolerated.



**A MONTH'S TREATMENT
FREQUENTLY PRODUCES
REMARKABLE IMPROVEMENT**

***In Rheumatic
Affections***

ASPRIODINE
MARTINDALE

DOSE: One or more tablets daily

Literature and Samples on request

**SAVORY &
MOORE LTD.**

WELBECK STREET,
LONDON, W.1

Telephone: WELbeck 5555

Special Hospital Provisions

Medicines containing poisons which are supplied to patients in hospitals or in out-patient departments are subject to much the same rules. Where substances included in the First Schedule to the Rules are supplied a record must be kept for two years of the name and quantity of the poison supplied, the date on which it was supplied, the name and address of the patient, and the name of the person who supplied the poison or who gave the prescription for it. Again this rule does not apply to prescriptions given by doctors or dentists under the N.H.S. Acts. The containers of such medicines must be labelled with a designation or address sufficient to identify the hospital, or dispensary, or health centre issuing it.

Medicines containing poisons shall be supplied only for use in wards, operating theatres, or other departments on a written order signed by a doctor, or dentist, or "by a sister or nurse in charge of a ward, theatre, or other section of the institution." Again the container of the medicine must be labelled with words describing its contents and in the case of substances included in the First Schedule with a distinguishing mark indicating that it must be stored in a cupboard reserved solely for the storage of poisons.

Where poisons are stored on shelves in a dispensary or pharmaceutical department the container of the poison "must be rendered distinguishable by touch from the containers of articles other than poisons stored on the same premises." All places in which poisons are stored must be inspected at regular intervals, not exceeding three months, by a pharmacist or some other person appointed by the governing body or person in control of the institution.

First Schedule

Substances included in the Poisons List to which special restrictions apply are as follows:

Alkaloids, the following; their salts, simple or complex:
 Acetyl dihydrocodeinone
 Aconite, alkaloids of, except substances containing less than 0.2 per cent of the alkaloids of aconite
 Apomorphine except substances containing less than 0.2% of apomorphine
 Atropine except substances containing less than 0.15% of atropine
 Belladonna, alkaloids of, except substances containing less than 0.15% of the alkaloids of belladonna calculated as hyoscyamine
 Benzoylmorphine
 Benzylmorphine
 Brucine except substances containing less than 0.2% of brucine
 Calabar bean, alkaloids of
 Coca, alkaloids of, except substances containing less than 0.1% of the alkaloids of coca
 Cocaine except substances containing less than 0.1% of cocaine
 Codeine except substances containing less than 1.5% of codeine
 Colchicine except substances containing less than 0.5% of colchicine
 Coniine except substances containing less than 0.1% of coniine
 Cotarnine except substances containing less than 0.2% of cotarnine
 Curare, alkaloids of; curare bases
 Diacetylmorphine
 Dihydrocodeinone
 Dihydrodesoxymorphine
 Dihydrodihydroxycodeinone
 Dihydromorphine
 Dihydromorphinone
 Ecgonine except substances containing less than 0.1% of ecgonine
 Emetine except substances containing less than 1% of emetine
 Ergot, alkaloids of
 Ethylmorphine except substances containing less than 0.2% of ethylmorphine
 Gelsemium, alkaloids of, except substances containing less than 0.1% of the alkaloids of gelsemium
 Homatropine except substances containing less than 0.15% of homatropine
 Hyoscine except substances containing less than 0.15% of hyoscine
 Hyoscyamine except substances containing less than 0.15% of hyoscyamine
 Jaborandi, alkaloids of, except substances containing less than 0.5% of the alkaloids of jaborandi
 Lobelia, alkaloids of, except substances containing less than 0.5% of the alkaloids of lobelia
 Morphine except substances containing less than 0.2% of morphine calculated as anhydrous morphine
 Nicotine
 Papaverine except substances containing less than 1% of papaverine

Pomegranate, alkaloids of, except substances containing less than 0.5% of the alkaloids of pomegranate

Quebracho, alkaloids of
 Sabadilla, alkaloids of, except substances containing less than 1% of the alkaloids of sabadilla

Solanaceous alkaloids, not otherwise included in this Schedule, except substances containing less than 0.15% of solanaceous alkaloids calculated as hyoscyamine

Stavesacre, alkaloids of, except substances containing less than 0.2% of the alkaloids of stavesacre

Strychnine except substances containing less than 0.2% of strychnine

Thebaine except substances containing less than 1% of thebaine
 Veratrum, alkaloids of, except substances containing less than 1% of the alkaloids of veratrum

Yohimbin, alkaloids of

Allylisopropylacetylurea

Amidone (*dl*-2-dimethylamino-4 : 4-diphenyl-heptane-5-one); its salts

Amidopyrine; its salts

Amino-alcohols, esterified with benzoic acid, phenylacetic acid, phenylpropionic acid, cinnamic acid or the derivatives of these acids, except in substances containing less than 10% of esterified amino-alcohols

Antimonial poisons except substances containing less than the equivalent of 1% of antimony trioxide

Arsenical poisons except substances containing less than the equivalent of 0.01% of arsenic trioxide and except dentifrices containing less than 0.5% of acetarso

Barbituric acid; its salts; derivatives of barbituric acid; their salts; compounds of barbituric acid, its salts, its derivatives, their salts, with any other substance

Barium, salts of

Beta-aminopropylbenzene; its salts, its N-alkyl derivatives; their salts; beta-aminoisopropylbenzene; its salts; its N-alkyl derivatives; their salts

Cannabis; the resins of cannabis; extracts of cannabis; tinctures of cannabis; cannabin tannate

Cantharidin except substances containing less than 0.01% of cantharidin

Cantharidates except substances containing less than the equivalent of 0.01% of cantharidine

Carbachol

Digitalis, glycosides and other active principles of, except substances containing less than one unit of activity (as defined in the *British Pharmacopoeia*) in two grammes of the substance

Dinitroresols except agricultural and horticultural insecticides or fungicides; dinitronaphthols; dinitrophenols; dinitrothymols

Ergot; extracts of ergot; tinctures of ergot

Guanidines, the following: polymethylene diguanidines, diparaisyl-phenetyl guanidine

Hydrocyanic acid except substances containing less than 0.15%, weight in weight, of hydrocyanic acid (HCN); cyanides except substances containing less than the equivalent of 0.1%, weight in weight, of hydrocyanic acid (HCN); double cyanides of mercury and zinc

Lead, compounds of, with acids from fixed oils

Mercuric chloride except substances containing less than 1% of mercuric chloride; mercuric iodide except substances containing less than 2% of mercuric iodide; nitrates of mercury except substances containing less than the equivalent of 3%, weight in weight, of mercury (Hg); potassio-mercuric iodides except substances containing less than the equivalent of 1% of mercuric iodide; organic compounds of mercury except substances containing less than the equivalent of 0.2%, weight in weight, of mercury (Hg)

Metanitrophenol; orthonitrophenol; paranitrophenol

Metopon (methyl dihydromorphinone); its salts

6-morpholino-4 : 4-diphenylheptane-3-one; its salts

Nux vomica except substances containing less than 0.2% of strychnine

Opium except substances containing less than 0.2% of morphine calculated as anhydrous morphine

Quabain

Oxycinchonic acid, derivatives of; their salts; their esters

Para-aminobenzenesulphonamide; its salts; derivatives of para-aminobenzenesulphonamide having any of the hydrogen atoms of the para-amino group or of the sulphonamide group substituted by another radical; their salts

Pethidine; its salts

Phenetylphenacetin

Phenylcinchoninic acid; salicylcinchonic acid; their salts; their esters

Phenylethylhydantoin; its salts; its acyl derivatives; their salts

Picrotoxin

Savin, oil of

Sodium, monofluoracetate

Strophanthus, glycosides of

Sulphonal; alkyl sulphonals

Thallium; salts of

Tribromethyl alcohol
Tridione (3 : 5 : 5-trimethyloxazolidine-2 : 4-dione)
Zinc phosphide

In the Third Schedule of the Poisons Rules there are listed articles exempted from the provisions of the Pharmacy and Poisons Act and of the Rules. These include, for example, extracts and tinctures of ipecacuanha and substances containing less than 0.05% of emetine; substances containing less than 10% of chloroform; and ointments containing less than 3% weight for weight, of mercury.

The other schedules follow the pattern laid down in the twelve schedules of the 1935 Poisons Rules. An additional four schedules are concerned with such things as the purchase of strychnine for killing seals and the colouring of some compounds of arsenic.

MISSIONARY ENDEAVOUR

C.M.S. Celebrations

The Church Missionary Society celebrated on April 12 its 150th anniversary. It was founded in an Aldersgate Street tavern in 1799 by a group of 16 clergy and 9 laymen with whom William Wilberforce and Zachary Macaulay were associated, though they were not present at that first meeting. The first interest of the Society was in Africa, and a few years later it entered India and Ceylon. Work in China was undertaken in the 'forties of the last century, and in Japan and Persia some thirty years later. The Society is now responsible for more than half the missionary force of the Church of England and for about a quarter of the total missionary work of British societies. It has nearly one thousand missionaries on its register, about two-thirds of whom are women.

The first medical missions under the Society's auspices were not inaugurated until 1865. Doctors had been sent abroad by the Society from 1840 onwards, but not as missionaries; their work was to care only for the health of the missionaries proper. The first C.M.S. medical mission was started in the native state of Kashmir. The next was at Hangchow in 1871. In the ten years from 1880 to 1890, hospitals were opened in Persia, Palestine, India, and Egypt. A C.M.S. hospital was established in 1897 at Mengo in Uganda Protectorate. A full account of the work done there under the direction of Dr Albert Cook appeared in these columns on the occasion of the Mengo Hospitals Jubilee (Aug. 30, 1947, p. 342). The

I.S., which is responsible for half the medical work of Anglican missions, now has 51 hospitals and 149 dispensaries. More than five million treatments are given each year, and in every hour of the day more than 500 patients receive some form of treatment through C.M.S. hospitals, out-stations, welfare centres, and clinics.

The burden of rising costs affects missionary societies as much as other institutions. It is not only at home that money values have altered. In China it now costs as much to put in the windows of a rebuilt hospital as it cost to build the entire hospital before the war. In East Africa nurses' uniforms cost twice as much as they did, and the cost of medicines has gone up sixfold. In India the maintenance cost of a hospital bed has trebled.

The number of European-trained nurses working for the Society is 105. It was mentioned at a Press conference at the Society's headquarters in Salisbury Square that about 80% of the nurses at work in India are Christians. Many of them have been trained at C.M.S. hospitals. The Indian-trained nurse is almost always the product of Christian example and missionary organization. As for medical men and women, stress was laid at the conference on the fact that for missionary work, especially in certain regions and certain types of service, such as that among lepers, a sense of vocation is needed. Some sense of vocation is called for, of course, in all medical work, but it is especially important in Christian missions, among people alien in thought and custom and in a strange environment. In many lands the Church Missionary Society has led the way to State action in organizing medical services. Now that Government-provided medical services are increasingly widespread in Africa and the East, the aim of the Society's

medical missions is changing to the extent that instead of providing centres which specialize in a particular type of medical work it aims at a general healing ministry, integrated with the Society's main evangelical and educational programme. The need for medical services in the lands which the Society occupies remains, of course, overwhelming. In India there is one doctor for every 10,000 people. China, with ten times as many people as there are in the British Isles, has fewer doctors than there are in London.

AMERICAN REVIEW OF SOVIET MEDICINE

The October, 1948, issue of the *American Review of Soviet Medicine*, recently received, contains the announcement that the publication is to be suspended indefinitely. The *Review* first appeared in October, 1943, sponsored by the American-Soviet Medical Society, under the presidency of the late W. B. Cannon. It was designed to publish translations of important papers from Russian medical literature, survey articles of various aspects of Russian medicine by American experts, news of current medical events in the U.S.S.R., reviews of Soviet medical books, etc. Edited throughout its existence by Dr. Henry E. Sigerist, the *Review* made possible a wide exchange of medical information between the Soviet Union and the English-speaking countries, while the American-Soviet Medical Society was able to build up an extensive library of Russian literature. In a valedictory editorial Dr. Sigerist writes: "Much to our regret we are unable to [continue publication] for reasons which are so obvious that we need not elaborate on them." As the difficulty in obtaining medical literature from the U.S.S.R. has not appreciably increased since 1943, other factors must be responsible for the decision to discontinue the *Review*. The American-Soviet Medical Society is to continue in being, and will keep its members informed of medical developments in the U.S.S.R. by issuing mimeographed reports whenever there is an opportunity.

TRAVELLING FELLOWSHIPS IN MEDICINE

The Medical Research Council invites applications for the following Travelling Fellowships for the academic year 1949-50.

Rockefeller Medical Fellowships

These fellowships are provided from a fund with which the Council has been entrusted by the Rockefeller Foundation of New York. They are intended for graduates resident in this country who have had some training in research work in clinical medicine or surgery, or in some other branch of medical science, and who are likely to profit by a period of work at a centre in the United States or elsewhere abroad before taking up positions for higher teaching or research in the United Kingdom. The stipend will ordinarily be at the rate of £650 per annum for a single Fellow, and of £900 per annum for a married Fellow. Travelling expenses and some other allowances will be paid in addition.

Dorothy Temple Cross Research Fellowships in Tuberculosis

These fellowships are awarded by the Council from a special endowment of which it is the trustee. The object of the fellowships, as defined in the trust deed, is to give special opportunities for study or research to suitably qualified British subjects of either sex "intending to devote themselves to the advancement by teaching or research of curative or preventive treatment of tuberculosis in all or any of its forms." The fellowships will, as a rule, be awarded to candidates who wish to make their studies or inquiries elsewhere than in the United Kingdom. They will ordinarily be awarded for one academic year. The fellowships provide for the payment of stipend, together with an allowance for travelling and incidental expenses. The stipend will ordinarily be at the rate of £650 per annum for a single Fellow, and of £900 per annum for a married Fellow.

Completed applications for fellowships of either type must be lodged with the Council by June 1. Further particulars and forms of application are obtainable from the Secretary, Medical Research Council, 38, Old Queen Street, Westminster, London, S.W.1.

Reports of Societies

REORIENTATIONS IN NEUROLOGY

At a meeting of the Manchester Medical Society on Feb. 2 Sir CHARLES SYMONDS delivered an address on this subject.

He said that the most fascinating and elusive problem of neurology was that of the selective lesion. This or that structure was picked out again and again by different diseases so that, for example, examination of the pupils alone might warrant the diagnosis of neurosyphilis. Of the reasons for this hardly anything was known, but it might depend partly upon the effect of toxins, or upon deficiencies in specific biochemical functions. Myasthenia gravis was the best-known example of a biochemical lesion; familial periodic paralysis and porphyria were less well understood, but of interest because of the genetic factor. Some of the obscure paralyses, such as that described by Landry, might be caused similarly. The paralysis of botulism and the spasm of tetanus were now known to depend upon derangement of the acetylcholine-cholinesterase mechanism of neuromuscular transmission. There was evidence suggesting that this mode of transmission might also exist within the central nervous system across synapses, and, if so, certain functional nervous disorders might prove to be caused by analogous biochemical disturbances.

Specific patterns of central nervous disease were related to equally specific nutritional deficiencies. Subacute combined degeneration of the cord was one familiar clinical example, and the prison camps in the Far East had provided others. Animal experiments had shown correlation between the histological pattern of lesions and specific vitamin deficiencies, whether due to lack of vitamins or excess of anti-vitamins in the diet. Disseminated sclerosis remained a mystery, but the experimental production by Weston Hurst of demyelination of optic nerves and other structures in the monkey by interference with intracellular oxidation suggested the possibility of a biochemical lesion.

Bodian and Howe had shown that the susceptibility of anterior horn cells to the virus of poliomyelitis could be modified by an artificially induced resting state following section of peripheral nerves. Bodian had further demonstrated that the natural immunity of rhesus monkeys to oral infection by the virus of poliomyelitis was lost when the animal was deprived of pyridoxine. It seemed, therefore, that we might have to think in terms of interaction between virus and metabolic disorder if we were to understand the aetiology of certain nervous diseases.

CHELSEA CLINICAL SOCIETY

The sixth meeting of the session was held on March 8 at the South Kensington Hotel, with the president, Mr. NILS ECKHOFF, in the chair. A discussion on prefrontal leucotomy was opened by Mr. W. McKISOCK, who himself had operated on over one thousand cases, and was continued by Dr. CURRAN, whose experience of investigation and aftercare was equally extensive. An interesting discussion ensued in which Drs. BRUNTON BLAIE, GUY BEAUCHAMP, FURBER, BOCKLEY SHARP, SKENE KEITH, WAYNE ROE, MOODY, GORSKY, and Mr. CRUMBIE and Mr. GUERRIER took part. Members were asked to take note of the annual dinner date, which was fixed for Tuesday, May 10.

At the third meeting of the Administrative and Clerical Staffs Whitley Council on Feb. 1 it was agreed that the London "weighting" for administrative and clerical officers aged 26 years and over with salaries of under £760 a year should be £30 a year in all sections of the National Health Service. It should now be paid as from Feb. 1 to all such officers employed in the Metropolitan Police area who have not already received it. Agreement was reached on the salaries of senior officers of hospital management committees and boards of management. The salaries are based on a new system by which a varying number of points are allotted to hospitals and institutions of different sizes. The salaries for secretaries vary from £640 by £25 to £890 to £1,400 by £50 to £1,700, and for deputy secretaries from £430 by £15 to £595 to £935 by £30 to £995 by £35 to £1,135. The scales are subject to the addition of London weighting, and they operate as from Jan. 1.

Correspondence

Transmission of Sarcoma by Dried Tissue

SIR,—Professor W. E. Gye (March 26, p. 511) describes a method of extracting a very powerful carcinogen from three sarcomas of mice after a treatment of the tumours by freezing and desiccation which is thought to exclude the survival of any cells. All cancer research workers will congratulate him and his associates on this achievement, and those who have worked with the weaker carcinogens, which take effect chiefly in the second year, will be impressed by the prospect of results obtainable in 2 to 4 weeks after injection.

The results described show undoubtedly that, if the death of all cells can be assured, a very active carcinogen has been obtained from mouse sarcomas. Professor Gye concludes that this particular carcinogen differs from many others in being also the cause of the continued growth of tumours. Do the experiments, in their present state, necessarily bear this interpretation? The proof of the identity of these two agents does not seem to me quite clear.

As one who was concerned, chiefly on the administrative side, with the pioneer work of Mayneord, Hieger, Cook, and Hewett on carcinogenic compounds, I am very glad that methylicholanthrene has performed the humble, and essential, part of initiating the growth of one of the tumours used by Gye, and I am sure that Professor J. W. Cook, to whom we owe the existence of this compound, would agree.

The distinction between the initial and the continuing cause of cancer suggests many attractive speculations. For instance, one would like to know what was the first abnormal change in the fowl which produced the Chicken Sarcoma I of Murphy and Rous. What determines whether a wild cottontail rabbit does or does not develop a Shope tumour? Why is sarcoma a very rare spontaneous tumour in the mouse, the species in which this new agent has been discovered? Why are certain compounds carcinogenic or, as one might say, able to liberate a virus, while other closely allied compounds have not this power?

One hopes that Professor Gye and his staff will go on to test filtrates of these tumours. Dr. L. D. Parsons has recorded the production of sarcomas by filtrates of sarcomas of the mouse induced, as was one of the three used by Gye, by a hydrocarbon (a derivative of 1:2:5:6-dibenzanthracene). Preliminary statements of her work, which was interrupted, were given in the 12th to the 17th Annual Reports of the British Empire Cancer Campaign and elsewhere.^{1,2}

In the same issue of the *British Medical Journal* the author of a leading article (p. 531) states, "Suppose . . . we can safely accept the conclusion that tumours in general can be propagated in the absence of viable tumour cells, where does this lead? . . . It means that of current theories of the nature of cancer some 90% can be quietly relegated to the waste-paper basket. . . ." It would be interesting to know what are, say, nine of these theories which are demolished by experiments upon some sarcomas of the mouse.

Those of us who have reached "cancer age," and are hoping to avoid cancer altogether, are naturally more interested in the initial cause of cancer than in the continuing cause. The results described by Professor Gye should assist discrimination between these two effects.—I am, etc.,

St. Bartholomew's Hospital,
London, E.C.1.

E. L. KENNAWAY.

REFERENCES

- ¹ *Nature*, 1938, 142, 450.
- ² *J. Path. Bact.*, 1938, 47, 501.

The Lethal Danger of Desoxycortone Overdosage

SIR,—Although I have written fully on this subject in Price's *Practice of Medicine*, Hutchison's *Index of Treatment*, *Major Endocrine Disorders*, etc., I have met with three cases in undergraduate and postgraduate centres in the last few months and feel called upon to make a further note.

Desoxycortone is used in Addison's disease and Simmonds's disease because it is an easily administered essential hormone of the adrenal cortex, affecting salt and water metabolism but not carbohydrate metabolism. Overdosage results in excessive

retention of salt and water and excessive excretion of potassium, with resulting low serum potassium values. There may be obvious oedema of superficial tissues, with or without hypertension; or more insidious pulmonary oedema, going on to general anasarca; or the paralytic effects of low potassium concentrations may be presenting features. (I do not include the occasional production of more chronic hypertension without any fluid retention or depression of potassium.) With injection treatment, an awareness of the possibility of overdosage permits its avoidance or easy correction by diminishing or withdrawing the desoxycortone injections. However, the facility of and patients' preference for subcutaneous implantation of tablets has led to the increasing use of this method, and here the only really reliable method of counteracting overdosage through wrong calculation is by removal of some or all of the tablets—a procedure which is not as easy as their implantation. Temporary corrective measures are the use of diuretics—e.g., mersalyl, urea; and potassium citrate by mouth if the serum potassium is known to be low.

In December, 1938, I made the first report on Addison's disease (four cases) treated with implantations of desoxycortone acetate.¹ The dose I chose, rather empirically, was 200 mg. for the initial implantation. Although my subsequent arithmetical formula was rather higher—one 100 mg. tablet for each 1 mg. of desoxycortone injected daily, giving an implantation of some 400 mg. for the average case—I am tending to return to 200 mg. as an initial implantation. Thorn and his colleagues^{2,3} suggested the rather high equivalent of 100 mg. for each 0.5 mg. of desoxycortone injected daily. The use of this high equivalent has undoubtedly led to overdosage by the implantation method in other clinics, although Thorn is careful to point out that the maintenance dose after several weeks or more is less than the initial maintenance dose. Even so, this equivalent is, I believe, still too high, and for initial implantation probably twice as high as is prudent over a series of cases.

In a recent case of overdosage two separate implantations of 200 mg. each at intervals of seven months were successful, whereas a third of 300 mg. led to oedema and depression of serum potassium. Some patients, in the case of both Addison's and Simmonds's disease, are particularly sensitive to desoxycortone, and this sensitivity may vary. Certainly no patient should have an initial implantation of desoxycortone before a trial period of several weeks with desoxycortone injections. The patients who have their mineral metabolism well needed (as judged by chemical estimation) by desoxycortone implantations nevertheless may be liable to chronic hypoglycaemia, with hypoglycaemic exacerbations which may prove fatal, and this should be looked for and anticipated. It should also be remembered that cortical extract (e.g., "cucortone," "eschatin"), although much safer than desoxycortone from the point of view of excessive salt and water retention, can in large doses produce or aggravate it. A further point is that if testosterone is implanted as supplementary therapy with the desoxycortone the dose of the latter must be less, as testosterone has a salt and water retaining effect and may tip the scales in the wrong direction. Of course, supplementary salt by mouth is another aggravating or reinforcing factor when the dose of desoxycortone is on the high side.

The justification for this letter is the not infrequent occurrence of overdosage effects from desoxycortone—grave or even lethal—some ten years after initial experience with this valuable and highly potent form of therapy.—I am, etc.,

London, W.1

S. L. SIMPSON.

REFERENCES

- ¹ *Proc. R. Soc. Med.*, 1938, 32, 685.
- ² *J. Amer. med. Ass.*, 1940, 114, 2517.
- ³ *J. clin. Endocrinol.*, 1943, 3, 335.

Statistics and Health Education

SIR.—You report (*Supplement*, March 26, p. 160) that the Ministry of National Insurance is about to collect some more statistics (about illness) and that the public health department of the Middlesex County Council has been holding a discussion on the strategy of health education (March 26, p. 538). Now presumably the objects of both these activities are the same—to improve the health of the people—but are either of them using

the best approach? The Ministry, according to your leading article (p. 533), is asking, "How often are we ill?" (Without a single extra page of statistics, do we not already know the answer? Too often.) It is, however, also collecting much information about age groups, marital status, etc., and it says that the validity of the statistics will depend on the accuracy of the diagnosis as stated on the certificate. In other words, it must be able to classify the "diseases" from which patients are suffering.

Now, Sir, if we want to get the right answer we must ask the right questions. If we want to keep people well, then surely the right question to ask is, "Why do they get ill?" and not, "What illness have they got?" After all, it is human beings who get ill, and disease is a metaphysical conception. What help is it to us to say precisely what illness the patient is suffering from if we do not know why he got ill? We have not finished when we have stuck a so-called diagnostic label on the patient—we are just at the beginning.

You have given the Middlesex discussion the subtitle "Telling the Public." Would not a better approach to the problem be "Asking the Public"? As Dr. Hill said, too little is known about the prevention of disease. Would it not be better to ask the patients about the circumstances which led to their illness rather than concentrating exclusively on the precise nature of that illness? If we did, is it not likely that we should learn something more about prevention? The Ministry presumably wants to find out something about why married women get ill so frequently. Why doesn't it ask my coalman? In his office he has a notice: "The wife works seven days a week—I work five." Suppose the Ministry were to ponder for a time on that notice and then ask itself, "Are our statistics really useful?" On the other hand, if Dr. Hartston did start "calling all lumbagos" (and got a reply from all neurotics) would he really be so sure exactly what to tell them to do to prevent further attacks? And would they really want to do it?

There is another question which has always intrigued me: In an epidemic of influenza, why does not everyone catch it? Do we know the answer, and would it not help us if we did? The trouble as I see it, Sir, is that only those of us have time to think who are removed from reality—that is, from general practice. (As the train bears me away to rural Sussex I can cogitate over the articles in your *Journal* in a way that was impossible when I was tearing back to do a surgery in south-west London.) The consequence is that attempts at preventive medicine are being made in a sort of vacuum—hence their ill-success.

An intelligent community that really wished to improve its health would put its best doctors into general practice and give them sufficient leisure to research into the problems of real life. It is doubtful whether we are an intelligent community, but is not this an opportunity for somebody—perhaps the Rockefeller Foundation—to subsidize a few selected general practitioners to do some research? We might then get some useful results.—I am, etc.,

East Hoathly, Sussex.

F. GRAY.

Hyperinsulinism Due to Islet-cell Adenoma

SIR.—As a mere student, I hesitate to trespass on the pages of the *Journal*. However, I feel it only just to point out that the historical summary prefacing Dr. W. G. Duncan Murray's article (March 26, p. 521) on islet-cell adenoma is not quite accurate in one respect. Dr. Murray states that the first operative cure for this condition was reported by Carr and his colleagues in 1931.¹ It is generally acknowledged in the literature that the first operative cure preceded this by two years, being reported by Howland, Campbell, Maltby, and Robinson in 1929.² This case was reviewed, together with three others, in 1939 by Campbell, Graham, and Robinson,³ the patient being alive and well after ten years. Carr and his colleagues do in fact acknowledge this precedence in the preamble to their original paper. I hope this gentle reminder will not be taken for quibbling. It is rather important that this case should be remembered, as the follow-up is the longest recorded.—I am, etc.,

Manchester, 15.

J. BRYAN EAGLES.

REFERENCES

- ¹ *J. Amer. med. Ass.*, 1931, 96, 1363.
- ² *Ibid.*, 1929, 83, 674.
- ³ *Amer. J. med. Sci.*, 1939, 198, 445.

Delayed Admission to Hospital

SIR,—In your leading article (March 26, p. 532) two instances were given illustrating the difficulty which at present exists in gaining immediate admission for even acute surgical emergencies to hospital. But the circumstances differed considerably in the two cases you quoted.

The first, that of a patient with tuberculosis who developed a superimposed and presumably non-tubercular condition, belongs to a problem group which most certainly existed long before the appointed day. In the past there was the same difficulty in accommodating the acute case who in addition had open tuberculosis. Sanatoria, if perchance there was a vacant bed, often had no facilities for operative treatment. General hospitals, on the other hand, were loath to admit cases of open tuberculosis to their wards, and some hospitals had a regulation that such cases should not be admitted. The solution to this problem would be to reserve in each area a number of beds, and a very small number would suffice, at one hospital where facilities exist both for emergency (i.e., operative) treatment and for isolation of the patient.

The second case you described revealed an even more serious state of affairs. As stated later in your article, "... before July, 1948, any hospital, however hard-pressed, always managed to find room for someone in need of life-saving medical or surgical treatment." I cannot believe that the refusal of such emergencies is a common occurrence throughout the country. Certainly in the smaller towns with one, or at the most two, general hospitals the difficulty of gaining admission would not often arise. In such towns, even since July, 1948, the "individual" responsibility of the hospitals continues—it must, for there is no alternative.

The "group principle" will lead to a measure of better co-ordination between hospitals in some ways, but at the same time it inevitably weakens the sense of "individual responsibility," which now becomes diffused into "group responsibility." In view of the difficulties which the Emergency Bed Service is experiencing it might be wise to reconsider the proposed bed bureau in other regions.

Your article concluded by stressing the urgent need for the "quick re-establishment of authority to secure the immediate admission into a State hospital of an acutely ill person," but did not suggest who would wield such authority. Earlier you referred to the authority of the relieving officer under the Poor Law and Local Government Act. Surely it is not proposed that a similar authority should be re-established? Moreover, it was seldom that the relieving officer had to deal with the acute emergency; rather he requested admission for aged or chronically ill patients, and on grounds more often social than medical or surgical.

This raises yet another problem, and one which is common in all regions, the difficulty of providing sufficient accommodation for the aged requiring hospital treatment. A large percentage of the cases in the old poor law institutions which have now been taken over as State hospitals are ambulant and no longer in need of hospital treatment. If these cases could be found accommodation outside the hospitals, much-needed beds would immediately be available for the aged who require and are waiting for treatment. It almost seems that the authority to admit should in this instance be reversed to "the authority to discharge."

Local authorities have now been given the task of providing accommodation for the aged in need of care and attention. But, bereft of their institutions, hampered by covenants and restrictions in their efforts to convert existing large houses, and apparently without priority to build hostels, they have an unenviable task. Certainly it will take several years to provide the much-needed hostel accommodation. Until it is provided the waiting-lists of the aged and chronic sick will continue. The re-establishment of authority will not solve this problem. —I am, etc.,

Nottingham,

WILLIAM MORTON.

SIR,—If only to stress the importance of your leading article (March 26, p. 532) I wish to record a recent experience. While acting as locum to a doctor in X, I recently saw on a Saturday morning a boy aged 3 years—in his third week of whooping-cough—suffering from acute appendicitis. I rang up Hospital

A, who stated that they had no accommodation for a case of infectious disease and referred me to Hospital B, where there are cubicles. On requesting the child's admission, I was told that there was no bed. On my inquiring for the emergency bed service I was informed that no official was present—it then being after 12 noon. I then tried Hospital C, where I again drew a blank. Finally I telephoned Hospital B again, and it was not until I suggested ringing up the Ministry of Health that a bed was found.

The child was operated on the same afternoon and the appendix was found to be gangrenous. The patient is now at home convalescing. Had I not persisted in my demand for a bed I have little doubt that the boy would have died. An emergency service that does not function between noon on Saturday and 9 a.m. on Monday is a farce.—I am, etc.,

M. B. REICHWALD.

Diagnosis of Early Pulmonary Tuberculosis

SIR,—Many experienced general practitioners will agree with Dr. Reginald Fisher (April 2, p. 591) that the selection of patients to be referred to the local tuberculosis officer is no easy matter, and there can be no doubt that the great majority of tuberculosis clinics have neither the staff nor the other facilities for dealing with all those who should be referred to them.

It was in order to meet this difficulty that in January, 1948, a miniature radiography unit was installed at the Cardiff tuberculosis clinic, to which practitioners were invited to send any patient with symptoms of ill-health, not necessarily suggestive of pulmonary tuberculosis. Those with more definite symptoms were referred to the clinic in the usual way. This scheme has proved a success in Cardiff and has led to the discovery of a considerable number of early cases of tuberculosis as well as other chest diseases.—I am, etc.,

Cardiff.

S. H. GRAHAM.

The Thymus in Meningococcal Septicaemia

SIR,—I think that Drs. Peter Turner and R. V. Dent (March 26, p. 524) will allow me to comment on the fleshy thymus glands which were found in their two post-mortem cases of meningococcal septicaemia. I am sure that it is a misinterpretation which leads them to state that "the rapid course of the illness makes it evident that the (thymic) enlargement preceded infection." On the contrary, the rapid course of the illness did not give the thymus gland time to undergo the gross involution which occurs during the course of any serious illness lasting more than a few days.

In Case 3, a girl of 15, the thymus, which is considered to be enlarged, weighed 42 g. This is well within the range of 13 to 50 g. given by Boyd¹ for the age group 10–15 years. The latter figures are based on forty cases within this age group in which death, resulting from violence, occurred within twenty-four hours. Histologically the thymus glands in Cases 1 and 3 appeared normal, and, in view of what I believe to be normal weights also, I see no evidence to suggest that the thymus plays any part in meningococcal septicaemia. In conclusion, may I quote from Boyd's paper a sentence which sums up the position admirably: "Since most subjects who come to autopsy have been ill for more than three days, the pathologist's eye becomes adjusted to the involuted thymuses, so that the prominent thymus of the healthy, well-nourished subject appears enlarged to him."—I am, etc.,

London, S.E.5.

REFERENCE

G. F. M. HALL.

¹ *Amer. J. Dis. Child*, 1932, 43, 1162.

Cough Fracture in Pregnancy

SIR,—In the light of the interest stimulated by the recent report of four cases by Drs. J. W. Paulley, D. H. Lees, and A. C. Pearson (Jan. 22, p. 135), the following case may be of interest.

A woman of 36, who had been delivered of her third child three days previously, was seen at home on April 29, 1948. She gave a history of recurrent bronchial attacks during the preceding two years. One week before confinement she developed a severe cough, and three days later a sharp pain of pleuritic type in the left chest, and a little fever. Her side was strapped, and the confinement

proceeded normally. I was asked to see her, in view of the possibility of a tuberculous infection and its immediate danger to the infant. On examination, she was afebrile and did not appear ill. Her chest contained a number of bronchial signs; she had relatively weak air entry on the left, and was rather tender over the left base, with the most sensitive spot below the left scapula.

A small portable x-ray machine was taken out to her cottage, which was fortunately supplied with electricity. The film was considered normal and the case proceeded favourably, although the pain persisted in the left chest for some time. A check-up x ray was done three months later, which showed callus formation on the left 7th and 8th ribs in the posterior axillary line. Reinspection of the original film showed a suspicious line at the site of the lesion in the 8th rib, and there seems no doubt that the onset of the original "pleurisy" was in fact occurrence of the fractures.

This case shows the features mentioned by Drs. Paulley, Lees, and Pearson—a chronic cough in late pregnancy causing a fracture of the lower ribs on the left. It also suggests that such cases may be missed by a routine chest radiograph, which does not readily demonstrate a recent fracture without displacement.

My thanks are due to Dr. I. Speedy Bertin for the clinical features, and to Mr. A. F. Keith for the radiography in difficult circumstances. —I am, etc.,

Exeter,

G. E. ADKINS.

What is Normal?

SIR,—One of the early tasks of Dr. Clifford Allen's institute of psychosexual diseases (March 26, p. 547) should be the study of normal sexual behaviour. Kinsey has shown how ignorant we are of the conduct of normal people, and surely more work is needed along these lines, especially in this country, before we can really decide what is abnormal. For example, one might have been inclined to call homosexuality abnormal, but if Kinsey's statement that 37% of all American males have homosexual experience after adolescence (and more before) is true, that is hardly possible.

Having obtained a clearer idea of what is sex abnormality, one can then decide more rationally what should be regarded as sex delinquency, for abnormality and delinquency are quite distinct (homosexuality is probably not abnormal but certainly is illegal). The report of the joint committee of the B.M.A. and the Magistrates' Association (Supplement, March 12, p. 135) recommends an inquiry into the advisability of altering the law to allow homosexual conduct between consenting adults. But your comment (March 12, p. 446) that this and other proposals are "highly controversial," and that "many may think that any legal alterations which allow the actual or potential offender to think that law and order are weakening in his favour is inappropriate at a time when crime in general is becoming a grave menace to social security," is a little surprising. Surely homosexuality can hardly be regarded, along with, say, housebreaking, as a grave menace to social security? It is just such a comment as yours that makes one feel that it is so important to withdraw the term "criminal" from conduct which is essentially normal, and to restrict it to behaviour which involves another unwilling or under-age person.—I am, etc.,

London, S.W.4.

DAVID PYKE.

Health Regulations for Air Travel

SIR,—I have to draw your attention to the article by Air Commodore J. Kyle (Dec. 25, 1948, p. 1115), which tabulates a list of requirements for travellers from England to places on the routes operated by the British Overseas Airways Corporation.

For passengers from Southampton to Hong Kong it is erroneously stated in the table referred to above that cholera and plague inoculation certificates are required. For your guidance I must add that in so far as Hong Kong is concerned cholera inoculation certificates are only required from passengers who originate or pass through ports declared infected with cholera by Hong Kong.

In so far as plague is concerned your attention is also invited to the World Health Organization weekly fasciculus (1948, 21, No. 15, p. 219), which contains the following passage: "The following information was received from the port health officer, Hong Kong, on April 2, 1948. (1) Ships

and aircraft from ports declared infected against plague are subject to the following measures: Medical inspection, deraization of vessel or aircraft before and/or after discharge of cargo, if considered necessary after inspection of vessel or craft and its cargo. (2) Passengers from plague-infected ports are *not* required to produce inoculation certificates against plague."

I am therefore to request that you will be so good as to make this known to all concerned. I should add for your information that the local offices of all airlines operating from the United Kingdom to Hong Kong have been so informed.—I am, etc.,

I. NEWTON.

Director of Medical Service.

Hong Kong.

** Air Commodore Kyle gives us the following information: An aircraft lands at airports in six or eight countries *en route* to the Far East, and if only one of these countries enforces quarantine restrictions all travellers going beyond the airport in that country must produce a certificate of inoculation, either on the way out or on the way back. Air passenger to Hong Kong pass through Augusta, Alexandria, Bahrain, Karachi, Calcutta, Rangoon, and Bangkok. Of the two diseases referred to by Dr. Newton a certificate of inoculation against cholera is required at Bangkok from passengers who have passed through Calcutta and Rangoon on the outward journey and a certificate of inoculation against plague is required on the homeward journey at Alexandria for passengers who have come from or passed through Bangkok.—ED., B.M.J.

Vesico-vaginal Fistula

SIR,—As none of your readers have responded to the invitation of Dr. D. T. R. Evans (March 12, p. 455) for information regarding the demonstration of the site of vesico-vaginal fistula by the injection of air, may I recount my experience in connexion with a similar problem.

About the year 1903, when I was trying to make myself familiar with the use of the cystoscope, I set out to demonstrate the site of a vesico-intestinal fistula. I imagined that this could easily be done by injecting coloured fluid into the rectum and observing it flowing through the fistula into the bladder, but soon found that this was fallacious and that the necessary information could not be obtained by this means.

During the examination air was unintentionally pumped into the rectum from an empty Higginson's syringe and at once found its way through the fistula and bubbled into the solution in the bladder, disclosing the site of the fistula and proving a most satisfactory method of localization. Since that time I have every now and again employed the method and can recommend it as being simple and valuable.—I am, etc.,

Taplow, Bucks.

G. GREY TURNER.

Observation of Children's Hearts

SIR,—I was glad to read Dr. R. Kemball Price's study (March 26, p. 515) of 200 cases of heart disease in children, started in his cardiac clinic 18 months ago. Each case was examined clinically and by electrocardiogram and by cardiography, so that five cases occupied an afternoon. This is excellent as a research method, but in 1941 I advocated a long-term plan by which in each routine school medical examination the heart angle was measured in every child. This can be done in two minutes, as only a tape measure is needed. The angle should remain constant throughout school life; if not, the cause of its increase must be sought (for prophylaxis) in valvular defect, rheumatic or other infections, athletic strain, or emotional stress. Unfortunately, in wartime none of the heart angles in my paper could be measured again in the following years; a long-term series is badly wanted.

If the apex beat moves outwards the heart is enlarged or distressed, but this linear distance increases as the child grows. Hence I measured it as an angle which does not change with growth. The simple method is to call the mid-sternum 0° and the mid-axilla 90° (one-quarter of the chest girth). In health the heart angle, measured from the left margin of the apex beat, should not exceed 45° in a child or adult. For instance, if the chest girth is 36 in. (90 cm.) the mid-axilla is 36 ÷ 4 = 9°, 90°—and the apex beat should not be more than 4.5 in

11.25 cm.)—i.e., 45°—from the midline. Thus the heart angle is the apex beat distance divided by the mid-axilla distance multiplied by 90°. Calculations can be saved by the chart in my paper, or by better ones obtained at H. K. Lewis and Co., 3ower Street, London, W.C.1. or I can send my reprints.

An enlarged heart angle is a clinical abnormality with a cause which demands treatment. It may or may not indicate an enlarged heart. Thus in effort syndrome I have always found the angle increased, but a telerradiograph shows no enlargement. This instructive discrepancy is mysterious, but Darwin once remarked that "in fear the heart knocks against the ribs"—owing to its emotional, slapping overaction.

I earnestly hope that doctors who examine children regularly, especially in boarding schools, will keep long-term records of the heart angle both in sickness and in health. I am confident that the results will be rewarding at the time and specially valuable when published after two or three years. Clinical reports are always far more instructive when the fourth dimension (time) completes them—as in my paper and as Dr. Price plans to do in greater detail.—I am, etc.,

Beverley, Yorks.

F. C. EVE.

REFERENCE

1 *Lancet*, 1941, 1, 659.

Nurses and Nursing Aides

SIR,—It is quite clear that if the sick are to be nursed in hospital this cannot be done by a limited number of highly trained persons, however devoted and competent they may be. The opportunities open to academically gifted young women, especially in teaching and the social services, are now so numerous that we can no longer expect to obtain anything like an adequate number of them for nursing. We must therefore adopt measures on the lines suggested in the paper of Dr. E. B. Brooke and Mr. J. P. Wetenhall (March 19, p. 491): nor do I think that the profession of nursing will in any way suffer from this, but it will, I believe, gain increased recognition and prestige.

It is essential, however, that the ancillary worker—nursing aide or whatever her designation may be—shall be given a status and dignity in accordance with the important social duties she is carrying out. She must, as your contributors state, be in alignment with the ward nursing team. She must not come to be regarded as a nurse's menial or orderly. The rough-and-ready suggested division of nurses' duties between those ministering to the patients' comfort and those assisting the doctor is not sufficient for this purpose, nor, I imagine, was this intended.

We are at present considering the problem of "breaking down" nursing duties, much as has been done for many industrial processes; and we hope, with the guidance of experts in such problems, to be able to reach such a division as will leave with the ancillary worker such real nursing duties as will enable her to be emotionally satisfied and not frustrated by prohibitions (this is a vital matter), and also to make her help of value to the fully trained nurses, so that the two groups can work in the wards alongside each other, respecting and respected.

There will, of course, be difficulties in doing this, but it is to be hoped that the nursing authorities will recognize the urgent need for some such scheme and will make no difficulties about supporting it on the supposition that the status of the trained nurse will suffer. It will, in fact, be enhanced, and the sick will have some chance of being "nursed" in hospital instead of, as is too often the case at present, being "attended to as far as possible" at home.—I am, etc.,

St. Albans.

W. J. T. KIMBER.

Taking Children's Temperatures

SIR,—May I round off this topic with a few comments? Some of your correspondents have disagreed with the contention of my letter (Dec. 18, 1948, p. 1078) and of Dr. A. Cyril Wilson's (Feb. 12, p. 284) that there are objections to the routine use of rectal thermometers for young children.

Dr. Lise Gellner (March 26, p. 547) dismisses with "amusement" the belief that early events such as this may later cause psychiatric disorders, apparently holding as proof the fact that Continental mothers all interfere with their babies in this way.

Yet there was a time when Continental mothers as well as English ones cheerfully fed children upon rachitic diets, quite unaware of subsequent eventualities. The risk of disturbing a growing personality is no less serious than the risk of disturbing bony development.

Dr. A. A. MacDougall (March 12, p. 457) does not see that it interferes more to put a thermometer into the rectum than into the mouth or axilla. But it is natural for objects to go into the mouth, not into the rectum. I doubt he would maintain this standard had he seen children from a "modern" school playing "doctors" with imaginary rectal thermometers. Children can be consistent. Nor can I agree with him that vaginismus appears only in the psychopath. Out of 159 consecutive cases of vaginismus (most of them severe, being sent in consultation) no less than 56 actually remember that rectal interference was *de rigueur* in the nursery. Such a proportion is not likely to be chance; and I think others dealing with these cases should find a similar percentage, particularly if they remember to enquire about local treatment for threadworms or can ask the mother about soap-sticks in infancy.

Whilst no one suggests that the majority of children so treated suffer ill consequences, clearly one cannot foretell when lasting impressions may occur. During this correspondence I have had personal letters from psychiatrists and others confirming these views. I therefore still maintain that those in charge of infants' wards should not consider that rectal interference is necessarily a trivial or a harmless practice.—I am, etc.,

London, N.W.1.

JOAN MALLESON.

POINTS FROM LETTERS

Is Influenza Epidemic?

Dr. A. H. GREGSON (Cromer) writes: With reference to the annotation entitled "Is Influenza Epidemic?" (March 12, p. 448), I apologize for the dogmatism of the following, but it is a purely clinical observation. There seems little doubt that the present influenza epidemic consists of three separate types—(1) and (2) harmless, (3) potentially fatal. (1) The patient presents with aching in the limbs and nausea, with a temperature of up to 100° F. (37.8° C.) and perhaps headache and vomiting. This responds in a few hours to intestinal antiseptics such as benzyl benzoate, or iodochlorhydroxyquinoline 0.25 g. thrice daily. (2) "Classical" influenza, with aching limbs, head, and trunk, some photophobia, pyrexia to 103° F. (39.4° C.), and no chest signs. This can be treated according to taste. (3) A dangerous "bronchial" influenza, which is really a bacillary bronchopneumonia plus aching limbs, head, and trunk, temperature of 99°–103° F. (37.2°–39.4° C.), and very often a true vertigo of labyrinthine type but not often showing nystagmus. In its early stages this type may not on superficial examination show any such signs, but the following test, first described I think by Hughes in 1842 (*Guy's Hosp. Rep.*, 1842, 7, 298) settles the matter: "The patient gives a forcible cough and an immediate deep inspiration through the open mouth. At the end of inspiration there is a mixed 'whiffing' sound with momentary bronchial breathing and sometimes a few momentary bronchi." In my own experience of this test over some years a faint "plop" at the end of the forced inspiration is an even earlier sign. Either result means the same thing—incipient broncho- or lobar pneumonia.

Psychiatric Indications for Abortion

Dr. A. HARGREAVES (Rickmansworth, Herts) writes: In the letter of Dr. Ellis Szungo (April 2, p. 591) it is stated in reference to the psychiatric indications for abortion, "Obviously they have no football pools in Switzerland." This is incorrect. There is a well-organized pool, the surplus from which is devoted to the benefit of athletic and sporting organizations. . . . Whether this detail affects the validity of his argument I am not sufficient of a psycho-gynaecologist to determine.

Diagnosis of Early Pulmonary Tuberculosis

Dr. E. A. WOOD (St. Leonards-on-Sea, Sussex) writes: I sympathize with Dr. Reginald Fisher (April 2, p. 591), and perhaps my suggestions as to which patients to examine by x rays, briefly reported in the *Journal* of Sept. 27, 1947 (p. 487), will be more helpful. He will not forget, I am sure, to have sputum examined when there is any; though a "negative" should not preclude x-ray examination indicated on other grounds.

Dr. WALTER WYNNE died at Northiam, Sussex, on March 7 at the age of 81. He was born at Ruthin, North Wales, in May, 1867, and received his medical education in Edinburgh, graduating M.B., C.M. in 1888. In the early 'nineties he started practice at Northiam, and remained there for the rest of his life, retiring in 1934. Dr. Wynne was a fine type of general practitioner and was much loved and respected over the wide area of his practice. He was fond of shooting, fishing, cricket, tennis, and all country things, and he had a great sense of humour. In 1935, following the shock of the death of their younger daughter after an operation, Mrs. Wynne and he went on the world tour arranged in connexion with the B.M.A. meeting in Melbourne. He took an active part in all the scientific and social aspects of the tour. Not long after his return he had a further blow in the death of his younger son. For many months Dr. Wynne suffered from a distressing paralytic condition, which he bore with great fortitude, only taking to his bed on the day of his death. The sympathy of his colleagues and friends will be extended to his widow and to his surviving daughter and son.—G. L. B.

Dr. ROBERT TENNANT BRUCE died on March 14 after a painful illness lasting more than a year, borne with quiet and uncomplaining fortitude. He was born in 1872 in Edinburgh, the son of the late Dr. Robert Bruce. Educated at Edinburgh Academy and Edinburgh University, he graduated M.B., C.M. in 1894, and after an assistantship in general practice he joined the late Dr. Gowan as a junior partner at Broughty Ferry, Angus. A few years later he came to London, and in 1903 he proceeded M.D. He then practised at Thame, Oxfordshire, where his skill and kindness soon became well known. In 1914 he joined the R.A.M.C. and served with a field ambulance in the 51st Division in France. Later he did a spell of duty as a regimental medical officer, and was taken prisoner. Later still, after his release, he commanded an ambulance train in France. After being demobilized he retired from practice and settled in London, where he was able to indulge in his many hobbies—climbing, travel, literature, carpentry, photography, chess, bridge, and croquet. In 1903 he married Caroline Taylor, daughter of David Wybrants, of Dundee, who survives him; to her the sympathy of Robert Bruce's innumerable friends will be extended.

Dr. PHILIP NEWMAN GRINLING died at his home in Sheffield on March 14 at the age of 41. He graduated M.B., B.S. at Armstrong College, Durham, in 1930, and was soon afterwards appointed house-surgeon and later house-physician to the Royal Victoria Infirmary at Newcastle-upon-Tyne. Following a period as an assistant he settled in general practice in the Firth Park district of Sheffield. There he rapidly built up a large practice which he conducted for the rest of his brief life. He was remarkably successful in the new sphere of industrial medicine, in which he had a niche of his own, particularly with the largest steel concern in Sheffield. He gave a great deal of time and energy to the St. John Ambulance Association. If he thought anything worth doing at all he expended all he had in him upon it, otherwise he left it alone. He was a member of all the important local B.M.A. committees in turn, and was secretary of the local public relations committee and a member of the Yorkshire Branch council. He never sought popularity, and in fact was courageous in his defence of unpopular issues and his lack of tolerance for any form of muddled thinking. Yet as a friend he was ever kindly and true as steel. It was painful for those who were his friends to see him struggling in recent years, when a never robust constitution was letting him down badly. We shall miss him greatly.—W. E. D.

The Services

Colonels (Honorary Brigadiers) F. R. Sandford, C.B.E., M.C., T.D., and G. J. V. Crosby, C.B.E., T.D., R.A.M.C., T.A., have been appointed Honorary Physicians to the King, in succession to Colonels H. F. Humphreys, O.B.E., M.C., T.D., retired, and R. Errington, C.B.E., M.C., T.D., retired.

Surgeon Commander G. A. Mason and Surgeon Lieutenant-Commander C. P. Nicholas, R.N.V.R., have been awarded the R.N.V.R. Decoration.

DANGEROUS DRUGS IN CARS

The case is reported¹ of a doctor who was fined £5 for failing to keep dangerous drugs in a locked receptacle. They were left in his locked car, which was stolen. When the case was heard on March 11 the prosecution did not dispute that the car was locked; it was stolen from the municipal car park while the doctor was at the cinema. When it was recovered the prosecution, an open leather case containing drugs was found on the rear seat. Counsel for the defence disputed the view that a locked car is not a receptacle and said that if the prosecution's contention was upheld it would place the whole medical profession in a most difficult position. The stipendiary magistrate, Lord Ilkeston, said in his judgment: "In my opinion a locked car is not a receptacle within the meaning of the word as used in paragraph 4 (2) of the Dangerous Drugs Regulations, 1948." He agreed to state a case.

When the Dangerous Drugs Regulations, 1948, were published a Home Office notice accompanying them² stated that the Secretary of State is advised that a car cannot be regarded as a receptacle. The law is uncertain on how a doctor may leave dangerous drugs in an unattended car. It would seem to be necessary for him to lock both the car and the case in which the drugs are kept. Probably the locked case would be regarded as a proper receptacle and the locked car as a proper place for the receptacle to be kept, though it is uncertain what view the courts would take of this. To be on the safe side doctors would be well advised to attach the case to the car by means of a padlock and chain, and leave the car locked. It is a sufficient precaution to leave a locked case in an unlocked car.

¹ Daily Telegraph, March 12, 1949.

² British Medical Journal, 1949, 1, 78.

Universities and Colleges

UNIVERSITY OF ABERDEEN

At a Graduation Ceremony on March 31 the following medical degrees were conferred:

M.D.—R. G. Simpson, *G. Sangster, P. H. Beattie.
M.B., Ch.B.—A. R. Adams, Mary P. H. Lewis, A. Nicol, N. A. Regan, Joan Smith, R. F. F. Steven, J. A. Tallack.

* With honours for thesis. * With commendation for thesis.

UNIVERSITY OF EDINBURGH

Dr. Douglas Guthrie, Lecturer on the History of Medicine, will deliver a series of lectures entitled "The Historical Approach to Medicine" in the Physiology Lecture Theatre, University New Buildings, Teviot Place, Edinburgh, on May 2, 9, 16, 27, and 30 and June 6, 13, and 20, at 5 p.m. The course is open to all matriculated students and graduates of the University, and to members of the University staff, without fee. Others may attend on payment of entrance fee of 10s. in lieu of the matriculation fee.

UNIVERSITY OF LONDON

The degree of D.Sc. has been conferred on Frederick Robert Selt, Ph.D., M.D., Reader in Bacteriology at Middlesex Hospital Medical School.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS GLASGOW

The following have been admitted Fellows of Faculty *qua* Physicians: J. F. Smith, M.D., R. A. Blair, M.B., J. C. Crie, M.B., S. K. Gang, M.B., G. H. V. Keshani, M.B., Margaret M. O'Hare, M.B., C. Ross, M.B., I. A. Short, M.B., Mary D. Smith, M.B., R. A. Stewart, M.B., F. H. Stone, M.B., W. O. G. Taylor, M.B., R. Thomson, M.B., J. D. Woods, M.B.

The following have been admitted Fellows of Faculty *qua* Surgeons: A. A. Bonar, M.B., E. Camcron, M.B., R. K. Dewar, M.C.P.&S.O. J. Ferrier, M.B., J. D. Fraser, M.B., T. B. Gardiner, M.B., J. Jalundhwala, M.B., G. Johnstone, L.R.C.P.&S.Ed., M. T. Khale, M.B., D. MacLeod, M.B., D. A. Macpherson, M.B., A. L. Mort, M.B., J. F. P. Mullins, M.B., R. M. Nadkarni, M.B., T. R. Richmond, M.B., N. T. Sampanthan, M.B., M. Shaw, M.B., R. Sinha, M.B., G. Smith, M.B.E., M.B., R. A. Tennent, M.B., M.B., J. K. Watt, M.B.

VINESTHENE

butyl di-n-butyl ether

is an inhalation anaesthetic indicated especially for short anaesthesia.

It is particularly useful for children and is administered most economically by the closed method.

With 'Vinesthene', induction is rapid, anaesthesia is smooth and muscular relaxation is good.

The absence of excitement and struggling during the induction stage is a valuable factor when this anaesthetic is used for dental procedures and in Hospital Out-Patient Departments.

Compared with ethyl chloride, induction with 'Vinesthene' is much easier, there is not the same tendency to breath-holding or muscle spasm, and incidence of post-operative sickness would appear to be much less.

When the open method of administration is advocated

'Vinesthene' is best **VAM** trade mark brand
used in the form of

which is a mixture of 1 part of 'Vinesthene' and 3 parts of ethyl ether.

This gives a more even plane of anaesthesia than 'Vinesthene' and overcomes the disadvantages of open ether, particularly enabling a greater degree of relaxation to be obtained.

OUR MEDICAL INFORMATION DIVISION WILL
BE PLEASED TO SEND A COPY OF THE
MEDICAL BOOKLET 'VINESTHENE'
ON REQUEST.



Adequate supplies of these two products are now available.

'VINESTHENE' in containers of 25 c.c.

boxes of 6 x 3 c.c. ampoules.

boxes of 6 x 5 c.c. ampoules.

and

'VAM' in containers of 4 oz.

manufactured by **MAY & BAKER LTD**

distributors:

PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD. DAGENHAM

47233n

The proteolysed extract of liver for parenteral use

NEO-HEPATEX

PROTEOLYSIS—Original research in the Evans laboratories has shown that a better liberation of active principles from protein complexes, and an enhanced therapeutic potency can be obtained by the application of controlled proteolytic enzyme digestion to liver in the manufacture of anti-anæmia preparations.

POTENCY—Each batch is clinically tested before issue to ensure that a dose of 2.0 c.c. every fourteen days will restore the blood picture to normal in the average uncomplicated case of pernicious anæmia. A maintenance dose of 2.0 c.c. per month is usually adequate.

Made in England by

EVANS

Further details sent on request

EVANS MEDICAL SUPPLIES LTD

Liverpool and London

Overseas Companies and Branches:

AUSTRALIA

BRAZIL

EIRE

INDIA

ISRAEL

SOUTH AFRICA

SOUTH-EAST ASIA

THE NATIONAL HEALTH SERVICE

means that your insurances need
reconsideration. The

MEDICAL SICKNESS SOCIETY

can give you advice and is intro-
ducing special policies to meet the
needs of the Doctor in the Service.
For particulars please write to

**THE MEDICAL SICKNESS, ANNUITY
LIFE & ASSURANCE SOCIETY, LTD.**
7, Cavendish Square, London, W.1
(Tel.: LANgham 2992)

referring to this advertisement

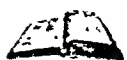
GREEN CORN AT HARVEST TIME

EVERY practising physician has
observed the increase in what may
be termed "the cult of sub-normal
health,"—particularly among young
girls.

Usually the positive signs are few.
They may well be psychogenic.

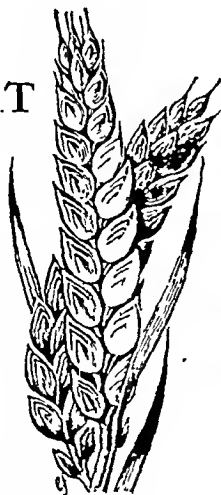
If the presenting symptoms are
debility, with lethargy, constipation,
lustreless hair, adenoids and catarrhal
disorders an iodine-deficient thyroid should come high on the
list of differential diagnoses.

Adequate iodine intake even in known goitre areas would
be assured by the addition of iodine to table salt, as recom-
mended by a subcommittee of the Medical Research Council.
Medical men are invited to write for **WORLD GOITRE
SURVEY**, which presents a summary of world knowledge
on the use of iodine in the treatment of goitre and its allied
conditions. **WORLD GOITRE SURVEY** will be sent free
of charge to any interested medical practitioner.



Iodine Educational Bureau

19 STONE HOUSE, BISHOPS-GATE, LONDON, E.C.2



Once again you can prescribe

VICHY- CELESTINS

WORLD-FAMOUS FRENCH SPA WATER

Bottled as it flows from the Spring

Holding an undisputed place in the
therapeutics of rheumatism and
arthritis, as well as in disorders of
the digestive and urinary tract,
Vichy-Celestins is once more
available in clinical practice.



Sole Agents in the United Kingdom:
INGRAM & ROYLE, LTD.,
12, Thayer St., London, W.1



CALGITEX

SODIUM ALGINATE SOLUTION AND CALCIUM CHLORIDE SOLUTION IN THORACIC SURGERY

EXTRAPLEURAL PNEUMOTHORAX would probably have a
larger place in collapse therapy were it not for the complica-
tion of haemorrhage into the space.¹ In this connection, the
technique of using Sodium Alginate Solution in conjunction
with Calcium Chloride Solution has proved very successful in
arresting haemorrhage. Its application is easy and no un-
favourable reactions or toxic effects have been noted. The
solutions are compatible with penicillin and other antibiotics.

FOR EXTERNAL USES the Solutions are invaluable for
arresting haemorrhage in minor cuts or wounds—when
applied they form a firm transparent film which is absorbed
during healing.

¹ Thorax, Vol. 5, No. 4, Page 233, Dec., 1948

ALL CALGITEX ALGINATE PRODUCTS ARE
HAEMOSTATIC · ABSORBABLE · SOLUBLE

Manufactured by

MEDICAL ALGINATES LIMITED
WADSWORTH ROAD, PERIVALE, MIDD.

Sole Agents: **CHAS. F. THACKRAY LTD.**, Park Street, Leeds 1,
and 38 Welbeck Street, London, W.1

ROYAL COLLEGE OF SURGEONS IN IRELAND

The following candidates received the Fellowship of the College on April 1, having passed the examination on March 10: J. S. Martin, M. S. Strong, J. C. de R. Sugars.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At a meeting of the Council, held in the College House on March 26, with the President, Sir William Gilliat, in the chair, Miss Josephine Barnes was appointed to serve on the Population Investigation Committee of the Eugenics Society. Mr. R. C. Thomas was appointed to represent the College on the Council of the Queen's Institute of District Nursing.

Harold Renton (South Africa) was elected to the Membership.

The following were elected to the Fellowship: Doris C. Bates, R. B. Charlton, K. M. K. Duff, M. D. A. Evans, J. D. S. Flew, B. Gilbert, J. W. Johnstone, W. I. C. Morris, Margaret M. Nolan, H. L. Sheehan, D. F. Standing, C. K. Vartan, W. Waddell, W. W. Wilson, R. G. Worcester.

A prize for an essay on the "Physiology or Management of the Third Stage of Labour" was divided between Dr. Jean R. C. Burton-Brown (Oxford) and Dr. David A. Fletcher Shaw (Manchester).

Medical Notes in Parliament

Analgesia in Childbirth

Lady TWEEDSMUIR asked Mr. Bevan on March 31 at what date he asked the Medical Research Council to solve, as quickly as possible, the problem of finding a safe and effective analgesic agent for midwifery.

Mr. BEVAN replied that there was no need to make that request, because the Medical Research Council, as he was aware, took into consideration the recommendation made in this matter by the Working Party on Midwives and had decided to set up a committee in accordance with that recommendation. He hoped that before long a much cheaper and more easily transportable apparatus would be produced. That would not be allowed to interfere with provision of transport for midwives, which was proceeding at an accelerated rate. He had impressed on local authorities that they should not delay provision of apparatus in the hope that a lighter apparatus would become available.

Dr. SEGAL asked what was the lowest cost of apparatus for the administration of trilete analgesia in obstetrics.

Mr. BEVAN answered that there were several types of apparatus, all of which were portable. The lowest price of the types on the market was, he understood, about £7. The suitability of existing apparatus for use by midwives in domiciliary cases would be among the matters investigated by the expert committee appointed by the Medical Research Council. It was not yet certain that it was safe for midwives to use the trilete apparatus without assistance.

Replying to Mr. PETER THORNEYCROFT, Mr. BEVAN said there were eight county or county borough councils in whose areas no analgesia was being used in the domiciliary midwifery service. They were: Merioneth County and the county boroughs of Bath, Burnley, Chesler, Dudley, Merthyr Tydfil, Nottingham, and St. Helens.

Mr. WOODBURN said on April 5 that expert medical opinion was not yet agreed on the unsupervised use by midwives of any existing trilete apparatus. The Medical Research Council had decided to set up a committee to investigate the problem.

Mr. BEVAN on April 7 told Lady TWEEDSMUIR that he could not yet say when he would receive the final recommendations of the Medical Research Council on the latest types of analgesic drugs and apparatus suitable for use by midwives alone. Although existing methods would no doubt be reviewed by the committee which had been set up, the question remitted to the Medical Research Council by the Working Party on Midwives was on the possibility of devising improved methods. This was a relatively long-term project involving the initiation and conduct of actual research work. Quick results were not to be expected.

Number of Patients

Mr. BOSSOM asked on March 31 what estimate Mr. Bevan had made for the purposes of the National Health Service of the number of patients which a doctor could reasonably be expected to see in a day or an hour.

Mr. BEVAN said the number of patients a doctor could attend varied according to the circumstances of his practice. No

precise estimate was possible. The figure of 4,000 was the maximum which the British Medical Association agreed that any doctor should have upon his list, but there were doctors with lists of 4,000 who had fewer patients to attend than had some doctors with a list of only 3,000. In parts of the country where the average age of the population was high, a higher percentage of people would need to see the doctor.

Beds for Emergency Cases

Dr. SEGAL on March 31 asked Mr. Bevan to arrange for at least one bed for the admission of emergency cases to be reserved nightly in all hospitals of over 200 beds.

Mr. BEVAN would not do this. He said hospitals normally reserved the number of beds shown by experience to be needed, and in emergency put up extra beds. There was more demand for beds to-day and many more beds to meet the demand.

Sir HENRY MORRIS JONES said that before the Health Service Act came into force no hospital in London or elsewhere refused emergency sick cases. Was Mr. Bevan aware that in London particularly, medical men had to be on the telephone for over an hour every day trying to get sick people into hospital?

Mr. BEVAN said Sir Henry was inaccurate. Before the passage of the Act it was often difficult to get emergency cases into hospital. There was now fixed responsibility. Formerly responsibility was diffused and no one knew about the complaints. All vacant beds in London were filled up nowadays by the end of the day. Where there were emergency cases, emergency beds were established in order to deal with them. There would inevitably be instances of delay, but the Ministry would try to cut the delay down.

N.H.S. Locums

Mr. BEVAN on April 7 told Sir WALDRON SMITHERS that he would not take steps to pay for a locumtenent when a doctor in the National Health Service was ill or incapacitated. He added that in fixing the remuneration of general medical practitioners full account was taken of practice expenses. The cost of employing a locumtenent where necessary formed part of these expenses.

Hospital Staff and Beds

Asked by Dr. BROUGHTON on April 7 what increase there had been in the number of staffed beds for the acute sick in general hospitals in England and Wales since the date of the coming into operation of the National Health Service Act, Mr. BEVAN replied that figures for beds for the acute sick as such were not readily available. Between June 30 and Dec. 31, 1948, the increase in the number of staffed beds in general hospitals in England and Wales was 15,510.

Maternity Packs and Dressings

Dr. COMYNS on April 7 asked where expectant mothers attending antenatal clinics should obtain maternity packs and dressings for the lying-in period.

Mr. BEVAN said local health authorities should arrange for maternity outfits for domiciliary confinements to be supplied at clinics, through midwives, or in some other convenient way, and for other dressings required during the lying-in period to be provided by the midwife in attendance. Maternity outfits and sterilized dressings were not included in the schedule of appliances which a general practitioner could prescribe for his National Health Service patients.

Vitamins in Bread

Mr. STRACHEY, replying to Dr. BARNETT STROSS on April 4, said that there was no vitamin A in bread. The comparative figures for the vitamin B₁, B₂, and calcium of the national and pre-war white bread were (in milligrams per oz.):

	National	White
Vitamin B ₁ ..	0.063	0.015
Vitamin B ₂ ..	0.028	0.013
Calcium ..	31	3

During the past four years the rate of extraction of national flour has varied between 80% and 90%. The current rate of extraction is 85%. National flour is reinforced with calcium (creta preparata) at the rate of 14 oz. per 280 lb.

Streptomycin.—Mr. BEVAN said on March 31 that the production of streptomycin was now sufficient to cover all medical needs and to provide small but increasing quantities for export. Further expansion was planned. Since July, 1948, the number of hospitals in England and Wales where streptomycin treatment was available had increased from 30 to 220.

No. 12

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended March 26.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	39	4	15	3	3	53	5	8	1	3
Deaths	1	1	1	—	—	—	—	—	—	—
Diphtheria	117	13	40	6	5	154	13	46	10	2
Deaths	1	—	—	—	—	3	—	1	—	—
Dysentery	34	7	26	1	—	136	10	53	1	1
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	1	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	27	11	1	—	—	40	5	3
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	35	3	4	36	6	44	4	9	25	2
Deaths	—	—	—	3	—	—	—	—	3	—
Measles*	15,307	1274	340	118	178	9,308	1425	369	99	48
Deaths†	—	—	1	1	—	—	3	—	—	—
Ophthalmia neonatorum	47	9	7	—	1	38	4	8	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	7	—	—	—	—	1	—	1(B)	—	—
Deaths	—	—	—	—	—	—	—	—	1	—
Pneumonia, influenza	1,547	65	19	12	8	720	44	6	5	6
Deaths (from influenza)‡	327	26	9	2	3	14	—	3	—	3
Pneumonia, primary	—	—	242	48	—	—	—	226	29	—
Deaths	444	62	9	16	—	242	44	—	12	9
Polio-encephalitis, acute	2	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-myelitis, acute	15	2	3	1	—	17	3	1	—	—
Deaths§	1	—	—	—	—	2	—	—	—	—
Puerperal fever	—	—	4	—	—	—	—	11	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| .. ..	99	9	6	2	—	103	12	14	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,357	105	173	100	44	1,526	97	261	36	39
Deaths¶	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	3	—	—	1	—	4	—	1	7	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,978	181	244	122	68	2,603	192	50	45	16
Deaths	9	1	7	2	—	13	2	1	—	—
Deaths (0-1 year)	359	46	51	22	21	306	37	58	19	9
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	6,847	971	680	187	187	4,704	705	601	179	109
Annual death rate (per 1,000 persons living)	—	—	13.6	11.2	—	—	12.1	11.2	—	—
Live births	8,444	1336	974	415	256	7,663	1195	963	411	233
Annual rate per 1,000 persons living	—	—	19.5	25.7	—	—	19.4	25.7	—	—
Stillbirths	206	32	32	—	—	194	26	32	—	—
Rate per 1,000 total births (including stillbirths)	—	—	32	—	—	—	—	32	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Measles, primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Infant Mortality, Stillbirths, and Abortions

A quarter of a million, or 1 in 8, of the children that might have resulted from two million pregnancies in the three years 1936-8 were lost as a result of spontaneous abortion, stillbirth, or death in the first twelve months of life. This estimate was made by Titmuss and quoted by the Joint Committee of the Royal College of Obstetricians and Gynaecologists and the British Paediatric Association in the report, *Neonatal Mortality and Morbidity*, discussed in a recent leading article (*Journal*, March 12, p. 444). This figure of 250,000 is so striking that it seemed of interest to examine it. During the three years there were 1,837,053 live births. The losses included 74,580 stillbirths, 103,324 deaths of infants under 1 year of age, and, according to Titmuss, 90,000 abortions, excluding criminal abortions. Titmuss did not give the details on which his estimate of abortions was based nor did he indicate whether this figure was really representative of the whole population. Consequently it is not clear whether this is a conservative estimate or not. However, the two official figures and the 90,000 estimate give a total loss of 267,904 infants or potential infants—appreciably more than the quoted quarter of a million. If to this figure is added the known total of live births (1,837,053) the total pregnancies in the three years were just over the two-million mark—2,001,633. The proportion of pregnancies which yielded children who did not survive a year, on this basis, is 267,904 : 2,001,633, which would correspond to a rate of 134 per 1,000. Large as this rate may seem, the infant mortality alone exceeded this level at the beginning of the present century. Improvements have taken place in the ten years since 1936-8, and the figure of 1 in 8 has now been reduced to something of the order of 1 in 12.

Discussion of Table

In England and Wales there was a rise in the notifications of scarlet fever 148 and whooping-cough 188. There was a decrease in the incidence of measles 968 and cerebrospinal fever 18.

The largest rises in the incidence of scarlet fever were those of London 42, Surrey 30, and Lancashire 26. The chief variations in the notifications of whooping-cough were increases in Lancashire 90, Kent 36, and Middlesex 31, with decreases in London 40 and Oxford 23.

The largest falls in the notifications of measles were Yorkshire West Riding 206, Middlesex 188, Lancashire 166, Staffordshire 160, Essex 158, Yorkshire North Riding 121, Southampton 110, and Surrey 101. The only outstanding exception to the declining trend was a rise of 101 in Sussex. There was no appreciable change in the notifications of diphtheria.

Of the 34 cases of dysentery 15 were notified in Lancashire (Liverpool C.B. 9; Preston R.D. 4).

Deaths from influenza in the great towns were 33 fewer than in the preceding week. A small decline occurred in every area except in the Midland and North Midland region, where an increase of 21 was recorded.

In Scotland there were increases in the notifications of measles 48, dysentery 13, and diphtheria 12, while a decrease was reported for whooping-cough 28. The increase in the incidence of dysentery and diphtheria occurred in the western area; in Glasgow the increases were 5 and 12 respectively.

In Eire there were increases in the notifications of whooping-cough 65 and diarrhoea and enteritis 18, while a fall of 38 was reported for scarlet fever. The rise in the incidence of whooping-cough and diarrhoea and enteritis was mainly due to the experience of Dublin C.B. No further cases of scarlet fever were notified from the outbreak in Donegal, Stranorlar R.D., where 31 cases were notified in the preceding week.

In Northern Ireland the largest change in the weekly totals was an increase of 10 in the notifications of measles.

Quarterly Returns for Scotland

The births during the December quarter were equivalent to a rate of 18.5, which was 0.2 below the average of the fourth quarters of the five preceding years. The infant mortality was 44 per 1,000 registered live births, the lowest rate ever recorded for a fourth quarter, and 13 below the rate for the fourth quarter of 1947. The general death rate of 12.2 per 1,000 was 0.6 below the five-years average. The death rate for the principal epidemic diseases was 8 per 100,000, compared with an average of 25 for the corresponding quarter of the five preceding years. The chief causes of death in this group were influenza 52, whooping-cough 20, cerebrospinal fever 12, and diphtheria 9. The death rate for all forms of tuberculosis was 74 per 100,000, and for respiratory tuberculosis 67. These rates are respectively 1 and 7 above the five-years average.

Week Ending April 2

The notifications of infectious diseases in England and Wales during the week included scarlet fever 1,257, whooping-cough 2,998, diphtheria 105, measles 15,819, acute pneumonia 1,481, cerebrospinal fever 30, acute poliomyelitis 13, dysentery 62, paratyphoid 2, and typhoid 1

Medical News

Lord Boyd-Orr

Lord Boyd-Orr, formerly Director General of the United Nations Food and Agriculture Organization, was made an Honorary Fellow of the Royal College of Physicians of Ireland on April 5

Lord Addison

Viscount Addison has resigned his office as Paymaster General. He retains his post as Lord Privy Seal, and continues to be Leader of the House of Lords. He is succeeded by Sir Gordon Macdonald, retiring governor of Newfoundland

Broadmoor

Broadmoor Criminal Lunatic Asylum was transferred on April 1 to the responsibility of the Minister of Health from that of the Home Secretary, under whose charge it has been since it was opened in 1863. The asylum is now managed by a Board of Control, and its address is Broadmoor Institution, Crowthorne, Berks. The institution is part of the mental health services incorporated in the National Health Service. While the Board of Control is responsible for running the institution, decisions on the admission and discharge of patients will continue to rest with the Home Secretary. There are at present 869 patients—682 men and 187 women

Care of Cripples

The Central Council for the Care of Cripples has issued a useful pamphlet showing how, by close co-operation between the voluntary organizations and the various statutory bodies, the physically handicapped can receive full benefit from the provisions made for their well-being. In the first part detailed instructions are given on how to start and run local associations efficiently, and the second part contains excellent explanatory notes on the relevant Acts. It concludes with a list of voluntary organizations and their addresses. Copies may be obtained for 2s from the Central Council at 34, Eccleston Square, London, S W 1

David Anderson-Berry Prize

A David Anderson-Berry silver-gilt medal, together with a sum of money amounting to about £100, will be awarded in 1950 by the Royal Society of Edinburgh to the person who in the opinion of the council has recently produced the best work on the therapeutical effect of x rays on human diseases. Applications for this prize are invited. They may be based on both published and unpublished work and should be accompanied by copies of relevant papers. Applications must be in the hands of the general secretary, Royal Society of Edinburgh, 22, George Street, Edinburgh, 2, by March 31, 1950

Pollution Control in the U.S.A.

As a result of the passing of the Water Pollution Control Act in the U.S.A. last year a nation-wide scheme has been started to improve water supply and sewage disposal as well as to eliminate pollution of streams by industrial wastes. A Water Pollution Control Advisory Board is being established under the United States Public Health Service to give technical assistance and advice. Fourteen river-basin offices are being set up in different parts of the U.S.A. to carry out the scheme, and they will encourage local understanding of the need for pollution control, since it is from communities themselves that requests for aid must originate

Cooling of Ice-cream

The Ministry of Health announces that after May 1 ice-cream manufacturers will no longer be able to plead the special defence that they have ordered but been unable to obtain the necessary apparatus in any proceedings for failure to install suitable cooling apparatus. The Minister is satisfied that suitable cooling apparatus is now available in sufficient quantity to meet all the prospective demands of the trade. The special defence was introduced in the Ice Cream (Heat Treatment, etc.) Regulations, 1947, because at that time there was a serious shortage of cooling apparatus, and it was later extended to May 1, 1949, by subsequent regulations. After May 1 it will be necessary for the requisite cooling apparatus to be installed in all premises where ice-cream is manufactured other than from a complete cold mix

Award for Prevention of Blindness

Dr Lawrence T. Post, of St. Louis, U.S.A., has been awarded the Leslie Dana Gold Medal for 1948 for "outstanding achievement in the prevention of blindness and the conservation of vision." The award is given on the recommendation of the Association for Research in Ophthalmology. Dr. Post is Professor of Clinical Ophthalmology at Washington University Medical School

Medicine in Singapore

The King Edward VII College of Medicine Alumni Association, which was reconstituted in 1947, now issues its *Proceedings* as an occasional periodical. The first number includes original articles on malaria, parasitology in Malaya, and helminth parasites, and reports of cases on a wide variety of medical disorders. It is edited by Dr B. R. Sreenivasan in conjunction with an editorial board which includes Professor G. A. Ransome

Wills

Sir Edward Stewart, formerly vice chairman of the British Red Cross Society and on the staff of St. Marylebone General Dispensary and the Royal Chest Hospital, left £55,974. Dr. Susan Sutherland Isaacs, the well-known child psychologist, left £2,849. Dr. Edmund Spencer Hemsted, of Kintbury, Berks, left £115,904

COMING EVENTS

Postgraduate Lectures

The Royal College of Obstetricians and Gynaecologists has arranged a postgraduate course of advanced lectures for those studying the special practice of obstetrics and gynaecology, to be given at the College House, 58, Queen Anne Street, London, W., from Monday, April 25, to Friday, April 29, inclusive, at 12 noon and 5 p.m. each day. The fee for the course of ten lectures is 4 guineas (10s. 6d. for a single lecture). Admission is by ticket only, obtainable from the Secretary

Port Health Authorities

The Association of Sea and Air Port Health Authorities of the British Isles will hold its 50th Annual Meeting at the Town Hall, Newport, Mon., on April 27-29. Papers to be read include: "Imported Fats," by Dr. Stuart I. A. Laird, "Water," by Major W. W. Marsden, "The Control of Water and Food Supplies on Air Routes," by Sir Harold Whittingham, "Some Experiences of an Army Hygiene Officer, 1939-45," by Dr. L. H. Murray, "Port Health and its Relation to Allied Services," by Dr. T. L. J. Coxon. Particulars may be obtained from the honorary secretary of the association, Dr. H. C. Maurice Williams, Health Department, Civic Centre, Southampton

American Congress on Obstetrics and Gynaecology

The International and 4th American Congress on Obstetrics and Gynaecology will be held on May 14-19, 1950, at the Hotel Statler, New York City. It is sponsored by the American Committee on Maternal Welfare. General sessions will be held to discuss the following topics: (1) "Physiology of Human Reproduction," (2) "Pathology of Human Reproduction," (3) "Social and Economic Problems," (4) Neoplastic Diseases of the Female Reproductive System," (5) "Obstetric and Gynaecological Procedures." Information may be obtained from Dr. Fred L. Adaire, 24, West Ohio Street, Chicago 10, Illinois, U.S.A.

Royal Sanitary Institute Congress

The council of the Royal Sanitary Institute announces that the presidents of the sections of the Health Congress to be held at Brighton on May 23-27 will be as follows: Preventive Medicine: Professor Andrew Topping, Engineering and Architecture: Sir Lancelot Keay, Maternal and Child Health: Professor W. S. M. Craig, Veterinary Hygiene: Mr. H. T. Matthews, Food and Nutrition (in conjunction with Food Group, Society of Chemical Industry): Dr. E. B. Hughes, D.Sc.; Housing and Town Planning: Mr. J. W. R. Adams, Tropical Hygiene: Professor P. A. Buxton, F.R.S., Hygiene in Industry: Professor T. Ferguson. The president of the conference of medical officers of health will be Professor R. H. Parr. A discussion on "The Hospital and Medical Services" in the Preventive Medicine section will be opened by Brigadier J. L. Glyn Hughes and Mr. Henry Lesser. At the Conference of Medical Officers of Health Dr. C. Metcalfe Brown will speak on "Public Health Research," and Dr. J. Stevenson Logan will introduce a discussion on "For and Against Institutional Midwifery." In the Tropical Hygiene section Dr. P. C. C. Garnham will speak on "Modern Concepts in Malaria Control," and Dr. W. Berry on "The West African Groundnut Scheme." There will be a symposium on "The Care and Preservation of Fish as Food."

Almroth Wright Lectures

A course of six Almroth Wright Lectures on "The Bacterial Cell" will be delivered in the Wright-Fleming Institute of Microbiology, St. Mary's Hospital Medical School, Paddington, London, W., on Tuesdays at 5 p.m., from May 3 to June 7. The lectures are open to all members of the medical profession and to all students in medical schools without fee. Details will be published in the Diary column of the *Journal* week by week.

Teaching Biology

"New Trends in Biology Teaching" is the theme of a two-day conference which is being held on May 6 and 7 at the Borough Polytechnic, London, S.E.1. Professor, S. Mangham will give an opening address on "Biology for To-morrow." He will be followed by Miss Hilda Franks on "Syllabuses." Dr. L. M. J. Kramer is giving a lecture-demonstration, "Preparing and Presenting Inexpensively a Year's Course Based on the Theme 'The Child's Microbial Heritage.'" At the final session Mr. Richard Palmer will talk on "Some Neglected Aspects of Human Biology in Schools." Tickets for the conference can be obtained from the British Social Hygiene Council, Tavistock House North, London, W.C.1, price 5s. (exclusive of meals).

SOCIETIES AND LECTURES**Tuesday**

SOCIETY FOR THE STUDY OF ADDICTION.—At Medical Society of London, 11, Chandos Street, W., April 19, 4 p.m., Annual general meeting; "Alcoholism as a Neurotic Symptom," by Dr. R. D. Newton.

Wednesday

ROYAL MICROSCOPICAL SOCIETY.—At B.M.A. House, Tavistock Square, London, W.C., April 20, 5.30 p.m., "The Use of Thin Sections of Entire Organs in Morbid Anatomical Studies," by Professor J. Gough and Mr. J. E. Wentworth.

ROYAL INSTITUTE OF PUBLIC HEALTH AND HYGIENE.—At 28, Portland Place, London, W., April 20, 3.30 p.m., "Occupational Eye Diseases and Injuries" (I), Illustrated, by Mr. Joseph Minton.

Friday

CAMBRIDGE MEDICAL SOCIETY.—At Addenbrooke's Hospital, Cambridge, April 22, 2.30 p.m., "Some Aspects of Epidemiology," discussion by Dr. A. M. McFarlan.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—At Zoological Gardens, Regent's Park, London, N.W., April 22, 7.15 p.m. for 7.30 p.m., dinner meeting.

APPOINTMENTS

BOWEN, JOHN, L.R.C.P. and S.I., L.A.H., Physician, Provincial Hospital for Nervous Diseases, Farville, St. Johns, New Brunswick, Canada

DEWAR, R. DUNCAN, M.B., Ch.B., D.P.H., Medical Officer of Health, Metropolitan Borough of Deptford.

PETERS, L. B., M.B., B.S., Senior Assistant School Medical Officer and Assistant to Medical Officer of Health, Brighton Corporation.

BIRTHS, MARRIAGES, AND DEATHS**BIRTHS**

Davies.—On April 1, 1949, to Dr. Celia Marjorie Davies (née Rapport), wife of Dr. D. L. Davies, 13, Engel Park, N.W.7, a son

Giles.—On April 4, 1949, at the City General Hospital, Stoke-on-Trent, to Ruth (née Whitley), wife of Dr. Christopher Giles, a son.

Kay.—On March 25, 1949, at Westgate, to Alexandra and Dr. David Kay, a son—Nicholas

Keat.—On April 3, 1949 to Dorothy, wife of Dr. E. C. B. Keat, a son

Lamb.—On April 3, 1949, at P.M.R.A.F. Hospital, Halton, to Joan (née Turner) S.R.N., wife of Ernest Hope Lamb, M.B., Ch.B., Squadron-Leader, R.A.F., a sister for Ernest—Susan Jane

DEATHS

Baker.—On March 19, 1949, William Thomas Baker, L.R.C.P., L.R.C.S. Ed. Duncanson.—On March 29, 1949, at Rulhin, Wales, Thomas Smith Duncan, M.B., Ch.B., of Nottingham

Hall.—On April 7, 1949, at his home, 31, The Drive, Hove, Donald George Hall, M.D., F.R.C.P., J.P.

Humphreys.—On March 30, 1949, Owen Rosser Humphreys, M.R.C.S., L.R.C.P., of Cardiff

Jones.—During January, 1949, Arthur Thomas Jones, M.R.C.S., L.R.C.P., J.P., of Cardiff

McKie.—On April 6, 1949, at Eastbourne, Gordon McKenzie McKie, M.R.C.S., L.R.C.P., aged 76

Wilestone.—On April 4, 1949, peacefully, at Redroof Nursing Home, Croydon, Lieut. Stone Wilestone, M.D., of Cuckfield, Sussex, aged 85.

Wicks.—On April 4, 1949, at the County Hospital, York, Arthur Hedley Visick, F.R.C.S., of The Old House, York

Williams.—On April 6, 1949, at Foxholes Barrs Wood Road, New Milton, Hants, Charles Rudolph Williams, M.B., Ch.B.

Wilson.—Recently, Lionel Hugh Wilson, L.R.C.P., L.R.C.S. Ed., of Sheffield

Winter.—On March 31, 1949, at Misgrove Park Hospital, Taunton, Herbert George Winter, C.B.E., M.C., M.R.C.S., L.R.C.P., Broadrick, late R.A.M.C.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Early Ambulation after Confinement

Q.—What are the latest views on early rising after confinements? There appears to be a volume of evidence to-day in favour of getting patients up soon after operation; how does this affect ambulation after confinement?

A.—Although letting a patient get up soon after labour is often advised and has been shown to be free from risk, it is not so popular and is not practised so widely as early ambulation after operations. The same arguments can be applied in its favour, but other considerations also arise. Very often, and especially if the patient has other young children, the pregnancy imposes a prolonged physical and mental strain, and a short period of complete rest in bed is both welcome and advantageous. Early rising, too, provides a great temptation for the woman to resume her domestic responsibilities too soon. Even in hospital practice it tends to make women clamour to return home early in the puerperium. There is also the question of the establishment of lactation, which is favoured by rest. There are, of course, counter-arguments; for instance, a woman can often breast-feed more easily sitting comfortably on a chair than propped up in bed. Indeed, it becomes almost a matter of personal opinion; yet so far many obstetricians, guided probably by general considerations such as the above, seem not to favour getting about too soon, and this is true even of those who encourage it in their gynaecological wards. Some, however, have adopted a compromise, allowing their obstetrical patients up on the fifth or sixth day. There is something to be said for selecting the treatment to suit individual patients and their circumstances rather than following a rigid routine. In the case of caesarean section, when the purely medical advantages outweigh any social disadvantages, getting the patient up on the first or second day is already widely practised—often by those who insist on the traditional stay in bed after normal labour.

Vitamin E in Heart Disease

Q.—Is there anything further to report on the claims that excellent results have been obtained in cardiac cases by the use of α -tocopherol—a vitamin-E preparation?

A.—Vitamin E is found in all body tissues, and has a variety of actions. Consequently it was tried as a therapeutic agent in many different conditions, with, as a rule, disappointing results. Vogelsang, Shute, and Shute (*Med. Rec.*, N.Y., 1948, 161, 83) reported strikingly beneficial effects in about 1,500 cases of every type of heart disease. They claimed that it was the "most effective known drug in heart disease, and certainly the safest. The percentage of cases which show improvement following its administration is high (about 80%); the degree of improvement seen in the worst cases is often marked, and allows a return to activity in many cases of great disability; the improvement continues for months, even years." Since then vitamin E has been used by a number of observers in this and other countries, but on the whole the results have been most disappointing. Makinson *et al.* (*Lancet*, 1948, 1, 102) compared results in 22 cases of angina pectoris, using vitamin E, phenobarbitone, aminophylline, and calcium lactate, and found the vitamin to be of no therapeutic value. They used a dosage of 150 mg. daily for three weeks. Ball, in a series of 10 cases of angina pectoris, using 300 mg. of "ephynal" daily for six weeks or longer, found that his results did not support the Canadian workers' claims. Levy and Boas (*Ann. intern. Med.*, 1948, 28, 1117), in 13 cases of angina pectoris and of heart failure secondary to various causes, and also Baer, Heine, and Gelford (*Amer. J. med. Sci.*, 1948, 215, 542), in 22 cases of heart disease, including patients with heart failure and angina pectoris, found the results very disappointing. Both teams of workers used adequate dosage according to the standards of Shute and his colleagues. Similar findings have been reported from Denmark (*Nord. Med.*, 1948, 37, 82). Shute (*Lancet*,

1948, 1, 301) considered that Makinson *et al.* had used insufficient dosage for too short a time, and had not given enough data about their cases. He is supported in his claims by Hickman (*ibid.*, 1948, 1, 652), who pointed out that the results may be due to a local preponderance of cases with an inadequate vitamin-E intake resulting from faulty dietary habits. Shute, however, constantly stresses that he uses the drug not as a vitamin but in relatively massive doses as a therapeutic agent. He refers to the remarkable results obtained in dogs and cattle with cardiovascular disease (Lambert, *Vet. Rec.*, 1947, 59, 355), and also to the work of Govier on the biochemical background of the clinical results. Results comparable to those of Shute have not been obtained by other workers following the administration of vitamin E to patients suffering from cardiovascular disease.

Exposure to Graphite Dust

Q.—Does graphite dust constitute a danger to health? If so, are there any precautions which can be taken to safeguard the health of those exposed to it?

A.—Mineral graphite, or plumbago, is a naturally occurring form of crystalline carbon, appearing as black soft masses or, less commonly, as crystals in igneous rocks. It is mined extensively in Ceylon, Madagascar, and West Africa, and there is also a deposit in Borrowdale, Cumberland. Graphite is used in the manufacture of electric batteries, lead pencils, grate polishes, lubricants, crucibles, and in foundries. In these manufacturing processes it is necessary for the graphite to be in the form of a fine powder, while "commercial graphite" may have added sand. The carbon content of natural graphite varies. Thus certain grades of Ceylon graphite are stated to contain between 60 and 85% carbon, while Korean graphite has a carbon content of approximately 85%. The remainder is composed of mineral ash, such as oxide of calcium, iron, or silica. Although the presence of silica in the ash has been recognized, there is little definite information about the silica content of natural graphite, but it may be as much as 5%. There is also a so-called artificial graphite with a very low silica content obtained from coal or coke by treating in electric furnaces. On the silica content will depend the risk to health of long periods of exposure to graphite dust. Precautionary measures are those for the suppression and control of the dust hazard at its source. To this end full use should be made of wet methods of working, and localized mechanical exhaust ventilation.

Pelvic Allergy

Q.—Is there such a thing as "pelvic allergy"? If so, what are its effects, how can it be identified, and how treated?

A.—Some relationship between the female genital organs and allergic states has long been suggested as a result of clinical observations. For instance, asthma may first appear at puberty or the menopause, the attacks may be associated with menstruation, and may disappear completely during pregnancy. The type of relationship is not constant, however, and may assume the opposite form. Again, symptoms referable to the pelvic organs may be manifestations of allergy—some states of pruritus vulvae and cyclical ulceration of the vagina and vulva, for example. B. Zondek and Y. M. Bromberg (*J. Obstet. Gynaec. Brit. Emp.*, 1947, 54, 1) claim to have shown that many conditions, such as menstrual tension state, migraine, angioneurotic oedema, urticaria, and cyclical keratitis, which tend to occur premenstrually are due to "endocrine allergy." They postulate that the patient is allergic to one of the hormones of her own production, and they advise desensitization by the administration of graduated amounts of the appropriate hormone, the latter having been identified by skin tests. More recently C. Macpherson (*Canad. med. Ass. J.*, 1949, 60, 54) in an article entitled "Pelvic Allergy" puts forward the view—which, as he points out, is not original—that spasmodic dysmenorrhoea in young girls can be an allergic manifestation, and he claims good results from treatment with adrenaline and antihistamine drugs. It could be argued that an endocrine antigen is unlikely in such cases because the hormone levels are at their lowest during menstruation. However, bearing in mind the fact that the basis of spasmodic dysmenorrhoea may be muscle ischaemia, it recalls the work of O. W. and G. V. Smith (*Amer. J. Obstet. Gynec.*, 1947, 54, 212) on menstrual

toxin, a euglobulin which has vasoconstrictive properties and which is liberated during menstruation. Some or all of these possibilities might well come under the unsatisfactory heading of "pelvic allergy."

There are clearly at least two problems involved: (a) general allergic reactions due to genital and endocrine functions; and (b) genital reactions as manifestations of allergic states. The whole question remains very much a matter of conjecture, and most of the suggestions mentioned above await confirmation and proof.

Contact Lenses for Myopia and Astigmatism

Q.—Can contact lenses be prescribed for a combination of myopia and astigmatism? How are they obtained, how long does it take to get them, and what is the approximate cost?

A.—Contact glasses can be prescribed for a combination of either myopia or hypermetropia with astigmatism. By presenting a spherical surface to the air the astigmatism is eliminated. To obtain the glasses a consultation should be arranged with an ophthalmic surgeon, who will determine whether the patient is suitable psychologically and the eyes are suitable physically for the lenses. On the basis of his examination of the eyes he will give directions to the technician, who will proceed with the making of the lenses. The time taken varies with the type of lenses ordered and the material of which they are made, and ranges from three weeks to three months. The cost is from 30 to 50 guineas, plus the surgeon's fees.

Essential Amino-acids

Q.—I believe that milk contains all the ten essential amino-acids. Do eggs likewise contain all ten—and are there any other non-meat products that contain them all? Can you recommend an up-to-date book on the subject?

A.—The proteins of practically all foodstuffs contain all the essential amino-acids. Gelatin is an exception. Flour contains relatively little lysine. Eggs have a high content of these amino-acids. In peas and beans the ratio of essential to non-essential amino-acids is rather lower than in meat.

Two useful books are: *Science and Nutrition*, by A. L. Bacharach (3rd ed., 1947, Watts and Co., London), and *Human Nutrition*, by V. H. Mottram (1948, Arnold, London).

Sympathectomy for Asthma

Q.—Would you please let me know what operations upon the sympathetic and parasympathetic systems have been performed for the relief of asthma, and any references in literature to the subject?

A.—The following operations have been performed upon the sympathetic and parasympathetic systems for the treatment of asthma: unilateral cervical sympathectomy (sympathetic chain and part of the stellate ganglion); stellate ganglionectomy, unilateral and bilateral; right-sided vagotomy below the recurrent laryngeal nerve; bilateral resection of the pulmonary plexus; procaine block of the stellate ganglion and upper thoracic ganglia, followed by their extirpation in cases where the asthma had responded temporarily to the block. The subject is dealt with adequately in a special chapter of 20 pages in *The Treatment of Bronchial Asthma*, by V. J. Derbes and H. T. Englehardt (Lippincott, London, 1946), which contains twenty-three references. Further references are: Gay, L. N., *Diagnosis and Treatment of Bronchial Asthma* (Baltimore, 1946); Malherbe, A., *Pr. méd.*, 1939, 47, 241; Tapella, P. A., *Prensa méd. argent.*, 1940, 27, 1553.

Sulphonamides in Pneumococcal Pneumonia and Ulcerative Colitis

Q.—(a) What is the best sulphonamide for routine use in pneumococcal pneumonia, and in what dosage? (b) What sulphonamide is advised in the treatment of ulcerative colitis? Should this be given by mouth or in the form of an enema, and what is the dosage?

A.—(a) Sulphadimethylpyrimidine (sulphamezathine), or one of the other sulphadiazine homologues, is the most suitable of the sulphonamide drugs for the treatment of pneumococcal pneumonia. In adults the oral dosage is as follows:

initially 1.5 g., followed by 1.5 g. four-hourly for two to three days; 1 g. four-hourly for the next two days; 1 g. six-hourly or a final two days.

(b) Sulphaguanidine, succinylsulphathiazole, and phthalylsulphathiazole are of value in ulcerative colitis. The third-named drug is probably the most satisfactory, and has been recommended in oral doses as large as 0.02 g. per kilo of body weight four-hourly for four weeks. Retention enemata of one of these drugs are often useful, 7 to 10 g. being dispensed in 100 ml. of water or mucilage.

Civatte's Poikiloderma

Q.—What is the aetiology of Civatte's disease, and is there any effective treatment? I have a patient who has had patches of brownish discoloration on both cheeks, with scaling and cracking of the skin of the face, for the past two years, associated with irregular menses. A dermatologist diagnosed Civatte's disease and prescribed various lotions, ointments, and later X-ray treatment combined with stilboestrol, but the skin is steadily getting worse.

A.—The aetiology of poikiloderma of Civatte is unknown. It usually affects women about the menopausal period and tends to clear spontaneously in the course of a few years. It has been thought to be dependent on some disturbance of endocrine function, adrenal or ovarian, and there does appear to be some response to oestrogen therapy in a few cases. As a rule treatment is without effect. A very similar affection, described by Riehl in 1917 and not limited to women or to this age period, is regarded as being related to the ingestion of fats or the application of creams containing tar and petroleum products.

Ganglion

Q.—I have a ganglion involving the common extensor sheath in the back of the right wrist of about six months' duration. It causes little inconvenience, but is unsightly in a doctor in practice. What is the correct treatment? Would incision, evacuation of contents, and removal of a portion of the posterior wall be likely to lead to permanent disappearance?

A.—To be strictly orthodox complete excision of the entire ganglion should be advised. But when, as in this case, it is the cause of no significant disability and little inconvenience it is tempting either to leave it alone or to attempt subcutaneous rupture of the cyst wall by very firm pressure. If operation is undertaken it should take the form of complete excision, carried out with the aid of a tourniquet under general anaesthesia. This gives the greatest prospect of permanent cure. Simple evacuation with removal of part of the cyst wall, while entailing almost as much inconvenience as complete excision, is far less likely to give permanent relief.

Stilboestrol and Seminoma Testis

Q.—A patient aged 35 was recently operated on for seminoma of the testicle. There is no evidence at present of metastases, but the possibility cannot be ruled out. Is stilboestrol, or any similar preparation, likely to be effective, as in carcinoma of the prostate? If so, what preparation and what dosage would you recommend?

A.—There is no evidence at present that stilboestrol or any other preparation is of value in cases of seminoma of the testicle. After orchidectomy for seminoma it is advisable to give a course of high-voltage X rays to the aortic lymph nodes.

Reaction to Dental Analgesia

Q.—A patient had pounding of the heart, gastric distension, and fairly severe pain in the jaw shortly after a tooth extraction. These symptoms, along with polyuria and frequency, continued until the following morning, when he obtained relief by vomiting. This appeared to be a case of acute acidosis due to the local analgesia. Is there any way of counteracting these symptoms?

A.—Reactions following injection analgesia are usually due to the adrenaline and not to the procaine or other synthetic local analgesic employed. Pounding of the heart sometimes occurs after the injection, particularly if any of the solution containing adrenaline is inadvertently injected direct into a

blood vessel. In a patient with cardiac disease the signs and symptoms may of course be more severe. Acidosis is not generally produced by local analgesia, but patients not infrequently confuse local analgesia with general anaesthesia and fast for a period beforehand. This fasting may account for acidosis. There is of course no reason why the patient should not have perfectly normal meals before any extraction involving local analgesia.

Induction of Labour

Q.—What is the best method of induction of labour for use by a general practitioner working in ordinary domiciliary practice? What is the foetal mortality, if any?

A.—It is not stated whether it is desired to induce labour at term or prematurely. In ordinary domiciliary practice the general practitioner would probably be wise to transfer to hospital patients in whom the induction of premature labour seems indicated. When pregnancy appears to be at or after term, the minimum risk to mother and foetus attaches to the induction of labour when the head is engaged, the cervix is effaced, and dilatation has begun. But when these conditions are fulfilled induction is rarely required. The safest method is a "simple induction" with castor oil, enema, and hot bath. Pituitary preparations should be used with caution and are best avoided, while quinine has fallen into disfavour because of reports of foetal death following its use. Surgical methods of induction are not generally suitable for domiciliary practice, although loosening the attachment of the membranes by a sweep of the finger inserted through the cervix is reasonably safe provided the conditions enumerated above are satisfied. The risks of induction of labour to the foetus cannot be stated in general terms; they depend to a large extent on the indication for the operation and the time at which it is done, as well as on the method employed and the state of the lower segment and cervix.

NOTES AND COMMENTS

Getting Warm in Bed.—Mr. R. D. MOTHERSOLE (Bolton) writes: It is often difficult, especially for elderly people, to get warm in bed after getting up during the night. I suppose it is a matter of common knowledge (despite the trend of modern education) that warm-blooded animals get most of the heat they need from their voluntary muscles, which act as slow-combustion stoves and immersion heaters. The fuel, I need hardly say, is glucose. But I find it is less well known, even by doctors, that by tensing one set of muscles against their opponents (e.g., flexors v. extensors) especially those of the lower limbs, but the more the better, it is possible to warm up the whole body quickly, with practically no movement of the parts concerned nor disturbance of the bedclothes.

Mind and Skin.—Dr. I. B. SNEEDON writes: My article on "The Mind and the Skin" (March 19, p. 472) was an abridged version of the paper which was given to the Sheffield Medico-Chirurgical Society on Oct. 18, 1948. I should be grateful if this correction could be made.

Ankylosing Spondylitis.—Dr. F. HERNAMAN-JOHNSON writes: I regret that the dosage of gold and sodium bismuth tartrate is not made clear in my letter in your issue of April 2 (p. 591). It is 0.001 g. of gold (as printed) and 0.5 grain (not 0.5 g.) of sodium bismuth tartrate.

Correction.—Dr. T. STEPHANIOES writes: With reference to the article "Ringworm of the Scalp: Treatment by X-ray Epilation without Subsequent Local Application" (March 26, p. 523), I would like to point out a typist's error which crept into the text. The statement "Open field 16.6 in. (42 cm.) diameter" should, of course, have read "Open field 16.6 cm. diameter." It will be noted that all the other measurements were given in the metric system only.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: Allotology, Westcent, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the British Medical Journal alone. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: Britmedads, Westcent, London. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, EUSTON 2111. TELEGRAMS: Medisera, Westcent, London. B.M.A. Scottish Office: 7, Drumshugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY APRIL 16 1949

THE SECRETARY REPORTS

N.H.S. FINANCE

How many people really know how the National Health Service is financed, what proportion of the usual employee's contribution goes to the financing of the Service, how much of the contribution goes to the family doctor? A small survey has been made for the Association by the Gallup Poll to discover the extent of the public's knowledge—or lack of knowledge—on such points. One of the most significant results of the inquiry is that only 2 out of 550

persons questioned know that the portion of the 4s. 11d. which goes to the doctor is in the region of 1d.

The facts, simply put, are that about one-eighth of the cost of the Service is met from the insurance contributions; that on average about 8½d. of the 4s. 11d. goes to the Health Service, the remainder going to unemployment benefit, sickness benefit, widow's pension, maternity benefit, retirement benefit, etc.; that the general practitioner receives about 4½d. a week (roughly 1d. from the weekly contribution and 3½d. from taxes). The full results of the inquiry are given below.

The following three questions were put to 550 men and women chosen at random in eleven districts of Central and Greater London:

1. Can you say how much you/your husband pays each week in contribution to the National Health Service?

2. Can you say what benefits this contribution covers?

3. (a) How much of your weekly contribution goes directly to the doctor?

(b) If "Don't know": is it 1d., 3d., 1s., 1s. 6d., or more than 1s. 6d.?

Question 1	Total	Sex		Age Groups				Economic Status			
		Men	Women	21-29	30-49	50-64	65 and Over	Well-To-do	Middle Class	Working Class	Very Poor
3d. (married women)	8	—	8	1	6	1	—	2	2	3	1
4d.-1s.	3	—	—	1	—	—	2	1	—	1	1
1s. 1d.-3s. 10d.-4s. 11d.)	78	37	41	24	38	16	—	1	10	65	2
Full amount N.I.	271	164	107	84	125	62	—	19	71	172	9
Above full amount	63	29	34	12	31	20	—	5	26	32	—
Don't know	96	37	59	23	45	22	6	7	24	48	17
Not working	31	10	21	3	4	4	20	1	5	11	14
Sample	550	280	270	148	249	125	28	36	138	332	44
Question 2											
All benefits	63	45	18	12	34	17	—	6	24	29	4
Medical benefits and some others	209	105	104	42	106	55	6	12	54	130	13
Medical benefits only	197	90	107	67	84	38	8	13	54	121	9
Other benefits	14	8	6	2	6	2	4	—	1	10	3
Don't know	67	32	35	25	19	13	10	5	5	42	15
Sample	550	280	270	148	249	125	28	36	138	332	44
Question 3 (a)											
1d.	2	1	1	—	2	—	—	—	—	2	—
2d.-3d.	15	12	3	4	7	4	—	2	5	7	1
4d.-1s.	95	67	28	21	44	29	1	7	34	50	4
1s. 1d.-1s. 6d.	7	7	—	4	4	2	1	1	4	1	1
Over 1s. 6d.	12	7	5	4	6	2	—	1	3	8	—
Nothing at all	9	2	7	—	8	1	—	2	3	2	—
Don't know	410	184	226	119	178	87	26	23	89	262	36
Sample	550	280	270	148	249	125	28	36	138	332	44
Question 3 (b)											
1d.	9	5	4	5	2	1	1	1	4	3	1
3d.	61	29	32	20	23	10	8	5	22	27	7
1s.	95	49	46	32	40	22	1	6	20	66	3
1s. 6d.	41	23	18	16	13	11	1	3	11	26	1
Over 1s. 6d.	55	24	31	10	29	14	2	3	12	38	2
Don't know	149	54	95	36	71	29	13	5	20	102	22
Sample	410	184	226	119	178	87	26	23	89	262	36

National Health Service

MINISTRY INQUIRY INTO G.P. REMUNERATION

The Ministry of Health has started an inquiry into the remuneration of general practitioners working in the National Health Service in England and Wales. It has circulated a questionnaire to all executive councils requiring information about payments made to all practitioners on their lists. The information is to reach the Ministry by April 23. Information about all payments made to doctors from July 5, 1948, to March 31, 1949, is to be returned. Sums which the councils should have paid, but failed to do, by March 31 are stated separately, but sums which, although earned during the period, would not normally be paid until after the close of the period will not be included.

BONDS WITH ASSISTANTS

There may be an impression that an assistant who is a trainee under the Ministry of Health scheme is in a category somewhat different from other assistants, and that the principal is protected from encroachment on the termination of the period of training. This is not so, and principals are therefore advised to enter into the usual assistantship bond with the trainee.

TEMPORARY RESIDENTS

Doctors have at last received payments for the treatment of temporary residents, but some of them may not fully understand the basis and method of payment adopted. The sum of 8s. has been paid to executive councils out of the central pool for each temporary resident attended during the two quarters ending Dec. 31, 1948. Executive councils, in making payments, were instructed to take one-third of the number of claims made by a doctor for temporary residents and credit the doctor with that number of units (a unit being equivalent to payment for an ordinary patient for three quarters) multiplied by whatever ratio of credits was in operation in the area under the old N.H.I. Act. This method of payment, as well as the amount allocated from the central pool, is provisional, and it will be reviewed by the General Medical Services Committee so that it may recommend to the Ministry the most suitable and equitable method of payment for future quarters.

EMERGENCY DENTAL TREATMENT

The Ministry of Health has devised a new procedure to facilitate the speedy dental treatment of patients who require treatment urgently. The arrangements include a new form (EC.17A), the use of which will be confined to the following items of emergency treatment: (a) not more than two extractions, (b) general anaesthetic, and (c) dressings. The fee for each procedure is 10s.

CLAIMS FOR UNEMPLOYMENT BENEFIT

Revised arrangements have been made in the procedure for claims for unemployment benefit where doubt arises whether a claimant is capable of work, or where a claimant contends that he is unfit for certain kinds of work but fit for others. Such a contention might be made in relation to the statutory dis-qualifications for refusing suitable employment or leaving employment voluntarily without just cause.

With certain exceptions such claimants will be examined by an appointed Examining Medical Officer. These officers will normally be the same as the independent Medical Referees under the control of Engagement Orders, all of whom have been invited to undertake this work, which is from the medical standpoint virtually identical.

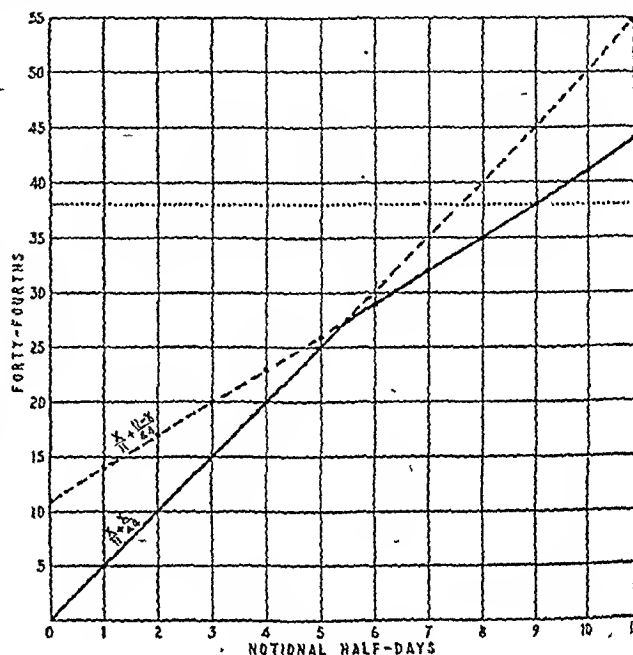
The number of cases to be examined will probably be comparatively few.

PAYMENT OF PART-TIME SPECIALISTS

In accordance with the Spens Report on the Remuneration of Consultants and Specialists the proposed terms and conditions of service of hospital medical and dental staff (*Supplement*, March 19, p. 149) include two formulae for relating payment of part-time specialists to that of whole-time specialists. If x is the number of notional half-days worked by a part-time specialist, the part-time salary is in proportion to the whole-time salary in accordance with one or other of the following formulae, whichever gives the less result:

$$\frac{x}{11} + \frac{x}{44} \quad \text{or} \quad \frac{x}{11} + \frac{(11-x)}{44}$$

The maximum remuneration for part-time appointments is $9\frac{1}{2}$ elevenths of the whole-time salary appropriate to the grade.



The effect of this proposal is illustrated in the accompanying graph. The vertical ordinate shows the number of 44ths of the whole-time salary that the part-time specialist may earn, and the horizontal ordinate the notional half-days that he may work. Up to $5\frac{1}{2}$ notional half-days the first formula applies, and after that point the second. The maximum remuneration for part-time appointments ($38\frac{1}{2}/44$ of the whole-time salary) corresponds to a working time of 9 notional half-days, and is shown by the fine-dotted line.

HEARD AT HEADQUARTERS

How They See It

The United States is taking an extraordinary interest in our National Health Service. One American medical journal, *Medical Economics*, has sent its editor, Mr. W. Alan Richardson, to make a survey of how the Service is operating, in view of the fact, as he says, that the prospect of some sort of Federal sickness insurance programme grows stronger daily in the States. Mr. Richardson, who attended the Special Representative Meetings as a visitor, is spending a month in this country. Before coming he picked out at random from the *Medical Directory* about 200 names representing a cross-section of the medical community, all the way from London to Aberdeen, and in Wales and Northern Ireland, and is endeavouring to interview as many of these doctors as he can. His schedule of questions is comprehensive and penetrating. He is here to make a balanced study uncoloured by party bias or predilection. It is gratifying to learn that he has met with the greatest courtesy and co-operation from all whom he has interviewed so far.

A Rosy Picture

Talking of the States, the *Brooklyn Eagle*, which might be compared to our *Manchester Guardian*, has column after column on the subject of our Health Service. It paints a rosy picture of its blessings. "Eyeglasses, hearing-aids, and wigs, and every possible device . . . are to be had for the asking." We are told that tens of thousands of bald men have been provided with two free wigs. Why two? That is because a man will have one to wear while the other is being cleaned and kept in good condition at a shop which gives such service at Government expense. The most enthusiastic sponsors of the Service announce, without the trace of a smile, says the *Eagle* correspondent, that untold millions now alive will live to such great ages that the nation will have to build special homes for them all over the island. Another dispatch declares that England's free National Health Service is providing everybody, even casual visitors, with anything and everything they may need for their physical and mental welfare. The general popularity of the Service, it is said, is measured by the high praise the political parties pour upon it. They are all for it, and claim it as their child. Even guarded criticism brings retribution, as it did in South Hammersmith, where the by-election was lost to the Conservatives, so says this American observer, because some of them had ventured to suggest that it was fiscally mismanaged. The average workman and his wife are delighted. In the professions and many of the "white collar" groups there is misgiving, but in the medical and dental professions themselves the chief amazement is at the absence thus far of the domination of bureaucrats.

The Milk Problem

A Joint Committee of the B.M.A. and the National Veterinary Medical Association, with equal numbers on each side, is starting some useful work. It has decided to tackle first of all the subject of milk and milk products, including the health of the cow. When that job is done it will turn to meat and meat products (presumably if by that time meat has not vanished from the British table). The committee has already had some long discussion on milk in relation to child and family health, and at its second meeting the other day it considered a long memorandum on milk distribution in which the present marketing and retailing methods were reviewed, and the question of the cleanliness of milk and the prevention of contamination at the various stages of production and delivery was gone into very thoroughly. The committee is addressing itself to the question of ensuring efficient and cheap deliveries—by efficient delivery being meant a system whereby every domestic consumer will be able to obtain, within reasonable limits, the type of milk he desires, free from any risk of disease and capable of keeping for at least twenty-four hours after delivery to his home.

Definition of Terms

When Dr. Grant, European director of the International Health Division of the Rockefeller Foundation, addressed the Institute of Almoners the other day he began by defining his terms. He said that, as he was travelling about in various countries, when people talked to him about social medicine and used similar phrases he was accustomed to ask them whether they understood semantics. "Are we speaking the same language?"—a very necessary question, especially with the new terms and phrases which are now becoming current in social and State medicine. The same difficulty of precise definition was referred to in the recent debate in the Royal Society of Medicine on specialization. The opener, Sir Robert Young, said that he consulted Dr. Johnson about the meaning of the word, but the great lexicographer had let him down. He had no definition of "specialization" to give, and of "specialty" or "speciality" he would only say that it meant "particularity." The *Century Dictionary* was not much more helpful, defining "specialization" as "the state of being or becoming a specialist." It is interesting to find Murray's first definition of "specialist" as "a medical practitioner who specially devotes his attention to the treatment of a particular disease or class of diseases," and the first reference quoted from literature to the use of the word "specialist" in that connexion is dated 1856.

The Next London Health Centre

After Woodberry Down the next health centre to be established by the L.C.C. will be at Poplar. It will be erected in the East India Dock Road, and will serve an area bounded on the north by Limehouse Cut, on the east by the railway, and on the south by the northern boundary to the West India Docks. The population which it will ultimately serve will be something like 18,000, but for the time being, until other health centres in adjoining areas are available, it will serve a population of 30,000. It will have doctors' and dentists' suites, ante-natal, post-natal, and child welfare clinics, a school treatment centre, and accommodation for ancillary services and health education. The cost is estimated at £150,000, as compared with £162,000 at Woodberry Down. The third health centre, to be included in the scheme of priorities for the year ending March, 1951, will be in Kingsland Road, Shoreditch. This will be in a converted building, and will cost only £60,000. The architect is already at work on the scheme. For the year ending March, 1952, three more health centres are on the list of priorities.

Questions Answered

Maternity Service Payments

Q.—According to the rules on Form E.C.24 the payment promised is 7 guineas and the minimal antenatal care required is the initial examination plus an examination at the 36th week. My executive council has allowed only 10s. 6d. for the antenatal visit and 4½ guineas for the confinement. The amount therefore is usually less than 7 guineas. I should be glad of your views.

A.—A fee of 7 guineas is admissible where the initial examination took place after the appointed day, a further examination was conducted at the 36th week, and where the statutory post-natal examinations are carried out (attendance at the confinement is left to the discretion of the practitioner). However, where the initial examination took place before July 5, 1948, it has been agreed that a fee of 10s. 6d. will be paid for each antenatal examination carried out after the appointed day, the practitioner looking to the patient for reimbursement for any services carried out before the appointed day.

Fitness for Work

Q.—The first sentence of a printed letter (Form R.M.2) which I have received from the divisional medical officer of the Ministry of Health reads as follows: "The above-named insured person, who is stated to be certified by you as incapable of work, has been referred by the Ministry of National Insurance for advice as to capacity for work." Unless I am guilty of deliberate wrongful certification, or my judgment is at fault, the person concerned is still unfit for work. Am I obliged to supply the particulars asked for of the case, with or without the patient's approval? Is the patient obliged to attend for examination if requested? If the regional medical officer comes to the conclusion after examining the patient that she is fit for work, and the patient and I maintain that she is not, what is then the position? Will insurance benefit be withheld, and has the patient any redress?

A.—A general practitioner is required (clause 7 (13) of Part I of the First Schedule to G.M.S. Regulations) "to furnish information to the medical officer within such reasonable period as the latter may specify any clinical information which he may require with regard to the case of any patient to whom the practitioner has issued or declined to issue a medical certificate." The patient is not compelled to attend for examination, but failure to attend, if requested, may result in suspension of sickness benefit.

If the R.M.O. declares the patient fit for work, suspension of sickness benefit will follow normally, but the patient has a right of appeal to a local appeals tribunal against suspension. If the patient's doctor is still of opinion that the patient is incapable of work he should continue to issue certificates of incapacity.

A CENTRAL HOSPITAL BED BUREAU

SUPPLEMENT TO THE
BRITISH MEDICAL JOURNALORGANIZATION OF A CENTRAL HOSPITAL
BED BUREAU

BY

R. G. COOKE, M.D.

Medical Superintendent, City Hospital, Derby; Supervisor, Derby
Hospitals Central Bed Bureau

The Derbyshire Royal Infirmary and Derby City Hospitals are grouped together because for some time there has been a common waiting-list. The distribution of admissions for the first month (January) was as follows:

	From Waiting-lists	Emergencies	Others*	Total
D.R.I.	150	123	316	589
City Hospital	153	178	184	515
Women's Hospital ..	38	43	58	139
Children's Hospital ..	55	33	91	179
Total	396	377	649	1,422

* "Others" consist of accidents, direct admissions from out-patients, maternity cases, etc.

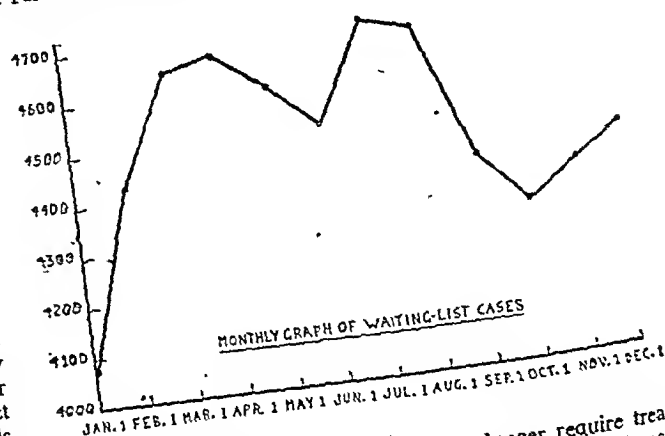
The proportions in the various groups differ for the various hospitals month by month according to the number of accidents and immediate admissions. At the end of the first month the state of the waiting-lists was as follows:

	On List 1/1/48	Added during January	Adm. during January	No Longer Requiring Treatment	On List 1/2/48
D.R.I.	3,590	624	303	37	3,874
City Hospital	266	58	38	16	286
Women's Hospital ..	210	137	55	—	276
Children's Hospital ..	—	—	—	—	—
Total	4,066	819	396	53	4,436

Measures to Reduce Lists

Although all the hospitals had been working at full pressure for some time with a low average stay (varying from 12 to 15 days), the total numbers had been rising month by month for a considerable time. This was continued in the first two months of operation of the Bed Bureau, the adverse balance during this period being 589. Of the admissions 72% were immediate ones, leaving only 28% of the beds available for waiting-lists—a number quite insufficient to cope with the large number of additions to the waiting-lists. It was evident that further measures would be required, and recognized procedures were therefore dealt with more intensively.

Review of Waiting-lists.—The cases had been reviewed during the previous year and a considerable number removed, but a further review has taken place of all patients on waiting-lists



for 12 months to ascertain those who no longer require treatment for one cause or another. This has resulted in 1,164 cases being removed from the lists during the first 11 months—approximately 25% of the original number. The percentage of E.N.T. cases removed from the list on review has been removed than that of the general lists—353 E.N.T. cases were removed—but the review of these cases is not yet completed. Another factor in the difficulty of coping with the numbers of E.N.T. cases has been the fact that some of the beds of this department occasionally have to be borrowed for general emergency cases.

Towards the end of 1947 a Hospitals Co-ordinating Committee was formed in Derby. It consisted of representatives from three voluntary hospitals, a municipal general hospital, and a maternity home. The hospitals represented were: Derbyshire Royal Infirmary (339 beds), Derby City Hospital (300 beds), Derbyshire Hospital for Sick Children (84 beds), and Derbyshire Hospital for Women (60 beds).

One of the first tasks was to deal with the problem of the long waiting-lists of the hospitals. Owing to the shortage in the area of hospital beds for acute cases the combined waiting-lists of all the hospitals amounted to just over 4,000. Because of the large percentage of emergency admissions several non-urgent cases had been waiting for some years.

It was decided to set up a Central Bed Bureau, and an office was allotted in the Derbyshire Royal Infirmary. Inquiry was made in other areas. Organizations dealing with emergency admissions only were found to be in existence in London, Birmingham, and Dublin, and thanks are due for the helpful advice that they readily gave.

To try to find a comprehensive solution to the problem it was decided to deal with all cases (except booked maternity cases)—emergencies, those on waiting-lists, and private patients—through the Bureau. At a later date cases for the Isolation Hospital were also included. A separate telephone exchange is installed in the Bed Bureau Office with a number unrelated to hospital numbers, and from this exchange there is a private switch extension to the City Hospital, so that consultation is available at any time of the day or night at times when medical advice is not available in the office. The Bed Bureau telephone exchange is staffed day and night throughout the week. There are four clerks for work through the day (who also deal with all the waiting-list routine) and a rota of night telephonists. The problem is simplified considerably by the fact that the two larger hospitals have practically a common medical staff, to some extent on the unit system.

The service started on Jan. 1, 1948, and before this date the 350 general practitioners in the area were asked by circular that all applications for admission to hospital (except those for mental hospitals) should be sent to the Bureau. It was pointed out that it was the intention to facilitate admission to hospital, and that if a case required immediate admission the Bureau would undertake to provide a bed. It was also stressed that if the Bureau was to be effective it would require the co-operation and confidence of the general practitioners, and that these would not be obtained unless the service was efficient. Criticisms and suggestions were welcomed.

Size of Waiting-lists

There is a large board in the Bed Bureau office showing the bed state at all the hospitals. Hooks for each section show beds available by means of hang-on tags. As a bed is filled or becomes available a tag is removed or added as required. Direct admissions, accidents, etc., are notified by the various hospitals as they occur. The bed state is checked twice daily by telephoning the various hospitals at 9.15 a.m. and 5 p.m.

On Jan. 1, 1948, the waiting-lists were as follows:	3,590
Derbyshire Royal Infirmary	266
Derby City Hospital	210
Children's Hospital	—
Women's Hospital	—
Total	4,066

By far the largest factor in the size of the waiting-list was provided by the ear, nose, and throat department, whose waiting cases on Feb. 1 numbered 2,260 out of 4,436—about 50%.

Use of Accessory Accommodation—Beds are used in out living cottage hospitals, to which some patients from these areas are transferred in a pre convalescent stage. The largest measure of co operation has been received from the various cottage hospitals. During the 11 months 439 cases have been so dealt with. The local Isolation Hospital has also recently provided a small block of eight beds for convalescent cases, which is proving a great help.

More minor cases are dealt with by being admitted for one day—e.g., cases of varicose veins, certain cases of D and C etc. Certain cases doubtfully suitable for admission are brought to the out-patient departments, seen by the appropriate consultant and returned home if considered suitable. Admission of certain cases is deferred for a few days after consultation and agreement with the outside practitioner. This has resulted in some cases not requiring admission. Some institutional cases have not been admitted to hospital after consultation with the outside practitioner. The Graph illustrates the size of the lists each month.

A comparison of the numbers put on waiting-lists during the month and the numbers admitted and taken off the lists during the same month shows the following figures:

January	Debit balance	370	August	Credit balance	262
February	Debit balance	219	September	Credit	
March	Debit balance	17		balance	85
April	Credit balance	72	October	Debit balance	60
May	Credit balance	84	November	Debit	
June	Debit balance	193		balance	65
July	Credit balance	32			

The advent of the National Health Service has seen a great increase in attendance at out patient departments with consequent swelling of waiting lists. Comparative total out-patient attendances at the various hospitals for the year ending Nov 30 are as follows: 1946-7, 103,695; 1947-8, 132,616.

This great increase has of course affected adversely the reduction of the lists. During the period Jan 1 to Nov 30 1948, 7,260 cases were added to waiting-lists and if some scheme had not been put into operation the lists would have tended to become unmanageable. Much of this increase should not recur, and the general state is more satisfactory than it was twelve months ago. The present position is that for the medical and general surgical lists all non-urgent cases entered prior to Jan 1 1948, have now been admitted; some of these had been waiting for long periods. All cases are reviewed weekly, and all urgent cases are admitted early. Consultants visit the office regularly with advice on their cases. A comprehensive view of the problem is facilitated by the fact that all the hospitals have the same management committee. The organization has received the greatest help and co operation from hospital staffs and practitioners, and this has made the scheme workable.

When all hospitals are full and an urgent case has to be admitted (which cannot go to another hospital if in a fringe area) there is an inter-hospital arrangement whereby the local hospitals dealing with the type of case in question take it in turn to accommodate the patient. Free choice of hospital by practitioner and patient is preserved so far as practicable, but it has been found that special request for a named hospital does not arise frequently. The organization of such a service depends on a skeleton scheme as a basis and the local working out of details which will differ in different areas.

Summary

A Central Bed Bureau has been instituted for an area where there is a shortage of hospital beds for acute cases and a sharply rising waiting list. All cases, emergency and waiting list, are included. This gives a comprehensive view of the problem as a whole. The fullest co-operation of all hospital staffs and practitioners is evident. The hospitals have tended to become regarded as a single unit, and requests for a particular hospital have not been encountered often.

With the assistance of ancillary measures to save beds the waiting lists requiring admission are on a more satisfactory basis in spite of the great increase in demand consequent on the introduction of the National Health Service.

In areas where there is a shortage of hospital beds for acute cases it would seem to be desirable to institute a comprehensive scheme for admissions suiting local needs, especially in view of the greatly increased numbers of persons attending hospitals.

Correspondence

Absurdities in Pay-bed Regulations

SIR—I have been perusing the regulations for pay-bed accommodation issued by the Ministry of Health 1948 No 1490 (*Supplement* July 31 1948, p 61) and note that the fee to be paid a surgeon depends on whether the operation he performs is classified as major* (fee 50 guineas) intermediate (fee 25 guineas), or minor (fee 10 guineas).

Turning to the schedule of gynaecological operations I find that whereas hysterectomy is classified as a major operation, simple myomectomy is classified as an intermediate operation. But what is a simple myomectomy? Does it refer to the position, or the number or the size, or sizes of the fibroids in the uterus? Anyone having expert knowledge of gynaecological operations knows that the average risks of myomectomy are about the same as those of hysterectomy (Wertheim's operation excluded), while the skill and experience required for the former operation is considerably greater than that required for the latter. Myomectomy because it is conservative, fulfils a much higher ideal than destructive hysterectomy, and yet this precious schedule puts a premium on the latter.

Salpingectomy and salpingostomy (chronic whatever that means with regard to salpingostomy) did the author think there was an operation for acute tubal closure?) are likewise classed as intermediate though anyone with experience of tubal surgery knows that many of the operations for chronic tubal disease (especially when tuberculous) are exceedingly difficult and lengthy while salpingostomy particularly when performed to re-establish the patency of the inner ends of the tubes, is an exceedingly delicate and prolonged operation requiring special experience and skill.

There are many other absurdities in the schedule, but these I cite will suffice to show that whoever drew it up did not possess the expert knowledge it required or else was exceedingly careless and perfunctory. One would have thought that the Ministry would have had no difficulty in procuring acknowledged authorities on gynaecological surgery to draw up the schedule. Or is it that among the ranks of these there are no Socialists?—I am etc.

London W 1

VICTOR BONNEY

Remuneration of Specialists

SIR—Truly we live in an age where quantity overrules quality. The outbursts of criticism and comment on the terms and conditions of general practitioners under the Act, obviously unsatisfactory to all doctors, are in direct contrast to the lack of interest in the plight of the consultants, relatively a mere handful of individuals. *The Times* echoed by the *Lancet* in a leading article lays emphasis on the dissatisfaction of the general practitioners at being paid less than the consultants and the *British Medical Journal* generally appears to think the consultants are very fortunate.

Before commenting on the Minister's proposals it would be as well to capitulate certain basic facts and events which must be taken into consideration.

(1) No consultant or specialist at present holding a senior post has benefited from the proposed salaries payable to trainee specialists. He has learnt his art under the old unpaid or underpaid system, conditions which he accepted in the hope of recouping the lost (financial) years when fully trained.

(2) Private practice is fast disappearing. The causes of this are the high rate of compulsory insurance levied on the erstwhile private patient, the high cost of nursing home beds (and their scarcity) and the fact that for private beds the hospitals have now doubled and in some cases trebled their charges.

(3) Consultants are to be paid for their hospital work which they previously performed free.

(4) The free consultation in the patient's home is replaced by the domiciliary scheme.

(5) The Consultants and Specialists Committee of the British Medical Association is alleged to represent all the consultants and specialists in the country. It is hard however, to see how the

members of this committee are to obtain the views of their constituents. It is understood that the Royal College of Physicians is calling a general meeting to discuss the proposals, but no word has been heard of the Colleges of Surgeons and Obstetricians and Gynaecologists or the Scottish Corporations doing likewise. The representatives of the regions will have received proposals from the staffs of the hospitals in the regions, but these representatives (of the great majority of consultants and specialists) are very much in the minority on the committee.

Bearing in mind the above facts, it is suggested that the proposals would be acceptable if adjusted in certain respects.

(1) The Spens Report, accepted in principle by the Minister and the profession, should be properly implemented. This means that the rates of remuneration should be raised to cover the 85% increase in cost of living.

(2) The fees for domiciliary visits should bear some relation to the time spent and knowledge required. The fee of 4 guineas is adequate for a patient within a hundred yards of the consultant's home, but there are not many of these. A reasonable fee should be paid according to the distance travelled in a scattered region, and allowance must also be made for the fact that a six-mile journey in London takes as long as a twenty-mile one in Devonshire.

(3) The special merit awards should be allotted purely on seniority. The jealousy and bad feeling likely to be engendered by any other system would be detrimental to the profession. Also, any system requiring recognition is likely to encourage massive publication of inaccurate and useless information with the idea of catching the assessor's eye. The busy and competent consultant will never be noticed.

(4) The mileage allowance bears no relation to the costs of a car under present conditions, to the county rates paid before July 5, or to the Whitley Council scales for local authorities. It has been rumoured that members of the Coal Board receive 2s. 6d. per mile, but I cannot substantiate this and would accept correction.

(5) Why should there be a limit to the number of domiciliary visits paid for? No other trade or profession is expected to work for nothing. No doubt the Minister fears dichotomy, and the mass of honest consultants must work for nothing lest a few black sheep steal an unnecessary fee or two.

No doubt there are other criticisms both constructive and destructive, but it would be better if they were voiced now and not, like the general practitioners', after the signature has been placed on the dotted line.—I am, etc.,

Exeter, Devon

DEREK JEFFERISS.

SIR,—Some comparisons may now be made between the proposed remuneration of whole-time National Health Service specialists and whole-time non-professorial medical university staff, and from the point of view of the latter they are most unsatisfactory.

The universities seem to have been influenced too much by the fear of possible reaction from their staffs of faculties other than medical, who have now in any case had their salaries raised. It should be a *sine qua non* that medical men receive the same treatment in all branches of the profession. To state, as has been done, that the amenities of university life compensate for less remuneration is hardly intelligent reasoning, because by virtue of his work and frequent emergency calls, day and night, the clinical worker cannot take the vacations and "time off for thinking" that the non-medical don can. Junior members of university staffs in many centres, although paid by the university, have little if any contact with academic university life, and are not necessarily members of any university college.

It would appear that in many cases the maximum salary for the university specialist is the minimum for his opposite number in the National Health Service, and he is to lose a considerable sum (the equivalent of nine months' extra salary) because the universities are not bound by a clause retrospective to July 5, 1948. The obvious solution of allowing the university specialist to be remunerated for clinical work which, after all, he carries out in a National Health Service hospital has not been accepted.

I trust that the British Medical Association will note these facts and come to the aid of a small but important branch of the profession. The only individual remedy would be to resign and take a National Health Service post. The universities, I predict, will not get the best if they adhere to their present decisions.—I am, etc.,

Oxford.

G. GORDON LENNON.

Democracy or Oligarchy?

SIR,—Most doctors hate committee work and politics—this is an axiom. The minority who take up this sort of work, whether the motive be a subconscious wish for power or a strict sense of obligation, tend to become separated from their colleagues. Usually they are beset by two dangers again: which they must be constantly on guard if they are to remain faithful to the cause they set out to serve.

In recent years the work of the medical politicians has become rapidly more and more exacting. It demands a immense amount of work, for instance, to be a useful member of the B.M.A. Council or to keep sufficiently informed of day-to-day developments to stand up effectively for medical interests on a local executive council.

As his grasp of the complex issues develops, the medical politician finds it increasingly difficult to bridge the gulch between himself and the bulk of his professional colleague who stand aloof. He begins to lose the common touch in matters political, and to bother less and less to explain his actions and consult the wishes of those whom he represents. He tends to feel, with some justification, "I'm doing this work for them. Why should I run after them? The least they can do is to keep in touch with me if they want a voice in things. And so, little by little, he may lose his basic ideal of democracy and contribute to the growth of its most dangerous weed—oligarchy.

When one finds that recommendations of the B.M.A. Council to the Representative Body, or of the General Medical Service Committee to its parent, the Conference of Local Medical Committees, are published in the national Press as if they were established policy before the profession's representatives have even met to consider them, one is moved to ponder these things.—I am, etc.,

Orpington, Kent.

A. C. E. BREACH.

Statistics of Extra Work

SIR,—It is the general opinion of the vast majority of general practitioners that the amount of work demanded by patient has greatly increased since the inception of the National Health Service Act. If this is the case, and I believe that it is, it will be necessary to prove this to the Ministry of Health beyond any shadow of doubt.

In my opinion it can be done if doctors will punctiliously enter on the back of the Medical Record Cards (Forms E.C.1 and E.C.6) every item of service rendered to a patient, no matter how trivial. The Ministry of Health's instruction "This column is provided for doctors to enter A, V, or C at their discretion" should be disregarded altogether. It should be a simple matter to compare figures obtained in this way with similar statistics which were obtained in N.H.I. days and which are already in the hands both of the B.M.A. and the Ministry of Health.

I am well aware that at the end of a busy day it is very laborious to enter up items of service in this way, but if we are to be in a position to prove our statements with regard to added burden of work in the new Service we must be prepared to make the necessary extra effort.—I am, etc.,

Belford, Northumberland.

D. T. McDONALD.

Refresher Courses

SIR,—I intended to enrol for a G.P. refresher course to be held at the University of Edinburgh, for which Government grants are available. The University confirmed that a place would be reserved for me and I applied for the grant through the usual channels.

The Department of Health for Scotland, which is responsible for financial arrangements, has now informed me that my application for a grant has been refused. The reason given is that payment of fee and expenses can be made "only for doctors who either are ex-Service medical officers or are in general practice as principals under the National Health Service arrangements." Since I am an assistant and not a principal no grant can be made to me.

It would be interesting to find out why this discrimination between principals and assistants is being made. Should not the medical standard of an assistant be just as high as that

of a principal? Surely every doctor in general practice, whether he works as a principal or as an assistant, carries an equally great responsibility towards the patient. At any rate, if the Ministry intends to exclude assistants from grants towards courses, such a decision should be made perfectly clear in advance. Although there exists a memorandum setting out the conditions (G.P.R.C.I.), nothing is said about the exclusion of assistants, and disappointments which could be avoided are thus bound to follow.—I am, etc.,

ASSISTANT.

Trade Unionism

SIR.—What I have to say in this letter will be acceptable to the advocates of trade unionism, but I hope to address myself with sufficient objectivity to interest at least those who are either indifferent to or antagonistic to any organization with a trade union structure.

The medical profession as a whole is realistic. It cannot change the framework of the new social order, whether we like it or not. There is no looking back, but on the contrary we must adapt ourselves with some intelligent anticipation to the future. The liberty of the profession can be enjoyed only in obedience to laws which are not irksome or oppressive yet involve control and restraint for the benefit of the whole medical community. We require, as Professor Whitehead puts it, "a doctrine as to the social mingling of liberty and compulsion."

The growth of group action in the pursuit of economic interests can be effective only if the group organization concerned can exercise adequate control over its members and those within its sphere of action. To do so we must survey the internal legal structure of the group entities which have so largely replaced the individual in the economic struggle.

The growth of trade unions and business associations leads to the replacement of individual bargaining by collective group agreements which more and more curtail the freedom of the individual by penalizing the outsider and compelling the member to submit to collective terms. It means a sacrifice of freedom in substance. This point most doctors, who think clearly and freely, have recognized, but it means an enormous change of attitude and outlook.

What are the aims of trade unionism? Perhaps the best definition is that of the Webbs: "A trade union as we understand the term is a continuous association of wage-earners for the purpose of maintaining or improving the conditions of their employment. The purpose of the trade union is the protection of the standard of life—that is to say, the organized resistance to any innovation likely to tend to the degradation of the wage-earners." These definitions are true in 1949 as in 1902, when the Webbs wrote the *History of Trade Unionism*. The purpose of trade unionism has not changed, but its methods.

Such is the influence of the movement that its co-operation is now recognized as vital in the execution of the plans of the Government. The Government is at every stage bound to consult, as other Governments did in two wars, the unions on matters of industrial and social policy. The old methods of strike, agitation, and political opposition are in the process of being replaced by negotiation and consultation on terms of equality with the employers. Trade unionism should encourage a community of interest between employer and employee, even if the employer is the State and the employee the doctor.

Unless we possess legal powers analogous to those of a trade union, both as regards withdrawal of service and the economic support which would be essential if that service is withdrawn, and we are afforded the full protection of the Trade Disputes Act, 1906, we are rendered materially impotent in our negotiations with the Government. In the words of Mr. Justice Holmes, "True liberty of contract can begin only where equality of bargaining power begins."

The change in the status of the doctor since July 5, 1948, has not only altered but increased the problems of the profession. Many doctors, for reasons which I can well appreciate, refuse to consider themselves as "workmen" or "employees." They still feel that they are independent contractors. I would respectfully remind them and Sir Valentine Holmes, K.C., that *employed and employment* are defined in the National Insurance Act in Section 1 (2) and in Section 78, and include trade, business, profession, office, or vocation. A person who is gainfully

occupied for the purposes of National Insurance is one who is engaged in any trade, business, profession, office, or vocation, and is wholly or substantially dependent thereon for a livelihood. "Self-employed" persons include small traders and all professional persons, unless, though qualified, they are paid a salary or other remuneration under a contract of service.

The Minister of National Insurance has designated general practitioners as "self-employed," yet has ruled that specialists in contract with regional hospital boards who are engaged for more than half their time in their appointment under one board are to be regarded as "employed" persons, but that those who are engaged for less than half their time under one board are regarded as "self-employed"—a complete lack of uniformity and contrary to the definitions in Section 1 (2) and in Section 78 of the National Insurance Act. Although the Minister of National Insurance designates some of us as "self-employed" we are by virtue of the above-mentioned Sections "employed" persons because of our salaries, remuneration and emoluments on which we are wholly or substantially now dependent for a livelihood.

I submit, therefore, with some respect that the arguments expressed by Sir Valentine Holmes, K.C., on points (2) and (3) in his further and fuller Opinion published in the *Supplement* of April 2 (p. 171) are not cogent because they are based on incorrect assumptions.

With regard to his point (1), that he does not think that doctors are employed in "trade or industry," I would draw attention to the words of Lord Wright in *National Association of Local Government Officers v. Bolton Corporation*, 1943, A.C. (at pp. 184, 185). "'Trade' is, not only in the etymological or dictionary sense, but in legal usage, a term of the widest scope. It is connected originally with the word 'tread' and indicates a way of life or occupation. In ordinary usage it may mean the occupation of a small shopkeeper equally with that of a commercial magnate. It may also mean a skilled craft. It is true that it is often used in contrast with a profession. A professional worker would not ordinarily be called a tradesman, but the word 'trade' is used in the widest application in the appellation 'trade unions.' Professions have their trade unions. . . . From another point of view it may be said that every person who seeks to dispose of his services is a trader in that respect." And to cite Lord Simon in the same judgment at p. 176, "If there can be a 'trade union' to which higher grade officers of a municipal corporation can belong, it does not seem an impossible use of language to say that a dispute concerning their conditions of service may be a trade dispute." The same will apply to a trade union of doctors.

Finally, Sir, I would emphasize that I do not regard trade unionism as "political." Many of the conservative "white collar" trade unions contain a much higher percentage of Conservatives than of the two other parties. I am neither a rigid Tory nor an unhesitating Socialist. I am interested in trade unionism because my Liberal principles urge me to strive for a higher standard of living and more tolerable working conditions for the doctors in return for the truly efficient and arduous service rendered by them since the inception of the National Health Service Act.—I am, etc.,

London, W.8.

J. ARTHUR GORSKY.

POINTS FROM LETTERS

Graduated Capitation Fee

Dr. D. M. O'CONNOR (Launceston, Cornwall) writes: How does Dr. Bamford calculate (*Supplement*, March 19, p. 157) that on a fixed capitation fee "more the work, more the pay"? As things are at present the plausible doctor is at least as well rewarded as the conscientious. . . . I might be classified by Dr. Bamford as either "lazy" or "bad" or both, but I find that 2,250 names on my list in a partly rural practice give me all the work I can possibly do (I have averaged over twenty visits on the last six Sundays). . . .

Dr. QUENTIN EVANS (Herne Bay, Kent) writes: I was very glad to see the letter of Dr. J. W. O. Holmes (*Supplement*, March 26, p. 164), with which I fully agree. There can be no question that some doctors are quite capable of giving efficient medical attention to a large list. With a properly loaded mileage fund, or other means for compensating sparse areas, there seems no justification whatsoever for a tapering capitation fee.

Association Notices

Diary of Central Meetings

APRIL

- 20 Wed. Rural Practitioners Subcommittee, 11 a.m.
- 20 Wed. Private Practice Committee, 2 p.m.
- 21 Thurs. Joint Subcommittee on Report of Working Party on Midwives, 11 a.m.
- 21 Thurs. General Medical Services Committee, 11 a.m.
- 21 Thurs. Committee on Psychiatry and the Law, 2 p.m.
- 21 Thurs. Full-time Non-Professorial Medical Teachers, Laboratory and Research Workers Group Committee, 2.30 p.m.
- 22 Fri. Public Health Committee, 2 p.m.
- 22 Fri. Physical Medicine Group Committee, 2 p.m.
- 27 Wed. Committee on the Postgraduate Education of General Practitioners, 2 p.m.
- 28 Thurs. Publishing Subcommittee, 11 a.m.
- 28 Thurs. Grants Subcommittee, 11.30 a.m.
- 28 Thurs. Occupational Health Committee, 2 p.m.
- 29 Fri. Film Committee, 2.30 p.m.

MAY

- 3 Tues. Central Ethical Committee, 2 p.m.
- 5 Thurs. Coroners Acts Committee, 2 p.m.
- 24 Tues. Scholarships and Grants Subcommittee, 11 a.m.

Meetings of Branches and Divisions

DENBIGH AND FLINT DIVISION

At a meeting of the Division on Feb. 3 Professor Wilfrid Gaisford lectured on "Treatment of Some Common Disorders in Infancy." He said that it should always be their aim to keep infants out of hospital if possible. The risks of sending an infant into hospital—at least into most hospitals—were much greater than was generally realized.

Immediately after birth an infant should cry lustily and be a healthy pink colour. If he remained blue, one must clear his airway and give him oxygen. But if he was born white and did not cry, the position was very different. If the delivery had been difficult the condition was probably due to shock and damage to the respiratory centre. The chief points in treatment were: (1) The greatest gentleness in manipulation; (2) immediate warmth; (3) oxygen; (4) head and shoulders to be raised (having made sure the airway was clear of mucus and liquor). If the cause was haemorrhage the infant would usually die. But it might be only severe oedema, which was remediable. Cerebral dehydration was best accomplished by hypertonic rectal saline or 0.5 ml. 50% mag. sulph. intramuscularly. Phenobarbitone gr. 1/8 or 1/6 might be given if there was restlessness or twitching, and the infant should be kept undisturbed in complete quiet in the dark.

Pallor might occasionally be due to blood loss, an occult haemorrhage from rupture of placental vessels—the so-called "vasa praevia." In that case the mucous membranes were also obviously bloodless and the immediate and urgent necessity was for blood. The anaemia gravis resulting from blood destruction in the infant of an Rh-negative mother did not usually become pronounced for a couple of days, but might be present at birth in severe cases. The differentiation from the anaemia due to blood loss was made by the almost certain presence of an enlarged spleen in the Rhesus baby—and, of course, the possibility should have been known beforehand by Rh testing during the antenatal period, which should be done as a routine in every primigravida.

With regard to the feeding of premature infants, there was a die-hard superstition that unless they were given breast milk they would not thrive. That was not true. The ideal food for premature babies was undoubtedly premature milk—i.e., colostrum, with its high protein and mineral content and low fat. The institution of a "colostrum bank" for premature babies might be impracticable but would be very valuable. In the meantime they could do well on artificial milk formulas until they reached the weight of a normal infant. From then on breast milk was the ideal food.

Vomiting in the first few hours of life was quite a natural procedure, particularly if much fluid had been swallowed during the birth process. But if vomiting occurred after three or four consecutive feeds and was accompanied by excessive mucus and by cyanosis, then a congenital abnormality should immediately be suspected. To-day, with the advances that have been made in thoracic surgery, there was a reasonable chance of survival in the commoner abnormalities. Any infant showing such symptoms after feeding should be sent to hospital forthwith. Vomiting continuing from the second day onwards might be a sign of cerebral trauma. If bile-stained and projectile vomiting occurred, duodenal stenosis was likely. Pyloric stenosis did not occur at this age, although it was commonly called "congenital."

Haematemesis, like melaena, might be true or spurious. In each case the spurious preceded the true—in haematemesis by two or three days and in melaena by 12-24 hours. The spurious was due to swallowed blood, and the true to the physiological hypoprothrombinaemia which occurred between the second and fourth day after birth, before there had been time for vitamin K to be synthesized in the infant's gut. Vitamin P might also be implicated, for there was an undoubted seasonal incidence in these haemorrhagic diseases of the newborn. There were, in addition, other causes of haemorrhage.

The cause of diarrhoea varied in different epidemics. Some were staphylococcal, some due to *Giles's bacillus* (a non-motile form of *Bact. coli*), and some possibly due to a virus. Almost always these organisms were penicillin- and sulphonamide-resistant, but many were streptomycin-sensitive.

There were four obvious points of attack for infections in the newborn—the eyes, the skin, the upper respiratory tract, and the umbilicus. The most important was the upper respiratory tract. The commonest source of infection was the oro-pharynx. A parent or relative—or even the doctor—with a cold might be the infective agent. As breathing was entirely nasal at that age blocking of the airway made suckling difficult. Prevention was obviously the remedy but when the infection had occurred nasal instillation of 0.5% ephedrine about 10 minutes before feeds might relieve the congestion sufficiently to enable the feed to be taken in comparative comfort. Occasionally a small length of rubber catheter might have to be passed into each nostril to secure an airway. There was no evidence that sulphonamides or penicillin were advantageous. Fingers, swabs, and gauze should never be put into an infant's mouth to clean it. A sip of water after each feed was all that was necessary to ensure cleanliness.

INFANCY

Excessive crying attracted most attention. Most of the infants were in good condition. The estimate of the parents' characters would be helpful. Screaming from pain was usually recognizable, and a napkin pin transfixing the penis was not likely to go long unremedied. Definite association with micturition was a clear pointer. Acute otitis did not usually cause screaming in infants. It was the persistent grizzler with intermittent crying bouts, or the continued screamer that he was talking about. The commonest cause was colic, and the commonest cause of colic was underfeeding, resulting in the swallowing of wind. All mothers were told to "burp" their babies during and after a feed but not before. That was an omission. The stomach should be cleared of gas as far as possible before the feed was begun. An infant had an appetite which varied physiologically within wide limits. Why should an infant be fed every 3 or 4 hours and, in the case of the artificially fed, be limited to, or forced to take, the particular quantity described?

Infants on the breast or bottle would do better if allowed to select the volume of their feeds and the intervals between feeds—with two provisos: (1) the mother must be intelligent; (2) if a cow's-milk formula was used, it must be properly balanced.

The only practical differential diagnosis of pyloric stenosis was pylorospasm. There was a difference in the general appearance of the child. One with a spasm tended to be gaining weight, although perhaps slowly, and would have good faecal stools. The true stenosis showed (a) constipation, or hunger diarrhoea, and (b) oliguria. If in doubt, the best treatment was phenobarbitone gr. 1/8-1/6 according to weight given a quarter of an hour before feeds. It would not improve. If there was no improvement in 48 hours and if there was visible gastric peristalsis, then operation. But the infant should be removed from hospital after 48 hours, or 72 at the most. Nothing was more depressing than to operate on an infant, only to lose him from gastro-enteritis or pneumonia caught in hospital.

It was often not realized how much sugar an infant could take. It was easily digested, provided readily available energy, and promoted peristalsis by its fermentation in the gut and thereby aided evacuation. The important thing was the ratio of carbohydrate to protein. In cow's-milk feeds the optimal proportion was attained when one part of sugar was added to 12 parts of whole milk. Bringing the sugar up to this level would often cure constipation in infancy. In the case of breast-fed babies constipation might be a sign of underfeeding.

Failure to thrive was a great source of worry to parents and doctors alike. Having excluded organic and constitutional disease the chief line of approach was the "self-selection" method of feeding. Such infants were not suitable for admission to hospital, and many began to improve as soon as they were allowed to assert their individuality as regards feeding. Of equal importance was the avoiding of emulsions and oily preparations, which tended to promote anorexia.

Finally Professor Gaisford pleaded for the home nursing of infants with acute infections such as bronchopneumonia and meningitis—especially the latter. Sulphonamides and penicillin given haphazardly could do a lot of damage. One really large dose would often succeed, and—particularly in meningitis—the less the spinal canal was interfered with the quicker the infant got better. The general condition of the infant was the clue to progress, not the alterations in cells and protein in his cerebrospinal fluid, and not even his temperature. That might fall gradually over a period of days without treatment. Injections given 3- or 4-hourly were unpleasant in childhood. Their aim should be to deal a shattering blow to the infecting organism and then to leave the natural powers of resistance to take over, which, if they were given a chance, they would usually do.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-County Borough Councils.—Dartford, Wallsend.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huydon-with-Roby, Redditch (restricted to new appointments), Tyldesley.

LONDON SATURDAY APRIL 23 1949

WOMEN WAR CAPTIVES IN RUSSIA

BY

R. F. A. DEAN, M.R.C.S., L.R.C.P.

(From the Medical Research Council Unit, Wuppertal, B.A.O.R., and Department of Experimental Medicine, Cambridge University)

In August, 1948, 24 women who had recently been released from camps in Russia were admitted to one of the hospitals in the British zone of Germany which received returning prisoners of war in need of medical care. They were, on the whole, in very good clinical condition, and this seemed remarkable when considered in relation to the known or generally believed stories of hardships of life in Russia. It was therefore decided to obtain from some of the women careful and detailed accounts of their experiences.

In order that the accounts might be comparable and more easily managed, a questionnaire was drawn up and was followed as closely as the women's talent for diversion allowed. The account now presented was put together from the replies received. So far as possible it is an exact record of the replies, and comment has been excluded.

Six women, whose ages ranged from 21 to 37, were chosen for the questioning. They were all women who had come to the British zone as *Ost-Flüchtlinge*—that is, they no longer had any homes in any of the four German zones. They were questioned in complete privacy by a woman doctor who spoke German and English fluently, and they gave the accounts of their lives in Russia with perfect willingness and, so far as could be judged, without exaggeration of their hardships or pleasures. They appeared to be excellent witnesses, and their statements, made without hesitation and quite spontaneously, bore the ring of truth. The frequency with which they corroborated each other's stories was extraordinary. Two of the women (Margret and Ida) were, in fact, discovered to have been inmates of the same camp by the exactness of their descriptions of camp conditions.

The Women, and How They were Taken into Captivity

The six women were Ida and Elli, both aged 21; Hanna, aged 24; Margret, aged 26; Agnes, aged 32; and Emma, aged 37. All six came from the eastern portion of Germany, which is now partly Russian, partly Polish. Hanna came from the south (Silesia) and all the others from the north (Pomerania; East and West Prussia). They had all lived in country districts, and all except Hanna, who worked in an office, were doing housework and farm-work in their own homes. The two eldest women were married. Agnes had a daughter aged 12, but Emma had no children. Agnes's husband had to join up in 1942, and she then went home to her mother; Emma's husband, who was also a soldier, was reported missing in October, 1944.

The villages in which the women were living were occupied by Russian troops in February and March, 1945; and shortly after the occupation Elli, Hanna, and

Margret were visited by soldiers, who told them to go away with them immediately for three days' work. Elli, who had been expecting a summons of this kind, was wearing extra clothing and was told to take a blanket with her. Hanna was caught when on a visit to the neighbouring town. There she was questioned extensively, then taken to her home and told to dress in her warmest clothes. Margret had a rucksack, in which she packed some warm garments. Ida was taken from her home and told she must work for four months, and she also was allowed to pack a bag with some clothing. Agnes would have been taken from her home in the same way, but the Russians who came for her were apparently unnerved by the screams of the children who saw her going. Next day, however, while she was at some compulsory work of clearing away rubble, she was arrested with the women who were working with her and given no chance to go home. Emma hid in her mother's home for fourteen days after the Russians came, and then went with other women to the Russian commandant to ask for work, which they hoped might provide them with some sort of protection. They were set to mind horses. After a fortnight of this Emma was taken to the next village to clear away rubble. She could send no word home, and did not, in fact, see her home again.

It appears that to some extent age determined the choice of prisoner. Thus Elli and her sister aged 15, and four girls of similar ages, were taken together; Margret's father (49), her sister (20), and her brother (18) were taken with Margret herself, but her two sisters (13 and 7) and her mother were left. There was at this stage no examination to determine fitness for work. All the six women knew of cases of women who were pregnant when they were taken off. One gave birth on the journey to Russia, and she and her child died. Many others whose children were born later were repatriated after a short time.

Conditions on the Journey

It was usual for the women to be collected in cellars or other safe places. When the numbers were sufficient they were either marched or taken by lorry to a railway centre; a period of from seven to 14 days was usually occupied in these preliminaries, and all the six women said that it was physically the most exhausting of their experiences and the most severe mental strain. There was a widespread fear at this time, which seems to have been to some extent justified, that they were in constant danger of rape. There was no actual corporal punishment on the march, but the guards were very strict, urging the prisoners on with their rifle butts. Some of the women had to

long distances. For instance, Elli had a very hard journey. Her party was forced to walk for the first two days, and many of the women broke down and were left by the wayside, and Elli does not know their fate. The night of the second day was passed at a farm, where they were offered good food but were too exhausted to eat it. The next day the party were lodged with about 2,000 other women in a bank building, where they were kept for two days. On the third day they set out on a journey in which they walked 100 km. in three days. Many fell out, and the officer in charge said: "If you cannot get along, stay here and go 'kaput!'"

At the railway centres it seems to have been usual to provide washing facilities, and something was done to eliminate lice. For the actual railway journey into Russia the women were packed into cattle-trucks, about 80 in one truck. Sleep was very difficult, and if one woman wanted to lie down, other women had to stand. For toilet purposes there was a hole in the floor of the truck. Washing was impossible, and the food was very inadequate; a little bread was distributed three times a day, and each woman had one spoonful of sugar a day. All six women agreed that the lack of water was, however, the worst of their deprivations, and Elli and Emma said that their parties were actually screaming for it. One girl aged 18 in Elli's truck died after having diarrhoea. Elli thought that about 40 to 50 of the 2,000 women in her transport died on the journey. The train journeys lasted from two to four weeks; Ida and Hanna had the shortest journeys, and Elli the longest.

One woman, Hanna, ended her journey in the Caucasus, and the other women went to the Urals. The women all remained in these districts, but they were moved from camp to camp several times until they finally settled in camps where they stayed for periods lasting up to two years. In the Urals the variations of temperature between summer and winter were extreme, with cold in winter down to minus 50° C.; but in the Caucasus the climate was more temperate. The camp conditions in the first few months were obviously very bad. The camps usually consisted of collections of wooden huts, which were in a filthy condition and overcrowded. Many deaths occurred in these first months; Elli said that 18 of the prisoners with her died in one day, and she and the other women believe that the total number of women prisoners was almost halved by death by the end of 1945. The chief causes of death were typhoid and similar gastro-intestinal illnesses, and "water," which was apparently a generic term for swellings of feet, hands, and face.

The Work and How it was Done

The first medical examination was made by Russian doctors, or by German doctors under Russian supervision, within three to four weeks of arrival. The women were classified according to their capacity to work, but the examination consisted merely of an inspection. There was no thorough investigation. They were put in four groups: Group I were the fittest, and Groups II and III were less fit but still capable of work, whereas those in the fourth group, called "O.K." (*ohne Kraft*), were unfit for anything except cleaning and other chores in the camp. Margret and Emma were classified at this preliminary examination as "O.K." and the others as Group II.

Margret and Emma had no set work for the first six months. Agnes was put to work in a lime-kiln, and her job was to fill trucks with the lime. She said it was very hard work and the lime made her eyes smart; other women had lime burns. Ida, and Margaret as soon as she was well enough to be put in Group III, worked in a peat-

field, carrying the turves, stacking them, and loading them into trucks. The actual cutting of the peat was usually done by men or by the fittest women. Elli worked in a coal mine 275 metres below the surface. There she had to drag pit-props a distance of about 700 metres. The mine tunnels were only about 1.5 metres high, so that she had to walk in a bent position. For a short time she had to shovel coal. Hanna was not so specific in her account of her work. She was in a labour camp where the women were called on to do all kinds of work, such as helping to build roads and houses, and for a short time she worked in a silver mine. In July, 1945, Emma was put to work in a tile factory. For the first month she had to lay down boards for the tiles to dry on, but for the next six months she had to clear dust from the chambers in which the tiles were baked. These chambers were very hot and dusty. Afterwards she went back to carrying the boards.

All the women stated that a specific amount of work known as the "norm" had to be done each day. Each group had a different "norm," which was fixed according to the fitness for work, and Ida gave the following example. In her peat-field the "norm" for a Group II worker was to clear eight rows, each 200 paces in length, and this was to be done in eight hours. Group III had only six rows to clear, and this was expected to take six hours. Both groups were therefore thought capable of doing the same amount of work per hour. If the "norm" was not completed within the set time the women had to go on until the rows were finished. If for any reason other than obvious illness the women failed to complete the "norm" they were liable to be given solitary confinement for one to three days. There was no corporal punishment.

All had one free day each week, but some had to do camp cleaning on this day. Although the women longer not to work they did not actually refuse, the reason being perhaps that, as will be shown later, in most cases good work guaranteed better food. All the women said that they were worked to their utmost capacity.

Payment for work was sometimes made in money, sometimes in goods. If, as in Elli's camp, they were paid in money they had to buy all their own food, but the earnings were enough to enable the best workers to buy as much as they wanted. The average worker or sick woman earned less and managed to buy only the food offered in the camp kitchen. In most camps it seems to have been a rule not to pay the women in money but to set the "norm" as the minimum amount of work which guaranteed free food. Extra work—graded in percentage above the "norm"—was rewarded sometimes by money payment and sometimes by material for garments.

The Food in the Camps

There was general agreement that the food was of very poor quality and inadequate in quantity during 1945 and 1946, but that it improved to some extent later. Despite this improvement all the six women except Elli said that they were always hungry. They usually had three meals a day, but Hanna and Emma had only two. The number and time of Emma's meals were determined by the fact that she had to work for eight hours without a break; meals were served in her camp only at 6 a.m., 12 noon, and 6 p.m. The staple items of diet were cabbage soup, bread, and *Brei*, which was a kind of soup made principally from cereal, but Emma received *Brei* only if her work was considered good.

On the average the women seem to have been given 600 to 800 g. of bread per day; the quality of the bread was, however, said to have been very poor. As a rule 0.5 kg. of sugar was issued once a month, but many months

ssed without it. Ida said that the younger women often the whole pound straight off. She also ate stinging title which she had gathered on her way to work. They re eaten raw after she had rubbed them in her hands so at they might not sting her tongue. All the women reed that the food was not adequate for the work they re expected to do. The meals never satisfied them, and anna said that she thought no one could have survived the basic camp rations. In her camp extra food could bought. In 1946 she sold her coat for 520 roubles to Russian civilian and used the money to buy potatoes and me fruit. She said they were always looking through eir belongings to see what they could turn into food.

In Margret's camp extra food also had to be bought, it only the men who were fellow prisoners were paid. he women were able to get some of the men's money by ing various jobs for them. Emma in the last two months as able to earn 930 g. of bread a day because, although e was in Group III, her output of work was that expected a woman in Group II. This was her only way of getting tra food. Agnes could not get food for extra work, but anaged to do some needlework and knitting for Russian ilians, who gave her potatoes and milk in exchange. Elli ad a different story because her earnings were from 30 50 roubles a day and her basic food requirements only ost about half this amount. Bread cost her 3 roubles and 0 kopeks for 1 kg., and a small portion of *Brei* 0-90 kopeks. She was in the comparatively fortunate osition of being able to supplement her diet out of her come with such extras as milk, but that cost 10 roubles or 0.5 litre. Meat at 80 roubles for 0.5 kg. was too xpensive for her to buy.

The women were asked if they craved for any particular ood. Elli said that she had no cravings, as she could have ough anything if she had wanted to pay for it. Ida anged for potatoes and meat—something “*kräftig*”; anna for potatoes and something sweet. Emma wanted ilk and butter, Margret and Agnes wanted “proper” hole potatoes, *Brötchen mit Wurst*, and cake.

Living Conditions, Medical Care, and Illness

The permanent camps consisted of a collection of one four wooden huts set in a compound and surrounded by wire fence. In the larger camps the compound was about e size of a football ground. There was only one entrance o the camp, which was guarded. The number of women i each camp varied widely, from 80 in Hanna's camp to 000 in Emma's. In each camp there were usually a small umber of German men who were civilian internees and ho had been taken from their homes at the same time as e women. Twenty to thirty women occupied one room, ending their free time there during the day and sleeping here in beds which consisted of double-tiered wooden rames with straw mattresses. All the six women except Agnes had blankets, but she had to use her coat instead. da and Emma complained about the bugs, which disturbed heir sleep. There was no possibility of any kind of privacy n the camp. Although washing facilities were more or ss primitive, and soap was scarce, all the women agreed hat they could maintain a reasonable standard of cleanl-ness. Emma, Margret, and Ida said that they were xamined for lice once a week but that hair was shaved ly if lice were actually found.

All but Agnes said there was a monthly sick parade, hich was held by a German or Russian doctor. It was rely an inspection with the object of reclassification if ecessary. In most camps a doctor was available to see cute cases and to decide if an illness was severe enough o prevent the woman from working. Elli said that to be

certified as sick there must be fever over 37.5° C., furunc-losis, or a swollen face. In Ida's camp there were once considered to be too many women with temperatures over 37.5° C., and so the critical temperature was raised to 37.8° C.

In all except the smallest camps a room was set apart for women who were ill, and they were looked after by a nurse—usually a German girl, who did this instead of other work. This room was only for women who were really ill and was not available for those who merely needed rest. Severe cases were sent to the local civilian hospital or to the hospital of a neighbouring camp centre. Ida unfortunately had diphtheria in her first year. She was sent to the local Russian civilian hospital and was treated like the other Russian patients. She stayed there for four weeks, and was then sent back to camp, where she had to start work again immediately, although she complained of pains and stiffness in her legs, of water running out of her nose when she drank, and of difficulty with her speech. After five days' work she was seen by the Russian doctor, who put her on light work in the camp kitchen for three months. Her condition got worse and worse, and eventually she was sent back to the civilian hospital. There she rested for four weeks, and was then given some kind of light therapy, and her condition began to improve. The most common illnesses seen in the camps were typhoid and diarrhoea, malaria, and furunculosis. Tuberculosis and other lung diseases do not seem to have been especially prevalent. The six women attributed most of the illness to bad food, but Agnes said that much of the illness in her camp was due to the work with lime.

Nearly all the deaths of which the women had any know-ledge occurred within the first year, and were attributed chiefly to the bad conditions. Even so, Elli thought that the women who died were those who let themselves go too much, who were very depressed and did not put up a fight. Some women who were beyond caring drank stagnant or polluted water and became ill and died. Some women actually went mad. Hanna told a gruesome story of the first months of her imprisonment, when food was very scanty and large numbers died. She thought that, in proportion to the total numbers, more men died than women. During these first months the whole camp was practically a hospital. Fatigue parties took out the corpses at night to bury them in mass graves. Wolves came and dug up the corpses and ate them, and Hanna was with a party which was sent out to rebury the bodies. Her uncle was one of those who died in her camp.

The six women were asked what illnesses they themselves had suffered from. Margret, Agnes, Hanna, and Emma all had oedema of the legs in varying degrees. Margret had it when she arrived in Russia, and said she noticed it more often on her days of rest than on working days. Her hands and face were also swollen. She and Agnes also had polyuria. As previously mentioned, Ida had diphtheria, and Elli and Hanna had malaria. Ida eventually owed her release to a periodontal cyst which increased steadily in size. The Russian doctors preferred to send her home rather than operate on her. Hanna had typhoid and what she believed to be nephritis. She, Ida, and Margret all had lice, but none of them had typhus. Among minor ailments which were not referred to as illness were very painful pins-and-needles in Elli's hands, Margret's breathlessness, palpitations, and hot flushes, and Agnes's giddiness. Elli, who had started to develop a goitre when she was 16, found that it almost disappeared when she was in Russia. It seemed to enlarge as her general condition improved.

Unfortunately only Elli was able to keep any record of her weight. She weighed 51.5 kg. in 1944, and only 41 kg. in 1947. She weighed 51 kg. on her return in 1948. Hanna, who in 1947 was able to weigh herself on the potato scales, thought that by then she had lost about 23 kg. from her 63 kg. in 1944. Ida thought that she was at one time about 7 kg. under her normal weight, and Margret and Emma merely said that they got very thin.

Lack of clothing was not blamed as a cause of illness. All six women were allowed to keep what clothing they had of their own, and in addition to this were given padded clothing for the winter. The materials they earned by extra work, and other materials and wool which were obtained by barter or purchase, were made up during leisure hours, and it was evident that a great deal of care and trouble were expended on the making of the garments. The women brought back with them to Germany underclothing, blouses, and cardigans, all of which were very well made and proved the interest that was taken in the work. In the early days before needles and other sewing materials were available the men in one camp made knitting-needles from pieces of wire. Skill in needlework was made to serve a double purpose, as some Russian civilians were willing to pay with food for knitting or sewing.

The walk to work and the work itself precluded any idea of physical activity in leisure hours. The women were usually confined to the barrack precincts, but in the last year or so some degree of freedom was allowed. Elli, Ida, and Margret could then go to the nearby village alone, and Agnes was allowed to go into the woods sometimes to gather mushrooms and berries on her free day. In Ida's camp there was dancing once a week to music played on home-made instruments, and in Emma's camp there was even a club with a wireless set and occasionally a film show. There was a reading-room in this club and German newspapers. Agnes said that there were no books in her camp; Margret said books were to be had, but she was not interested in them. The reaction of the six women to imprisonment varied according to their temperament, and most of them appeared to have accepted their fate in a way which, when they were questioned, was expressed by a shrug of the shoulders accompanied by some remark

such as: "We had to be contented"; "We did not worry much—it was no use"; or "*Was sollten wir machen?*"

The girls in Elli's camp were perhaps less apathetic. They were living under more normal conditions, because they were paid for their work, and although they had to pay for their own food they could improve their condition by other purchases. This enabled them to maintain an interest in life, although, as Elli said, they had almost given up hope of ever returning home. They had ceased to worry about it, and disbelieved the rumours of repatriation. Hanna said she always thought, "I must get home," but she tried to be cheerful and to keep in good spirits because she realized that this gave her the best chance of survival. Agnes knew of one woman, aged 35, who tried to escape from Russia and reached Moscow before she was caught. She was said to have been sent to Siberia for fifteen years. The other women knew of no attempts at escape made by women, and laughed at the idea. In some camps a few children had been born, and Ida said that she liked to play with them in her leisure hours. None of the other women seems to have found any outlet for her maternal feelings, but no comment was made which indicated an appreciation of this lack.

The first chance of communication with relations came early in 1946, when most of the women were able to send postcards. Elli said that even the privilege of sending the first postcard was held out as an inducement for the best work. Ida and Elli were the first of the six to receive news from home, which they did in June and September, 1947, but Emma did not hear from her husband until March, 1948. Hanna had no news at all until she reached the British zone; the three other women had postcards from relations in the first three months of 1948. Margret and Agnes both said that not knowing what had happened to their families was almost the worst of their trials. Incidentally, Ida felt that the lack of freedom was the hardest to bear—even worse than the bad food, which was the chief complaint of the other women.

Menstruation and Sexual Feelings

Before their captivity all the women had menstruated regularly at intervals of 25–31 days, and the periods were normal. They all stopped menstruating in Russia, and the accounts are summarized in the accompanying Table. Or

Table Summarizing the Menstrual History

Name	Age of Menarche	Age when Taken Prisoner	Date of Last Period	Circumstances of Last Period	Date and Circumstances of Reappearance of Menstruation	Comments
Ida	17	18	April, 1945	En route to railway base	August, 1948, in Germany	No periods while she was in Russia, but a heavy yellowish discharge every 4 weeks. Headaches and "sexual feelings" in the head at the same time as the discharge. She thought other girls had similar symptoms
Elli	14	18	April, 1945	En route to Russia in railway truck	January, 1946, while working on a collective farm. Periods regular for 3 months, then stopped when she began mine work and did not restart until 1947. Stopped again May, 1948, and restarted August, 1948, in Germany	The restart in 1947 was due, she thought, to better food she received at that time
Hanna ..	14	21	September, 1945	In hospital for typhoid and malaria	Not yet restarted	She was certain that cessation was due to bad food, as girls who worked the kitchen menstruated as long as they were getting better and extra food. She herself menstruated "as long as she had any calories in her body"
Margret ..	15	23	January, 1945	At home	Not yet restarted	
Agnes ..	15	29	April, 1945	En route in railway truck	Not yet restarted	Had headaches and backaches every four weeks
Emma ..	16	34	March, 1945	While working for Russians (minding horses) before being taken prisoner	Not yet restarted	

da and Agnes noticed anything which might have replaced or formed a part of the normal menstrual cycle.

The women were asked if they were worried by the stoppage of periods. Hanna said that she was worried, but that the doctors reassured her. Margret, Agnes, and Emma were not anxious about it, and Emma thought it was "*sehr natürlich*." Hanna and Elli thought that normal sexual desires persisted, and Elli's replies suggested that if she had found a suitable partner she might have had intercourse with him. She was the only one of the four unmarried women who admitted that she was not a virgin before captivity in Russia. Ida was on very good terms during the last year in camp with a German boy aged 18, but the friendship was of an adolescent type and did not advance to sexual intercourse.

Since their return to Germany the two married women had met their husbands and had opportunities for intercourse. Agnes, who had had a number of years of married life before the war, said that, although she was happy to be with her husband again, she was "*zu schwach*" for sexual relations. Emma, who was married (at the age of 33) while her husband was on leave from the Army and had spent only one other short leave with him, said that her relations with him after their four years of being apart were perfectly normal. Margret dismissed the subject by saying that she was too young and that she was not interested in the men in the camps.

Four of the women knew personally women in their camps who became pregnant while they were in captivity, some of the fathers being German prisoners and others Russians of German or other descent. No details of the menstrual history of the women who became pregnant could be obtained. The children were born in the local hospitals, and all the mothers were able to breast-feed their children. Pregnant women received extra food from the sixth month and during lactation, and Elli said the children in her camp looked very bonny. These pregnancies were not the results of rape. All the women agreed that the danger of rape was over as soon as they were "*verladen*" into their cattle-trucks. (The word *verladen*, which was always used by the women when talking about their train journey, is normally never used for human beings but only for cattle and goods.) All the women except Margret were able to avoid rape during the critical first weeks, and regarded this as very good fortune. Margret said she had been raped "only twice"; she did not enlarge on this statement.

The Release from Captivity

During the last year there were rumours in most of the camps that release might be near for women in Group III. Previously only women who were unfit for work had been sent home. Release, when it actually came in July, 1948, was sudden and unexpected. Margret, Agnes, Emma, and Hanna were released because they were in Group III, and Hanna said that she was lucky in that the choice was made according to the classification of March, 1948. She had actually since then considerably improved in health. Elli was released because she had had an accident in her mine at Christmas, 1947. She had broken her collar-bone and two ribs when she was crushed between two trucks. Since then she had been on lighter work and made a good recovery. Ida, who was a Group I worker in the last two years, was sent home because of her dental cyst.

All the women gave a similar account of their return journey. Although they again travelled in cattle-trucks until they reached the border of the Russian zone at Frankfort-on-Oder, the conditions were very much better than on the outward journey, and there were no complaints of ill-treatment. They went from Frankfort-on-Oder to

Göttingen, where they were medically examined. The very great majority of all the women repatriated at this time were dismissed from hospital care or left hospital at Göttingen of their own accord to join relations in the western zones. Twenty-four women who preferred to stay under medical care after meeting their relations were sent to another hospital at the beginning of August, 1948, and the six women questioned belonged to this party.

Finally all the six women were asked what their plans were for the future. Margret hoped that when she was fully recovered she would be able to join her mother, who had come to the British zone and was trying to build up a home again in Hilden, near Düsseldorf. Ida expected to join her mother, now in a village near Krefeld, and had made inquiries about work in a factory where her brother was working. Hanna planned to keep house for her uncle and cousin in the British zone. Elli's family was widely scattered, and she could not decide what she would do. Her mother was still in her old home in Pomerania, and her father, who had been a prisoner of war in England, was working for a farmer in the Ruhr Valley. She had other relations near Münster and she might go to them. The two married women, Agnes and Emma, intended to join their husbands, who were trying to establish themselves in the British zone. They would leave hospital as soon as they felt completely well.

Summary

An account is given of the experiences of six German women who were taken into captivity in Russia. This account was compiled from the information they gave after they had returned to Germany. Great hardships were endured at first, but conditions gradually improved, and the women were in good clinical state on their return.

Menstruation ceased soon after the women were captured, and five of them had amenorrhoea for nearly three years.

P.T.A.P.: THE PRESENT POSITION

BY

LEWIS B. HOLT, M.Sc.

The Wright-Fleming Institute of Microbiology, St. Mary's Hospital, W.2

AND

GUY BOUSFIELD, M.D.

In the prophylaxis of diphtheria A.P.T. has certain drawbacks: it is not constant in its composition and, especially in adults, there may be unpleasant reactions. One of us (L.B.H.), working in the Wright-Fleming Institute of Microbiology, produced a purified diphtheria toxoid which instead of being precipitated by alum was adsorbed on to pure aluminium phosphate—a more suitable compound. To this prophylactic he gave the name P.T.A.P. (signifying *Purified Toxoid precipitated by Aluminium Phosphate*).

In November, 1944, it was decided that the results obtained in guinea-pigs with this new diphtheria prophylactic justified field trials (Holt, 1947). At that time we appreciated that numerous important problems arose in diphtheria prophylaxis regarding which there was very little accurate knowledge. These included: (a) the route of choice for inoculations—subcutaneous or intramuscular; (b) the dose of toxoid (Lf units) administered as adsorbed toxoid for the satisfactory mass immunization of children; and (c) the optimal amount of mineral carrier (AIPO₃) to employ. The new method gave us complete control of the composition of the prophylactic and therefore promised

that these questions could be answered with a measure of reliability not previously obtainable.

In the preliminary trials very small amounts of aluminium phosphate carrier were employed. The results of these trials (Bousfield, 1947a) revealed two important facts: (1) that aluminium phosphate is an extremely suitable vehicle for adsorbing toxoid when used for human prophylaxis, in that local or general reactions were absent or at most trifling; and (2) that the efficiency of the prophylactic, as judged by the Schick conversion rate (S.C.R.) in young children following one inoculation, increased as the amount of phosphate was increased, but without clear-cut evidence of an optimal amount. The amounts of carrier eventually used, and with no untoward reactions, were very much greater than would be considered safe if presented as A.P.T.

As the work progressed it was found that samples of P.T.A.P. having a mineral content of 10-15 mg. AlPO_4 per ml. gave the best Schick conversion rates (dose 0.5 ml.); that this new prophylactic improved in antigenicity on storage (three months) at room temperature (Bousfield, 1947b); and that consecutive batches, chemically almost identical and of the same age, were antigenically the same (Bousfield, Duke, *et al.*, 1948).

We propose here to set forth further details showing the superiority of P.T.A.P. over A.P.T. in the immunizing of children and some further details about its constitution and use.

Uniformity of Antigenicity in Successive Batches of P.T.A.P. and A.P.T.

It has been found that successive batches of A.P.T. sometimes show disturbing variations in efficiency when tested in the field (Bousfield, 1947c).

These variations were greatly reduced by the acceptance in 1942 of more stringent provisional regulations (B.M.J., 1942). Even so, although the new regulations eliminated the grossly inferior products they did not solve the problem of variations in antigenicity. These, of course, are more readily demonstrated when the responses to single inoculations are observed (Bousfield, 1947a).

Evidence showing the degree of antigenic uniformity obtainable with P.T.A.P. has already been published (Bousfield, Duke, *et al.*, 1948), but it may be useful at this stage to recapitulate. In Table I a summary of the results already published is given together with those obtained recently from single inoculations employing six unselected batches of Government issue A.P.T. It will

TABLE I.—Uniformity, and Performance of Six Consecutive Batches of P.T.A.P.* (30 Lf and 10 mg. AlPO_4 /ml.), and of Government Issue A.P.T. (Lf>50/ml.) Dosage 0.5 ml., Administered Intramuscularly. Children all Schick-positive before Immunization, and Post-Schick-tested Four Weeks After a Single Inoculation.

Batch No.	Post-Schick Results							
	P.T.A.P.				A.P.T.			
	(+)	(-)	Total	S.C.R. %	(+)	(-)	Total	S.C.R. %
1	9	143	152	94.1	11	66	77	85.7
2	5	144	149	96.6	11	87	98	88.8
3	6	149	155	96.1	6	35	41	85.4
4	4	146	150	97.3	22	111	133	83.5
5	4	160	164	97.6	1	28	29	96.6
6	0	141	141	100.0	1	39	40	97.5
Total	28	883	911	96.6	52	366	418	87.5

* Redrawn from Bousfield *et al.*, 1948.

† Two and one-half times the officially recommended first dose for A.P.T.

Statistical Analysis of the Results

	χ^2	df	P
P.T.A.P.	9.284	5	<0.10
A.P.T.	8.930	5	>0.10
Comparison	44.436	1	<0.001

Namely, there is no significant heterogeneity between the six batches in either group, but P.T.A.P. is definitely superior to A.P.T.

be noted that with P.T.A.P. the Schick conversion rate varied from 94.1 to 100%, with an average of 96.6; and the rate for A.P.T. varied from 83.5 to 97.5, with an average of 87.5%. These latter figures were obtained with a dose of 0.5 ml., which is two and a half times the officially recommended first dose.

The differences among the samples of each group are not statistically significant in either case, but the difference between the results obtained with P.T.A.P. and A.P.T. is significant.

Route of Choice

It was thought of some importance to determine whether the immunity response after intramuscular injection differed from that after subcutaneous injection. To answer this question the following evidence may be taken into account: direct observations (Schick conversion rates) made at a fixed time interval on a number of subjects who had been inoculated by one or the other route; the immunity response curves over a period of time following injections by either route; and a combination of the results obtained from the above two methods.

In regard to the first method, samples of P.T.A.P. were employed containing a fixed amount of toxoid (5 Lf in 0.5 ml.) and widely different amounts of aluminium phosphate carrier. The conversion rates were determined 28 days after inoculation. The results, which are summarized in Table II and have their probit analysis depicted in the diagram, show that the intramuscular route gives a significantly better response.

TABLE II.—Comparative Antigenicity of P.T.A.P. of Varying AlPO_4 Content, when Administered Either Subcutaneously or Intramuscularly. (Toxoid Dose Constant at 5 Lf in 0.5 ml. S.C.R. Determined 28 Days After One Inoculation).

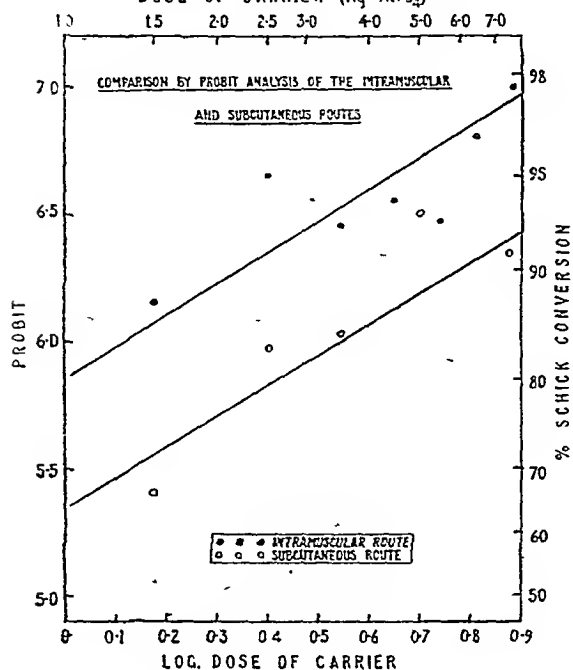
Mg. AlPO_4 Injected	Schick Conversion Rate %	
	Subcutaneous Route	Intramuscular Route
1.5	65.6 (93 cases)	87.3 (79 cases)
2.5	83.3 (54 ")	95.2 (83 ")
3.5	85.0 (100 ")	92.7 (82 ")
4.5		94.1 (85 ")
5.0	93.3 (45 ")	
5.5		92.9 (55 ")
6.5		96.4 (84 ")
7.5	91.5 (47 ")	97.4 (88 ")
	(339 cases)	(556 cases)

Statistical analysis of Comparable Groups					
Mg. AlPO_4 Injected	χ^2	df	P		
1.5 ..	10.949	1	..	<0.001	
2.5 ..	5.346	1	..	<0.05	
3.5 ..	2.605	1	..	<0.20	>0.1
7.5 ..	2.807	1	..	<0.1	>0.05
Total ..	21.707	4	..	<0.001	

Regarding the second method, no data are available concerning the time for maximal Schick conversion rate in children who had received subcutaneous inoculations either A.P.T. or P.T.A.P. It has been found in guinea-pigs, however, that when A.P.T. or P.T.A.P. is administered subcutaneously the time for maximum antitoxin response was always the same regardless of the amount of mineral carrier employed—namely, 25 to 28 days (Holt, unpublished observations). This was correlated with the time for fibrous encapsulation of the residual mass (nodule formation) to occur—namely, some 7 to 10 days.

Since the time interval for the (sterile) foreign-body reaction in the human is the same or even a little longer, seems justifiable on this point to transfer the evidence direct from the guinea-pig to the child.

When an inoculation is made intramuscularly it would seem reasonable to infer that the continuous movement of the muscle fibres would not only usefully disperse the injected particles but delay or even prevent fibrous

DOSE OF CARRIER (Mg. AlPO_4)

Probit Analysis of the Two Curves

	χ^2	df	P
Homogeneity of subcutaneous series	1.620	3	>0.50
Homogeneity of intramuscular series	2.532	5	>0.70
Parallelism between the two curves	1.724	1	>0.10

Namely, no significant deviation from parallelism.

Both the subcutaneous route and the intramuscular route show a linear dependence on the probit of the response (percentage of Schick negatives) with the logarithm of the dose of carrier, a result analogous to that shown by Carlinfantini (1948). The two lines are parallel, and the ratio of potency of the intramuscular to the subcutaneous route is 2.6 with 95% fiducial limits of 1.4 and 5.0. Therefore the intramuscular route is definitely superior to the subcutaneous route.

encapsulation. Should this occur the antitoxin response curve to moderately large or large doses of P.T.A.P. or A.P.T. should show a peak value later than 28 days after injection. This was in fact found to be the case.

Three sets of figures are available on this point. The Schick conversion rates after a period of time were observed in children who had received intramuscular inoculations of 0.1 ml. A.P.T. (Lf 50), 0.5 ml. P.T.A.P. (Lf 200, 5 mg. AlPO_4 /ml.), and 0.5 ml. P.T.A.P. (Lf 190, 8 mg. AlPO_4 /ml.). In the case of the very small dose of A.P.T. the conversion rate showed a peak value at the sixth week, and in both cases of P.T.A.P.—where much more carrier was employed—the Schick conversion rate was still rising at the end of twelve weeks (Bousfield, 1947c). These observations show that conversion rates obtained four weeks after an intramuscular injection of P.T.A.P. would have been higher had the tests been carried out at a later date.

This conclusion, now referred back to Table II, means that in the case of the subcutaneous route the conversion rates found represent maximal ones and those for the intramuscular route submaximal.

From all these considerations it is concluded that the intramuscular inoculation of P.T.A.P. containing reasonably large amounts of mineral carrier results in a more complete utilization of the prophylactic than that following subcutaneous inoculation, with its early fibrous encapsulation of much of the material injected.

Optimal Amount of Mineral Carrier

In determining the optimal amount of mineral carrier to employ in young children it is not possible to substitute any animal for the child, and it would be unwise in our present state of knowledge to rely too much on investigations based on a weight-for-weight basis between animal and child. The results already published (Bousfield, 1947a) clearly demonstrate the great part played by the amount of carrier inoculated, and reveal that the best conversion rates are obtained with samples of P.T.A.P. containing 10–15 mg. AlPO_4 per ml. (see Table II). But to be able to say definitely that 15 mg. is better than 10 mg., or vice versa, involves two serious difficulties, as the percentage differences involved are very small. These difficulties are: (a) the rapidly increasing dose of antigen required to immunize the residual less responsive members of a population, and (b) because of this, the necessity for studying really large numbers of cases, if it is sought statistically to substantiate any conclusion drawn, when Schick conversion values greater than 90% are achieved.

With the limitations indicated above borne in mind, the evidence shown in Table VI strongly indicates but does not conclusively prove that P.T.A.P. containing 10 mg. AlPO_4 per ml. is better than an antigen containing 15 mg.

Essential Lf Dosage

In order to answer this problem it was considered necessary to use a rather longer time interval between inoculation and the post-Schick test. It was therefore decided to determine the Schick conversion rate three months after a single intramuscular inoculation of samples of P.T.A.P. each containing 15 mg. AlPO_4 /ml. and different amounts of purified toxoid. The figures obtained from a preliminary test were as shown in Table III.

TABLE III—Schick Results

Toxoid Injected (Lf)	Three Months After One Intramuscular Injection of 0.5 ml.		
	(-)	(+)	S.C.R. (%)
5	114	6	95
10	123	2	98.4
15	118	5	96
20	124	1	99.2
30	120	4	96.7
Total ..	599	18	97

$$\chi^2 (5 \text{ Lf/the rest}) = 1.8, P = 0.2.$$

These results do not show any statistically significant differences.

This experiment was repeated. For the more recent trials, two similar series of preparations were used, and observations were made at three time intervals—three, six, and fifteen months after injection.

It is clear from the results shown in Table IV that, using a dose of 7.5 mg. of AlPO_4 , the same excellent responses were obtained with amounts of toxoid varying from 10 to 30 Lf. Even with 5 Lf of toxoid the response was not appreciably lowered.

Amounts of toxoid as low as 10 Lf/ml. gave results equally as good as those obtained from the amounts prescribed by the T.S.A. Regulations (50 Lf/ml.). It seems, therefore, that much of the toxoid demanded by the present regulations is wasted when used in P.T.A.P. This is a matter of no small importance economically when toxoid of the quality described is used.

Another point of importance arising from these findings is the persistence of the immunity induced by one dose of P.T.A.P., which suggests that we may in fact be in sight of a single-injection prophylactic against diphtheria.

TABLE IV.—Schick Conversion Rate after One Inoculation of 7.5 mg. of $AlPO_4$, with Varying Amounts of Purified Toxoid (Children Aged 1 Year at Time of Inoculation)

Lf Injected	Schick Failure Rate %		
	Material E.3061		
	After 3 Months	After 6 Months	After 15 Months*
5	5.0 (120)	4.0 (50)	4.08 (47)
10	1.6 (125)	4.1 (49)	4.08 (49)
15	4.06 (125)	1.9 (52)	1.75 (57)
20	0.8 (125)	5.6 (54)	4.76 (63)
30	3.23 (124)	1.8 (58)	3.64 (55)
	619 cases S.C.R. 97.08%	263 cases S.C.R. 96.7%	
	Duplicate Material E.3143		
5	5.3 (75)		
10	2.6 (76)		
15	1.4 (72)		
20	1.3 (77)		
30	5.6 (71)		
	(371 cases, S.C.R. 96.7%)		
	Materials E.3061 and E.3143 Combined		
5	4.8 (125)		
10	3.2 (125)		
15	1.6 (124)		
20	3.05 (131)		
30	3.9 (129)		
	(634 cases, S.C.R. 96.6%)		

Statistical Analysis of Results E.3061 and E.3143 Combined

$$\chi^2_{2142} \quad \text{df} \quad 4 \quad P \quad 0.7$$

The results are homogeneous, and no statistical difference exists between the several samples.

* This series, tested 15 months after a single inoculation, is obtained by retesting all the children available who were injected with batch E.3061 and found negative three months later. (Although the antigen in Schick toxin results in a definite second response effect, this is transitory and does not affect the immunity level when the tests are repeated 12 months later. This was shown by the study of a further 239 children, who received the same material and were not post-Schick tested until 12 months after the single inoculation. This group showed an overall conversion rate of 95.4%, which compares with an approximate 93.3% for the group (271 cases) which received the intermediate Schick test.) The findings thus represent the persistence rate of immunity in children who responded to a single inoculation. To get a true picture of the situation in such a group of children as is shown in the results of the three-months test in batch E.3061 at a period of 15 months (assuming that those who failed had not received a further inoculation), it is necessary to add the percentage of failures in the original group to the failures found 15 months after inoculation. If this is done one can say that the expectation in the five groups not post-Schick-tested for 15 months would be approximately:

5 Lf still Schick + at 15 months	..	9.1%
10 Lf " " " " " "	..	5.7%
15 Lf " " " " " "	..	5.8%
20 Lf " " " " " "	..	5.8%
30 Lf " " " " " "	..	6.9%

With the possible exception of the 5 Lf series, these figures would compare reasonably favourably with those obtained 15 months after the present routine two-injection treatment with A.P.T.

pH of P.T.A.P.

It was noted by Dr. W. B. Stott (M.O.H., Cuckfield) and one of us (G.B.) that during the injection of P.T.A.P. babies showed some signs of temporary discomfort. It was obviously desirable to rectify this if it could be done without affecting the efficiency of the prophylactic.

That the injection of P.T.A.P. in 0.5-ml. doses did cause some pain was confirmed by inoculating a number of adults. The pain, which was trifling and transient, was suspected to be due to the slight acidity of the prophylactic—pH 5–5.2. When the reaction was altered to pH 7, or even to pH 6, and again tested on adults, it was found that, apart from the needle puncture, the injection was painless. It became necessary, therefore, to determine the stability and efficiency of P.T.A.P. prepared in such a way that the final mixture was so nearly neutral that pain was avoided.

A quantity of P.T.A.P. was prepared containing 30 Lf of purified toxoid and 10 mg. $AlPO_4$ per ml.; one part was adjusted to pH 5 as usual and the other to pH 6.5. Both samples were then left at room temperature (20–22° C.) for six months and tested for potency by animal assay as follows: They were each diluted 1 in 60 with physiological saline, and 1-ml. quantities were injected subcutaneously into normal guinea-pigs.

The dose, therefore, was 0.5 Lf and 0.16 mg. of mineral carrier. The animals were bled four weeks later and the

sera from each group pooled. At the same time they were given a second identical inoculation. Two weeks later they were bled again, and the antitoxin titre of each serum was determined. The results obtained are shown in Table V.

TABLE V.—Animal Assay of Acid and Nearly Neutral P.T.A.P., Lf 30, 10 mg. $AlPO_4$ /ml. (Six Months Matured at Room Temperature)

Pig No.	Group A (P.T.A.P., pH 5)	Group B (P.T.A.P., pH 6.5)
	Mean Value 28 days after 1 dose 0.2 u./ml.	Mean Value 28 days after 1 dose 1.0 u./ml.
	Individual Values 14 days after 2nd dose, u./ml. serum	
1	2.5	10
2	0.2	8
3	7.0	7
4	1.5	1.5
5	1.0	3
6	4.0	1.5
7	2.2	4
8	0.1	2
9	5	8
10	2	3
11	1.25	2.5
12	2	—
Arithmetic Mean	2.4	4.6
Geometric Mean	1.48	3.4

Statistical Analysis

$$= \frac{\bar{x}}{\sqrt{s^2(n_1 + n_2)}} = 2.1$$

which, for 21 degrees of freedom, gives a P value of 0.05.

From the figures obtained it seemed probable that the prophylactic at a reaction of pH 6.5 was actually a better antigen than that at pH 5.

For the purpose of determining by clinical trial the relative efficiency of nearly neutral and acid P.T.A.P. three preparations were made: (a) P.T.A.P., Lf 30, 10 mg. $AlPO_4$ /ml., pH 6.5; (b) P.T.A.P., Lf 30, 15 mg. $AlPO_4$ /ml. pH 6.5; and (c) P.T.A.P., Lf 30, 10 mg. $AlPO_4$ /ml., pH 5. They were matured for six months at room temperature before use.

As before, Schick-positive children between their first and second birthdays were used. The dose administered was 0.5 ml. intramuscularly, and the Schick conversion rate was observed four weeks later. The "pain factor" was assessed on three grounds—"reaction" to (1) the needle-pain, (2) the actual pressing of the syringe plunger (the inoculation proper), and (3) duration of "reaction" after withdrawal of the needle.

These factors were assessed as carefully as possible and were recorded as +, ++, or ++++. The total number of plus signs set down against each preparation was divided by the number of cases observed.

TABLE VI.—Comparison of P.T.A.P. at pH 5 and pH 6.5 (S.C.R. Observed Four Weeks After a Single Intramuscular Inoculation of 0.5 ml.)

Composition of P.T.A.P.			Post-Schick Results			
Lf/ml.	pH	$AlPO_4$ /ml.	(+)	(-)	S.C.R.	"Pain-factor"
A. 30	6.5	10 mg.	2	206	99.0	0.68
B. 30	6.5	15 mg.	10	181	94.8	0.65
C. 30	5.0	10 mg.	4	167	97.7	1.05

Statistical Analysis

I. Series A and B (comparison of the 10- and 15-mg. preparations at pH 6.5):

$$\chi^2 = 4.612; \text{df} = 1; P = < 0.05$$

(after Yates's correction for continuity, difference significant at the 5% level).

II. Series A and C (comparison of the pH 5 and pH 6.5 preparations):

$$\chi^2 = 1.47; \text{df} = 1; P = 0.25$$

The results, summarized in Table VI, show that there was a greatly reduced overall "reaction" to the pH 6.5

nixtures. Furthermore, they reveal that there was no eduction in potency when such mixtures were used—in fact, the results obtained with the 10 mg./ml. preparation were virtually perfect, and indicated that 10 mg./ml. of aluminium phosphate is optimal.

Résumé, and Conclusion Arising from Latest Findings

It is now four years since field trials on P.T.A.P. were begun. A number of important points had to be unequivocally established. It has been shown that in order to obtain the best results a far greater amount of carrier must be used than would be considered safe if presented as A.P.T. With these very large amounts of carrier the remarkable conversion rates of 97–99% following a single inoculation have been achieved, and this immunity has been shown to persist in 94% of the children for 15 months or more. Of equal importance is the virtual absence of local or general reactions; and not one child in over 6,000 inoculated developed a sterile abscess.

The work progressed in stages. Up to now the optimal amount of mineral carrier has been determined, the route of choice has been found, an approximation of the requisite quantity of purified toxoid has been made, and most of the discomfort of the earlier preparations has been abolished. Also, as a result of improved laboratory technique, the purity of the toxoid employed as routine procedure has been increased to 2,000 Lf/mg. p. N₂ (90% pure toxoid). Toxoid of this purity was used in all the more recent work described above.

On the basis of these findings the composition of P.T.A.P. now prepared is as follows:

AlPO ₃	.. .. .	10 mg./ml.
Toxoid:		
(a) amount	.. .. .	50 Lf per ml. (by law)
(b) purity	.. .. .	2,000 Lf/mg. p. N ₂
NaCl	.. .. .	0.85%
Preservative	.. .. .	0.01% sodium ethyl mercury thiosalicylate
Reaction	.. .. .	pH 6–6.5

The prophylactic is stored at room temperature for three to six months before issue.

Summary

Purified toxoid, aluminium phosphate precipitated (P.T.A.P.), is an accurately standardized diphtheria prophylactic, which in its antigenicity, stability, and freedom from reactions has distinct advantages over alum-precipitated toxoid (A.P.T.).

Study of the results obtained from experimental work and field trials shows that: (a) The optimal amount of mineral carrier for young children is 5 mg. AlPO₃, in a 0.5-ml. dose. (b) Intramuscular inoculations confer appreciably better immunity than do subcutaneous. (c) P.T.A.P. produces a definitely better Schick conversion rate than does A.P.T. A single inoculation of 0.5 ml. P.T.A.P. containing 10 or more Lf units of purified toxoid and 10 mg. AlPO₃ per ml. produces in children a Schick conversion rate of >95% one month after injection. At three and six months the S.C.R. is still over 95%, and has not fallen appreciably even after fifteen months. (d) P.T.A.P., adjusted to pH 6, is an antigen at least as efficient as the earlier more acid (pH 5) preparation, and causes less discomfort on inoculation.

The composition of P.T.A.P., as now prepared, is accurately described.

For facilities at various stages of this work we desire to thank Dr. A. Anderson, M.O.H., Heston and Isleworth; Dr. H. W. Barnes, M.O.H., Camberwell; Dr. P. L. T. Bennett, M.O.H., Fulham; Dr. H. D. Chalke, D.M.O., No. 7 London Division; Dr. H. Smith, D.M.O., No. 1 London Division; Dr. A. G. G. Thompson, M.O.H., Lambeth; and Dr. W. H. S. Wallace, D.M.O., No. 8 London Division. Grateful thanks are also due to Dr. L. Cavalli, of the Department of Genetics, Cambridge, for assistance in the statistical analyses.

REFERENCES

- Bousfield, G. (1947a). *Lancet*, 1, 286.
 — (1947b). *Ibid.*, 2, 867.
 — (1947c). *Publ. Hlth. Lond.*, 60, 121.
 — Duke, H. L., et al. (1948). *Med. Off.*, 80, 145.
British Medical Journal (1942). 1, 734.
 Carlantoni, E. (1948). *Lancet*, 2, 629.
 Holt, L. B. (1947). *Lancet*, 1, 282.

A METHOD OF INCREASING THE LUNG BLOOD SUPPLY IN CYANOTIC CONGENITAL HEART DISEASE

BY

N. R. BARRETT, M.Chir., F.R.C.S.

AND

RAYMOND DALEY, M.D., M.R.C.P.

(From the Departments of Thoracic Surgery and Cardiology,
St. Thomas's Hospital, London)

The purpose of this report is to describe an ancillary method of increasing the pulmonary blood supply in patients suffering from congenital cyanotic heart disease in whom the main defect is inadequate blood flow to the lungs. There are already two methods of increasing this blood supply. An anastomosis has been created between a systemic artery and one of the pulmonary arteries (Blalock, 1947; Potts and Gibson, 1948), and valvulotomy has been successfully practised in patients with valvular stenosis (Brock, 1948; Sellors, 1948).

These procedures have improved many seriously incapacitated children. Enthusiasm has been rekindled in a field in which endeavour had almost ceased, and physicians and surgeons have been brought together at a time when "progress" has often led to divergence of paths.

Theoretical Considerations

It has been found that anastomosis or valvulotomy may not be practicable or advisable in every case. There are patients in whom the pulmonary arteries may be absent or too small for any form of anastomosis. The Blalock type of operation may be impossible if the aortic arch lies at the base of the neck or if there is unusual aortic branching.

The clinical condition of some patients is so serious before operation that even the most skilled and experienced surgeon may hesitate to embark upon a procedure which may take many hours to complete. Conversely, some congenital cardiac deformities alter function to such a minor degree that it is unreasonable to undertake an operation of great magnitude. Therefore, if a simple operation could be devised which offered hope of amelioration it might serve a purpose in some cases.

It occurred to one of us (N.R.B.) that a simple alternative method of improving these patients might be to produce vascular pleural adhesions and so to bring blood into the lungs from the parietes. Attempts to revascularize the heart (by omentopexy and similar procedures) have been disappointing, but there are reasons for believing that success might be achieved if the same principles were applied to the lungs. These reasons are:

(a) Some children are born without pulmonary arteries and survive; thus blood from systemic collateral vessels can reach the alveoli.

(b) In patients suffering from pulmonary tuberculosis in whom an artificial pneumothorax has been induced and

adhesions cauterized it is common to find blood vessels either in the middle of adhesions or, as isolated strands, spanning the pneumothorax from the parietes to the visceral pleura. These vessels carry blood from the extrapleural tissues to the lung and sometimes are the main blood supply to a diseased area: for instance, if vascular adhesions over a large tuberculous cavity situated near the edge of the lung are divided the peripheral wall of the cavity may slough.

(c) At thoracotomy performed on patients suffering from Fallot's tetralogy collateral vessels coming from the mediastinal, the phrenic, and the internal mammary arteries are often seen entering the hilum of the lung. It is well known that in some of these patients death may follow a thoracotomy when an anastomosis could not be achieved, and this may be due to severance of collateral vessels in the course of dissection.

With these points in mind, thoracotomies were performed upon two patients suffering from Fallot's tetralogy, and the experiences obtained gave clinical support to the proposition. The object was to perform a Blalock's operation, but in neither case could the operation be carried out.

The first patient was a small girl. The right chest was opened in the hope that the right subclavian could be anastomosed to the right pulmonary artery. Dense, diffuse vascular adhesions were found, and it was only after these had been divided that the hilum was reached and a very small pulmonary artery isolated. This artery was not clamped, but about twenty minutes later the child died, and at necropsy it was found that the left pleural cavity was obliterated by adhesions and that the left pulmonary artery was also diminutive. Death probably occurred because an important collateral circulation had been removed on the right side as the pleural adhesions were cut to expose the hilum.

The second patient was also a little girl. The aortic arch was high in the mediastinum, and the innominate artery came off so far towards the left side that it was anatomically impossible to approximate the right subclavian to the pulmonary artery. A good deal of dissection in the mediastinum was carried out before the attempt was abandoned, and in the end the mediastinal pleura was not closed because of oozing from the raw surface which was left. After the operation the parents were informed that nothing beneficial had been achieved or could be done; hence it was surprising to find a few months later that the girl was much improved. Before this operation she could walk only 40 to 50 yards (37-46 metres) before becoming severely dyspnoeic, whereas after operation she could walk a mile (1.6 km.). Since then a further operation has been performed on the left side and adhesions have been deliberately created. She can now walk three miles (4.8 km.), has given up her push-chair, and goes to an ordinary school. (See Case 1, below.)

Surgical Technique

After these experiences operations were developed expressly to create vascular adhesions, and they have been practised when, for the reasons already described, systemic pulmonary anastomosis or valvulotomy seemed to be impracticable. The ordinary methods of pleurodesis, such as the injection of a small amount of strong silver nitrate into the pleural cavity or insufflation of iodized talc, were not used, because it was felt that more effective blood vessels would be created if the surface of the lung was brought into direct contact with the vessels in the chest wall. For this reason the first cases were treated by opening both pleural cavities—at separate operations—and removing the parietal pleura from the upper mediastinum, from the dome of the pleura, and from the upper half of the chest. Powdered asbestos (0.4 g.) was

dusted on to the raw surfaces, the chest was closed and, after instituting temporary drainage, the lung was completely re-expanded.

At each of these operations a fairly extensive examination of the anatomy of the congenital abnormality was undertaken and the pericardium was often opened, but in spite of this the children sustained the procedures well and there has been no mortality. The parietal pleura has not been stripped off the lower part of the chest and the diaphragm, because it was felt that this might reduce the vital capacity too much. We have found that bilateral excision of the pleura actually reduces the vital capacity by about 200 ml. in children under the age of 10 years.

Another type of operation to improve the circulation to the lungs has also been tried. The great omentum has been brought up into the chest and placed in contact with the left lung. The use of the omentum, although attractive in that it carries a large blood supply and can easily be transposed to the lung, is not without theoretical and practical disadvantages. Experience gained in the management of recent chest wounds has shown that whenever a 'knuckle' of omentum passes through a small hole in the diaphragm a diaphragmatic hernia begins to form and steadily increases in size as more and more omentum is insinuated into the pleural cavity. Hence any method of bringing the omentum straight up through a convenient artificial hole in the diaphragm is certain to be complicated by the development of a diaphragmatic hernia. To overcome this the omentum has first been brought up into the upper part of the rectus sheath so that it lies immediately superficial to the muscle fibres of the transversus abdominis and deep to the rectus abdominis. From this point it has been introduced into the left pleural cavity by creating a tunnel in the tissue behind the costal margin and then spread out and stitched in the fissure between the upper and lower lobes of the left lung. As large a surface of the lung as possible has been brought into contact with the omental vessels. Powdered asbestos has been dusted on to the fissural surfaces of the lung before the omentum has been stitched into place.

Results

This communication is a preliminary report and is submitted because the surgery of congenital cyanotic heart disease is progressing so rapidly that ideas and experiences gained from a small group of patients may be useful stepping-stones to better surgical treatment.

Assessing results of operation is a matter of difficulty. The majority of "blue children" lead sheltered lives and their activity is restricted to a degree which is not commensurate with their ability. Hence a stay of a few weeks in hospital, where the services of physiotherapists and occupational therapists are available, almost invariably improves the morale of the patient and increases functional ability. The sensitive, uncommunicative child lying in bed with clubbed fingers hidden under the bedclothes soon becomes active, and tries to play games and to sit at table with the others for meals. These factors must be taken into consideration before increased exercise tolerance can be attributed to the beneficial result of any particular operation. but increased exercise tolerance is an important method of assessing any treatment and it is of course the criterion by which the patient and relatives judge improvement.

Estimations of arterial oxygen saturation provide evidence of improvement if the conditions under which the blood is taken remain comparable and the child is not upset by the procedure. Decrease of polycythaemia and oxygen capacity is good evidence of improvement if enough time is allowed for correction of post-operative anaemia.

Probably the most satisfactory objective evidence is obtained by the measurement of oxygen intake as a percentage of ventilation before and after a standard exercise according to the method of Courmand (Baldwin, Courmand, and Richards, 1948) and Bing (Bing *et al.*, 1947). From the results of this test the pulmonary blood-flow response to effort can be inferred.

In the following case histories it will be seen that only some of these tests have been carried out in the majority of the patients.

Case Histories

Case 1.—A girl aged 8 years suffered from the tetralogy of Fallot. She was very cyanosed and unable to walk up more than one flight of 12 stairs. She squatted frequently and the edges of her frock were soiled and torn. The oxygen capacity was 25.9 vols.%. The aortic arch was so high in the mediastinum that no systemic artery could be brought down to the pulmonary artery. At the first operation, in April, 1948, the right hemithorax and superior mediastinum were explored. No collateral vessels were found. Three months later she was able to walk one mile on the flat. In August, 1948, the upper half of the parietal pleura on the left side was removed and 0.4 g. of asbestos insufflated. By December, 1948, she could walk two to three miles (3.2 to 4.8 km.) on the flat, was able to climb 50 stairs without dyspnoea, and had ceased to squat. Her arterial oxygen saturation was then 80% at rest and 45% after walking up and down three flights of stairs. Oxygen capacity was 23.3 vols.%.

Case 2.—This patient, a girl aged 16 years, had been to an ordinary school but had to be taken there in an invalid chair. She subsequently worked as a bookbinder. She was able to lead only a sedentary life and could not walk up more than one flight of stairs or dance slowly more than once round a ballroom. She suffered from the tetralogy of Fallot, and before the first operation the resting arterial oxygen saturation was 78%. Oxygen capacity was 28.2 vols.%. It was felt that her disability was not of sufficient degree to warrant a major operation. Consequently in May, 1948, a right thoracotomy was performed. A few apical vascular adhesions were present, which were divided when the upper parietal and mediastinal pleurae were removed, and 0.4 g. of asbestos was insufflated over the exposed area. In October, 1948, the same procedure was carried out on the left side. By January, 1949, she was able to walk about 1½ miles (2.4 km.) on the flat and go up three or four flights of stairs, and had attended a dance "without anyone knowing there was anything wrong with me." Her arterial oxygen saturation was then 88% at rest and 60% after walking up three flights of stairs. Oxygen capacity was 23.4 vols.%.

Case 3.—A mentally retarded boy aged 13 years was suffering from pulmonary stenosis and an interventricular septal defect. He was very dyspnoeic after walking 50 yards (46 metres) and when in hospital squatted most of the time. The arterial oxygen saturation was 85% at rest. Oxygen capacity was 20.8 vols.%. Oxygen consumed per litre ventilated was at rest 33.5 ml., after standard exercise 26.7 ml. Carbon dioxide produced per litre ventilated was at rest 26.5 ml., after standard exercise 21 ml. In September, 1948, a right thoracotomy was performed. There were no adhesions and no visible collateral vessels. The upper halves of the parietal and mediastinal pleurae were removed and 0.4 g. of asbestos was insufflated. In November a similar operation was carried out on the left side and in addition an omental graft was brought up to the left lung. By January, 1949, he was able to run up and down six flights of stairs without undue dyspnoea and had entirely given up squatting. Arterial oxygen saturation was then 84.5% at rest and 62.1% after exercise. The oxygen capacity was 21.4 vols.%. Oxygen consumed per litre ventilated was at rest 30 ml., after standard exercise 36 ml. Carbon dioxide produced per litre ventilated was at rest 21.7 ml., after standard exercise 23 ml.

Case 4.—A well-developed girl of 12 years who had been blue from birth was proved by angiocardiology to have a common truncus arteriosus and absent pulmonary arteries. She attended an ordinary school and was able to walk about

440 yards (400 metres) slowly on the flat, but was very dyspnoeic after ascending three flights of stairs. The arterial oxygen saturation was 57.5% at rest and 44% after three flights of stairs. Oxygen capacity was 33.3 vols.%. Oxygen consumed per litre ventilated was at rest 18 ml., after standard exercise 14.5 ml. Carbon dioxide produced per litre ventilated was at rest 17.5 ml., after standard exercise 12.5 ml. In November, 1948, a left thoracotomy was performed and the absence of a pulmonary artery on the left side was confirmed. There were a large number of collateral vessels entering the hilum. Pleural adhesions were absent. The omentum was grafted into the interlobar fissure, and the upper half of the parietal pleura was removed, 0.6 g. of asbestos being insufflated over the raw surface. Three months later (*i.e.*, after only one side of the chest had been operated upon) her exercise tolerance had increased by about 50%. The arterial oxygen saturation was then 73% at rest and 46% after three flights of stairs. Oxygen capacity was 25.9 vols.%. Oxygen consumed per litre ventilated was at rest 24.5 ml., after standard exercise 23 ml. Carbon dioxide produced per litre ventilated was at rest 22.7 ml., after standard exercise 18.8 ml.

Case 5.—A timid girl aged 10 years was suffering from Fallot's tetralogy and arachnoidactyly. Her deformities were so great that she had been almost constantly bedridden. She became dyspnoeic after struggling along a few steps. Arterial oxygen saturation was 42% at rest. Oxygen capacity was 30.1 vols.%. In May, 1948, the right hemithorax was explored. The innominate artery bifurcated at the base of the neck, and an anastomosis using the right subclavian artery would have been very difficult. No adhesions were present, but there was some collateral circulation. A large area of parietal and mediastinal pleura was removed and 0.4 g. of asbestos insufflated. In August, 1948, a similar operation was performed on the left side. After many months in hospital she was educated to walk, and by January, 1949, she was able to walk about 50 yards unaided. Arterial oxygen saturation was 55% at rest. Oxygen capacity was 25.8 vols.%.

Case 6.—A mentally retarded boy aged 12 years was suffering from Fallot's tetralogy. He had attended an ordinary school, but since 1945 his activities had been so limited by dyspnoea that his attendances became very infrequent. He squatted a great deal and his maximum slow-walking distance was about 100 yards (92 metres). Oxygen capacity was 29.1 vols.%. In July, 1948, a right thoracotomy was performed. There were few collateral vessels and no pleural adhesions. The right subclavian artery was unsuitable for anastomosis because it came from the aortic arch distal to the left subclavian. The pulmonary arteries were very small. Accordingly the right parietal and mediastinal pleurae were extensively removed and 0.4 g. of asbestos was insufflated. A similar operation on the left side was carried out in September, 1948. When seen in February, 1949, he had ceased to squat and his range of activity had increased so that he could walk up 72 stairs or about 440 yards on the flat without discomfort. Oxygen capacity was 22.1 vols.%. His mother reported that she recently went to collect him at school in his wheel-chair, but he had run several hundred yards and arrived home before her.

Conclusion

Judged by clinical means, such as improved exercise tolerance, diminution of cyanosis, and less frequent squatting, it is considered that there have been two good results (Cases 1 and 3) and that three patients have shown considerable improvement (Cases 2, 4, and 6). One patient (Case 5), whose condition was complicated by arachnoidactyly, has been educated to walk, but her skeletal deformity is so great that improvement is difficult to assess.

Of the four cases of which there are details of resting arterial oxygen saturation before and after operation significant improvement has occurred in three (Cases 2, 4, and 5) and no change in one (Case 3).

In six patients the blood oxygen capacity was measured before and after operation and was significantly decreased in four. One patient (Case 3), although clinically improved, showed no change in arterial oxygen saturation or oxygen

capacity, but his oxygen intake and carbon dioxide production, measured as a percentage of ventilation, changed from markedly abnormal to normal figures.

The results may be improved after a longer follow-up period than three to four months, but it is thought that as preliminary observations they are encouraging enough to warrant further application of the procedure to patients who for various reasons are unsuitable for the types of surgery already devised.

Our thanks are due to Miss M. Young, of the Sherrington School of Physiology, and to Dr. Evan Jones and Dr. M. B. Matthews, of the cardiac department, St. Thomas's Hospital. We would also like to state that Dr. James W. Brown has seen these patients and encouraged us to further trials.

REFERENCES

- Baldwin, E. de F., Cournand, A., and Richards, D. W. (1948). *Medicine*, 27, 243.
 Bing, R. J., Vandam, L. D., and Gray, F. D. (1947). *Bull. Johns Hopk. Hosp.*, 80, 107, 121, 323; and 81, 192.
 Blalock, A. (1947). *Lancet*, 2, 478.
 Brock, R. C. (1948). *British Medical Journal*, 1, 1121.
 Potts, W. J., and Gibson, S. (1948). *J. Amer. med. Ass.*, 137, 343.
 Sellors, T. H. (1948). *Lancet*, 1, 988.

THE ASSOCIATION OF MATERNAL OBESITY, LARGE BABIES, AND DIABETES

BY

J. A. L. GILBERT, M.D., F.R.C.P.Ed., M.R.C.P.
Lund Research Fellow of the Diabetic Association

(From the Clinical Endocrinology Research Unit of the Medical Research Council, University of Edinburgh)

The obstetric histories of the majority of diabetic women are characterized by an abnormally high foetal loss rate before the onset of clinical diabetes (Miller, Hurwitz, and Kuder, 1944; Miller, 1945; Henley, 1947; Gilbert and Dunlop, 1949). The foetal loss rate shows a progressive increase during this period, reaching a maximum in the immediately pre-diabetic phase, and is higher among women developing diabetes before the age of 45 than among those in whom the disease has its onset after this age.

Allen (1939), in reviewing the obstetric histories of diabetic women, noted that a high percentage of large babies were born many years before the onset of clinical diabetes. Further, Miller, Hurwitz, and Kuder (1944) report the incidence of babies with birth weights in excess of 11 lb. (5 kg.) to be as follows; non-diabetic women, 0.07%; pre-diabetic women, 3.9%; and diabetic women, 6.4%. Miller (1945, 1946) surveyed the birth weights of 22 babies born to 16 mothers who eventually developed diabetes after the age of 40. All deliveries were carried out in the hospital at which these women later sought treatment for their diabetes. Of the 22 babies three weighed 5 kg. (11 lb.) or more, six weighed 4.5 kg. (9.9 lb.) or more, and 15 weighed 4 kg. (8.8 lb.) or more. The number of babies in each weight group was 200, 27, and 7 times the expected incidence respectively, which led him to conclude that women developing diabetes after the child-bearing age are recruited almost wholly from the 5-7% of mothers giving birth to babies weighing more than 4 kg. (8.8 lb.). The recent publication of Kriss and Fletcher (1948) confirms these observations. These workers report that 58% of their diabetic women had at some time prior to the onset of clinical diabetes given birth to at least one baby of 10 lb. (4.53 kg.) or more in weight. The average "latent period" between the birth of the first of such babies and the development of diabetes was 24.2 years.

Large babies were formerly attributed to maternal hyperglycaemia, resulting in the transfer of an excess of glucose to the foetus. Bill and Posey (1944), Bigby and Jones (1945), and Henley (1947), however, report the delivery of large babies in spite of well-controlled diabetes, and this has also been my experience.

White and Hunt (1943) and White (1946) conclude from observations of diabetic pregnancies that the unusually large babies are accounted for by an excess of chorionic gonadotropin.

Allen (1939) observed a relationship between excessive maternal gain in weight during pregnancy and the birth of large babies. Watts (1935) and others, who injected into pregnant rats what was at that time assumed to be anterior pituitary growth hormone, observed an unusual gain in maternal weight and in foetal size; such finding may in some measure explain Allen's observations. The report of Miller (1946) again suggests the importance of the growth hormone in the production of large babies: he drew attention to the similarity of the splanchnomegaly observed in the babies of diabetic mothers to that found in acromegalic patients.

Young has often stressed the relationship between the growth-promoting and the diabetogenic effects of anterior pituitary extracts. Thus in 1941 he reported that puppies treated for long periods with daily injections of diabetogenic pituitary extract failed to exhibit glycosuria as did adult dogs, but rapidly increased in weight. Diabetes did eventually develop, however, in some of the animals after many months' treatment. Further injections of the anterior pituitary extract produced only a diabetogenic effect, the growth-promoting influence having been lost. Luken (1946) suggests that diabetes does not result from an excess of any one anterior pituitary hormone but from the combined oversecretion of both the growth and the adrenotropic hormones.

It is thus apparent that maternal obesity, an abnormally high foetal loss rate, and an unusually high incidence of large babies may occur many years before the onset of clinical diabetes, and that the investigation of women with such obstetric histories may show that a considerable proportion of them become diabetic in the course of time. Such a group of women form the basis of the present investigation.

Selection of Patients

Pre-diabetic foetal loss reaches a maximum during the two-year period immediately before the diagnosis of diabetes (Gilbert and Dunlop, 1949). It follows that some of the women who in 1941-3 had abnormal obstetric histories but showed no signs of diabetes might in 1948 have developed this disease.

The obstetric histories of 5,000 women confined in the Simpson Memorial Maternity Pavilion, Edinburgh, between August, 1941, and April, 1943, were therefore examined and 150 of these were found to have unexplained histories of repeated abortions, miscarriages, intrauterine deaths, neonatal deaths, and babies weighing 10 lb. or more. Mimeographed forms asking for the results of all pregnancies since 1941-3 were sent to these women, but owing to the evanescent nature of Edinburgh's wartime population only 75 replies were received. Thirty-five of these gave histories of one or more normal pregnancies since 1941-3 and were therefore discarded from the investigation. The remaining 40 had either not been pregnant since 1941-3 or had had abnormal pregnancies. Of these it has been possible to examine 21 in hospital, the remaining 19 having declined admission owing to pressing domestic obligations.

The usual glucose-tolerance test was performed on all 1 patients, six of whom showed curves which were typically diabetic—i.e., they had fasting blood-sugar levels of more than 120 mg. per 100 ml. and levels which rose to more than 200 mg., remaining above 120 mg. at the end of two hours.

Table Comparing Patients with Diabetic Blood-sugar Curves and those with Normal Curves

	Diabetic G.T.T.	Non-diabetic G.T.T.
No. of patients	6	15
Age	39-46 years; aver. 44.2 years	28-45 years; aver. 39.3 years
Obese	6	8
No. of live births	25	40
No. of babies more than 10 lb.	11	5
No. of patients with babies of 10 lb. or more	5	3

G. T. T. = Glucose-tolerance test.

From the accompanying table it will be seen that the average age of those patients with diabetic blood-sugar curves was five years above that of those with normal curves. It seems probable, therefore, that some women of the latter group may yet develop a diabetic tendency.

The very high incidence of obesity is remarkable, 14 of the 21 patients being more than 14 lb. (6.35 kg.) in excess of the normal mean weight for their age and height, while all six patients with diabetic blood-sugar curves were 10 lb. (13.6 kg.) or more above their "correct" weight. All patients dated the onset of obesity from their first or second pregnancy, and with each successive pregnancy there had occurred a further gain in weight. Obesity was a less pronounced feature among the women with normal blood-sugar curves than among those who had become diabetic.

Women with unsatisfactory first pregnancies are usually admitted to the Simpson Memorial Maternity Pavilion for second and subsequent confinements. Consequently, accurate birth weights of the majority of viable infants in this group were available. The difference in the incidence of babies weighing 10 lb. or more among the diabetic and non-diabetic groups of women is striking—11 out of 25 compared with 5 out of 40. Thus there seems to be an association between the production of large babies and ensuing maternal diabetes.

Obese Non-diabetic Women

The high incidence of obesity among women with unsatisfactory obstetric histories suggests that maternal obesity may be related to a high foetal loss rate. The second step in the present investigation therefore consisted in a survey of the obstetric histories of 84 obese non-diabetic women attending the dietetic out-patient department of the Royal Infirmary, Edinburgh. All patients were interviewed personally. The group was unselected, and represented 84 consecutive attendances of obese non-diabetic women at the department.

As in the previous group of patients, the vast majority of these women associated the onset of obesity with an early pregnancy. The ages of these patients varied between 35 and 72 years, with an average of 46.8. Among the 341 pregnancies involved there was a foetal loss rate of 13.4%. This rate is similar to the pre-diabetic foetal loss rate of 12.5% observed by Gilbert and Dunlop in women developing diabetes after the age of 45, the majority of whom were over weight, and contrasts with the control foetal loss rate of 8%.

The majority of confinements among the obese non-diabetic women and among the women developing diabetes after the age of 45 were carried out either at home or in

institutions from which birth-weight records were not available. Consequently it was impossible to ascertain the precise incidence of large babies. However, many patients spontaneously volunteered the information that they had had large babies, quoting birth weights of up to 14 lb.

Discussion

The present investigation reveals that six out of 21 women who had had obstetric histories of a high foetal loss rate and who had given birth to babies weighing 10 lb. or more eventually developed diabetes and that the diabetes was associated with obesity. Thus the incidence of diabetes in those women far exceeds the expected incidence of diabetes in a similar age group of women which is given by Joslin (1946) as 0.864%. The association between the production of large babies and the development of maternal diabetes which was noted by Miller (1945) and Kriss and Fletcher (1948) is therefore confirmed by the present study.

The abnormally high foetal loss rate in the obese non-diabetic women of the present survey is similar to that occurring in the obstetric histories of women developing diabetes after the age of 45, most of whom were also obese (Gilbert and Dunlop, 1949). The unusually high incidence of the birth of large babies was a further similarity in the obstetric histories of these two groups of patients. The present observations therefore suggest that close correlation exists between increasing maternal obesity, the production of large babies, and ensuing maternal diabetes.

Both clinical and experimental studies suggest that the anterior pituitary lobe plays an important part in the production of obesity, large babies, and diabetes. The frequent onset of obesity and diabetes at the time of the menopause has been attributed to anterior pituitary overactivity secondary to the loss of the inhibiting effect of oestrogens on the pituitary. Further, the onset of obesity and a diminished carbohydrate tolerance following spontaneously occurring or artificially produced amenorrhoea, as was reported by Ogilvie (1935), supports this hypothesis. The reported results, however, of oestrogen therapy in menopausal diabetes are conflicting.

Young (1941, 1945), from his experimental observations, concludes that excess diabetogenic activity of the anterior pituitary lobe may be balanced by hyperfunction of the pancreatic islets induced through an overproduction of the anterior pituitary pancreatic hormone. The effect of such a balance is the production of growth by a reduction in carbohydrate oxidation and an associated conservation of nitrogen (Young, 1941, 1945; Ogilvie, 1944). The resulting growth manifests itself, according to the age of the patient, either in the abnormal height of the pre-diabetic juvenile or in the obesity of the middle-aged subject. This growth is maintained only so long as the pancreatic islets respond to the excessive secretion of pancreatic hormone, but ultimately islet exhaustion may supervene, manifesting itself in cessation of growth and clinical diabetes. Other observations are in accord with this hypothesis. Thus, Ogilvie (1933, 1935) has reported pancreatic islet hypertrophy in a high proportion of obese non-diabetic subjects and a latent period of many years between the onset of obesity and the occurrence of diabetes. Further, Joslin (1946) notes that a rapid loss of weight by obese subjects may precede the onset of diabetes.

Applied to the present study these findings suggest that the anterior pituitary growth factor may be in part responsible for the maternal obesity and diabetes, and that this factor passes across the placenta, causing the foetus to be both abnormally long and abnormally fat. The foetus

thus appears to combine the type of growth displayed by both the pre-diabetic juvenile and the obese middle-aged diabetic.

The clinical and experimental observations discussed suggest that an excessive secretion of the anterior pituitary growth factor during pregnancy may account for the production of progressive maternal obesity, large babies, and ultimate maternal diabetes.

Summary

Twenty-one women with obstetric histories of unexplained abortions, miscarriages, intrauterine deaths, stillbirths, and neonatal deaths, and the birth of babies weighing 10 lb. or more, were admitted to hospital for investigation. Six of these patients were found to be diabetic. All six were grossly obese and five had had babies weighing 10 lb. or more.

Evidence is brought forward to show a correlation between progressive maternal obesity, the birth of unusually large babies, and ensuing maternal diabetes. It is suggested that an excessive secretion of the growth factor during pregnancy may account for the associated phenomena.

I wish to thank Professor D. M. Dunlop and Dr. R. F. Ogilvie for their helpful advice and criticism, and Professor R. J. Kellar for so kindly putting the case records of the Simpson Memorial Maternity Pavilion at my disposal.

REFERENCES

- Allen, E. (1939). *Amer. J. Obstet. Gynec.*, **38**, 982.
 Bigby, M. A. M., and Jones, F. Avery (1945). *British Medical Journal*, **1**, 360.
 Bill, A. H., and Posey, F. M. (1944). *Amer. J. Obstet. Gynec.*, **48**, 405.
 Gilbert, J. A. L., and Dunlop, D. M. (1949). *British Medical Journal*, **1**, 48.
 Henley, W. E. (1947). *N.Z. med. J.*, **46**, 386.
 Joslin, E. P. (1946). *The Treatment of Diabetes Mellitus*, 8th ed. Kimpton, London.
 Kriss, J. P., and Fletcher, P. H. (1948). *J. clin. Endocrinol.*, **8**, 380.
 Lukens, F. D. W. (1946). *Amer. J. med. Sci.*, **212**, 229.
 Miller, H. C. (1945). *New Engl. J. Med.*, **233**, 376.
 — (1946). *J. Pediat.*, **29**, 455.
 — Hurwitz, D., and Kuder, K. (1944). *J. Amer. med. Ass.*, **124**, 271.
 Ogilvie, R. F. (1933). *J. Path. Bact.*, **37**, 473.
 — (1935). *Quart. J. Med.*, n.s., **4**, 345.
 — (1944). *Edinb. med. J.*, **51**, 460.
 Watts, R. M. (1935). *Amer. J. Obstet. Gynec.*, **30**, 174.
 White, P. (1946). In Joslin's *Treatment of Diabetes Mellitus*, 8th ed. London.
 — and Hunt, H. (1943). *J. clin. Endocrinol.*, **3**, 500.
 Young, F. G. (1941). *British Medical Journal*, **2**, 897.
 — (1945). *Biochem. J.*, **39**, 515.

GLOSSITIS IN ADDISONIAN PERNICIOUS ANAEMIA

EFFECT OF SYNTHETIC VITAMINS OF THE B COMPLEX

BY

ALEXANDER BROWN, M.D., F.R.F.P.S.
M.R.C.P.Ed.

(From the Muirhead Department of Medicine, the University and Royal Infirmary, Glasgow)

Glossitis has been recognized as a common feature of Addisonian pernicious anaemia since the work of Hunter (1909). Some evidence of involvement of the tongue is obtained in about 70% of cases (Brown, 1946). Adequate treatment of the anaemia with potent liver extract usually results in the disappearance of oral symptoms.

Glossitis is also a common feature of the sprue syndrome and of many deficiency states such as pellagra. Its occurrence has been attributed to deficiency of specific vitamins such as nicotinic acid and riboflavin. The fact that the sore tongue of the pernicious anaemia syndrome is indistinguishable from that occurring in well-recognized nutritional deficiencies suggests that in pernicious anaemia it may again be due to a vitamin deficiency, and that it may

be corrected by appropriate treatment with one or more of the members of the vitamin B complex.

The present report describes the occurrence of glossitis and a syndrome suggestive of ariboflavinosis in patients with Addisonian pernicious anaemia and the effect of treatment with certain synthetic vitamins of the B complex.

Clinical Observations

Seven patients with pernicious anaemia are described in whom there was a well-marked disturbance suggestive of deficiency of one or more members of the vitamin B complex. The diagnosis of pernicious anaemia was made on the following grounds. In all cases the clinical picture was compatible with the diagnosis; all had a macrocytic anaemia with a megaloblastic bone-marrow reaction which showed a satisfactory response after treatment with highly purified liver extract; all had a histamine-fast achlorhydria, and in none was there evidence of steatorrhoea or dietary defect.

Of the seven patients, six had severe painful glossitis. Five of the six had been receiving parenteral liver therapy for periods ranging from four months to two years; they were receiving it regularly every two to four weeks during the period of this present study. As indicated in the case reports, the glossitis had either existed since the original illness or developed during its treatment with parenteral liver. The development of a sore tongue was not always controlled by liver therapy, and on occasion bore no relation to the immediate or subsequent haematological status of the patient. In the seventh case (treated for five years) glossitis was associated with angular stomatitis and vascularization of the cornea.

Case 1

A man aged 58 developed pernicious anaemia, for which liver therapy was started in February, 1946. His tongue was red, glazed, and smooth, but did not cause pain until June 1946, when its appearance deteriorated and it became extremely sensitive and painful. Blood levels at this time and during the subsequent six months were maintained above 4,500,000 red cells per c.mm. by regular administration of anahaemic. From June 15, 200 mg. of nicotinic acid daily for seven days left the condition of the tongue, if anything, worse. On June 2 100 mg. of calcium pantothenate was given intramuscularly, and then 100 mg. daily by mouth.

By the third day discomfort had disappeared; by the seventh day only slight redness at the tip remained, and by July the organ was merely clean and atrophic. Calcium pantothenate was stopped on July 6, and from this date only routine liver therapy was given. Lingual discomfort returned within 14 days. By July 27 the organ was diffusely red and raw-looking, painful, and extremely sensitive, with numerous deep fissures. From July 27, 100 mg. of calcium pantothenate was given daily by mouth. By the fourth day undue discomfort could not be provoked even by hot foods or by deliberate friction against the teeth. By the seventh day objective evidence had almost entirely disappeared. By Aug. 17 the tongue looked more nearly normal than at any time since the patient had first been seen. Atrophy was less marked and central furring had developed. Fissuring was no longer present. Treatment with pantothenate was discontinued, and by March, 1947, there had been no recurrence of the glossitis.

Case 2

A married woman aged 40 had received liver therapy for two years, when the tongue, previously pale and atrophic became red and very uncomfortable. When seen with this complaint in February, 1946, blood values had been maintained for two years at normal levels (between 4,800,000 and 5,570,000 red cells per c.mm.). From Feb. 23, in addition to the continued regular administration of highly refined liver extract (anahaemin), 300 mg. of nicotinic acid was given daily by

nouth. Gradual improvement occurred, and by April 13 the only visible abnormality was slight marginal redness. The organ was still uncomfortable and unduly sensitive to hot foods. Continued treatment failed to improve matters, and nicotinic acid was stopped on April 27. She continued to receive regular injections of liver extract (anaheim), but symptoms gradually returned. By Aug. 24 severe general glossitis was present. From this date she was given 100 mg. of calcium pantothenate daily by mouth. From the fourth day the tongue was comfortable, and by the seventh nothing abnormal was evident except slight atrophy. Treatment was stopped. Symptoms returned at beginning of November, and by the 23rd severe marginal glossitis was present, causing great discomfort. From this date she was given 100 mg. of calcium pantothenate daily by mouth. By the third day the tongue was almost completely asymptomatic. By the seventh day it looked almost normal, and by the 14th day it showed only a smooth atrophic veal-like condition. Treatment was stopped. Up to February, 1947, there had been no return of symptoms.

Case 3

A man aged 61 had received liver therapy for pernicious anaemia for nine months. His tongue had been normal in appearance and sensitivity during this period. In spite of continued regular treatment, and in the presence of blood values unchanged above 4,300,000 red cells per c.mm., from June, 1946, he gradually developed a painful glossitis. By July 27 the organ was diffusely affected and extremely sensitive and remained so without change until, from Aug. 24, 100 mg. of calcium pantothenate was given daily by mouth. Great subjective improvement was noted within 48 hours, and by the seventh day the organ was not even unduly sensitive. It was also normal in appearance. Calcium pantothenate was stopped, and up to March 15, 1947, there had been no return of symptoms.

Case 4

A married woman aged 58 had had a sore tongue before liver therapy was begun for pernicious anaemia in 1946, and during maintenance treatment which kept blood levels at above 4,500,000 red cells per c.mm. she suffered almost continuously. On June 7, 1946, after about two years' observation and treatment, the tongue showed a severe marginal glossitis with numerous sharp-edged fissures. It was extremely sensitive. By Aug. 3, in spite of continued treatment with liver extract, conditions remained unchanged. She was given 100 mg. of calcium pantothenate intramuscularly. Within 48 hours all discomfort had disappeared and within seven days signs had almost completely disappeared. Routine liver therapy thereafter failed to maintain this improvement, although the red cell count did not fall below 4,400,000 per c.mm.; but within five weeks of giving pantothenate the tongue had returned to its previous condition. On Oct. 6 a further 100 mg. of calcium pantothenate was given intramuscularly. Within 48 hours marked improvement had occurred, and by the seventh day all evidence of active glossitis had disappeared. Return of symptoms was evident in about three weeks, and by Nov. 2 active glossitis was again fully established. From this date 50 mg. of calcium pantothenate was given daily by mouth. By the third day the tongue was much less sensitive, and by the seventh day all discomfort had disappeared and the organ looked merely pale and atrophic. Treatment was stopped and conditions in the mouth remained unchanged for almost a year. In October, 1947, active glossitis again appeared, uninfluenced by continued regular administration of liver extract and with blood levels above 4,500,000 per c.mm. throughout. By Nov. 10 the tongue showed diffuse redness and was extremely sensitive. A simple dose of 50 mg. of pantotheate was given intramuscularly. Within 48 hours symptomatic relief was evident, and on the seventh day all redness had disappeared, but the tongue was atrophic. There had been no return of symptoms up to May, 1948.

Case 5

A woman aged 73 was admitted to hospital in April, 1944, on account of pernicious anaemia associated with severe glossitis and stomatitis. The tongue was diffusely red and

showed slight fissuring. The oral features were unaffected by liver therapy even when this was given twice weekly (4 ml. of anaemia on each occasion). The blood count rose with a reticulocyte response in an unusually slow fashion, and throughout the following observation period the red cell levels failed to reach 4,000,000 per c.mm. Administration of 150 mg. of nicotinic acid daily by mouth from May 19, 1945, was followed by great improvement. By the seventh day the tongue was less sensitive and looked much less raw. The lips had healed completely. By the 14th day the tongue was merely atrophic and all discomfort had disappeared. Continuation of treatment for four months failed to improve the atrophy. After about two months' treatment with liver extract alone, active glossitis again became troublesome, and by February, 1946, the tongue had returned to its previous condition. On this occasion repetition of nicotinic acid treatment (150 mg. a day) was beneficial, but failed to relieve the condition completely. Treatment was stopped after three weeks, and 5 mg. of riboflavin was given daily by mouth from Feb. 28. Complete subjective and objective evidence of active glossitis disappeared within seven days. Treatment was stopped, and by June 3 symptoms had returned. On this date 100 mg. of calcium pantothenate was given intramuscularly. During the following 10 days the glossitis gradually became more severe. On Aug. 14 administration of riboflavin was again begun (5 mg. a day), with complete subjective and objective recovery by the seventh day. Further observations on this case were not possible.

Case 6

A married woman aged 58 was first seen on account of a sore tongue which had been troublesome for about two years. She was found to have pernicious anaemia. The tongue was diffusely red over the dorsum and very sensitive, although sensations of taste were impaired. From April 5, 1947, treatment with liver extract being withheld, 50 mg. of calcium pantothenate was given daily by mouth for seven days; no benefit resulted. After a further seven-day period of observation riboflavin was given in doses of 5 mg. daily for a week, again without benefit. Thereafter nicotinamide in daily doses of 200 mg. for two weeks was associated with slight aggravation of the glossitis. From May 10 folic acid was given by mouth in doses of 20 mg. a day. By the seventh day marked relief had occurred, and by the 10th day it was complete. By the 14th day the tongue was normal in appearance. A satisfactory haematological response also occurred with this treatment, and by Aug. 16 the tongue and the blood levels were normal. Folic acid was discontinued. Within four days the tongue became uncomfortable and active glossitis gradually progressed until liver therapy was begun on Aug. 23. Thereafter both anaemia and glossitis remained adequately controlled.

Case 7

This woman, aged 61, had been receiving liver therapy for five years, when she failed to receive adequate treatment and relapsed. During recovery from this relapse, with weekly administration of 4 ml. of anaemia and with a red cell count of 3,410,000 per c.mm., she developed a very severe bilateral angular stomatitis involving the mucocutaneous junction, marginal glossitis, and vascularization of the cornea in the upper and outer quadrants, more pronounced in the left eye, where penetration of small vessels amounted to about 2 mm. There was also severe conjunctivitis. Treatment with riboflavin was begun on Dec. 28, 1946. Within a week the angular stomatitis and the conjunctivitis had improved, and by Jan. 25, 1947, the corneal change was seen to be receding. By Feb. 1 the tongue and lips were normal, and within a further 14 days the eyes also were normal. Riboflavin was discontinued after a short period. There was no return of symptoms.

Summary of Results of Treatment.—The results obtained by the administration of synthetic vitamins of the B complex to these patients are summarized in the accompanying table. No single substance was found to be effective throughout all cases, and although consistent results were obtained in the one individual with a single vitamin for periods up to 15 months (Case 4), it was also found in one

Table Summarizing Results of Treatment

Case No.	Sex	Clinical Status	Blood Level (Millions)	Lesions	Effective Treatment	* Vitamins Ineffective
1	M	Treated 4 months	4.5 +	Glossitis	Pantothenate, oral + i.m.	Nicotinic acid
2	F	Treated 2 years	4.8-5.8	"	Pantothenate, oral	Nicotinic acid (partial effect)
3	M	Treated 1 year	4.3 +	"	Pantothenate, oral	—
4	F	Treated 2 years	4.4 +	"	Pantothenate, (1) i.m., (2) oral	—
5	F	Treated 1 year	3.5-4.0	Glossitis, stomatitis	Nicotinic acid, riboflavin	Nicotinic acid later inadequate
6	F	Untreated	3.4	Glossitis	Folic acid	Pantothenate, nicotinamide, riboflavin
7	F	Treated 5 years	3.41 +	Glossitis, angular stomatitis, vascularization of cornea	Riboflavin	—

instance (Case 5) that different vitamins might be effective at different times against apparently similar lesions.

Discussion

The significance of glossitis in pernicious anaemia is not understood, but it is generally recognized that if sore tongue is a feature before treatment is begun it is usually cured by liver extract. Indeed, so commonly does the glossitis respond to liver extract that it has been said that reappearance of tongue manifestations in patients under treatment is an indication of inadequate therapy (Wintrobe, 1946). This suggests some direct relation between the glossitis and the anaemia. There is, however, evidence to the contrary (Oatway and Middleton, 1932; Brown, 1946).

In the present series glossitis occurred without obvious relation to present or subsequent blood levels (see Cases 1, 2, and 4 especially). The significance of this is not clear, especially in view of the apparent rarity of such an occurrence in the experience of others (Wintrobe, 1946). It seems unlikely from what is known of the individual patients that exceptional dietary inadequacy was by itself responsible. All had good appetites and were taking apparently adequate diets. The possibility of a combination of minor defect of absorption in pernicious anaemia and a sub-optimal post-war dietary cannot be entirely discounted. The question arises whether increased dosage with liver extract would have been effective treatment for the glossitis. No definite answer can be given from these results, which are concerned with the effect of single pure substances, but it should be noted that blood counts were maintained at normal and even high levels (Case 2), and in spite of this the tongue was sore. In addition Case 5 received unusually large doses of liver extract without effect on the tongue.

It would seem possible that the development of a sore tongue in pernicious anaemia reflects a breakdown in a metabolic system similar to that responsible for the megaloblastic marrow and the neurological changes. The fact that in this series the glossitis could be controlled by the administration of synthetic vitamins suggests that the breakdown may involve the availability of the vitamin found effective. Members of the B complex exist in natural foods often in a conjugated and not immediately available form. The suggested breakdown in availability may occur at this stage in assimilation, or later in closer relationship to their final functions as parts of enzyme systems concerned with cellular metabolism. Liver extract contains a factor which in the majority of cases rectifies the defect responsible for the mucosal changes and at the same time corrects those responsible for the marrow and neural disturbances. Vitamin B₁₂, which may be identical with the anti-pernicious-anaemia principle of liver, has been found effective against the anaemia, the neurological changes, and the glossitis. Conceivably this substance may promote the utilization of certain other essential substances, some of which are well-known vitamins of the B complex.

The role of pantothenic acid in human nutrition is not yet fully understood, and the instances described here are

believed to be the first in which this substance has been found to influence symptoms in pernicious anaemia. If this effect represents restoration of an actual deficiency it is difficult to account for the latter except on the basis of a metabolic disturbance secondary to a more fundamental defect such as that already suggested. Pantothenic acid is widespread in Nature, and a deficiency conditioned in such a way seems more probable than one due simply to inadequate intake, especially in persons whose diet is not obviously abnormal.

Summary

Seven patients with Addisonian pernicious anaemia are described each of whom had a sore, red, raw-looking tongue. One also had angular stomatitis and vascularization of the cornea.

In each case it was found possible to control these changes with a single member of the vitamin B complex in pure form. Four cases of glossitis responded to calcium pantothenate, and one each to nicotinic acid and folic acid. One case responded first to nicotinic acid and later to riboflavin. The patient with glossitis, angular stomatitis, and vascularization of the cornea responded to riboflavin.

The significance of these findings is discussed, and it is suggested that the epithelial changes described reflect a breakdown in some metabolic system which may be similar to that responsible for the megaloblastic marrow and the neurological complications of pernicious anaemia.

I wish to thank Professor L. J. Davis for his advice and criticism in the investigations and in the writing of this paper.

REFERENCES

- Brown, A. (1946). *Glasg. med. J.*, 27, 313.
 Hunter, W. (1909). *The Severe Anaemias*. Macmillan, London.
 Oatway, W. H., and Middleton, W. S. (1932). *Arch. intern. Med.* 49, 860.
 Wintrobe, M. M. (1946). *Clinical Haematology*. Kimpton, London.

UNUSUAL SYMPTOMS IN PETROL-TANK CLEANERS

BY

INDER SINGH, M.B., B.S., M.R.C.P., F.R.F.P.S.
 Lieutenant-Colonel, I.A.M.C.

On Sept. 18, 1945, men from a certain labour unit were employed in cleaning a large petrol tank. It had just been drained of its contents, and to overcome the effects of undue exposure to the petrol vapour inside the tank the men were ordered to work in frequent shifts. The air inside the tank was not rendered gas-free, nor were the men given any airline masks or special clothing to wear. After the initial respiratory discomfort and irritation of the eyes the workmen became accustomed to the vapour and some of them stayed in longer.

Two men, whose cases are recorded below, went to the extreme and worked almost continuously for nearly seven hours. No adverse effects during this period prevented them from doing so. Towards the end, however, they

were seized with intense giddiness and they staggered and fell. They were rescued in an unconscious state by other workers. With first-aid measures both came round in about half an hour and complained of severe vertigo, a sense of constriction in the chest, and pains all over the body. They had to be carried to their quarters. The course of their illness was as follows.

Case 1

A man aged 25 was admitted to hospital the day after exposure to petrol vapour. Vertigo was severe and he complained of headache, marked loss of muscular power, soreness of the throat, irritation of the eyes, loss of appetite, and numbness, coldness, and intense pain in the lower limbs; pain in other parts of the body was less acute. Apart from congestion of the throat and eyes there were no abnormal physical signs.

6th Day.—The patient was improving. The calf muscles were, however, acutely tender on pressure. The knee- and ankle-jerks were sluggish. Five multivitamin tablets, each containing vitamin B₁, 1 mg., vitamin B₂, 1 mg., nicotinic acid, 10 mg., and ascorbic acid, 25 mg., were given three times a day.

10th Day.—Improvement was marked. Only slight pain remained in the lower limbs. Next day he was discharged as cured at his own request.

16th Day.—He returned to the hospital with headache, vertigo, and Parkinsonian tremor of both hands and early rigidity. He was irritable and irrational.

26th Day.—Parkinsonian rigidity and tremor were well established, and frequent oculogyric spasms were accompanied by spasms of the muscles of the face and mouth. His face, which was very pale, and his attitude, voluntary movements, and speech, were typical of the disease. Mental and bodily asthenia was profound, and most of the time the patient lay quiet in bed, showing no interest in himself or his surroundings. Rarely he asked for a bed-pan or urinal; mostly he passed his urine and stools in bed. His mood was very changeable, and he often cried without apparent reason. There was progressive loss of weight. The ankle-jerks were very feeble, but the calf muscles were not tender. The knee-jerks were slightly exaggerated and the abdominal reflexes were rather brisk. Heart sounds were very feeble. The pulse was regular, 72 a minute, and of low tension and volume. Blood pressure was 95/70 mm. Hg. Respiration was normal, and the temperature was usually subnormal. Both eyes were slightly icteric (effect of suppressive nepadrine). There was still conjunctivitis of the right eye. Urine showed no albumin, sugar, or abnormal quantities of lead, and deposits were normal. Stools were also normal. A blood count showed: Hb, 120% (Sahli); red cells, 6,830,000 per c.mm.; white cells, 12,600 (polymorphs 68%, lymphocytes 23%, mononuclears 2%, eosinophils 1%, and basophils 6%). There were no malaria parasites in the smear. The bilirubin content of the blood was 0.7 mg. per 100 ml. (icterus index 3.5). Blood urea was 16.6 mg. per 100 ml. Wassermann and Kahn reactions were both negative. The patient weighed 118 lb. (53.52 kg.), having lost 23 lb. (10.43 kg.) since the onset of the disease. He was put on a nutritive high-protein diet of over 4,200 calories. In addition 10 multivitamin tablets were given thrice daily. Suppressant mepadrine was stopped.

36th Day.—For the first time during his stay in hospital the patient had a temperature of 100° F. (37.8° C.) at 6 p.m. Blood smears and thick drops were negative for malaria parasites. Subsequently the temperature was 99° F. (37.2° C.) at 10 p.m., 99.6° F. (37.55° C.) at 2 a.m. next morning, and once again normal at 6 a.m. and after. Between 1 and 10 a.m. he passed four samples of characteristic haemoglobinuric urine, the first very dark, the second and third dark brown, and the fourth considerably lighter. Subsequent samples were progressively normal to the naked eye, although spectroscopic examination showed the presence of oxyhaemoglobin till the next morning. Apart from the transient low fever described above there were no constitutional symptoms and no haemoglobinaemia in a blood sample taken at 10 a.m. Haemoglobin fell from 125 to 120%, and the red cells from 6,830,000 to 6,510,000 per c.mm. The leucocytosis was raised from 12,600 to 14,200, with polymorphs 72%, lymphocytes 20%, mononuclears 2%, eosino-

phils 1%, and basophils 5%. There were no malaria parasites in the smears or thick drop preparations. Spectroscopically, serum collected from blood taken at 10 a.m. with care to prevent haemolysis showed only traces of oxyhaemoglobin, and the icterus index remained at 3.5. There was no appreciable rise in blood urea. The Donath-Landsteiner reaction, the acid-serum test, and the Wassermann and Kahn reactions were negative. Spherocytosis was absent and fragility of red cells was normal. No haemolysins were found *in vitro* in the serum. Urine did not show any evidence of abnormal quantities of lead excretion. Alkalis and fluids were given by mouth, and, on empirical grounds, 20 ml. of concentrated antivenene was injected intramuscularly to prevent further haemolysis.

48th Day.—Improvement set in fairly rapidly. Rigidity and tremor were less pronounced. Headache, giddiness, and oculogyric spasms disappeared. His mood was less changeable and he was taking general interest all around. He was able to stand and to walk slowly by himself, and his weight had begun to rise. Insomnia still persisted.

76th Day.—The patient was now almost completely normal. A noticeable feature was a fall in his erythraemia; the red cells were now 5,200,000 per c.mm., and the Hb was 90%. The blood pressure was 120/80 mm. Hg. Insomnia was less troublesome. Mentally he was still moody and depressed.

96th Day.—He was discharged completely cured.

Case 2

A man aged 23 was admitted on the day after exposure to petrol vapour. His complaints and condition were essentially similar to those of Case 1, but vertigo was very severe and he had considerable pain associated with pins-and-needles in all parts of the body. The throat was very congested and there was conjunctivitis of the right eye. Unlike Case 1 there was no temporary improvement and the patient was completely bedridden.

13th Day.—He developed a Parkinsonian tremor of both hands, at first only when he attempted a voluntary movement, but two days later at rest also, with early rigidity. He was becoming very irrational.

26th Day.—His complaints were identical with those of Case 1, but he was more severely affected. Most of the time he was depressed and cried without any obvious reason. He talked of his family in trouble, which he said would finish without his help. Later he started getting out of bed and running away, and often fell and injured himself. He complained of the sisters and nursing orderlies harassing him, the loss of his pay-book although it was still with him, and a sense of impending death. He said he was guilty, and persistently begged for pardon for all the sins he had committed. There were physical signs of bronchitis at both bases. Heart sounds were very weak. The pulse was regular, 80 a minute, of low tension and volume. The blood pressure was 110/80 mm. Hg. Respiration was normal and the temperature was usually subnormal. Stools were strongly positive for ankylostoma ova. The urine contained no albumin, sugar, or abnormal quantities of lead, and deposits were normal. A blood count showed: Hb, 80%; red cells, 5,630,000 per c.mm.; white cells, 6,800 per c.mm. (polymorphs 62%, lymphocytes 26%, monocytes 4%, eosinophils 0%, and basophils 8%). There were no malaria parasites in the smears or thick drop preparations. The bilirubin content of the blood was 0.4 mg. per 100 ml. (icterus index 2). Blood urea was 53 mg. per 100 ml. Wassermann and Kahn reactions were negative. The patient weighed 130 lb. (58.97 kg.), having lost 28 lb. (12.7 kg.) in 26 days. Similar diet and multivitamin tablets were given as in Case 1.

38th Day.—The patient passed characteristic haemoglobinuric urine, sherry-red in colour, just after midnight. A second sample passed two hours later was lighter, and a third passed in the morning was almost normal. Subsequent samples were macroscopically normal, and before evening there was no spectroscopic evidence of oxyhaemoglobin in the urine. Constitutional symptoms and haemoglobinaemia in a sample of blood taken at 10 a.m. were conspicuous by their absence; the patient did not even have the little fever which occurred in Case 1. Spectroscopic examination of the blood showed only traces of oxyhaemoglobin, and there was no rise in the

icterus index. The blood count was not appreciably changed. The results of other tests as carried out in Case 1 were likewise all negative. Similar treatment was adopted.

48th Day.—The patient had an attack of severe abdominal pain below the umbilicus associated with tenderness in the right iliac fossa, vomiting, fever with rigor, and a leucocytosis of 13,200, with polymorphs 56%, lymphocytes 28%, monocytes 4%, and eosinophils 12%.

60th Day.—There were signs of improvement in the rigidity, tremor, and mental condition.

66th Day.—The patient complained of pain all over the body. He had haemoglobinuria again, and this time it was severer than that of Case 1. After midnight he passed three samples of very dark urine followed by urine of gradually diminishing colour. About twelve hours after the first sample was passed it had cleared considerably, but to the naked eye it was not completely clear until the evening. Once again there were no constitutional symptoms other than the preliminary aches and pains in the body, and no haemoglobinaemia about twelve hours after the first sample of haemoglobinuric urine, and the icterus index did not rise. The haemoglobin fell to 75%, and the red cells to 4,930,000 per c.mm. The white cells numbered 8,400 per c.mm., with polymorphs 68%, lymphocytes 23%, eosinophils 8%, and monocytes 1%. The results of blood smears and other tests carried out previously were all negative. Treatment similar to that in Case 1 was given; 10 ml. of concentrated antivenene was repeated next day also.

By the 80th day the patient had almost completely recovered, and on the 96th day he was discharged as fit.

A follow-up of both cases for twelve months showed that recovery was complete in all respects, and there had been no recurrence of haemoglobinuria.

Discussion

In general petrol is a mixture of hydrocarbons of varying volatility and toxicity, the toxicity decreasing as the boiling-point increases. Octane, which is present in high proportion in some petrols, is very toxic—e.g., n-octane is about seven times as toxic as pentane (Lawrence, 1945). Some commercial petrols contain benzene and other aromatic hydrocarbons which are of still greater toxicity. The amount of lead tetra-ethyl is normally too small to be toxic, but, in circumstances to be discussed later, may give rise to lead-poisoning.

The toxic symptoms which arise after the inhalation of petrol vapour depend on the concentration of the vapour and the duration of exposure to it—e.g., Fieldner, Katz, and Kinney (1921) found that 1 part per 1,000 produced drowsiness in men after 15 minutes' exposure, and vertigo, ataxia, and nausea at the end of one hour, but 7 parts per 1,000 produced definite intoxication in five minutes. A very high concentration of the vapour causes almost immediate unconsciousness, and death from respiratory arrest (Rambousek, 1913).

Ordinarily, exposure to low concentration of vapour produces emotional changes simulating those of drunkenness. There may be excitement or euphoric exhilaration. Tolerance may be acquired by repeated exposure, and in such persons tremor of the hands without any emotional changes may alone occur on exposure to low concentrations of the vapour (Hamilton, 1925; Kulkow, 1926). Women may burst into fits of uncontrollable hysterical laughter or crying. Men may become irritable and quarrelsome.

Higher concentrations irritate the eyes, the skin, and the respiratory passages. A sense of constriction in the throat, burning pain in the chest and abdomen, a feeling of pressure over the heart, and irritation of the skin are followed by drowsiness, headache, vertigo, nausea, and muscular weakness. Tonic contractions of flexors of the hands and twitchings of the muscles of the trunk and limbs have been described at this stage by Rudd (1944).

With still higher concentrations the euphoric exhilarative period is very short. The patient becomes rapidly disorientated and abusive. Hallucinations may occur and he may defy rescue and become rapidly delirious and comatose. Convulsions may occur, but may be delayed till he is removed to fresh air for resuscitation (Machle, 1941).

From short exposures recovery is quick and is followed by deep slumber from which he can be roused. After prolonged exposure coma may last several days and end in death from respiratory failure. Recovery from coma may be heralded by muscular twitchings, and is usually associated with severe headache, vomiting, severe abdominal pain, pain in the extremities, extreme restlessness, a bursts of hysterical laughter. Headache, insomnia, loss of appetite, vomiting, pain in the extremities and abdominal and muscular weakness are the usual immediate after-effects and may last several days. An early erysipelas-like eruption on the skin of the face and the mucous membrane of the mouth and throat followed by necrosis is an early fatal complication that rarely occurs (Floret, 1927).

Sometimes damage inflicted on the nervous system gives rise after a variable period to symptoms simulating those of disseminated sclerosis or other organic nervous diseases (Potts, 1915). The onset of epilepsy has been described by Floret (1927). Peripheral and cranial nerves may be involved, often singly, such as the sciatic (Jansen, 1913), hypoglossal, and optic. Recovery may take place or nervous disability may be permanent. Lawrence (1919) recorded the occurrence of discomfort and tenderness of the right iliac fossa on the second day after exposure to petrol vapour, lasting till the twelfth day, without an abnormal amount of lead in the urine or faeces.

Lead tetra-ethyl is readily soluble in fats and oils, and lead poisoning can occur by its absorption through the intact skin. The chief mode of absorption is, however, through the pulmonary epithelium from inhalation of its vapour. In this form, the amount absorbed being proportionate to the vapour pressure in the lung alveoli. As much as 5% of lead per litre may be present in air saturated with vapour, and the symptoms of poisoning are entirely due to this lead content. Owing to the solubility of lead tetra-ethyl in fats, however, the central nervous system is chiefly affected.

The concentration of lead tetra-ethyl in leaded petrol is usually not more than 1 in 3,000 by volume, and in this concentration the occurrence of lead-poisoning is unknown in workmen engaged in its distributive and allied trades, well as among the general public (Kehoe, Thamann, and Cholak, 1934; Final Report of Departmental Committee, 1930; Lind, 1936). It is unlikely that lead tetra-ethyl plays any part in the symptomatology of acute petrol-vapour poisoning, except when the exposure is prolonged and the concentration of lead in the air is more than the safe limit of 1.5 mg. per 10 m.³ of air (American Public Health Association, 1943). Thus under controlled conditions, when the concentration is kept below this limit, poisoning is hardly ever occurred in workmen engaged in the manufacture of the product and its blending with petrol (Kehoe, 1934; Kehoe and Machle, unpublished data, 1936).

No cases have been found in can-fillers and can-washers although the urine has contained from 0.026 to 0.6 mg. lead per litre (Cassells and Dodds, 1946).

These authors state that some of the men engaged in underground or semi-underground pump-houses, where ventilation was poor and the concentration of the vapour naturally higher, however, showed mild symptoms of intoxication and a urinary lead concentration which was as high as 0.275 mg. per litre. Workers in depots below the level of the surrounding countryside, and hence

with poor natural ventilation, showed a high urinary lead concentration but no symptoms of intoxication. However, 15 cases of poisoning are described in tank-cleaners who overlooked or disobeyed regulations governing the cleaning procedure. Machle (1935) had previously recorded 11 similar cases. In these the poisoning was due to inhalation of lead tetra-ethyl vapour in high concentrations rising out of the sludge or sediment deposited at the bottom of large tanks after storage for some time; these contained analysed cases as much as 0.044 to 0.84% of organic lead compounds. Symptoms occurred after one to 17 days of exposure. "The classical signs and symptoms of lead-poisoning—namely, abdominal colic, tremors and fibrillary twitchings, myalgia, neuralgia, constipation, pallor, blue line on the gums, paralysis, stippling of the red blood cells, and punctate basophilia—either did not occur or were a very minor part indeed of the picture" (Cassells and Dodds, 1946), although in fatal cases the various organs showed a high concentration of lead—e.g., brain 0.6 to 1.74 mg., spleen 0.27 to 0.29 mg., liver 2.35 to 2.5 mg., kidneys 0.79 to 1.2 mg., against the normal maximum of brain 0.09 mg., spleen 0.07 mg., liver 0.28 mg., kidneys 0.16 mg. per 100 g. of wet tissue (American Public Health Association, 1943).

The earliest symptom was insomnia, with difficulty in falling asleep, broken sleep, and troubled dreams. Following this, and sometimes preceding it, came a nasty sweet taste in the mouth and halitosis, lack of appetite, nausea, vomiting, and diarrhoea with or without abdominal pain. Next in evidence were irritability, restlessness, nervousness, anxiety, difficulty in passing urine, and possibly tiredness. At this stage the pulse was slow, the temperature subnormal, the blood pressure diminished, and the reflexes increased, with the body weight showing slight loss. When exposure was longer and more severe "the signs and symptoms progressed to increasing tiredness and loss of body weight, tremor, muscular weakness and twitching, oddities of behaviour, and evidence of mental confusion, and then, quite abruptly, came the onset of acute maniacal symptoms with suicidal tendencies, or the occurrence of a convulsion" (Cassells and Dodds, 1946).

Although the classical signs and symptoms of lead-poisoning were absent urine examination showed a lead concentration which was usually above 0.15 mg. per litre. In fact, when the urinary lead concentration was less than 0.1 mg. per litre and symptoms of the above nature were displayed lead tetra-ethyl was considered unlikely to be the cause. The excretion of lead in the urine continued for a long time after exposure ceased, and sometimes the urinary concentration continued to rise in spite of cessation of exposure, to be followed by a progressive and gradual fall.

The clinical symptoms had apparently no relation to the urinary lead concentration—for in one of Cassells and Dodds's cases mental symptoms were present when the urinary lead concentration was 0.215 mg. per litre, but had disappeared later on when it had risen to 0.295 mg. Apparently loss of weight was sometimes very excessive, as shown in another of their cases by a gain in weight of 74 lb. (33.1 kg.) in about three months during the stage of recovery, and by a loss in a further case of between one and two stones (6–12 kg.) in about five weeks during the illness. Although the deep reflexes were usually exaggerated, at times they were diminished; in some cases they were exaggerated, while in others they were diminished—e.g., in one case "all reflexes were exaggerated except the biceps jerk, which was only just elicited." Cerebral symptoms in one case occurred suddenly in the midst of apparent recovery and ended fatally. There were no permanent sequelae: recollection of dreams was all that remained in one case.

Tropical conditions predispose to the occurrence of cases of lead tetra-ethyl poisoning. The two men whose cases are recorded in this paper were engaged, without any provision of airline masks or special clothing, in cleaning a tank which had not been rendered gas-free by ventilation after the petrol had been drained away. They thus faced a dual risk—one from the inhalation of petrol vapour, and the other from the absorption of lead tetra-ethyl by inhalation as well as by direct absorption through the intact skin.

The initial respiratory discomfort and irritation of the eyes were no doubt due to the effects of petrol vapour. It appears that sheer determination to work, associated with a fairly low concentration of the vapour, delayed the onset of giddiness, ataxia, and unconsciousness. To the effects of the same vapour may be ascribed the immediate symptoms, such as vertigo, headache, muscular weakness, anorexia, soreness of the eyes and throat, and pain in the lower limbs.

Symptoms of lead tetra-ethyl poisoning in a petrol-tank cleaner after exposure for a single working day have been described by Cassells and Dodds in one of the cases in their series, mentioned above. It will have to be conceded that these two workmen also absorbed enough lead during the day's exposure to give rise to such symptoms as marked loss of muscular power, muscular tenderness on pressure, and sluggish ankle- and knee-jerks due to its probable neuritic, muscular, spinal, or vasoconstrictor action. The numbness and the coldness of the lower limbs were perhaps due to vasoconstriction and the inability of the blood vessels to relax on account of the action of lead on them. Symptoms such as headache, anorexia, and body pains could be common to both effects.

Among the symptoms tremor, slow pulse, subnormal temperature, increased reflexes, loss of body weight, muscular weakness, and oddities of behaviour have all been described, as recorded above, in lead tetra-ethyl poisoning. It has been said that when symptoms of this nature are displayed lead tetra-ethyl is unlikely to be the cause if the urinary lead is less than 0.1 mg. per litre; yet on account of the similarity of symptoms it must be conceded that in my two cases these were due to lead tetra-ethyl in spite of failure to demonstrate pathological quantities of lead in the urine, and especially as in one of the cases there was no correlation between cerebral symptoms and the urinary lead concentration.

The unusual symptoms appearing in my two cases were:

1. *Acute Parkinsonism.*—As symptoms of organic nervous disorder are known to occur as sequelae of petrol-vapour poisoning it cannot altogether be ruled out that this was the case in these two patients. It is also known, however, that lead, through its vasoconstrictor action, can give rise to temporary blindness, angina pectoris, and gangrene of the extremities. Although localizing signs do not occur in lead encephalopathy, a similar selective action may play a part in the causation of acute Parkinsonism.

2. *Pain Simulating Acute Appendicitis.*—Discomfort and tenderness in the right iliac fossa, starting on the second day after exposure to petrol vapour and lasting until the twelfth day, recorded by Lawrence in one of his cases without any evidence of abnormal amounts of lead in the urine or faeces and apparently without any leucocytosis, bears a strong resemblance to an attack of similar pain in Case 2. However, in this instance it occurred 48 days after the exposure and was associated with a leucocytosis of 13,200 without a relative increase in the polymorphs. Such a leucocytosis is known to be associated with lead colic, and it is not impossible, therefore, that the appendicular reaction in this case was due to lead rather than to delayed effects of petrol vapour or to an incidental appendicitis.

not known. The incidence of 62% of *Staph. pyogenes* in the nasopharynx and its relative predominance is not unexpected in view of the findings of others (Kneeland, 1930; Torrey and Reese, 1945). The high incidence of 50% in the faeces is much greater than has been recorded heretofore (Todd, 1922; Crowley, Downie, Fulton, and Wilson, 1941), owing largely, it is believed, to the selective medium employed. It is a relevant point in considering the staphylococcus as a possible aetiological agent in enteritis.

The high incidence of penicillin-resistant strains in both nasopharynx and bowel probably reflects the strains circulating in a hospital environment. It is of interest that a similar incidence was found by Barber and Rozwadowska-Dowzenko (1948) from strains from infections, also in hospital. The figures obtained from this series of infants, taken in conjunction with time and place, may be regarded as a contribution to the further study of penicillin resistance of staphylococci in the community.

Summary

An investigation into the incidence of staphylococci in the nasopharynx and faeces of 130 normal healthy breast-fed infants aged 0-7 days born in the Maternity Department of St. Mary's Hospital, Manchester, is recorded.

From the nasopharynx *Staph. pyogenes* was isolated in 62% of the infants and from the faeces in 50%.

Of the *Staph. pyogenes* strains isolated from the nasopharynx 55.5%, and from the faeces 58.5%, were penicillin-resistant. All the resistant strains produced penicillinase.

Only four strains of *Staph. pyogenes* isolated were resistant to streptomycin.

In the cases that were specially tested there was homogeneity in the staphylococcal flora of the nasopharynx and bowel in individual infants so far as sensitivity to penicillin was concerned. In three-quarters of the infants who harboured *Staph. pyogenes* in both nasopharynx and bowel the strains from the two sources corresponded in their susceptibility to both penicillin and streptomycin.

The high incidence of *Staph. pyogenes* in the faeces was due largely to the use of a selective medium, and the high incidence of penicillin-resistant strains probably reflects the strain circulating in the hospital.

I wish to thank Professor W. F. Gaisford for his interest and advice and Professor H. B. Maitland for helpful criticism.

This work was undertaken whilst holding the Cow and Gate Research Fellowship in Child Health tenable in the Department of Child Health, University of Manchester.

REFERENCES

- Barber, M., and Rozwadowska-Dowzenko, M. (1948). *Lancet*, 2, 641.
Crowley, N., Downie, A. W., Fulton, F., and Wilson, G. S. (1941). *Ibid.*, 2, 590.
Hayes, W. (1945). *J. Path. Bact.*, 57, 457.
Kneeland, Y. (1930). *J. exp. Med.*, 51, 617.
Maitland, H. B., and Martyn, G. (1949). *J. Path. Bact.* In the press.
Todd, E. W. (1922). *J. Hyg., Camb.*, 21, 37.
Torrey, J. C., and Reese, M. K. (1945). *Amer. J. Dis. Child.*, 69, 208.

The Ministry of Health has issued a circular describing the procedure to be followed in caring for persons of unsound mind arriving at seaports and airports. If a British subject of unsound mind is not met by a relative or friend who will take charge of him, the medical officer there should call in the appropriate duly authorized officer of the local health authority, who is responsible for removing a person of unsound mind. An alien of unsound mind is prohibited by the Aliens Order, 1920, from being given leave to land, but Article 14 of the Order enables the Secretary of State to exempt any person from that prohibition. An immigration officer who considers that an alien is of unsound mind should seek the advice of the Medical Inspector of Aliens. If the latter is satisfied that the alien is of unsound mind, he gives the appropriate certificate on Form Port 12 to the immigration officer. If, nevertheless, the alien is allowed to land, the immigration officer is responsible for his disposal, and he may then deal with him in the same way as for a British subject.

Medical Memorandum

Unusual Physical Signs in Strangulated Inguinal Hernia

The following case of strangulated inguinal hernia is recorded because it illustrates three physical signs which should receive wider recognition.

CASE REPORT

A normal healthy man aged 33 was admitted to hospital complaining of a swelling in the right groin and vague abdominal pain. The swelling in the groin had been present for about six weeks and had not given rise to any symptoms until three days before admission when it became painful and enlarged rapidly, extending into the scrotum. He complained of some generalized abdominal pain of colicky nature, a little nausea, and constipation for two days. He was also reported that blood-stained fluid had been aspirated from a hydrocele on the right side some hours previous to admission.

On examination a large fusiform swelling was seen in the right groin, extending downwards and continuous with a very large swelling in the right half of the scrotum. It was impossible to get above the swelling in the groin, yet the swelling of the scrotum was clearly cystic and translucent, although not brightly so. There was a gurgling cough impulse over the swelling in the groin. Auscultation of the abdomen revealed some increase of peristaltic sounds, and the heart sounds could be clearly heard throughout the whole abdomen.

At operation a loop of ileum was found to be strangulated at constriction about half-way down an hourglass-shaped hernial sac. About 6 in. (15 cm.) of bowel was involved, and the distal sac, which was very large, was filled with dark blood-stained fluid. Considerable ascites was present in the abdominal cavity, with moderate intestinal distension.

The strangulated bowel was thickened, waterlogged, and dark purple in colour, and the mesentery was thrombotic and oedematous. After the usual measures to restore the circulation it was decided to resect the bowel, and a piece about 2 ft. 6 in. (76 cm.) was removed and an end-to-end anastomosis performed. The large congenital sac was removed and the hernia repaired. The patient made an uninterrupted recovery and at a follow-up three months later had no complaints.

COMMENTARY

The Cough Impulse.—In a case of suspected strangulated hernia the presence of a cough impulse should not necessarily rule out the diagnosis. As in this case, the site of strangulation may be some way distal to the external abdominal ring leaving the proximal part of the contents unstrangulated.

Blood-stained Hydrocele.—The collection of blood-stained fluid from a hydrocele is usually considered to be associated with some disease or trauma of the testis. The above case demonstrated that it may be associated with intestinal obstruction. Such a finding was of even greater interest in another case I had some years ago. A man presented with a recent developed hydrocele of a hernial sac with blood-stained fluid. On lying the patient down it was found that the sac could be slowly emptied into the peritoneal cavity—i.e., the processus vaginalis was patent. At operation an internal strangulation due to a fibrous band was found. At no time had he ever noticed any descent into the hernia—the congenital sac behaved always there, but making itself manifest only when blood-stained fluid formed within the abdomen.

Heart Sounds Heard Clearly in the Abdomen.—This fact, I believe, signifies a combination of intestinal distension and fluid. I have heard the sounds on other occasions, and these findings have always been confirmed at operation or strongly supported by other signs.

In the case recorded the fluid in the abdomen was no doubt present because the strangulation was of that type which started with slow venous occlusion, as shown by the thickened waterlogged loop of strangulated bowel in contrast to the thin friable type of wall found in more rapid strangulation in which the arteries are quickly occluded. Although in the former type of obstruction I believe the bowel is often more viable than its appearance would suggest, it is this type of strangulation which leads to late obstruction from interstitial fibrosis at constriction if the bowel is dropped back.

If the patient's condition warrants it, an immediate resection would always seem justified.

C. PATRICK SAMES, M.S., F.R.C.S.,
Assistant Director, Surgical Unit, St. Mary's Hospital

Reviews

CARE OF CHILDREN

Advances in Pediatrics. Volume 3. Edited by S. Z. Levine, A. M. Butler, L. E. Holt, jun., and A. A. Weech. (Pp. 363; illustrated. £2 5s.) New York and London: Interscience Publishers. 1948.

Handbook of Parentcraft. By Leslie George Housden, O.B.E., M.D. With an Introduction by Sir Wilson Jameson, K.C.B., F.R.C.P., D.P.H. (Pp. 152. 5s.) London: Eyre and Spottiswoode, 1948.

The third volume of *Advances in Pediatrics* is up to the high standard set by its predecessors. Eight monographs, each with useful bibliographies, cover a wide range of interests. It is significant of the present-day trend that two of the eight are on psychological matters. The account of the treatment of epilepsy and the social management of children with this complaint is a practical contribution of great importance. A thoughtful essay on the effects of birth processes and obstetric procedures on the newborn infant is a worthy product of the Boston School, from which comes also an account of retro-lental fibroplasia, posthumously contributed. From Philadelphia the pen of an expert deals with viral hepatitis, and the contribution from Johns Hopkins is on abnormalities of sexual development, a study which was presented in graphic form at the International Congress on Pediatrics in 1947 in New York. A concluding essay on the osteochondroses is a comprehensive account of this curious group of bony abnormalities. The reviewer's only regret is that a year must elapse before more surveys of this type are available.

Dr. L. G. Housden's little volume on parentcraft makes available in permanent form the teachings of this keen enthusiast. His general thesis is perhaps sounder than some of his details. Pasteurized milk is not generally regarded as safe for babies without boiling, and the milk dilutions advocated (with the briefest mention of dried milk) are not those generally accepted. However, Dr. Housden's object is to educate young parents in their job, which is a larger and more important theme than bottle feeding, and he has certainly succeeded in writing an interesting book.

ALAN MONCRIEFF.

PSYCHOLOGY OF CHILDREN

Childhood and After. Some Essays and Clinical Studies. By Susan Isaacs, C.B.E., M.A., D.Sc.(Vict.), Hon.D.Sc. (Adelaide). (Pp. 245. 15s.) London: Routledge and Kegan Paul. 1948.

With the death of Susan Isaacs we have lost one of the foremost pioneers of child psychology and one whose originality of thought and powers of observation are all too uncommon in this or any other field of mental science. An early adherent of the psycho-analytic school, she may have been regarded by some as too extreme in her early days, but later she became a wise counsellor whose knowledge and understanding of the inner workings of the human mind made her a real help to the community.

This development is reflected in this book, which is a collection of lectures and addresses some of which have not previously been published. One of the early essays—that on privation and guilt (1929)—is full of the extreme Freudian ideas—the Oedipus complex, the castration complex, infantile sadism, and so on. That there are at times waves of hostility to the mother and still more to the father in the mind of the young child, and that these moods may influence subsequent behaviour, may readily be accepted, but that specific desires to tear the mother to pieces, to destroy her and eat her, are ever formulated even in the deepest layer of the unconscious is less credible, though the hostility may later be expressed in some such way during psychotic fantasies. In a later essay (1940) on temper tantrums we find a less extreme attitude when the author is discussing tantrums in young children, but she returns to somewhat extravagant Freudian explanations in respect of the emotional outbursts of a young schizoid adult.

The last two essays—on fatherless children and children in institutions—are wholly admirable—sensible, instructive, and constructive. The last is the full text of a memorandum

to the Curtis Committee and must have influenced and impressed that body considerably. This volume is of great interest in showing the development not only of the author's mind but also of the whole modern attitude to abnormal psychology.

R. G. GORDON.

HODGKIN'S DISEASE

Hodgkin's Disease and Allied Disorders. By Henry Jackson, jun., A.B., M.D., and Frederic Parker, jun., A.B., M.D., Oxford Medical Publications. (Pp. 177; 14 plates. £2 5s.) New York: Oxford University Press (Geoffrey Cumberlege). 1947.

This attractively produced monograph embodies the authors' observations on a series of 259 cases of Hodgkin's disease. The "allied disorders" discussed successively in shorter sections are reticulum-cell sarcoma, giant-follicle lymphoma, lymphocytoma, lymphosarcoma, plasmacytoma, and endothelioma. The authors describe all these conditions from their combined clinical and pathological aspects and illustrate them by radiographs and photomicrographs.

While the text is full of interesting and authoritative observations which will be of value to the practising specialist and pathologist, there is nothing revolutionary in these pages. The most controversial aspect of the account of Hodgkin's disease, perhaps lies in their distinguishing three forms of the condition—*paragranuloma*, *granuloma*, and *sarcoma*. The authors consider that each of these displays a distinctive pathological and clinical picture. While "paragranuloma" has been regarded by others as "early Hodgkin's disease," the authors claim that, although it may pass on to the granuloma phase, it may persist unchanged for many years, and they quote an instance where the patient is alive and active 39 years after the diagnosis was established by biopsy. The paragranuloma and granuloma together conform to the prevailing conception of Hodgkin's disease. It may be, however, that some examples at least of the paragranuloma are rather to be regarded as the equivalent of Robb-Smith's lympho-reticular medullary reticulosis.

The interpretation of what is called Hodgkin's sarcoma is a difficulty that confronts all pathologists; we read (p. 32) that the spleen was involved in only 9 of 32 cases, but it seems likely that this group would be broken down by other authorities into different categories. Doubtless this and other controversial points will be resolved only when the aetiology of the disease is known.

DOROTHY S. RUSSELL.

ANALYTICAL PSYCHOLOGY

Studies in Analytical Psychology. By Gerhard Adler, Ph.D. (Pp. 209; illustrated. 21s.) London: Routledge and Kegan Paul. 1948.

The contributions of C. G. Jung to psychiatry and psychopathology are so extensive that a summary of some main concepts is welcome. The summary presented in this volume is given in the setting of clinical experience, and in consequence the account is vivid and avoids the dullness of an epitome. It is not a book for the beginner. Throughout the author assumes that the reader is familiar with the terminology of analytical psychology and psycho-analysis.

In the opening chapter, "A Comparative Study of Analytical Psychology," the author criticizes chiefly the Freudian point of view, and he competently discusses the differences between the teaching of Jung and of Freud. The exposition of Jungian theory and clinical procedure in the later chapters is more useful and gives the book its practical value. Psychiatrists have the unusual opportunity of observing a colleague at work and noting just how he tackles the well-known problems. Now and then, however, the author's enthusiasm outruns his critical faculty and we find a tendency to generalize from particular instances. It is probably true, for example, that some—perhaps many—children go through ceremonies with their dolls and animal toys before going to sleep in order to allay dimly felt anxiety of the powers of darkness. But not every child is afraid of the dark, and not every child who says good night to its doll is carrying out a protective ceremony customary in primitive races (p. 101).

Drawing and painting have been used for years in psychiatry as a form of diversional therapy, but their use in expressing

hitherto unrecognized thought and feeling, for which no other vehicle will serve, is more recent. The illustrations in this volume, drawn by the author's patients in an attempt to understand their dreams, are of this type, and the commentary upon them is clear and informative. The final chapter, on "Jung's Contribution to Modern Consciousness," takes us beyond the limitations of psychiatry and describes how much psychology as a whole has gained by Jung's teaching. The book is worthy of serious attention and will be of special interest to post-graduate students who require a lucid statement on such subjects as symbolism, the collective unconscious, archetypes, amplification, the opposites, and dream analysis.

E. A. BENNET.

TELEKINESIS

The Reach of the Mind. By J. B. Rhine. (Pp. 188. 10s. 6d.) London: Faber and Faber. 1948

Psychology is indebted to Professor Rhine for his pioneer scientific work on telepathy, clairvoyance, and, most recently, telekinesis. This work, extensively confirmed elsewhere, could not be seriously discussed until the combination of controlled experiment and statistical analysis showed, as it now has done, that effects are being obtained which cannot be accounted for by any present theory of mental and physical interaction. They demand further inquiry. The late Sir James Jeans once remarked that any experiment should be regarded with the greatest caution until it was confirmed by theory. This is the present standing of these studies of "psi" phenomena. The reader receives the impression that Professor Rhine is studiously avoiding the statement of any working hypothesis and that he is best pleased when the results of experiment are apparently senseless.

He has, for instance, performed a great number of experiments on the power of his subjects to influence the fall of rolling dice, and he shows that they can at will secure an excessive proportion of high or of low numbers on the top faces of the dice when they have come to rest. He has experimented with dice of various shapes—e.g., with sharp or rounded edges—and found no difference between them. Telekinesis is unaffected by such mechanical factors. He also says, however, that he gave up experimenting with disks because he got no statistically significant results; so it seems that the shape of these experimental objects does have some effect after all. If mental operations have some direct effect on isolated physical systems, then they must be to some extent subject to the laws of physics; if Professor Rhine has not found this, it may be because he has not looked in the right direction. If his views are correct, there is no reason why the pure willing of one of his subjects should not be able to roll over a single dice after it has come to rest and turn it so as to show another face. A single successful experiment of this kind would be a clearer demonstration to the vulgar than a thousand experiments whose validity depends on statistical analysis.

Professor Rhine is enthusiastically concerned to demonstrate the paramouncy of mind and the "psychocentric" nature of man, as well as to dethrone materialist systems of philosophy. Although the phenomena he reports are extremely interesting, their theoretical interpretation is still so doubtful that no radical change in the basic philosophy of science seems yet to be called for.

ELIOT SLATER.

Dr. Frederick Christopher's *Minor Surgery* (sixth edition, pp. 1,058; 937 illustrations on 595 figures; £3. Philadelphia and London: W. B. Saunders) includes much more than is usually found in the house-surgeon's manual. As the author points out, the distinction between minor and major surgery is at times almost impossible to make. He has overcome this difficulty by giving the term a comprehensive meaning. As a result the book will be useful not only to the newly elected house-officer but to the majority of practitioners and assistant surgeons. This edition has been brought thoroughly up to date. Indeed, the author considers such procedures as the use of oxidized cellulose for the control of haemorrhage and others which have not yet established themselves, but he always gives references to recent work. The chapters on the surgery of the extremities make the book a useful treatise on minor orthopaedic work—perhaps as good as is to be found anywhere. This book has always been popular; in its new revised form it is likely to be more so.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

A Course in Practical Therapeutics. By M. E. Rehfuss, M.D., F.A.C.P., and others (Pp. 824. 82s. 6d.) London: Baillière, Tindall and Cox. 1948.

Systematically arranged and fully illustrated.

The Diagnosis of the Acute Abdomen in Rhyme. By Zeta. 2nd ed. (Pp. 93. 6s.) London: H. K. Lewis. 1949.

A second edition of the well-known epic.

An Introduction to Public Health. By E. W. Caryl Thomas, M.D., B.Sc., D.P.H. (Pp. 263. 15s.) London: Simpkin Marshall. 1949.

A short book for students.

Cunningham's Manual of Practical Anatomy. By J. C. Brash, M.C., M.A., M.D., F.R.C.S.Ed., F.R.S.Ed. Vol. 1. 11th ed. (Pp. 387. 21s.) London: Geoffrey Cumberlege. 1948.

General introduction, and the upper and lower limbs

Pediatric Anesthesia. By M. D. Leigh, M.D., and M. K. Belton, M.D. (Pp. 240. 27s. 6d.) London: Macmillan. 1948.

Theory and practice of anaesthesia for children

Eat and Grow Beautiful. By G. Hauser. (Pp. 233. 9s. 6d.) London: Faber and Faber. 1949

A book for the non-scientific reader.

Practical Orthoptics in the Treatment of Squint. By T. K. Lyle, M.A., M.D., M.Chir., M.R.C.P., F.R.C.S., and S. Jackson, S.R.N., D.B.O. 3rd ed. (Pp. 271. 35s.) London: H. K. Lewis. 1949

An extensively revised edition.

Common Sense About Hair. By G. Reeson, M.I.T., and C. Bedeman, M.I.T. (Pp. 78. 3s. 6d.) London: Walding Press. 1949.

For the layman

Psycho-Analysis Today. Edited by S. Lorand, M.D. (Pp. 404. 25s.) London: George Allen and Unwin. 1948.

A survey of the development of psycho-analysis.

La Marihuana en la America Latina. By P. O. Wolff (Pp. 55. No price.) Buenos Aires: El Ateneo. 1948.

Extended version of a lecture given to the Medico-Legal Society of Buenos Aires.

The Neurosis of Man. By I. Burrow, M.D., Ph.D. (Pp. 428. 28s.) London: Routledge and Kegan Paul. 1949.

An analysis of the causes of neurosis

Klinische Infektionslehre. By F. O. Höring. 2nd ed. (Pp. 245. M. 18.) Berlin: Springer. 1948.

A study of the pathogenesis of infection.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Edited by C. F. Mayer, M.D. (Pp. 994. \$4.25.) Washington: U.S. Government Printing Office. 1948.

The tenth volume of the fourth series, which is also the fifty-seventh volume of the entire publication since its inception in 1880.

Anaesthetics and the Patient. By G. Ostlere, D.A. (Pp. 166. 7s. 6d.) London: Sigma Books. 1949.

A monograph for nurses, junior medical students, and the layman.

Yearbook of General Surgery, 1948. Edited by E. A. Graham, M.D. (Pp. 717. 25s.) London: H. K. Lewis. 1949.

A review of the year's literature.

First Steps in Childhood. By G. M. Kerr, M.B., B.S., D.A. (Pp. 120. 3s. 6d.) London: Clerke and Cockran. 1949

For mothers.

Tuberculosis of the Knee-Joint. By J. Mortens. (Pp. 550. Kr. 30.) London: H. K. Lewis. 1948.

English translation of a recent Danish monograph.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY APRIL 23 1949

THE SYMPATHETIC TRANSMITTER

Adrenaline is an amine in which one hydrogen atom is replaced by a methyl group; the same amine in which this hydrogen atom is not replaced is known as nor-adrenaline or arterenol. Evidence is accumulating to show that the substance which transmits sympathetic impulses to the end organ is nor-adrenaline, and not adrenaline as many have thought. Several workers¹⁻⁴ have obtained results indicating that nor-adrenaline is the transmitter at sympathetic nerve endings in the liver. Recently von Euler⁵ has demonstrated by colorimetric and biological tests that extracts of sympathetic splenic nerve fibres of cattle contain 1-nor-adrenaline—a finding which again emphasizes the importance of this substance. To be set in the balance against this evidence is that of Gaddum and his colleagues,^{6, 7} who found the substance liberated by the stimulation of sympathetic nerves to the vessels of the rabbit's ear to be adrenaline.

All this work might seem at first sight to be of academic importance only, but Goldenberg and his colleagues⁸ in the U.S.A. have been quick to see its possible clinical significance. They have made a clinical study of the effects of intravenous infusion of nor-adrenaline, comparing them with those of adrenaline. The vasodilator effect of adrenaline has been demonstrated in man by Allen, Barcroft, and Edholm⁹ and by other workers.¹⁰⁻¹² The action of nor-adrenaline is different: intravenous infusion causes vasoconstriction and a rise in pressure. For example, in one patient Goldenberg and his colleagues found that infusion of adrenaline caused a fall in the total peripheral resistance (expressed in dynes cm.⁻⁵ sec) from 1,000 to 500, the infusion of nor-adrenaline on the other hand caused a rise from 1,250 to 1,750. When both adrenaline and nor-adrenaline were infused there was a fall; the presence of adrenaline appeared to block the constrictor action of nor-adrenaline. From these and similar observations in other patients they put forward the highly speculative theory that essential hypertension may be considered to be a disease of deficient transmethylation, though they admit that their study provides no "definitive evidence" for this view. They suggest, that is, that nor-adrenaline is a precursor of adrenaline, and that essential hypertension results from a failure to effect the conversion. Recently Holtz and Kroneberg¹³ put forward the view that epinine rather than nor-adrenaline is the precursor of adrenaline.

Obviously, until there is evidence that nor-adrenaline can become adrenaline by methylation, the theory, however interesting, must remain insecure. The difference between nor-adrenaline and adrenaline is not confined to the action on the vessels, for Barcroft and Konzett¹⁴ have shown that intravenous infusion in man of nor-adrenaline causes a slowing of the heart rate, while that of adrenaline causes a quickening.

If nor-adrenaline is the sympathetic transmitter and is a purely constrictor substance, how then is sympathetic vasodilatation to be explained? It has been known since the time of Dastre and Morat¹⁵ that the stimulation of certain sympathetic fibres produces vasodilatation. The experiments of Bulbring and Burn¹⁶ threw light on sympathetic vasodilatation in the dog. They found that the vasodilatation was due to the liberation of acetylcholine. Folkow and Uvnäs¹⁷ in Sweden have now studied sympathetic vasodilatation in the cat and have come to the conclusion that in this animal as well as in the dog the transmitter is acetylcholine. They and their colleagues¹⁸ have also shown that the sympathetic vasodilator fibres in the coronary vessels liberate acetylcholine. They regard nor-adrenaline as the transmitter of all constrictor impulses in the cat and acetylcholine as the transmitter of all sympathetic dilator impulses.

The most recent observations on nor-adrenaline concern the medulla of the suprarenal gland. Holton¹⁹ has shown that medullary tumours contain much more nor-adrenaline than adrenaline. Meier and Ben²⁰ have found that the dilator action of adrenaline on the limb vessels disappears if the suprarenal glands are removed, but it reappears if nor-adrenaline is infused intravenously, thus they suppose that the suprarenal medulla must liberate not only adrenaline but also nor-adrenaline. Schümann²¹ has reported the presence of nor-adrenaline in the suprarenal of the pig. Bulbring and Burn²² have shown that stimulation of the splanchnic nerve in the cat liberates from the suprarenal medulla a mixture of nor-adrenaline and adrenaline—on an average about 50% of each. Thus nor-adrenaline is rapidly becoming a substance of unexpected importance, and the rate at which new discoveries in this field are appearing is so great that conclusions of clinical interest seem bound to emerge very soon.

DIPHTHERIA PROPHYLACTICS

From 1911 to 1940 the number of cases of diphtheria notified in England and Wales was consistently round about 50,000 a year. In 1940 the Ministry of Health introduced its immunization scheme—the prophylactic most commonly used being alum-precipitated toxoid (A.P.T.)—and in 1942 the number of notified cases was 41,404; after that it fell steadily—34,662 in 1943, 29,949 in 1944, 18,596 in 1945, 11,986 in 1946, and 3,941 in 1947, the last year

¹ *J. Pharmacol.*, 1937, 59, 114

² *J. Physiol.*, 1947, 105, 357

³ *Acta physiol. scand.*, 1939, 10, 100

⁴ *J. Physiol.*, 1939, 95, 104

⁵ *Ibid.*, 1939, 98, 385

⁶ *Amer. J. Med.*, 1948, 5, 792

⁷ *J. Physiol.*, 1946, 105, 255

⁸ McMichael, J., and Sharpey-Schafer, E. P., *Brit. Heart J.*, 1944, 6, 33

⁹ Starr, I., et al., *J. Clin. Invest.*, 1937, 16, 799

¹⁰ Ranges, H. A., and Bradley, S. E., *Ibid.*, 1943, 22, 687.

¹¹ *Klin. Wschr.*, 1948, 26, 605

¹² *Lancet*, 1949, 1, 147.

¹³ *C.R. Acad. Sci. Paris*, 1880, 91, 393

¹⁴ *J. Physiol.*, 1935, 83, 483

¹⁵ *Acta physiol. scand.*, 1948, 15, 389

¹⁶ *Ibid.*, 1948, 15, 421

¹⁷ *Nature*, 1949, 163, 217

¹⁸ *Experientia, Basel*, 1948, 4, 358

¹⁹ *Klin. Wschr.*, 1948, 26, 604

²⁰ *Nature*, 1949, 163, 363

for which full returns are available. The number of deaths from diphtheria showed a similar trend: between 1911 and 1940 there had been a fairly steady fall, but the figure appeared to be attaining stability at about 2,500 (2,133 in 1939, 2,480 in 1940, 2,641 in 1941). In 1942, two years after the Ministry's campaign had started, deaths from diphtheria in England and Wales had fallen to 1,827, and the decrease continued: 1,371 in 1943, 934 in 1944, 722 in 1945, 472 in 1946, and 198 in 1947.

Since this remarkable change in the incidence and mortality of diphtheria took place to a large extent during a war in which food shortages, movements of population, and bombing had added greatly to the difficulty of controlling infectious disease, it is clear that A.P.T. possesses the essential feature of a good diphtheria prophylactic—the capacity to reduce to very small proportions the incidence and mortality of diphtheria. Recently, however, some disquiet has been expressed at the variability of A.P.T. as an immunizing agent.¹ Much of this seems to have been due to the use of some preparations of low potency in the 1941 immunization campaign. Though batches of A.P.T. produced by the method of Barr, Glenny, Pope, and Linggood² show little variation in antigenic power in guinea-pigs, whether tested by a one- or two-dose method,³ there is clearly some substance in the contention that the composition of A.P.T. is not accurately known, that it is not reproducible with certainty in different laboratories, and that the amount of carrier (according to Holt,⁴ aluminium hydroxide and phosphate) cannot be controlled. There is also some complaint of reactions after A.P.T., particularly in older children and in adults; these are said to be due partly to bacterial protein in the prophylactic. Obviously, therefore, it would be a great advantage to have a diphtheria prophylactic the composition of which was constant and controllable and which caused few reactions—always provided that the immunizing effect was at least as good as that of A.P.T.

These considerations led Mr. L. B. Holt to devise a new prophylactic,⁴ and to this he gave the name P.T.A.P. (purified toxoid, aluminium phosphate precipitated). The purified toxoid, produced from the toxin of *C. diphtheriae* grown in a semisynthetic medium, is precipitated by the addition of aluminium phosphate in controlled conditions.⁵ By this method toxoid of consistent purity can be adsorbed on known and controllable amounts of aluminium phosphate. The latter point is of considerable importance, since Bousfield⁶ has shown that if a constant amount of toxoid is injected as P.T.A.P. the Schick-conversion rate rises with increase in the amount of carrier used. When testing P.T.A.P. by a one-injection method in children Bousfield and his colleagues⁷ found that different batches did not vary in antigenic potency, that the Schick-conversion rate by this method was from 94.1% to 100%, and that the antigenicity of P.T.A.P. improves on keeping. Reactions⁸ to P.T.A.P. are reported to be trifling in children and in adults, and in individuals sensitive to A.P.T. are less than those

caused by the latter prophylactic. (Complete freedom from reaction to diphtheria prophylactics is hardly likely to be achieved: Pappenheimer and Lawrence⁸ have shown that some individuals are sensitive to pure diphtheria toxoid.) Nodule formation becomes more obvious as the dose of carrier is increased, and the Schick-conversion rate tends to rise as the incidence and extent of nodule formation become greater.

In this issue of the *Journal* Mr. L. B. Holt and Dr. Guy Bousfield give an account of the present position of P.T.A.P. First, they show that there is no significant difference between batches of P.T.A.P. of the same age as judged by the Schick-conversion rate in children 28 days after a single injection. They also found no difference between the six batches of A.P.T. tested in parallel, but P.T.A.P. did give a significantly higher mean value for the Schick-conversion rate (96.6%, as compared with 87.5% for A.P.T.) 28 days after one injection. They then consider the method of injection, and show that if 5 Lf doses of toxoid are used as antigen in a single dose intramuscular injection gives a higher Schick-conversion rate than subcutaneous injection whatever the quantity of carrier, presumably because muscular movement not only may disperse the antigen but also delays its encapsulation. There is evidence that 5 Lf doses of toxoid adsorbed on 5 mg. aluminium phosphate give the best results. An interesting finding is that even with such small doses of toxoid (15 Lf doses plus 7.5 mg. AlPO_4) a Schick-conversion rate of 95% may be obtained three months after a single intramuscular injection. Moreover, even with this small dose the Schick-negative state is maintained in at least 95% of the children for at least 15 months. The authors suggest that these observations indicate that a prophylactic effective against diphtheria by a single injection may be practicable—a matter of obvious importance, since many children never appear for their second injection. At present, however, there are still strong theoretical objections to giving the first course of immunization by a single-dose method. The earlier batches of P.T.A.P. (at pH 5) produced some stinging on injection, but it was found that adjustment to pH 6.5–7 not only abolished the stinging but made no difference to the antigenicity. From their experience so far Holt and Bousfield recommend a prophylactic containing in .1 ml. 50 Lf doses of toxoid (2,000 Lf doses per mg. protein nitrogen), 10 mg. of AlPO_4 , 0.85 g. of NaCl , and 0.0001 g. of preservative, adjusted to pH 6–6.5 and stored for three to six months in the cold-room before issue.

This work shows what advances have been made in the study of diphtheria prophylactics. There is, however, still a need for caution: the test of a diphtheria prophylactic is its efficiency in the field—its capacity to reduce to a negligible level the incidence of diphtheria and its mortality. Large amounts of bacterial protein in prophylactics undoubtedly increase the frequency and severity of "reactions" after injection; removal of all bacterial protein, though it reduces reactions to a minimum, may reduce the immunizing power even though the Schick-conversion rate is raised. It is therefore exceedingly important that extensive trials of the immunizing power of this new prophylactic should be carried out, preferably over a number of years, in parallel with A.P.T. If the incidence of

¹ Bousfield, G., *Publ. Hlth, Lond.*, 1947, 60, 121.

² *Lancet*, 1941, 2, 301.

³ Barr, M., and Glenny, A. T., *ibid.*, 1947, 1, 355.

⁴ *ibid.*, 1947, 1, 282.

⁵ Holt, L. B., *Brit. J. exp. Path.*, 1948, 29, 335.

⁶ *Lancet*, 1947, 2, 867.

⁷ *Med. Offr.*, 1948, 80, 145.

⁸ *Amer. J. Hyg.*, 1948, 47, 241.

diphtheria in children injected with P.T.A.P. is as low as, or lower than, the incidence in those injected with A.P.T. then the case for P.T.A.P. will have been conclusively proved.

AN UNFORTUNATE PRECEDENT

Lord Moran was last week re-elected President of the Royal College of Physicians of London and thus enters his ninth year in this distinguished office. President during a time of storm and stress, he has by his skill in negotiation rendered the profession notable service. Lord Moran has been at the head of affairs longer than any recent presidents, the nearest to him in duration of office being Lord Dawson of Penn, who was P.R.C.P. for seven years. There is, of course, no fixed term of office, the election being annual. But a glance at the history of the College shows that some former presidents had considerable staying power. For example, William Baronsdale (1589-99) and Sir Edward Alston (1655-66) each served for a term of 11 years. Sir Hans Sloane, founder of the British Museum, was President for 16 years, from 1719 to 1735. The president longest in office was Sir Henry Hallford, who was elected unanimously every year from 1820 to 1844. He was physician to four sovereigns, and mainly responsible for the removal in 1825 of the College from Warwick Lane to its present habitation in Pall Mall East.

Politics and economics now invade professional life and thought in a way that would have made our ancestors sit uneasily in their chairs of office. Presidents now have to bear a heavy burden and responsibility. As guardians of the gates of ancient and learned institutions they have, Janus-like, to look two ways at once, within and without, at the internal affairs of the Colleges and at the external relations between these and the State. This dual obligation is illustrated by the fact that the present President of the Royal College of Physicians is also the Chairman of the Distinction Awards Committee, a committee which has the difficult—and, as some think, impossible—task of selecting from the body of consultants and specialists in this country those thought fit to receive money prizes. It says much for Lord Moran's strong sense of duty that he has consented to act in these two capacities; and that the Comitia of the College last week re-elected him shows that they do not disapprove of this situation.

The times are exceptional, and exceptional measures and men must be found to match them. Nevertheless we may hope that this is a precedent which will not be followed. Fellows must be able to feel free to criticize the presidents of the Royal Colleges in Council and Comitia, and by fearless advocacy of contrary opinions be able to take part in the needed evolution of these institutions. Those with great expectations for a prize may at times feel constrained to remain silent when it is a question of voicing an opinion thought to be unacceptable to a president who also holds the chairmanship of the Distinction Awards Committee. And, human nature being what it is, some may even be tempted to handle the base coin of adulation. A president's first duty is to promote the interests of his own College, and at times he may, not unnaturally, be unconsciously biased in favour of his own Fellows when it comes

to choosing for a prize one or two out of several candidates of almost equal merit. It is true that there is the safeguard of a strong committee and the most careful assessment of claims from the periphery. We have no doubt that the strictest fairness will be observed. Yet many people think that the presidents of the Royal Colleges should not be placed in an invidious position. It may be questioned whether they should serve even as members of the Distinction Awards Committee. It is not impossible that in future the decisions of this committee will be challenged, and it would seem to be important that the presidents of the Royal Colleges should remain free to criticize these decisions, and not be involved in them. The principle, we think, is important enough to deserve careful consideration.

CONGENITAL HEART DISEASE: A NEW APPROACH

The surgical treatment of congenital heart disease has been one of the most remarkable developments in recent years. In cyanotic heart disease, including Fallot's tetralogy, the Blalock-Taussig operation has proved of great value. The object is to provide an anastomosis between a systemic artery and a pulmonary vessel so that a proportion of the systemic "blue" blood can be shunted into the lung and there oxygenated. In the standard Blalock operation a subclavian artery is joined by an end-to-side anastomosis to the corresponding main pulmonary trunk, while in Potts's operation a side-to-side opening is constructed between the aorta and left pulmonary artery. In addition to these operations there have been successful attempts, including that described by Brock¹ in this *Journal* some months ago, to divide or excise a stenosed pulmonary valve and thereby to increase the blood flow from the heart into the lung.²

In the operation in which an anastomosis is to be performed it is essential that the vessels concerned should be large enough for the making of a satisfactory junction; unfortunately in a number of patients with cyanotic disease one or other pulmonary artery may be so small that such an operation becomes impracticable. In these cases the body itself makes an effort to improve pulmonary oxygenation by establishing numerous fine collateral channels in the region of the lung root, and the importance of these may be gauged by the fact that if they are divided and there is no adequate pulmonary artery death may result. Elsewhere in this issue Mr N. R. Barrett and Dr. Raymond Daley describe a method of treating the cases in which pulmonary arteries are too small for anastomosis by establishing new vascular channels along adhesions between the mediastinum and lung. The adhesions are made by stripping the parietal pleura from the upper part of the chest, then powdering the raw surface with asbestos dust, and re-expanding the lung. This can be done on both sides, and it seems probable that considerable revascularization over the raw area may occur. As an alternative method, omentum has been brought up from the abdomen and applied to lung, since it is known that vascular adhesions can also be established in this manner. Barrett and Daley have treated six patients by one or other of these methods, and they consider that the results were good in two cases and that there was clinical improvement in three. It is too early as yet to say whether the improvement will be permanent.

This form of operation may well be valuable in the treatment of patients in whom the more generally accepted

¹ *British Medical Journal*, 1948, 1, 1121.

² Sellors, T. H., *Lancet*, 1948, 1, 938.

type of anastomotic operation is not possible, but at the same time modern methods of investigation must be employed in order to obtain before operation as much information as possible about the condition of the vessels. There are many variations of Fallot's tetralogy and other cyanotic conditions, and no hard-and-fast decision about the type of operation can be made until the chest is opened and the exact abnormality defined.

TOXOPLASMOSIS

Although the toxoplasma was known to be a parasite in certain animals as long ago as 1908,^{1,2} it was not until 1939 that toxoplasmosis was reported in a human patient, the case having been first diagnosed as encephalitozoic encephalomyelitis.³ Interest in the condition led to a careful review of some earlier case reports and in some cases to re-examination of necropsy material. As a result toxoplasma infection has been suggested as the cause of some previously obscure conditions; among these was a case of "coloboma of the macula lutea in a microphthalmic eye, with parasites in the retina" reported by Janku⁴ in Prague in 1923. Since 1939 several authors⁵⁻¹⁰ have reported cases of this infection, and recently Jacoby and Sagorin¹¹ have described the first case of congenital toxoplasmosis diagnosed in this country.

The first cases of toxoplasma infections to be recognized were in newborn babies, but later the condition was diagnosed in older children and adults. "While in the latter the signs and symptoms may be diverse (pneumonia, fever, exanthema, gastro-enteritis), in children the usual clinical picture is that of meningo-encephalomyelitis, almost always accompanied by affections of the eye—the most frequent being bilateral chorioretinitis in the central area of the fundus. In a series of 15 cases identified by Wolf and his colleagues¹² as toxoplasmosis, 11 patients were examined ophthalmologically and of these 10 had chorioretinitis. Most lesions were in the healed state and took the form of atrophic pigmented areas resembling macular colobomata. In another report Wolf and his colleagues⁸ give the following criteria as typical of toxoplasmosis in infants: (1) onset very early in life; (2) symptoms of meningo-encephalomyelitis; (3) affections of the eye (especially chorioretinitis); and (4) cerebral calcification noticeable on radiographs of the skull. A certain diagnosis depends on the finding of the protozoon by biopsy or necropsy, either directly or after passage through animals. According to Binkhorst¹³ this had been accomplished in 18 cases up to 1945, 13 being congenital and five acquired infections. In the case reported by Jacoby and Sagorin the protozoon was not isolated, but neutralizing antibodies were found in the mother's serum.

While ocular disorders such as pupillary abnormality and paresis of ocular muscles have been described in cases of encephalitis, chorioretinitis has seldom been reported as a complication. Its discovery, therefore, in a case of encephalitis of unknown origin should at any rate bring the possibility of toxoplasmosis to mind, especially if cerebral calcification is present. The same would apply

if central chorioretinitis was found in a mentally defective child or in a child with Little's disease. The first report in the European literature of a case in which the diagnosis was confirmed *intra vitam* by the demonstration of toxoplasma-like parasites in animals inoculated with the cerebrospinal fluid came from Binkhorst in 1946.¹⁰ The patient was a 6-years-old girl who had been brought to hospital for treatment of a convergent squint. It was noticed that she stumbled when walking, had a copious flow of saliva, and a marked impediment of speech when she endeavoured to talk, which was seldom. Her stature was slight, and she had general motor weakness. Nothing abnormal was found in the lungs, the blood, or the cerebrospinal fluid. Microphthalmus and chorioretinitis were present, and radiographs of the skull in the bi-temporal and fronto-occipital planes showed multiple small and large opacities, with the density of calcium shadows, situated intracerebrally. Micro-organisms resembling toxoplasma were found in a cerebral granuloma in a guinea-pig after the intracerebral injection of cerebrospinal fluid from this case.

Infections of domestic animals in this country have not hitherto been reported, but Jacoby and Sagorin mention that a dog in Kent was recently found to have toxoplastic encephalitis, the diagnosis being confirmed by identification of the protozoon. Toxoplasmosis in human beings may be more common than is thought, and it should be considered as a possible cause of visual disability in children in whom no direct interference with the light path is immediately noticeable.

BRITISH HOSPITALS ASSOCIATION

Voluntary hospitals having passed into history, it was inevitable, though none the less to be regretted, that the British Hospitals Association should follow them. The association, which is now being wound up, can look back upon a fine record of service extending over 65 years. Its end is in no sense due to any failure or shortcomings of its own. It is a political casualty, and the voluntary hospitals, whose interests the association so effectively represented, have now been taken over as a going concern continuing their service into the new era of regional administration.

The British Hospitals Association was formed to focus the views of hospitals under voluntary management, and with the help of a very large council, representative of hospitals all over the country, it brought them to the attention of Government Departments and public bodies generally. Its patron was the Duke of Gloucester, and its president for not far short of 30 years was the late Sir Arthur Stanley who had a lifelong enthusiasm for all hospital causes. The association also owed much to the wise guidance of its chairman, Sir Bernard Docker. It had 25 area committees in England and Wales, a branch in Scotland with five committees, and a branch in Northern Ireland. The task it undertook was a difficult one. Voluntary hospitals were always highly individualistic institutions, proud of their traditions and jealous of their area of local or special appeal. It was no small matter to get them to combine for a common purpose, even for such a thing as the adoption of a uniform system of accountancy or statistics. In all the work connected with hospital financing and development of recent years, such as the growth of contributory and provident schemes, organized collections, the training of almoners, dietitians, and administrators, the association has exercised a useful influence. Under its auspices together with the Joint Council of the Order of St. John and the British Red Cross Society and other bodies, there was established a Central Bureau of Hospital Information

¹ Nicolle, C., and Manceau, L., *C.R. Acad. Sci., Paris*, 1908, 147, 763.

² Splendore, A., *Rev. Soc. sci. S. Paulo*, 1908, 3, 109.

³ Wolf, A., Cowen, D., Paige, B. H., *Amer. J. Path.*, 1939, 15, 657.

⁴ *Can. Lek. Ass.*, 1923, 62, 1021.

⁵ Pinkerton, H., and Weinman, D., *Arch. Path.*, 1940, 30, 374.

⁶ — and Henderson, R. G., *J. Amer. med. Ass.*, 1941, 118, 807.

⁷ Sabin, A. B., *ibid.*, 1941, 116, 801.

⁸ Wolf, A., Cowen, D., Paige, B. H., *Arch. Neurol. Psychiat.*, 1942, 48, 689.

⁹ Zuelzer, W. W., *Arch. Path.*, 1944, 38, 1.

¹⁰ Binkhorst, C. D., *Ophthalmologica, Basel*, 1946, 113, 239.

¹¹ *Lancet*, 1948, 2, 926.

¹² *Arch. Ophthalmol., Chicago*, 1943, 29, 1.

¹³ *Ophthalmologica, Basel*, 1948, 115, 65.

which has been responsible since about 1930 for the compilation of the *Hospitals Year Book*, incorporating *Burdett's Hospitals and Charities*, founded in 1889. This annual publication, alike as a directory, a financial review, and a statistical record, has made itself indispensable to all concerned with hospital administration, voluntary or municipal.

Early in the planning which led up to the National Health Service the British Hospitals Association put forward its own views. It recognized the value of a system of regional hospital councils, each council with its medical advisory committee, being set up as statutory bodies and charged with the duty of planning in detail for the hospital, consultant, and specialist service in their areas. It saw no difficulty in the continuance of two hospital systems side by side, with equal representation on the regional councils. The voluntary hospitals had never set out to establish a comprehensive service for the whole nation, and the association was fully aware of the enormous scope for local authority effort in the field of hospital provision. At the same time it urged that as the voluntary hospitals had accumulated a long tradition and experience, while local authority enterprise in this field was of comparatively recent origin, the voluntary hospitals might well form a touchstone against which the efficiency of the newer service could be judged. That was in 1944. Events have moved swiftly since then, and one of the unfortunate results is that, the voluntary hospitals having lost their voluntary status, the British Hospitals Association can no longer exercise its representative function on their behalf.

SAFETY IN CARS

In the aircraft industry physiologists and engineers have co-operated to design apparatus to eject pilots from the cockpits of high-speed aircraft and to reduce the effects of over-violent acceleration, whether in turning or pulling out of a dive. Another safety measure is the fitting of shock absorbers strong enough to take the strain of a bad landing even by a heavy aircraft. But, according to Woodward,¹ in automobile engineering "the only influence of aircraft design apparently so far adopted . . . is the erroneous one that the aerodynamic principles of a jet-propelled aircraft should be applied to a vehicle the speed of which should be limited to 55 miles per hour on the ground." Taken by itself there might appear to be an element of the dogmatic in the speed limit proposed. But in an inquiry conducted by the Safety Department of the American Automobile Association, out of 4,102 replies received four drivers favoured the introduction of governors limiting top speeds for every three which opposed such a device; and the highest speed favoured by the supporters of governors was 55 m.p.h. This, however, is only one factor and not perhaps the most important: for, though speed was found to be a contributory cause in two out of five fatal accidents, the proportion of accidents in which the speed had exceeded 50 m.p.h. was only one in five.

Woodward suggests that physiological and psychological principles should now be applied in automobile design in the same way as they have already been successfully applied in the case of aircraft. If all-round vision is important, then front supporting columns should be moved to the rear. If low windows lead to fractured elbows due to "side swipe"—a suggestion supported by radiographs—then windows should be higher. On the other hand, they should be wide enough to serve if necessary as emergency exits, and perhaps it is for this reason that Woodward

prefers a single door to two doors on each side. It might, however, be thought that two doors on each side would offer an improved chance of escape if one or more of the doors jammed as a result of an accident. To prevent front seats crashing forward in emergency stoppages and increasing the impact of knees or legs on dashboard would seem to be an elementary precaution. It would also be wise to include on speedometers an indication of the stopping distance appropriate to the speed of travel. It is not easy to provide a good view of the roadway from a "streamlined" car, and in the inquiry already referred to only one in six of American drivers voted for appearance as an important factor in body design. Some of us may feel impelled to cut a dash, in appearance as well as speed, when we take the road. If the American inquiry is anything to go by both qualities could be dispensed with without user protest provided that the more important quality of acceleration was retained. No doubt safer cars could be designed, and it would be interesting to see how far a campaign for a safe car, as opposed to one which looked and performed like a speed-track monster, could be commercially successful.

TREATMENT OF GONOCOCCAL VULVOVAGINITIS

The treatment of gonococcal vulvovaginitis before the introduction of the sulphonamides and penicillin was very unsatisfactory: it was always a prolonged process and often taxed the ingenuity of the most experienced practitioner. Relapse was all too common, and in some cases cure was delayed till the vaginal epithelium had changed its character from that of the infant to that of the adolescent. Even the sulphonamides were by no means always effective, and sulphonamide resistance was not unusual: whether this was due to resistant strains of bacteria or lack of reaction on the part of the host was often not clear. With the advent of penicillin the whole picture changed; a few injections of the drug in aqueous solution cured most patients, and even orally administered penicillin was often successful. Clarke and Eisenberg¹ treated 20 girls aged 2-10 years with a single intramuscular injection of 100,000 or 200,000 units of penicillin in oil-wax and obtained lasting cure in all but one case. The failure was in a girl most probably reinfected about four months after apparent cure, and she was finally cured by a second injection. Unless penicillin-resistant strains of gonococci develop—and up to the present there is no suggestion that they have—the outlook for controlling this previously intractable condition is bright. Moreover, much of the danger of cross-infection, so much feared in the past in residential nurseries and other institutions for young girls, will have gone, since infected children can now be rendered non-contagious in a matter of days or even hours.

The Moynihan Lecture will be given in the Riley-Smith Hall of the University Union in Leeds on Monday, April 25, at 3 p.m., by Professor G. Grey Turner, Emeritus Professor of Surgery in the University of London. His subject will be "Moynihan and the Training for Surgery."

Dr. N. Hamilton Fairley, F.R.C.P., F.R.S., will deliver the Croonian Lectures before the Royal College of Physicians of London (Pall Mall East, S.W.) on Tuesday and Thursday, May 3 and 5, at 5 p.m. His subject is "Malaria, with Special Reference to Recent Experimental Clinical and Chemotherapeutic Investigations."

¹ J. Amer. med. Ass., 1948, 138, 627.

² Amer. J. Dis. Child. 1947 74 707

A REGIONAL ORTHOPAEDIC AND ACCIDENT SERVICE

BY

G. R. GIRDLESTONE, D.M., F.R.C.S.

A few months ago this *Journal* (Oct. 23, 1948, p. 751) approved a short publication of mine on the organization of a Regional Orthopaedic and Accident Service within the National Health Service, and asked for further information. I am now trying to answer the questions; but as that article was written a year ago, when we knew very little about regional machinery, it is best to include a brief general review.

An Outline of the Service

A comprehensive orthopaedic and accident service should cover: (a) Acute diseases affecting the locomotor system, together with accidents of all kinds. These conditions require a 24-hour service in all the area hospitals of the region, best run in each such hospital under an orthopaedic and accident surgeon who lives in its vicinity. While the great majority of accidents involve the locomotor system, there may be damage to eye, brain, thorax, abdomen, etc.: thus the man in charge often requires the expert assistance of his colleagues in other branches of surgery. (b) The multiplicity of cases of congenital or acquired deformity, insidious disease, and so on, which may be termed the "cold" orthopaedics of the scattered clinics and the orthopaedic hospital.

There may be one or several orthopaedic hospitals in a region. In the Oxford region there are two—the Manfield, at Northampton, and the Wingfield-Morris, at Oxford. My illustrations are taken from the latter, for which I have worked in a regional service for nearly 30 years.

In order to understand and appreciate the organization of a modern orthopaedic service the reader should bear in mind from the beginning two rather special considerations which are easily overlooked. The first is the necessity for widely scattered out-patient facilities for diagnosis and treatment. In "cold" orthopaedics children form a majority of the patients, and in this work *very early discovery, prompt effective treatment, and prolonged aftercare* are the three fundamental conditions of success. Now, a mother finds great difficulty in taking her child to a distant hospital; indeed, she will seldom do so unless the doctor's advice is reinforced by the child's obvious need. Thus the lack of a clinic within easy reach may be very harmful. If an early diagnosis is to be made the patient should be seen by an experienced specialist long before anything serious or painful is evident, and if cure is to be assured attendance must be kept up long after the success of treatment is apparent (and to the mother fully satisfying). For these reasons clinics within easy reach of every village in the region are regularly attended by the staff of the central orthopaedic hospital. In these neighbourly clinics early diagnosis is achieved much more often than would otherwise be possible, and the prolonged periodic follow-up which so many orthopaedic cases require is facilitated. This is no theoretical statement, but the outcome of ample experience.

Though many of these clinics are held in hospitals they are, taken together, the out-patient department of the central orthopaedic hospital, extended for the benefit of its distant patients. For three reasons it is essential that members of the senior surgical staff should visit the clinics: first, because very early diagnosis of major conditions is a matter demanding considerable experience and judgment; secondly, because the achievement of a full correction of these innumerable minor cases demands much co-operation from the parents, which can seldom be achieved without the authority and influence of a senior specialist; and, thirdly, because prolonged follow-up is far better carried out by a senior man who attends the clinic continuously year after year.

The second consideration concerns "cold" orthopaedics—a slow-moving complex field of work, in which sound judgment grows very slowly with experience and much failure and frustration, or fairly quickly and without failure and frustration by membership of a team of men, seniors and juniors, with all the opportunities of guidance and discussion

that this gives. It is characteristic of "cold" orthopaedics that a surgeon is often unable to distinguish between the ultimate success or failure of his treatment, or to assess the relative value of different methods of treatment, until years have passed. Furthermore, the great variety of disorders of the locomotor system afford a dangerously wide scope for invention: indeed, much ingenuity has been exercised in many centres for many years, with results varying from beneficial to disastrous. This is a potent reason for the frequent demonstration, examination, and free discussion of cases which will save the younger men from trying over again methods which appear excellent but have proved unsound. At the Wingfield a whole staff meets twice a week, spending about an hour and half on the examination (in one room) and discussion (in another) of five or six patients, new and old. This is the soundest possible source of learning.

A regional orthopaedic and accident service can be organized on the following pattern.

A. Central Orthopaedic Hospital

The whole organization is built round the central orthopaedic hospital, which in a regional centre is likely to form the clinical field of the medical school. It is probably better that it should be under the Regional Hospital Board than regarded as part of the teaching hospital, and that it should have its own individual board of management. There may more than one first-class orthopaedic hospital in a region, as the centre of its own regional organization.

These hospitals have a number of special characteristics: (a) wards designed for treatment in open air and sunshine; (b) theatres with every possible means of promoting asepsis and, preferably, a Plenum system of filtered-air ventilation; (c) plaster-rooms with much special equipment; (d) first-class radiographic and photographic departments; (e) physiotherapy with treatment baths for anterior poliomyelitis and much other special equipment, and staffed by experts; (f) occupational therapy; (g) school teachers for the education of children school age (2-16) grouped suitably by ages in wards; (h) workshops equipped and staffed for the quick and exact manufacture and fitting of splints, and research into new designs and materials.

Hospital Records.—That clinical records should be full and accurate is of particular importance in an orthopaedic hospital because many of its patients are under treatment from time to time over many years, and without explicit and reliable records the progress, whether improvement or deterioration may be impossible to assess with any accuracy. Here the series of records of photographs "before and after" and of small individual "before and after" loops of cinematograph film are of extraordinary value; for by these demonstrative and realistic means the surgeon is made fully aware of the effect good or bad, of his treatment.

Research.—The opportunities for clinical research are many; the need is great—perhaps especially for more exact knowledge on the relative value of different methods of treatment, based on written, radiographic, photographic, and cinephoto records before and after. Each orthopaedic hospital ought to keep such records and make accurate assessment of its end-results in complete series of cases. It would find the material which some for its own consumption; and it could thus contribute to the general knowledge of orthopaedics. It is desirable that members of the surgical staff should be given an opportunity of taking part in animal research in university laboratories.

Library.—There should be a good medical library, with facilities for reading, writing, and dictation for all members of the staff.

Pathology.—For regional work the clinical pathology carried out in laboratories under the supervision of the senior clinical pathologist of the teaching hospital. This seems preferable to a completely independent system of laboratories.

B. Regional Staff—Central Orthopaedic Hospital

Director of Orthopaedic Services.—The clinical administration of the Regional Orthopaedic Service within the central orthopaedic hospital and throughout the region is best entrusted to one of the surgeons, who will of course work in the clinic

touch with his colleagues as a member of the Staff Committee. Much of his work is clinical administration; some of it is clerical, to co-ordinate and facilitate the working of the organization. Most of his decisions are made after full discussion with the Staff Committee; particularly will this be so when something has to be done to improve an unsatisfactory service. If he should turn out to be too much of a "director" he can be replaced. The post should not itself carry any extra emolument: so that if a change of directorship should be desirable it may be made without financial disturbance.

Regional Consultants.—Several of the senior surgeons of the central orthopaedic hospital should be recognized as regional consultants and be responsible for the orthopaedic departments in the area hospitals. Each of these men will visit one or more such hospitals every week. Here he will have the assistance of the local orthopaedic and accident surgeon, and they should work intimately together in the wards, theatre, and out-patient department.

Specialist Surgeons.—A number of surgeons who have not yet reached regional consultant rank complete the surgical staff of the central orthopaedic hospital, which should provide about one surgeon to every 50 beds. The work of the staff covers the intramural work of the central orthopaedic hospital, the orthopaedic and accident departments of the central and area general hospitals, and the outlying clinics.

Professor of Orthopaedic Surgery.—Where the regional hospital is closely associated with a teaching hospital its staff may include a professor of orthopaedic surgery, who, with his first assistant, can be given charge of one of the units of the hospital. He thus plays his part in the regional work of the hospital. He is responsible to the university for the organization and carrying out of all academic activities throughout the hospital. In an article so general as this it is hardly possible to specify the relations between the regional director, with his widespread administrative and co-ordinating duties, and the professor, with his academic interests. Much will depend on individual circumstances. Their functions should always be mutually helpful.

The establishment of resident staff is as follows. At the central orthopaedic hospital, with, say, five surgical units: one resident of senior registrar status and five house-surgeons of junior registrar status. At each of the area hospitals with accident and orthopaedic departments the services of a man of senior registrar status and a house-surgeon are required.

C. Area Hospitals

In the area hospitals—i.e., the principal general hospitals of the region—there are (1) the orthopaedic department, mainly for out-patient service, but with some beds for short-stay cases; and (2) the accident service.

The staffing of these outlying units is of particular concern. The orthopaedic and accident work should be closely co-ordinated. It is essential that the surgeon in charge of the service should be a member of the regional orthopaedic team. The best arrangement is that the visiting regional orthopaedic consultant who is responsible for the orthopaedic department of the area hospital should also be consultant to its accident service and be prepared to see difficult cases and discuss problems with the accident surgeon, and that the latter, in turn, should work in the orthopaedic department as assistant surgeon (to use the old term), and be on the staff of the central orthopaedic hospital. For these outlying posts it is possible to pick from a strong field of candidates a man with sound experience of the accident side of orthopaedics, with a Fellowship, and with a background of sound surgical training. But for the most part, when appointed, he has not had very much experience of "cold" orthopaedics.

Nevertheless these men are from the first active and valuable members of the orthopaedic staff of the region, not only taking care of orthopaedic emergencies (their primary service), but also helping the visiting consultant to cope with the flood of "cold" orthopaedics which comes to an area hospital. Their value in this field will increase as they accept the opportunities of absorbing orthopaedics from their association with the central orthopaedic hospital. Whenever possible, they take part in the clinical conferences at that hospital as a member

of its staff and on sessional duty. Even if the pressure of work makes some of these visits to the centre impracticable they have the advantage of close association with an orthopaedic specialist who has been working in that intensive school for years. Thus, for example, in the southern part of the Oxford region there is in view a staff of five whole-time surgeons living at the centre, with four men working in and living near the area hospitals.

There is a tendency to speak of major and minor orthopaedic cases and to set up a distinction between them in regard to their need of specialist skill—let us say between the lesions of the spine and the larger joints and those of the hand or foot. This is a mistake. The smaller tasks are often the more delicate and intricate, requiring as much judgment and more exact technique—and what happens to his hand or foot is of major, not minor, importance to the patient. But many of these short-stay cases make no special demands on hospital design and equipment, and therefore need not be admitted to the central orthopaedic hospital.

D. Outlying Clinics

A certain number of *ad hoc* orthopaedic clinics in the smaller towns have been found necessary, in addition to the orthopaedic out-patient clinics of the general hospital, in order to bring the means of specialist diagnosis, treatment, and after-care within the easy reach of patients, particularly children, in every part of the region.

E. Proportion of Beds to Population

It is probable, judging from our own experience at the Wingfield, that about 300 beds per million population are sufficient, provided that the beds in the central orthopaedic hospital are supplemented by provision of a total of 40 or 50 beds for short cases in the associated general hospitals. Orthopaedic hospitals do, however, differ considerably in regard to the type of cases they admit. In the Wingfield we have always had a considerable proportion of active orthopaedics—i.e., acute inflammation or injury of any part of the locomotor system—a good many cases of difficult fractures, non-unions, mal-unions, and so on, and internal derangement of joints. On the other hand, by a very closely knit system of orthopaedic clinics we are able to allow patients to leave hospital very much earlier than is otherwise possible. Almost all our patients go home a few days after first getting out of bed.

F. Aftercare Sisters—Orthopaedic Physiotherapists

These are highly trained girls who have obtained a certificate in orthopaedic nursing, are members of the Chartered Society of Physiotherapy, and have had a postgraduate training in the great variety of plaster and splint work used in orthopaedics. This triple training makes them invaluable in out-patient orthopaedic work of every kind, as well as in the plaster-room of the central and area hospitals. Their responsibilities and duties have hitherto been primarily those of working for the orthopaedic surgeons in the plaster-rooms of the central orthopaedic hospital, in the out-patient departments of the area hospitals, and in the outlying clinics. But they have carried in addition the responsibility of attending the outlying clinics weekly between the surgeon's periodic visits and carrying on treatment by remedial exercises, plaster work, and the supervision of splintage. Their remedial exercise work is largely class-work, made effective by their capacity to impress upon the mothers of the children the importance of keeping up these exercises and maintaining good posture during the intervening period. This is simple and economical, and can be a most effective way of getting rid of postural defects, with far less interference with school-time than is necessitated by the regular attendance of children at the hospital or clinic for daily remedial exercises. It is noteworthy that, at a census taken in 1927, of 540 children under treatment at clinics in Berks, Bucks and Oxon, 509 were attending school.

The number of children attending the clinics is, of course, only a small proportion, probably a very small fraction, of the number who need remedial exercises. Here we see the immense advantage of close liaison between the orthopaedic personnel and the School Medical Service, with organizers of remedial exercises associated with that Service. This association is

valuable both in regard to the supervision of the right sort of exercises in schools by the School Service and in promoting the recognition of those types of deformity which call for the attendance of the child at an orthopaedic clinic for diagnosis and treatment.

Our staff numbers five fully trained members and one undergoing postgraduate training. They live in the neighbourhood of the central orthopaedic hospital. Their time is divided in about equal proportions between work in the central orthopaedic hospital and the outside hospitals and clinics.

Three Important Questions

Three questions remain to be answered—those of cases of acute anterior poliomyelitis, combined pulmonary and skeletal tuberculosis, and workshops.

Acute Anterior Poliomyelitis.—In general, cases of acute anterior poliomyelitis can be admitted and isolated in the central orthopaedic hospital as soon as they can safely be moved. It is probable that more can be done to minimize the severity of paralysis during the first three weeks than at any subsequent stage. In a time of epidemic, however, there is likely to be too great a rush of cases for this immediate admission and isolation to be practicable; therefore a sufficient number of beds in an isolation hospital within easy reach of the central orthopaedic hospital should be allocated to meet this need, and the patients placed under the joint care of the isolation medical and nursing staff on the one hand and the orthopaedic surgeons and aftercare sisters on the other. Where such ready co-operation can be promoted the effect is admirable. As the patients pass out of quarantine they can be admitted to the orthopaedic hospital.

Combined Pulmonary and Skeletal Tuberculosis.—Pulmonary tuberculosis is best treated in a sanatorium, and skeletal tuberculosis is best treated in an orthopaedic hospital where the surgeon and his resident staff devote their whole time to the study and care of the locomotor system, and where constant practice makes the nurses capable of ensuring the comfortable, effective, and long-continued immobilization of a hip or a spine on a frame or in plaster. It is recommended that a special unit should be developed for this work in every region, as convenient as possible for the physicians and surgeons concerned. Experienced nurses, prepared for long-term service, are necessary, for only thus can their patients be given comfort and confidence through a lengthy period of confinement which is always difficult and can be very distressing.

Workshops.—I can best answer this question by saying that our Wingfield workshops have been fulfilling the needs of the Wingfield Hospital and its clinics, together with some work, mainly but not exclusively orthopaedic, for the Radcliffe Infirmary, Oxford, the Royal Berkshire Hospital, Reading, the Royal Buckinghamshire Hospital, Aylesbury, the R.A.F. Hospital at Halton, and the Ministry of Pensions Hospital at Stoke Mandeville. It is probable that this workshop staff and equipment could serve a regional orthopaedic and accident service for a population of at least a million. Our staff and space consist of:

Superintendent ..	Office, 68 sq. ft. (6.3 sq. m.)
Clerks (2) ..	General office, 220 sq. ft. (20.4 sq. m.)
Boot repair dept. (9) ..	680 sq. ft. (63 sq. m.)
Machine shop (6) ..	(including one blacksmith) machine shop, 864 sq. ft. (80 sq. m.); forge, 130 sq. ft. (12 sq. m.); welding, 81 sq. ft. (7.5 sq. m.)
Carpenter's shop (1) ..	490 sq. ft. (45.5 sq. m.)
Saddlers (3) ..	432 sq. ft. (40 sq. m.)
Stores ..	306 sq. ft. (28.4 sq. m.)
Fitting-room ..	180 sq. ft. (16.7 sq. m.)
Waiting-room ..	54 sq. ft. (5 sq. m.)
Dispatch-room ..	80 sq. ft. (7.4 sq. m.)

Conclusions

A Regional Orthopaedic and Accident Service can render a high standard of service if the personnel is first-rate and works as a team in a well-planned and complete organization. The orthopaedic and accident services should be closely articulated in those parts of the region where they are not fused. In the area hospitals a local orthopaedic and accident surgeon is

in immediate charge of the work as a member of the regional team. The orthopaedic service is directed from the central orthopaedic hospital, with an out-patient department in every hospital and in sufficient additional clinics to bring a consultant frequently within reasonable reach of every village in the region. This arrangement and other extramural organization are necessary to bring about early diagnosis, regular attendance, and thorough follow-up. The efficiency of treatment depends on the ability, spirit, and character of the members of the team. For in truth much of the clinic work will prove tedious to the staff, and largely ineffective to the patient, unless it is tackled with obvious and infectious interest. Though organization can facilitate their attendance, patients will keep coming only if they understand what is being done for them and why it must go on so long.

Orthopaedic work must be very good or it is marred by frequent failure and much disappointment. It demands a great deal of skill and effort from all concerned, and particularly is this true of "cold" orthopaedics, for in this field there is often a strong tendency towards recurrence of deformity, with as much harm as help from *vis medicatrix naturae*.

My work for the E.M.S. in two regions during the war made me acutely aware of the needless suffering that was being endured and the disablement that was being promoted in reputable hospitals as a result of members of their surgical staff treating fractures in an atmosphere of isolation and seclusion. For example, I found a young soldier who had suffered a compound fracture of the femur a few days before, in great pain and distress. His lower limb was tightly bandaged to a long Liston splint, the upper part of which was completely free in the bed and some distance from the trunk. The fracture was uncontrolled and in obvious varus deformity, and I was told that the splint was detached daily for dressings.

Regional Hospital Boards have indeed grave responsibility—and great opportunity. They can put an end to a long epoch of isolation and seclusion in which the work of individual surgeons all over the country has been good, bad, or indifferent. Isolation bred incompetence, seclusion hid it, and no one could do anything about it.

Each Board must aim at a sound organization, staffed by a team of men who share their advance in knowledge and clinical experience, a team who will thus come to be distinguished by the diffusion of a high standard of skill and a spirit of whole-hearted service. In order to achieve such a team there must be some devolution of authority step by step from the Director of Orthopaedic Services right through his senior and junior colleagues, the resident staff, and all the personnel of ancillary departments and clinics. Since the team is animated by a common purpose this authority can be exercised almost entirely by the guidance and personal influence of the senior men. When, however, a man continues to prove himself unable to render first-class service his appointment must be terminated by the Board.

The regional organization on which this article is based has been tried over many years, and has earned the approval of local authorities, voluntary hospitals, and all concerned. How far it can be applied to other specialties I do not know—probably only in some of its features. It seems likely that a considerable number of autohousous areas will be required for medicine, for surgery, and for gynaecology. No doubt, too, a pattern which suits the country as a whole will be modified for the service of industrial areas with great density of population.

In many regions local associations for the care of cripples will be found; these are voluntary bodies capable of giving most valuable help to the secretaries, almoners, and surgeons of orthopaedic hospitals.

The American people are contributing funds to finance a campaign against heart disease. The American Heart Association is seeking five million dollars to carry out research, to spread information about the disease, and to provide community services for its victims. President Truman has urged that the utmost support of governmental and voluntary organizations be given, and said recently, "Combating the nation's leading cause of death has become our most serious national health problem."

TRAINING OF NURSES

NURSES' BILL

The Nurses' Bill, which is sponsored by the Minister of Health, was given a first reading in the House of Lords on April 12. The Bill is intended to improve the training of nurses, and its provisions follow closely some of the recommendations of the report of the Working Party.¹ This report² criticized the present constitution of the General Nursing Council which was first set up³ under the Nurses Registration Act of 1919. It urged, for example, that elections to the Nursing Council should be by hospital regions. The report also proposed the reorganization of the present methods of training nurses. These proposals, which we commented on in a leading article,⁴ have now been put before Parliament in the form of this Bill, of which the full title is "An Act to reconstitute the General Nursing Council for England and Wales and otherwise to amend the Nurses Acts, 1919 to 1945, and to make further provision with respect to the training of nurses for the sick."

Reconstitution of General Nursing Council

The proposed new Council will consist of 34 members, of whom 17 are to be elected by nurses, 12 appointed by the Minister of Health, three by the Minister of Education, and two by the Privy Council. Of the elected members, one will be drawn from each of fourteen areas designated by the Minister. There will also be special representation for mental nurses, sick children's nurses (by election), public health nurses, sister tutors, ward sisters, and male nurses (by appointment).

A Mental Nurses Committee of the General Nursing Council will consist of six members of the Council (including two mental nurse members), two elected mental nurses, and four persons appointed by the Minister—a matron, a mental nurse tutor, "a doctor teaching psychiatry," and a chief male nurse. Matters mainly concerning mental nurses other than questions of registration or removal from the Register will be referred to this committee.

If this Bill is enacted the General Nursing Council will not be able to refuse approval, or to withdraw approval, from a training institution without giving the managing body written notice and an opportunity to be heard. Appeals against such refusal or the withdrawal of approval will be heard by a person nominated by the Lord Chancellor, instead of being made to the Minister of Health. The General Nursing Council will be empowered to admit to the Register nurses trained anywhere abroad to a standard considered by the Council to be satisfactory, or, if below that standard, after such further training as the Council may direct. This proposal will replace the provisions of the 1919 Act, which restricted such admission to the Register to those Dominions that granted reciprocal treatment to British nurses.

Male nurses, who are at present only admitted to a special supplementary part of the Register, will in future be admitted to the general part of the Register. A minor but important change is that the General Nursing Council will be empowered to charge nurses already registered or enrolled fees for life registration or enrolment. These fees will take the place of the present annual retention fees. The General Nursing Council will no longer be under an obligation to publish the Register but will publish periodical lists of admissions and removals.

Proposals for Training

The Minister will be given power under this Bill to constitute by order standing nurse-training committees for each of the fourteen hospital areas in England and Wales. The members of these committees will be representative of regional hospital boards, boards of governors, the General Nursing Council, the Central Midwives Board, local health authorities, local education authorities, and universities. Among the duties of these committees will be the promotion of improvements in nurse-training and research into methods of training; advice and assistance to training institutions in preparing and carrying out

training schemes; and advice and assistance to the General Nursing Council on the approval of training institutions.

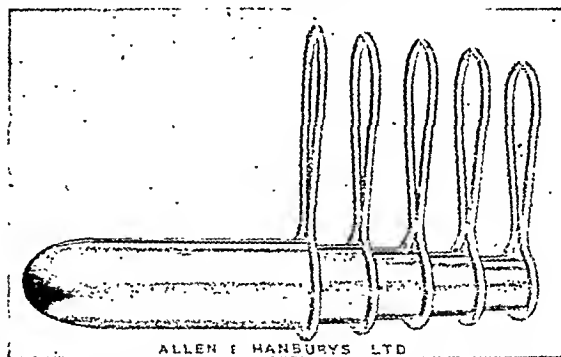
These regional nurse-training committees, which are very much as envisaged by the Working Party, will also allocate among the training institutions the money provided by the Exchequer through the General Nursing Council for training. By this means the finance of nurse-training will so far as practicable be independent of the finance of hospital administration. Experimental schemes of training which are not in accordance with the rules in force at the time may be adopted by these committees subject to the approval of the General Nursing Council.

One of the last clauses in the Bill empowers the Council to pay to its members and to members of the Assistant Nurses Committee sums in respect of the loss of remunerative time as well as travelling and subsistence expenses. The Bill, which is a short one of 19 clauses and three schedules, will have the effect of repealing many of the provisions of the Nurses Registration Act, 1919, and the Nurses Act, 1943.

Preparations and Appliances

VAGINAL DILATORS

W. McKIM H. McCULLAGH, F.R.C.S., F.R.C.O.G., senior obstetric surgeon, City of London Maternity Hospital, writes: The standard glass vaginal dilators are readily broken and occasionally an undiscovered crack causes their disintegration in the vagina, with difficulty in removing the fragments. In addition, the glass dilators have no handles, and, as half of those patients requiring their use have psychological inhibition: in regard to the entry of anything into their vagina, it is



important that their phobias be considered and that the instruments used be as little fearsome as possible. Handles inserted at right angles to the penis replica assist in instructing the patient in the location and direction of her vaginal passage, which is an important factor in curing dyspareunia and assisting coitus. The upper and anterior surface of the dilator is grooved, to lessen pressure on the urethra.

One is surprised at finding not a few long-married patients each year still *virgines intactae* and others ignorant of the fact that a happy marriage necessitates painless complete physical union. I find these new forms of dilators here illustrated of great assistance in treating such cases, and especially so in vaginismus cases, where even after dilatation of the vagina by operation the introduction of a small dilator causes vaginal spasm. Personal attention by the surgeon is psychologically necessary, and these safe dilators give extra confidence and extra mechanical knowledge to the patient when introduced day by day in order of size, after operation, till a sufficiently large one is employed.

The metal dilators are hollow, and are supplied in nests by Allen & Hanburys, of Wigmore Street, W.1, and the Coldite sets are supplied by Vann Bros., of Weymouth Street, W.1.

¹ Report of the Working Party on the Recruitment and Training of Nurses, 1947. H.M.S.O., 2s. 6d.

² British Medical Journal, 1947, 2, 426.

³ Ibid., 1920, 1, 616.

⁴ Ibid., 1947, 2, 422.

During the first quarter of this year 276 children were admitted to Dr. Barnardo's Homes. The number of children rescued from destitution by these Homes in March was 114.

Correspondence

Diabetic Coma

SIR,—I have read with great interest Dr. J. G. H. Sheppard's account (April 2, p. 576) of a case of diabetic coma treated with 56,000 units of insulin, and congratulate him on both his courage and its reward. In view, however, of the great potential dangers associated with the use of active insulin in such heroic dosage I would like to ask whether a control test for potency was carried out on the insulin used in this case.

It is important to remember that the giving of 56,000 units of insulin does not prove that this dose was necessary or, in view of the severe delayed hypoglycaemic reactions described, even desirable. It seems probable that in the very severe type of case described by Dr. Sheppard a large proportion of the insulin given in the resistant phase is destroyed before it has time to act, and I know of no convincing evidence that the amount of insulin utilized can be increased by increasing the dose above a certain optimum level. Experience would suggest that this level is far below the dose given by Dr. Sheppard. No mention is made of the volume of fluid administered intravenously, and the persistence of a very high pulse rate suggests the possibility that more rapid clinical improvement might have resulted from more intensive treatment of the dehydration.

I find it difficult to believe that the sudden collapse was due to the accidental substitution of 5% glucose for normal saline in the drip, especially in view of the controlled observations on the mode of action in diabetic coma of saline and glucose respectively published by Drs. J. Lee, D. Naidoo, and J. A. Torrens in the same issue (p. 565). Incidentally, in the article referred to, the authors correctly include the name of Dr. R. D. Lawrence among those who "administer glucose as a beneficial procedure" in diabetic coma, but I would like to point out that in the department of which he is the director it has been the custom for the past ten years to give normal saline for the first three hours of treatment of cases in diabetic coma.—I am, etc.,

London, S.E.5.

WILFRID OAKLEY.

SIR,—Professor H. P. Himsworth (April 9, p. 632) considers our glucose-treated and saline-treated cases (April 2, p. 565) not comparable because he feels that the age levels, the alkali reserve, and the blood-pressure readings can be interpreted differently.

First, with regard to the age, the mean for group A is 35.9 (standard error of mean ± 5.15 , standard deviation 16.3) and for group B 33.3 (S.E. of M ± 3.74 , S.D. 15.9). These are comparable. It is true that mortality rises with age, but there can be no justification for making a special choice of 50 years, which taken by itself can give little information about the duration and severity of the diabetic process and the degree of its detrimental effect on the cardiovascular-renal and nervous systems. Had Professor Himsworth chosen 40 as his necessarily arbitrary critical age he would have been faced with 9 cases in the saline series and only 3 in the glucose series, producing the very opposite impression. Nevertheless, the over-50's in the saline cases did not die.

Secondly, the errors inherent in the estimation of the alkali reserve at such low figures make the alleged difference of 2.2 vol. CO₂ per 100 ml. between 9.8 vol. and 12 vol. meaningless. But this difference is only the result of Professor Himsworth's arithmetic. In fact, the actual averages for the fatal cases in each group are 9.8 vol. and 9.5 vol.—very similar figures. Joslin (*Diabetes Mellitus*, 1940, 7th ed., London, p. 388) says that "among unconscious patients the percentage of deaths was essentially the same in the group with CO₂ values above 10 vol. as with the group with low values." No single factor is all important, and even in a combination of factors each will assume a different relative importance. We have used Collen's index, which is not an absolute standard, but as it is equally applied to both series it is governed by no more logic than a yard-stick.

Thirdly, the average systolic and diastolic blood pressures in each group are comparable. Any special selection on the

basis of an arbitrary figure can be of little value. A consideration of the diastolic pressures might equally be taken to indicate that the fatal saline cases were more serious than the fatal glucose cases.

We do not wish to claim that our contention is "mathematically significant," because for this purpose we should have required almost twice the number of cases. Over fifty cases treated under strictly similar conditions would have been impossible to collect in a period which included the final months of the war, with its attendant nursing difficulties, and which saw the introduction of penicillin. Our poorly documented wartime cases which were treated with glucose but were not included in the series because of the special difficulties encountered in their management bear out the mortality figures given for the group A cases. Group B cases now total 20 with 2 deaths.

We agree emphatically with Professor Himsworth that glucose is a potent weapon for the correction of disordered carbohydrate metabolism, that the depleted electrolytes should be supplied, and that the rapid fall in plasma potassium and phosphorus may lead to serious symptoms.

We wish to point out that although it was not possible to provide a sufficient number of cases for strict mathematical proof our cases provided evidence that the administration of glucose to seriously dehydrated cases of diabetic coma in the early stages of treatment increases the water output, interferes with rehydration, worsens the state of circulatory collapse, and in some cases may indeed precipitate death.—We are, etc.,

J. LEE.
D. NAIDOO.
J. A. TORRENS.

Isleworth, Middlesex.

SIR,—Drs. J. Lee, D. Naidoo, and J. A. Torrens (April 2, p. 565) have endeavoured to demonstrate that the administration of glucose to serious cases of diabetic coma in the early stages of treatment "increases the mortality significantly." For this purpose they took 28 comparable cases and found that, using glucose, 10 cases suffered a 40% mortality, whilst 18 cases, using saline, suffered an 11% mortality. They have then "proved" their point.

However, if we examine their results statistically it can be shown that these two series of cases have a standard error of 16.2%. The difference between the percentage mortalities (40%–11% = 29%) is less than twice the standard error, and it is generally accepted that this difference might easily have arisen by chance and is not significant. The series of cases quoted is much too small to justify the authors' claims.—I am, etc.,

London, W.9.

C. A. ROYDE.

SIR,—I quite agree with Drs. J. Lee, D. Naidoo, and J. A. Torrens (April 2, p. 565) in the conclusions of their valuable contribution to the question whether or not to use glucose as a preliminary measure in treating diabetic coma. Although the comparison is somewhat difficult because of a slight difference in the age of both groups, this difference is more marked by the lower figures of the alkali reserve in group A, the glucose-treated cases. The common feature in the fatal cases of both groups is the very low alkali reserve (with one exception 10 or under 10 vol. CO₂ per 100 ml.). Though the Collen index is equal in both groups, this index takes no account of the depletion of the CO₂ reserve—a most important factor in assessing the severity of the case and the chances of recovery. If the CO₂ reserve is very low and does not improve markedly within the first 4–8 hours, the chance of recovery is poor. It is, therefore, more important to give an alkali intravenously as a preliminary measure. The absorption by the stomach is often very much impaired in diabetic coma, and any solutions given are either vomited or found many hours later in a greatly dilated stomach, as proved at necropsy.

The importance of the alkali reserve in the treatment of diabetic coma has been pointed out by Professor H. P. Himsworth (April 9, p. 632), who refers to the recent investigations by Butler and his colleagues.—I am, etc.,

Wembley, Middlesex.

S. P. BARTFELD.

The Intervertebral Disk

SIR,—The *Journal* of Feb. 12 has three contributions that illustrate the increasing importance of the intervertebral disk.

(1) When a stooping man begins to extend his spine, says Sir H. E. Griffiths (p. 255), the posterior margin of the disk is compressed between the posterior margins of the vertebral bodies.

Comment.—This could happen only if the vertebral body pivoted on the disk, as the tibia pivots on the talus. The vertebral bodies, in fact, move apart during extension of the joints, which are situated three centimetres behind the posterior margins of the bodies; pressure on the disk is therefore reduced.

(2) Perforation of the annulus fibrosus by a spinal needle is followed by seepage of the nucleus pulposus through the hole (Dr. C. Langton Hewer, p. 283).

(3) When pain in the leg follows septic infection of the lumbar canal we are required to believe ("Any Questions?" p. 292) that the disk must have been injured during a supposedly ill-performed lumbar puncture.

Comment.—The annulus fibrosus must disobey the rules of bealing that are observed by all other tissues. Puncture even of an artery—whose contents are fluid and under high pressure—does not lead to escape of its contents. The nucleus, too, must be unlike all other tissues: it is fluid enough to seep out through a tiny puncture in a ligament and at the same time solid enough to interrupt nerve roots by pressure.

In order to make possible behaviour that is without parallel in biology, the quality of "turgor"—self-expansibility—is often attributed to the nucleus. But "to ascribe turgor or power of expansion to the nucleus is to invoke some property quite unknown in the physical world and takes medicine back to the obscurantism of the Middle Ages. . . . If the volume of a fluid increases, something must have been added to it from without; if it decreases, part of its substance must have been removed."¹

The disk is nothing but a resilient bit of fibrocartilage, more cartilaginous in its centre and more fibrous at its margins. It cushions sudden or intermittent pressure by flattening and it is restored to its previous shape when the compressing force is removed. Its resilience is shown by the rarity of disk lesions in compression fractures of vertebral bodies. It is rarely seen as a whole because of its inaccessibility, and—on the principle *omne ignotum pro magnifico*—fairy tales have been invented about it that can be disproved only by the expenditure of much labour. We are a credulous profession and often prefer the incomprehensible to the simple explanation.

In other parts of the body pain that appears during muscular effort is due to strain of muscles or ligaments. In many cases of back strain the same cause can be demonstrated by local analgesia. Yet the recent fashion demands that we invoke a complicated mechanism whose reality cannot be proved, that makes of the vertebrochondral relationship a ball-and-socket joint, and that takes away from the pedicles and articular processes their historic function of weight-bearing.

We take advantage of this weight-bearing function when we allow a patient with a crush fracture to walk about with his spine in extension. Narrowing of an intervertebral space is always secondary to failure of the weight-bearing structures through decalcification, with sagging and sometimes the appearance of linear stress fractures.² The disk, which is not constructed to bear continuous pressure, accommodates itself by flattening. Narrowing of the space, therefore, is not the cause of the pain but a later effect of the decalcifying process.—I am, etc.,

Melbourne, Australia.

MICHAEL KELLY.

REFERENCES

- 1 Roberts, Ff., *Brit. J. Radiol.*, 1944, 17, 54.
- 2 Roberts, R. A., *Chronic Structural Low Backache*, 1947, London.

Bronchography and Surface Analgesia

SIR,—Mr. R. C. Brock (March 12, p. 454) strongly condemns bronchography by direct tracheal puncture. He favours the use of an indirect method in which the iodized oil is trickled into the glottis from the nose or pharynx, and he argues that direct puncture is unnecessarily dangerous, more complicated, and gives no better results than the indirect method. Never-

theless, after trying both techniques, we are convinced that tracheal puncture is a safe procedure and that it has definite advantages over the indirect methods.

In the past our experience on the resident staff of the Brompton Hospital covered a period of thirteen years, during which time we saw almost all the bronchograms performed there. These amounted to over 10,000, the large majority of which were done by direct puncture. The only serious complications were four cases of cellulitis of the neck; all these occurred in patients with large amounts of heavily infected sputum, which we now regard as a contraindication to the use of this method. All recovered satisfactorily, although they occurred before the days of chemotherapy.

Direct puncture requires a little more apparatus than the indirect method, but in our opinion the superior results more than compensate for this. The method itself is easy to master: with proper tuition, and its speed commends it to both doctor and patient. Our criterion of a good bronchogram is that every segmental branch of the appropriate bronchial tree shall be outlined. There is always an element of luck in bronchography, and it is impossible to guarantee one hundred per cent success with any method. Nevertheless, after long experience we are convinced that tracheal puncture produces a higher percentage of good bronchograms, particularly of the upper lobes, than the indirect translucotic methods. The direct puncture technique has the great advantage that the patient can be placed in the appropriate position for outlining each lobe before the oil is introduced.

Properly performed, tracheal puncture is painless, and patients who have had experience of both methods often prefer it because it is quicker. We have done bronchograms by direct puncture under local anaesthesia on intelligent children as young as six years without causing them any distress.

We agree with Mr. Brock that the cricothyroid membrane is best avoided; the needle should be inserted into the trachea just below the cricoid cartilage. A few minims of procaine are sufficient to anaesthetize the skin, and we agree that many patients will tolerate the introduction of the iodized oil without further anaesthesia. But a few will not, and it is not possible to pick these out beforehand. One good cough can ruin a bronchogram, and therefore we inject 0.5 to 1 ml. of 2% "butyn" into the lumen of the trachea as a routine measure. Tracheal puncture should not be used if the patient has large quantities of fetid sputum, and in such a case an indirect translucotic method is preferable.—We are, etc.,

G. S. TODD,
King Edward VII Sanatorium, Midhurst.
A. F. FOSTER-CARTER,
Brompton Hospital Sanatorium, Fimley.

Penicillin-resistant Staphylococci

SIR,—Drs. A. Vourekka and W. Howard Hughes (March 5, p. 395) state that they identified 315 distinct strains of staphylococci obtained from 241 patients on the basis of colonial appearance, haemolysis, and coagulase production. I find this difficult to believe, and thought that such nice distinction could only be obtained by phage-typing. I should be glad if anyone could confirm that such results are possible. Staphylococci are of major importance in Saskatchewan and constitute an important part of the work in bacteriology in Regina. Since phage-typing is not readily available it is important to know if such distinction in typing can be achieved by the naked eye. For myself, I think not.—I am, etc.,

Regina, Saskatchewan.

N. G. B. McLETCHE.

Adoption

SIR,—The Adoption Bill is evidently intended both to facilitate desirable adoptions and to safeguard children from being placed out unsuitably; it may be hoped that in its ultimate form, after the incorporation of desirable amendments, it will do both more effectively.

It starts with the statement (Section 1 (1)) that a child may be adopted by his mother with or without her husband, or by his natural father with or without his wife. Adoptions of a child by his mother and her husband are already frequent, and no doubt the great majority of legal adoptions by a child's own mother, which were stated in the debate in the House

to be a third of the whole number, are by her and her husband together. Those who come professionally into contact with mothers in difficult circumstances can sometimes help them to take heart about the future by emphasizing to them and their relatives the truth that a man who marries a woman who already has a child often wishes to bring up her child as though he were his own, and can with her legally adopt the child and so give him his mother's new married name. It is not true that a mother who rises to her responsibility for her own child is less likely to marry happily in the future than if she gives her child away; on the contrary, a happy marriage is much more likely to be founded on candour and responsibility accepted than on secrecy and responsibility evaded.

Adoptions by a mother and her husband also include some where a married woman has given birth since her marriage to a child by another man. Such a child already has a claim to his mother's married surname even without adoption by her husband, and his birth certificate, if the new short form is used (available since 1935 in Scotland and 1947 in England) need not reveal any irregularity. Therefore a husband who is prepared to accept his wife's child out of mercy towards him or love of his mother may not feel any necessity to adopt him legally, but it is perfectly competent for him to do so with his wife, and the point of Section 1 (1) is not to make this legal but to call attention to the fact that it is legal already. Knowledge that it is possible may come as a great relief to a husband who wishes to express in action his reconciliation with his wife and good will to her child.

This Bill will be valuable if it stimulates adoption by a child's own kindred, but no legislation is needed to stimulate offers of adoption by strangers. Would-be adopters who appear suitable at first sight already exceed in number the suitable children available. There is accordingly never any need to jump at the first offer of adoption that presents itself, and Section 5 of the Bill is apparently designed to lessen the risk of over-hasty or unsuitable adoptions.

Negotiations for the adoption of a child into the family of strangers should not be entered into before he is born or without the sponsorship of a registered adoption society or local authority, for the following reasons:

1 No final judgment that a child is suitable for adoption can be made until he is born and has been carefully tested and observed. The placing of children who prove physically or mentally unsuitable causes very great disappointment and difficulty.

2 The decision whether a particular offer from would-be adopters should be encouraged should be made by a body which receives many offers and is in a position to select. The paramount consideration should always be the welfare of the child, and *no adoption should be promoted for its possible therapeutic effects on the adopters*. The wise bringing up of an adopted child calls for great integrity of character and stability of purpose, especially during the strains of adolescence.

3 A mother should not be encouraged to consent to the proposed adoption of her child under any duress of circumstance or family pressure, or to arrive at a final decision while she is still pregnant or before she has fully recovered from her confinement. It is not until her child is born that many a mother understands the strength of her own love for him, and she may afterwards bitterly regret and resent a separation from her child which she had previously seemed to desire. Parenthood, even unmarried parenthood, brings privileges as well as burdens, and to remove a child from his mother is not only to relieve her of a burden, it is to rob her of a privilege and maybe to inflict a wound on the integrity of her nature.

Where circumstances seem at first sight too difficult to permit a mother's bringing up of her own child, the National Council for the Unmarried Mother and her Child, 21, Coram Street, London, WC1, or the Scottish Council for the Unmarried Mother and her Child, 17, Wester Coates Avenue, Edinburgh, 12, should be consulted. Through these bodies and the local societies working with them many mothers of all social types and degrees of education are helped to rise to the responsibility and some measure of the privilege of their motherhood. Sometimes, though much less often than the inexperienced might suppose, the adoption of the child is the right ultimate solution, but always with proper safeguards and never in a hurry.—I am, etc.,

ANNE ASHLEY,

General Secretary,
Edinburgh Council of Social Service

Edinburgh

Physiological Basis of Vagotomy

SIR,—Mr. A. Davis Beattie (April 9, p. 607) attempts to justify vagotomy as a physiological procedure for the treatment of peptic ulcer by relying on the neurogenic elements of its aetiology. He admits, however, that ulcer may occur both in the asthenic and sthenic types, and rejects the inborn diathesis in favour of a psychosomatic type with parasympathetic preponderance brought about by nervous stress. He refers to the work of McCrea and his associates, who emphasize that there is no true antagonism between the vagus and the sympathetic nerves. McCrea¹ states:

"Each nerve is undoubtedly both efferent and afferent, transmitting centrifugal and centripetal impulses, and concerned with motor, vasomotor, secretory, and sensory functions of the organ . . . The cutting out of one system of regulators (therefore) gradually results in the diminution and in almost a disappearance of control by the remaining system, the final results approaching but not attaining the effects of section of both. In this complete denervation, the intrinsic automatic mechanism takes on the proper functioning of the stomach no longer guided by external reflexes."

McCrea points out that the disorders of gastric function may be produced by either hypo- or hyperfunction of the extrinsic nerves, and that the primary cause which gives rise to such disorders may be located (1) peripherally, (2) in the nerve plexus, or (3) centrally. To take these in reverse order: disorders of central origin may be constitutional, as suggested by Eppinger and Hess, and are possibly a result of endocrine instability; there is no evidence that they ever result in peptic ulcer formation. Disorders of the nerve plexus are obviously too rare to be taken into serious consideration. The peripheral irritation, according to McCrea, is the most common cause, and is the result of inflammation which he rightly interprets as the pre-ulcerative stage.

This inflammation cannot be produced by the secretory response of vagal stimulation since acid by itself cannot produce the ulcer, and Beattie recalls that Dragstedt has shown that peristaltic activity and gastric secretion alone are not sufficient to delay physiological healing. It cannot be too strongly emphasized that the cause which is responsible for the local inflammation (which starts in the mucous membrane) is also responsible for the initiation of the ulcer and the maintenance of its chronicity.

In which way then, may it be asked, does vagal section arrest the progress of this morbid process, and what mechanism will be available to record whatever may go wrong in the stomach, since its immediate effect is the abolition of pain? It is difficult to follow the argument that by severing the stomach from its vagal control it can be claimed that there is "physiological basis for vagotomy."—I am, etc.,

London, W 1

J.-JACQUES SPIRA

REFERENCE

¹ *Brit J Surg*, 1926, 13, 621.

Artificial Insemination

SIR,—In his letter (April 2, p. 590) Dr. Robert Forbes again refers to the Archbishop of Canterbury's Commission on Artificial Insemination. This was a mixed body of clergy and laymen—among the latter lawyers—whose sole dissentient from findings otherwise unanimous and unacceptable to Dr. Forbes was one of the clergy, the Dean of St Paul's. He further ignores that the whole Commission, including the Dean, had nothing to say against artificial insemination by the husband's semen. This is not fair controversy.

All systems of jurisprudence have admitted the existence of two systems of law: one called the Divine, or God's, or natural; the other that of the realm or State. Apart from any theory as to the origin of the former, a court of the latter can and will on due occasion hold that what may or may not be right or admissible in the latter is contrary to the natural rights of the person or persons concerned and therefore inadmissible.

Whatever system of natural or Divine law any system of jurisprudence admits, it ordinarily holds that law is unalterable and all that remains is to ascertain what it is. The proper persons to enunciate what on any particular point it lays down are clearly those concerned principally with the system in question; and in this country the division which arose about four centuries ago between the clerical and the legal profession

leaves the clergy with the duty concerned. Once the Divine law on any particular matter is known it is open to the different States of the world to leave their individual systems in accord or discord with it, or to bring them into accord or discord, as the State chooses. The risk of a divided loyalty on the part of its subjects, who in the last resort, all experience shows, will obey the law of God rather than the law of man, is wittingly run by the State which chooses discord.

In the debate in the House of Lords to which Dr. Forbes refers it appeared common ground that artificial insemination by a donor's semen constitutes adultery until doubt was thrown upon this view by, I believe, Lord Merriman. This is also the view of the Archbishop's Commission with the exception of the Dean of St. Paul's. Adultery in some systems of State law has been both a criminal and a civil offence (that is, an offence against the State and also against the offended spouse); in others, among them our own, it is a civil offence, the remedy being divorce, but no criminal penalty attaching. But in every system of Divine law adultery has in one way or another been regarded as sinful. The Greeks, whom we revere as the fathers of medicine, worshipped (practically as well as by offering and oblation upon her altars) a goddess of fornication whom they admitted had no power over the goddess of the home and who was at constant enmity with the goddess of the marriage bed and of childbirth in wedlock.

It is therefore incorrect to say that the doctor in attendance alone can determine whether A.I.D. is fitting and proper. He is no more entitled than anyone else to transgress either the Divine or the secular law. No matter how many legal precautions may be advised by Dr. Forbes or used by the practitioner, either he is doing right or he is doing wrong; and with exceptions only of individuals on certain relatively minor points all who have examined this subject consider he is doing wrong to advise or execute it. Answerably it is incorrect to say the law may require alteration. The Divine law can neither require nor receive alteration: it is laid down for ever. Our secular law on this matter appears in substance to be in accord with the Divine law; and if Dr. Forbes and his associates procure a deviation they are by so much further extending that discord between the Divine law and the law of the country already mentioned as a source of danger through the imposition of a divided loyalty.—I am, etc.,

London, S.W.6.

C. T. NORRIS.

SIR,—Whether Lord Merriman was right or wrong in describing as worthless the document approved by the Medical Defence Union for use by the parties concerned in A.I.D., his opinion coincides with that of the eminent legal experts who advised the Archbishop of Canterbury.¹ They state (p. 40) that the "assurance suggested by the Medical Defence Union as proper to be obtained by the doctor—that the birth of a child will not defeat the claims of any person to any titles, estates, interests, or funds—is one that could never be properly given or accepted."

This, however, is a matter that only the lawyers can settle. It is otherwise with the ethical aspects of A.I.D. Dr. Robert Forbes asserts (April 2, p. 590) that the "decision whether artificial insemination will constitute appropriate treatment for any given patient rests within the judgment of the doctor in attendance. He and he alone can determine whether or not it is fitting. . . ." But this is to beg the very question at issue: it is, in the last resort, society as a whole that must decide whether or not it is "fitting." Few can doubt that serious moral considerations are involved. Yet Dr. Forbes upbraids the Church for making its views plain before A.I.D. has been "properly examined by competent authorities and either condemned or confirmed." Who these authorities are and by what standards they are to "condemn" or "confirm" Dr. Forbes does not say. But to condemn the Church for forming its own judgment, after taking into account all the available evidence—medical, social, legal, and psychological—is surely illogical. If the Church is not a "competent authority" in such a matter as this, with the right to declare its views, will Dr. Forbes tell us why?—I am, etc.,

Redhill, Surrey.

G. L. RUSSELL.

REFERENCE

¹ *Artificial Insemination*, 1948. London: S.P.C.K. See also *British Medical Journal*, 1948, 2, 523.

Painless Childbirth

SIR,—The subjects of painless childbirth and analgesia are very much in the forefront at present in the Press and in parliamentary circles. Varying opinions have been expressed as to the relative merits of different agents and whether it is advisable to allow midwives to be equipped with "trilene" inhalers.

I should like to express my appreciation of the Minnitt gas-air apparatus, which is the one in use most frequently at present. This apparatus, designed by Dr. Minnitt, does just what is claimed for it. It provides a safe and suitable method of analgesia for use by midwives when no doctor is present.

According to the Central Midwives Board regulations, the midwife must be accompanied by an assistant when analgesia is to be administered. The most important part of the midwife's duty is the delivery of the baby, and a method of analgesia which had a definite risk to the mother would demand too much of her attention at a critical point in the conduct of the case. With the exception of the small percentage of non-cooperative patients, the rule is to find that patients express appreciation of the relief afforded by this method of analgesia. Transport difficulties seem to be the stumbling block, since the apparatus is somewhat heavy to carry.

There are two attachments for use with the Minnitt apparatus which enhance its analgesic effect and still keep the apparatus within the limits of safety. One is the Chassar Moir attachment, which allows the patient to have a few breaths of pure nitrous oxide followed by the 50% gas-air mixture. This initial nitrous oxide deepens the analgesic effect at the right point, and yet recovery from it is rapid. This method is very suitable for the time when, as a rule, inhalation analgesia is commenced—that is, towards the end of the first stage. There is a sufficient interval between pains for the reservoir bag to refill.

The other supplementary method is the Rowbotham bottle with a Walton fitting, into which 6 dr. (21 ml.) of trilene is placed. This method was demonstrated to me by Dr. Minnitt and I have used it in a considerable number of cases. In the second stage, and for delivery, the gas-air mixture is diverted over the surface of the trilene and affords marked relief.

Midwives receive a very comprehensive and excellent training, and a high standard of proficiency is demanded from them at the end of it. Analgesia is now included in the curriculum. The two supplementary methods I have mentioned for use with the Minnitt apparatus could be included in the category of safe and suitable methods for the trained midwife.

From my experience of observing their work in hospital I should say that they are very careful when using analgesia and tend towards under- rather than overdosage. They could have a somewhat wider range than at present to help them in conducting the normal midwifery which is their province. I do not think that they would abuse the privilege or that any harm would come to the mother or infant.—I am, etc.,

Bearsden, Glasgow.

ELLEN COWAN.

Psychiatric Indications for Abortion

SIR,—The annotation (March 19, p. 489) entitled "Psychiatric Indications for Abortion," arising from changes in Swiss law, is of great interest. I hope I may be permitted to comment upon certain points.

1. Where pregnancy is the result of rape, the fact of rape does not in itself constitute a reason for termination. The mental strain consequent upon the birth of a child so conceived must, however, be a potent factor in determining the post-natal condition of the mother's psychic, and therefore also her physical, health. That this view is admissible under English law was upheld by Mr. Justice Macnaghten in the Bourne case (reported in the *Journal* of July 23, 1938, p. 199). Considered in this sense the Swiss law does not seem dissimilar.

2. It is very hard for a socialized State to admit that economic grounds for termination can exist. Here again, however, under even the best social safeguards very great inequalities must always continue. As your annotation rightly points out, no system of family allowances and maternity benefits can be adequate for the over-prolific family. The income which is reasonable for the average family, providing not only shelter, clothing, and food but the opportunity of rest and convalescence for the mother, will not be enough to secure the same benefits as the mother with repeated pregnancies—whose need is none the less the greater.

3. When the question of defining admissible psychiatric grounds is raised, we are upon even more uncertain terrain. As Dr. Ellis Stungo (April 2, p. 590) very sensibly points out, each case must be considered upon its merits. Those "merits" cannot be judged only from the patient as a "body," or even as a "mind," without consideration of the total picture.

How did the act of conception come about? In what sense is the mother, married or unmarried, emotionally involved with the father? Is the mother, if unmarried or deserted, on good terms with her parents, or has she friends who can accept the situation? Will the emotional trauma likely in many cases to follow thwarted motherhood have greater repercussions in the long run than the immediate difficulties leading to the request for termination? These are some of the questions which must be faced. In order to face them the doctors concerned cannot be too fully informed regarding every aspect of the background. This is where the "family doctor" can be invaluable and by his information and advice has it in his power to contribute enormously to the prevention of much misery.

4. Where a patient is in so disturbed a mental condition as to warrant continual watching for the prevention of suicide, that in itself would seem to be strong evidence of such severe mental conflict as may lead to complete breakdown. I would, however, like to put on record my disagreement with Dr. Stungo that in doubtful cases it is always wiser not to resort to termination, but to endeavour to reconcile the expectant mother with the reality factors of her situation. In genuinely doubtful cases I consider it wiser to give the mother the benefit of the doubt.

I should like to conclude by asking you, Sir, whether it might not be appropriate for medical men throughout the country to seek the establishment of a Royal Commission to investigate and, if possible, to suggest amendments of the law concerning termination of pregnancy. There can be few doctors, and even members of the general public, who do not feel it an anomaly, that pregnancies, the result of positively illegal acts—e.g., rape or seduction of a girl below the age of consent—cannot be terminated, if the demand is made, *upon that ground alone*. Similar considerations would seem to apply in the case of insane patients desirous of termination, and in those instances where congenital syphilis or a long-standing family history of insanity make it reasonably certain that the offspring will be tainted—with consequent serious repercussions upon the mother, the child, and the community as a whole.

It would also protect doctors and safeguard the general well-being of the mothers of the nation if at the same time the whole question of psychiatric indications for abortion could be submitted to public examination with suggested positive reforms in law.—I am, etc.,

London, W.1.

EUSTACE CHESSEY.

POINTS FROM LETTERS

Prescription of Barbiturates

Dr. NATHAN FINN (Johannesburg) writes: Dr. H. H. Margulies (Feb. 19, p. 325) in his constructive criticism of my communication (Jan. 29, p. 195) exaggerated the emetic dose of *pulv. ipéac.* In my experience many people complain of nausea even after $\frac{1}{4}$ gr. (5.4 mg.), and many actually vomit from such a dose. In my humble opinion, shared perhaps by others, there is some contradiction in the arguments put forward by Dr. Margulies, who does not tell us if his statements were made from observations on patients. Theoretically he may be right, but every theory must be proved, otherwise it just remains a theory utterly useless to a practitioner. The question is one of great practical importance. The solution cannot be to stop prescribing a so well-established and also most useful preparation. In my experience "ersatz" preparations are far from satisfactory.

Irreducible Umbilical Hernia in Pregnancy

Dr. MARGARET M. NOLAN (Anua, S. Nigeria) writes: On July 16, 1948, an Anang woman of the Calabar Province, aged about 26, was admitted to the antenatal ward. She was 5 months pregnant and was complaining of much pain in the umbilical region. On examination she was found to have a medium umbilical hernia which was tender but apparently reducible. On Aug. 2 she complained of no bowel movement for 24 hours, and she had much abdominal pain; the hernia was now irreducible. After an injection of "omnopon" $\frac{1}{4}$ gr. (22 mg.) and under local infiltration with "nupercaine," the hernial sac was isolated and removed with a portion of adhering gangrenous omentum. The hernia was repaired according to the Mayo technique, chromic catgut No. 0 being used. The wound healed by first intention. The pregnancy continued to term, the patient having a normal delivery of a living female infant weighing 6½ lb. (2.8 kg.) on Jan. 2, 1949. The puerperium was normal, and the patient went home on the tenth day.

Obituary

JOHN W. BONE, LL.D., M.B., C.M.

Dr. John W. Bone, whose record of service for the British Medical Association was outstanding, died at his home in Luton on April 14 at the age of 79. He had been treasurer for nine difficult years, and for thirteen years before that he had been chairman of the Medico-Political Committee, which afterwards became the General Practice Committee.

John Wardle Bone was born in 1869, and in 1891 he graduated M.B., C.M. with first-class honours at the University of Edinburgh. Four years later he took the B.Sc. in public health. After serving in some resident appointments, including one at Clayton Hospital, Wakefield, he settled in general practice at Luton in Bedfordshire. He was kindly and painstaking, and yet the sort of man who would "stand no nonsense," and he had an admirable way with him, particularly in dealing with children. From 1896 onwards he was closely identified with the Luton Children's Hospital, though he did not actually receive a staff appointment there until 1899. In 1905 he became honorary medical superintendent of the hospital, and during his tenure of office he was responsible for various extensions and improvements. He resigned the position of medical superintendent in 1933, while remaining a member of the committee of management and continuing to take a great interest in the hospital. He was also honorary consulting surgeon to the Bute Hospital, Luton, and a co-opted member of the maternity and child-welfare committee of the town council.



Dr. Bone did not become a member of the British Medical Association until 1905, but he quickly made his personality felt in his own Division, of which he was chairman in 1910. He also represented the Bedfordshire and Hertfordshire Division at annual representative meetings from 1911 onwards, and entered the Council in 1920. In 1922 he was president of the South Midland Branch. When the Association was called upon to choose from a number of candidates the two who should have its support at the 1928 election of direct representatives for England on the General Medical Council, Dr. Bone was one of those selected, the other being the late Sir Kaye Le Fleming; both were returned by large majorities. On the General Medical Council he was a very active member and most skilful in the examination of witnesses. Often after counsel on both sides had completed their examination Dr. Bone would rise and with a few questions, asked through the chair, give a quite fresh aspect to the case.

He was not a great platform man, and confessed that he was never happy with the microphone in large assemblies, but he was an ideal member of committees. His tongue was occasionally caustic and his manner dour, and when in the chair he never concealed his impatience at undue protraction of the business. Nevertheless, he had a great sense of fun, and his delight in some quip would often relieve a tedious afternoon. The gradual serpentine movement of committee procedure really interested him; he knew that it was there, and not in larger and more showy gatherings, that the business was done. His work for the British Medical Association in the committee-room, usually at Headquarters but sometimes at the House of Commons or on deputations to Government Departments, was of great value. His own contributions to debate were always persuasive and critical, and he had the capacity for working in a team and throwing his whole weight into a cause.

The list of John Bone's Headquarters activities would run parallel with the medico-political activities of the Association

from 1920 onwards. In addition to his work in the General Practice Committee, which at one time had as many as twenty subcommittees, he had been a member at various times of the Central Ethical Committee, of the committee concerned with certification under the Workmen's Compensation Act, of the committees on Health Services, on Lunacy Law and Mental Disorder, on Medical Education, on Poor Law Reform, and many others. Bone's membership of the Insurance Acts Committee dated from 1923, and there again he served on a bewildering number of subcommittees. A useful piece of work in which he took particular interest was his chairmanship of the committee which put up so effective an opposition to the Osteopaths Registration Bill when it came before the Select Committee of the House of Lords in 1935. On all questions connected with pharmacy and dangerous drugs he was an acknowledged expert. He was a member of the Advisory Committee on the Pharmacy and Poisons Act, known as the Poisons Board, and brought to the work a surprising amount of detailed knowledge. Earlier he had been a member of the watching committee set up by the Association in regard to the revision of the *British Pharmacopoeia*. He was also one of the five members nominated by the Association on the Board of Directors of the British Medical Bureau. Another excellent achievement was his part in the settlement of the dispute at Llanelli, which arose in 1934 between the local profession and the Workmen's Committee. He was one of the three or four representatives of the Association who visited the area and spent three days in hearing evidence and making the fullest possible local inquiries.

Dr. Bone was a man of considerable business sagacity. He succeeded the late Mr. Bishop Harman as Treasurer of the Association, and for nine years showed his mastery of the financial policy of a great organization. His treasurership included the anxious period of the second world war, when important decisions had to be made almost from day to day. He managed to combine, in a way that carried general approval, a firm control of expenditure with a policy of expansion adapted to meet the great demands on the Association which he foresaw as likely to arise in the post-war years. His presentation of the financial report year by year was never seriously criticized. He was also treasurer of the National Insurance Defence Fund, and one of the treasurers of the General Medical Council.

At the Cambridge meeting in 1948, when he retired from the treasurership, the Council unanimously decided to award him the Gold Medal of the Association for his exceptional services—a decision which evoked enthusiastic approval when it was announced to the Annual Representative Meeting. In 1946 Dr. Bone received the Hon. LL.D. of his own University of Edinburgh.

Dr. Alfred Cox writes: For some weeks now Dr. Bone's old friends have been sorrowfully awaiting the inevitable end, but nevertheless it is very sad to think that B.M.A. House will see him no more. For many years, as is well shown by the preceding narrative, he was there nearly every day and there were few of the Association's activities in which he did not take an active part. He was not easy to know intimately. He had the old-fashioned idea that a man's private life was his business, and would have resented intrusions on it. But it was a pleasant revelation to see him at home as I did occasionally when he was in active practice. We had some kindred interests which helped me to get behind the somewhat "dour" Bone. He was a North Countryman and could always be drawn on his early days in the North. He never got rid of his Northumbrian "burr" and never tried. He was a great collector of books, which, unlike some collectors, he read, and he could talk, and talk well, about his favourites. I should put Bone high among the men of business capacity who have served the Association. He was eminently a man of orderly and logical mind and hated waste, though he could always be converted to approval of large expenditure by the Association once he saw its possibilities. This was brought out before he became treasurer in the enthusiastic support he gave to his old friend Sir Robert Bolam when he fathered the ambitious scheme for the extension of B.M.A. House. From what I saw of his methods of practice it did not surprise me to learn that he had built up one of the most successful general practices in the provinces. Bone was no lover of the limelight—nor indeed of those who obviously sought it. But he was sound all through, and no man ever more faithfully earned the Gold Medal of the Association. It is a

grief to all his friends that he never received it in due form amidst the applause of all of us who knew him and who would have been delighted to have been able to say to him, "Well done, good and faithful servant."

DONALD GEORGE HALL, M.D., F.R.C.P.

Dr. Donald Hall died very suddenly at his home in Hove on April 7 from coronary thrombosis at the age of 72. His early years were spent at Gatehouse-of-Fleet, a lovely spot in Kirkcudbrightshire, where was nurtured his intense attachment to his native land. He was educated at the Edinburgh Academy, and from there gained a scholarship in natural science at Emmanuel College, Cambridge, where in 1897 he took a first-class tripos in the same subject. Returning to Edinburgh to complete his medical course, he graduated M.B., B.Ch. in 1900. There followed resident appointments at the Royal Infirmary and the Royal Hospital for Sick Children, Edinburgh, and then, like many a Scot, Hall migrated southwards and became house-physician at the Royal Sussex County Hospital, Brighton. Subsequently he put up his plate in Hove, and thus began a general practice which was later to bring him such a well-deserved reputation.

In 1903 Hall proceeded M.D., and in the following year he was elected assistant physician to the Royal Sussex County Hospital. Soon after the 1914-18 war he began to make a special study of the treatment of pulmonary tuberculosis by artificial pneumothorax, and of the use of the electrocardiograph. He became a recognized authority on both subjects, and his election in 1945 as chairman of the Cardiac Society of Great Britain and Ireland was a tribute to his profound knowledge of the diseases of the heart. Dr. Hall was elected F.R.C.P. in 1923 and thenceforth confined himself to consulting practice. He was the trusted adviser of an ever-widening circle of doctors and their patients, and the esteem in which he was held was reflected in the frequency with which his colleagues called upon his help in their own illnesses and those of their families.

Donald Hall was an able physician and consultant. Kindly and inspiring confidence, he had a remarkable memory which enhanced the value of his wide experience, his incisive mind, and a sure clinical instinct. His opinion and advice were equally clear and decided, and whenever possible he offered a reassuring and optimistic outlook to the patient. When the chairmanship of the Royal Sussex County Hospital became vacant in 1938, Hall, though still an active member of the honorary staff, was unanimously elected to this important and onerous post. He filled it with conspicuous success for eight years, and it was largely due to his wise guidance that the hospital was able to fulfil its many obligations during the difficult years of the recent war. In 1946 his services to the hospital were recognized by his appointment as its president. Hall was president of the Brighton and Sussex Medico-Chirurgical Society in 1927, chairman of the Brighton Division of the B.M.A. in 1926-7 and again in 1931-2, and president of the Sussex Branch in 1933-4. In the Boer War he had served on the hospital ship *Nubia*, and in the 1914-18 war in the Second Eastern Hospital, with the rank of major. In his younger days he captained his college rugby team, and later played forward for the famous Edinburgh Academical side, which included several internationals. Hall was a good shot and a keen fisherman. For many years he spent his holidays shooting and fishing in Scotland or Northumberland with his friends. Many will remember his and Mrs. Hall's hospitality and kindly thoughtfulness on these occasions. His family circle was ideally happy, and in all he did he was constantly supported by his wife. For her and her family deep sympathy will be felt by many friends. For forty-four years Donald Hall devoted his great gifts to his hospital, its patients, its nurses, and to many others. The gratitude and affection he inspired will not soon be forgotten.

A. HEDLEY VISICK, F.R.C.S.

Mr. Arthur Hedley Visick died after a brief illness at York on April 4 at the early age of 51. He came of a medical family. His father was well known in North London as an anaesthetist, and on his mother's side he was related to Sir Albert Cook and the late Mr. J. Howard Cook, of Uganda. He was educated at Epsom College and St. Bartholomew's Hospital, gaining an entrance scholarship there in 1915. He

did not take up his studies, however, until 1918, as he served in the Army during the war. From the first Hedley Visick showed his interest in surgery. He won easily the Treasurer's prize and later the Foster prize for anatomy. In his final year he had the unusual distinction of being awarded the Walsham prize and the Brackenbury surgical scholarship as well as the Willett medal for operative surgery. He qualified in 1922, and served as house-surgeon first to Sir Holburt Waring and then to the ear, nose, and throat department at St. Bartholomew's. He graduated M.B., B.S. in 1924, and immediately afterwards took the F.R.C.S. He then gained valuable surgical experience as chief assistant to Sir Charles Gordon-Watson and demonstrator of anatomy at St. Bartholomew's. In 1926 he went to Michigan as an instructor in surgery at the university there. After this year in America he settled in York, and in due course was put on the staff of the York County Hospital and was made surgical specialist to the Military Hospital. He was also consulting surgeon to the York City Hospital and to a number of smaller outlying hospitals.

From his earliest days as a medical student Visick had set his heart on being a surgeon. Even before he qualified he used to watch surgeons at work in other hospitals. This he continued to do at all stages of his career: he would often come up to London for a few days for this purpose. He was a keen and regular member of the surgical travelling club to which he belonged. When Hedley Visick started in York it was as a general practitioner, but he gradually did more surgery, gave up general practice completely, and quickly built up a reputation not only in York but in a wide area around the city as a first-rate surgeon. At first he interested himself in thyroid surgery, but over the last ten years he became especially expert in gastric surgery and was well known for his work on this subject. As a Hunterian professor at the College of Surgeons last year he lectured on gastrectomy, and he contributed to this and other journals a number of thoughtful and valuable articles on the surgery of peptic ulcer. His follow-up clinic was a model of completeness in detailed record-keeping. Every Wednesday, with medical and radiological colleagues, he personally saw all the patients who attended this clinic. Each interview and examination was quick and informal but thorough. Each patient was called by his Christian name and was glad to come. In his earlier days Visick was an unusually good teacher, while in later years he showed the same ability as a lecturer.

One of Hedley Visick's characteristics was his great and genuine enthusiasm for any subject he took up. This was combined with an excellent pair of hands, which made his operating a pleasure to watch. He was a man of even temper who greatly delighted in meeting old friends and making new ones. He was highly esteemed by his colleagues, and from 1938 to 1943 he acted as chairman of the York Division of the B.M.A. The place he made for himself as a consulting surgeon in York will not easily be filled. He was very happy with his family at his old house at Fulford and at his cottage in the country. The sympathy of all his colleagues and friends will be given to his wife and three children.

MAURICE SORSBY, M.D., F.R.C.S.Ed.

Dr. Maurice Sorsby, who died at Los Angeles on April 6 at the age of 50, qualified M.B., Ch.B. at Leeds in 1922, proceeding M.D. in 1925. In the same year he also obtained the Edinburgh F.R.C.S. Devoting himself to otolaryngology, he held staff appointments at the Metropolitan Ear, Nose and Throat Hospital, the London Jewish Hospital, and the Plaistow Children's Hospital. He was also for a time consulting ear, nose, and throat surgeon to the L.C.C. hospitals. A sound early training in general surgery turned his interest mainly to the intracranial complications of ear disease and to the general aspects of the cancer problem. His study of the incidence of cancer in Jews, embodied in his excellent *Cancer and Race*, was a valuable contribution to a subject on which previously there had been more opinions than critical data. This detailed study of the incidence of cancer in Jewish communities in different parts of the world showed that the total cancer rate in Jews was everywhere approximately the same as that of the general population, though the distribution according to the organs affected varied considerably. These latter differences could in most

cases be explained by environmental factors. The low incidence of cancer of the tongue, for instance, could be correlated with a low incidence of syphilitic leucoplakia, which so often precedes it. Maurice Sorsby's study on Beethoven's deafness was characteristic of his wide interests, and a busy professional career still left him time for much social activity. As a president of the London Jewish Hospital Medical Society he was largely instrumental, together with the late Dr. M. D. Eder, in forming the Emergency Medical and Dental Association for the relief of victims of Nazi persecution in the years before the war. A large circle of friends will feel sympathy with his widow and his two sons.

Medico-Legal

DAMAGES FOR A DOCTOR

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

Dr. L. M. Bingham, of Great Waltham, Chelmsford, was run down by an Army vehicle on Nov. 28, 1947, and suffered serious injuries, including a fractured pelvis. He had previously worked in general practice and as a radiologist; as a result he was physically unfit for general practice but not for radiology.

In the action which he brought in the High Court against the driver and the War Office, Mr. Justice Croom-Johnson awarded him £4,000 damages for pain and suffering and £20,000 compensation for estimated loss of earnings for the remainder of his working life. This amount was computed on the basis of £2,000 loss of earnings for each of fifteen more years, less £10,000 to allow for contingencies, his increased earnings as a radiologist, and the large capital sum down which he was to receive. The defendants appealed on the ground that the damages were excessive, and that the judge had failed to take into account the fact that the plaintiff's fees would have been reduced by taxation.

Lord Justice Tucker, giving judgment¹ in the Court of Appeal, said that the judge could not have given sufficient weight to the fact that the doctor could now devote the whole of his time to radiology. The court thought the amount awarded for loss of earning capacity should be halved, making the total damages £14,000 instead of £24,000.

On the second point, that the judge had failed to allow for the reduction of the doctor's fees by income tax, his lordship said that this argument had been rejected twice by High Court judges sitting alone but had never come to the Court of Appeal for decision. It had been accepted in a Scottish case, but he thought with respect that it was fallacious. The principle of *restitutio in integrum* required that the doctor should be put in the same position *vis à vis* his patients as that in which he would have been but for the fault of the defendants—that is, that he should receive his fees in full. Questions of ultimate liability to the Revenue did not concern the defendants, though different considerations might arise in cases of P.A.Y.E.

Lord Justice Singleton, agreeing, said that general damages for loss of future earnings would not be subject to income tax, but that in assessing them no reduction should be made in respect of the tax which would have been payable on such earnings. He thought that cases of P.A.Y.E. would be in the same position. Mr. Justice Birkett concurred.

This action, incidentally, is a reminder of the convenience of the reform introduced by the Proceedings against the Crown Act last year, whereby a Government department can now be sued in the same way as a subject of the King, and the cumbersome procedure by petition of right is no more.

¹ *The Times*, March 11, 1949

H.M. Customs and Excise state that from April 5 preparations appearing in the *National Formulary*, whether or not compounded with substances appearing in the monographs and formularies of the other publications specified in Provision 1 of Notice 78 M, or with an excipient, vehicle, base, or preservative, are exempt from purchase tax so long as they comply with the remaining provisions of Notice 78 M or 78 N.



PREGNAVITE

**A single* supplement
for safer pregnancy**

CLINICAL USES

To improve the nutritional state where circumstances prevent consumption of all the protective foods required to prevent hypochromic anaemia.

Indications in the history of previous pregnancies: toxæmia, previous premature births, inability to breast feed, and dental caries.

* The recommended daily dose provides: vitamin A 2,000 i.u., vitamin D 300 i.u., vitamin B₁ 0.6 mg., vitamin C 20 mg., vitamin E 1 mg., nicotinamide 25 mg., calc. phosph. 480 mg., ferr. sulph. exsic. 204 mg., iodine, manganese, copper, not less than 10 p.p.m. each.



Vitamins Limited

Upper Mall, London, W.6

TEMPORIS ARS MEDICINA FERE EST (OVID)



The art of medicine is generally a question of time. With the peptic ulcer patient, as is well known, the rate of healing is determined by the ulcer's freedom from irritation. By rapidly buffering excess acid and at the same time avoiding acid rebound, 'ALUDROX,' a suspension of 5.6% colloidal aluminium hydroxide in gel form, ensures rest for the ulcer. Pain is relieved and time taken for healing reduced to a minimum.

ALUDROX

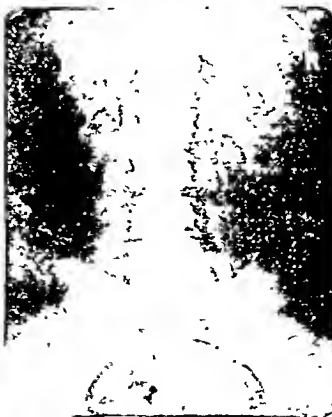
Aluminium hydroxide gel

JOHN WYETH & BROTHER LIMITED
Clifton House, Euston Road, London, N.W.1
BEFLEX - ENDRINE - PETROLAGAR - PLASTULES

Wyeth

Subtleties of shadow

FINE shades and distinctions seldom count so much as in the interpretation of a radiograph. Indeed, the ultimate diagnosis may well hinge on a subtlety of shadow only revealed when adequate density and definition have been obtained. To aid in achieving these criteria Glaxo contrast media cover a wide radiographic field. From this range the preparation best suited to individual diagnostic requirements can be nicely selected. Pyelosil* and 'Pyelectan' are the two standard preparations for excretion pyelography; and recently, 'Visco-Pyelosil' has been introduced for salpingography—in particular, for the investigation of sterility. In radiography of the gall bladder by the "single-dose" technique, Pneumodol Glaxo provides a safe and reliable contrast medium, while for detection of abnormalities affecting the spinal column, 'Myodil' affords successful visualisation without fear of irritation or arachnoiditis.



PYELOSIL

Brand solution of Diodone
25% and 50% solutions: 20 cc
ampoules. Also 70% solution
especially for card o-angiography
20 cc and 50 cc ampoules.

VISCO-PYELOSIL

Brand viscous solution
of Diodone:
10 cc & 5 x 10 cc ampoules

PYELECTAN

Brand injection of Iodaxyl
20 cc & 5 x 20 cc ampoules.
Pyelectan (Retrograde) 10 cc

PNEUMODOL Glaxo
Granules, 6 gram tube (1 dose)
70% solution of 6 (1 dose)

MYODIL

Brand Ethyl
iodophenylurdecylate
3 x 3 cc ampoules.

GLAXO

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX. BYRON 3454

An anti-histamine of wide application



HISTOSTAB is one of the most satisfactory antidotes for histamine now available.

In the treatment of a wide range of allergic conditions Histostab has few undesirable side-effects. It may be given orally, or by injection when rapid action is required. It will control allergic urticaria and eczema, and will relieve the itching in certain cases of pruritis. It has proved of value in cases of sensitivity to Insulin, Liver and Penicillin, suppressing the unpleasant effects and allowing treatment to be continued.

As Compound Solution of Histostab it is available for nasal and ocular instillation in vasomotor rhinitis and hay fever.

Histostab Tablets. Bottles of 25 x 0.1 G. tablets.

Injection of Histostab. Boxes of 6 ampoules of 2 ml. (0.1 G.).

Solution of Histostab Compound. Bottles of $\frac{1}{2}$ fl. oz.

HISTOSTAB



Literature and further information gladly sent on request to the Medical Department
BOOTS PURE DRUG CO. LTD.
NOTTINGHAM, ENGLAND

S.35

Vitamin B₁₂ in

Anahæmin
B.D.H.

Micrograph of the pernicious anemia (P.A.) factor, vitamin B₁₂, isolated from Anahæmin B.D.H.

Although the potency of each batch of Anahæmin B.D.H. has always been established clinically before issue, further confirmation of its hæmopoietic activity is now afforded by the isolation of the anti-pernicious anemia factor in crystalline form from routine batches of Anahæmin B.D.H. in the B.D.H. Research Laboratories*. This factor is identical with the substance named vitamin B₁₂ by Rickes *et al.*† Since its introduction twelve years ago Anahæmin B.D.H. has given outstanding results in the treatment of macrocytic anæmias.

* J. Pharm. Pharmacol., Jan. 1949, p. 60
† Science, 16th April, 1948, p. 397

THE BRITISH DRUG HOUSES LTD LONDON N.1

Arab T/111

From the Laboratory of
T. & H. SMITH, LTD.

GLYCODEINE

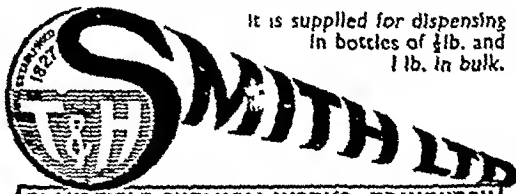
GLYCODEINE IS A VALUABLE SEDATIVE FOR THE RELIEF OF IRRITABLE COUGH, ESPECIALLY IN PHTHISIS, BRONCHITIS AND DYSPNOEA.

IT IS ALSO A USEFUL LINCTUS FOR THE TREATMENT OF ASTHMA AND LARYNGITIS.

GLYCODEINE IS EXEMPT FROM THE REGULATIONS OF THE DANGEROUS DRUGS ACT.

GRANULA. Codein Phosp. 0.4, Liq. Folu 13.5, Syr. Prunl Seros. 13.5, Glycerin ad 100
Each dram contains $\frac{1}{2}$ grain Codeine Phosphate.

It is supplied for dispensing in bottles of $\frac{1}{4}$ lb. and 1 lb. in bulk.



BLANDFIELD CHEMICAL WORKS · EDINBURGH

ALSO AT LONDON AND GLASGOW

Mr BEVAN said that merchant seamen, like anyone else who went abroad, were unable to obtain treatment under the National Health Service Act while out of this country. The Government intended to negotiate reciprocal arrangements with other countries wherever the opportunity arose. He thought that one such arrangement was being negotiated at the moment.

No. 13

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended April 2.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included) (b) London (administrative county) (c) Scotland (d) Eire. (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county) (c) The 16 principal towns in Scotland (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	30	5	16	4	2	51	6	35	1	2
Deaths	—	—	1	—	—	—	1	1	—	—
Diphtheria	105	16	28	3	4	161	23	46	12	1
Deaths	1	—	—	—	—	3	—	1	—	—
Dysentery	62	5	23	3	—	188	14	38	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	—	—	—	1	—	1	—	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	25	4	4	—	—	37	9	3
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	51	—	—	—	—	31	—
Deaths	30	1	2	—	1	40	4	6	—	—
Measles*	15,819	1487	396	154	151	10,874	1719	295	90	53
Deaths†	—	—	—	—	—	—	—	3	—	—
Ophthalmia neonatorum ..	29	5	12	—	1	72	4	22	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	2	—	1(B)	—	—	1	—	1(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza Deaths (from influenza)‡	1,481	58	21	10	12	764	44	3	13	7
Deaths	274	20	6	1	—	15	2	1	—	—
Pneumonia, primary ..	—	—	210	37	—	—	—	263	27	—
Deaths	333	45	—	8	14	214	35	—	7	13
Polio-encephalitis, acute ..	2	1	—	—	—	4	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-myelitis, acute ..	13	1	—	—	—	15	—	2	1	—
Deaths§	2	—	—	—	—	4	1	—	—	—
Puerperal fever	—	—	9	—	—	—	—	1	18	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| ..	110	6	5	1	—	123	7	12	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,257	87	186	80	43	1,421	108	305	46	43
Deaths†	—	—	—	—	—	—	—	1	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	1	—	1	1	—	5	—	—	1	1
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	2,998	247	276	121	64	2,639	166	22	52	13
Deaths	13	2	1	1	—	11	1	1	1	—
Deaths (0-1 year) ..	280	37	45	21	8	344	48	33	21	20
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths) ..	6,101	814	644	211	158	4,777	730	620	183	103
Annual death rate (per 1,000 persons living)	—	—	12.9	13.1	—	—	—	12.5	11.4	—
Live births	7,927	1272	1028	441	258	8,659	1351	1191	377	289
Annual rate per 1,000 persons living	—	—	20.6	27.3	—	—	—	24.0	23.6	—
Stillbirths	205	29	23	—	—	232	26	34	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	22	—	—	—	—	28	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Smallpox

As was anticipated in these notes (April 9, p. 640), there have been further cases of smallpox following the infection and death of a passenger on the s.s. *Mooltan*. Among the persons exposed to infection while on board the following secondary cases have been reported. The notifying authority and the date of onset of illness are given in each case: Port of London, 3.4.49; Paddington M.B., 5.4.49; St. Paneras M.B., 5.4.49; Isle of Axholme R.D.C., 5.4.49; Paddington M.B., 6.4.49; Liverpool C.B., 6.4.49; Wembley Borough, 7.4.49; Sutton and Cheam Borough, 7.4.49; Torquay Borough, 8.4.49; Aylesbury Borough, 12.4.49; and Richmond Borough, 12.4.49. There is still some uncertainty about the diagnosis in patients reported from South wark M.B. and Abertillery. In many other persons who travelled on the s.s. *Mooltan* and who subsequently came under observation the suspicion of smallpox has not been confirmed. The above list contains information available up to April 19, when all the confirmed cases of smallpox in England and Wales had been in contact on the s.s. *Mooltan* and should therefore be considered as imported cases. In other words, there have so far been no secondary cases infected in this country. These are expected to appear at any time.

The disease is a severe form of *variola major*. Five of the patients have died, two of them in the prodromal stage. The disease has been haemorrhagic in some; with others there has been extreme modification resulting from vaccination.

Suspected Smallpox

Two patients are under observation at Lacey Smallpox Hospital. They are in no way associated with the s.s. *Mooltan* and furthermore the diagnosis is uncertain. They come from Brigg and Bolton-on-Dearne and were taken ill on April 13 and 14, respectively.

Discussion of Table

In England and Wales increases were recorded in the notifications of measles 512 and dysentery 28. There were decreases in the incidence of scarlet fever 100 and acute pneumonia 66.

After declining for four weeks the incidence of measles rose; the rise was mainly confined to the Home Counties. The largest increases in the notifications were Middlesex 260, London 213, Yorkshire West Riding 111, and Surrey 107; the largest decreases were Staffordshire 189 and Leicestershire 147.

A small decrease in the number of notifications of scarlet fever was recorded in most areas of the country; the only notable exception was a rise in Essex due to 62 cases in Billerica U.D. There were only very small fluctuations in the local trends of diphtheria. The only large variations in the local incidence of whooping-cough were rises in London 66 and Warwickshire 51.

No new outbreaks of dysentery were reported during the week. The increased incidence was due to scattered cases; 18 counties notified the presence of a case compared with 9 counties in the preceding week.

In Scotland an increase was recorded in the number of notifications of measles 56, whooping-cough 32, and scarlet fever 13. There were decreases in the incidence of acute primary pneumonia 32 and diphtheria 12. The rise in the notifications of scarlet fever was mainly due to the experience of the south-eastern area, and the decrease in the incidence of diphtheria occurred in the western area.

In Eire there were rises in the incidence of measles 36 and of diarrhoea and enteritis 15 and a fall of 20 in the notifications of scarlet fever. There were 28 cases of measles notified in Donegal, Stranorlar R.D.; otherwise these changes were mainly due to the experience of Dublin C.B.

In Northern Ireland the only appreciable change was a fall of 27 in the notifications of measles, due to a small decrease throughout the country.

Week Ending April 9

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,191, whooping-cough 2,608, diphtheria 106, measles 14,724, acute pneumonia 1,093, cerebrospinal fever 39, acute poliomyelitis 14, dysentery 63, smallpox 4, paratyphoid 5, and typhoid 1.

Charter Travelling Scholarships, value £300 for one year, have been awarded by the Pharmaceutical Society to Miss Joan Mary Rhodes, B.Pharm., Ph.C., of Worthing, to enable her to study the conditions of pharmaceutical practice in Denmark, and also, subject to his passing the final examination for the B.Sc. (Pharm.) Degree of the University of Manchester in the summer of 1949, to Robert Guest Baker, of Manchester, to study in New York. The Charter Travelling Scholarship was founded in 1943 to mark the 100th anniversary of the granting of a Royal Charter to the Society.

Medical News

Blood Test for Cancer

At the annual meeting of the American Association for Cancer Research, which was held in Detroit last week, Professor Charles B. Huggins, of the University of Chicago, is reported by the *Manchester Guardian* (April 18) to have described a blood test for cancer. The test is said to be based on a change in the coagulability of the serum of patients with cancer, "due to a disturbance in the albumin content." It is positive not only in cancer, but also in tuberculosis, lobar pneumonia, meningitis, and other acute infections. Associated with Professor Huggins in this work were Dr G. M. Miller and Dr E. V. Jensen.

Central Midwives Board

At its April meeting the Central Midwives Board re-elected Mr Arnold Walker as chairman and Mr J. P. Hedley as vice-chairman for the ensuing year.

American Conference on Handicapped Children

A conference sponsored by the Child Research Clinic of the Woods Schools, Langhorne, Pennsylvania, was held on April 22 to discuss the effect on handicapped children of the emotional attitudes of parents and such environmental influences as school, church, and community. The conference programme was under the direction of Dr Charlotte E. Grave, Director of the Woods Schools Child Research Clinic.

Linctus Diamorphinae

There is no linctus diamorphinae in the new *Notionol Formulary*, which will replace the *Notionol War Formulary* as from May 1. Pharmacists will therefore be unable, under the Dangerous Drugs Regulations, to dispense the *War Formulary* preparation unless the formula is written out in full. To overcome this difficulty the Pharmaceutical Society has released its formulae for the two linctuses which are scheduled for inclusion in the *B.P.C. 1949*, which has not yet been published. A notice of their composition appeared in the *Pharmaceutical Journal* of March 26. They are linctus diamorphinae *B.P.C.* (the same strength as the *N.W.F.* linctus but with a different base), and linctus diamorphinae et hyoscyami *B.P.C.* After May 1, therefore, when a doctor prescribes linctus diamorphinae or linctus diamorphinae *N.W.F.*, pharmacists will dispense linctus diamorphinae *B.P.C.* unless a formula is written out in full.

Victor Horsley Memorial Lecture

The Victor Horsley Memorial Lecture is held triennially and is usually given about the time of Sir Victor Horsley's birthday, which is in July. The lecture this year will be delivered by Sir Hugh Cairns, K.B.E., D.M., F.R.C.S., Nuffield Professor of Surgery, Radcliffe Infirmary, Oxford. The lecture will be in December, under the chairmanship of Dr. F. M. R. Walshe, and the exact time and place will be announced later.

COMING EVENTS

Royal Medico-Psychological Association

A meeting of the Child Psychiatry Section of the Royal Medico-Psychological Association will be held at the Royal Society of Medicine (1, Wimpole Street, London, W.) to-day (Saturday, April 23), at 11.15 a.m., when Dr E. Mildred Creak and Dr Richard H. Dobbs will read papers on "The Psychiatric Aspects of Maternity and Child Welfare Work." At 2.15 p.m. papers will be read by Miss Anna Freud and Dr A. G. Watkins on "Effects of Hospitalization on the Child." Members of the British Paediatric Association, the Section of Paediatrics of the Royal Society of Medicine, and the Maternity and Child Welfare Section of the Society of Medical Officers of Health are invited to attend the meeting.

Edinburgh Lectures

A series of Honnman Gillespie Lectures in association with Edinburgh postgraduate courses will be given in the Anatomy Theatre, University New Buildings, Teviot Place, Edinburgh, on Thursdays, at 5 p.m., from April 28 to June 9 (except May 19). The lectures are open to all graduates and senior students, and details will be published week by week in the diary column of the *Journal*.

Care of Cripples

The Central Council for the Care of Cripples will hold a conference on "Planning the Future for the Physically Handicapped" on Friday, April 29, at the Conway Hall, Red Lion Square, London, W.C.1. Speakers include Mr H. Osmond Clarke and Dr G. S. Wiles. Information may be obtained from the Secretary of the Central Council, 34, Eccleston Square, London, S.W.1.

Wright-Fleming Institute of Microbiology

The following course of six Almroth Wright Lectures on "The Bacterial Cell" has been arranged for the Summer Session, 1949. They will be given in the Lecture Theatre of the Institute at St. Mary's Hospital on Tuesday afternoons at 5 p.m. May 3. Professor E. W. Rideal, F.R.S., "Surface Properties of Bacteria" May 10. Mr E. F. Gale, Ph.D., "Biochemical Properties of the Bacterial Cell Wall" May 17. Mr W. T. J. Morgan, F.R.S., Ph.D., "Bacterial Antigens" May 24. Dr M. R. Pollock, "Bacterial Nutrition" May 31. Mr F. C. Bawden, F.R.S., "The Nature of Plant Viruses" June 7. Dr A. S. McFarlane, "Electron Microscopy of Bacteria and Viruses." These lectures are open to all members of the medical profession and to all students in medical schools, without fee.

St. George's Hospital Medical School

A series of lecture demonstrations will be held in the large lecture theatre of St. George's Hospital Medical School (Hyde Park Corner, London, S.W.) on Thursdays, at 4.30 p.m., from May 5 to July 7, both dates inclusive. The series is open to all medical practitioners and senior medical students, without fee. Details will be published in the diary column of the *Journal* week by week.

Musical Recital

A recital on behalf of the Princess Tshahi Memorial Hospital will be given by the St. Michael's Singers on May 11 at 6 p.m. at the Church of St. Michael, Cornhill, London, E.C.3. More than half the equipment for the Memorial Hospital, which has been built at Addis Ababa by means of British subscriptions, has been shipped from England. More is still required, and donations will be gratefully received. They should be addressed to the Honorary Treasurers Lord Harder and Lord Amulree, c/o H. Reynolds and Co., 1, Bloomsbury Court, London, W.C.1.

Royal Medical Benevolent Fund

The annual general meeting of the Royal Medical Benevolent Fund will be held at 11, Chandos Street, Cavendish Square, London, W., on Friday, May 13, at 5.15 p.m., with the President, Lord Webb-Johnson, in the chair. The statement of accounts for 1948 will be presented and officials and committee of management elected for the ensuing year.

SOCIETIES AND LECTURES

Friday

LONDON UNIVERSITY.—At King's College, Strand, W.C., April 22, 5.30 p.m., "Gas Phase Reactions of Organic Radicals" by Dr E. W. R. Steacie, Director of Division of Chemistry, National Research Council of Canada.

Saturday

BRITISH ASSOCIATION OF ALLERGISTS.—At Medical Institution Mount Pleasant, Liverpool, April 23, 11.15 a.m., (1) "The Management of Some Allergic Manifestations of the Upper Respiratory Tract" by Dr R. Donald (Melbourne). (2) "Asthma in Childhood—Experiences in a Liverpool Play Clinic" by Dr C. A. Clarke. (3) "Some Aspects of Nasal Allergy" by Dr E. Travers. (4) "The Skin Reactions—Its Uses, Limitations and Standardization" by Dr D. B. Macauley. (5) "The American Approach to Allergy" by Dr A. E. Bernstein.

Monday

HUNTERIAN SOCIETY.—At Talbot Restaurant, 64 London Wall, E.C., April 25, 7 for 7.30 p.m., dinner and annual general meeting. "Speech Defects and Voice Affections" address by Mr H. St. John Rumsey.

LEEDS UNIVERSITY.—At University Union (Riley-Smith Hall) April 25, 3 p.m., "Morphology and the Training for Surgery" by Mr. H. G. Turner.

LONDON UNIVERSITY.—(1) At King's College, Strand, W.C., April 25, 5.30 p.m., "Gas Phase Reactions of Organic Radicals" by Dr E. W. R. Steacie, Director of Division of Chemistry, National Research Council of Canada. (2) At London School of Hygiene and Tropical Medicine, Keppel Street, W.C., April 25, 5.30 p.m., "Bacteriophage and Antibiosis" by Professor A. Gratia (Liege).

LONDON UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., April 25, 4.45 p.m., "Selective Toxicity with Special Reference to the Nervous System" by Professor Adrien Albert.

WESTMINSTER.—At Medicine, Meyerstein Lecture Theatre, S.W.—April 25, 5.20 p.m., "clinical pathological meeting".

Tuesday

INSTITUTE OF LARYNGOLOGY AND OTOLARYNGOLOGY, 330-332, Gray's Inn Road, London, W.C., April 26, 2.30 p.m., "Malignant Diseases and Radiotherapy" by Mr W. A. Mill.

Wednesday

ROYAL INSTITUTE OF PUBLIC HEALTH AND HYGIENE.—At 28, Portland Place, London, W., April 27, 3.30 p.m., "Occupational Eye Diseases and Injuries" (2) Illustrated, by Mr Joseph Minton.

Thursday

EDINBURGH UNIVERSITY.—At Anatomy Theatre, University New Buildings, Teviot Place, April 28, 5 p.m., "A Workshop for Severely Disabled Men," Honyman Gillespie Lecture by Professor T. Ferguson.

FACULTY OF RADIOLOGISTS: THERAPY SECTION.—At British Institute of Radiology, 1, Wimpole Street, London, W., April 28, 8.15 p.m., "The Medical Aspects of the Problems of Everyday Dental Practice," joint paper by Surgeon Lieutenant-Commander John Bunyan, R.N.V.R., and Mr. C. W. Stidson Broadbent.

MEDICO-LEGAL SOCIETY.—At 26, Portland Place, London, W., April 28, 8.15 p.m., "Medico-Legal Aspects of the Problems of Everyday Dental Practice," joint paper by Surgeon Lieutenant-Commander John Bunyan, R.N.V.R., and Mr. C. W. Stidson Broadbent.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—April 28, 5 p.m., "Stomatodaeal Ruminations. Clinical and Non-clinical," Hunterian Lecture by Professor Charles F. M. Saint (late Professor of Surgery in the University of Capetown).

Friday

FACULTY OF RADIOLOGISTS: THERAPY SECTION.—April 29, joint meeting with Section of Radiology, Royal Society of Medicine, Discussion: "The Method of Presentation of Results in the Treatment of Cancer." (1) At Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., 2.15 p.m., to be opened by Professor B. W. Windyeyer and Drs. J. S. Fulton and Percy Stocks. (2) At Royal Society of Medicine, 1, Wimpole Street, London, W., 8.15 p.m., to be delivered by Dr. Ralston Paterson, Miss M. C. Tod, and Professor R. McWhirter.

KENT AND CANTERBURY HOSPITAL, Canterbury.—April 29, 5 p.m. to 7 p.m., clinical meeting.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES, 11, Chandos Street, London, W.—April 29, 8 p.m., "Reiter's Disease," by Dr. A. H. Harkness.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—April 29, 5 p.m., "Spondylolisthesis," Hunterian Lecture by Professor R. I. Harris, Professor of Orthopaedic Surgery in the University of Toronto.

ROYAL INSTITUTE OF PHILOSOPHY.—At University Hall, 14, Gordon Square, London, W.C., April 29, 5.15 p.m., "The Relevance of Psychological Research to Philosophy," by Professor C. D. Broad.

APPOINTMENTS

Mr. J. L. B. Ansell has been appointed Surgeon-Apothecary to his Majesty's Household at Sandringham in succession to Sir Frederic J. Willans, K.C.V.O., deceased.

DONOVAN, W. T., M.B., Ch.B., D.P.H., Medical Officer of Health, Metropolitan Boroughs of Bethnal Green and Poplar.

EAST ANGLIAN REGIONAL HOSPITAL BOARD.—*Chest Physician, Peterborough Area:* G. B. Royce, M.B., Ch.B., Medical Superintendent, Hellesdon Hospital; F. J. Napier, M.B., B.S., D.P.M., *borough Area:* G. M. Barling, M.B., Ch.B., D.O.M.S., *Peterborough Area:* Norman Kimbell, M.B., Ch.B., M.R.C.P., *announcement.*

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, London; W.C.—*House-physicians:* H. G. Dunn, M.B., B.Ch., M.R.C.P., O. D. Fisher, M.B., B.S., M.R.C.P., D.C.H. *House-surgeon:* Mrs. Christine B. A. John, M.B., Ch.B., Assistant Resident Medical Officer (Tadworth Court), Joan P. D'Arcy, M.B., B.Ch.

LEES, DAVID HUGH, M.B., Ch.B., F.R.C.S.Ed., M.R.C.O.G., Assistant Surgeon, Jessop Hospital for Women, Sheffield.

LOGAN, DANIEL CRAWFORD, M.B., Ch.B., D.P.H., Medical Officer of Health, Whittlesey, Cambridgeshire.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Halle.—On March 21, 1949, at Sheffield, to Frances and Hugh, a daughter—Elizabeth Anne.

Hulbert.—On April 5, 1949, at West Hill Hospital, Dartford, to Elizabeth, wife of K. F. Hulbert, F.R.C.S., a daughter.

O'Sullivan.—On April 11, 1949, Una (née O'Leary), wife of Dr. J. G. O'Sullivan, Manchester, a daughter.

Pooler.—On April 10, 1949, at Easterholme, Stretton, Derbyshire, to Pamela (née Relton), wife of H. E. Pooler, M.B., D.A., a brother for Rosamund.

Taylor.—On April 11, 1949, in Edinburgh, to Helena (née Lauder Thomson), M.B., Ch.B., D.P.H., wife of Dr. A. W. O. Taylor, M.R.C.P.Ed., 9, Frogston Road East, Edinburgh, a son.

Whalley.—On March 10, 1949, to Joy (née Brooks), wife of Dr. G. Hamilton Whalley, Newcastle, a son.

DEATHS

Burn.—On April 10, 1949, at Bryansburn House, Bangor, Co. Down, Mrs. Alice M. Burn, M.B., Ch.B.Ed., D.P.H.

Cuthbert.—On April 7, 1949, at a nursing-home, Glasgow, Charles Campbell Cuthbert, M.D., M.B., Ch.B., formerly of 3, Buckingham Terrace, Glasgow, W.2, and his wife Jean Copeland.

Davies.—On April 6, 1949, after a short illness, John Christopher Davies, M.B., B.Ch.

D'Esterre.—On April 12, 1949, at Westwinds, 31, Alcey Park, West Dulwich, S.E.21, William Henry Daniel Patrick D'Esterre, M.D., B.S., M.R.C.S., L.R.C.P., aged 79.

Groome.—On April 10, 1949, at Canterbury, Walter Groome, M.B.E., M.B., C.M., aged 81.

Mackay.—On April 12, 1949, at Roekbank, Campbeltown, Argyll, Duncan Matheson Mackay, M.D.Ed., aged 79.

Neill.—On April 9, 1949, at Coonoor, South India, the Rev. Charles Neill, M.A. M.B., formerly of Craigavon, Co. Down, aged 80.

Sorsby.—On April 6, 1949, at Los Angeles, Maurice Sorsby, M.D., F.R.C.S.Ed.

Wacher.—On April 11, 1949, peacefully after a long illness, Harold Wacher, M.D.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Penicillin-Phthalylsulphathiazole Antagonism

Q.—The National Formulary, 1949, on page 13 states that "there is evidence that it [phthalylsulphathiazole] should not be given with penicillin." Would you please quote the evidence?

A.—Poth, Wise, and Slattery (*Surgery*, 1946, 20, 147) gave phthalylsulphathiazole to six patients and succinyl sulphathiazole to five patients to reduce the coliform organisms in the large bowel. Penicillin was then given intramuscularly (20,000 units at two-hourly intervals) while the administration of the sulphonamide was continued. There was no demonstrable effect on the reduced flora induced by succinylsulphathiazole, but there was an abrupt and significant increase in the coliform flora in all the cases treated with phthalylsulphathiazole. The phenomenon could not be explained. The authors recommend that penicillin should not be administered simultaneously with phthalylsulphathiazole if it is important to maintain a reduction in the coliform flora of the bowel, as in the treatment of chronic coliform infections of the urinary tract or ulcerative colitis.

Streicher (*J. Amer. med. Ass.*, 1947, 134, 339) in an investigation on the effect of orally administered penicillin in chronic ulcerative colitis found that the antibacterial effect of penicillin was impeded by the administration of phthalylsulphathiazole. The organisms studied were *Bacterium coli*, *Staphylococcus albus*, and streptococci of gamma type. When 3 g. of phthalylsulphathiazole was given in addition to 225,000 units of penicillin by mouth, 300 units of penicillin was needed to inhibit the *Bact. coli* in vitro as compared with 20 units when the penicillin was given alone. Nevertheless, Streicher considers that in practice oral penicillin and phthalylsulphathiazole may be combined with advantage. More recently Stewart and Jones (*Ann. trop. Med. Parasit.*, 1948, 42, 33) have studied the effects of combining penicillin and phthalylsulphathiazole in the treatment of experimental amoebic infection in the rat. Both drugs were effective prophylactically, with a possible additive effect. Therapeutically, phthalylsulphathiazole enhanced the action of penicillin without itself having any effect on the established infection.

There is thus no definite confirmation of the observations reported by Poth and his co-workers suggesting that the combined use of penicillin and phthalylsulphathiazole is undesirable in clinical practice, but until further evidence is available succinyl sulphathiazole would appear to be a wiser choice in combined therapy.

Xanthomatous Biliary Cirrhosis

Q.—What are the features of the condition known as "primary biliary xanthomatosis"?

A.—"Primary biliary xanthomatosis" is more often termed "xanthomatous biliary cirrhosis." It is a disorder in which chronic obstructive jaundice and hepato-splenomegaly are associated with cutaneous xanthomata (plana or tuberosa), and less frequently with xanthomata in the tendons, bones, or coronary arteries. The serum cholesterol level is greatly raised, owing mainly to an increase in the quantity of cholesterol ester. This uncommon condition is placed by Thannhauser in the group of hypercholesterolaemic primary essential xanthomatoses. This author's monograph (*Lipidoses: Diseases of the Cellular Lipid Metabolism*, 1940, Oxford University Press) contains a full bibliography and should be consulted.

Petroleum Products and the Skin

Q.—Can you give any information on the reactions which may occur when one of the following is applied to the skin: (a) light liquid paraffin, (b) liquid paraffin B.P., and (c) soft paraffin (yellow or white)?

A.—Light liquid paraffin, liquid paraffin B.P., and soft paraffin (yellow or white) do not usually give rise to any

Safe, effective bacteriostasis with

'SULFEX'

in nasal and sinus infections

The intranasal use of 'Sulfex' ensures prolonged local bacteriostasis and prompt vasoconstriction. The microcrystalline ('Mickraform') sulphathiazole forms a fine, even 'frosting' over the nasal mucosa, and makes possible the maintenance of high local concentrations with the minimum of systemic absorption. The shrinking action of 'Paredrinex' renders the tissues more accessible to the sulphathiazole and promotes ventilation and drainage. 'Sulfex' is indicated in nasal and sinus infections—particularly those secondary to the common cold—and in sore throat. It is equally suitable for children and adults.

'Sulfex' is an aqueous suspension of microcrystalline ('Mickraform') sulphathiazole, 5%, in an isotonic solution of 'Paredrinex', 1% (pH 5.5 to 6.5). Issued in 1-oz. and 8-oz. bottles.

Sample and literature on request

MENLEY & JAMES, LIMITED

123 Coldharbour Lane, London, S.E.5

For Smith Kline & French International Co., Owner of the trade mark 'Sulfex'

P.53

Why Ribena in Skin Disorders?

Because the beneficial role of vitamin C in maintaining the integrity of the skin has been evidenced by the good results reported from its use in various skin disorders.

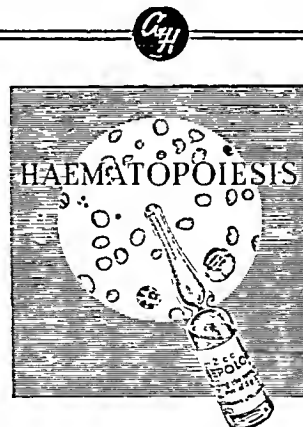
Notably, because excellent results are reported with natural vitamin C, in the form of 'Ribena' blackcurrant syrup in specific cases of skin disorder, for example acne rosacea, allergic skin manifestations, and even psoriasis. Cases of dry skin and flexural eczema, too, in a large group of school children cleared up rapidly when their dietary was supplemented with Ribena. More specific information will be gladly supplied on request.

Ribena is the pure undiluted juice of fresh ripe blackcurrants with sugar, in the form of a delicious syrup. Being freed from all cellular structure of the fruit, it will not upset the most delicate stomach. It is particularly rich in natural vitamin C (not less than 20 mgm. per fluid ounce) and associated factors.

Ribena BLACKCURRANT SYRUP

H. W. CARTER & CO., Ltd. (Dept. 8A.)
The Royal Forest Factory, Coleford, Glos.

Enq.—Inq. should be addressed to Proprietaries (Eire) Ltd.,
17/22, Parkgate Street, Dublin



Hepolon is produced by special processes which conserve all the known hematopoietic principles of the whole liver. It approximates to the extract described by Gänsslen.

Hepolon not only passes the highest clinical tests for potency against pernicious anaemia but contains Whipple's factor, Wills's factor, riboflavin, nicotinic acid, and the hematonic minerals of liver; it gives no reactions for histamine or undesirable protein matter.

Ampones of 2 c.c.; box of 6, 6, box of 12, 11 6, and box of 24, 22-
Rubber-capped vial of 10 c.c., 5 -, and of 30 c.c., 12 6.

HEPOLON

Contains in 100 c.c. the total soluble extractive matter of 250 g. fresh liver.

ALLEN & HANBURY LTD, LONDON. E.2

THE INTRAVAGINAL TAMPON
IN MENSTRUAL HYGIENE

An important clinical study

*Significant facts
obtained by the close
observation of 25 parous
and nonparous women*

In view of the increasing use of the intravaginal tampon for the absorption of the menstrual flow, the following important study was undertaken to determine whether or not this method of sanitary control is safe and not prejudicial to health.

Twenty-five women—parous and nonparous—were selected and were under daily institutional observation during two successive catamenial periods. Ranging in age from twenty-one to forty-five, some had previously used tampons, others had not.

The following summary indicates clearly the findings of the study.

1. In not a single instance was there any evidence of local irritation brought about by the use of the tampons.

2. No uterine cramps, suggestive of block of the uterine flow or damming back into the tubes were reported in any case of this series.

3. No bladder irritation was reported.

4. The average number of tampons used in a period was ten.

5. In cases in which a cervical erosion was present, neither the amount of bleeding nor the character of the erosion was altered by the use of the tampons.

6. There was no appreciable difference in the bacterial flora of the vagina and

cervix, as determined by smear and culture, before menstruation and after the use of the tampons during the menstrual period.

7. There was no appreciable difference in the pH of the vaginal or cervical secretions before menstruation and after the use of the tampons during the period.

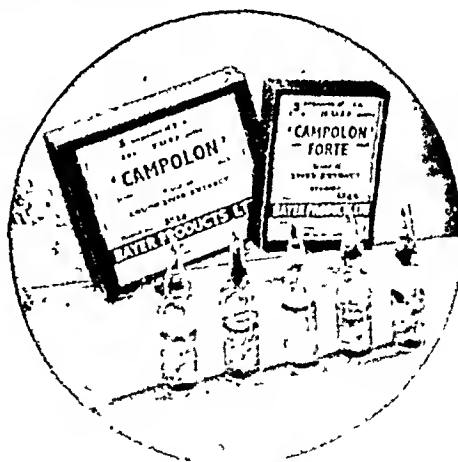
8. Absolute comfort and complete absorption of the flow was obtained by the proper correlation of the size of the tampon with the length and calibre of the vagina.

9. The evidence is conclusive that the tampon method of menstrual hygiene is safe, comfortable and not prejudicial to health.

TAMPAX

If you are not acquainted with Tampax, descriptive literature and samples of both absorbency sizes will gladly be sent on request.

MEDICAL INQUIRIES: TAMPAX LTD., 110 JERMYN ST., S.W.1



CRUDE
LIVER
EXTRACT

'CAMPOLON'

(2 U.S.P. units per c.c.)

Trade Mark

In pernicious anaemia this crude liver extract has proved to be both potent and reliable. Administration of "Campolon" is followed by a prompt and satisfying change in the blood picture and a parallel improvement in the patient's general condition.

'CAMPOLON FORTE' (15 U.S.P. units per c.c.)

A concentrated preparation, this is of especial value in severe cases of pernicious anaemia and in those with neurological symptoms.

Medical literature, giving details of packings, gladly sent on request

BAYER PRODUCTS LIMITED
AFRICA HOUSE, KINGSWAY, W.C.2 (HOL. 2730)

★ AMPLE SUPPLIES ★

ARE AVAILABLE

HEPARIN

(EVANS)

A pure pyrogen-free preparation evolved at The Evans Biological Institute.

Solution — 1,000 i.u. or 5,000 i.u. in r.c. bottles of 5 c.c.

Powder — containers of 100,000 i.u.

Further details on request

EVANS MEDICAL SUPPLIES LTD
Liverpool and London

EVANS

reaction when applied to intact skin, even for prolonged periods. These oils collect in the mouths of the hair follicles, and, when their use in association with cosmetics is accompanied by insufficient attention to skin cleansing, aggregates of oil and particulate matter may give rise to mechanical plugging of the follicle opening. The occurrence of follicular hyperkeratosis, comedones, and sometimes pustular eruptions has been recorded following the use of impure paraffin oils in hair oil (*Year Book of Dermatology and Syphilology*, 1946, p. 277) and also as a result of the application of impure petroleum jelly (yellow soft paraffin). It is likely that the hyperkeratotic reaction in such instances is due to the presence of aromatic hydrocarbons which the refining process has failed to remove. This defect should not occur in medicinal preparations. The introduction of even highly refined paraffins into the subcutaneous tissues gives rise to an oleogranuloma, and consequently this must be borne in mind when application of these oils to damaged skin is considered. The ill effects of paraffin oils on damaged or diseased skin are otherwise due to their physical properties. In general it is undesirable to apply paraffin oils to skin which is inflamed or weeping, as they retain heat, fail to mop up the exudate, and thus render the skin moist and soggy—a condition in which it is especially liable to infection.

Safe Dose of Acetylsalicylic Acid

Q.—*What is the largest dose of acetylsalicylic acid that can be taken within twelve hours without endangering health?*

A.—The amount of acetylsalicylic acid which can be taken with safety varies for different people. Single doses of 20 g. (300 gr.) have been fatal, and some susceptible persons have had a severe allergic reaction after 0.6 g. (10 gr.). The principal danger is from haemorrhage, owing to a fall in the blood prothrombin level. If this is counteracted by giving menaphthone beforehand it is probably safe to take from 5 to 10 g. (75 to 150 gr.) in 12 hours.

Dyspareunia

Q.—*A woman aged 28 has always had severe pain on intercourse. She is normally developed, and no structural abnormality of uterus, ovaries, or parametrium can be felt. Endometrial biopsy also shows no abnormality. The pain can be elicited only by moving the cervix, but is not felt when the uterus is squeezed without being moved. The patient also complains of frequency of micturition, and has had bouts of mild pyrexia. A recent abortion has not altered the pain. Any advice on this problem would be welcome.*

A.—Tenderness of the cervix and the production of pain on moving that organ strongly suggest the presence of disease in the cervix or neighbouring tissue. The other clinical features of this case also point to a diagnosis of chronic cervicitis. If this is deep-seated in the glands, and there is no superficial evidence of it, it may be difficult to exclude. The presence or absence of intermenstrual discharge should help. If chronic cervicitis is present, treatment with surgical diathermy or a graduated course of medical diathermy should be tried. Another possibility is endometriosis in the pouch of Douglas or utero-sacral ligaments; even intermittent pyrexia can be associated with this. For this condition another pregnancy should be encouraged, and if it progresses satisfactorily spontaneous retrogression of the endometriosis might occur. In either of the above conditions, if the pain proves intractable, injection of the paracervical ganglia with a local analgesic is sometimes useful. If no organic disease is present the discomfort might be explained by a congenitally short vagina which exposes the vault and the cervix to an unusual degree of trauma during coitus, or by an inherent hypersensitivity of the cervix. There might also be a psychogenic basis leading to aversion to coitus.

Pig as Vector of Ascaris

Q.—*Is there a greater risk of human infection with roundworm from vegetables grown in soil containing pig manure as compared with other manures? How long do the ova remain viable in manure, and is there any means of destroying them?*

A.—In spite of the fact that the roundworm (*Ascaris suis*) occurring in the pig is morphologically indistinguishable from the roundworm (*Ascaris lumbricoides*) occurring in man, it does not normally develop to maturity in the human host,

although it has been shown that *A. lumbricoides* may reach maturity in the pig if the animal is placed on a vitamin-deficient diet. The pig cannot therefore be regarded as a reservoir for human ascariasis, but it is believed that pigs play a part in the dissemination of eggs of *A. lumbricoides* which have been ingested previously with human faeces. The ova of *Ascaris* commonly remain viable in buried manure for at least a year, although much longer periods have been recorded. During this resting period they are very resistant to chemicals, but may be destroyed by drying, and perish almost immediately if heated to 55° C.

Thickening of Palmar Skin

Q.—*An unmarried female aged 49, well developed and active, is greatly distressed by the formation on both palms of a thickened, dry, rough skin with a tendency to crack and fissure. The condition appears to be hyperkeratosis. What is the treatment?*

A.—A diagnosis is necessary before suggesting treatment in this case, and cannot be made without more knowledge of the patient's general condition, menstrual history, past medical and dermatological history, and family history. The condition might be psoriasis, lichen simplex, constitutional eczema, lichen planus, or keratoderma climactericum, among other things. A patchy hyperkeratosis of palms and soles is occasionally associated with the climacteric and is responsive to oestrogen therapy. Treatment should be undertaken with care, starting probably with 0.5 mg. of stilboestrol daily. It should not be carried to the point of provoking uterine haemorrhage if the periods have stopped. It would, perhaps, be advisable to submit the case to a dermatologist for clinical review before undertaking treatment.

Intravenous Calcium Chloride and Gluconate

Q.—*(a) I understand that intravenous calcium chloride is dangerous to the digitalis-controlled heart. Does this apply to the rapid intravenous injection of calcium gluconate to determine the circulation time? (b) Have fatalities been recorded with this drug, or with ether, saccharin, dehydrocholic acid ("decholin"), or magnesium sulphate? (c) Which is the safest?*

A.—(a) There are numerous reports, both clinical and experimental, on the synergic effects of calcium chloride with digitalis; and fatalities have been recorded in animals and in human beings. On the other hand, many observers have used calcium gluconate without any fatal result in large numbers of patients suffering from serious cardiovascular disease which was fully controlled by digitalis (Goldberg, *Amer. J. med. Sci.*, 1936, 192, 36; Baer and Slipakoff, *Amer. Heart J.*, 1938, 16, 29; Berliner, *Amer. J. med. Sci.*, 1936, 191, 117). H. C. Wall (*Amer. Heart J.*, 1939, 18, 228) pointed out that calcium chloride contained three times as much calcium, weight for weight, as calcium gluconate; and in the former ionization was much greater. The rare fatalities in human beings occurred in extremely ill patients with advanced heart disease. In heart failure the blood volume is greatly increased and the circulation time slowed, these factors acting as safety-valves to the sudden rise of calcium concentration in the chambers of the heart, which apparently causes the fatal outcome (McGuigan and Higgins, *J. Lab. clin. Med.*, 1938, 23, 839). These factors, however, also tend to prevent a precise end-point being attained, and in patients with slow circulation time, and taking less than 5 ml. of calcium gluconate, no subjective sensation may be noticed. Thus, to be safe, intravenous calcium should be given slowly, but this would vitiate the result. Bernstein and Simpkins (*Amer. Heart J.*, 1939, 17, 219) showed that magnesium sulphate had none of the dangers incidental to the use of calcium salts, and gave more exact readings at the slower circulation rates.

(b) No fatalities have been reported following the use of saccharin, dehydrocholic acid, or magnesium sulphate. Leinhardt (*J. Amer. med. Ass.*, 1935, 105, 1759) reported a fatality accompanying the injection of 2.5 ml. of 10% ether in saline in a case of bronchial asthma. He doubted whether this was alone the cause of death, but felt that it was a precipitating factor. Hitzig advises against the injection of saccharin and ether into the same vein, because it may give rise to thrombosis and local pain. If the substances are injected outside the vein severe local reactions occur. The only untoward

effects reported after the use of dehydrocholic acid were in allergic or asthmatic patients. K. J. Norman (*Amer. Heart J.* 1947, 34, 740) mentioned three such cases, in one of which sensitization to the drug itself was acquired.

(c) Dehydrocholic acid, magnesium sulphate, and saccharin are safe, provided allergy is excluded in the case of the first named.

Arcus Senilis

Q.—What significance should be attached to the presence of a well-developed arcus senilis in a man aged 37, with normal blood pressure and without signs or symptoms of cardiovascular disease?

A.—No significance should be attached to this. The writer has under his care one of a family in the members of which a definite arcus senilis develops at about the age of 16 years. The differential diagnosis is from the Kayser-Fleischer ring, which is coloured and is associated with hepatolenticular degeneration (pseudo-sclerosis and Wilson's disease).

Oestrogen Therapy of Menorrhagia

Q.—In the article on sex hormones in therapeutics (*B.M.J.*, Jan. 29, p. 165) it is stated that intensive oestrogen therapy will control heavy and prolonged menstrual bleeding. What would be the most appropriate synthetic drug to use orally, and in what dosage?

A.—The statement was made in reference to so-called functional uterine haemorrhage. Stilboestrol 1 mg., or ethinyl oestradiol 0.05 mg., orally every four hours, might be used. It is emergency treatment in that it controls the bleeding by raising the oestrogen level above the bleeding threshold. There is still the problem of preventing or controlling oestrogen-withdrawal haemorrhage, which is likely to occur when treatment is suspended.

Ptyalism in Pregnancy

Q.—A patient had excessive salivation all through her first pregnancy; she could not swallow the saliva but had to spit. Belladonna or sedatives failed to relieve the condition. She is now pregnant again and the salivation is returning. What treatment do you suggest?

A.—The treatment of ptyalism in pregnancy is difficult because the aetiology is unknown. There is often, however, as in hyperemesis, a psychological underlay which manifests itself by the constant spitting—a conscious or subconscious dislike or fear of pregnancy. Usually the condition clears up by the time quickening is first felt, and this should be impressed on the patient. Calcium gluconate (10 ml. of 10% solution daily) has been given intravenously with good results in some cases. After a similar query was answered some years ago (*April 14, 1945, p. 543*) one correspondent advised putting very thin slices of lemon between the cheeks and the teeth. Another reported having successfully treated a patient with 20 drops of 25% benzyl benzoate in 90% alcohol taken in water every four hours.

Treatment of Asthma

Q.—A female patient of 43 has been subject to acute attacks of hay-fever from the age of 8. Six years ago she developed sharp attacks of asthma lasting several days, usually followed by bronchitis. The asthma has been successfully treated with subcutaneous adrenaline. Unfortunately, however, owing to the frequency of nocturnal mild attacks, I have for many months had to use maintenance doses as a suppressive, and in consequence the patient has become adrenaline-fast. She now complains of palpitation and cardiac pain, both during the severe attacks and for some weeks afterwards, despite prolonged rest in bed. A recent blood count showed R.B.C. 3,500,000 and W.B.C. 16,000 per c.mm., with a haemoglobin value of 75%. I am treating the anaemia with intramuscular injections of "analaemin." Can you make any alternative suggestions for prophylaxis of the mild nocturnal attacks, and what treatment do you recommend during the violent attacks?

A.—For the periodic violent attacks, when adrenaline fails, intravenous aminophylline, 0.48 g. in 20 ml., is usually effective. For alternative nightly prophylaxis one might suggest aminophylline 0.2 to 0.4 g. with or without phenobarbitone

gr. 1 (32 mg.); if there is gastric irritation after aminophylline, enteric-coated aminophylline or glucophylline in similar doses might be tried, or the aminophylline could be given per rectum, 0.5 g. in 10 ml. of water, with a syringe and catheter; alternatively, "franol" (theophylline, ephedrine, and phenobarbitone), 1 or 2 tablets, might be tried, and a favourite prescription in such cases is "caffineine" 1 drachm (3.5 ml.) in water thrice a day. This preparation is made up as follows:

R	Caffeine sod. iodid.	..	..	5 gr. (0.32 g.)
	Sod. iodid.	..	..	5 gr. (0.32 g.)
	Dilute hydriodic acid	..	..	5 m. (0.3 ml.)
	Decoction of coffee	..	..	40 m. (2.4 ml.)
	Water to	..	..	1 fl. dr. (3.5 ml.)

The history and leucocytosis suggest the presence of infection. Is there infection in her sinuses?

Washing-soda in Tea

Q.—A patient who works in a buffet informs me that it is widespread practice to put a handful of washing-soda in a tea urn at each filling to make the tea darker than the strength of the brew would warrant. Would the constant drinking tea so treated be harmful?

A.—It is not likely that any harm would come of the use of washing-soda in tea. But, as with other methods for making tea go further, the resulting drink is not nearly so good as should be.

NOTES AND COMMENTS

Lactation.—Dr. ARMIN RUTISHAUSER (Dessie, Wollo Prov. Ethiopia) writes: In a question about lactation in virgins ("Any Questions?" Nov. 20, 1948, p. 925) it is stated that Margaret Me describes how one of the savage tribes in New Guinea adopts babies who are then breast-fed by women who have never had children of their own. Before the war I spent two years at the hospital Dr. Albert Schweizer, French Equatorial Africa, where I saw following two cases in the obstetrical department. There was a woman who gave birth to a child, but after a few days breast-feeding was impossible, as the breast did not produce any milk, though the baby suckled. All the treatment we undertook had negative results. Then I was asked permission to take mother and child away as the family wanted to consult a sorcerer. I agreed, seeing that we were at a standstill. After some weeks the family came back with the baby all right and mother producing a lot of milk. Another mother died, and her mother, a very old-looking woman with breasts like paper, started to feed the baby after having disappeared for a short time in the jungle. After those experiences my curiosity was aroused and I found out that the women underwent treatment with a result that inactive breasts started to produce milk. During the following year we tried hard to find out what kind of plants were used for this special treatment, but it was quite impossible to get information, as the sorcerers are very anxious to keep their knowledge for themselves. In any case, it would be very interesting to learn more of all the drugs used in Africa, as I am quite sure that there are a great number of very important ones.

Late Menopause.—Dr. HILDA M. DENHOLM-YOUNG (Farningham Kent) writes: Regarding menstruation at age 56 ("Any Questions," April 2, p. 602), the question does not state if the woman was from Shetland or Orkney, where menstruation finishes normally at about 60 and where children are sometimes borne at that age.

Disclaimer.—Mr. HAROLD DODD (London, W.1) writes: During the past week there have been several announcements in the public press with regard to my connexion with the Fife-Openshaw Nursing Home. These have been made in spite of my urgent requests. I begged the Press to confine their statement to the announcement made by Princess Arthur "that she was giving up her connexion with it." My wishes were ignored. Therefore I should be grateful if you would kindly insert this disclaimer.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Attilio Westcott, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* and unless the contrary be stated, authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are sent abroad. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.) TELEPHONE: EUSTON 2111. TELEGRAMS: *Brimmedads, Westcott, London*. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, TELEPHONE: EUSTON 2111. TELEGRAMS: *Medheera, Westcott, London*. B.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY APRIL 23 1949

THE SECRETARY REPORTS

MEETING WITH THE MINISTRY

Representatives of the General Medical Services Committee, headed by Dr. Wand, met representatives of the Ministry of Health on Thursday, April 14, to discuss the case for increased remuneration for general practitioners conveyed to the Ministry on March 4. The Ministry's reply amounted in effect to a refusal to discuss the case until their inquiry now being conducted into the public moneys actually paid to general practitioners for the first nine months of the Service is completed. A full report has been made to the General Medical Services Committee, which met on Thursday, April 21, and a report of the proceedings of that committee will be found in these columns next week.

But, as if by a side wind, another issue arose during the discussion. On being asked whether, in the event of an application being made by the General Medical Services Committee, the question of general-practitioner remuneration could be raised through Whitley machinery and in the event of disagreement recourse had to arbitration, the Secretary of the Ministry of Health stated that "it must not be assumed without further discussion that participation in the Whitley machinery necessarily involves, in the event of disagreement, the right to resort compulsorily to arbitration on all subjects." On being asked to say whether on the subject of remuneration the profession's representatives on the Whitley body could secure arbitration on request, he replied to the same effect, that this must not be assumed. Thus it appears that on what is a crucial issue for the medical profession the Government is proposing to go back on an assurance.

Some evidence of the Government's assurances on this point is given below.

1. During the Second Reading Debate on the National Health Service Bill on Thursday, May 2, 1946, Mr. Greenwood (Lord Privy Seal), replying to the debate on behalf of the Government, said:

"Some references have been made to the conditions of service, remuneration, and so on. As Hon. Members will be aware, the Bill gives the Minister a general power to prescribe by regulations the conditions of service, remuneration, and qualifications of officers and servants employed by the new regional hospital boards or other bodies providing health services under the Bill. It is my right Hon. Friend's intention before prescribing any terms of service or rates of remuneration to use the familiar machinery of discussion and negotiation with employees. Where suitable machinery exists and is in operation it will be used with such adaptations as may be necessary in the new circumstances. What my right Hon. Friend has in mind where there is no machinery is to set up some machinery of the Whitley Council type behind which there may be provision for agreed reference to arbitration should the Whitley Council not be able to carry it out. I think that principle will run all through my Rt. Hon. Friend's administration of this great new Service."

2. On May 25, 1948, when at a meeting between the Minister of Health and representatives of the profession the Minister was asked whether it would be open to the profession immediately after the inception of the Service to raise through Whitley machinery the question of betterment, the Minister replied in the affirmative.

3. In the Government's proposals for Whitley machinery conveyed to the Association in October, 1947, the following paragraphs appear:

DISAGREEMENTS

It is necessary to prescribe the courses available where disagreement arises in any part of the Whitley machine.

(a)

(b) *Functional Council and Central Council.*—It is not possible to give a simple prescription and it is suggested that one of the first duties of the Central Council should be to draw up an agreement defining the field of arbitration. It will suffice here to say that, while the Government hopes that the normal working of Whitleyism will minimize the necessity for arbitration, it is anxious to accord the fullest rights to arbitration subject to the preservation of the Government's prerogatives. A code of conduct is unlikely to be arbitrable, but a simple proposal for a change in wage or salary rates almost certainly is. The necessary machinery can be provided readily by the Ministry of Labour and National Service under the Industrial Courts Act, 1919.

ARBITRATION

Every effort shall be made to accommodate differences of opinion between the two Sides of the Council in order to reach an agreed decision. Where it is impossible to accomplish this, it shall be open to the employers or the staff organizations concerned to seek arbitration in accordance with the terms of an arbitration agreement. In such cases, the matter should be referred to the Minister of Labour and National Service for action under the Industrial Courts Act.

4. In the revised proposals conveyed to the Association in March, 1948, the substance of the last paragraph quoted above was repeated. This paragraph is part of the scheme which has been accepted by the profession.

5. Again and again in the last few years representatives of the profession have been assured by the Ministry—Dr. Dain has asked the question on many occasions—that there would be devised permanent conciliation machinery backed by arbitration to avoid the kind of dispute which has characterized National Health Insurance in the past.

Breach of Undertakings

It is true that the Ministry's statement begins with the words "that it must not be assumed" and refers to further discussions, but it is a departure from a position hitherto maintained and promises given by Ministers and officials. To withdraw the promise of automatic arbitration in the event of disagreement on matters of remuneration would be a breach of many undertakings, a departure from modern negotiating practice, and potentially dangerous to the profession.

Why has this change of front occurred? Clearly, the associations of local authorities have hitherto understood the meaning of the Minister's assurances in terms of compulsory arbitration. We are in good company in the interpretation of the Government's promise on this point. But is the change of front the first sign of an attempt by the Ministry to get the associations of local authorities out of their present difficulty? Clearly an issue of great importance arises.

National Health Service

LABOUR POLICY

When the annual conference of the Labour Party meets at Whitsun it will have before it a pamphlet published by the Party last week entitled *Labour Believes in Britain*. The election programme will be drawn up in the light of the conference's discussions, and before the end of next year the electorate will have an opportunity of deciding whether Britain believes in Labour.

The pamphlet states that as soon as circumstances permit an industrial health service will be set up to "key in" with the National Health Service.

"Some industrial firms have made a praiseworthy start, but over much of industry (including not only factories but offices, warehouses, shops, marshalling yards, and the rest) health standards are far too low. Non-medical factory inspectors and doctors must work hand in hand to achieve a steady improvement in working conditions. Experiments in local organization should be encouraged. As sickness and accident rates fall there will be gain not only in individual health but in production. All who manage industry, whether socialized or private, must place healthy working conditions in the forefront of their plans."

The programme includes the steady development of every part of the National Health Service, including the building of health centres. Enough hospital beds must be provided in properly equipped buildings, and health education of the general public must be extended. "Training of those who wish to enter the medical professions must be brought within the reach of all who can benefit from it, regardless of their incomes. As with the rest of university education, at least three-quarters of the places in the medical schools should be scholarship places."

The Party pats itself on the back again for the lowered infant and maternal mortality. Some of the "first victories of peace," under the Party's four years of rule, are: "Fair shares of necessities. The people, and especially the children, healthier than ever. Record low figures for infant and maternal mortality." The list ends with the piquant statement: "Our new National Health Service is the envy of the world."

COMPENSATION

No claims for the assessment of compensation, submitted for the first time, and received by the Ministry after April 30, will be considered. Applications for advanced payment on grounds of hardship may be made at any time.

ADVISORY APPOINTMENTS COMMITTEES
FEES REDUCED

Members of advisory appointments committees set up under Section 14 of the N.H.S. Act, 1946, will in future be paid 4 guineas for work lasting about half a day instead of the 7 guineas that used to be paid for work lasting a day or less. If the work takes less than an hour or so no payment is to be made. The change has been made because the Ministry of Health has found that the work of a committee rarely exceeds half a day. Members of regional boards or of hospital management committees serving on advisory appointments committees are not debarred from being paid at these rates.

ASSISTANTS DOING OBSTETRICS

Executive councils are empowered by the N.H.S. (General Medical and Pharmaceutical Services) Amending Regulations, 1949, as an exception to permit a practitioner providing maternity medical services to employ for those services a deputy or assistant whose obstetric experience has not been approved by the local obstetric committee. The Ministry of Health states that permission should not be given if it is reasonably practicable for a doctor to use a deputy or assistant whose experience has been approved by the committee.

HOSPITAL BOARD APPOINTMENTS

The following are the medical men appointed to fill the vacancies caused by the retirement in rotation of one-third of the members of the fourteen regional hospital boards in England and Wales. They hold the office until March 31, 1952.

Newcastle Regional Hospital Board.—Reappointed: Mr. D. C. Dickson, Dr. W. Fraser.

Leeds Regional Hospital Board.—Reappointed: Dr. D. C. Muir, Professor M. J. Stewart. New member: Dr. W. W. A. Kelly.

Sheffield Regional Hospital Board.—Reappointed: Dr. J. W. Brown, Dr. J. G. McCrie.

East Anglian Regional Hospital Board.—Reappointed: Dr. J. V. Morris.

North-West Metropolitan Regional Hospital Board.—Reappointed: Mr. A. C. Morson, Dr. H. Joules, Dr. H. E. A. Boldero.

North-East Metropolitan Regional Hospital Board.—Reappointed:
Mr. Somerville Hastings, M.P.

South-East Metropolitan Regional Hospital Board.—Reappointed: Mr. J. R. H. Turton. New member: Mr. H. C. Edwards.

South-West Metropolitan Regional Hospital Board.—Reappointed: Mr. P. H. Mitchiner, Mr. J. M. Wyatt.

Oxford Regional Hospital Board.—Reappointed: Professor A. D. Gardner, Dr. J. S. Skottowe.

South-Western Regional Hospital Board.—Reappointed: Mr. A. L. Candler, Dr. R. E. Hemphill, Dr. S. McClements. New member: Mr. N. L. Capener.

Welsh Regional Hospital Board.—Reappointed: Mr. R. D. Aiyar, Mr. A. H. Coleman, Dr. H. G. Davies.

Birmingham Regional Hospital Board.—Reappointed: Mr. N. Duggan, Professor H. F. Humphreys, Professor Sir Leonard Parsons, F.R.S., Dr. J. J. O'Reilly.

Manchester Regional Hospital Board.—Reappointed: Dr. W. Briggs. New member: Professor W. F. C. Morris.

Liverpool Regional Hospital Board.—Reappointed: Dr. D. Brown
Dr. J. F. Mountford, Mr. D. R. Owen, Professor H. H. Stones.

AUSTRALIAN HEALTH SERVICE

Since the Australian Pharmaceutical Benefits Act was passed in June, 1948, providing free medicines for patients prescribed on a special form, the B.M.A. in Australia has consistently objected to the limited number of medicaments and appliances that may be prescribed in accordance with the formulary. *The Times* (April 13) reports that the B.M.A. and the Government are unlikely to compromise on the issue, and that the B.M.A. has decided to test the constitutional validity of the measure in the High Court. The Minister for Health and Social Services, Mr. McKenna, has stated that since the Act came into force only 117 doctors have prescribed free medicine, and nearly 6,000 have declined to do so.

MEDICAL FILMS

The Film Committee of the Association is anxious to obtain news of medical films that are planned or in the course of production. A number of interesting films have been produced from time to time by practitioners who are authorities on particular subjects. These films are often shown at scientific meetings during the course of a lecture by the author, but with suitable commentary and captions they could be used on other occasions. Sometimes they are the property of particular medical schools and are used in the course of routine lectures. Often, for reasons of expense, only one copy of the film is made, and this copy deteriorates rapidly with frequent projection. Commercial and scientific firms who produce films usually prepare a master copy from which any number of copies can be made. The master copy is never used except for the purpose of taking prints. Failure to adopt this policy has resulted in the loss of motion-picture material, and the Association wishes to bring to the notice of members and others who intend to produce films at any time that it is anxious to give advice and help on the production of films and the provision of copies.

Any information or inquiries in this connexion or any requests for assistance should be addressed to the Secretary of the Association.

Medical Ethics

Eye Testing at Factories

the Central Ethical Committee has considered the practice in some industrial concerns of having the services of an ophthalmologist at a factory at stated times and of notifying the employees that his services are available for eye testing. In some cases Forms O.S.C.1 are being signed by the industrial medical officer. The committee has expressed disapproval of such arrangements when they do not safeguard the general practitioner's recognized custom of referring his patients to the specialist of his own choice, and when they tend to operate to the exclusion of other ophthalmic practitioners in the area.

HEARD AT HEADQUARTERS

Test Case?

Anyone who has studied the various opinions of learned counsel taken by the Association on the question of medical trade unionism will have discovered how complicated the whole issue is, and indeed how much depends on the interpretation that the courts might give to a few words such as 'workmen, masters, and trade. The Medical Practitioners' Union, which is a properly registered trade union and claims the full protection of the Trade Disputes Act, 1906, has also taken counsel's opinion recently. Their counsel met the Association's to discuss the problem, but they could not reach agreement. Commenting on this deadlock, the *Medical World* of April 1 hints of further action, saying, "The Medical Practitioners' Union remains unshaken in its certainty of a sure legal foundation, but it will now have to take the necessary steps to make this certainty manifest to the profession." These words seem to suggest that the M.P.U. will bring a test case of some kind in the courts.

Fit for What?

It is a far cry from the lowing of cattle on primeval plains to our administrators' utterances, but these still bear traces of their ancestry. The emotional and ambiguous connotations of words make it difficult to phrase instructions precisely, and the regulations that so voluminously govern the activities of N.H.S. doctors are labyrinths of saving clauses designed to exclude all meanings but one. Precision of this kind, which is usually achieved only at the expense of clarity, is out of place in letters—a point made by Sir Ernest Gowers in his admirable book *Plain Words*. Imitation "legalese" is far more annoying to read than the genuine article, yet it abounds in letters running on administrative errands throughout the health service. A correspondent tells us that a regional hospital board sent him a letter asking him to certify that the candidate for a job "is 'free from any physical defect or disease which now impairs her capacity satisfactorily to undertake the duties of the post for which she is a candidate.'" The writer of the letter apparently quoted this curious phrase from another document, presumably because he felt that he would be sailing across an uncharted sea if he asked our correspondent to certify that the candidate was fit for the job.

Up to Capacity

The proposed increase in the size of the Council, as a result of bringing in a larger number of directly elected members, the increase not being quite offset by the decrease in other categories, will tax the seating capacity of the council chamber at Headquarters to the full. At present the chamber seats 64 members, with four others—the Chairman, the President, the Chairman of the Representative Body, and the Treasurer—on the dais, but seats have also to be provided for officials. If the recommendations are approved the new Council will be almost equal in number—within two or three—to the first Council of the Association when it was founded in 1832. That Council numbered 70 members. It was widely drawn from all parts of the country, including Edinburgh and Norwich and Swansea. Each member of Council then represented between four and five members of the Association. Each member of the present Council represents between 800 and 900.

Questions Answered

Services without Charge

Q.—(1) Patients frequently ask for smallpox vaccinations and T.A.B. injections as required by shipping companies before they go on pleasure cruises. These people are not "patients" because they are perfectly healthy.

(2) Patients ask for advice and prescriptions on birth control, mostly in cases where the delaying of conception has nothing to do with their health but is prompted by other considerations. They not only require to be fitted with caps, they also require repeatedly prescriptions of chemicals.

(3) Patients are found to need some sort of physiotherapy—e.g., diathermy or ultra-violet light. The doctor has the appliances on his premises. He cannot for 3d. a week treat these cases as part of the N.H.S., though he may be willing to do this for a small fee.

In which of these cases is a fee chargeable?

A.—(1) With very few exceptions—namely, those quoted in paragraph 10 of the First Schedule of the General Medical and Pharmaceutical Services Regulations—a doctor may not demand a fee from one of his public patients. Thus a practitioner will be required to carry out vaccination and T.A.B. injections on one of his public patients without further charge. He can demand a fee if the patient is not included on his public list.

(2) At present it appears that practitioners are expected to give advice and prescriptions on birth control, both for medical and sociological reasons, without charging an additional fee. Representations have been made to the Ministry on this point, and the matter is now under consideration.

(3) At present a practitioner willing to undertake diathermy or ultra-violet therapy on one of his public patients must do so without any additional fee. Representations have been made to the Ministry on this point, and the matter is still under consideration.

Compensation

Q.—The Ministry of Health has notified me that "your claim for compensation under Section 36 of the National Health Service Act, 1946, has been duly considered and the amount of the annual value of the goodwill of your practice for the purpose of calculating compensation has been determined at £2,279." The amount £2,279 represents the average gross receipts for the last three years. Would you please advise me if there are any grounds on which I am entitled to claim any increase on this figure?

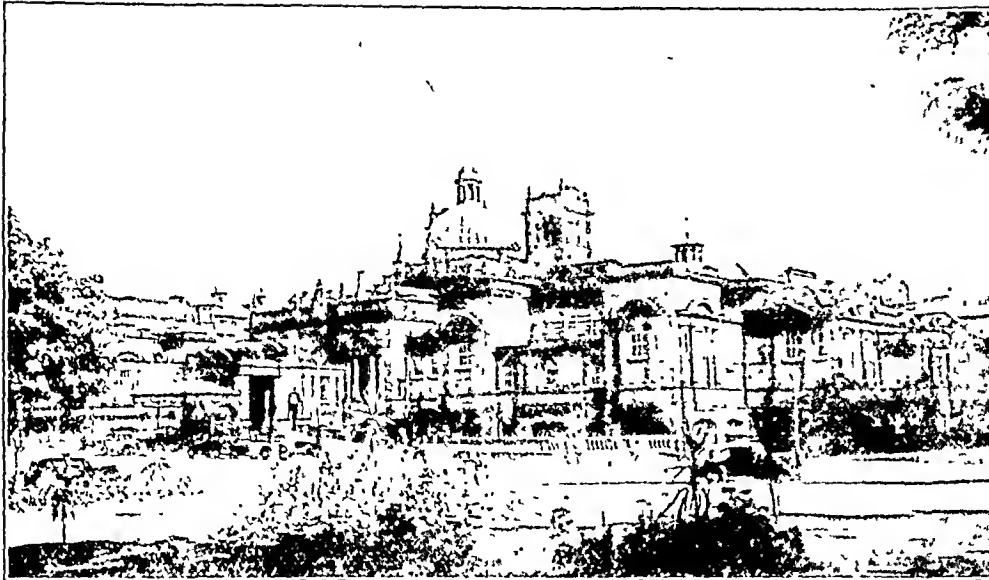
A.—The annual loss is the value of the practice at one year's purchase and is arrived at by taking the average gross receipts for the last two accounting years. This was the usual method of valuing a practice for sale. The actual amount of compensation payable will be a multiple of this sum, but the factor to be applied cannot be determined until the aggregate of all claims is known.

Salary for Trainee Assistant

Q.—What salary is payable by the principal to his trainee assistant, if the salary paid is exactly the amount of the grant payable to the principal under the trainee assistant scheme?

A.—The financial arrangements for the trainee assistant scheme provide for the salary and boarding expenses of the trainee together not exceeding £750 p.a. It is envisaged that in some circumstances it might not be appropriate for the maximum permitted remuneration to be paid. Where the full salary of £750 is paid the example shown in the Supplement of Oct. 30, 1948 (p. 149), should be amended as follows:

(a) Assistant's salary	£600
(b) Board and lodging	£100
(c) Additional car	£150
Total	£850
Less	
(d) Employer's superannuation contribution	£56
(e) Employer's National Insurance contribution	£10 8s
(f) Trainee's contribution to superannuation (6%)	£42
Net total	£741 12s
	or £61 16s.
	per month



The Royal Baths, Harrogate

HARROGATE AND ITS ENVIRONS

BY

T. G. REAH, M.D., M.R.C.P.

"There is nothing in our profession of Physicke more usefull, nor in the workes of nature more admirable, than naturall baths and mineral waters."—(E. Jorden, 1569-1632.)

Since the sixteenth century, when William Slingsby advocated the use of its iron-containing waters, Harrogate has been recognized as a health resort, and until quite recent years its reputation depended mainly upon the internal and external application of its waters. They rise in natural springs, of which there are more than 80.

While success was claimed in the past in the treatment of numerous and diverse diseases, the limitations of the uses of mineral waters have been increasingly recognized in recent years, and new methods of treatment and modifications or elaborations of the older treatments have been introduced as they have become available. A large and well-equipped establishment, the Royal Baths, has been erected by the Harrogate Corporation, at a cost of nearly a quarter of a million pounds, in which the various treatments are given, and in 1939 an extensive new wing costing £80,000 was opened in order to relieve the congestion in the main building and to create more comfortable and convenient surroundings for patients. A wide range of hydrological, electrical, and accessory forms of treatment are thus available for the benefit of patients and in particular for those suffering from the chronic rheumatic disorders.

The Royal Bath Hospital, founded in 1824 and rebuilt in 1889, has 150 beds devoted to the care and treatment of patients suffering from rheumatism. Considerable alterations and extensions are now being made at the hospital, and it is hoped in time to provide accommodation for the long-term treatment of patients confined mainly or entirely to bed. A Rheumatism Research Department has been established, and it is

intended shortly to increase the accommodation for the treatment of ambulatory patients and to make increasing use of the facilities at the Royal Baths for the treatment of patients under the National Health Service Act.

The Harrogate and District General Hospital, with 250 beds, provides for the general medical needs of the town and surrounding district, and there are also in the town a home for patients suffering from incurable diseases and several convalescent homes.

The town itself is situated half-way between London and Edinburgh, at about 400 ft. above sea-level, on the edge of the Yorkshire Moors. There are over 350 acres of open spaces, of which the most remarkable is the Stray, an expanse of 200 acres in the centre of the town, which originally was part of

the old Forest of Knaresborough and is now preserved for all time by Act of Parliament. From the top of the Observatory Tower on Harlow Hill, at a height of nearly 700 ft. above sea-level, there can be seen on a clear day the Rivers Humber and Tees, York, Ripon, a score of other towns, and numerous castles, abbeys, and parks.

The town is also a centre unique in the number of places of historic and scenic interest to which it leads. Three miles away is Knaresborough, rising from the precipitous banks of the River Nidd and crowned by its fourteenth-century castle. It was to Knaresborough that Constable de Moreville fled in 1170 after the murder of Thomas à Becket, and Richard II was imprisoned there in 1399—tradition says in the room now known as the King's Chamber—before his death a year later at Pontefract.

St. Robert the Hermit and Mother Shipton with her uncanny prophecies will always be associated with the town, and Thomas Hood has told the grim story of Eugene Aram, who was executed 14 years after his murder of Daniel Clarke. The Dropping Well, a petrifying spring, is one of the town's natural curiosities; the water runs over an overhanging ledge into a

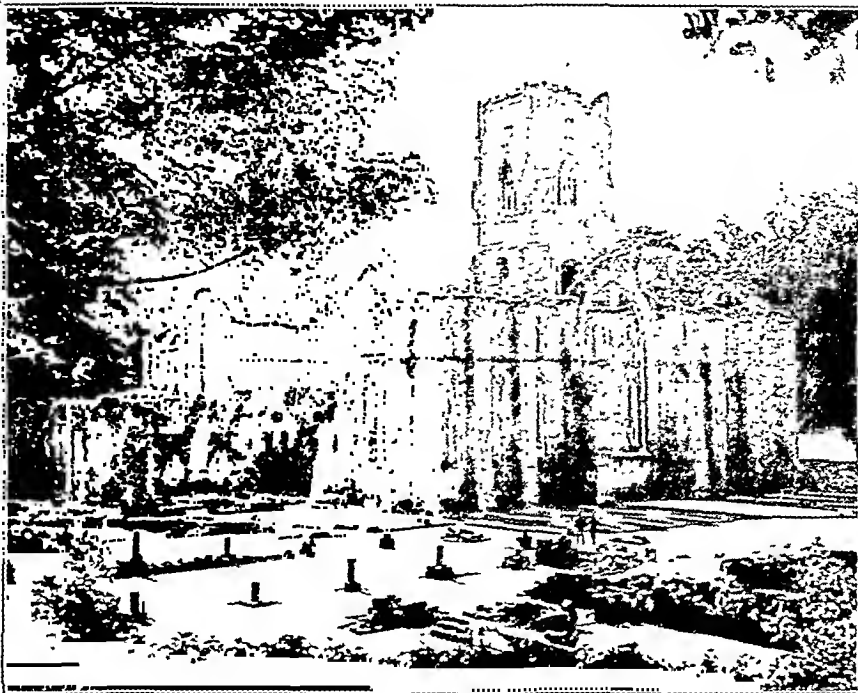


Valley Gardens, Harrogate

rock bowl below, and its lime content impregnates the various articles which have been suspended in it, converting them apparently into stone.

Ripley, once an important market-town, is a pleasant village three miles to the north of Harrogate, and still has a market cross and stocks. The castle, with its Cromwellian associations, is the home of Sir William and Lady Ingilby, who have kindly consented to welcome those who join the excursions to Ripley. The church, believed to have been built about 1400, has several fine monuments to the Ingilby family, including a tomb bearing the mutilated effigy of Sir Thomas Ingilby (died 1369), the founder of the family. In the churchyard is a rare mediaeval penitents' cross, probably about 700 years old.

The City of Ripon, 11 miles from Harrogate, received its first charter of liberties and privileges as a corporate community in 886, when its chief magistrate was styled "Wake-man." It is therefore full of historic associations. The cathedral contains a Saxon crypt built about 670, but its main structure was erected between 1154 and 1530 and later restored by Sir Gilbert Scott. The Wakeman's House, in a corner of the market-place, is a quaint thirteenth-century building, formerly the residence of the wakemen (mayors) of Ripon and completely furnished in the style of the sixteenth and seventeenth centuries. St. Anne's Hospital, St. Mary Magdalene Hospital, and Thorpe Prebend House are all of considerable antiquarian interest. Several ancient city customs are still retained, such as the sounding of a horn at the market cross at 9 o'clock every evening, a practice that originated before 1088. A civic reception has been arranged by the Mayor for



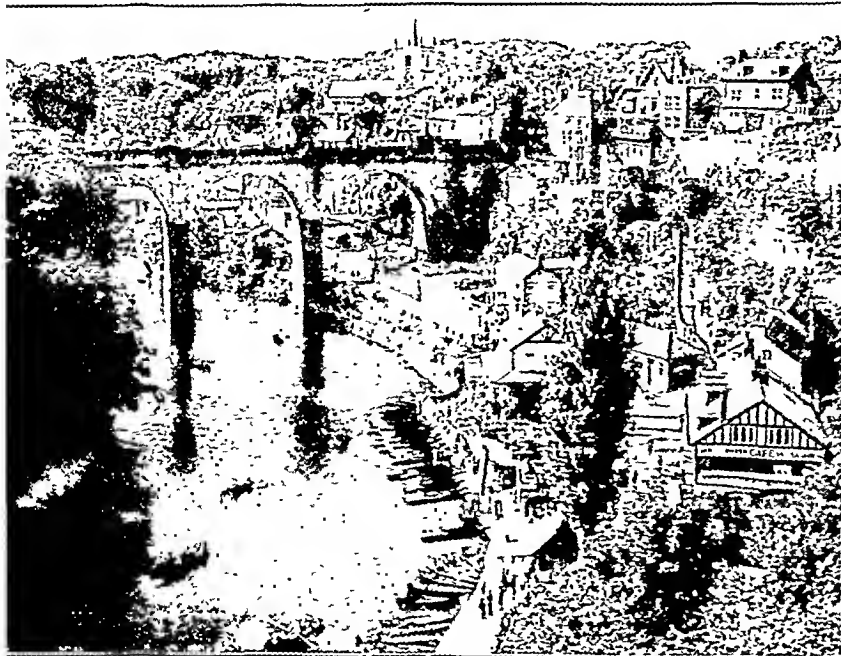
Fountains Abbey

those visiting the city, and a particular privilege will be the sounding of the horn after the reception.

A short distance from Ripon is Fountains Abbey, unsurpassed in beauty among all the ruins of England and of them all the most completely preserved. Magnificently situated in the wooded valley of the River Skell, the abbey was founded in the early years of the twelfth century by 13 monks from the Benedictine Abbey of St. Mary at York, who obtained permission from the Archbishop of York to live under the stricter rules of the Cistercians. After considerable initial hardships their conditions improved, and the house gradually grew in possessions and in reputation until its suppression in 1539, when

it was surrendered to Henry VIII by its last Abbot, Marmaduke Bradley. The abbey is best approached through the park of Studley Royal, the home of Commander and Lady Doris Vyner, who have kindly agreed to welcome one of the parties of visitors. An avenue of limes and beeches leads to a thirteenth-century bridge and mill with near-by yews which gave the founder monks their first shelter. The Great Tower, built by Abbot Huby in Tudor days, is in the Perpendicular style, and there are considerable remains of the church, with its massive nave pillars. The Chapel of the Nine Altars, the chapter-house, and the refectory were noble buildings, and the cellarium is unique in that in all our ruins there is no range of ancient arches comparable to it.

Adjacent to the abbey is Fountains Hall, a fine example of Jacobean architecture, built by Sir Christopher Proctor in 1611 from stone removed from the old infirmary buildings after



Knaresborough, Yorks

the Dissolution. There is a spacious banqueting hall with a minstrel gallery, a bedroom with a secret panel, rare tapestries, and a huge stone fireplace with a quaint panel depicting the Judgment of Solomon. A museum upstairs contains among its original documents the foundation charter of the abbey.

By gracious permission of H.R.H. the Princess Royal and the Earl of Harewood parties are to visit Harewood Park and Gardens. Above the valley of the Wharfe, in the park of 1,800 acres with its old beeches and 50-acre lake, are a church, founded early in the twelfth century, and a ruined fourteenth-century castle. Of the original church only the bowl of the font remains, and the present building is mainly fifteenth century, but it was restored in the eighteenth century and again by Sir Gilbert Scott.

Templenewsam, the "Templestowe" of *Ivanhoe* and the birthplace of Lord Darnley, husband and cousin of Mary Queen of Scots, is now used as an art gallery and museum by the City of Leeds. Its portraits, oak panelling, carved and gilded furniture, armoury, and ivories are only a few of the treasures housed in this historic building.

The City of York, with its magnificent minster, its Roman wall, and its innumerable museums and buildings of historic interest, is 22 miles from Harrogate. The Lord Mayor has kindly consented to arrange for the civic plate to be shown on one of the excursions to the city and to entertain the party to tea.

By the River Wharfe the ruins of Bolton Abbey have been painted by Turner and have inspired Ruskin and Wordsworth. The nave of the priory church is still used as the parish church, but the rest of the buildings are in ruins. Also in Wharfedale are Appletreewick, as attractive as its name; and Burnsall; both are for ever associated with Sir Walter Craven, the Yorkshire Dick Whittington, who became Lord Mayor of London in 1611.

At Brimham Rocks, 1,000 ft. above sea-level, on a moorland plateau of 60 acres, great rocks have by time and weather been converted into a series of grotesque and striking shapes, of which the largest weighs about 100 tons.

On the site of the ancient Roman city of Isurium now stands the village of Aldborough. In its museum are preserved the antiquities found in the neighbourhood; it is to be visited by the kindness of Lady Lawson Tancred. The church has a fourteenth-century nave, and its fifteenth-century tower is said to have been built from some of the materials of the Roman city.

Rievaulx Abbey, built in 1130 by a band of Cistercian monks on the banks of the River Rye, is unusual in that the alignment of the monastery is north and south instead of east and west, because of the fall of the land. A short distance away, Byland Abbey, another Cistercian foundation, at the foot of the Hambleton Hills, is a very early example of English Gothic. The village of Coxwold in the Vale of Mowbray is also near by, and it was here that Laurence Sterne, vicar of the parish from 1762, wrote the later volumes of *Tristram Shandy* and also *A Sentimental Journey*.

From Harrogate to Wensleydale the road passes through West Tanfield, with its church containing the Marmion tombs, to Middleham, with its Norman castle and its famous racing stables. Charles Kingsley was one of the last of the canons of the collegiate church here. In the neighbouring dale of the River Swale the road passes through lofty moors, steep-sided fells, and grey stone villages to Richmond, whose castle dominates the surrounding country.

The grimness of the West Riding of Yorkshire will be seen on a visit to the Brontë country and the parsonage at Haworth, where this strange family of genius arrived in the spring of 1820. The parsonage, overlooking the bleak churchyard, now belongs to the Brontë Society, and a new wing has been added, but the original rooms are much as when the family lived in them.

One aspect of the industrial life of the West Riding will be seen on a visit arranged for doctors' wives to Listers Mills at Manningham, Bradford. By the kindness of the directors of the firm the whole process in the manufacture of a fabric (velvet) will be seen—the combing of the wool and its carding, spinning, and weaving. Finally there will be a demonstration of the finished products of the firm.

British Medical Association

ONE HUNDRED AND SEVENTEENTH ANNUAL MEETING.

HARROGATE, JUNE 24 TO JULY 1, 1949

President-Elect: C. W. CURTIS BAIN, M.C., D.M., F.R.C.P., Senior Physician, Harrogate General Hospital.

Local General Secretary: D. D. PAYNE, M.D., D.P.H. } B.M.A. Office, Royal Baths, Harrogate.

Executive Officer: G. A. PECK, B.Sc.

Local Science Secretary: J. V. WILSON, M.D., M.R.C.P., Department of Pathology, Harrogate General Hospital.

PROGRAMME

Complete particulars of the programme for the Annual Meeting will be found in the following pages. A longer period is devoted to the scientific meetings, which should prove of exceptional interest. On the social side a very full programme has been drawn up, including numerous excursions to places of interest in the neighbourhood, civic receptions, dances, theatres, concerts, and every kind of sport. It is hoped that the programme so arranged will provide suitable entertainment for visitors and make the meetings successful and enjoyable.

The Annual Representative Meeting will begin at the Royal Hall, Harrogate, on Friday, June 24, at 10 a.m., continuing all day on Saturday and Monday and, if necessary, on Tuesday morning.

The Representatives' Dinner will take place at 7.30 p.m. on Monday, June 27, at the Grand Hotel, and it will be followed at 9 p.m. by the Statutory Annual General Meeting, which will be held in the Ballroom of the Grand Hotel. The adjourned Annual General Meeting and President's

Address will take place in the Royal Hall on Tuesday, June 28, at 8.30 p.m., followed by the President's Reception in the Lounge Hall.

The Annual Dinner of the Association will take place on Thursday, June 30, at 7.30 p.m. in the Majestic Hotel.

The Popular Lecture will be given in the Royal Hall on Friday, July 1, at 8.30 p.m.

The Official Religious Service will be held in St. Peter's Church at 3 p.m. on Tuesday, June 28, and Catholic Benediction will be held in St. Robert's Church at 3 p.m. on Thursday, June 30.

The Reception Room for registration, in the Sun Pavilion, will be opened on Monday, June 27, at 2 p.m. The Ladies' Club will be at the Prospect Hotel.

The Annual Exhibition of Surgical Appliances, Foods, Drugs, and Books will be housed in the Sun Pavilion. The official opening will take place on Tuesday, June 28, at 9 a.m.; it will remain open on June 29 and 30 and July 1 from 9 a.m. to 6 p.m.

The Pathological Museum in the Royal Bath Hospital, Cornwall Road, will be opened on Tuesday, June 28, at 9.30 a.m. and will remain open for the rest of the Meeting. It is hoped to hold a Civic Reception in the Royal Hall on Wednesday evening, June 29.

The local Division is giving a Garden Party open to all members and friends on Thursday, June 30, at 4 o'clock, in the gardens of the *Majestic Hotel*.

The President-Elect has kindly offered to give a sherry party at his house for the Representatives on Thursday evening, June 23.

There will also be a Concert for the Representatives in the Royal Hall on Sunday evening, June 26.

The usual Golf and Chess Competitions will be held.

HOTEL AND LODGING ACCOMMODATION

Harrogate is fortunately placed as regards hotel and other accommodation to suit every requirement. No booking of accommodation for members will be undertaken by the B.M.A. other than for overseas guests. Members intending to be present at the Meeting who have not already booked accommodation are strongly advised to make their arrangements without any further delay, as hotel and boarding-house accommodation is becoming very fully booked up for the period of the conference.

A list of guest and apartment houses can be obtained on application to the Executive Officer, B.M.A. Office, Royal Baths, Harrogate.

To assist members in making their arrangements a list of hotels with accommodation still available is given below. The rates quoted are not guaranteed, but are those published up to date. In order to benefit from the special conference terms, every member should mention when applying that he is attending the B.M.A. Conference.

Name and Address of Hotel	Tel No	Garage	Total No of Guests	Full Board (3 Days or more) per Day	Bed and Breakfast 3 Days (or more)
Avondale, Cold Bath Road	3686	No	30	20/-	12/-
Bella Vista, 23, Harlow Moor Drive	5890	No	14	15/6	9/6
Berkeley Court, 35, Victoria Av	430811	Yes	35	21/-	13/6
Boston Swan Road	2918	Open yard	30	18/6	13/6
Brentwood, 6, Granby Road	83083	No	14	16/6	10/6
Britannia Lodge, Swan Road	4206	No	16	21/-	12/6
Camp Hydro, Ripon Road		Yes	240	35/-	21/-
Cambridge, 4, Cambridge Cres	50511	No	27	19/6	12/6
Cavendish Lodge, 5, Kent Road	623611	Yes	14	21/-	12/6
Convancham Hall, Knaresborough (3 miles distant)	K'bro' 2281	Yes	26	21/-	16/-
Eversfield, 1, Swan Road	204511	No	14	25/-	12/6
Fearnlea, Swan Road	5491	No	25	21/-	12/6
*Granby, Granby Road	3046-8	Yes	100	30/-	19/-
*Grand, Cornall Road	4631	Yes	200	45/-	32/6
Harrogate, 11, Swan Road	4051	Yes	300	30/-	21/-
	281211	No	36	18/-	16/-
	2757	For 1 car	50	25/6	17/6
	4472	No	60-70	22/6	12/6
Liltham, Valley Drive	234711	No	80	25/-	15/-
Lion House, West Park	248411	Adjoining	40	21/-	17/6
Lynwood, 6, North Park Road	6271	No	20	21/-	17/6
*Majestic, Ripon Road	2261	Yes	300	45/-	30/-
Manor, Clarence Drive	391611	No	16	22/6	12/6
Marlborough, 53, Valley Drive	5477	No	16-20	20/-	12/6
Metropole, Valley Drive	593211	No	32	21/-	12/6
Mount Edgcombe, 103-105, Valley Drive	237211	Open yard	30	21/-	13/6
Normandene, 2, Valley Road	624811	No	26	15/-	10/6
Octagon Valley Drive	2611	No	36	22/6	15/-
Pinemoor, Harlow Moor Drive	345111	No	20	21/-	12/6
*Prince of Wales, West Park	6675	Yes	210	42/6	30/6
*Prospect, Prospect Place	5071	Adjoining	150	37/6	27/6
Ridings, Springfield Avenue	2602	No	25	21/-	12/6
Riversdale, 12-19, Valley Drive	6193	No	30	20/-	12/6
Russell Valley Drive	3134	No	50	27/6	12/6
Santa Rosa, 19, Dragon Parade	6276	No	17	15/-	8/6
*Somerset, Park Lane, Harrogate	490111	Yes	10	20/-	14/-
Valley Garuets, Valley Drive	3239	No	19	19/6	14/6
6007-9	2539	No	28	30/-	15/-
Valley Garuets, Valley Drive	3575	Yes	20	24/-	15/-
*Victoria, Esplanade	313711	Yes	70	21/-	12/6
Wintingham Hall, Knaresborough (3 miles distant)	K'bro' 2316	Yes	15	23/-	13/6
			26	21/-	12/6

* Licensed hotels.

Note—Ration books are required for visitors to hotels staying more than four nights.

REGULATIONS REGARDING DRESS

Robes with hoods are to be worn at: the Official Religious Service, Tuesday, June 28, at 3 p.m.; the President's Address, Tuesday, June 28, at 8.30 p.m.; the President's Reception, Tuesday, June 28, at 9.30 p.m.; the Mayor's Reception, Wednesday, June 29, at 8.30 p.m.; the Roman Catholic Service, Thursday, June 30, at 3 p.m.

Robes may be hired from Messrs Ede and Ravenscroft, Ltd., 93, Chancery Lane, W.C.2, and should be sent direct to the hotel or other accommodation in which the hirer is resident and not to the Reception Office.

Evening Dress (Tails or Dinner Jacket) with Decorations is to be worn at the President's Reception, Civic Reception, and Annual Dinner. Dress is optional for the Representatives' Dinner.

REGISTRATION FEE AT ANNUAL MEETINGS

The expenditure arising in connexion with the Annual Meetings has in the past been met from a guarantee fund raised by the local profession, supplemented by a grant from the Council of the Association. The Council considers that the time has come when the proportion of the expenses falling upon the local profession should be minimized. With this object in view the Council, while continuing the central grant, has decided that members attending the Annual Meeting (other than members of the Representative Body and overseas visitors) should be asked to pay a fee of one guinea towards the expenses of the meeting. The fee of one guinea will be payable when members register at the Reception Office, Sun Pavilion, Harrogate.

OFFICIAL RELIGIOUS SERVICE

The Official Religious Service will be held in St. Peter's Church, Harrogate, on Tuesday, June 28, and the sermon will be given by His Grace the Archbishop of York. The service will be broadcast in the Northern Programme, and the church is likely to be full. It has therefore been decided to issue tickets for the Procession, for which academic dress is required. It will then be possible to ascertain how many seats will be available for wives and friends. Application for tickets, which will admit to the robing-room at the Royal Hall, can be made on a form which will be enclosed in a future issue of the *Journal*. The tickets themselves will be issued at the Reception Office, Sun Pavilion, from 2 p.m. on Monday, June 27. Members of Council and Representatives will be able to obtain their tickets for robing at the A.R.M. Inquiry Office, Royal Hall, from Friday, June 24. Should the number of members intending to take part in the procession be less than the seating accommodation at the church, additional tickets for admission to the church will be issued on Tuesday morning in order of application. Those receiving them must be in their seats by 2.30 p.m. Those taking part in the procession should reach the Royal Hall by 2 p.m., as all the congregation must be seated before the broadcast begins at 3 p.m.

EXCURSION PROGRAMME

Excursions to places of interest in the neighbourhood of Harrogate are likely to prove a great attraction to the doctors and their wives attending the Annual Meeting. Arrangements for transport and refreshments have already had to be made and the numbers fixed for each excursion. In order to avoid disappointment those wishing to take part in any of the excursions* should therefore fill in the form to be issued shortly and send it, with the appropriate payment, to the Executive Officer, B.M.A. Office, Royal Baths, Harrogate, Yorks. Cheques should be made payable to "The British Medical Association" and crossed.

Applications will be acknowledged at once, but the reserved tickets will be collected at the Reception Office, Sun Pavilion, Harrogate, at any time after 2 p.m. on Monday, June 27, except in the case of Representatives and Members of Council, whose tickets will be issued at the A.R.M. Inquiry Office, Royal Hall, Harrogate, between June 24 and 27.

Tickets for functions other than excursions may not be reserved in advance but will be obtained at the Reception Office at the time of the meeting, as in former years.

*The short morning and evening excursions may also be booked at the time of the meeting at Harrogate.

SCIENTIFIC SECTIONS

The clinical and scientific work will be divided among eighteen Sections, meeting on Tuesday, Wednesday, Thursday, and Friday, June 28, 29, and 30, and July 1.

The Sections will meet in various hotels (see programme).

Below is a list of the names of the Sections and the officers appointed to each, together with provisional programmes.

The following Sections will meet on Four Days:

MEDICINE

President: Professor R. E. TUNBRIDGE, O.B.E., M.Sc., M.D., F.R.C.P. (Leeds).

Vice-Presidents: R. R. BOMFORD, D.M., F.R.C.P. (London); Professor H. W. FULLERTON, M.D., M.R.C.P. (Aberdeen); Professor A. P. THOMSON, M.C., M.D., F.R.C.P. (Birmingham).

Hon. Secretaries: T. G. REAH, M.D., M.R.C.P., 4, Spring Grove, Harrogate; J. L. LOVINOND, M.D., F.R.C.P., 81, Harley Street, W.1.

Meeting-place: Harrogate Hydro.

The following programme has been arranged:

Tuesday, June 28.—10 a.m., *Discussion:* Diabetes Mellitus. To be opened by Dr. R. D. LAWRENCE (London), followed by Professor R. E. TUNBRIDGE (Leeds), Insulin and Diet; Mr. H. H. FOURACRE BARNES (London) and Dr. CHARLES ROLLAND (Edinburgh), Pregnancy Aspects; Mr. D. A. HALL, Ph.D. (Leeds), Rapid Blood Sugar Estimations; Dr. R. G. PALEY (Leeds), Skin Complications of Insulin Injections; and Dr. A. J. BALLANTYNE (Glasgow), Ocular Complications.

Wednesday, June 29 (Combined Meeting with Section of Surgery).—10 a.m., *Discussion:* Treatment of Peptic Ulcers. To be introduced and summarized by Sir HENRY COHEN (Liverpool). Opening paper by the late Mr. A. HEDLEY VISICK (York) to be read by Dr. C. N. PULVERTAFT (York), followed by Dr. RICHARD DOLL (London), Sociological Aspects; and Mr. A. D. BEATTIE (Leicester), Surgical Aspect.

Thursday, June 30.—10 a.m., *Papers:* (1) Radioactive Substances in Clinical Medicine, by Dr. RUSSELL FRASER (London); (2) Anticoagulants, by Professor H. W. FULLERTON (Aberdeen); (3) Streptomycin, by Dr. GEOFFREY MARSHALL (London).

Friday, July 1.—10 a.m., *Discussion:* Cirrhosis of the Liver. To be opened by Professor J. W. MCNEE (Glasgow), followed by Dr. N. H. MARTIN (London), Pathology; Mr. J. E. RICHARDSON (London), Surgical Aspects; and Dr. E. R. CULLINAN (London), Summary.

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. *Demonstration:* The Role of Surgery in Rheumatism. "Movement is Life" (Lucas-Championnière).

OBSTETRICS AND GYNAECOLOGY

President: Professor A. M. CLAYE, M.D., F.R.C.S., F.R.C.O.G. (Leeds).

Vice-Presidents: GLADYS KAY, M.D. (Harrogate); Professor T. N. A. JEFFCOATE, M.D., F.R.C.S.Ed., F.R.C.O.G. (Liverpool); ARNOLD L. WALKER, M.B., F.R.C.S., F.R.C.O.G. (London).

Hon. Secretaries: C. RUTHERFORD MORISON, M.D., M.R.C.O.G., 2, Lancaster Road, Harrogate; Miss JOSEPHINE BARNES, D.M., F.R.C.S., M.R.C.P., M.R.C.O.G., 7, Wimpole Street, W.1.

Meeting-place: Prince of Wales Hotel.

The following programme has been arranged:

Tuesday, June 28.—10 a.m., *Discussion:* Breech Presentation and its Management. To be opened by Mr. R. NEWTON (Manchester), followed by Mr. C. M. MARSHALL (Liverpool), Mr. B. L. JEAFFRESON (Leeds), and others.

Wednesday, June 29 (Combined Meeting with Section of Radiology).—10 a.m., *Discussion:* The Value of X-ray in Assessing Disproportion. To be opened jointly by Professor CHASSAR MOIR (Oxford) and Dr. J. BLAIR HARTLEY (Manchester), followed by Miss MEAVE KENNY (London) and Dr. S. JOSEPHS (Newcastle-upon-Tyne).

Thursday, June 30 (Combined Meeting with Section of Dermatology).—10 a.m., *Discussion:* Pruritus Vulvae. To be opened by Professor T. N. A. JEFFCOATE (Liverpool) and Dr. G. A. GRANT PETERKIN (Edinburgh), followed by Dr. ELIZABETH HUNT (London).

Friday, July 1.—10 a.m., *Discussion:* Functional Uterine Haemorrhage. To be opened by Mr. V. B. GREEN-ARMYtage (London), followed by Dr. P. M. F. BISHOP (London) and Dr. T. N. MACGREGOR (Edinburgh).

PATHOLOGY AND BACTERIOLOGY

President: Professor R. J. V. PULVERTAFT, M.D., F.R.C.P. (London).

Vice-Presidents: Professor T. F. HEWER, M.D., F.R.C.P. (Bristol); J. G. GREENFIELD, M.D., F.R.C.P. (London); A. H. T. ROBB-SMITH, M.D., M.R.C.P. (Oxford).

Hon. Secretaries: J. V. WILSON, M.D., M.R.C.P., Harrogate General Hospital, Harrogate; Professor H. A. MAGNUS, M.D., Department of Pathology, King's College Hospital, Denmark Hill, S.E.5.

Meeting-place: Grand Hotel.

The following programme has been arranged:

Tuesday, June 28.—10 a.m., *Discussion:* The Laboratory Diagnosis and Prevention of Whooping-cough. To be opened by Professor R. CRICKSHANK (London), followed by Dr. W. C. COCKNURN (London) and Dr. G. EVANS (Manchester).

Wednesday, June 29 (Combined Meeting with Section of Tropical Medicine).—10 a.m., *Discussion:* Fat Metabolism and the Sprue Syndrome. To be opened by Professor A. C. FRAZER (Birmingham), followed by Dr. DOUGLAS BLACK (Manchester), Dr. K. D. KEELE (London), and others.

Thursday, June 30.—10 a.m., *Discussion:* Chemotherapy in the Treatment of Malignant Disease. To be opened by Professor E. C. DODDS (London), followed by Sir STANFORD CADE (London), Professor A. HADDOW (London), and Professor F. DICKENS (London).

Friday, July 1.—(Subjects and speakers to be arranged.)

RADIOLOGY

President: J. L. A. GROUT, F.R.C.S.Ed., D.M.R.E., F.F.R. (Sheffield).

Vice-Presidents: C. G. HITCHCOCK, M.R.C.S., L.R.C.P. (Harrogate); J. ALEX. THOMSON, M.B., Ch.B., D.M.R.E. (Harrogate); Professor BRIAN W. WINDEYER, F.R.C.S.Ed., D.M.R.E., F.F.R. (London).

Hon. Secretaries: C. N. PULVERTAFT, M.B., B.Ch., D.M.R.E., York County Hospital, York; JOHN R. NUTTALL, M.D., F.F.R., D.M.R., Radium Department, General Infirmary, Leeds.

The following programme has been arranged:

Tuesday, June 28. *Meeting-place:* Queen Hotel (Therapeutic Meeting).—10 a.m., *Discussion:* The Scope and Limitation of Radiotherapy. To be opened jointly by Dr. J. S. FULTON (Liverpool) and Dr. CHESTER WILLIAMS (Bradford).

Wednesday, June 29. *Meeting-place:* Prince of Wales Hotel (Combined Meeting with Section of Obstetrics and Gynaecology).—10 a.m., *Discussion:* The Value of X-ray in Assessing Disproportion. To be opened jointly by Professor CHASSAR MOIR (Oxford) and Dr. J. BLAIR HARTLEY (Manchester), followed by Miss MEAVE KENNY (London) and Dr. S. JOSEPHS (Newcastle-upon-Tyne).

Wednesday, June 29. *Meeting-place:* Prince of Wales Hotel (Therapeutic Meeting).—10 a.m., *Discussion:* Radiotherapy in Spondylitis Ankylopoietica and Osteoarthritis. To be opened by Dr. E. L. GWENDOLEN HILTON (London), followed by Dr. MARGARET D. SNELLING (London) and Dr. L. JANET MALLENDER (Leeds).

Thursday, June 30. *Meeting-place:* Majestic Hotel (Combined Meeting with Section of Cardiology).—10 a.m., *Discussion:* Angiocardiography. To be opened jointly by Dr. FRANCES GARDNER (London), Interpretation of Normal Angiocardiograms; of those seen in Cases of Cyanotic Heart Disease, and in Aortitis and Aortic Aneurysm; and Dr. J. WILKIN (Sheffield), Technical Considerations; Demonstration of Angiocardiograms. Followed by Dr. K. D. KEELE (London), Angiocardiograms in Acyanotic Heart Disease; Dr. T. H. HILLS (London), Angiocardiograms in Cyanotic Heart Disease; and Dr. F. JACKSON (London), Present Trends in North American Clinics.

Friday, July 1. *Meeting-place:* Queen Hotel (Diagnostic Meeting).—10 a.m., *Discussion:* Radiology of Joints. To be opened by Dr. E. DUFF GRAY (Manchester), followed by Dr. P. H. WHITAKER (Liverpool) and Dr. J. B. KING (Edinburgh).

SURGERY

President: T. V. PEARCE, M.D., F.R.C.S. (Harrogate).

Vice-Presidents: H. HAMILTON STEWART, F.R.C.S. (Bradford); IAN J. FRASER, D.S.O., O.B.E., F.R.C.S. (Belfast); Sir CECIL P. G. WAKELEY, F.R.C.S., F.R.A.C.S., F.R.S.Ed. (London).

Hon. Secretaries: GORDON N. BAILEY, M.A., M.B., F.R.C.S., 2, Lancaster Road, Harrogate; RODNEY SMITH, M.S., F.R.C.S., 6, Devonshire Place, W.1.

Meeting-places: Majestic Hotel (Tuesday, Thursday, and Friday) and Harrogate Hydro (Wednesday).

The following programme has been arranged:

Tuesday, June 28.—10 a.m., *Discussion:* Prostatic Obstruction. To be opened by Mr. H. HAMILTON STEWART (Bradford), followed by Mr. WILSON HEY (Manchester), Mr. ASHTON MILLER (Bristol), and Mr. JOHN SWINNEY (Newcastle-upon-Tyne).

Wednesday, June 29 (Combined Meeting with Section of Medicine).—10 a.m., *Discussion:* Treatment of Peptic Ulcers. To be introduced and summarized by Sir HENRY COHEN (Liverpool). Opening Paper by the late Mr. A. HEDLEY VISICK (York), to be read by Dr. C. N. PULVERTAFT (York), followed by Dr. RICHARD DOLL (London), Sociological Aspects; and Mr. A. D. BEATTIE (Leicester), Surgical Aspect.

Thursday, June 30 (Combined Meeting with Section of Neurology and Psychiatry).—10 a.m., *Discussion:* The Treatment, After-Treatment, and Sequelae of Closed Injuries to the Head. To be opened by Professor NORMAN MCMONISH DOTT (Edinburgh), followed by Dr. W. RITCHIE RUSSELL (Oxford), Rehabilitation after Head Injury; and Dr. E. STENGEL (Chichester), Psychiatric Aspects of Head Injury. 2.30 p.m., *Occasional Paper:* The Mechanism of Speech and the Repair of a Cleft Palate, by Mr. MICHAEL OLDFIELD (Leeds), illustrated by coloured film and drawings.

Friday, July 1.—10 a.m., *Discussion:* Pain in the Right Iliac Fossa. To be opened by Dr. A. FULLERTON (Batley), followed by Professor D. CHAMBERLAIN (Leeds), Mr. R. K. BOWES (London), and Mr. G. H. MACNAB (London).

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. *Demonstration:* The Role of Surgery in Rheumatism. "Movement is Life" (Lucas-Championnière).

The following Sections will meet on Two Days:

ANAESTHETICS

President: Professor R. R. MACINTOSH, D.M., F.R.C.S.Ed., D.A. (Oxford).

Vice-Presidents: B. L. S. MURTAGH, M.B., Ch.B., F.F.A.R.C.S., D.A. (Birmingham); H. B. WILSON, M.B., Ch.B., D.P.H., F.F.A.R.C.S., D.A. (Aberdeen); GEOFFREY ORGANE, M.D., F.F.A.R.C.S., D.A. (London).

Hon. Secretaries: W. M. JONES, M.B., B.S., D.A., 4, South Drive, Harrogate; J. ALFRED LEE, M.R.C.S., L.R.C.P., F.F.A.R.C.S., D.A., 73, King's Road, Westcliff-on-Sea.

Meeting-place: Queen Hotel.

The following programme has been arranged:

Wednesday, June 29.—10 a.m., *Discussion:* Post-operative Pulmonary Complications. To be opened jointly by Dr. H. J. V. MORTON (Uxbridge) and Dr. E. M. BUZZARD (Oxford), followed by Mr. DONALD BARLOW (London), Dr. DONALD TEARE (London), and Dr. JOAN MILLAR (Newcastle-upon-Tyne).

Thursday, June 30.—10 a.m., *Discussion:* Dental Anaesthesia. To be opened by Dr. W. S. MCCONNELL (London), followed by Dr. STEPHEN COFFIN (London) and Dr. FRED A. BANNISTER (Chester). 11.15 a.m., *Discussion:* The Use of Continuous Caudal and Peridural Analgesia in Obstetrics, Surgery, and Therapeutics. To be opened by Dr. ROBERT A. HINGSON (Johns Hopkins, Baltimore). (Note.—This discussion may be continued at 2.30 p.m.)

ANATOMY AND PHYSIOLOGY

President: Professor JOHN KIRK, M.B., Ch.B., F.R.C.S.Ed. (London).

Vice-Presidents: Professor A. HEMINGWAY, M.Sc., M.B., Ch.B. (Leeds); Professor FRANCIS DAVIES, M.D. (Sheffield); Professor C. McLAREN WEST, M.C., M.B., B.Ch. (Cardiff).

Hon. Secretaries: E. J. FIELD, M.D., M.S., Department of Anatomy, University of Bristol; R. J. SCOTHORNE, B.Sc., M.B., Ch.B., Anatomy Department, School of Medicine, Leeds, 2.

Note: On Tuesday, June 28, *Physiology and Anatomy* will meet as separate Sections, but there will be a united meeting on Wednesday, June 29.

The following programme has been arranged:

Physiology—Tuesday, June 28. Meeting-place: Cairn Hydro. —10 a.m., *Symposium on the Control of Activity in the Gastro-intestinal Tract. Speakers:* Professor R. A. GREGORY (Liverpool), Motility of the Small Intestine in Relation to Feeding; Dr. A. A. HARPER (Manchester), The Control of Gastric and Pancreatic Secretion; Dr. R. E. DAVIES (Sheffield), Secretory Mechanisms and Their Control; Dr. J. N. HUNT (London), Studies of Gastric Motility.

Anatomy—Tuesday, June 28. Meeting-place: Prince of Wales Hotel.—10 a.m., *Symposium on Muscle Structure and Function. Speakers:* Professor W. E. LE GROS CLARK (Oxford), The Vascularization of Muscle, with Special Reference to Ischaemic Necrosis and Reparative Processes; Dr. R. BARER (Oxford), The Organization of the Muscle Fibre; Dr. R. E. M. BOWDEN (London), Some Aspects of Denervation and Re-innervation of Human Voluntary Muscle; Mr. W. F. FLOYD (London), Clinical Value of Electro-myographic Studies; and Professor W. T. ASTBURY (Leeds), The Muscle as a Molecular Machine.

Wednesday, June 29. Meeting-place: Cairn Hydro.—10 a.m., *Symposium on the Anatomy and Physiology of the Skin. Speakers:* Professor H. BARCROFT (London), Factors Regulating Blood Flow in the Skin; Dr. C. A. KEELE (London), The Control of Sweating; Dr. R. E. BILLINGHAM (Birmingham), The Anatomical Basis of Epidermal Pigmentation in Man; and Dr. G. WEDDELL (Oxford), The Pattern of Cutaneous Innervation.

CARDIOLOGY

President: Sir JOHN PARKINSON, M.D., F.R.C.P. (London).

Vice-Presidents: JOHN R. H. TOWERS, M.D., F.R.C.P. (Leeds); Professor J. CRIGHTON BRAMWELL, M.D., F.R.C.P. (Manchester); D. EVAN BEDFORD, M.D., F.R.C.P. (London).

Hon. Secretaries: D. R. CAMERON, M.D., M.R.C.P., 14, Clifton, York; GRAHAM W. HAYWARD, M.D., F.R.C.P., St. Bartholomew's Hospital, E.C.1.

The following programme has been arranged:

Thursday, June 30. Meeting-place: Majestic Hotel (Combined Meeting with Section of Radiology).—10 a.m., *Discussion:* Angiocardiography. To be opened jointly by Dr. FRANCES GARDNER (London), Interpretation of Normal Angiocardiograms; of those seen in Cases of Cyanotic Heart Disease, and in Aortitis and Aortic Aneurysm; and Dr. J. WILKIE (Sheffield), Technical Considerations: Demonstration of Angiocardiograms. Followed by Dr. K. D. KEELE (London), Angiocardiograms in Acanthotic Heart Disease; Dr. T. H. HILLS (London), Angiocardiograms in Cyanotic Heart Disease; and Dr. F. JACKSON (London), Present Trends in North American Clinics.

Friday, July 1. Meeting-place: Majestic Hotel.—10 a.m., *Simulation of Heart Disease by Other Conditions.* To be opened by Dr. RAE GILCHRIST (Edinburgh), followed by (a) Simulation by Pulmonary Conditions, by Dr. J. CLIFFORD HOYLE (London); (b) Simulation by Gastro-intestinal Conditions, by Dr. S. W. PATTERSON (Ruthin Castle); (c) Simulation by Psychoneuroses, by Dr. WILLIAM PHILLIPS (Cardiff). 12 noon, *Discussion:* The Treatment of Obstructive Heart Failure. To be opened by Dr. D. EVAN BEDFORD (London).

CHILD HEALTH

President: Professor C. W. VINING, M.D., F.R.C.P., D.P.H. (Leeds).

Vice-Presidents: Professor R. S. ILLINGWORTH, M.D., F.R.C.P., D.P.H., D.C.H. (Sheffield); NEWTH, M.B., B.S., D.P.H. (Nottingham); Profes RAIG, M.D., F.R.C.P.Ed., F.R.S.Ed. (Leeds).

Hon. Secretaries: L. J. PROSSER, M.B., Ch.B., 11, Ripon Road, Harrogate; T. COLVER, M.B., Ch.B., 10, Claremont Place, Sheffield, 10.

Meeting-place: Grand Hotel.

The following programme has been arranged:

Wednesday, June 29.—10 a.m., *Discussion*: Common Feeding Difficulties in Infancy. To be opened by Professor R. S. ILLINGWORTH (Sheffield), followed by Dr. FRANCES CHARLOTTE NAISH (York), Dr. STANLEY G. GRAHAM (Glasgow), and Dr. JEAN MACKINTOSH (Birmingham). *Discussion*: Domiciliary Care of the Premature Child. To be opened by Dr. F. J. W. MILLER (Newcastle-upon-Tyne).

Thursday, June 30 (Combined Meeting with Section of Preventive Medicine).—10 a.m., *Discussion*: Behaviour Difficulties in Childhood. To be opened by Dr. MILDRED CREAK (London), followed by Professor C. W. VINING (Leeds), Dr. H. C. CAMERON (London), Dr. A. A. E. NEWTH (Nottingham), and Dr. W. S. MACDONALD (Leeds). 3 p.m., Demonstration of Cases and Radiographs of Tuberculosis in Childhood, at Scotton Banks Sanatorium, by Dr. VINCENT RYAN (Knaresborough).

DERMATOLOGY

President: J. T. INGRAM, M.D., F.R.C.P. (Leeds).

Vice-Presidents: BRIAN F. RUSSELL, M.D., M.R.C.P., D.P.H. (London); P. B. MUMFORD, M.D., F.R.C.P. (Manchester); GEOFFREY HODGSON, M.B.E., M.D. (Cardiff).

Hon. Secretaries: S. T. ANNING, M.D., M.R.C.P., 5a, Shaw Lane, Leeds, 6; H. J. WALLACE, M.D., M.R.C.P., 80, Harley Street, W.1.

The following programme has been arranged:

Thursday, June 30. Meeting-place: Prince of Wales Hotel (Combined Meeting with Section of Obstetrics and Gynaecology).—10 a.m., *Discussion*: Pruritus Vulvae. To be opened by Professor T. N. A. JEFFCOATE (Liverpool) and Dr. G. A. GRANT PETERKIN (Edinburgh), followed by Dr. ELIZABETH HUNT (London).

Friday, July 1. Meeting-place: Majestic Hotel.—10 a.m., *Discussion*: Psoriasis. To be opened by Dr. H. W. BARBER (London), followed by Dr. BRIAN F. RUSSELL (London) and Dr. J. H. TWISTON DAVIES (Manchester). *Occasional Paper*: The Uses and Abuses of Chemotherapy in Dermatology, by Dr. F. F. HELLIER (Leeds). 2.30 p.m., Clinical Meeting at Royal Bath Hospital.

NEUROLOGY AND PSYCHIATRY

President: W. RUSSELL BRAIN, D.M., F.R.C.P. (London).

Vice-Presidents: W. R. HENDERSON, O.B.E., M.B., Ch.B., F.R.C.S. (Leeds); DAVID ROBERTSON, M.D. (York); R. G. GORDON, M.D., F.R.C.P. (Bath).

Hon. Secretaries: JAMES VALENTINE, M.B., Ch.B., D.P.M., Seabor Park, Burley-in-Wharfedale, near Leeds, Yorks; HELEN E. DIMSDALE, M.D., M.R.C.P., 41, Devonshire Street, Portland Place, London, W.1.

Meeting-place: Majestic Hotel.

The following programme has been arranged:

Wednesday, June 29.—10 a.m., *Discussion*: Intractable Pain. To be opened jointly by Dr. J. PURDON MARTIN (London) and Mr. WYLIE MCKISSOCK (London), followed by Dr. E. B. STRAUSS (London). *Psychiatric Aspect*; and Dr. ANDREW WILSON (London). *Pharmacological Aspect*.

Thursday, June 30 (Combined Meeting with Section of Surgery).—10 a.m., *Discussion*: The Treatment, After-Treatment, and Sequelae of Closed Injuries to the Head. To be opened by Professor NORMAN MCOMISH DOTT (Edinburgh), followed by Dr. W. RITCHIE RUSSELL (Oxford), Rehabilitation after Head Injury; and Dr. E. STENGEL (Chichester). *Psychiatric Aspects of Head Injury*.

OCCUPATIONAL HEALTH

President: Professor R. E. LANE, M.D., F.R.C.P. (Manchester).

Vice-Presidents: Professor G. P. CROWDEN, O.B.E., D.Sc., M.R.C.P. (London); F. S. COCKSEY, O.B.E., M.D., D.Phys.M. (London); W. BLOOD, M.R.C.S., L.R.C.P. (London).

Hon. Secretaries: CHARLES CRESDEE, M.R.C.S., Wits End, Fixby Road, Huddersfield; R. S. F. SCHILLING, M.D., D.P.H., Department of Occupational Health, University of Manchester, Manchester, 13.

Meeting-place: Majestic Hotel.

The following programme has been arranged:

Wednesday, June 29.—10 a.m., *Discussion*: The Development of a Comprehensive Medical Service for Industry. To be opened by Dr. DONALD STEWART (Birmingham), followed by Dr. STUART LAIDLAW (Glasgow) and a general practitioner (name to be announced later).

Thursday, June 30.—10 a.m., *Discussion*: Tuberculosis and Occupation. (1) Tuberculosis in the Boot and Shoe Trade by Dr. ALICE STEWART (Harrow-on-the-Hill); (2) Mass Radiography in Industry, by Dr. W. POINTON DICK (Denham); (3) Rehabilitation and Resettlement, by Dr. F. R. G. HEAL (London).

OPHTHALMOLOGY

President: JAMES FISON, M.D. (Harrogate).

Vice-Presidents: JOHN MARSHALL, M.C., M.B., Ch.B., D.O.M.S. (Glasgow); N. P. R. GALLOWAY, M.B., Ch.B., D.O. (Nottingham); A. B. NUTT, M.B., B.S. (Sheffield).

Hon. Secretaries: JANE A. M. SHEPHERD, M.B., Ch.B., D.O.M.S., 39, Harlow Oval, Harrogate; P. D. TREVOR-ROPER M.B., B.Ch., F.R.C.S., D.O.M.S., 126, Harley Street, W.1.

Meeting-place: Masonic Hall, Harrogate.

The following programme has been arranged:

Thursday, June 30.—10 a.m., *Discussion*: Ophthalmology in Relation to Diseases of the Skin. To be opened by Mr. J. H. DOGGART (London), followed by Dr. ALICE CARLTON (Oxford) and Dr. I. B. SNEDDON (Sheffield). Afternoon, *Occasional Papers*: (1) Scleromalacia Perforans, by Mr. H. V. INGRAM (Newcastle-upon-Tyne); (2) Angiomatosis Retinae, by Mr. A. G. CROSS (London); (3) Watery Eye, by Mr. JOHN MARSHALL (Glasgow).

Friday, July 1.—10 a.m., *Occasional Papers*: (1) Toxoplasmosis, by Mr. A. B. NUTT (Sheffield); (2) Practical Ophthalmology in Spain and Holland in 1948, by Mr. JOHN FOSTER (Leeds).

ORTHOPAEDICS

President: R. BROOMHEAD, M.B., F.R.C.S. (Leeds).

Vice-Presidents: C. GORDON IRWIN, M.B., F.R.C.S. Ed (Newcastle-upon-Tyne); H. JACKSON BURROWS, M.D., F.R.C.S. F.R.A.C.S. (London); F. W. HOLDSWORTH, M.B., M.Ch. F.R.C.S. (Sheffield).

Hon. Secretaries: IAN LAWSON DICK, M.B., Ch.M. F.R.C.S. Ed., 2, Walmer Villas, Manningham Lane, Bradford; J. P. CAMPBELL, M.B., Ch.B., F.R.C.S. Ed., 1, Tavistock Avenue, Mapperley Park, Nottingham.

Meeting-place: Majestic Hotel.

The following programme has been arranged:

Tuesday, June 28.—10 a.m., *Discussions*: (1) Closed Fracture of the Shaft of the Radius and Ulna. To be opened by Mr. E. MERVYN EVANS (Birmingham), followed by Mr. F. W. HOLDSWORTH (Sheffield) and Mr. IAN LAWSON DICK (Bradford) 11.30 a.m., (2) Upper Limb Pain due to Lesions of the Thoracic Outlet. To be opened by Professor LAMBERT ROGERS (Cardiff).

Wednesday, June 29 (Combined Meeting with Section of Rheumatology).—10 a.m., (1) The Structure and Functions of the Synovial Membrane, by Professor D. V. DAVIES (London); followed by The Varieties of Pathological Reactions Encountered in Human Synovial Tissues, by Dr. D. H. COLLINS (Leeds); (2) Partial Denervation of the Hip-joint in Osteoarthritis, illustrated by film, by Mr. H. PETTY (Leeds); followed by Indications for Vitallium Mould Arthroplasty of the Hip and Survey of End-results, by Mr. R. BROOMHEAD (Leeds). (3) Physical Treatment of Arthritis. To be opened by Dr. H. F. TURNER (London).

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. *Demonstration*: The Role of Surgery in Rheumatism. "Movement is Life" (Lucas-Championnière).

OTO-RHINO-LARYNGOLOGY

President: A. B. PAVEY SMITH, M.C., M.B., F.R.C.S. (Harrogate).

Vice-Presidents: W. I. DAGGETT, M.B., B.Ch., F.R.C.S. (London); R. GARNETT PASSE, F.R.C.S., D.L.O. (London). GEORGE SEED, M.B., Ch.B., F.R.C.S., D.L.O. (Leeds).

Hon. Secretaries: J. E. REES, M.R.C.S., L.R.C.P., D.L.O. 10, York Place, Harrogate; H. S. SHARP, M.B., B.Ch., F.R.C.S. 149, Harley Street, W.1.

Meeting-place: Cairn Hydro.

The following programme has been arranged:

Thursday, June 30.—10 a.m., *Discussion*: Nasal Allergy. To be opened by Mr. R. R. SIMPSON (Hull), followed by Professor R. B. HUNTER (Dundee), Mr. J. GERRIE (Aberdeen), Dr. N. SOUTHWELL (London), and Dr. H. H. MOLL (Leeds).

Friday, July 1.—10 a.m., *Discussion*: Acute Respiratory Obstruction in Infants and Young Children. To be opened by Mr. G. E. ARCHER (Manchester), followed by Dr. MARY J. WILMERS (London), Mr. J. H. OTTY (Bradford), and Dr. E. C. BENN (Leeds).

PREVENTIVE MEDICINE

President: Professor R. H. PARRY, M.D., F.R.C.P., D.P.H. (Bristol).

Vice-Presidents: D. D. PAYNE, M.D., D.P.H. (Harrogate); C. FRASER BROCKINGTON, M.A., M.D., D.P.H. (Wakefield); R. H. H. JOLLY, M.D., D.P.H. (Wolverhampton).

Hon. Secretaries: HUGH O. M. BRYANT, M.B., Ch.B., D.P.H., Health Department, Municipal Offices, Harrogate; H. I. TRENCHARD, M.B., Ch.B., M.R.C.P., Chest Clinic, 53, Greenhill Crescent, Harrow, Middlesex.

Meeting-place: Grand Hotel.

The following programme has been arranged:

Thursday, June 30 (Combined Meeting with Section of Child Health).—10 a.m., *Discussion*: Behaviour Difficulties in Childhood. To be opened by Dr. MILDRED CREAK (London), followed by Professor C. W. VINING (Leeds), Dr. H. C. CAMERON (London), Dr. A. A. E. NEWTH (Nottingham), and Dr. W. S. MACDONALD (Leeds).

Friday, July 1.—10 a.m., *Discussion*: Marriage and Pregnancy in Relation to Tuberculosis. To be opened by Dr. F. A. H. SIMMONDS (South Mimms), followed by Dr. R. C. COHEN (Baintree) and Dr. JEAN HALLUM (Birmingham). *Occasional Paper*: Recent Developments in Influenza, by Dr. C. H. ANDREWES (Hampstead).

RHEUMATOLOGY

President: W. YEOMAN, M.D. (Harrogate).

Vice-Presidents: G. NORMAN MYERS, M.Sc., M.D., F.R.C.P. (Cambridge); G. D. KERSLEY, M.D., F.R.C.P. (Bath); H. F. TURNER, D.M., M.R.C.P. (London).

Hon. Secretaries: D. N. ROSS, M.D., F.R.F.P.S., Royal Bath Hospital, Harrogate; DORIS M. BAKER, M.D., M.R.C.P., 9, Upper Wimpole Street, W.1.

Meeting-place: Majestic Hotel.

The following programme has been arranged:

Tuesday, June 28.—10 a.m., *Discussion*: (1) Rheumatoid Arthritis in the Young. To be opened by Dr. B. E. SCHLESINGER (London), followed by Professor W. S. M. CRAIG (Leeds) and Dr. DONALD WILSON (Bognor Regis). (2) *Clinical Lecture-Demonstration*. Speakers not yet settled.

Wednesday, June 29 (Combined Meeting with Section of Orthopaedics).—10 a.m., (1) The Structure and Functions of the Synovial Membrane, by Professor D. V. DAVIES (London); followed by The Varieties of Pathological Reactions Encountered in Human Synovial Tissues, by Dr. D. H. COLLINS (Leeds). (2) Partial Denervation of the Hip-joint in Osteoarthritis, illustrated by film, by Mr. H. PETTY (Leeds); followed by Indications for Vitallium Mould Arthroplasty of the Hip and Survey of End-results, by Mr. R. BROOMHEAD (Leeds). (3) Physical Treatment of Arthritis. To be opened by Dr. H. F. TURNER (London).

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. *Demonstration*: The Role of Surgery in Rheumatism. "Movement is Life" (Lucas Championnière). 4.30 p.m., Report on Proceedings of International Congress of Rheumatology at New York, by Dr. G. D. KERSLEY (Bath) and others.

TROPICAL MEDICINE

President: G. W. M. FENDLAY, C.B.E., M.D., F.R.C.P. (London).

Vice-Presidents: Professor B. G. MAEGRAITH, M.B., B.S., (Liverpool); Colonel H. E. SHORTT, C.I.E., M.D., D.T.M., I.M.S. (Ret.) (London); J. BALFOUR KIRK, C.M.G., F.R.C.P., D.P.H.: D.T.M.&H. (London).

Hon. Secretaries: B. CLIVE NICHOLSON, M.D., M.R.C.P., D.P.H., 24, Swan Road, Harrogate; CLEMENT C. CHESTERMAN, O.B.E., M.D., M.R.C.P., D.T.M.&H., 7, Parsifal Road, N.W.6.

Meeting-place: Grand Hotel.

The following programme has been arranged:

Tuesday, June 28.—10 a.m., *Discussion*: Tropical Diseases as Aftermath of War. To be opened by Air Vice-Marshal T. C. ST. C. MORTON (R.A.F.), followed by Dr. A. R. D. ADAMS (Liverpool), Dr. J. P. CAPLAN (London), Sir GORDON COVELL (London), Professor G. J. STEFANOPOULOU (Pasteur Institute, Paris), and Dr. F. HAWKING (London).

Wednesday, June 29 (Combined Meeting with Section of Pathology and Bacteriology).—10 a.m., *Discussion*: Fat Metabolism and the Sprue Syndrome. To be opened by Professor A. C. FRAZER (Birmingham), followed by Dr. DOUGLAS BLACK (Manchester), Dr. K. D. KEELE (London), and others.

TIME-TABLE OF MEETING

Key

R.—events available for members of Representative Body and Ladies accompanying them.

L.—events primarily arranged for Ladies.

U.—events for all Members and Ladies accompanying them.

*—Academic Robes should be worn.

Thursday, June 23

8.00 p.m.—R. "Get-together"—Private Sherry Party—Dr. Bain's house, St. Ann's, York Place.

Friday, June 24

9.00 a.m.—A.R.M. Inquiry Office open—Royal Hall.
9.30 a.m.—Ladies' Club open for registration—Prospect Hall.
10.00 a.m.—Annual Representative Meeting—Royal Hall.
11.00 a.m.—Civic Welcome to Representatives—Royal Hall.
L. Orchestra and coffee—Lounge Hall.
12.30 for 1.00 p.m.—Lunch to Overseas Representatives—Queen Hotel.
2.30 to 5.30 p.m.—L. Coach tours.
5.30 to 6.15 p.m.—Tour of Royal Baths.
8.00 to 10.00 p.m.—R. Coach tours.
R. Bridge.
R. Theatre.

Saturday, June 25

9.00 a.m.—A.R.M. Inquiry Office open—Royal Hall.
9.30 a.m.—Annual Representative Meeting—Royal Hall.
9.30 a.m.—Ladies' Club open—Prospect Hotel.
L. Orchestra and coffee—Lounge Hall.
2.00 to 5.30 p.m.—L. Coach tours.
5.30 to 6.15 p.m.—R. Tour of Royal Baths.
6.00 p.m.—Press Cocktail Party—Fountain Court (Royal Baths).
7.00 for 7.30 p.m.—Glasgow Graduates' Dinner—Majestic Hotel.
8.00 to 10.00 p.m.—R. Coach tours.
R. Dancing.
R. Theatre.
R. Bridge.

Sunday, June 26

R. Church Services.
R. Tour of Royal Baths.
R. Tour of Royal Bath Hospital.
R. Golf.
R. Tennis.
10.30 a.m. to 6.00 p.m.—R. Long coach tours.
2.00 to 5.30 p.m.—R. Short coach tours.
8.00 p.m.—R. Celebrity Concert—Royal Hall.

Monday, June 27

9.00 a.m.—Council Meeting—Council Room, Municipal Offices.
9.00 a.m.—A.R.M. Inquiry Office open—Royal Hall.
9.30 a.m.—Ladies' Club open—Prospect Hotel.
10.00 a.m.—Annual Representative Meeting—Royal Hall.
10.00 a.m. to 12.30 p.m.—L. Coach tours.
10.00 a.m. to 6.00 p.m.—Coach tours.
11.00 a.m.—L. Tour of Royal Baths.
L. Orchestra and coffee—Lounge Hall.
2.00 p.m.—Reception Room open for registration—Sun Pavilion.
2.00 to 5.30 p.m.—L. Coach tours.
5.30 p.m.—L. Tour of Royal Baths.
7.00 for 7.30 p.m.—R. Representatives' Dinner—Grand Hotel.
9.00 p.m.—U. Annual General Meeting—Grand Hotel Ballroom.

Tuesday, June 28

- 9.00 a.m.—Official opening of Exhibition by President—Sun Pavilion.
 9.00 a.m.—Reception room open for registration—Sun Pavilion.
 9.30 a.m.—Ladies' Club open—Prospect Hotel.
 9.30 a.m.—Opening of Pathological Museum—Royal Bath Hospital.
 10.00 a.m.—*Scientific Sections*.
 10.00 a.m. to 12.45 p.m.—L. Coach tours.
 L. Orchestra and coffee—Lounge Hall.
 3.15 p.m.—L. Coach tours.
 3.30 p.m.—U*. Official Religious Service, St. Peter's Church.
 5.00 p.m.—U. B.M.A. Films—Grand Hotel Ballroom.
 5.30 p.m.—U. Tour of Royal Baths.
 5.45 p.m.—British Council Reception for Overseas and Foreign Delegates—Queen Hotel.
 6.00 p.m.—Medical Women's Federation Sherry Party—Lounge Hall (Fountain Court).—Open to all Medical Women (by invitation of Harrogate Members of M.W.F.).
 8.30 p.m.—U*. *Adjourned Annual General Meeting and President's Address*—Royal Hall (limited to 1,300).
 9.30 p.m.—U*. President's Reception—Lounge Hall (limited to 600).

Wednesday, June 29

- 9.00 a.m.—*Council Meeting*—Council Room, Municipal Offices.
 9.00 a.m.—Reception Room open—Sun Pavilion.
 9.00 a.m.—Exhibition open—Sun Pavilion.
 9.30 a.m.—Ladies' Club open—Prospect Hotel.
 9.30 a.m.—Pathological Museum open—Royal Bath Hospital.
 10.00 a.m.—*Scientific Sections*.
 10.00 a.m.—L. Notts Ladies' Challenge Cup Golf Competition—Starbeck Golf Club.
 10.00 a.m.—U. Childe and Leinster Cup Golf Competition—Oakdale Golf Club.
 10.00 a.m. to 12.30 p.m.—L. Coach tours.
 10.30 a.m. to 6.00 p.m.—L. Coach tours.
 11.00 a.m.—L. Tour of Royal Baths.
 L. Orchestra and coffee—Lounge Hall.
 2.00 to 6.00 p.m.—U. Coach tours.
 Melbourne Chess Competition—Prince of Wales Hotel.
 2.30 p.m.—Overseas Conference—Council Room, Municipal Offices.
 5.30 p.m.—U. Tour of Royal Baths.
 5.30 p.m.—Empire Medical Advisory Bureau Cocktail Party for Overseas and Foreign Delegates—Lounge Hall (Fountain Court).
 8.30 p.m.—U*. Civic Reception—Royal Hall.

Thursday, June 30

- 9.00 a.m.—Reception Room open—Sun Pavilion.
 9.00 a.m.—Exhibition open—Sun Pavilion.
 9.30 a.m.—Ladies' Club open—Prospect Hotel.
 9.30 a.m.—Pathological Museum open—Royal Bath Hospital.
 10.00 a.m.—*Scientific Sections*.
 10.00 a.m.—Treasurer's Cup Golf Competition—Pannal Golf Course.
 10.00 a.m. to 12.30 p.m.—L. Coach tours.
 L. Orchestra and coffee—Lounge Hall.
 1.00 p.m.—Irish Graduates' Lunch—Granby Hotel.
 2.00 to 5.30 p.m.—U. Coach tours.
 2.30 p.m.—Demonstration and tour—Royal Bath Hospital.
 3.00 p.m.—*Roman Catholic Service, St. Robert's Church.
 4.00 p.m.—Division Garden Party—Majestic Hotel.
 Melbourne Chess Competition—Prince of Wales Hotel.
 5.00 p.m.—U. B.M.A. Films—Grand Hotel Ballroom.
 7.30 for 8.00 p.m.—Annual Dinner—Majestic Hotel.
 Theatre.
 Bridge.

Friday, July 1

- 8.30 a.m.—Annual Breakfast of the Medical Prayer Union—Harrogate Hydro.
 9.00 a.m.—Reception Room open—Sun Pavilion.
 9.00 a.m.—Exhibition open—Sun Pavilion.
 9.30 a.m.—Pathological Museum open—Royal Bath Hospital.
 9.30 a.m.—Ladies' Club open—Prospect Hotel.
 10.00 a.m.—*Scientific Sections*.
 11.00 a.m.—L. Tour of Royal Baths.
 Orchestra and coffee—Lounge Hall.
 2.00 to 6.00 p.m.—U. Coach tours.
 2.30 p.m.—Demonstration and tour—Royal Bath Hospital.
 5.30 p.m.—U. Tour of Royal Baths.
 8.30 p.m.—Popular Lecture—Royal Hall.

PROPOSED AMENDMENTS TO COUNCIL'S
REPORT

GENERAL MEDICAL SERVICES

Constitution of General Medical Services Committee

AMENDMENT by Halifax: (1) That the General Medical Services Committee (formerly Insurance Acts Committee) should be reconstituted to form the executive body of all general practitioners grouped within the framework of the B.M.A. in areas conforming to the present B.M.A. Divisional Areas.

(2) That representatives on this executive body should be elected direct by vote of practitioners. Each constituency should conform to the area of each Branch Council area of the B.M.A. The Central Conference may also elect representatives.

(3) That this executive body should be subject to no other body by veto in matters which have been decided by a central conference composed of representatives of the practitioner group.

(4) That this executive body should have direct access to the Minister of Health.

ORGANIZATION

Election of Central Council of the Association

Recommendation of Council: That the number of members to be directly elected by members in the Branches and Divisions of the Association in Great Britain and Northern Ireland be increased from 22 to 37.

AMENDMENT by Bury: That the number of members of the Council elected by Branches should not be fewer than 42, and that these 42 or more be distributed among groups according to membership and strength.

AMENDMENT by Bury: That the term of membership of the *ex officio* members of Council be limited to three years.

Correspondence

Midwives and Doctors

SIR.—The letter from Dr. O. E. L. Sampson (*Supplement*, March 26, p. 166) is of extreme importance to the maternity services of this country. I am in a similar position to Dr. Sampson and share his fears.

I read recently an address by Dr. Joan Moignard in *Public Health*, January, 1949, and I think that the following extract from her address is so important that it should receive much wider circulation among the profession.

"The provision of the free services of a doctor should be a great step forward in improving the maternity services, and I am quite certain that anyone who has heard the Minister of Health speak about it will have been convinced that it is a sincere and honest attempt to provide for all women advantages hitherto only available for the better-off sections of the community. And yet it is this provision that has caused most concern to everyone who is anxious about the quality of the service."

"Since July 5 there has been a remarkable eagerness on the part of general practitioners, many of whom previously had shown great reluctance to undertake midwifery, to book maternity cases, and yet they are the people who are complaining of being overworked. One cannot help having a suspicion that the fees for maternity work have a great influence on their actions. I personally have come across a number of cases where an expectant mother had no intention of booking a doctor until at a chance contact the suggestion that she should do so was made by the doctor himself."

"The consequence of this to individual patients, who in all good faith are naturally anxious to avail themselves of what are understandably regarded as the advantages of the new provisions, is a matter for anxiety. The usual course of events seems to be this. The patient is advised to book a midwife to act as a maternity nurse. Antenatal care is undertaken by the doctor, the patient usually waiting in a crowded surgery for a somewhat perfunctory examination, at which regular attendance is not insisted upon. Delivery is undertaken by the midwife, who seems to change her status with amazing frequency, and the doctor may or may not see his patient

again for a post-natal visit, which only too often degenerates into merely a vaginal examination.

"Let us consider antenatal and post-natal care in more detail. Before July 5 this was carried out partly by the midwife visiting the patient at home, and partly at antenatal and post-natal clinics. Here an attempt was made to bring as many as possible of the advantages which maternity hospitals offer their cases to patients having their babies at home. Of these I will mention only a few. Thorough general medical overhaul, routine obstetric examination, blood-pressure and urine examination need no comment. Dental inspection and any necessary treatment is offered by, most clinics, and the Ministry of Health has laid down that expectant and nursing mothers constitute a priority class for this service. Routine W.R., blood grouping, and rhesus investigation are carried out at most clinics, and the advantages of this are obvious. Welfare foods are available at the clinic, which is a saving of precious time and energy to the patient. General advice on the hygiene of pregnancy, diet, rest, exercise, clothing, and the requirements of the baby is given, and appropriate literature provided. It is very doubtful whether it is possible for a service of this sort of completeness to be provided other than by some type of clinic, and I wonder how many doctors' patients are getting it at the moment. It is the sum of all these details, in addition to competent obstetric care, which helps to achieve healthy motherhood.

"The question of competence brings me to two other problems—the status of the midwife and the qualifications of doctors undertaking midwifery. Many of us in recent years have heard a little too much of the professional status of midwives, which has been exaggerated to extremes. But the fact remains that 96% of all confinements are normal, and I question whether anyone is more competent to undertake normal cases than the midwife, who is doing nothing but midwifery and has the time and patience to await events without the thought of a long visiting list and a crowded surgery. One of the reasons for the very good results obtained by midwives is that their work is strictly limited to what they are trained to do, and help must be summoned if these circumstances cease to obtain; but their work must be backed up by good antenatal and post-natal services, and by good obstetrics when help is required. The midwife should be present with the patients at antenatal examinations, have full reports of all investigations and access to record cards, and have opportunities for discussing her patients with the doctor. At present in so many cases the midwife is booked as a maternity nurse, is denied all these facilities, but is left to deliver unaided, not her own, but someone else's patient.

"One of the constant grumbles of midwives for many years has been that when they have needed to summon medical aid the quality of the help received has fallen far below their own standards and those of the antenatal and post-natal care given at a clinic. It was hoped that when panels of general-practitioner obstetricians were formed this would be remedied.

"The Royal College of Obstetricians and Gynaecologists has been considering this problem for a long time, and has repeatedly stated that in its view only suitably qualified doctors should undertake maternity work. To this end it introduced the College's Diploma in Obstetrics—the D.R.C.O.G. This is not in any sense a specialist qualification: it is a diploma awarded on the results of an examination following a period of resident postgraduate training in a maternity hospital recognized by the College, and is intended solely to set a standard for general-practitioner obstetricians. I suggest that the possession of this diploma, which could be acquired with very little effort by anyone who possesses the skill and knowledge he should have to do maternity work, should be required by obstetric committees from those wishing to be included in panels of general-practitioner obstetricians.

"I do not propose to touch on problems of organization and responsibility for services, but I would in conclusion like to put forward a scheme in outline which would meet these points that I have discussed. Assuming that only normal cases come under the domiciliary service, the midwife should be the responsible person in charge of the case. This provides for continuity of care, which from the patient's point of view is a psychological necessity. The midwife's care should be backed up by an antenatal clinic staffed by a doctor qualified to undertake maternity cases. Whether these clinics are provided by the local authority or by groups of practitioners would vary according to local circumstances.

"There is nothing new in this. But there is one principle which needs to be satisfied in a good service, and that is that the person responsible for antenatal care should also be responsible for delivery. I do attach a great deal of importance to this. If no medical aid is needed at delivery, the requirement is fulfilled by the midwife who has participated in the work of the antenatal clinic. But if medical aid is required I suggest that the doctor called should be the same doctor who has attended the patient at the antenatal clinic, and who from that previous contact will inspire more confidence and bring more knowledge than someone seeing the case for the first time. With this type of arrangement adequate numbers of doctors who are suitably qualified would be available, and the quality of care given to each individual case would be greatly improved."

I would add that the position has been aggravated by the profession's opposition to the recognition of the general-practitioner obstetrician, in spite of their lack of opposition to the recognition of the D.A. and D.O.M.S. I would also point out that there is absolutely no encouragement at the moment for any G.P. to undertake to become more proficient at this work, as the fees for his services are those that any G.P. can obtain. In conclusion I am sure that if things remain as they are, the Ministry will have to report a rise in the maternal and infant mortality rates after a year or two of the present unfortunate state of affairs.—I am, etc.,

London, N.2.

G. D. S. BRIGGS.

Display of Hearing-aids

SIR.—Mr. Ian G. Robin's letter (*Supplement*, March 19, p. 157) points the case for a square deal for those manufacturers and distributors of hearing-aids whose standards of business, approved by the National Institute for the Deaf, give them the right, which in nearly all cases they have exercised, to be members of the Hearing-Aid Manufacturers Association. What little Press advertising is done by our members has to conform to our own regulations, made in the interests of the deaf public with the full approval of the National Institute for the Deaf.

The policy of excluding our members' aids from hospital clinics is therefore a restraint upon firms who accept our rigid standards but not on those who do not accept them. It will certainly encourage doorstep sales to the detriment of sales on medical and personal recommendation, on which our members mainly rely. The policy also deprives the doctor of his hitherto fully acknowledged right to prescribe what is best for his patient. The restoration of hospital facilities for our members' aids is therefore in the interests not only of the members themselves but also of the medical profession and the deaf public.—I am, etc.,

R. G. STAPLES.

Secretary, Hearing-Aid Manufacturers Association
and Society of Aural Technicians.

London, N.21.

Anticipate Legislation

SIR.—The following appears in Harvey Cushing's *From a Surgeon's Journal* on p. 373:

"A long pow-wow after dinner on the after-the-war problems of medicine, and the urgent need of formulating plans to meet the new situation which will doubtless arise. All agree that State medicine will come to play an increasingly important role, and the profession must anticipate legislation by formulating it themselves, rather than having this done by politicians and lawyers."

The date is June, 1918, and the place Boulogne.—I am, etc.,

London, W.1

HENRY MACCORMAC.

Plea for Moderate Lists

SIR.—Dr. J. W. O. Holmes's letter (*Supplement*, March 26, p. 164) condemning the tapering capitation fee is so well argued that I feel I must attempt a reply in favour of the more moderate numbers. There are some cases which, there would be general agreement, G.P.s should cope with unaided; there are others which it is their plain duty to send to hospital; but there is a large group in which there can be no general agreement because of the personal factor.

Let us consider a keen man aged 30 with some 2,000 patients. He does a little minor surgery, attempts some common-sense psychological medicine, and keeps at home those seriously ill patients whom he believes likely to do best at home. Perhaps he also occasionally manages to talk to a consultant or watch an operation when one of his own cases is involved—very good for him and for the consultant and for the conduct of the case. These are all time-consuming activities and he is genuinely busy and useful. As the years go by his list grows, but the day remains the same length. He cannot afford to refuse that growing list.

Ten years later he will have become a second-class sorting machine, "passing the buck" whenever he can justify this to himself (and how easy it becomes), caring for his 4,000 to their satisfaction but to that of no one else, spending far too

¹ *A Surgeon's Journal 1915-1918*, by Harvey Cushing. London: Constable. 1936.

much of his time signing the certificates and prescriptions they demand, writing numerous inadequate little notes to the hospitals and clinics of the area, and, if he has much imagination, disliking his work and himself.

It may be, Sir, that a man who is a naturally rapid worker and good organizer really can care for 4,000—or 8,000—"properly." It is obvious that a muddler or leisurely worker cannot. The real point is that we want to encourage the average decent G.P. to look after a moderate-sized list well and comprehensively rather than have a huge list which he cannot possibly care for as he ought.

Some sort of balance between payment per caput and payment for work done must be our aim. The present maternity-case fees are a help. The payment of liberal fees for all the minor jobs, such as diphtheria immunization—done sometimes in clinics and sometimes by G.P.s—would do a little to further the same principle. Beyond that I see appalling administrative difficulties arising.

As regards the future of general practice I have given a very gloomy prognosis with profound conviction. I have indicated a hopeful line of treatment, with very great difficulties in the way. Have we collectively a sufficient realization of what is happening, and is going to happen, to make us do anything about it?—I am, etc.,

Woodford Green, Essex.

E. B. GROGON.

Different Capitation Fees

SIR,—In the correspondence about sliding capitation fee I have seen no reference yet to what to me is a far greater injustice—namely, the difference in the capitation fee in different areas. In the Press to-day the capitation fee for the nine months is stated to be 13s. for Eastbourne and 11s. 5d. for Hastings. To have a difference of 1s. 7d. for two such similar places seems completely wrong. Cannot some scheme be devised to get rid of such discrepancies, as 1s. 7d. must mean a very marked difference in the incomes of two men who each have, say, 2,500 persons on their lists?—I am, etc.,

Farnham, Surrey.

G. H. WARD.

Early Bird

SIR,—I really thought that the limit had been reached as regards requests for certificates, but I was approached last week for what I consider is the star turn up to date. One of my male patients breezed into my consulting-room ("breezed in" is the right expression) and opened up the conversation by saying it was a long time since he had troubled me. I got his medical record-card out of the drawer and found that he last consulted me in July, 1947, on account of eczema, and that this disease was the only condition for which he had consulted me during the last six years. He is a fit-looking man aged 53.

He then stated that all he required was a note to say that he was not fit to run to catch a bus. Further inquiry elicited the fact that he is employed at one of those factories which are sufficiently large to have a private fleet of buses to transport the work-people to and from home, and anyone who has passed such a factory at closing time will have noticed the stamped of employees to get to the buses. He then produced a certificate from the works doctor certifying that he could leave work five minutes early in order to catch the bus, and he informed me that the works doctor had told him to get a similar note "off his own doctor" to put things right. The man was quite indignant when I refused to issue the certificate, and he stated that "they were all getting them."

I expect the next certificate which the patient will demand from the doctor to whom he transfers will be one to enable him to leave work ten minutes early to avoid the rush of those leaving work five minutes early.—I am, etc.,

Manchester.

JAMES O'GRADY.

All-in Service

SIR,—It appears that the public are not fully aware of what was promised to them when the National Health Service came into operation. The four following points require consideration and should be pressed for:

(1) The insistence on the right of the community to avail themselves of benefits of the N.H.S. at any level—i.e., an individual cannot consult a doctor privately (as many thousands would) and be

entitled to have medicines (which are a much bigger imposition financially) supplied by the State.

Of course, such an individual would not be registered with a doctor, and therefore the capitation fee would be saved to the State.

(2) Patients who want to occupy private accommodation have to pay the full specialist and hospital charges. They cannot pay just the difference between private accommodation and State Service charges, to which they are entitled anyway. Here again a saving to the State would be effected.

(3) The problem of hostels for old people, particularly the financial side, has not been gone into nearly thoroughly enough. It is very costly for an elderly person or his relatives to pay £4 or £5 per week for maintenance in a hostel (although those I have heard about are fully worth this price). Thus a prospective inmate with accumulated capital of £600 would find it swallowed up in three years. The fear of this must prevent quite a number of would-be aspirants from applying to enter such hostels. Arrangements should be made for them to have this accommodation even though their capital has dwindled away.

(4) The plight of those in the middle classes who are semi-invalid or confined to bed is indeed pitiful. The drain on their accumulated resources is very serious. Of course they may be admitted to a Social Welfare Institution or chronic-sick ward of a hospital if such accommodation is available, and it certainly is not to-day, or they (this is what happens in the great majority of cases) remain domiciliary patients in their own homes or those of their relatives. This in most cases entails the employment of trained or partly trained nurses, and changes of bed linen and other invalid accessories, which are in these days unreasonably expensive. A system of nursing grants; say from £4 to £6 (which latter is the cost of maintenance in the State hospital) for those who are unfortunate enough not to be able to avail themselves of hospital treatment should be instituted. Among this category, which cannot be regarded as being within the higher-income group, may be included the general practitioners themselves.

Another point has occurred to me with regard to the economy of this "all-in" health service—that is, the reclamation of gold from dental plates on the demise of the wearer. In the same way glasses procured as National Health Service benefits should be returned.—I am, etc.,

Ruthin, Denbighshire.

TREVOR HUGHES.

Mileage Payments

SIR,—Surely it would take but little trouble for our executive to ascertain how much *per mile travelled* we are being paid. My own figure for the first nine months works out at nearly 6d. per mile now that a final payment has been made. Can anyone seriously suggest that this is reasonable? How can it happen that in a national service one executive council is able to pay 25% more than its immediate neighbour?—I am, etc.,

Launceston, Cornwall.

DONALD M. O'CONNOR.

Abolish Assistantships

SIR,—While I have contributed to the correspondence on abolition of assistantships (*Supplement*, Feb. 26, p. 115) I can find little with which to disagree in the reply of the one protagonist of assistantships ("A.B.C.," *Supplement*, April 2, p. 216). The fact is that he has completely missed the point. We do not object to a period of assistantship preceding a partnership or as training in introduction to general practice, but we do most strenuously object to the exploitation of young doctors with a view to, neither partnership nor training.

It may be outside the experience of "A.B.C.," but it is certainly within the bitter experience of many of us, that doctors are employed to do the donkey work of a large practice at a mere pittance, because the very structure of the N.H.S. makes it almost impossible for them to achieve the glory of becoming a principal.—I am, etc.,

ANOTHER ASSISTANT.

Assistantships

SIR,—The views of your correspondent "A.B.C." (*Supplement*, April 2, p. 216) are understandable, coming as they do from a practitioner nurtured in an age when industry, opportunity, and enterprise were the main ingredients of success. However, it should now be obvious to all that all such arrangements as partnerships and assistantships are redundant except in so far as they suit the personal conveniences of the parties concerned. The attitude of "I had to do it the hard way, why shouldn't you?" dies hard, but once it has died there is

no clear reason why any man who has put in many years of arduous and costly training should not go forth into the world and earn a four-figure income.

The idea that a period of assistantship extending over months or years is necessary in order that he may learn his job is rather amusing. The period of apprenticeship is served in hospital under the "all work and no pay" system, and any doctor who has completed one or two house appointments in general medicine and surgery is, in my view, more than competent to deal with general practice as it is understood to-day, and certainly far more abreast of recent developments in medicine than are the rank and file of his senior colleagues. The junior practitioner is more likely to err in the direction of over-caution as a result of his hospital training, so that, far from adding to his already stupendous mass of knowledge, a preliminary period of "unlearning" would appear to be indicated in order to enable him to arrive at a correct assessment of the clinical condition of his patients.—I am, etc.,

X. Y. Z.

Graduated Capitation Fee

SIR,—There have been a number of letters in the *Supplement* of late by doctors with large lists imputing to doctors with small lists laziness, inefficiency, and unpopularity; also suggestions that such doctors are being subsidized by colleagues with large lists. Counter-imputations of money-grubbing, popularity-seeking, and hurried work could likewise be made against large-list doctors by small-list doctors. It is not unlikely that such imputations and counter-imputations more or less cancel one another out from the point of view of justifiability. It remains indisputable, however, that the smaller one's list the greater one's expenses in relation to income. Rent, rates, food and fuel, attendance on door and telephone, motor-car and telephone expenses—the main items of essential expenditure—are little affected by the size of one's list. The case, therefore, for a steeply graded capitation fee rests on a secure foundation on the grounds of expenses alone.

As to the charge of small-list doctors being subsidized: we are all paid from a common pool, and there is no need for any doctor to "subsidize" another by accepting on to his list more patients than the average number available to each doctor in the Service.—I am, etc.,

Wallasey, Cheshire.

LENNOX JOHNSTON.

Whither Medicine?

SIR,—May I express my modest appreciation of Lord Horder's address, "Whither Medicine?" (*Journal*, April 2, p. 557), which for me is a model of lucid exposition of our case, for a bigger voice in any scheme of National Health Service.

Ignoring recorded experience, the Health Minister has embarked on a policy of reckless hencence which, as might have been foreseen, invites abuse.

That Lord Horder's historical survey will have any influence on our lawgivers is a hope too extravagant to entertain, but its careful study should convey the fact that omniscience is not the monopoly of the best-intentioned politicians of whatever shade. "Striving to better, oft we mar what's well" is perhaps not inappropriate.—I am, etc.,

Southampton.

ARTHUR KING.

Exchange Control Medical Advisory Committee

SIR,—There is a medical dictum that "more mistakes are made by not looking than not knowing." This applies even to panels of "independent consultants," tuberculosis or otherwise.

It is one of the tragedies of present-day medicine that the opinion of the man on the job and seeing the case counts for so little with "officials" ranging from admission clerks doubting a diagnosis of, say, a fractured femur, to "leading specialists" doubting the suitability of treatment which has not the rubber stamp of being under their administration.

In tuberculosis there is another old saying, which even the Exchange Control Medical Advisory Committee will have heard, and that is that "each case is a law unto itself," which makes it rash for anyone to say that any case is too advanced to be permitted treatment.

Furthermore, when there is a long delay in waiting for sanatorium treatment (last week one of my patients with a T.B.-positive sputum was told he would have to wait four months for institutional treatment), are not the experts adopting a dog-in-the-manger attitude of "we cannot cure you and we are not going to let anyone else try"?

The case I have just quoted is all the more ironical comment on "expert panels" in that the man was invalidated out of the Royal Navy in 1946 (he enlisted in 1938) as a neurotic, although one of the x-ray reports taken in 1944 had queried Koch's disease, so even "expert committees" can be in error about tuberculosis. Lastly, is not control interfering with the fundamental human right to leave any country which was debated at UNO?

Manchester.

S. SHUBSACHS.

Tuberculosis Officers

SIR,—The announcement in the *Supplement* of March 26 (p. 160) concerning the status of tuberculosis officers will come as a shock to workers in this important branch of medicine. They are not to be called physicians and specialists but senior hospital officers. Consequently their salary range will be from £1,300 to £1,750. It is a pity that such a retrograde step has been taken at this time.

Up to July 5 the more enlightened public authorities were trying to increase the status of tuberculosis officers. During the past ten years their clinical responsibility has considerably increased. There are now large refill sessions and anything up to 200 refills a week. The tuberculosis officer has charge of in-patient beds. Owing to the bed shortage he has to do a vast amount of domiciliary visiting and frequently to initiate collapse therapy in the patient's home. The pre-war days when the patient could be got into a sanatorium within a fortnight of being notified are now gone, and he is under the care of the tuberculosis officer for many months before going to a sanatorium. In addition, the tuberculosis officer is now expected to have a good knowledge of all diseases of the chest and is asked to give specialist opinion when patients are sent to him whether they are suffering from tuberculosis or not.

Tuberculosis is an important disease and those afflicted by it are usually young people. Consequently it is well worth while to be able to treat them efficiently and to give them many years of useful life. Tuberculosis has always been looked down on, and its care has been an offshoot of the Public Health Department. This classification can only reduce the numbers of trained physicians who will wish to specialize in this branch of medicine, and the patient will suffer.—I am, etc.,

London, W.2.

P. F. KENNISH.

Cause of Hardship

SIR,—At a recent meeting of our B.M.A. Branch it was stated that 37% of doctors in the United Kingdom have less than 1,000 patients. This is a staggering figure and would be even if the number were less than 2,000, and makes the loading of the first 1,000 patients a duty. One reads many indignant letters from doctors with the maximum number of patients against this suggestion, many stating that they have worked so hard in the past under uncongenial surroundings that they should now be very liberally rewarded.

Personally, I work in an industrial town in Lancashire and I find neither the work nor the surroundings uncongenial. I work here because I like it. There are few, if any, industrial towns or cities without good country within a few miles. The doctors now hardest hit did not ask for the new Service nor did they complain before July, 1948. They did a job of work for which they must have been satisfactorily rewarded in spite of the small numbers of patients they cared for, and it is only the new imposed method of remuneration which has caused hardship. They are still doctors, still colleagues, still entitled to a decent living, and the sooner the idea is banished that only the efficient doctor has large numbers of patients the better. If this last were correct, then efficiency and all the other adjectives applied to the doctor with the large list could be freely bought before July 5, 1948.—I am, etc.,

St. Helens, Lancs.

J. KAY.

B.M.A. LIBRARY

The following books have been added to the Library:

- Lyle, T. K., and Jackson, S.: *Practical Orthoptics in the Treatment of Squint*. Third edition. 1949.
Mott, F. D., and Roemer, M. I.: *Rural Health and Medical Care*. 1948.
Novak, E.: *Textbook of Gynecology*. Third edition. 1948.
Ogilvie, Sir W. H.: *Surgery: orthodox and heterodox*. 1948.
Osterström, E.: *Delinquency and Children from Bad Homes*. 1946.
Roughead, W. (Editor): *Burke and Hare (Notable British Trials)*. 1948.
Spaeth, E. B.: *Principles and Practice of Ophthalmic Surgery*. Fourth edition. 1948.
S. S.: *Untersuchungen über die Variation und Kovariation Menschlichen Auges*. 1946.
Zweite Auflage. Erstes Buch. 1948.
to Public Health. 1949.
Thorner, M. W.: *Psychiatry in General Practice*. 1948.
Van Hoosen, B.: *Petticoat Surgeon*. 1948.
Walker, K., and Strauss, E. B.: *Sexual Disorders in the Male*. Third edition. 1948.
Walsh, F. B.: *Clinical Neuro-ophthalmology*. 1947.
Wiener, A. S.: *Rh Factor: selected reprints*. 1948.
Zinsser's *Textbook of Bacteriology*. Ninth edition revised by David T. Smith *et al.* 1948.

Association Notices**Diary of Central Meetings****APRIL**

- 22 Fri. Committee on Nursing, 10.30 a.m.
25 Mon. Conference of Radiologists Group, 2 p.m.
27 Wed. Committee on the Postgraduate Education of General Practitioners, 2 p.m.
28 Thurs. Central Consultants and Specialists Committee, 10.30 a.m.
28 Thurs. Publishing Subcommittee, 11 a.m.
28 Thurs. Grants Subcommittee, 11.30 a.m.
28 Thurs. Ethical Rules Subcommittee (*Adjourned*), 1.45 p.m.
28 Thurs. Occupational Health Committee, 2 p.m.
28 Thurs. Organization Committee, 2 p.m.
29 Fri. Film Committee, 2.30 p.m.

MAY

- Tues. Central Ethical Committee, 2 p.m.
5 Thurs. Coroners Acts Committee, 2 p.m.
6 Fri. Venereologists Group Committee, 2.30 p.m.
9 Mon. Joint Committee of B.M.A. and National Veterinary Medical Association, 2 p.m.
11 Wed. Council, 10 a.m.
24 Tues. Scholarships and Grants Subcommittee, 11 a.m.
24 Tues. British Pharmacopoeia Subcommittee, 2 p.m.
31 Tues. International Relations Committee, 2 p.m.

Branch and Division Meetings to be Held

CARDIFF DIVISION.—At Lecture Theatre, The Engineer's Institute, Park Place, Cardiff, Wednesday, April 27, 8 p.m. Mr. Ralston Paterson: "The Application of Radiotherapy to the Treatment of Squamous Carcinoma."

GREENWICH AND DEPTFORD DIVISION.—At Brook Hospital, Shooters Hill, Woolwich, London, S.E., Thursday, April 28, 2.30 p.m. Dr. J. V. Armstrong: Clinical demonstration of fever cases. Members from neighbouring Divisions are specially invited.

MID-ESSEX DIVISION.—At Chelmsford and Essex Hospital, Sunday, May 1, 10 a.m. Mr. O. S. Tubbs: "The Modern Treatment of Congenital Heart Disease."

SCARBOROUGH DIVISION.—At Scarborough Hospital, Thursday, April 28, 8.30 p.m. Mr. D. W. Currie: "Carcinoma of the Cervix."

Meetings of Branches and Divisions**DUMFRIES AND GALLOWAY DIVISION**

At a meeting held on March 27 Mr. W. S. Mack, Glasgow, gave an interesting address on "Male, Female, and Inter-sex." The lecturer briefly discussed the historical aspect of hermaphroditism, and then reviewed some of the more recent work on the subject. The lecture was illustrated by lantern slides.

ROCHESTER, CHATHAM, AND GILLINGHAM DIVISION

A meeting was held at Rochester on March 20, with Dr. H. J. Hoby in the chair. About 40 medical practitioners were present.

The meeting was addressed by Dr. J. A. Gorsky, on (a) Constitution of the B.M.A.—the Legal Situation as to the Formation of a Medical Trade Union, and (b) Remuneration of General Practitioners.

It was resolved (a) that a new body be established for the better protection of the interests of the medical profession in disputes with public authorities and other bodies, but that in view of the fundamental conflict of legal opinion on some of the most important points considered by the committee the matter should be referred back

for further consideration; (b) that the recommendation of the General Medical Services Committee as submitted to the B.M.A. Council with regard to remuneration be approved.

The resignation of Mr. Heath as Representative was accepted with much regret and a vote of thanks was extended. Dr. M. Landau was elected Representative.

H.M. Forces Appointments**TERRITORIAL ARMY****TERRITORIAL ARMY RESERVE OF OFFICERS: ROYAL ARMY MEDICAL CORPS**

Lieutenant-Colonel D. G. Rice-Oxley, M.C., T.D., having exceeded the age limit, has relinquished his commission, retaining the rank of Lieutenant-Colonel.

Major G. M. Frizell, T.D., from Active List, to be Major, and has been granted the honorary rank of Colonel.

Majors W. R. Sprout, T.D., and J. M. F. Whitby, T.D., from Active List, to be Majors, and have been granted the honorary rank of Lieutenant-Colonel.

Major J. A. Anderson, M.B.E., from Active List, to be Major. Captain (War Substantive Major) I. G. Hardinge, from Active List, to be Captain, and has been granted the honorary rank of Lieutenant-Colonel.

Captain (War Substantive Major) J. A. S. Brown, T.D., from Active List, to be Captain, and has been granted the honorary rank of Major.

Major B. F. Longbotham, from Active List, to be Major. (Substituted for the first notification in a *Supplement to the London Gazette* dated Dec 7, 1948.)

Captain J. Nicholson, from Active List, to be Captain, and has been granted the honorary rank of Major.

Captain J. S. Macgill has relinquished his commission on account of disability and has been granted the honorary rank of Major.

Captain (Acting Major) G. T. Ashley, from Active List, to be Captain, and has been granted the honorary rank of Lieutenant-Colonel. (Substituted for the notification in a *Supplement to the London Gazette* dated Oct. 12, 1948.)

Captain (War Substantive Major) D. H. Thomson, M.B.E., from Active List, to be Captain, and has been granted the honorary rank of Lieutenant-Colonel.

REGULAR ARMY: EMERGENCY COMMISSIONS**ROYAL ARMY MEDICAL CORPS**

War Substantive Majors A. W. S. Thompson, E. G. Holmes, J. Marshall, and E. E. Satchwell have relinquished their commissions and have been granted the honorary rank of Lieutenant-Colonel.

War Substantive Major I. G. Cameron has relinquished his commission and has been granted the honorary rank of Major.

Captain G. R. Ellis has relinquished his commission and has been granted the honorary rank of Lieutenant-Colonel.

Captains H. N. Reed and J. Ryder have relinquished their commissions and have been granted the honorary rank of Major.

Captain J. White has relinquished his commission on account of disability and has been granted the honorary rank of Major.

War Substantive Captain R. J. Elsborg has relinquished his commission and has been granted the honorary rank of Major. (Substituted for the notification in a *Supplement to the London Gazette* dated March 23, 1948.)

ROYAL AIR FORCE

Group Captains E. C. K. H. Foreman, C.B.E., and J. MacC Kilpatrick, O.B.E., to be Air Commodores.

Wing Commanders H. C. S. Pimblett, C. Crowley, G. A. M Knight, F. W. P. Dixon, M.B.E., C. A. Rumball, O.B.E., K.H.P. to be Group Captains.

Wing Commander G. S. Strachan has retired on account of medical unfitness for Air Force service, retaining the rank of Group Captain.

Wing Commander G. O. Williams has retired.

Squadron Leaders W. K. Stewart, A.F.C., J. L. Roche, H. L. Jenkins, R. C. Jackson, P. A. Wilkinson, J. I. M. Smith, C. G Burgess to be Wing Commanders.

Flight Lieutenants W. B. Thorburn, A. J. Barwood, D. Crichton, M.B.E., and T. N. N. Brennan to be Squadron Leaders.

To be Squadron Leaders: J. W. Reade, G. R. Bedford, T. H Redfern, and P. H. Blakiston.

Flying Officer R. I. Meanock to be Squadron Leader.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-County Borough Councils.—Dartford, WallSEND.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

LONDON SATURDAY APRIL 30 1949

BASAL-CELL CARCINOMA (RODENT ULCER), WITH SPECIAL REFERENCE TO LESIONS ON NECK, TRUNK, AND LIMBS

BY

Sir CECIL WAKELEY, K.B.E., C.B., D.Sc., F.R.C.S., F.R.S.E.D.

Senior Surgeon and Director of Surgical Studies, King's College Hospital; Surgeon, Royal Masonic Hospital and Belgrave Hospital for Children; Consulting Surgeon, Royal Navy

AND

PETER CHILDS, M.Ch., F.R.C.S.

Surgical First Assistant, King's College Hospital

[WITH PHOTOGRAVURE PLATE]

During the last thirty-five years 237 cases of rodent ulcer have come under the care of one of us (C.W.) and 210 of these occurred on the face or scalp, while 27 were found to arise outside those confines (Figs. A and B). Summaries of the case histories of these lesions found elsewhere than on the face or scalp are now given.

Umbilical Region (3 Cases)

Case 1.—A man aged 58 presented himself in 1930 with a large rodent ulcer to the left side of the umbilicus. He had first noticed a small pimple in this region some 12 years previously. The ulcer was irregular in outline with a heaped-up and rolled-over edge (Fig. C). The ulcer measured $1\frac{1}{2}$ in. (3.75 cm.) at its greatest diameter, and its base was moist and some parts covered by small sloughs. There was no enlargement

of axillary or inguinal glands. Excision of the ulcer together with the umbilicus was undertaken through an elliptical incision. Recovery was uneventful. Microscopically the ulcer was a typical basal-cell carcinoma. This patient was last seen in 1939, when he was in good health and there was no sign of recurrence.

Case 2.—A man aged 60 was first seen in October, 1937, with a small rodent ulcer just below the umbilical margin. It had been present for two years and was gradually getting bigger. The ulcer had an



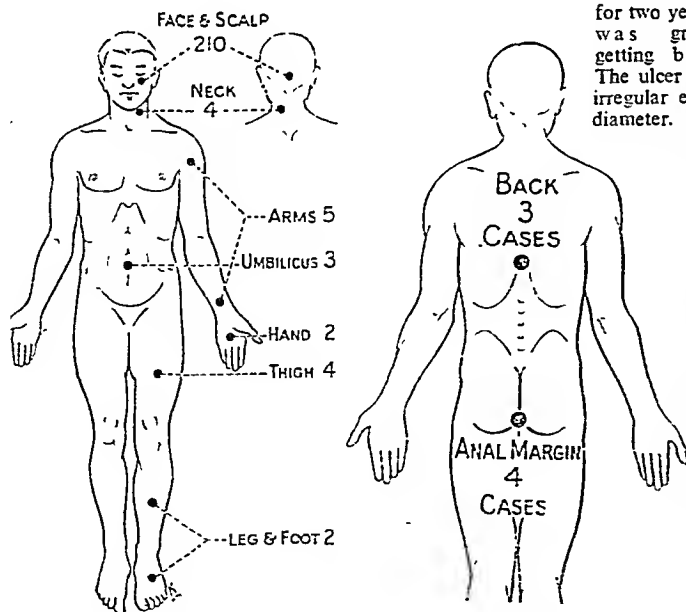
FIG. C.—*Case 1.* Rodent ulcer of the umbilical region. This lesion started as a pimple 12 years previously.

irregular edge and was $\frac{1}{2}$ in. (1.25 cm.) across at its greatest diameter. Excision was undertaken through an elliptical incision. Recovery was rapid and the patient was discharged from the hospital on the fourth post-operative day. Microscopically the growth was a typical basal-cell carcinoma. The patient was well, with no sign of recurrence, two years later.

Case 3.—A seaman aged 47 with a small raised growth just above the umbilical margin. There was a small area in the centre of the tumour thought he had been stung by a bee at Alexandria some ten months previously. Growth was hard, with a raised, no palpable glands in the axillary region. Excision was undertaken through an elliptical incision. Recovery was uneventful. Histological report stated that it was a typical basal-cell carcinoma. He continued his war service and was quite free from any symptoms.

Chest Wall and Back (3)

Case 4.—A man aged 59 was seen in 1942 with an irregular ulcer the size of a halfpenny on the middle of his back on a level with



FIGS. A AND B.—Diagrams illustrating distribution of rodent ulcers.

angles of the scapulae. The patient had been conscious of a lump on the back for some five years. Excision was undertaken through an elliptical incision. Recovery was uneventful. The histology was that of a typical rodent ulcer.

Case 5.—A man aged 64 was first seen in the out-patient department in November, 1945, complaining of an ulcer on the anterior chest wall about 1½ in. lateral to the right sternoclavicular joint. Some 19 years previously it had appeared as a spot the size of a pin-head. Gradually it became enlarged, and a crust formed on it. It was never raised above the adjacent skin surface. The ulcer was treated with x rays until March, 1947, at fortnightly intervals for courses lasting two to three months each. A total dosage of 4,100 units was given. Apparent cure was obtained twice but was followed by recurrence. On examination an irregular shallow depression was seen 1 in. (2.5 cm.) in diameter. It was almost entirely healed and epithelized, but part of the surface was covered by dry scabs. The surface was flat. The base was not depressed and the margin was not thickened or elevated, but there was an appreciable thickness and a certain stiffness as compared with normal skin. The ulcer was excised in June, 1947. The pathological report stated: "There is a central warty growth with several outlying nodules. It is not ulcerated. The cut surface shows no naked-eye evidence of infiltration of the subcutaneous tissue. Section shows the histological picture of a rodent ulcer. There is no deep infiltration of the underlying tissues" (Plate, Figs. 1 and 2).

Case 6.—A man aged 59 came under observation in December, 1948, with an ulcer on the left side of the chest wall. Thirty years earlier a small red nodule had appeared on the

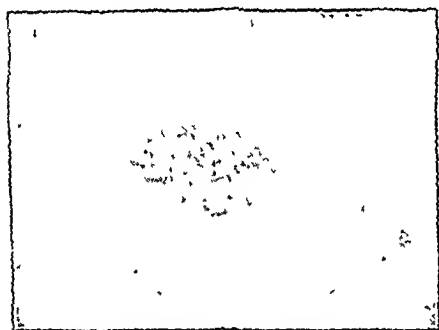


FIG. D.—Case 6. Rodent ulcer of left chest wall. This lesion had appeared as a small pimple 30 years before. It had ulcerated only six years before. When seen in out-patient department the ulcer had become secondarily infected.

rolled over in parts. The centre was ulcerated and infected, and the surrounding skin showed some inflammatory erythema. There was no deep fixation. The ulcer was excised in December, 1948. The pathological report was that of a typical rodent ulcer (Plate, Figs. 3 and 4).

Anal Margin (4 Cases)

Case 7.—A man aged 62 was seen in February, 1915, with a small irregular ulcer to the left side of the anal margin. It was about ¼ in. (1.25 cm.) in diameter, and had been present for four years. The ulcer edge was hard and "rolled over" in places. There was no enlargement of the inguinal glands. Excision was performed under general anaesthesia, and a small part of the external sphincter and muscle was removed with the ulcer. Recovery was uneventful, with full sphincteric control. On histological examination the growth was found to be a typical rodent ulcer.

Case 8.—A man aged 64 was seen in December, 1920, with a small ulcer the size of a cherry stone to the right side of the anal margin. The patient had noticed a "pimple" for some years, but he could not be definite about its duration. Excision was performed under local analgesia and recovery was uninterrupted. The histology was that of a rodent ulcer.

Case 9.—A man aged 56 was seen in October, 1922, with a small irregular ulcer the size of a threepenny-piece situated at the posterior part of the anal margin. The patient had noticed the lump for five years. The growth was excised under

local analgesia, and recovery was rapid. The histology was that of a typical rodent ulcer.

Case 10.—A man aged 59 was seen in May, 1925, with a small irregular indurated ulcer to the left of the anal margin. It had been first noticed by the patient five years previously and was thought to have started in an external pile. On examination there was an ulcer with a raised edge. It was about 1 cm. in diameter, and in one area it involved the anal margin. Excision was performed under local analgesia, part of the external sphincter and being removed. Healing was rapid and there was no anal incontinence. Histology revealed a typical rodent ulcer.

Thigh (4 Cases)

Case 11.—A man aged 54 was seen in March, 1916, complaining of an irregular ulcer on the outer side of his right thigh. It was the size of a split pea, and had been first noticed as a pimple two years previously. The ulcer had hard "rolled over" edges and had been irritated by the uniform trousers which the patient wore. Excision was performed under local analgesia. Histology revealed a typical rodent ulcer.

Case 12.—A marine officer aged 49 was seen in February, 1918, with a small irregular ulcer measuring 1 cm. in diameter situated on the outer part of his right thigh. He thought he had knocked his thigh against a rail a year previously, but was not certain of this fact. The ulcer was excised under local analgesia. The histology was that of a typical rodent ulcer.

Case 13.—A man aged 58 was seen in 1926 with an irregular ulcer on the outer side of his right thigh just below the greater trochanter. It was about 1 in. in diameter and had grown from a small pimple to its present size in eight years. It was excised under general anaesthesia. Histology revealed a typical rodent ulcer.

Case 14.—A male clerk aged 49 was first seen in November, 1948, complaining of a growth on his left thigh. It had started eight years earlier as a small pimple and had increased slowly in size since then. It was not painful. There was a swelling the size of a halfpenny on the anterior surface of the left thigh 4 in. (10 cm.) vertically below the left anterior-superior iliac spine. Its outline was irregular, with raised edges and a slightly depressed centre. Consistency was firm and the edges were well defined. It was attached to skin, but not deeply. It was excised under general anaesthesia in November, 1948. Histological section revealed a typical rodent ulcer with some cystic degeneration (Plate, Figs. 5 and 6).

Legs and Feet (2 Cases)

Case 15.—A stoker aged 62 was seen in 1923 with a small ulcer the size of a split pea on the lower part of the anterior surface of his left leg. A "pimple" had been present for eight years, and he had worn a bandage over it while in the Navy during the 1914-18 war. Excision was performed under local analgesia. Histology revealed a typical rodent ulcer.

Case 16.—A carpenter aged 59 was seen in 1926 with a small ulcerated area on the dorsum of his left foot. It was the size of a cherry stone and had been present for five years. The edge of the ulcer was irregular and was "rolled over" in parts. Excision was performed under local analgesia. Histology revealed a typical rodent ulcer.

Neck (4 Cases)

Case 17.—A married woman aged 49 was seen in September, 1928, with a small ulcerated area the size of a split pea situated on the left side of the neck just lateral to the hyoid bone. It had started as a pimple eight years previously, when she was serving as a stewardess. The ulcer was irregular, with hard edges. Excision was performed under local analgesia. Histology proved the growth to be a rodent ulcer.

Case 18.—A man aged 59 was seen in December, 1931, with a small ulcer just above the suprasternal notch. It had been present for four years and had started as a pimple. It was about the size of a cherry stone, with irregular edges. The patient had not worn a collar for three years because of the ulcer. Excision was performed under general anaesthesia. Histology revealed a typical rodent ulcer.

Case 19.—A married man aged 62 was seen in May, 1933, with a small ulcer the size of a sixpence just to the right of the ala of the thyroid cartilage. It began as a pimple and had been present for three years. Excision was performed under local analgesia. The growth was a typical rodent ulcer.

Case 20.—A stoker aged 56 was first seen in July, 1936, with a ulcer the size of a large pea in the midline of the neck just above the suprasternal notch. The ulcer had hard raised edges and had been present for over a year. Excision was performed under local analgesia. Histology proved the growth to be a rodent ulcer.

Arms and Hands (7 Cases)

Case 21.—A stoker aged 52 was seen in March, 1919, complaining of an ulcer on the centre of his left forearm. This had first appeared seven years previously while he was working in a tanker. The ulcer almost healed at times, but always broke down again. When examined the ulcer was found to be the size of a threepenny-piece. Its edge was irregular and was firm in consistency. Excision was performed under local analgesia. Histology revealed a typical rodent ulcer.

Case 22.—An ex-miner aged 62 was seen in April, 1924, complaining of a small ulcer just above his left antecubital fossa. The ulcer had started as a pimple three years previously and had appeared to heal over at times. It was the size of a split pea and its edges were irregular and firm. Excision was performed under local analgesia. Histology proved the tissue to be a rodent ulcer.

Case 23.—A man aged 66 was seen in March, 1928, complaining of a small irregular ulcer on the upper anterior surface of his right upper arm. The ulcer had appeared as a very small lump three years previously. It was now an irregular raised growth $\frac{1}{4}$ -in. (0.6 cm.) in diameter. Excision was performed under local analgesia. Histology revealed a typical rodent ulcer.

Case 24.—A married woman aged 52 was seen in May, 1930, complaining of an ulcer on the outer side of her left upper arm. The ulcer had started six years previously as a pimple and had gradually increased in size. It appeared to heal on three separate occasions. The ulcer was shallow, with a raised "rolled over" edge, and was the size of a cherry stone. Excision was performed under local analgesia. Histology revealed a typical rodent ulcer.

Case 25.—A man aged 60 was seen in September, 1932, complaining of a small ulcer just below his right antecubital fossa. It had first appeared four years previously after a blow on the forearm by a hammer. It was irregular, with a hard edge, and was about $\frac{1}{4}$ -in. (0.6 cm.) in diameter. Excision was performed under local analgesia. Histology revealed a typical rodent ulcer.

Case 26.—An electrician aged 69 was seen in December, 1934, complaining of a small ulcer on the back of his left hand. It had started six years previously, after an electrical burn from a live wire. The ulcer was shallow, with an irregular hard outline, and was $\frac{1}{4}$ -in. (1.25 cm.) in diameter. Excision and repair of the defect by skin grafting was performed under general anaesthesia. Histology proved the growth to be a rodent ulcer.

Case 27.—A man aged 56 was seen in May, 1940, complaining of a small ulcer on the back of his left hand. The ulcer was the size of a split pea, and it had a hard irregular edge. Excision was performed under local analgesia. Histology showed the structure of a typical rodent ulcer.

Discussion

Basal-cell carcinoma, or rodent ulcer, is a tumour composed of ramifying, often pointed, processes which invade the dermis and subcutaneous tissues; or of lobules composed of cells which have the character either of the basal cells of the epidermis or of the cells lining the pilo-sebaceous ducts. Cells of true sebaceous type do not occur. Sometimes the connexion with the basal layer of the epidermis can be made out in sections; in other cases continuity with the pilo-sebaceous organs is demonstrable. The amount of stroma is variable, but is usually relatively

large. It may be fibrous in the chronic types and embryonic in the more malignant tumours (Sequeira *et al.*, 1947).

Epidermal skin carcinomata, whether of basal, squamous, or mixed type, arise intra-epidermally (Savataud, 1931). They are preceded by a hypertrophic change in the affected area of epithelium, which results in the formation of a pre-rodent keratosis, finer and flatter than that of a squamous epithelioma (Molesworth, 1927).

The natural history of rodent ulcers is well illustrated by the above case histories.

In 14 of the 25 cases the lesion first noticed was a "pimple" or small red nodule. Over a period of years, ranging most frequently from four to eight years, the lesion grows slowly; the shortest history in this series was of 10 months, the longest of 30 years. For some years there is no ulceration, but eventually the epithelium over the lesion breaks down. There may be abortive attempts at healing. This occurred in three cases of the series. Finally, however, the patient is seen complaining of a chronic ulcer varying in size from $\frac{1}{4}$ to $1\frac{1}{2}$ in. (0.6 to 3.75 cm.) in diameter.

The patient is in the sixth and seventh decade of life (the youngest in this series was 47, the oldest was 69). Only two of the 25 patients were female.

The ulcer is irregular in outline, with a heaped-up "rolled over" edge which is indurated and even hard to the touch. The floor may show clean granulations, or may bear sloughs, or may be scabbed over by crusts. There may be evidence of epithelization. There is little or no discharge. If the ulcer has become secondarily infected the base may be necrotic and the surrounding skin may show an inflammatory erythema and induration. Typically there is no fixation deeply. The regional lymph nodes are not enlarged.

Low- and high-power views of a typical rodent ulcer, and of a rodent ulcer showing cystic change, are presented in Figs. 3, 4, 5, and 6.

Clinical Varieties

The clinical appearance of basal-cell carcinoma is not uniform. The most satisfactory classification of the different types is that of Sequeira *et al.* (1947).

Superficial Cicatrizing Type.—(1) The lesion may present as an irregular sclerotic scar surrounded by a rim of small greyish elevations. The surface is smooth, but ulcerates when the lesion becomes more active. (2) A flat infiltration of the skin may be found, underlying an ivory or waxy surface. Ulceration occurs late.

Non-Cicatrizing Type.—This is the typical rodent ulcer. It presents as a chronic, indolent, slowly growing ulcer, which spreads superficially and deeply.

The Terebrant Type.—This lesion may be highly malignant from the start, or may succeed the preceding types. New growth and ulceration progress very rapidly, in depth rather than on the surface, and the tumour is of great local malignancy.

Multiplicity of Lesions

Molesworth (1927) said that multiplicity of lesions in cases of rodent disease was commonplace in Australia. In this country rodent ulcers are often single, though two or three lesions in the same patient are not uncommon.

There is, however, a group of cases in which multiple rodent ulcers are found as described by Sequeira *et al.* (1947) and Johnson (1945). The lesions appear to be identical with those described by Little (1923) under the name "erythematoid benign epitheliomata." These multiple lesions are basal-cell carcinomata of the superficial cicatrizing variety. They occur in the form of a red plaque, at the edge of which is seen a very faint, wax-like, shiny, sinuous margin, narrow and raised; much flatter than the rolled edge of a typical rodent ulcer but clearly of the same

nature (Little, 1923). Histologically a basal-cell carcinoma is seen with unusually shallow invasion of the corium by epithelial down-growths. These multiple superficial lesions are usually numerous, and are diffusely placed over the trunk and limbs. They may be associated with a more characteristic non-cicatrizing rodent ulcer somewhere on the body.

Site

Bland-Sutton wrote: "Although rodent ulcer arises mainly on the face . . . it may occur on the neck and pinna, but never, so far as I know, on the limbs." Molesworth (1927) had not seen rodent ulcer on the hands or forearms; epithelial tumours in these areas he found always to be squamous epitheliomata. Sutton and Sutton (1942) said that the nose, forehead, upper lip, and covered parts of the trunk and extremities were preferred. Sequeira *et al.* (1947) described the site of election as the face above a line drawn just below the lobule of the ears and crossing the face below the nose. The inner and outer canthi, the side of the nose, particularly the alae, and about the ears were the commonest sites; rarely the lips were affected. Basal-cell carcinoma of the trunk were rare.

We have pointed out earlier in this paper that differentiation should be made between the typical non-cicatrizing type of rodent ulcer and the multiple superficial type. The latter is found diffusely distributed over the trunk and limbs. It is much less common to find typical single rodent ulcers in these sites.

Savataud (1923) quotes a case reported by Trimble in which an ulcerated basal-cell carcinoma involved a large area of the anterior abdominal wall. Johnson (1945) appears to have reported especially cases of multiple superficial rodent ulcers; among these there appear to have been one deep ulcer of the chest wall and one of the back. Lawrence (1941) reported two personal cases of basal-cell carcinoma of the anus and four cases found in the literature. Wilson (1941) reported four cases of basal-cell carcinoma of the vulva, and collected 23 additional cases from the literature; he included transitional-cell carcinomata among his cases. Newland (1936), among 600 personal cases of rodent ulcer, found five on the upper extremity and one on the buttock. Little (1923) recorded two cases of single superficial rodent ulcer, one on the buttock, and one on the thigh. Piérard and Dupont (1948) described under the name "nodular epithelioma" what were apparently cystic rodent ulcers—in one case on a leg, in the other on the scrotum.

Treatment

The morphoea-like or "card-like" tumours may be treated satisfactorily with CO₂ snow. Sutton and Sutton (1942) advocate Sherwell's treatment for small lesions: the lesion is curetted, and acid nitrate of mercury is applied. For rodent ulcers in general, however, choice of therapy lies between excision and irradiation.

Factors Which Influence Choice of Therapy

The following points demand consideration.

Site.—Regard must be had to both the accessibility and the proximity of important structures. Almost all rodent ulcers can be excised. With the development of skin grafting and plastic repair of skin defects there is now no site in which a rodent ulcer may be found which is inaccessible to surgical excision. Plastic repair of eyelids or nose can be readily performed. When irradiating rodent ulcers in some areas care must be taken that vital structures are not irradiated at the same time.

Surface Area of Lesion.—All small lesions are naturally the more readily excised. These lesions are also the more suitable for irradiation. Skin defects left by surgical excision can be readily covered by grafts or plastic repair. On occasion

the cosmetic effect may be better from irradiation of large areas, but greater exposure to irradiation is necessary, with its attendant disadvantages.

Depth of Penetration of Lesion.—This is difficult always to determine accurately. The more superficial a lesion the more accessible it is to irradiation, either by radium or by x rays. But superficial lesions are also readily treated by surgery. Surgery is the treatment of preference where penetration is deep into bone or cartilage.

Multiplicity of Lesions.—In certain cases multiple superficial lesions may be adequately treated with CO₂ snow—namely, those of morphoea or "card-like" type. In some cases superficial irradiation may have practical advantages over multiple excisions. But in the cases with deeper multiple lesions (and there are not usually more than two or three deep rodent ulcers in the same patient) surgical excision is not only practicable but the method of choice.

Age and State of Health of Patient.—Advanced age is not a contraindication to surgery. If the state of health of the patient is poor, local analgesia can almost always be used. Only rarely need a patient be condemned to irradiation on account of poor health. In patients of younger age groups surgical excision finds favour because with their longer expectation of life there is greater likelihood of the development of late complications of irradiation of the skin.

Availability of Apparatus and Trained Staff.—The amenities of surgery and persons trained in their effective use are more generally available than adequate radiotherapeutic apparatus and trained radiotherapists.

Surgical Excision and Irradiation Compared and Contrasted

Surgical excision is applicable to any lesion, and is directed to the area involved and no more. Irradiation becomes technically more difficult the deeper a lesion penetrates and the closer it lies to vital structures. Whereas one operation is required when surgery is practised, and the extent of excision necessary is readily gauged, multiple attendances for irradiation are often necessary, and dosage of irradiation is not standardized. Owing to uncertainty of depth of involvement irradiation may fail to destroy the deeper layers of cells. Some cells of the tumour may be resistant to irradiation. The peripheral extent of the growth may not be appreciated without surgical excision, and an adequate area of tissue may not therefore be irradiated.

The complications of surgical excision of rodent ulcers are negligible. Irradiation produces radiodermatitis, which may be followed by telangiectasis and atrophy; damage to vital structures not involved by the growth may be caused by gamma or x rays.

By surgical excision confirmation of diagnosis is obtained. Montgomery (quoted by MacKee and Cipollaro, 1946) showed that 13% of skin carcinomata, diagnosed clinically as basal-cell epitheliomata, contained prickle cells. These mixed or basal-squamous-cell epitheliomata are more radio-resistant than pure basal-cell tumours.

Recurrences occur consistently in 5% of cases treated by x rays. There should be no recurrence with adequate surgical excision.

With regard to time lost from work, admission to hospital, and mental trauma, the advantages are with surgery. In almost all cases rodent ulcers may be treated in the out-patient department under local analgesia. Arrangements can readily be made for premedication of the patients to diminish their worry. There is no danger of failure to complete the treatment with surgery as there is with the repeated visits so often necessary with radiotherapy.

Lastly, in the treatment of the recurrences after failure of irradiation, surgery is the only satisfactory choice. Recurrences tend to be more radio-resistant than the primary growth.

Summary

Twenty-seven cases of basal-cell carcinomata (rodent ulcers) are described occurring in sites other than the face and scalp. The clinical varieties of rodent ulcer, the multiplicity of lesions, and their site are discussed.

Treatment by surgical excision and that by irradiation are compared and contrasted.

Surgical excision of all rodent ulcers is recommended.

We wish to express our thanks to the late Dr. H. Creed, lately Director of Pathology, King's College Hospital, to Dr. H. A. Lucas, and to Professor H. A. Magnus, Professor of Pathology in King's College Hospital, for their assistance with the histology of these tumours. We wish to acknowledge the assistance of Mr. W. Smith, of the department of photography, King's College Hospital, who prepared the photomicrographs.

REFERENCES

- Johnson, M. (1945). *Brit. J. Derm.*, 57, 58.
Lawrence, K. B. (1941). *Arch. Surg., Chicago*, 43, 88.
Little, E. G. G. (1923). *Brit. J. Derm.*, 35, 435.
MacKee, G. M., and Cipollaro, A. C. (1946). *X-rays and Radium in the Treatment of Diseases of the Skin*. Kimpton, London.
Molesworth, E. H. (1927). *Med. J. Aust.*, 1, 878.
Newland, H. (1936). *Ibid.*, 2, 221.
Pierard, J., and Dupont, A. (1948). *Brit. J. Derm.*, 60, 50.
Savatard, L. (1923). *Ibid.*, 35, 405.
— (1931). *Ibid.*, 43, 161.
Sequeira, J. H., Ingram, J. T., and Brain, R. T. (1947). *Diseases of the Skin*. Churchill, London.
Sutton, R. L., and Sutton, R. L., jun. (1942). *Synopsis of Diseases of the Skin*. Kimpton, London.
Wilson, J. M. (1941). *Arch. Surg., Chicago*, 43, 101.

STREPTOMYCIN TREATMENT OF TUBERCULOUS BRONCHOPNEUMONIA IN CHILDHOOD

BY

R. McLAREN TODD, M.D., M.R.C.P., D.C.H.

Senior Lecturer in Child Health, University of Liverpool

[WITH PHOTOGRAVURE PLATE]

This report is concerned with the use of streptomycin for tuberculous bronchopneumonia in childhood, and is based upon the treatment of eight patients admitted between January, 1947, and April, 1948, to the streptomycin centres under the auspices of the Medical Research Council at Alder Hey Children's Hospital, Liverpool (7 cases), and the Royal Hospital for Sick Children, Glasgow (1 case). Two of the patients died, and the six survivors have been followed up for periods of between 6 and 22 months subsequent to admission.

Diagnosis

Tuberculous bronchopneumonia simulates other types of bronchopneumonia closely, the main clinical differences being the insidious onset, steady progress of symptoms, increasing pallor, flabbiness, and weakness, and the progressive character of the abnormal pulmonary signs in tuberculous bronchopneumonia (Naish, 1933). The evidence

upon which the diagnosis was based in our cases was as follows.

History of Contact.—The tuberculosis officer of the local authority co-operated with us closely during this investigation, and in seven cases a history of contact with a proved case of pulmonary tuberculosis was obtained (Table I).

History of Illness.—A period of ill-health varying from 27 to 90 days before admission to hospital was a feature,

TABLE I.—Contact History

Case No.	Contact	Site	X-ray Film	Sputum	Details of Contact
1	Stepfather	Lungs	Active tuberculosis	Positive	Living in same house, has had sanatorium treatment
	Stepfather's sister	Lungs	—	—	Living in same house until death from pulmonary tuberculosis two years ago
2	Mother Brother (18 years)	Lungs	Quiescent	Negative	Living in same house
		Lungs	Active	Positive	Living in same house and nursing the child for one month before entering sanatorium
3	Grand-mother	Lungs	Active	Positive	Living in same house for first 15 months of child's life
4	Father	Lungs	—	—	Living in same house. Died of pulmonary tuberculosis, July, 1948
5	Father	Lungs	—	Positive	Living in same house
6	No known contact				
7	Mother	Lungs	Quiescent	Negative	" "
	Brother (3 years)	Glands in neck	Active	Negative	" "
		Lungs	—	—	Lived in same house until death, at age of 15, from pulmonary tuberculosis, 1945
8	Brother (8 years)	Lungs	Active	Positive (Guinea-pig)	Lived in same house, but now in hospital with pulmonary tuberculosis
	Sister (7 years)	Cervical glands; dactylitis	Quiescent	—	Living in same house
	Mother—refused examination				" "

and in two cases the illness followed an attack of measles. All the patients had shortness of breath severe enough for the parents to remark upon it; cough of several weeks' duration was present in seven cases, sputum was noted in one case, and loss of weight had been observed in half the cases.

Clinical Signs.—The most striking signs were pallor (7 cases), variable degrees of dyspnoea (7 cases), cough (7 cases) accompanied by vomiting (2 cases), and poor nutritional state (3 cases). The pulmonary signs were those of bronchitis (4 cases), consolidation (3 cases), and collapse of the left lower lobe (1 case). (See Table II.)

Radiography.—Radiographs of the chest showed patchy shadowing of the lung fields in all patients: in Case 4 it was

TABLE II.—General Clinical Signs on Admission of Cases to Hospital

Case No.	Nutrition	Colour	Dyspnoea	Clubbing	Glands in Neck	Cough	Sputum	Chest Signs
1	Poor; very emaciated	Pale; no cyanosis	Slight	Fingers and toes Absent	Small	Moderate	—	Consolidation both bases Cavitation right upper lobe anteriorly
2	Poor	Pale; slight cyanosis	"	"	"	Severe, with vomiting	Yellow	Consolidation left lung anteriorly; bronchitic signs right side
3	Fair	Pale; no cyanosis	Stridor	"	None	Absent	—	Bilateral bronchitic signs
4	Good	Very pale	Slight	"	"	Moderate	Swallowed	Consolidation upper two-thirds left lung
5	Good	Pale	Marked	"	Enlarged and bilateral	Severe	—	Generalized bronchitic signs
6	Fair	No cyanosis	Slight	"	Small	Moderate	—	Generalized bronchitic signs
7	"	Pale	"	"	"	Severe, with vomiting	—	Bronchitic signs at both bases
8	"	"	Absent	"	Marked enlargement, with discharging sinuses	Slight	Swallowed	Clinical evidence of collapse of left lower lobe; bronchitic signs in other lung fields

associated with massive consolidation of the left lung, in Case 8 with collapse of the left lower lobe, and in Case 2 with partial collapse of the left lung and compensatory emphysema. In Cases 3, 7, and 8 enlarged hilar glands were visible. A fine miliary type of mottling in addition to the coarse patchy shadowing was present in Case 5. (See Table III.)

Isolation of Organism.—*Mycobacterium tuberculosis* was obtained from stomach washings or sputum in all cases, was seen on direct film examination (Cases 1, 2, 5, and 6), and was isolated by culture (Cases 3, 4, and 8) or by guinea-pig inoculation (Cases 4 and 7). The tubercle bacilli were of the human variety in seven cases and bovine in Case 3.

Tuberculin Reaction.—In five cases strong positive reactions to 1 in 10,000 old tuberculin were obtained; in two cases a dilution of 1 in 1,000 was positive; and in one case the test was negative at 1 in 10,000 but was not tested with higher concentrations.

Course of Illness After Admission to Hospital and Before Starting Streptomycin

Case 2 received streptomycin from the day of admission to hospital, but the remaining seven cases were observed for

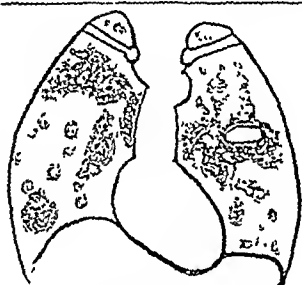
periods varying from 17 to 102 days before streptomycin administration was started. An assessment of the clinical condition during this period before streptomycin treatment has been made in Table IV.

Case 3 was admitted for the treatment of suppurative otitis media, and initially no abnormal chest signs were noted. Bronchitis first developed on the 48th day of observation. Fever was minimal except on the 97th day, when a temperature of 104° F. (40° C.) was recorded. No obvious deterioration in general condition was observed. In contrast, the course in Case 1 was progressively downhill: this patient lost 1½ lb. (570 g.) in 17 days, his temperature reached 102° F. (38.9° C.) daily, and the respiratory signs increased in severity. Similar evidence of increasing consolidation was noted in Case 4 and the temperature was raised to 102° F. daily, but this patient's general condition was fairly satisfactory throughout. In the remaining four cases weight was stationary, appetite was fairly good, temperature was normal except for an occasional rise to 100° F. (37.8° C.), and no alteration in the chest signs was observed.

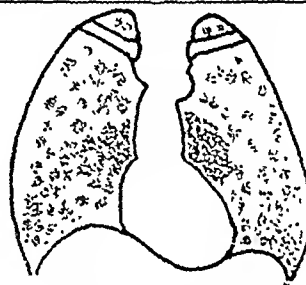
Streptomycin Administration

The streptomycin used was in the form of the hydrochloride, obtained from America (Merck), and the dosage

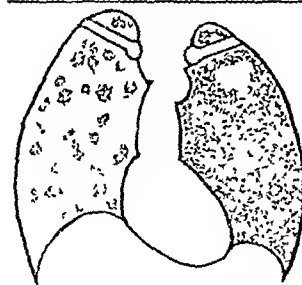
TABLE III—Details of X-ray Findings on Admission to Hospital (Radiologist's Report)



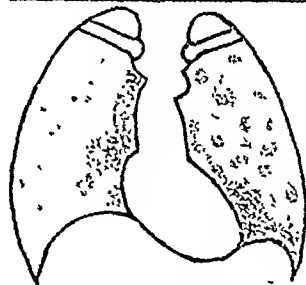
Case 1.—Gross changes in both lung fields typical of tuberculous bronchopneumonia, with cavitation on the left.



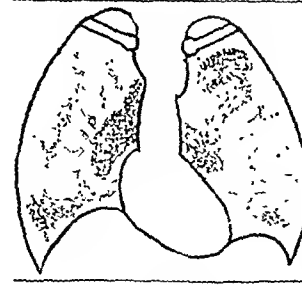
Case 5.—Diffuse bronchopneumonic tuberculous infiltration with finer miliary mottling.



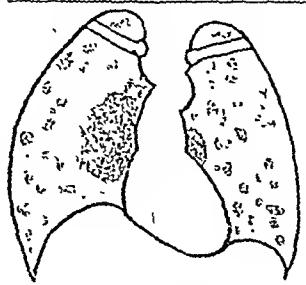
Case 2.—Consolidation and partial collapse of left lung with compensatory emphysema. Bronchopneumonic changes in the right lung.



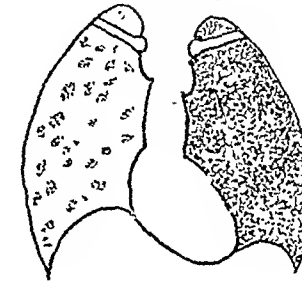
Case 6.—Bronchopneumonic changes in both lungs, but especially the left. Some de-aeration of left lower lobe. ? Tuberculous.



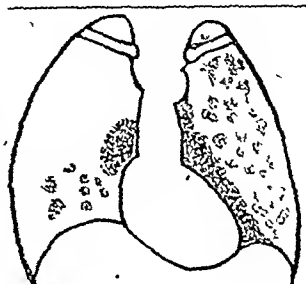
Case 3.—Opacity in left upper lobe and in right lower lobe due to consolidation of bronchopneumonic type; well-marked peripheral hyperaemia in all areas due to bronchopneumonic congestion. Both hilar shadows enlarged.



Case 7.—Bronchopneumonic consolidation of both lungs. Enlarged right mediastinal shadow.



Case 4.—Mediastinum enlarged to the left; areas of consolidation in right lung and massive consolidation of left lung.



Case 8.—Enlarged right hilar gland with infiltration at right base. Collapse of left lower lobe and bronchopneumonic shadowing in left upper lobe.

TABLE IV.—*Clinical Course of Patients from Day of Admission until Start of Streptomycin Therapy*

Case No.	Period of Observation	General Observations	Temperature	Weight	Appetite	Chest Signs
1	17 days	Lethargic and apathetic. Frequent bouts of coughing. Increasing pallor. Progressive loss of flesh.	Up to 102° F (38.9° C.) daily	Loss of 11 lb (570 g)	Good	Evidence of consolidation with cavitation?
2	Treatment started on day of admission					
3	102 days	Superficial skin sepsis. Right suppurative otitis media. Measles. Occasional bouts of sweating. Cough and dyspnoea from 48th day; later became cyanosed. Inspiratory stridor noted on 72nd day.	Up to 99° F (37.2° C) daily, 104° F (40° C) on 97th day	—	Poor	Developed bronchitic signs on 48th day
4	21 days	Fair general condition. Loose cough. Dyspnoea. No cyanosis.	Up to 102° F. (38.9° C) daily	—	Poor	Signs of increasing consolidation.
5	41 days	Admitted as whooping-cough (17/7/47) but not confirmed. On 1/8/47 developed marked cervical adenitis (No local cause in throat).	99–100° F (37.2–37.8° C)	Stationary	Poor	Bronchitic signs (Radiograph on 1/6/47 showed primary complex).
6	20 days	Quiet—resents examination. Occasional dyspnoea.	Normal	..	Good	Bronchitic signs
7	42 days	No dyspnoea.	99 to 100° F., with occasional spikes to 101° F (38.3° C)	..	Fairly good	..
8	48 days	Discharging sinuses in neck and axilla. Bouts of coughing. Dyspnoeic. No cyanosis.	Normal	..	..	Collapse of left lower lobe

TABLE V

Case No.	STREPTOMYCIN			TUBERCLE BACILLI		Sensitivity <i>in Vitro</i> (units/ml)	Weeks after starting Streptomycin
	Daily Dose and Route	Duration	Total Dose	Source	Date Isolated		
1	0.8 g i.m. 1.0 g i.m. 1.0 g i.m. 0.1 g i.m.	22/8/47–3/9/47 4/9/47–15/10/47 25/10/47–21/11/48 30/10/47–28/11/47	130 g	Gastric lavage Sputum " " " "	6/8/47 10/8/47 29/1/48 30/1/48 31/1/48 2/4/48 26/4/48 27/4/48	1 1 6 6 6 25 50 50	— — 23 23 23 32 35 35
2	0.3 g i.m. 0.5 g i.m.	22/1/48–1/4/48 2/4/48–12/4/48	27 g	Gastric lavage " "	20/2/48 23/2/48 2/3/48	1 1	4 5 6
4	1.0 g i.m. 0.5 g i.m. 0.4 g i.m. 1.0 g i.m.	21/1/47–24/3/47 26/3/47–21/4/47 27/6/47–25/7/47 23/1/48–20/2/48	112.5 g	Gastric lavage " " "	17/1/47 22/1/47 14/5/47 27/6/47	0.25 0.25 0.125 0.125	— — 16 22
8	1.0 g i.m.	2/4/48–26/6/48	84 g	Sputum "	25/2/48 16/7/48	0.125 0.125	— 15

adopted was 0.02 g. per lb. (454 g.) body weight every 24 hours, intramuscularly. The drug was dissolved in distilled water and was given in divided doses six-hourly. This regime was continued for a period ranging between 12 and 22 weeks, making a total dosage of 27 to 130 g. of streptomycin. Three patients showed evidence of mild sensitivity to streptomycin. In Cases 1 and 7 a maculo-papular rash was present on the limbs, face, and trunk. In Case 4 albumin, red cells, white cells, and hyaline casts were present in the urine, and in Case 1 albumin and pus cells were found; these reactions quickly disappeared when the drug was suspended temporarily. Eosinophilia was not a feature, and no effects on the vestibular apparatus were observed. Local soreness, erythema, and induration at the site of injection occurred in one case.

Sensitivity of *M. Tuberculosis* to Streptomycin

The method of testing was that used in two investigations undertaken by the Medical Research Council (1948) in which the sensitivity was compared with that of the standard culture H37Rv. In half the cases tubercle bacilli were not isolated after treatment with streptomycin had started. In three of the remainder (Cases 2, 4, and 8) the tubercle bacilli showed no increased resistance to the action of streptomycin, but in Case 1 increased resistance was observed. The details of the sensitivity tests are recorded in Table V.

Clinical Course

(a) Fatal Cases (2)

CASE 1

A boy aged 5 years 4 months had a history of measles 26 days before admission, followed by anorexia, loss of weight, apathy, and refusal to play. Unproductive cough continued from the time of the measles. The child's father, suffering from active pulmonary tuberculosis, was living in the same house. On clinical examination, nutrition was poor and loss of weight was obvious. The axillary and inguinal glands were enlarged and clubbing of fingers and toes was present. There was flattening and diminished movement of the right side of the chest, and dullness to percussion at both bases with rales. Cavernous breathing was noted at the right apex anteriorly.

Tubercle bacilli were seen in direct films (and later cultured) from stomach washings. Chest radiographs showed "gross changes in both lung fields typical of bronchopneumonia, with cavitation on the left side." The cerebrospinal fluid showed no abnormality (total protein 30 mg. per 100 ml., sugar normal, cells 2 per c mm.). Intramuscular streptomycin treatment in a dosage of 0.02 g. per lb. body weight per day (0.8 g.) was started. His condition deteriorated, and 23 days after the beginning of treatment a generalized erythematous rash was observed, albumin appeared in the urine, and treatment was temporarily suspended. One month later the condition of the left fifth metacarpal bone was noted to have deteriorated. Two weeks later a puncture revealed changes typical of osteomyelitis, although there was no suspicion of abnormal neurological signs. The

and bronchopneumonic shadowing in the left upper lobe. The cerebrospinal fluid was normal. The Mantoux reaction (1 in 10,000) was positive (12 by 15 mm.).

Streptomycin treatment was started (1 g. daily in divided doses six-hourly), and after six weeks of treatment all the sinuses in neck and axilla had healed. There was a marked improvement in the general condition and appetite was good, but the chest signs were unchanged. After twelve weeks streptomycin was discontinued; the sputum still contained tubercle bacilli.

The patient was sent to a convalescent hospital. Her sputum has remained positive, and x-ray films of the chest show little change. Since streptomycin treatment has been discontinued there have been bouts of pyrexia up to 103° F. (39.4° C.) and her general condition has slightly deteriorated.

Discussion

1 The *diagnosis* of tuberculous bronchopneumonia presents difficulties because the clinical signs and radiological appearances may closely resemble those of non-tuberculous bronchopneumonia. In one of our cases, for instance, the radiographs were suggestive of staphylococcal pneumonia, and the correct diagnosis was reached by isolating tubercle bacilli from gastric washings after a prolonged course of sulphathiazole had produced no obvious radiological improvement. Patchy areas of atelectasis associated with bronchopneumonia or with allergic conditions may present similar radiological shadows.

In addition to areas of bronchopneumonia of varying size, the finely mottled appearance of miliary tuberculosis may also be apparent on the x-ray film, as in Case 5. The experience of Blacklock (1932) was similar. In his study of 148 tuberculous children who came to necropsy 58 showed mixed miliary and bronchopneumonic lesions. Macroscopically there was often much difficulty in distinguishing between an early bronchopneumonic lesion and a subacute miliary one, and histological examination was frequently essential for differentiation. This same difficulty was found in the radiological assessment and diagnosis of our cases.

Scattered bronchopneumonic areas with cavitation are occasionally observed radiologically in the shadowed area surrounding a primary focus. These areas may progress to extensive pulmonary destruction (Caffey, 1945), and thus may be confused with the cavitation of tuberculous bronchopneumonia—a condition in which dissemination of the infection has occurred to parts of the same lung or the opposite lung through rupture of a caseous lymph node into a bronchus.

2 As to *prognosis* it is generally considered that recovery is improbable, and the usual course is a progressive deterioration (Nelson, 1946). The seven cases studied at Alder Hey Hospital during these trials were the only examples of tuberculous bronchopneumonia admitted in this period, and they were all treated with streptomycin. The only controls that we can offer, therefore, were similar cases in the hospital during the two years preceding the trials.

(a) *Duration of Survival and Mortality Rate*.—During the two years (1945 and 1946) preceding this trial eight proved cases of tuberculous bronchopneumonia were admitted to Alder Hey Hospital. The length of stay in hospital and results of treatment were as follows:

	Sex	Age	Stay in Hospital	Result
T.D.	Male	8 months	4 weeks	Died
J.W.	"	11 months	9 days	"
J.N.	"	1 year 3 months	4 weeks	"
D.H.	"	1 year 8 months	7 days	"
M.M.	Female	1 year 9 months	8 weeks	Taken home against advice
F.R.	Male	1 year 10 months	4	Died
B.B.	Female	5 years 9 months	2	"
M.D.	"	6 years 5 months	4	"

Seven of these eight patients died in hospital after a stay of seven days to four weeks, and the remaining case was taken home in poor general condition after eight weeks.

The results of streptomycin treatment of our patients compare favourably with these figures, both in the duration of life and in the more favourable outcome. The two fatal cases survived for 12 weeks and 9 months respectively after the beginning of streptomycin therapy. The five cases making good progress have survived 16, 15, 10, 8, and 4 months after cessation of streptomycin therapy.

(b) *Change in Weight*.—Gain in weight is considered a reliable guide in assessing improvement in these cases. The details of increase in weight are recorded in Table VI.

(c) *Isolation of Tubercle Bacilli*.—Gastric lavage was performed at regular intervals both during and after streptomycin therapy. In the two fatal cases tubercle bacilli were isolated on every occasion. In Case 8, which showed temporary improvement, tubercle bacilli reappeared after two months of streptomycin therapy. In only one of the five cases showing marked clinical improvement were tubercle bacilli isolated from gastric washings after streptomycin therapy had begun; this was Case 4, in which tubercle bacilli were isolated 16 and 27 weeks after the starting of streptomycin therapy.

(d) *Radiography*.—Radiographs taken at regular intervals during the trials showed a gradual clearing of the bronchopneumonic areas over a period of months (see Plate). In Cases 3, 5, and 6 calcification appeared 14, 13½, and 12 months after treatment was begun.

(e) *Pyrexia*.—The temperature records were of little value in assessing progress of the cases. In Cases 5, 6, 7, and 8 temperature was normal during and after streptomycin administration. In Case 4 the temperature was normal during treatment except on five isolated occasions. In Case 3 temperature was normal during the first eight days of streptomycin therapy, and then figures of 101° F. (38.3° C.) were recorded daily. Clinically, otitis media and tonsillitis had developed, and the temperature remained raised until these conditions had subsided. Three days later the temperature again rose to 101° F., and clinically the general condition of the patient had deteriorated and there was an increase in the chest signs. A transfusion of 300 ml. of fresh blood was given; thereafter the temperature remained normal. In Case 1 the temperature at 6 a.m. and 6 p.m. was above 100° F. (37.8° C.) for the first 25 days and often as high as 102° F. (38.9° C.). During the next 80 days it rose to 100° F. on three or four occasions each week; subsequently, normal temperatures were recorded. In Case 2 the temperature was normal except during the first three days of treatment and for the three days preceding death.

3 *Tuberculous meningitis* developed in one of our cases and was diagnosed by routine examination of cerebrospinal fluid before any abnormal neurological signs were present. It is suggested that the cerebrospinal fluid of all cases of tuberculous bronchopneumonia under treatment with streptomycin should be examined at two-weekly intervals during the first two months of treatment and at monthly intervals thereafter to detect early spread of disease to the meninges.

Summary

Streptomycin has been given to eight children suffering from tuberculous bronchopneumonia. Their ages at the beginning of treatment varied from 5 months to 12 years.

Two of these patients have died, and the six survivors have been under observation for periods of from 6 to 22 months.

The diagnosis of tuberculous bronchopneumonia presents difficulties because it closely simulates non-tuberculous bronchopneumonia, patchy collapse of the lung, and confluent miliary tuberculosis.

Gain in weight and radiological improvement in the lung fields are the two most valuable means of assessing progress.

In one child tuberculous meningitis developed during treatment and the organism became resistant to streptomycin.

This investigation was carried out under the auspices of the Medical Research Council Streptomycin in Tuberculosis Trials Committee (Chairman, Dr Geoffrey Marshall) at the centres at Alder Hey Children's Hospital, Liverpool, and the Royal Hospital for Sick Children, Glasgow. These two centres were under the charge of

R. McLAREN TODD : STREPTOMYCIN TREATMENT OF TUBERCULOUS BRONCHOPNEUMONIA IN CHILDHOOD

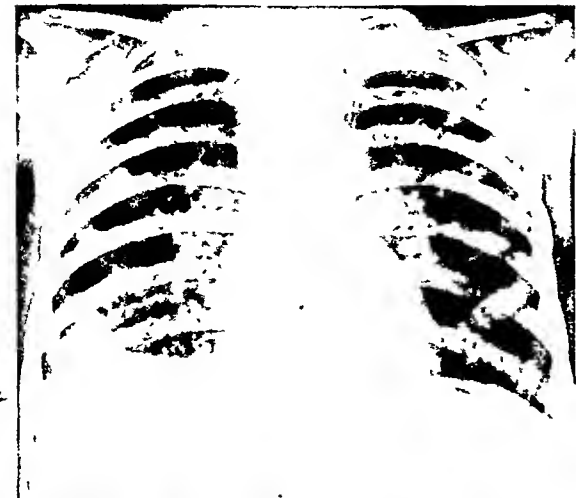


FIG. 1.—Case 3. Feb. 10, 1947. Bilateral hilar shadows: bronchopneumonic consolidation in left upper and right lower lobes



FIG. 2.—Case 3. Aug. 1, 1947. Marked improvement in right lower lobe.



FIG. 3.—Case 3. Oct. 15, 1948. Areas of calcification, especially at right apex, right midzone, and left apex: calcification at right base, probably site of primary focus.

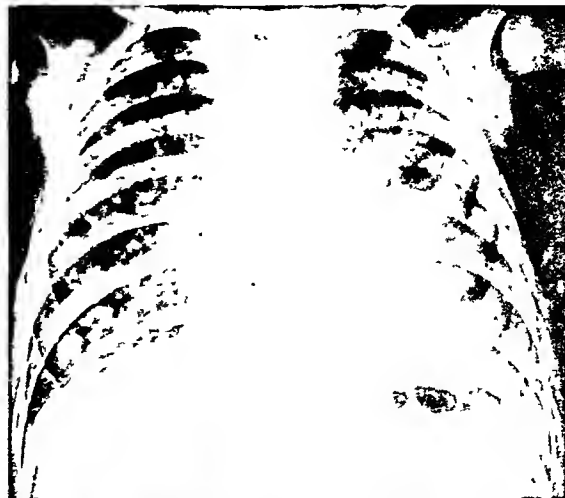


FIG. 4.—Case 5. Aug. 27, 1947. Diffuse bronchopneumonic infiltration

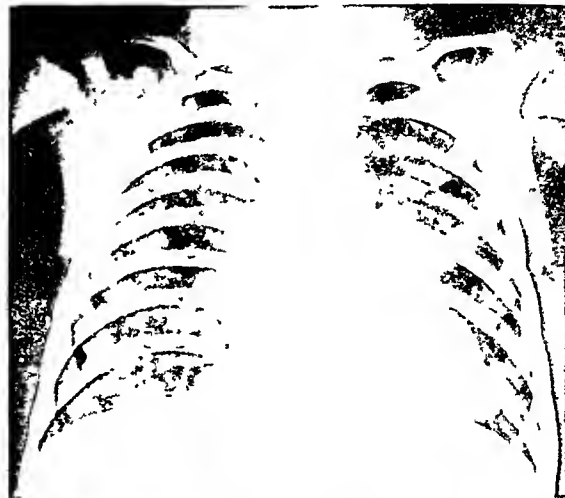


FIG. 5.—Case 5. Jan. 1, 1948. Considerable improvement in periphery of lung fields

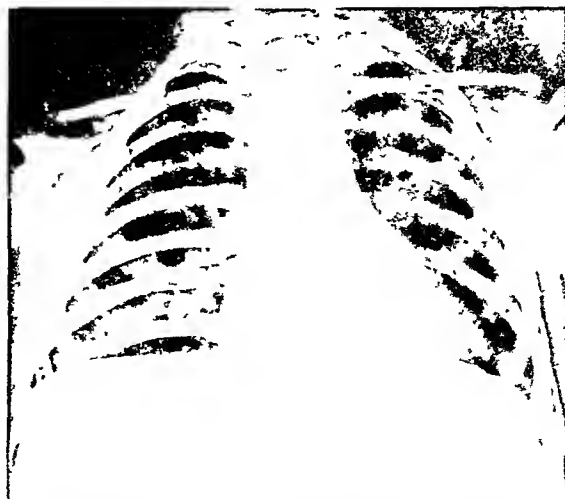


FIG. 6.—Case 5. Oct. 11, 1948. Calcification right base (probably site of primary focus) and right hilar glands

only one such case has been discovered." It appears that in this case vaccination has not given enough resistance because of deficient power of reaction. Frappier, of Montreal, hopes in the course of the next few years to have every child in the province of Quebec vaccinated with B.C.G. vaccine.

B.C.G. vaccination has been criticized and subjected to condemnation largely as a result of unfortunate experiences which can be eliminated by the observance of better technique in the preparation of the vaccine and its administration. Complications of the inoculation undoubtedly arise, but they can be avoided by proper precautions. Wilson (1947) has been critical of the suggestion that the practice should be adopted in this country, and has been replied to by Wallgren (1948). It would seem only fair that a scientific investigation of its efficiency in this country should be carried out with proper controls before embarking upon a national venture which by its biological nature will be damned outright by a section of the community.

Streptomycin

Streptomycin seems to have some control over the progress of tuberculosis in that the original experiments on guinea-pigs proved that the drug would arrest and even partially eradicate well-established tuberculosis in that animal. Hinshaw and Feldman (1945) recorded a favourable response in two-thirds of 75 cases, in some a clinical cure being recorded. Apart from a few unpleasant reactions depending upon dosage, impurities in the preparation, and idiosyncrasy, there is the disadvantage (and it is a disquieting one) that some types of tubercle bacilli are resistant to streptomycin. It would appear that these resistant strains, freed from the dominant restraint of the previously active ones, may infect other individuals and multiply in spite of streptomycin administration and account for much of the deterioration of cases under treatment after the initial improvement (M.R.C., 1948). There is the further consideration that a resistant strain can initiate the disease in other individuals and account for the widespread dissemination of the disease in a form for which streptomycin is innocuous.

In miliary tuberculosis a favourable response is obtained in a number of cases, but post-mortem examinations of fatal cases of tuberculous meningitis do not provide any histological evidence that the tuberculoma has been influenced by the drug; the associated meningeal exudate, however, may show considerable organization and thus account for the clinical improvement. There is a suggestion of a field of usefulness for streptomycin in primary infections, but it will be necessary to review the evidence when an extended trial has been made and a critical review is possible.

Conclusion

I have now completed my task within the limits of time and my competence. I shall not have failed, however, if I have focused attention upon some of the practical aspects of a common disease in infants and children, a disease which carries a heavy responsibility for death, sickness, and incapacity. If I began at the beginning it was because, as Aristotle said, "He who sees things from their beginning will have the finest view of them." If we study and understand tuberculosis in all its aspects in the young we will appreciate all the better the disease in the adult; so that nothing is lost, but perhaps much may be gained, by this approach. By concentrated effort in the preventive field and the use of all available facilities for diagnosis and treatment we can look forward with more hope for its eventual eradication.

REFERENCES

- Asserson, M. A. (1927). *Amer. Rev. Tuberc.*, 16, 359.
 Barsby, B. (1941). *Lancet*, 1, 627.
 Blacklock, J. W. S. (1947). *British Medical Journal*, 1, 708.
 Bledisloe, Lord (1948). *The Times*, Oct. 30, p. 5.
 Burrell, L. S. T. (1933). *Med. Pr.*, 187, 20.
 Curie, Eve (1938). *Madame Curie*. Heinemann, London.
 Eliasberg, H., and Neuland, W. (1920). *Jhrb. Kinderheilk.*, 93, 88.
 Ghon, A. (1912). *Der primäre Lungenherd bei der Tuberkulose der Kinder*. Berlin.
 Hinshaw, H. C., and Feldman, W. H. (1945). *Proc. Mayo Clin.*, 20, 313.
 Joint Tuberculosis Council (1948). Report of Children's Committee.
 Kayne, G. G. (1935). *British Medical Journal*, 1, 694.
 Lemaire, H. (1925). *Rev. Tuberc.*, 6, 228.
 McMurray, J. (1944). *Arch. Dis. Childh.*, 19, 87.
 McNeil, C. (1929). *British Medical Journal*, 2, 657.
 Malmros, H. (1948). *Ibid.*, 1, 1129.
 Medical Research Council (1948). *Ibid.*, 2, 769.
 Myers, J. A., and Harrington, F. E. (1934). *J. Amer. med. Ass.*, 103, 1534.
 Nassau, E., and Zweig, H. (1925). *Z. Kinderheilk.*, 39, 484.
 Newsholme, A. (1926). *Lancet*, 1, 1022.
 Parrot (1876). *C. R. Soc. Biol., Paris*, 28, 308.
 Wallgren, A. (1948). *British Medical Journal*, 1, 1126.
 — and Lundblom, A. (1935). *Nord. med. Tidskr.*, 10, 1699.
 Wilson, G. S. (1947). *British Medical Journal*, 2, 855.

THE EFFECT OF ENDOCRINES ON FIBRO-ADENOSIS

BY

H. J. B. ATKINS, D.M., M.Ch., F.R.C.S.

Director of the Department of Surgery, Guy's Hospital

A clinic for the investigation and treatment of the painful nodular breast was established at Guy's Hospital in 1937, and except during the years 1941–5 it has been functioning weekly since that date. At different times I have been assisted in the running of the clinic by various workers, but my thanks are due particularly to Dr. P. M. F. Bishop, endocrinologist to the hospital, who launched the project with me, and whose advice has always been available. All expenses incurred in the investigations have been defrayed by an annual grant from the British Empire Cancer Campaign.

I originally set out to investigate the effect of endocrine preparations on the disease which we now call fibro-adenosis, defined as "a painful or nodular condition of the breast not due to new growth, bacterial inflammation or fat necrosis" (Atkins, 1938). As this part of the investigation is complete I am submitting a report of the findings. The clinic is at present devoted to a clinico-pathological investigation into the effect of endocrines on established cancer of the breast and to following up the now considerable series of cases of fibro-adenosis.

A report has already been given of the early work in connexion with the administration of oestrogens, and androgens in the form of injections of testosterone propionate (Atkins, 1940), but a brief recapitulation of our findings may not be out of place.

Bearing in mind the importance of the psychological aspect of this condition and the subjective nature of many of the manifestations, together with the absence of any absolute standards of such objective phenomena as "nodularity," we were careful to control our results by submitting a parallel series of cases to a course of injections of sterile olive oil if the subsequent therapeutic agent to be investigated was to be injected, and to a course of chalk pills if the agent was to be taken by mouth.

In nearly every case a random sample of breast tissue was taken by biopsy from that part of the breast where the disease was judged to be most advanced, and submitted to histological examination. A second sample was taken at the conclusion of the treatment and at a corresponding

eriod in the menstrual cycle. In this way we were able to assess the clinical effect of the substance being investigated and, because the pieces of tissue removed for section were only random samples, to a limited extent the histological changes.

Oestrogens

Thirty-three patients were given oestrogen therapy. They received at least 80 mg. of oestradiol benzoate by injection in four weeks or 280 mg. of stilboestrol by mouth in eight weeks; 19 of these patients had much higher doses.

Our conclusions, based on a clinical follow-up of these 3 cases and set out in detail in the above paper (Atkins, 1940), were that oestrogens were harmful if given in doses large enough to be effective, and that the larger the dose the more harmful was the effect. We formed the impression that histologically the fibroblastic reaction, the epitheliosis, and the adenosis all tended to increase.

Androgens

Thirty-four patients received injections of testosterone propionate; 22 of them had at least 400 mg. in four weeks, and many received considerably higher doses.

It was found that the majority of the patients benefited temporarily by these injections but tended to relapse some weeks after the cessation of treatment. Further, eight of these patients suffered hirsuties, amenorrhoea, and deepening of the voice, and two of the eight had received only small doses of testosterone propionate.

One patient receiving large doses (1,200 mg. in six weeks) developed a carcinoma of the breast at the site of the original fibro-adenosis one year later, the only case at that time to develop carcinoma following fibro-adenosis.

Histologically some of the features of fibro-adenosis seemed less advanced after androgen therapy than before, but of this we were uncertain, and the acid test of sorting the pairs of slides with the labels obscured into "before androgen" specimens and "after androgen" specimens was equivocal. It was concluded, therefore, that the risks entailed in this form of therapy did not justify the temporary relief obtained.

It was at this stage that the war interrupted the investigations. They were resumed in 1946, when it was decided to investigate other methods of androgen administration, using the same techniques of clinical and histological control as those described above. The effects of administering androgens by mouth, by inunction, and by implantation were therefore explored, with the following results.

Twelve patients received 15 mg. of methyl testosterone by mouth daily for two months; seven were relieved of their symptoms for an average of seven months, the longest being eleven months; one was relieved of her symptoms only while the tablets were being taken, the symptoms returning immediately afterwards; three had no relief from their symptoms; and one did not attend the clinic again and cannot be traced.

Nineteen patients received 400 mg. of testosterone propionate in the form of "neo-hombreol" ointment applied to the breast in divided doses daily for a period of one month. Six of these were relieved for an average period of four and a half months after treatment stopped, the longest being nine months; even said that the pain was relieved while the ointment was being used, but recurred as soon as the treatment stopped; and six said that there was no relief of symptoms.

Eleven patients received 100 mg. of testosterone implanted deep into the breast tissue at the time that the first biopsy was performed. Of these, four were relieved of their symptoms for 1, 2, 3, and 6 months, followed by a relapse; two showed light improvement for the follow-up period (4 and 5 months); our were not relieved of their symptoms (one extruded the tablet after three months); and one complained that the symptoms were made worse.

The impression gained was that the patients receiving androgen therapy enjoyed a real though slight and only temporary improvement in their symptoms as a result of the androgen absorbed.

None of the cases receiving androgen in the above doses by mouth, by inunction, or by implantation developed symptoms or signs of masculinization, nor in this series was there any constant difference in the histological picture between the original biopsy specimen and the specimen taken after the administration of the androgen. It will be recalled that the histological changes effected by large doses of testosterone propionate by injection were not convincing, and this finding is directly at variance with that of Pricolo and Goisis (1946), who claimed substantial changes in the histological picture as the result of administering androgens in smaller doses than we had been using in our first series.

It must be emphasized that the only crucial test, where random samples of the breast are taken for biopsy, is for an independent histologist to examine the pairs of slides, each of which is given a code number, and to succeed in diagnosing these slides correctly as representing tissue before and after androgen therapy in a significant number of cases. The possibility that androgen therapy modifies the histological picture of the breast is not denied, but the extent to which it does so is far less than the paper cited above would lead one to expect.

Degrees of nodularity are not susceptible to exact measurement, but undoubtedly in a few cases the nodularity was less after androgen therapy. Before claiming these few findings as evidence of the effect of androgen therapy, however, it must be remembered that in a substantial proportion of cases of fibro-adenosis natural remissions occur. Furthermore, the feel of the breast in the majority of our cases receiving androgen therapy did not alter.

Discussion

In a high proportion of cases oestrogen therapy makes the symptoms and signs of fibro-adenosis worse and advances the histological changes characteristic of the disease.

In a substantial proportion of cases androgen therapy causes temporary improvement in the symptoms of fibro-adenosis. The safest, most effective, and most convenient way of administering androgens is in doses of 15 mg. of methyl testosterone by mouth daily for two months. Androgen therapy has less, if any, effect on the nodularity and no constant detectable effect on the histological picture.

My view is, nevertheless, that androgen therapy is not worth while in the disease fibro-adenosis. The pain, divorced from the apprehension, is rarely excessive, and the vast majority of patients, relieved justifiably of their apprehension, forget it. Where the pain is "intolerable" or "agonizing" it is not relieved even temporarily by androgens, and my experience during the early days of the clinic of removing in desperation both breasts in six cases so complaining, after everything else had been tried, has led me to believe that it is doubtful whether the pain is due to fibro-adenosis. Four of these patients still complain of "intolerable" or "agonizing" pain where the breasts were, and the remaining two have transferred their agony to other sites.

It is not justifiable to administer androgen therapy to these patients in the hope that this will prevent the onset of cancer (Loeser, 1938), as the case cited above exemplifies. It is not proposed here to enter into the question of the liability to malignant change in this disease, as this subject,

together with a full discussion of the pathology, significance, and natural history of fibro-adenosis, is to be made the subject of a further report elsewhere. Experience in the clinic has, however, led me to believe that, whatever views are taken about the possible precancerous nature of fibro-adenosis, these patients should be seen by their medical attendant at least every six months. I had thought originally that these continuous visits to the doctor might serve to emphasize and fix the fear of cancer in the patient's mind, but I find in practice that the effect is quite otherwise. Psychologically the patient is able to transfer the whole burden of responsibility to the shoulders of the medical attendant, where it should properly rest, and in the meantime cease worrying, in the knowledge that, in the remote chance of anything sinister developing, it will be dealt with without delay.

If the view is accepted that breast pain is due to the stimulation of nociceptive nerve endings by adjacent fibroblasts, and that these fibroblasts are elaborated in response to epithelial changes in the ducts, as many of the clinical features suggest (Atkins, 1939), then it is easy to see why androgens can have only a limited and temporary effect. Such effect as they do have is presumably the inhibition of oestrogenically stimulated epithelial growth, but without any modification of pre-existing epithelium, hence the absence of histological change. So long as the androgen is being administered inhibition will continue; but at a variable period after it is withheld the natural hormonal balance of the individual is resumed, and oestrogen-stimulated epithelium appears in the ducts with a consequent reactionary fibrosis and recurrence of symptoms.

There is really nothing that we know of at present which permanently modifies these processes apart from pregnancy and lactation, which revolutionize the physiological pattern, and the passage of time. Particularly about the menopause, fibroblasts disappear from the breast (there being no longer any considerable epithelial activity for them to restrain, if we care to think of it in that way) and they fulfil their natural function of being converted into inert collagen fibrils. When this happens the pain ceases. The administration of endocrines in an attempt to modify fibroblastic pain of this sort is not unlike the prescription of penicillin for an inflamed keloid scar—it may affect a little something, but does not get to the root of the trouble and is scarcely worth while.

Like fibroblastic pain in general, the pain of fibro-adenosis, which often varies with the weather, can frequently be relieved temporarily by radiant heat. X-ray treatment, on the other hand, is disappointing, and it cannot be denied that the most efficacious treatment is still that of Sir Astley Cooper (1829): a scrupulously careful examination, a confident diagnosis, a justifiable reassurance, and "the return of the patient with delighted affection to her family."

Conclusions

The effect of oestrogens on fibro-adenosis is harmful.

The effect of androgens may be temporarily beneficial, but it is not sufficiently so to encourage the use of these substances therapeutically in this disease.

The histological effect of androgens in therapeutic doses on breasts in cases of fibro-adenosis is inconstant.

REFERENCES

- Atkins, H. J. B. (1938). *Lancet*, 1, 707.
 — (1939). *British Medical Journal*, 1, 866.
 — (1940). *Lancet*, 2, 411.
 Cooper, Sir Astley (1829). *Illustrations of the Diseases of the Breast*. London.
 Looser, A. A. (1938). *British Medical Journal*, 2, 319.
 Pricolo, V., and Goisis, M. (1946). *Tumori Milano*, 20, 175.

CURARE-MODIFIED ELECTRIC CONVULSION THERAPY IN CASES WITH PHYSICAL DISEASE

BY

PETER D. W. SHEPHERD, M.B., B.S., M.R.C.S.

AND

DAVID C. WATT, M.B., Ch.B., B.Sc., D.P.M.

Assistant Physicians, Shenley Hospital

Many mental patients are denied the benefits of electric convulsion therapy (E.C.T.) because of physical contraindications. The purpose of this article is to show that, with few exceptions, even the most severe physical disability should not debar such patients from the use of this method. We here report the results obtained at Shenley Hospital in 50 cases in which the physical condition of the patients rendered them unsuitable for ordinary E.C.T., but in which, nevertheless, this treatment, modified by curare, was used.

Review of Literature

Textbooks contain few detailed instructions regarding contraindications to E.C.T., and wider literature shows a striking diversity of opinion. Thus Herskovitz (1943) is unwilling to treat with E.C.T. patients over 60 or those with any kind of heart disease (past or present) or tuberculosis. Cook (1944) considers tuberculosis an absolute contraindication. On the other hand, Feldman *et al.* (1946) have given E.C.T. to patients over 80, and Kalinowsky and Hoch (1946) do not think it contraindicated when the systolic blood pressure exceeds 200 mm. Hg or in the presence of active tuberculosis. In the main, however, its use in impaired cardiac function, chest disease, old age, and frailty is regarded as requiring careful consideration and as involving considerable risk (Sargant and Slater, 1944). Fractures, except slight vertebral crush fractures, are generally regarded as an absolute contraindication to E.C.T. A number of deaths have been reported where unmodified E.C.T. has been given to patients with heart disease (Jetter, 1944; Napier, 1944) and to elderly patients (Evans, 1943; Mayer-Gross, 1945), and sometimes treatment has had to be discontinued (Jones, 1943). Will and Duval (1947) report a death due to reactivation of old tuberculosis following E.C.T., and mention several other cases in which inactive tuberculosis became active and spread rapidly after treatment. Twenty-nine deaths due to unmodified E.C.T. have been collected by Will, Rehfeldt, and Neumann (1948). This bears out the general conclusion that in such patients unmodified E.C.T. is not without danger.

Respiratory paralysis, which accounts for most of the deaths so far resulting from curare-modified E.C.T., apparently presents no danger if the technique described by Hobson and Prescott (1947), and employed by us, is used. The electrocardiographic evidence that curare should not be used in cases of heart disease (Jones and Pleasants, 1943) is not borne out by clinical experience or by physiological experiment (McIntyre, 1947). Kalinowsky and Hoch (1946) state that patients dislike the sensation of curarization, but we have found that many patients prefer the modified treatment here described to ordinary E.C.T., as the anaesthetic eliminates the unpleasant feelings associated with E.C.T. as well as those associated with curare.

Technique

Our technique is the same as that employed by Hobson and Prescott (1947), except that a greater quantity of curare is used in order to modify the convulsion more effectively. In this way not only is the risk of fracture abolished but

the muscular effort is so slight that there is little or no rise in blood pressure. No cyanosis occurs throughout the treatment. *d*-Tubocurarine chloride is used to modify the convulsion. This is mixed with thiopentone and atropine, and the whole is given by rapid intravenous injection.

Routine investigations before starting treatment include x-ray examination of chest and spine, electrocardiograms, and of course physical examination. Treatment is carried out on an ordinary bed with one pillow under the head. Restraint is not necessary.

The initial dose of curare is based upon the body weight: .5 mg. per stone (6.35 kg.) for females, 3 mg. per stone or males. This is varied in subsequent treatments according to the effect on the individual case. We have not so far seen any case unduly sensitive to curare, but one patient (Case 43), weighing 7 st. 5 lb. (46.7 kg.), required 45 mg. of the drug. In the females of our series 0.25 g. of thiopentone and 1/100 gr. (0.65 mg.) of atropine was the standard dose, but in the males an initial dose of 0.15 g. of thiopentone was found to be satisfactory. The doses are altered in subsequent treatments if necessary.

Thiopentone is given to avoid apprehension and the very unpleasant sensation of curarization, also to facilitate artificial respiration. Atropine is employed to maintain a clear airway. Unconsciousness supervenes as curarization begins and is usually prolonged enough to allow full curarization to take place, while artificial respiration is carried out before the electric shock is given.

A Phillips airway is introduced as soon as breathing ceases, and oxygen is insufflated by means of the Lucas resuscitator. This allows a positive and a negative pressure to be given, while the bag automatically fills with oxygen when necessary. An ordinary 5- or 8-litre bag filled with oxygen, fitted to a three-way valve and face-piece and manipulated by the elbow—as in playing the bagpipes—is quite satisfactory, but the Lucas resuscitator is a distinct advantage.

Two to three minutes after the injection the electric stimulus is given and a major fit ensues. In a well-curarized patient there is no movement of the spine or limbs, but there are always some clonic movements of the face, enabling one to see whether or not a major fit is taking place.

Oxygen resuscitation is then continued until respiration starts spontaneously. The phase of apnoea lasts from 30 to 45 minutes. The majority of cases, however, are reathing again within 10 minutes. Movement begins first at the diaphragm, spasmodically and ineffectively, but rapidly becomes full and adequate. Prolonged apnoea gives rise to no real difficulty or anxiety, and unless a fall in blood pressure or other complication occurs there is no need for further intervention.

Nikethamide and neostigmine are kept at hand should they be needed, but we have had little use for them. In only two cases of our series—No. 5, in which there was a progressive fall in blood pressure during a period of prolonged apnoea, when nikethamide was given intravenously to initiate spontaneous respiration, and No. 17—were further drugs found necessary.

Ten to 15 minutes after the recovery of respiration, during which time the airway has to be carefully watched and the jaw held, consciousness is regained. The patient then generally feels more comfortable sitting up.

Patients are able to get up and walk one to two hours after treatment. The frequency and number of treatments are the same as in unmodified E.C.T.—i.e., initially twice weekly. This is cut down to once a week after improvement has been secured.

With regard to the additional time taken for the method we have found that one doctor with an experienced nurse can treat six patients in two to two-and-a-half hours. We have not found the complication of laryngeal spasm, mentioned by Hobson, at all common. In fact, we have had only one such case, which was only partial and required no extra treatment.

The accompanying Table shows all the patients who received treatment here between July, 1947, when it was started, and August, 1948. They are arranged in the order in which they first received treatment. The Table gives an idea of the material selected and the results obtained. Physically the results are all favourable. There were no deaths or serious complications, and it will be noted that the number of mental recoveries is higher than is generally claimed for E.C.T. This is due, on the one hand, to the fact that no cases were treated unless the prognosis appeared favourable, and, on the other, to greater certainty of the diagnosis. Many of these patients had been here months or years and had been rejected for straightforward E.C.T. through physical disability. Thus the mental diagnosis had become established with the help of time.

Summary of Cases

1 *Cases of Skeletal Disease.*—Twenty such cases were treated. Ten of these had old fractures of the spine: in three the injury was known to have been due to previous E.C.T. Seven cases had other diseases of the spine—e.g., prolapsed disk, spondylitis ankylopoietica, tuberculosis, and Paget's disease of the spine. The remaining three had recent or malunited fractures of the pelvis or femur.

Sixteen of the twenty have been discharged recovered; three of the remaining four are recovered but have nowhere to go; the other discharged herself before treatment was finished. The average age of this group is 62 years, and their stay in hospital varied from a few weeks in some cases to many months in others. Case 26 had been continuously in hospital for 15 years and has now been discharged. All the cases were x-rayed before treatment and some afterwards, but as no movement of the spine took place further radiographs were not thought necessary. No case developed fresh symptoms or signs of the original bony lesion.

2 *Cases of Hypertension and Cardiac Disease.*—Seventeen cases with cardiovascular disease were treated. Twelve of these were hypertensives whose systolic pressure recorded at rest was over 200 mm. Hg; all had electrocardiograms which showed changes varying from uncomplicated left axis deviation to those of frank coronary and myocardial insufficiency. The E.C.G. of Case 45 showed a low voltage and inverted T waves in all leads without any severe left axis deviation, and suggested an old coronary thrombosis. Case 35 had well-marked bundle-branch block. These cases were given larger doses of curare, but the blood pressure did not as a rule rise more than 10 mm. even during the fit—when with full curarization it is possible to take an accurate reading of the blood pressure. In most cases the blood pressure and pulse rate remained unchanged.

Three cases of this group had auricular fibrillation—two secondary to hypertension, the other to a rheumatic heart. The pulse rate was controlled by digitalis, and although it was increased during treatment no case gave cause for anxiety.

The two remaining cases were of congestive failure: one (Case 17) is reported in full; the other (Case 29) was that of an old man of 77 who presumably had myocardial failure.

All patients in this group recovered mentally except two, who are only improved.

3. *Frailty and Senile Cases.*—Eight cases fall into this group. There were no fixed criteria, but five of these patients were under 5½ st. (34.9 kg.) at the start of treatment, and the others were more than 2 st. (12.7 kg.) below normal weight. In addition to this emaciation, half these patients were over 65 years, one was recovering from a gastro-enterostomy, and two had osteoporosis. All improved physically with treatment. Four recovered mentally; three of the others improved but have since relapsed; the remaining case was unchanged.

4. *Pulmonary Cases.*—Four cases of pulmonary tuberculosis were treated. Case 27 is reported in detail. Two were of quiescent pulmonary tuberculosis, both having symptomless fibrotic lesions; the other (Case 48) had chronic apical tuberculosis with cavitation. Case 14 had developed an empyema four months previously which was still present during treatment. No changes occurred clinically or radiologically with treatment. All five cases recovered mentally.

Complications.—Case 28 improved considerably, but treatment had to be stopped owing to repeated local thromboses at the site of injection. Congestive cardiac failure of mild degree occurred during treatment in four cases; but these were in patients with known cardiac disease, and no permanent disability ensued.

Four cases are reported in detail. These represent the four main types of case treated, and those that were most seriously ill are chosen.

Case 3. Depression and Hypertension

A business woman aged 54 became mentally ill in April, 1947, and was admitted as a voluntary patient in June, 1947, with a diagnosis of agitated depression. She was very restless and required much sedation. She had delusions of guilt and was mentally retarded. Her blood pressure on admission was 280/130, and an E.C.G. showed marked left axis deviation with inverted T1. An x-ray film of the chest revealed an enlarged heart. Her exercise tolerance was fair. Curare-modified E.C.T. was started on Aug. 8. She was given 23 mg. of eurare on each of eleven occasions, and her blood pressure, which varied from 180/110 to 250/120 before the treatments, never rose more than 5 mm. during or after E.C.T. She recovered mentally and was discharged on Nov. 3. Eight months later, while still at home, she apparently relapsed and committed suicide by gassing herself.

Case 18. Depression and Fractured Spine plus Hypertension and Frailty

A housewife aged 64 first became mentally ill at Christmas, 1938, when she had insomnia and a tendency to worry unduly over trivial things. While in a general hospital having the B.M.R. taken she became suicidal and had to be admitted to

Case No.	Age	Sex	Indication	Mental Diagnosis	Result	No. of Treatments	Length of Stay Prior to Treatment	Remarks
1	58	F	Hypertension	Depression	Recovered	7	2 years	E.C.G.: depressed ST segment and inverted T1, T2, T3
2	57	F	Fractured spine	"	"	7	1 month	Fractured spine was the result of E.C.T. three months before
3	53	F	Hypertension	"	"	11	4 months	Committed suicide 11 months after
4	42	F	Pulmonary tuberculosis	Mania	"	7	3 "	"
5	71	F	Frailty	Depression	Improved	15	9 "	Subsequently relapsed
6	70	F	Pulmonary tuberculosis	"	Recovered	11	2 "	"
7	66	M	Spondylitis ankylopoietica	"	"	10	10 "	"
8	60	F	Hypertension	"	"	6	2 "	"
9	64	F	Frailty	"	"	7	3 "	"
10	52	M	Fractured femur	"	"	10	13 "	"
11	60	F	Prolapsed disk	"	"	8	3 "	"
12	50	F	Frailty	"	Improved	11	1 year	Subsequently had prefrontal leucotomy
13	67	M	Tuberculosis of spine	"	Recovered	5	11 months	"
14	33	F	Healing empyema	"	"	6	5 "	"
15	49	F	Prolapsed disk	"	"	10	2 "	"
16	72	F	Hypertension	"	"	6	6 "	E.C.G.: left axis deviation
17	60	M	Congestive failure (bronchitis and emphysema)	"	"	5	2 "	E.C.G.: low voltage and notched QRS in Lead I
18	65	F	Hypertension and fractured spine	"	"	3	10 years	E.C.G.: marked left axis deviation and multiple extrasystoles. Also emaciated
19	67	F	Frailty	"	Unchanged	14	2 months	Improved physically
20	70	F	Fractured spine (old lung abscess)	"	Recovered	6	1 year	Subsequently relapsed and readmitted
21	71	F	Frailty	"	Improved	8	3 months	E.C.G.: pathologically low voltage in all leads
22	65	M	Hypertension	"	Recovered	8	"	"
23	63	M	"	"	"	10	"	E.C.G.: many ventricular extrasystoles; marked left axis deviation
24	74	F	Fractured pelvis	"	"	9	3 years	"
25	59	F	Fractured spine	"	Improved	4	2 months	Left hospital against advice
26	63	F	Fractured femur and ununited fracture of pelvis	"	Recovered	9	15 years	"
27	57	M	Pulmonary tuberculosis	"	"	9	"	"
28	62	M	Hypertension	"	Improved	10	"	Also myocardial degeneration. E.C.G.: flattened T1 and low voltage in all leads
29	77	M	Cardiac failure (frailty)	"	Recovered	5	8 years	E.C.G.: marked left axis deviation with inverted T
30	66	F	Hypertension	"	"	11	2 months	E.C.G.: inverted T waves in all three leads
31	64	F	Auricular fibrillation (hypertensive)	"	"	4	4 "	Subsequently had a cerebral embolism (recovering)
32	61	M	Frailty (gastro-enterostomy)	"	"	4	"	E.C.G.: flattened T1. Nothing else
33	63	M	Auricular fibrillation (mitral stenosis)	"	Improved	5	"	E.C.G.: auricular fibrillation 5/4/47; normal rhythm 29/4/48
34	59	M	Fractured spine	"	Recovered	8	5 years	Subsequently relapsed
35	71	M	Frailty	"	"	7	"	E.C.G.: bundle-branch block
36	56	M	Hypertension (old hemiplegia)	"	"	5	"	E.C.G.: inverted T3. Nothing else
37	40	F	Fractured spine	Mania	"	8	2 months	"
38	69	F	Hypertension; emaciated	Depression	"	7	2 "	"
39	68	F	Fractured spine	"	"	8	1 month	"
40	64	M	Frailty	"	"	10	"	E.C.G.: left axis deviation
41	61	F	Wedged vertebrae and prolapsed disk	"	"	6	1 "	"
42	70	F	Hypertension (spondylololsthesis)	"	"	8	2 months	Also very emaciated and was requiring tube-feeding at the start
43	63	M	Hypertension	"	"	5	"	"
44	68	M	Auricular fibrillation	"	"	5	"	E.C.G.: auricular fibrillation and low voltage in all leads
45	64	F	Hypertension	"	"	7	"	E.C.G.: inverted T waves in all leads; myocardia degeneration
46	64	F	Fractured spine	"	"	6	"	"
47	48	F	"	"	"	6	"	Fractured spine occurred as a result of an attempt at suicide by a fall
48	54	M	Pulmonary tuberculosis	Mania	"	1	"	"
49	68	M	Paget's disease of the spine with wedging of D5 and L5	Depression	"	6	"	"
50	58	F	Fractured spine	"	"	6	1 year	"

a mental hospital. Since that time she has been continuously ill, having on three occasions been admitted to this hospital as a certified patient during her worst phases. On each admission her case was diagnosed as depression. She was apathetic, querulous, suspicious, and deluded. She expressed delusions that she was covered with lice and that her food was being doped by her husband.

Physically she was a poor specimen, weighing 6 st. 8 lb. (41.7 kg.). Her blood pressure was 170/95. An E.C.G. showed inverted T₁, upright T₂ and T₃, marked left axis deviation, and multiple ventricular extrasystoles. A radiograph of the spine revealed an old wedge fracture of D₇ with a synostosis of D₃, 4, 5, and 6 and marked kyphoscoliosis of dorsal and lumbar regions.

In February, 1948, she had an attack of bronchitis, which brought about congestive cardiac failure with venous congestion in the neck and persistent mild cyanosis. On her recovery from this her mental condition remained the same. Treatment was started on March 16. She was given 20 mg. of curare with 0.25 g. of thiopentone and 1/100 gr. (0.65 mg.) of atropine followed by E.C.T. The convulsion was well modified, but after this her blood pressure rose to 220/130 and the pulse rate to 130 a minute. She developed severe engorgement of neck veins, which persisted for 20 minutes. With the administration of oxygen, however, these signs of cardiac embarrassment subsided.

At the second treatment, which was given three days later, 21 mg. of curare was given, as it was thought that the rise of blood pressure indicated an insufficient curarization. This time the onset of venous congestion was delayed five minutes after the E.C.T. It was then more severe than on the first occasion. The pulse rate became 150 a minute, blood pressure 180/100, and in addition she became very cyanosed in spite of adequate oxygenation of the lungs. Venesection was performed, 100 ml. of blood being removed. Her condition gradually improved, and 75 minutes after treatment she recovered completely. In view of her steady mental progress she was again treated four days later. On this occasion she was given 16 mg. of curare. She began to breathe spontaneously four minutes after treatment, but 10 minutes later her previous symptoms recurred. Venesection (200 ml.) was performed and she rapidly responded.

She recovered mentally, and it was decided not to treat her again unless she relapsed. In fact, in spite of getting a peripheral neuritis and, later, a cystitis, both of which cleared up, she has remained well and was discharged home two months later. A radiograph of the spine showed no change. It has been suggested that these attacks of congestive failure were initiated by attacks of paroxysmal ventricular tachycardia. Added to that, the fact that the heart failure was delayed up to 15 minutes after the injection makes it appear unlikely that the curare itself was responsible.

Case 27. Depression and Pulmonary Tuberculosis

A process engraver aged 57 developed malaise and fever in July, 1947. The fever settled and he went on holiday, where the symptoms recurred. He was admitted to hospital, pulmonary tuberculosis being diagnosed. The sputum contained tubercle bacilli. He was given a left pleuric crush and returned home after three months.

He was admitted to a sanatorium in March, 1948. Radiographs then showed slight apical mottling in the right lung, with extensive infiltration of the upper and middle zones of the left lung. He began to complain of "nerves," and that he was worried and could not sleep. Heavy sedation did not improve him, and as there was thyroid enlargement a therapeutic test of thiouracil was started on May 3. He became more depressed and agitated, and on May 8, after he had inflicted a wound on his left wrist with a razor, he was admitted to this hospital as a voluntary patient.

On admission he was depressed and sleepless, and would not eat his food. He continually worried over imaginary misdeeds and felt that the future was hopeless for him. His pulse remained over 100 and his B.S.R. was 30-65 (Westergren). His temperature remained normal except during an attack of erysipelas in the beginning of May.

*Curare-modified E.C.T. was started on May 21. Before each shock he was given 20 mg. of curare, 0.15 g. of thiopentone, and 1/100 gr. of atropine intravenously. His pulse usually rose to 160, but his blood pressure rose no more than 20 mm. The convulsion was limited to clonic movements of the face and to arm rigidity. Oxygen was administered before and after the fit; his colour remained good throughout. He recovered within 30 minutes and gave no cause for anxiety.

He had nine treatments, and by June 21 he was cheerful and co-operative and ate well. He slept well, and showed no trace of his former delusions. He was able to be occupied in bed. His B.S.R. at the end of July was 13-26 (Westergren), his pulse remained between 80 and 100, and he had no pyrexia. He gained 3 lb. (1.36 kg.) in weight, and x-ray appearances showed no extension of the area of infiltration. He was discharged on July 21. One month later the x-ray appearances were unaltered.

Case 17. Depression and Heart Failure

A postman aged 60 was admitted to a general hospital on Dec. 14, 1947, suffering from heart failure. He had had bronchitis for 20 years. For three years before admission he complained of dyspnoea, and latterly he could not walk more than 100 yards (91.4 m.) without becoming breathless. On admission he was dyspnoeic, his neck veins were full, and rhonchi were heard throughout the chest, which was barrel-shaped and hyper-resonant. On Dec. 15 he got up in the evening and walked home in his dressing-gown and slippers because he "did not wish to wear hospital pyjamas without paying for them." He became suspicious and refused food. He declared that his case was hopeless and that he had caused all the deaths in the ward.

On Jan. 12, 1948, he was transferred to this hospital, under certificate, and was found to be in the state described above. On Feb. 24 modified E.C.T. was started, at which time he weighed 7 st. (44.45 kg.). Before each shock he was given 25 mg. of curare with 0.15 g. of thiopentone and 1/100 gr. of atropine intravenously. Artificial respiration with oxygen was carried out and the shock given three minutes after injection. The convulsion was limited to clonic movements of the facial muscles and slight arm rigidity. There was no cyanosis. Respiration had to be assisted for about 30 minutes after the convulsion. He was then propped up, and he usually recovered completely in one to two hours after the fit. On one occasion he was given 2 ml. of neostigmine and 2 ml. of nikethamide intravenously, as he had not recovered consciousness an hour after the fit. He had five treatments, by which time he became cheerful, was interested in his surroundings, and was eating and sleeping well. His physical condition had improved enough to allow moderate exercise, and he weighed 9 st. (57.15 kg.) when he was discharged on May 9.

Discussion

The cases of this series fall into two main groups: (1) those especially susceptible to bony injury, and (2) those in whom death is a possible outcome of E.C.T. In the former the advantages of diminishing the muscular contractions are obvious. Bennett (1940) and others first used curare in E.C.T. solely with this object. In the latter group the advantages are less obvious and are even open to question.

Hypertensive cases, which form a large part of this group, are given curare because, by diminishing the power of the muscular contractions, the blood pressure is less affected than during a fit unmodified by curare. It has also been shown by experiments on rabbits (Gross and Cullen, 1945) that curare has a direct effect on the smooth muscle of blood vessels and tends therefore to reduce the blood pressure.

In cases with established congestive heart failure the same argument applies—that the strain on the circulation, and particularly the heart, is lessened. Also, by abolishing cyanosis a theoretical advantage, at any rate, is gained.

Will and Duval (1947) have reported the treatment with unmodified E.C.T. of a patient with pulmonary tuberculosis in whom there was a rapid spread of disease. They quote experiments on rats and cattle which show that E.C.T. causes petechial haemorrhages in the lungs and they say these account for the activation of tuberculosis. They also suggest that curare might, by abolishing the violent movements and post-convulsive hyperventilation, provide a greater degree of safety in the shock treatment of the tuberculous patient. The avoidance of cyanosis with our technique is a further logical advantage.

We would like to stress the absolute importance of having available, and being familiar with, a suitable oxygen resuscitation apparatus before this treatment is undertaken.

Summary

The literature concerned with contraindications to E.C.T. and complications arising from it is discussed.

The technique of E.C.T., modified by *d*-tubocurarine chloride and thiopentone with assisted respiration, is described.

Fifty patients, untreatable by ordinary E.C.T., many of whom have been in a mental hospital for a considerable number of years, are reported as having been successfully treated by curare-modified E.C.T.

Four cases are reported in full.

The advantages of curare-modified E.C.T. in the various types of cases reported are discussed.

REFERENCES

- Bennett, A. E. (1940). *J. Amer. med. Ass.*, 114, 322.
 Cook, L. C. (1944). *J. ment. Sci.*, 90, 447.
 Evans, V. L. (1943). *Amer. J. Psychiat.*, 99, 531.
 Feldman, F., et al. (1946). *Arch. Neurol. Psychiat.*, Chicago, 56, 158.
 Gross, E. G., and Cullen, S. C. (1945). *Anesthesiology*, 6, 231.
 Herskovitz, H. (1943). Quoted by G. L. Jones in *Arch. Neurol. Psychiat.*, Chicago, 49, 789.
 Hobson, J. A., and Prescott, F. (1947). *British Medical Journal*, 1, 445.
 Jetter, W. W. (1944). *Arch. Neurol. Psychiat.*, Chicago, 51, 557.
 Jones, G. L. (1943). *Ibid.*, 49, 788.
 — and Pleasants, E. N. (1943). *Dis. nerv. Syst.*, 4, 17.
 Kalinowsky, L. B., and Hoch, P. H. (1946). *Shock Treatments*, p. 163. London.
 McIntyre, A. R. (1947). *Curare*, p. 130. Chicago.
 Mayer-Gross, W. (1945). *J. ment. Sci.*, 91, 101.
 Napier, F. J. (1944). *Ibid.*, 90, 875.
 Sargent, W., and Slater, E. (1944). *Physical Methods of Treatment in Psychiatry*, p. 64. Edinburgh.
 Will, O. A., and Duval, A. M. (1947). *J. nerv. ment. Dis.*, 105, 637.
 — Rehfeldt, F. C., and Neumann, M. A. (1948). *Ibid.*, 107, 105.

ACTING AS AN AID TO THERAPY IN A NEUROSIS CENTRE

BY

MAXWELL JONES, M.D., M.R.C.P.Ed., D.P.M.

Consultant Psychiatrist, British Postgraduate Medical School, Hammersmith; Senior Psychiatrist, Industrial Neurosis Unit, Belmont Hospital, Sutton

It has been known for many centuries that drama may effectively release emotional tensions in actors and audience or both. Since 1921 Moreno has been attempting to use drama for psychotherapeutic purposes, and in 1942 he founded his Theatre for Psychodrama in New York (Moreno, 1946).

We started to employ group methods in 1942 at Mill Hill Emergency Hospital, and began using plays for therapeutic purposes. At that time we had no knowledge of Moreno's work, but in recent years we have borrowed freely from him.

The Industrial Neurosis Unit at Belmont Hospital has 100 beds (two-thirds male and one-third female), and the patients stay in hospital for an average of two to three

months. The organization of the unit has been described elsewhere (Jones, 1947). The patients suffer from various neurotic complaints, mostly of a long-standing character, and the term "industrial" is used to indicate that the case represents a job-placement problem when the time comes to leave hospital. Patients of this type have usually a poor social adjustment, and may be actively antisocial. It has been found that group methods of treatment are particularly useful in treating this type of case. Only the use of drama will be considered here, although, of course, other types of individual and group treatment are used where indicated.

The Rehearsed Play

The plays are written and produced by the patients with the help of the nurses. About one week is spent in preparation and a play is presented weekly. The three wards on the unit take it in turn to produce one. A patient usually volunteers to present his own problem, but he may if he chooses, remain anonymous, or even write a play which presents some problem other than his own. The patient, having volunteered, is free to choose his own cast, producer, etc.; in other words, all the resources of the unit are put at his disposal so that he may be given every help to re-enact his problem as realistically as possible. No stage, curtains, or elaborate props are used, and the room is just large enough to hold the players and the audience. This is done to obtain an "intimate" atmosphere and avoid any suggestion of amateur theatricals; we want actors and audience to merge, and as many patients as possible to act or discuss or "act out" during the discussion. All the patients in my ward attend, and with the nurses and visitors about 100 people are usually present. Various production devices may be used—e.g., a whispered voice over the microphone to portray thoughts while the player mimes his anguish, etc., or a divided stage where two separate scenes are acted simultaneously, dialogue and mime being used alternately by each group of players.

Following the play, which represents a social or personal problem but never offers a solution, the group is asked by the psychiatrist to help the players to resolve the problem. The psychiatrist plays a largely passive part, content to allow the discussion to flow freely, intervening only if the discussion is becoming irrelevant or is being monopolized by one or two patients, etc. During the discussion it often helps to ask a contributor to demonstrate his point of view by working it out with the actual players. Thus a girl with a partial hemiplegia, the result of a birth injury wrote a play around her basic problem of social insecurity. She preferred not to act her own part, but during the discussion after the play found it impossible to remain anonymous. She was glad to re-enact several situations with the players, taking over her own role from the patient who had played it previously; such "acting out" allows the audience to "test out" a point of view much more realistically than by mere verbal discussion. At the end of the meeting, which lasts an hour, the psychiatrist tries to sum up and, if possible, to bring the various views expressed into something approaching a point of view acceptable to the group as a whole, or at least to the majority.

Reproduction of a Psychiatric Out-patient Interview

The psychiatrist simply reproduces an out-patient interview and a nurse usually plays the part of the patient. An old case record is used, preferably one where the psychiatrist has done a "follow-up" inquiry. The psychiatrist and nurse run through the interview beforehand. The psychiatrist knows the case well, and it is enough for the nurse to know the general trend of the interview, as she

gets her cues, from the doctor; she must try to act the part of the depressed patient or whatever is called for. If necessary, other psychiatric help can be invoked, and the psychiatric social worker, probation officer, disablement rehabilitation officer, etc., can appear in person.

Experience has shown that only simple situational problems should be raised, and there should be no attempt to develop any complicated treatment situation. At the end of the interview, lasting up to thirty minutes, the patients are asked what they would do if they were faced with this particular problem in the role of the psychiatrist. Again the discussion lasts until the end of the hour period, and the psychiatrist sums up, bringing the various points of view together, if possible, into an integrated whole. As before, there is opportunity for the patient taking part in the discussion actually to play the part of the doctor or patient and develop the interview along some particular line to demonstrate points more graphically than can be done by discussion alone.

Spontaneous Acting in a Small "Analytic" Group of about Eight Patients

Group treatment of an "analytic" type has been developed in recent years by many workers, including Schilder (1940), Wender (1940), and Slavson (1947) in the U.S.A., and Bion and Rickman (1943), Foulkes (1946), and Jones (1948) in Britain. Here a group of six to eight patients of both sexes meet for an hour a day for approximately two months. Patients are selected who have some form of social maladjustment, a good intelligence, and not a severe neurosis. The patients come to know something of each other's backgrounds and emotional difficulties. There is a common purposive goal—i.e., that the group should try to understand and help the individual. The atmosphere is essentially permissive, and the group stands for public opinion, which in time comes to be perceived as a much more friendly and understanding abstraction than when the group was first formed. Intimate confidences begin to be expressed and instinctual needs can be consciously formulated. Guilt is found to be much more universal than was at first realized, and is shared by all members of the group with obvious advantage—e.g., guilt over masturbation or hostility towards parents which previously may have been strongly suppressed. In this setting it is comparatively easy to get people to start "acting out" their problems. Thus a bus-driver who had a difficult domestic situation which he could not deal with satisfactorily was helped considerably by the group.

This man, aged 40, had been fairly happy in his home life before going overseas on active service. He was away from home for six years and returned to find the domestic situation completely altered. His wife had ceased to spend all her energies on her household duties: she now enjoyed the company of various women neighbours and was often away from home. Their son, now aged 17, went his own way, paying scant attention to his father or any other member of the family. Their little girl had been a baby when the father left home, and now regarded him as a stranger: the mother had done nothing to keep his memory alive. He returned to find he had no place in the family hierarchy. Added to this, conditions at work had changed; he now had a conductress in whom he had no confidence and who persistently gave the starting signal as some old lady was stepping off the bus, and so on. He felt tense and apprehensive all day when driving, and began to be quite obsessional about his time schedule. By the time he was off duty he felt exhausted and went home only to feel unwanted and frustrated. Finally he developed digestive symptoms suggestive of peptic ulcer, and was sent to hospital.

In the group this patient showed a good understanding of the other patients and a rare sense of humour. A scene was re-enacted when he returned home to his rather unfriendly wife and children and suggested that the whole family spent his day

off on Sunday at Kew Gardens. His son met the proposal with frank derision, and the little girl, taking her cue from the mother, showed a striking lack of enthusiasm. It was painful to witness the patient's suppressed anger, and one could almost visualize his red engorged stomach churning furiously. After this scene the group decided that somehow the patient would have to get to know his wife all over again. Various approaches were acted out, the patient often becoming completely inhibited as his hostility got the upper hand: it was much more difficult than just an intellectual understanding, and feelings seemed to crowd out his thoughts. But he made definite progress, which he began to apply when in the real setting of his home. At a follow-up six months after he left hospital he claimed proudly that he had "worked through" his domestic difficulties, and said that the family had had a most enjoyable outing at Kew Gardens.

Discussion

It is difficult to assess the value of any psychotherapeutic method, and in an in-patient unit such as the one at Belmont, where so many other factors—environmental, social, vocational, etc.—are at work, evaluation is particularly difficult. No critical assessment of our acting technique has as yet been attempted, but we are convinced that, taken in conjunction with other individual methods of psychotherapy, dramatic methods can aid treatment.

The rehearsed plays and the reproduction of a psychiatric out-patient interview are carried out in the presence of the entire personnel, patients and staff, of the unit. The patients are given a common social goal, and are asked to try to help with a real life problem concerning a fellow patient. It must be remembered that the industrial unit is largely composed of unemployed disheartened antisocial neurotic people, and one of our chief aims is to try to achieve some degree of resocialization: we believe that the plays bring the patients together and give them a social responsibility which, being shared, amounts to a group aim. The fact is that the patients are a remarkably good audience, and there is a large degree of participation in the discussion afterwards.

This group has definitely changed during the years we have been using a dramatic technique: the attitude now is one of much greater responsibility than formerly towards the person whose problem is being dramatized, and the group participation in the discussion afterwards is correspondingly greater. The other striking change is from anonymity to personal presentation, the latter now being the rule. This suggests the development of a group culture which is accepted by the group as a legitimate medium for the expression of personal problems. The plays usually raise very intimate problems and often invite censure; the fact that great tolerance and understanding are invariably shown must help to restore social confidence not only in the individual directly concerned but in all the patients who have identified themselves with their fellow patient.

The problems presented by the plays are of general interest, and it is easy for the individuals in the audience to project themselves into the situation enacted. In the discussion following the play various points of view are expressed, and the individual has an opportunity of gaining a more objective idea of the problem.

In the small analytic group of eight patients, meeting daily for up to two months, there is a much better opportunity for more specific therapy. We find it comparatively easy to pass from discussion to spontaneous re-enactment of some incident described by a member of the group. In this way it has been found possible to achieve mastery of a situation which in real life had overwhelmed the individual patient. By re-enactment in a friendly environment, in the presence of the psychiatrist, and with the knowledge that it is make-believe anyway, the individual may feel strong enough to cope with the problem enacted.

I doubt if an exact explanation can be given of the emotional relief felt subjectively on some occasions after "acting out," any more than the exact mechanism for the relief of anxiety following a painful abreaction during an analysis can be wholly explained—it is a fact, however, to which all those who have been analysed can testify. Where emotional "catharsis" actually occurs there is usually a sense of relief similar to the everyday experience of getting something off one's chest.

Conclusion

The various dramatic techniques described all aim at giving the individual an opportunity of expressing his thoughts and feelings in direct action or at least of projecting himself into a situation that is being enacted by others. Some of the advantages from these methods include the increase of group consciousness resulting from the patient's participation in a socially valuable group endeavour, an increased objectivity, the opportunity afforded for mastery of neurotic difficulties, and the liberation of pent-up emotions.

Many other techniques involving the same principles could be evolved, and Moreno has shown how valuable the psychodramatic method can be in many social spheres besides that of treating the neurotic—e.g., in the training of social workers by rehearsing home visits, etc. I have simply attempted to describe our use of psychodramatic methods to date, designed to meet our own particular needs in treating an in-patient neurotic population. No attempt is made to claim any specific therapeutic results by these methods. I do feel, however, that they have real value in supplementing short-term individual methods of treatment, and as the experience grows they may make a serious contribution to that most desirable goal—successful treatment of the neurotic in a reasonably short time.

I would like to thank Dr. Louis Minski, physician superintendent at Belmont Hospital, for his friendly co-operation in this work.

REFERENCES

- Bion, W. R. and Rickman, J. (1943). *Lancet*, 2, 678.
 Foulkes, S. H. (1946). *Int. J. Psycho-anal.*, 27, 46.
 Jones, M. (1947). *Occup. Therap.*, 26, 213.
 — (1948). *Brit. J. Med. Psychol.*, 21, 104.
 Moreno, J. L. (1946). *Psychodrama*. Beacon House, N.Y.
 Schilder, P. (1940). *J. soc. Psychol.*, 12, 83.
 Slavson, S. R. (1947). *The Practice of Group Therapy*. London.
 Wender, L. (1940). *Psychiat. Quart.*, 14, 708.

Medical Memoranda

Perforation as the First Manifestation of a Gastric Carcinoma

Perforation of a carcinoma of the stomach is an unusual event. We owe a classical description of the subject to Aird (1934), who collected details of 71 cases and described eight others treated at Edinburgh Royal Infirmary during the preceding ten years. It is significant that of the 71 references listed by Aird only five are from the British literature, and the most recent of these was published in 1904. The series of 506 cases of gastric cancer collected by Payne (1939) from the records of St. Bartholomew's Hospital includes six cases in which suture of a perforated carcinoma was performed, but no clinical details are given.

The diagnosis of the lesion may be considered in two parts: (a) diagnosis of the perforation, and (b) recognition of the presence of a carcinoma.

Symptoms consequent on the perforation generally follow on classical lines, but some cases pursue a more or less silent course, resembling in this respect perforations of the small bowel occurring in typhoid fever. However, in this event the primary growth or its metastases will already have undermined

the patient's health, and it is hardly likely that perforation of an early carcinoma will pass unnoticed. As regards recognition of the carcinoma, in a considerable percentage of cases its presence is already known and the perforation is but an incidental and terminal result of its extension. If the pre-operative findings have not already made the diagnosis certain, a laparotomy is nearly always bound to do so, either by inspection of the lesion or by the observation of metastases, which have been present in approximately half the recorded cases. A small residuum remain in which the history is inconclusive, metastases are not seen, and the perforated ulcer itself lacks the stigma of malignancy. It is the latter group which the following case is designed to illustrate. The case is unusual because the first evidence of gastric disease was provided by the perforation, the carcinoma was not recognized at the operation for its closure, and the patient made for a short time a complete recovery to normal health.

CASE REPORT

A man aged 60 was admitted to the Sheffield Royal Hospital on Nov. 26, 1946. He had been in his usual state of health until the day of admission, and although he had suffered from a mild degree of silicosis, due no doubt to his occupation as a grinder in a Sheffield cutlery works, he denied any past history of indigestion or of other symptoms immediately or remotely connected with his stomach. Ten hours before admission he was prostrated by sudden severe generalized abdominal pain which made him fall to the ground. It doubled him up and made him sweat, and during the course of the day pain was also felt at the tip of the left shoulder. After a few hours it decreased in intensity and he ate a little food, which caused him to vomit.

Examination showed an elderly-looking man lying quietly in bed. He had a good colour and was not sweating. The pulse was 100, regular, and of good volume; respirations 20. Generalized abdominal tenderness and board-like rigidity were present. Peristaltic sounds were heard, but the area of liver dullness was diminished. The clinical history therefore made it evident that a hollow viscus had perforated.

The abdomen was opened two hours after admission—12 hours after the attack began. Dirty free fluid containing fragments of undigested food welled up from the peritoneal cavity. Astride the lesser curve of the stomach, near the pylorus, was an ulcer which had perforated in its centre, the perforation admitting the tip of the little finger. An area of induration about 1 in. (2.5 cm.) in diameter circumscribed the central perforation. The stomach was mobile, with no suggestion of fixity, and the visible extent of the stomach wall at a distance from the lesion had a normal appearance. The liver adjacent to the stomach looked healthy, and in view of the apparently simple nature of the lesion the abdominal cavity was not explored. The perforation was oversewn with three catgut mattress sutures and the abdomen closed.

The post-operative course was uneventful. Gastric suction and intravenous infusion were maintained for 48 hours, and penicillin and sulphadimidine were given until the eighth post-operative day. The patient was discharged on Dec. 10, 14 days after admission.

On Jan. 6, 1947, he was examined in the out-patient department and appeared to be in good health. He complained of occasional epigastric pain after meals, and while it was considered that he might eventually be a candidate for partial gastrectomy the possibility of malignancy had not yet been entertained. A further examination on Feb. 17, however, showed a change for the worse. The pain, though still occurring only after meals, had become severe, vomiting had supervened, and he had evidently lost weight. A barium meal showed "chronic pyloric stenosis associated with a large gastric ulcer. The condition is probably due to adhesions arising from the previous perforation of the gastric ulcer, but the possibility of malignancy cannot be ruled out."

In view of the deterioration in his health, the patient was readmitted to hospital. A laparotomy on March 6, 14 weeks after the first operation, showed a carcinoma of the lesser curve of the stomach, fixed to and infiltrating the liver, and numerous tiny seedling deposits of growth scattered over the anterior wall of the stomach and throughout the peritoneum, omentum, and mesentery. The abdomen was closed and he was discharged to his home two weeks later, where he died on April 10, 1947.

COMMENT

Whatever one's views may be on the frequency of malignant change occurring in a simple gastric ulcer, there is no doubt in my mind that in this case the ulcer was malignant from the beginning. Considering that the primary lesion was so small when first observed, the rapid course of events after the perforation is remarkable. It is tempting to think that flooding of

the peritoneal cavity consequent on the perforation accounted for the diffuse seedling deposits scattered throughout the cavity. It is more likely that the rapid and silent penetration of the stomach wall, the early onset of fixity, and the widespread appearance of metastases were alike due to a rapidly developing anaplastic histology.

Cases occur from time to time in which the differentiation between an indurated simple ulcer and an ulcerating carcinoma cannot be made with certainty, and in such circumstances Bockus (1943) advises that a small section of tissue should be removed for biopsy. But it is in the very case in which carcinoma is unsuspected that one may be let down, and it would seem more prudent to make biopsy a routine in all gastric perforations treated by operation. Certainly, histological examination may yield equivocal results, but its employment in the case now described might have led to a more fortunate conclusion.

I thank Mr. J. C. Anderson for permission to publish the case treated in his wards, and Dr. J. L. A. Grout for the x-ray findings. Dr. Hart, of Sheffield, kindly informed me of the patient's progress at home.

LOUIS A. IVES, M.B., F.R.C.S.,
Late Surgical First Assistant,
Royal Hospital, Sheffield

REFERENCES

- Aird, I. (1934). *Brit. J. Surg.*, 22, 545.
Bockus, H. L. (1943). *Gastroenterology*, vol. 1, p. 677. Saunders, Philadelphia.
Payne, R. T. (1939). *Brit. J. Surg.*, 27, 740.

Oesophageal Foreign Body in a Baby

The following case illustrates the importance of careful examination in cases of laryngeal obstruction in babies. The only satisfactory method of examining the larynx of a baby is that of direct laryngoscopy.

CASE HISTORY

The patient, a baby aged 1 year, was admitted to hospital on Dec. 9, 1947, with a history of stridor which had been present since Dec. 6, after he had been spoon-fed with hot soup. Soon after admission the baby was seen by Dr. Robert Hughes. His temperature was 102° F. (38.9° C.), pulse 140, respirations 40. The breathing was noisy and stertorous, laryngeal obstruction being obviously present; wet sounds were heard all over the chest.

I examined the baby later on the same evening in the operating theatre. The pharynx was seen to contain a lot of pus and debris when the direct laryngoscope was introduced; the suction tube connected to the steam vacuum apparatus was used to clear the field. There appeared to be no membrane or gross laryngeal oedema, the obstruction being caused by the presence of pus and debris. Suction was employed continually to clear the field, which was being repeatedly obscured by pus welling up from behind the larynx. Eventually the field was cleared, and a foreign body was seen wedged behind the cricoid. After disimpaction this was removed, and an acute erosion of the posterior wall of the oesophagus was observed from which pus was exuding.

The foreign body was a piece of bone, part of the lamina of the tail vertebra of a sheep. The small dorsal process had been responsible for causing the pressure ulceration of the posterior wall of the oesophagus. The piece of bone measured $\frac{1}{2}$ in. (1.6 cm.) in length, and its greatest diameter was $\frac{1}{4}$ in. (1.25 cm.). The baby was returned to the ward, and the administration of penicillin, 50,000 units four-hourly, was begun. The temperature fell to 98° F. (36.9° C.) by noon on the following day, and remained normal after this.

On the day after operation it was found impossible to spoon-feed the baby, but he could gulp fluids down from a cup. Debris from the pharynx had to be swabbed away continually. On Dec. 11, two days after the operation, spoon-feeding was attempted, but coughing was again caused, and it was found that drinking from a cup was preferable, as the coughing was not initiated. By Dec. 15 the baby looked perfectly well and took food easily, and thereafter made an uninterrupted recovery.

The history was completely elicited from the mother after the event. On Dec. 6 the child was given a plate of soup in a café, and the bones in the soup were allowed to remain on the spoon while feeding, as the mother was convinced that he would reject any; but the child choked after one spoonful, and was immediately taken to the casualty department of a hospital, where it was stated that there was no bone in the throat. She called her own doctor in to see the child two days later, and, being afraid of further ridicule if she mentioned

the bone again, suggested to him that the baby had been scalded by the hot soup.

COMMENT

The interest of this case lies in the diagnosis of the cause of the laryngeal obstruction present. The suggested causes were laryngeal diphtheria, retropharyngeal abscess, and exudative bronchitis. The diagnosis of retropharyngeal abscess was correct, abscess formation having followed the ulceration caused by pressure of the foreign body.

The presence of a foreign body in the oesophagus of the baby of 1 year in the absence of a history was a surprise. From the technical point of view the use of efficient suction enabled the field to be properly cleared, a correct diagnosis to be made, and the efficient removal of the foreign body to be effected.

G. A. MOULDEN, M.B., D.L.O.,

Assistant Laryngologist,
Victoria Central Hospital, Wallasey

Thymoma Simulating Laryngeal Diphtheria

While there are many conditions which by pressure on the trachea or otherwise may simulate laryngeal diphtheria, thymoma is a very rare cause.

CASE REPORT

The patient, a boy aged 4½, was admitted to this hospital on Jan. 8, 1947, with the history of sore throat off and on for nine days, occasional vomiting, and troublesome irritating cough. His mother had noticed a faint pink rash on the trunk, which disappeared in twenty-four hours. On the night of Jan. 7 he developed dyspnoea and was admitted to a general hospital in a state of extreme cyanosis. Tracheotomy was performed, and 40,000 units of antidiphtheria serum were given intramuscularly. His condition improved, and on arrival at this hospital his colour was good, pulse of good volume but rapid, and he was breathing normally through the tube. He was a very well nourished child; physical examination revealed nothing abnormal except a few scattered rales in the chest. A few hours later he developed another attack of dyspnoea and became extremely cyanosed. He was nursed in an oxygen tent, but his condition became steadily worse and he died soon after. Swabs from the nose, throat, and larynx were all negative for Klebs-Loeffler bacilli.

At necropsy a large capsulated pear-shaped tumour of the thymus was found. It extended from the lower poles of the thyroid (not structurally continuous with it) to the front of the trachea to the anterior mediastinum. Adjacent structures were not invaded. There were prominent Malpighian corpuscles in the spleen but no general lymphadenopathy. Microscopically the tumour showed the general structure of a lymphosarcoma.

COMMENT

Tumours of the thymus are rare: in 17,000 necropsies Symmers (1911) found 25 thymic tumours—i.e., 0.14%. Diagnosis during life is difficult, as symptoms are few and not pathognomonic. Cyanosis, paroxysmal dyspnoea, and cough are the commonest; there may be pain, dysphagia, or hoarseness due to mediastinal pressure, and sometimes a swelling in the neck is found. Ewing (1928) reports a case with a history of repeated attacks of tonsillitis (cf. histology of tonsils and thymus). In myasthenia gravis, abnormalities of the thymus are found in about 30% of cases, and thymectomy has produced good results. I have not found any reports of cases in which laryngeal diphtheria was simulated.

Treatment is difficult; the scope of surgery is limited, but the sarcomata are radiosensitive and the prognosis is much more favourable than in the case of carcinoma or endothelioma.

I am indebted to Dr. Dawbarn, Waltoo Hospital, Liverpool, for the report of the post-mortem findings, and to the medical superintendent, City Hospital, Fazakerley, Liverpool, for permission to publish.

ALWYN GRIFFITH, M.B., Ch.B., C.P.H.,

Late R.M.O., City Hospital, Fazakerley.

BIBLIOGRAPHY

- Ewins, Prosser (1939). *British Medical Journal*, 1, 775.
Ewing, J. (1928). *Neoplastic Diseases*, 3rd ed. Saunders, Philadelphia.
Parker-Webb, E., and Wohl, M. (1944). *Med. Pr.*, 211, 22.
Symmers, D. (1911). *N.Y. med. J.*, 93, 971.

Reviews

PREGNANCY TESTS

Pregnancy Diagnosis Tests: A Review. By Alfred T. Cowie, B.Sc., M.R.C.V.S., Ph.D. Commonwealth Agricultural Bureaux Joint Publication No. 13. (Pp. 283. 15s.)

By the publication of this book the Commonwealth Agricultural Bureaux once more justify the claim of their organization to provide a service of great value to those for whose assistance it was designed. But many more than these will be grateful. The review is well done and well arranged. The author describes every kind of test and considers every kind of animal involved in the test. The magnitude of his task is indicated by the fact that one-third of this book (100 pages) is occupied by a list of the books and scientific papers that he has had to read and critically assess. It is of interest to note in passing that included in this list are two references to "unpublished observations" by the author himself.

Towards the end of the book he presents a summary and conclusions. These are somewhat disappointing, for they would seem to suggest that out of the enormous literature on this subject there is but little firmly proved that is sufficiently trustworthy and immediately applicable in the routine of pregnancy diagnosis. In the main this is due to the fact that in this summary the author omits all reference to pregnancy diagnosis in human medicine. In the veterinary field it seems that only in the case of the mare have these early laboratory diagnostic tests been shown to be of any considerable value.

This is indeed a book that was needed. Since anxiety can be stilled and hope sustained in the human subject, and since the management of his stock by the livestock breeder could be simplified and made more economical, by a confirmation of the existence of pregnancy at the earliest possible moment after conception, it is not surprising that there is a great and ardent demand for these tests. Since the demand for them is so great it is not surprising that biological scientists have everywhere been so busily engaged in refining the older tests and devising new ones. So much work of this kind has been proceeding during the last 25 years that it was high time that someone made a review of this kind and wrote a book like this one. It is the sort of book that everyone hopes that someone else will write, and therefore there will be very many who will be most grateful to the author.

F. A. E. CREW.

PHYSIOTHERAPISTS

The Growth of a Profession. Being the History of the Chartered Society of Physiotherapy, 1894-1945. By Jane H. Wicksteed, OBE, F.C.S.P. (Pp. 212. 6s.) London: Edward Arnold and Company, 1948.

In this little book Miss Wicksteed traces the history of the Chartered Society of Physiotherapy from 1894 to 1945. A good deal of the book is taken up by character sketches of the leading personalities, which will interest a limited circle of readers but which will be of great value to future historians. Her descriptions of the conditions in the middle of the last century are illuminating, when "medical rubbing" was a disreputable feature of the social life of that period. Under the influence of Weir Mitchell and of the Swedish School the new Society of Trained Masseuses was conceived at a time when the emancipation of women released a large number of cultivated and intelligent women of the right type looking for a career outside their own homes. An examination paper for obtaining the certificate of the Society is of some interest as an indication of the desire to place the training on a scientific basis: "Describe the circulation of the blood" is quite a broad question for a would-be masseuse of 1895.

From "medical rubbing" the training of the masseuse has had to be expanded to include the use of all the modern paraphernalia of physiotherapy in a relatively short period—the complexities of medical electricity as well as the far more ancient art of hydrotherapy. Perhaps Miss Wicksteed is more concerned with the administrative and medico-political aspects

of the relations of the society with the medical profession, however, than with stressing the continued need for a scientific and critical approach to these techniques.

It is satisfactory, as she so rightly points out, that the presidents during the past twenty years have all been outstanding members of the medical profession. It is a pity that she has not been able to discuss the tremendous significance of the National Health Service Act, whether for good or ill, with its effect on the public, or State, demand for physiotherapy to become more widely available. Perhaps in a second edition the situation can be brought up to date. But there is no doubt that all those, whether medical or lay, concerned with the organization of the care of patients requiring physiotherapy at the present time will have a wider appreciation of this important aspect of treatment when they have read the book.

W. S. C. COPENAN.

DISEASES OF THE EYE

Lehrbuch der Augenheilkunde. Edited by M. Amstler, A. Brückner, A. Franceschetti, H. Goldman, and E. B. Streiff. (Pp. 858; 342 figures. 85 Swiss francs.) Basle: Verlag Von S. Karger.

This volume on diseases of the eye, edited by the occupants of the five chairs of ophthalmology in Switzerland, arose out of the need of a textbook on the subject during the war, when books from abroad were not readily available. Swiss ophthalmology is of high quality, and the fortuitous circumstances which led to the production of this book are an unnecessary excuse for its appearance. The eighteen contributors, with the exception of Professor Weve, are all Swiss. The book is beautifully produced, and even if it broke no new ground it would have been a welcome addition to the literature on ophthalmology.

Most of the subject matter is presented in the way usual to textbooks. A completely modern book would reflect the three formative influences which are remoulding present-day ophthalmology—fuller appreciation of physiological principles, a better understanding of the significance of genetics in ophthalmology, and the imperceptible changes in pathological conceptions consequent on the therapeutic revolution experienced during the past decade. The first two of these influences are strongly reflected in the present text. The chapters on the physiology of the eye by Professor A. Brückner, Dr. R. Brückner, and H. Sillmann, as also the general tone of the account, do full justice to the considerable recent developments in ocular physiology and their bearing on diseases of the eye. The extensive chapter on heredity in relation to the eye by Professor Franceschetti and Dr. Klein likewise reflects satisfactorily the developments in genetics. However, the text is less satisfactory in revealing the changes in our conceptions of pathology. The distinction between infection and inflammation, though recognized, is hardly sufficiently emphasized. There is therefore some confusion on the possibilities of modern therapeutics, and undue prominence is given to methods of treatment that might well be rejected. None the less this book is the best short exposition available of present-day ophthalmology. Unlike many collective works, the text reads smoothly and is devoid of redundancies and overlapping.

ARNOLD SORSBY.

PSYCHOPATHOLOGY

Clinical Studies in Psychopathology. A Contribution to the Aetiology of Neurotic Illness. By Henry V. Dicks, M.A., M.D., F.R.C.P. Second edition. (Pp. 238. 15s.) London: Edward Arnold, 1947.

The second edition of Professor Dicks's book has no major changes and its success will be as assured as that of the first. As the title indicates, it is not a systematic presentation of psychopathology but a collection of case studies illustrating the author's views on some of the chief manifestations of the psychoneuroses. Professor Dicks takes his main inspiration from the work of the psychoanalysts, to whom he makes generous acknowledgment although not belonging officially to their group. Indeed, the brevity of the present work—one of its many attractive features—is chiefly due to the assumption that the reader has a general knowledge of the basic psychopathological theories of Freud and his school. The author's main

contribution consists in a greater emphasis than that given, he thinks, by the psycho-analysts on the conflicts at the early oral phases of development. He suggests that there are three biological needs—a self-preservative tendency, a sexual tendency (Freud's libido), and aggressiveness—and suggests that it is the self-preservative tendency that has to be satisfied by adequate feelings of security in the infant's earliest relations with its mother. When this security is absent the result is anxieties which can have great effects on the future growth of the personality. He also suggests that Freud's libido theory does not do justice to the full instinctual forces that enter into love relationships at all ages, a particularly important omission being the role of tender as distinct from sensual elements.

In the main text the author appears to take psycho-analytic views as much more definite and "official" than they are. Thus the work of Mrs. Klein and other psycho-analysts of the English school on the earliest stages of psychic development has met several of the points raised against Freud's earlier views. (In the preface to this edition, however, the author appears to have recognized this as an omission he would like to make good in any more comprehensive re-writing.) He makes many other interesting theoretical suggestions, and, although primarily for the psychotherapist, the cases are described so clearly that even the tyro in this field cannot fail to get a vivid impression of the psychological forces underlying neurotic illness.

J. D. SUTHERLAND.

REFORM OF MENTAL HOSPITALS

That Which is Caesar's. By H. G. Woodley. (Pp. 158. 8s. 6d.) Oxford: Pen-in-Hand, St. Michael's Street.

No doubt there is a good case for the reform of institutional psychiatry. In a civilized and prosperous country the practice of herding thousands of certified patients in huge compounds can scarcely be justified. With a decentralized system, and the services of five, or preferably ten, thousand suitably trained psychiatrists, it would no doubt be possible to treat the certified population of Great Britain in a way which might satisfy the author of this book. But to judge from his own presentation there appears to be grave doubt whether the case for reform can be stated either temperately or effectively by someone who has spent a year in a mental institution as a certified patient.

Outraged by the circumstances of his certification, and horrified both by the routines of treatment and by what he regards as a glaring lack of individual psychological attention, Mr. Woodley came to the conclusion that the only way to bring all this home to the public was to employ shock tactics, using for this purpose a scriptural variety of journalese which is certain to alienate the fastidious and to arouse suspicion in the minds of professionally trained persons. This is the more regrettable since the author has quite clearly grasped the desirability of maintaining whatever rapport is possible with even advanced or deteriorated cases, an understanding which he has evidently fortified with some reading in clinical psychology. Apparently, however, his reading has been vitiated by a persistent bias in favour of exclusively environmental causes of insanity. He is consequently altogether too optimistic about the accessibility of the psychoses even to the most understanding treatment. In fact the main virtue of the book is that the author attempts, however unsuccessfully, to do what would be much better done by psychiatrists themselves, if only they were so disposed.

EDWARD GLOVER.

Volume 2 of *Advances in Internal Medicine*, edited by Dr. William Dock and Dr. I. Snapper (Interscience Publishers, £2 17s.), contains a series of reviews by first-rate authors on clinical subjects where there have recently been considerable advances. The articles vary from about 5,000 to 20,000 words in length and cover a wide field. The ones of greatest interest to the reviewer, who is not a cardiologist, were "Circulatory Failure Studied by means of Venous Catheterization" (McMichael), "Angiocardiography" (Sussman and Grishman), and "Surgical Treatment of Hypertension" (Grimson). These provide the ordinary consulting physician or clinical lecturer with an admirably clear picture of the present situation. The article on angiocardiography is illustrated by remarkably fine x-ray photographs. Anyone looking for up-to-date accounts of disease and its treatment will now have to keep an eye on *Advances in Internal Medicine*.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

An Atlas of Traumatic Surgery. By Joseph Trueta, M.D., D.Sc., F.R.C.S. Can. (Pp. 150. 30s.) Oxford: Blackwell Scientific Publications. 1949.

A short, fully illustrated volume.

A Textbook of Pathology, General and Special. By J. M. Beattie, M.A., M.D., D.Sc., and W. E. C. Dickson, M.D., B.Sc., F.R.C.P. Ed. Vols. 1 and 2. 5th ed. (Pp. 1,582. 168s.) London: William Heinemann. 1948.

Revised and enlarged

The Thyroid and its Diseases. By J. H. Means, M.D. 2nd ed. (Pp. 571. 72s.) London: J. B. Lippincott. 1948.

From the Thyroid Clinic of the Massachusetts General Hospital.

Ways to Better Hearing. By L. Brentano. (Pp. 212. 10s. 6d.) London: George Allen and Unwin. 1948.

For the deaf.

Management of Common Gastro-Intestinal Diseases. Edited by T. A. Johnson. (Pp. 280. 42s.) London: Lippincott. 1948.

From the American Practitioner series.

Taylor's Principles and Practice of Medical Jurisprudence. Edited by Sir S. Smith, C.B.E., M.D., F.R.C.P., D.P.H. Vol. 2. 10th ed. (Pp. 841. 50s.) London: J. and A. Churchill. 1948.

Considerably revised.

Surface and Radiological Anatomy. By A. B. Appleton, M.A., M.D., and others. 3rd ed. (Pp. 332. 35s.) Cambridge: W. Heffer. 1949.

For students and general practitioners.

British Surgical Practice. Edited by Sir E. Rock Carling, F.R.C.S., F.R.C.P., and J. P. Ross, M.S., F.R.C.S. Vol. 5. (Pp. 494. 60s.) London: Butterworth. 1948.

This volume contains the section Hodgkin's Disease—Lymphogranuloma.

Bacterial and Mycotic Infections of Man. Edited by R. J. Dubos, Ph.D. (Pp. 785. 45s.) London: J. B. Lippincott. 1948.

For medical students.

Handbook of Midwifery. By M. Puxon, M.D., M.R.C.O.G. (Pp. 326. 25s.) London: Sylvio Publications. 1949.

For general practitioners and students preparing for qualifying and higher examinations.

Technic of Medication. By A. Smith, M.D., C.M., M.Sc. (Pp. 255. 30s.) London: J. B. Lippincott. 1948.

A brief guide to practical therapeutics.

Practical Aspects of Thyroid Disease. By G. Crile, jun., M.D., F.A.C.S. (Pp. 355. 30s.) London: W. B. Saunders. 1949.

A short volume for physicians and surgeons.

Refraction of the Eye. By A. Cowan, M.D. 3rd ed. (Pp. 287. 27s. 6d.) London: Henry Kimpton. 1948.

The third edition has been revised and brought up to date.

Obstetric Analgesia and Anesthesia. By F. F. Snyder, M.D. (Pp. 401. 32s. 6d.) London: W. B. Saunders. 1949.

Includes a large section on respiratory accidents to the child.

Irish Medical Directory and Hospital Yearbook, 1948-9. 10th ed. (Pp. 404. 15s. 6d.) Dublin: The Parkside Press. 1949.

The Scientific Paper. By S. F. Trelease. (Pp. 152. 11s.) London: Baillière, Tindall and Cox. 1947

A short guide for research workers.

Essentials of Dermatology. By N. Tobias, M.D. 3rd ed. (Pp. 518. 36s.) London: J. B. Lippincott. 1948.

A short account for students and practitioners.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY APRIL 30 1949

BREACH OF FAITH

Ever since the profession agreed to enter the Health Service and to work it as successfully as the administration would allow, it has assumed that the Government would meet its just claims for adequate remuneration. Both general practitioners and the Government have accepted the recommendations of the Spens Committee. The Report on Remuneration prepared by the General Medical Services Committee,¹ which was approved by the Conference of Representatives of Local Medical Committees on March 3 and received the fullest support of the Representative Body on March 29, gave cogent reasons for believing that the remuneration of general practitioners is inadequate, since the central pool is too small. The report has been in the hands of the Ministry since March 4, and a deputation of members of the General Medical Services Committee went to the Ministry on April 14 prepared to discuss remuneration in the light of the report. At that meeting the Ministry refused to consider the document until it had obtained and studied returns from executive councils showing the exact amounts paid to practitioners on their lists. At the same meeting an issue was raised—almost incidentally—of much deeper importance. When the Ministry was asked whether, in the event of a dispute on remuneration, the profession's claims could be submitted through Whitley machinery and finally, if necessary, to arbitration, the reply given was as follows: "It must not be assumed without further discussion that participation in the Whitley machinery necessarily involves, in the event of disagreement, the right to resort compulsorily to arbitration on all subjects." The profession will be disturbed at the negative caution of this reply.

Without the right to resort compulsorily to arbitration on a subject such as remuneration the Whitley machinery may well be reduced to mere trifling, the correction of minor administrative errors here and there and the removal of the occasional straw from the camel's back. It is difficult to see how any claims on which the two sides of the Whitley Council fail to agree can be justly decided if, on the Government's prerogative, resort to independent arbitration is denied. Indeed, not only the claim but justice itself would be denied. The profession would lie at the mercy of any Government in power and might have no other course to take but that which it has always most disliked and regarded as a last resort—refusal to work the Service or some part of it.

Some evidence of the Government's assurances was given by the Secretary of the Association last week,² and he

made this comment: "To withdraw the promise of automatic arbitration in the event of disagreement on matters of remuneration would be a breach of many undertakings, a departure from modern negotiating practice, and potentially dangerous to the profession." The Chairman of Council said³ at the Special Representative Meeting on May 28, 1948: "The Minister has agreed that when the Service starts on July 5 we can immediately raise with the Whitley Council which will be set up to consider general-practitioner remuneration this matter of the betterment factor and the implementation of the Spens Report. Therefore we are not bound to the present conditions as set out in the remuneration offer if we can prove to the Whitley Council that the amount is not the proper one." Nobody then supposed it to be the Minister's conception of Whitley machinery that a claim should be submitted to it and then, in the event of disagreement, left unsettled or determined arbitrarily by the Minister himself. The assumption that the profession's claims would be justly met was a prime factor influencing doctors to co-operate in working the Service, and a refusal to have them submitted to arbitration would be, as the General Medical Services Committee recorded last week, a gross breach of faith. The formation of the British Medical Guild is therefore particularly opportune, and, fully supported by the profession, it will provide them with a much-needed source of strength.

The profession will be surprised to learn that more than nine months after the Service started the Ministry does not know how many effective principals are on executive councils' lists. It declines to discuss the general practitioners' claims until it has gathered and analysed the information from the executive councils, which it hopes to have done by the middle of May. This delay is particularly remiss because the Ministry's estimate of public money paid out falls considerably short of the profession's moderate demands, which are based on the betterment factor of 170 to take account of the increased cost of living since 1939. The Ministry could surely have consented to begin discussions on the general merits of the case apart from its details. The deputation was further dissatisfied to learn on April 14 that the Ministry could give no assurance that there would be an addition to the pool on account of the increased number of general practitioners in the Service, and that, if remuneration is improved, the increase will not necessarily be retrospective to July 5, 1948. Since there have always been considerably more than 17,900 general practitioners in the Service—the estimate on which the size of the central pool was originally based—refusal to make the increase retrospective to July 5, 1948, when the necessity for it now is clear, would be a grave injustice.

Government spokesmen have admitted that there are grounds for general practitioners' being dissatisfied with their remuneration. On Jan. 21 Mr. Messer said in the House of Commons, "Clearly everybody knows that the situation cannot remain as it is." The profession knows that well; the Minister's further delay in acknowledging it and his lack of assurance that pay would be adjusted for the first nine months of the Service are in lamentable contrast to the speed with which he acted, without carrying out a full inquiry, to cut the remuneration of the ophthalmic medical practitioners.

¹ *British Medical Journal*, Supplement, Feb. 19, p. 83.

² *Ibid.*, April 23, p. 237.

³ *Ibid.*, June 5, 1948, p. 147.

AUREOMYCIN

We have already referred¹ to the preliminary account by Bryer and his colleagues² of the new antibiotic aureomycin or, as it is sometimes termed, duomycin. Further information is now available. Like chloramphenicol (chloromycetin), aureomycin is produced by a new member of the genus *Streptomyces*, for which the name *Streptomyces urofaciens* n. sp. is proposed. There are a number of species included under the category of "yellow" streptomycetes and most of them are soil inhabitants. The antibiotic aureomycin is a crystalline powder and is dispensed in the form of a yellow hydrochloride. The salt is soluble in distilled water and in 5% glucose in distilled water: solutions in normal saline precipitate when a concentration greater than 1% of the drug is reached. The powder is stable at room temperature, and in aqueous solution at pH 4.0 no loss of potency occurs after two weeks at 4° C. If the solution is neutralized or rendered alkaline the loss in activity is rapid. Aureomycin is not adsorbed by filters which retain bacteria.³

When injected intramuscularly solutions of aureomycin in distilled water or glucose cause acute pain lasting for some minutes, followed by a dull pain which may continue for half an hour, even if the drug is dissolved in 1% procaine: with repeated administration the sites of injection become red and tender. Intramuscular medication in man is thus hardly feasible, but fortunately aureomycin is well tolerated and active by mouth. A single dose of 0.5 g. of a crude preparation caused a loss of appetite and nausea, but these symptoms occur only rarely after the administration of more purified preparations in gelatin capsules: they are entirely absent if $\frac{1}{2}$ oz. (15 g.) of colloidal aluminium hydroxide is given with each 100 mg. of the drug. In this way a dose of 100 mg. has been given without any signs of toxicity every two hours to a patient who weighed 40 kg. Difficulty in determining concentrations of the drug in serum or plasma has been reported: loss of activity occurs on incubation at 37° C., serum proteins have a neutralizing effect, and a relatively high concentration of the antibiotic is necessary for minimal inhibition of growth of the test organism, *Klebsiella pneumoniae* type A. Some observers⁴ prefer a strain of *Bacillus cereus* var. *mycoides* as the test organism, others¹¹ the strain of *Bacillus subtilis* 219 which is used in the assay of streptomycin, or a haemolytic streptococcus. A level of 0.6 μ g. per ml. of serum is the lowest concentration of drug that can be measured with *K. pneumoniae*. This concentration is obtained by an oral dose of

0.5 g. and an intramuscular injection of 40 mg.: after oral administration alone repeated doses of 1 g. every six hours give detectable amounts in the blood—about 2 μ g. per ml. Aureomycin appears rapidly in the urine, and excretion continues for two to three days after a single oral dose of 0.5 g. In adults given repeated oral doses of 1 to 2 g. daily concentrations up to 256 μ g. per ml. may be found in the urine. After intravenous injection aureomycin passes into the cerebrospinal fluid.

The antibiotic range of aureomycin is a wide one and has been studied by a number of observers.⁷⁻¹¹ Pneumococci, gonococci, meningococci, and *Streptococcus pyogenes* are all inhibited by 1 μ g. or less of aureomycin per ml. Staphylococci and most strains of Gram-negative bacilli, including species of salmonella, are inhibited by concentrations varying from 1 to 25 μ g. per ml. Strains of two species, *Proteus vulgaris* and *Pseudomonas aeruginosa*, are moderately resistant, requiring from 125 to 250 μ g. per ml. for complete inhibition. There is no cross resistance with penicillin- and streptomycin-resistant strains, nor with strains that have become resistant to polymyxin or bacitracin. Resistance to aureomycin is difficult to produce either *in vivo* or *in vitro*. Some increase in resistance, however, has been induced against *Proteus vulgaris*, *Pseudomonas aeruginosa*, and *Bacterium coli*: such aureomycin-resistant strains do not produce any aureomycin-inhibiting substance corresponding to penicillinase. In experimental animals the toxicity is very low: mice tolerated by mouth 1,500 mg. and rats 3,000 mg. per kg. of body weight.

Accounts of the treatment of numerous human infections with aureomycin have now been published. Collins and his colleagues¹² reported the results obtained in 66 cases of gonorrhoea: only six failed to respond, and these had been given treatment for one day with a total of only 1.0 or 1.5 g. of aureomycin. Pneumococcal pneumonia has been successfully treated with 0.5 g. every six or eight hours, the total doses being from 10 to 20 g. Good results have also been obtained in meningococcal septicaemia. Claims have been made for the curative action of aureomycin in brucella infections: but in view of the difficulties in assessing the true value of any drug in these infections further controlled studies are required. In bacteraemia due to *Bacterium coli* and in salmonella infections aureomycin has failed: in the treatment of typhoid and paratyphoid it is thus inferior to chloramphenicol (chloromycetin). On the other hand Wright and his colleagues¹³ have shown that granuloma inguinale is readily controlled by aureomycin, and in view of its low toxicity it may well prove superior to streptomycin. The chemotherapeutic activities of aureomycin are not restricted to bacteria. Wong and Cox,¹⁴ as well as Wright and his associates,¹⁵ have shown that aureomycin has an effect on the viruses of lymphogranuloma venereum and psittacosis and also on rickettsial infections, including epidemic and murine typhus, scrub typhus, Rocky Mountain spotted fever, Q fever, and rickettsialpox.¹⁴⁻¹⁶ There is also some evidence that non-specific urethritis can be controlled by aureomycin. Finally, Braley and Sanders¹⁷ have reported on the use of a 0.5% solution of a borated salt of aureomycin in 100 patients with conjunctival and corneal infections. This was very effective in coccal infections, and

¹ *British Medical Journal*, 1948, 2, 1112.

² *J. Amer. med. Ass.*, 1948, 138, 117.

³ Schoenbach, E. B., Bryer, M. S., and Long, P. H., *Ann. N.Y. Acad. Sci.*, 1948, 51, 267.

⁴ Finland, M., Collins, H. S., and Paine, T. F., Jr., *J. Amer. med. Ass.*, 1948, 138, 946.

⁵ Dornbusch, A. C., and Pelcak, E. J., *Ann. N.Y. Acad. Sci.*, 1948, 51, 218.

⁶ Dowling, H. F., Lepper, M. H., Sweet, L. K., and Brickhouse, R. L., *ibid.*, 1948, 51, 241.

⁷ Chandler, C. A., and Bliss, E. A., *ibid.*, 1948, 51, 221.

⁸ Little, P. A., *ibid.*, 1948, 51, 246.

⁹ Bryer, M. S., Schoenbach, E. B., Bliss, E. A., and Chandler, C. A., *ibid.*, 1948, 51, 254.

¹⁰ Long, P. H., Schoenbach, E. B., Bliss, E. A., Bryer, M. S., and Chandler, C. A., *Calif. Med.*, 1948, 70, 157.

¹¹ Price, C. W., Randall, W. A., and Welch, H., *Ann. N.Y. Acad. Sci.*, 1948, 51, 211.

¹² *ibid.*, 1948, 51, 231.

¹³ *ibid.*, 1948, 51, 318.

¹⁴ *ibid.*, 1948, 51, 290.

¹⁵ Anigstein, L., Whitney, D. M., and Beninson, J., *ibid.*, 1948, 51, 305.

¹⁶ Lennette, E. H., Meiklejohn, G., and Thelen, H. M., *ibid.*, 1948, 51, 331.

¹⁷ Braley, A. E., and Sanders, M., *ibid.*, 1948, 51, 280.

difficult to reduce the bacterial count on standard agar to less than 500 bacteria per millilitre and to secure the absence of coliform bacilli from 1 ml. The cost should be about a penny for 200 glasses.

Shortage of glasses, space, and assistance makes the ideal of a clean, dry, sterile glass for each customer impracticable, but a step in the right direction can be made if the results of the investigations referred to are sensibly applied. Finally, a word might be said about the bartender's towel. If it cannot be abolished it should be frequently changed, and used solely for glasses which have been treated with antiseptic.

THE RELIABILITY OF LABORATORY TESTS

If a decision is to be based on or influenced to any extent by a laboratory test, then it follows that the result obtained must be precise and that the test should not be so complex that many possible sources of error are present. Belk and Sunderman¹ have checked the accuracy of the results of some common chemical measurements made in hospitals throughout the State of Pennsylvania. The 59 laboratories co-operating in the investigation were asked to analyse the following: solutions of glucose, sodium chloride, urea, and calcium (in concentrations similar to that found in human blood); serum for the measurement of total protein, albumin, and globulin; and citrated whole blood for the estimation of haemoglobin concentration. The figures received from the laboratories were surprisingly inaccurate. The results were grouped by the referees into three categories—satisfactory, unsatisfactory, and gross error. The sodium chloride analysis was done best—68% of the results being satisfactory. The albumin estimation was the worst—20% being satisfactory, 64% unsatisfactory, and 16% having a gross error. A questionnaire was sent to 95 pathologists in order to obtain their explanation for such unreliable results, and they included the following as contributory factors: (1) poorly trained technicians (in 82 answers); (2) inadequate number of technicians (in 80 answers); (3) lack of understanding between pathologist and staff (in 64 answers); (4) poor equipment (in 63 answers); and (5) insufficient floor space (in 57 answers).

In this country Biggs and MacMillan² have assessed the accuracy of some common haematological methods used in routine laboratory work. These included: haemoglobin estimation, red cell count, and packed cell volume (from which errors in estimating the colour index, mean corpuscular volume, and mean corpuscular haemoglobin concentration could be calculated); mean cell diameter derived from the Price-Jones curve; reticulocyte count; platelet count; whole-blood coagulation; and red-cell fragility. The white cell count was not included, because it is widely recognized that this has a large error. The results obtained in these tests by laboratory technicians and doctors were analysed in detail. As might be expected, the disagreement between observers was an important source of error. For some of the variables the variation around the mean value was large, and it was evident that some tests cannot be expected to measure small differences reliably. The red-cell count had an "inaccuracy" and thus the colour index and mean corpuscular volume were unreliable. The platelet count was also unreliable. The results of the streptomycin treatment on to record the small difference. In the three other cases in which erythrocyte counts were obtained during treatment no significant rise in platelet count was shown after 6, 15, and 30 days of streptomycin treatment. Of the surviving cases, five out of six died.

the reliability of routine work will follow the selection of those methods which give the best results in the hands of the average laboratory worker." If the results of any test are to be of value to the clinician, then the test must be able to detect differences smaller than those which are of clinical significance. It seems that not all laboratory tests meet this requirement, for some of them demand more skill than the average laboratory technician possesses.

MELANOMA OF THE CHOROID

In a series of papers from 1931 to 1942 Callender and his associates in the U.S.A. stressed the significance of reticulin in the prognosis of melanomas of the choroid. The richer the reticulin content the better they found the prognosis to be. They also held that prognosis could clearly be assessed by the cell type: the lowest mortality was in the group of cases with spindle-cell A tumours; it was considerably higher with spindle-cell B, and highest with epithelioid tumours. The importance of the melanin content as a prognostic aid was not so marked, though the mortality was higher in the group of cases in which the pigment content of the tumours was classed as heavy. Callender's method of classification has proved of value, and is confirmed in broad outline by Benjamin, Cumings, Goldsmith, and Sorsby¹ in a study of 250 cases of melanoma of the choroid. Their statistical assessment, however, does not confirm Callender's results in detail. In the first place they found a much better prognosis—a survival rate of 80.7% in a period of five years in their series, against 52% in that of Callender. The discrepancy in survival rates is still more noticeable if a period of 10 years is considered, the respective rates being 73.4% and 34.0%. Again, while Callender was able to grade mortality in relation to each of the cell types, melanin content, and reticulin content, the British workers obtained a more distinctly limited relationship. The only statistically significant findings they could extract were an increased mortality in the group of cases with epithelioid-cell tumours, a lower mortality in cases where the pigment content of the tumours was classed as light, and a higher mortality when the reticulin content was low. In criticizing assessment of mortality they rightly point out the need to take into account macroscopic features such as vascularity, haemorrhage, necrosis, and above all extension beyond the uvea.

Melanomata of the choroid are puzzling tumours. The high survival rate in this condition is probably unique in cancer statistics. It is difficult to grade the tumours owing to their histological complexity, and their relationship to melanomata elsewhere in the body is not readily assessed. On the one hand it has been suggested that the tumours are of mesodermal origin, on the other that they are of ectodermal origin. These complexities are discussed fully by Reese,² who attempts to sort out three distinct varieties of choroidal melanoma. Two varieties he considers to be neurogenic in origin; these are the tumours arising from the Schwann cell and the naevus cell, and the tumours arising from the pigment epithelium of the retina and ciliary body. These two varieties are therefore not strictly speaking choroidal tumours at all. The third group he regards as mesodermal in origin—chromatogenic melanoma arising from the uveal tract. His classification is largely a compromise between the conflicting hypotheses of ectodermal and mesodermal origin of choroidal tumours, and it would gain more ready acceptance if it could be shown to possess a prognostic significance.

¹ Brit. J. Ophthalm., 1948, 32, 729.

² Amer. J. Ophthalm., 1947, 30, 537.

² Brit. Medical Journal, 1948, 2, 769.

Hard, C. Debré, R., and Lelong, M., Bull. Acad. Méd., Paris, 1925, 93,

ANOPHELES ERADICATION IN CYPRUS

BY

HORACE SHELLEY, F.R.F.P.S., M.R.C.P., D.T.M.&H.

Director of Medical and Health Services, Cyprus

AND

MEHMED AZIZ, M.B.E., As.R.S.I.

Executive Officer, Anopheles Eradication Scheme, Cyprus

The history of the malarial fevers in Cyprus has been long and tragic, and over the centuries these fevers have cost the island much in human life and have been the major cause of chronic ill-health and invalidism. It is on record that "fevers and bad air" were a source of much trouble in the year 1394, and in a letter written by Namik Kemal, who was a Turkish poet of national reputation, a few years before the British occupation of the island in 1878 it is stated that "the hum of noxious pests sounds like that of the most modern weapons, and the diseases, the mildest of which is fever, are capable of killing a person much quicker than bullets." In the early days of occupation the British Army suffered severely from malaria, and steps were taken to reduce the breeding places of mosquitoes by draining and filling of swamps and planting of trees, particularly in the vicinity of the main towns. These operations brought some improvement, but the villages remained open to the same menace as previously.

In the year 1900 the District Medical Officer, Larnaca, Dr. G. A. Williamson, discovered malaria parasites in the blood of 470 out of 503 patients diagnosed clinically as cases of malaria; infestations were divided almost equally between *Plasmodium falciparum* and *P. vivax*, plus an occasional *P. malariae*. The three main species of parasite were thus proved to be present in the island. During 1912 the High Commissioner, Sir Hamilton Goold-Adams, informed the Secretary of State that he had recently ascertained the widespread prevalence of malarial fever in the inhabitants of the island, and that, though steps had been taken by Government to combat the menace, he considered that more could be done, and requested that an expert malariologist be sent to Cyprus to study the disease and advise concerning necessary preventive measures. In reply to this request Sir Ronald Ross visited the island in 1913 and found that 25.4% of the children had splenic enlargement. On his recommendation certain marshes were drained and a special staff was trained to undertake mosquito-control work. These drainage works were carried out in various places which were ideal breeding-centres for *Anopheles elutus*, a known vector of malaria. It was noted that coincident with these measures the incidence of enlarged spleen and active cases of malaria underwent a great diminution, and conditions remained apparently much improved until after the 1914-18 war, when they rapidly deteriorated for various causes and remained unsatisfactory until the beginning of the Anopheles Eradication Campaign in 1946.

There were three principal vectors of malaria in Cyprus: *A. superpictus*, breeding in shallow collections of water exposed to full sunlight; *A. elutus*, breeding in temporary collections and marshy collections of water; and *A. birfurcatus*, breeding in heavily shaded and cool water, including both wells and surface collections.

In 1935 Dr. Barber, of the International Health Division, Rockefeller Foundation, found a parasite incidence of 70% in certain village children, and sickness due to malaria at times assumed almost epidemic proportions. Careful dissections of *A. superpictus* indicated a sporozoite rate seven times greater than that of *A. gambiae* in certain malarial regions in Africa.

From the above information it is obvious that the problem of anopheles eradication in Cyprus was both complicated and urgent; nevertheless Dr. R. E. Cheverton, a former Director of Medical Services in the island, strongly believed in the possibility of obtaining the total eradication of anopheles vectors of malaria, and he therefore arranged for one of us (M.A.) to visit Egypt in 1945 and to study the campaign for the eradication of *A. gambiae* being carried out in the Nile Valley. Later Dr. F. L. Soper, of the Rockefeller Foundation,

visited Cyprus and expressed the view that there was every possibility of eradicating the anopheles from the island.

In 1946, working on this basic advice, an experimental area was chosen about 500 square miles (1,295 km.²) in extent and the species eradication carried out with vigour and with complete success; it was thus considered justifiable to extend the campaign to the whole island. Funds for the experimental work in 1946 came from the Colonial Development and Welfare Scheme. It was estimated that £310,000 would be the approximate cost of securing island-wide freedom from anopheles vectors.

Organization of Campaign

After the preliminary selection and training of staff and a comprehensive survey of breeding-places the island was divided into six districts, subdivided into 39 sections, 111 zones, and 556 blocks. One block was the area which could be covered by one man in twelve working days. A group of blocks constituted a zone under a zone officer, and a group of zones constituted a section under a section officer. Each section officer was assisted by special checkers of larvae and adult mosquitoes. Each district was under the direct administration of headquarters through the medium of the district officer, and in order that close and accurate supervision could be maintained the executive officer had under his immediate direction independent checkers, who could be sent to any district, section, zone, or block as considered advisable.

The executive officer (M.A.) was in entire charge of the whole operation, including the purchase and issue of stores, equipment, and larvicides, and the maintenance of records, and it was only necessary for him to approach the Director of Medical and Health Services in case of difficulties necessitating extra assistance and advice and to report progress.

The larvicides used during most of the campaign consisted of a 3 to 4% solution of D.D.T. in gas oil. "Malarial," Paris green, and simple fuel oil were used on certain occasions, and during 1948-9 D.D.T. and gammexane smoke were utilized in the case of buildings with high ceilings and in certain inaccessible places. Major drainage schemes were not attempted, though several marshy areas exist. Spraying was carried out with locally made or imported "flit guns," preference being given to those with a long handle.

The campaign proper started in April, 1946, with a direct attack on all breeding-places, the results being noted with particular care and the presence of one larva being sufficient to declare a block still positive. A protective zone about ten miles wide, situated between the eradication area and the rest of the island, was subjected to intense mosquito control with the object of preventing any reinfestation of the eradication area. During the winter months of 1946-7, and also in subsequent years, hibernating adult anopheles were attacked by subjecting all human and animal shelters to light treatment with D.D.T., the object being to destroy any adults and thus reduce the possibility of any widespread breeding in March and the later months.

It has to be appreciated that, as not all species of anopheles in Cyprus are necessarily frequenters of houses, search and attack had to be made in caves, both natural and artificial, tombs, tree trunks, etc., and checking could not be limited to villages and other settlements but had to extend over every part of the island. This needed both courage and ingenuity on the part of those concerned, who had on occasion to be lowered by ropes to deal with breeding- or sheltering-places which could be approached only from the perpendicular heights of cliffs or mountains.

Results

The effect of the campaign on the incidence of malaria has been remarkable. During 1944, two years previous to the opening of the scheme, 7,686 cases were reported, and this figure was reduced during 1948 to 406, of which number only three were considered to be recent infections.

In 1944 the percentages of school-children examined who had splenomegaly and parasitaemia were 32.4 and 51.9 respectively, figures which by 1948 had fallen to 10.6 and 1.3 respectively. In 1948 blood films from 655 infants (under 2 years) living in formerly highly malarious villages were examined and found negative for parasites.

At the time of writing this account not a single anopheles larva or adult had been discovered in the whole island for thirteen weeks, and it is anticipated that, apart from maintenance work, the campaign proper will end within two months.

It is not possible in a brief article to detail the numerous and unexpected difficulties which were encountered. At one stage the political situation in the Near East caused an interruption in the regular supply of oil, which for a period had serious repercussions on the task in hand. Delays also occurred in the receipt of essential larvicides and other items, but fortunately these difficulties were gradually overcome.

Our grateful thanks are due to Professor G. Macdonald, Director of the Ross Institute of Tropical Hygiene, London, for his advice, criticism, and assistance; to Drs. L. Soper and Bruce Wilson, of the Rockefeller Foundation, for their great help in the initial stages; to Dr J. R. Busvine for his independent and confirmatory checking during 1948; and finally to all those who have given assistance and encouragement.

THE RED CROSS UNDER REVISION

[FROM OUR CORRESPONDENT IN GENEVA]

A diplomatic conference for the establishment of new international conventions for the protection of war victims was opened in Geneva on April 21, and is expected to last for six weeks. Forty-five States, including Soviet Russia and the Vatican, are participating. The United Kingdom delegation is headed by Sir Robert Craigie and consists of representatives of the War Office, Admiralty, Ministry of Transport, Home Office, and Foreign Office. Several international organizations, including WHO, are observers. The first meeting was held at the Hotel de Ville, in the same room in which the Red Cross was established in the middle of the last century.

Three draft conventions are under consideration. Two of them, for the relief of the wounded and sick in the armed forces in the field and for the treatment of prisoners of war, are proposed revisions of the conventions concluded at Geneva in 1929. The third is a convention for the protection of civilians in time of war. All three were considered at the eighteenth International Red Cross Conference held recently at Stockholm, and now they are being critically reviewed by the representatives of Governments.

Already the United Kingdom delegation has put forward some criticisms of the International Red Cross proposals. It has suggested that certain passages in the draft convention for the relief of the wounded and sick, while appropriate to the circumstances of war as it was waged in the middle of the nineteenth century, bear no evident relation to the conditions of war usual in the middle of the twentieth century. The International Red Cross, in the view of the British delegation, appears to consider that all those who are charged with caring for the wounded and sick are outside the combatant forces altogether and can therefore be regarded as neutrals in any conflict. In fact medical services now form an integral and necessary part of the whole fighting machine, and their primary purpose is to ensure the fitness of combatant personnel to carry on the conflict. Here, of course, there is a distinction between the medical services of an army and of a humanitarian organization like the Red Cross. "The United Kingdom Government recognizes that, in the presence of wounded and sick, medical personnel should behave in the tradition of the Red Cross and should treat without distinction, except on grounds of need, the personnel of their own forces and those of the enemy." But the delegation goes on to urge that this fact should not be allowed to obscure the fundamental change which has taken place since the Red Cross emblem first appeared on the battlefield—namely, that the medical services of military forces are now organized with positive duties designed to maintain and increase the fighting efficiency of such forces. It presses strongly the view that all personnel, whether "protected" or not, falling into the hands of an adverse belligerent should be prisoners of war; that among prisoners of war all those required to care for the sick and wounded in the hands of the enemy should have the necessary freedom and facilities for carrying out their work, and that surplus doctors and nurses should be repatriated.

The draft convention for the protection of civilians in time of war is a document of 140 articles. It deals largely with the care of internees. It is laid down that every place of internment must have an adequate infirmary under the direction of a qualified doctor. Isolation wards must be set aside for contagious disease. Where special treatment, surgical operation, or hospital care is necessary, internees must be admitted to institutions where such treatment is given, and the care they receive must not be inferior to that provided for the general population. Internees, says one article, shall have the attention preferably of medical men or women of their own nationality. The costs of treatment, including those of any apparatus necessary for the maintenance of internees in good health, particularly dentures and other prostheses, and spectacles, shall be borne by the detaining power. Medical inspections of internees are to be made at least once a month, with the object of supervising their general health, nutrition, and cleanliness, and detecting contagious diseases, especially tuberculosis, malaria, and venereal conditions. These inspections are to include, wherever possible, periodical radiological examination and checking of weight. It is also provided that international standards of nutrition may be applied to the quantity, quality, and variety of food for internees, with additional food for expectant and nursing mothers and children.

This important conference has hardly yet got into its stride. The first days, as is usual in these big international assemblies, were frittered away over exasperating points on procedure, objections, validity of credentials, and admission of observers.

A HEALTH SERVICE FOR CHILDREN

CHADWICK PUBLIC LECTURE

A lecture under the auspices of the Chadwick Trust was delivered at Westminster Hospital Medical School on March 22 by Dr. HELEN MACKAY.

Dr. Mackay said that a hundred years ago there were no children's hospitals in this country and general hospitals discouraged the admission of children; half the inmates of work-houses were children. Eighty years ago the forerunners of infant-welfare centres made their appearance, but not until 1924 was the first chair in paediatrics established. Nowadays every child had a doctor, but there were still some deficiencies in the service. Undergraduates received a minimum of training in child care, and were often in difficulties when confronted with the sick child. Before last July doctors in most clinics could treat minor ailments. Now, in many areas they had to say that they were not allowed to do so, and the mother must take the sick baby to some overcrowded surgery or outpatient department. School medical work varied in different areas, some school doctors showing initiative, others being tied up by regulations which were not to the benefit of the child. In many hospitals there was no specially trained nurse in charge of the children's ward; in others children were scattered throughout the wards for adults; and in some hospitals wards were overcrowded with children who could have been nursed at home. The selection of cases for hospital should be controlled by doctors with experience of paediatrics.

The first essential in planning a health service for children was a well-trained staff with good facilities working as a team. A few fairly large hospitals were more economical in staff than numerous small ones. It was important to build up a small number of really adequate hospital units as quickly as the financial position allowed. Each region should have an overall plan, and the people on the spot must get together not only on principle but on detail. It was important also that the general practitioner should have adequate paediatric training. A large part of the clinical work in schools and welfare centres should be done by general practitioners interested in paediatrics, their numbers being augmented by those who took service as child-welfare and school medical officers.

Hospital Planning

The hospital service, Dr. Mackay continued, should have paediatric units in large hospitals, and regional centres for teaching and research. In most hospital areas the paediatric

unit would have beds in one hospital, and if a management committee area did not contain such a unit it should have a branch paediatric out-patient department based on a unit elsewhere. Beds should be provided for nursing mothers, and all in-patient children under puberty should be dealt with in the children's department. Beds for neonatal cases should be under the direction of one or two paediatricians, one of whom might be the children's health officer. As soon as a unit could function in isolation it must be provided with the services of all the necessary specialists and sub-departments. Units should not be too small, and they should be so sited as to make the best possible use of existing facilities, which should be within reasonable travelling distance from every part of the region.

Dr. Mackay also pleaded for paediatric regional centres with the outlook and status of university units. These centres should be equipped for highly specialized forms of treatment and investigation. Fever hospitals and general children's hospitals should be fused into paediatric units; the present division was artificial and served no good purpose. Long-term patients should be treated in general children's hospitals staffed and equipped to deal with all types of cases. Some children needed treatment in orthopaedic wards, others might lie in cottage homes under the care of house mothers.

Psychiatric treatment should be undertaken by paediatricians and general practitioners, but there should be fully staffed child psychiatric units adjacent to children's hospitals. Many children with psychiatric symptoms needed a full physical investigation. Psychiatrists working in these units should have had practical training in general paediatrics.

Initial Steps

Much could be done to obtain such a service in the immediate future. The first step was the overall planning, at least in outline, and the provision of facilities for training was a primary obligation. Adequate undergraduate training units should be set up, and this would necessitate the provision of much larger departments than existed at present. Properly staffed and equipped regional beds would also be needed for postgraduate training. Appointments should not be filled unless the candidates were of the right calibre and adequate facilities were available. If each hospital sought to create its own department and train its own staff regardless of the larger needs the future of the service might be in jeopardy.

The nursing must be done by nurses who were fond of children, wanted to look after them, and were trained for the work. School nurses and health visitors should also be given the opportunity of keeping up their knowledge of sick children. The interchange of nurses working at clinics or in hospitals should be encouraged. She thought also that mothers should be brought into hospitals to help with the nursing of their own children. "Play" people should be appointed who could provide the children with amusement and occupation. A central bureau should be set up in each region where statistics of child health would be available.

Hitherto there had been little inducement to nurses, medical students, or doctors to undertake paediatric work. If the National Health Service offered in paediatrics the same prospects as it offered in other branches of medicine, said Dr. Mackay in conclusion, the work, which in itself was so rewarding, would gain all the recruits needed.

The National Association for the Prevention of Tuberculosis discusses in a memorandum recently issued the policy for mass radiography in the future. Groups that should receive priority in being radiographed include nurses, doctors, and workers in certain dusty occupations, and entrants to the military and civil services. Other groups might include secondary-school leavers, food handlers, and expectant mothers. The memorandum admits that the work of mass radiography is often monotonous for those who do it and suggests that it should not be regarded as a career in itself but as part of the experience necessary for a fully qualified physician of a chest clinic. More propaganda is favoured to encourage the public to be radiographed, since there is evidence that the initial enthusiasm is waning.

Nova et Vetera

GENERAL ANATOMY, MICROSCOPIC ANATOMY, OR HISTOLOGY?

In Great Britain textbooks of histology have been designed almost entirely for medical students. They have been unsubstantial, as they usually figure tissues and organs from domestic and laboratory animals rather than from man. On the other hand, in Germany at the end of last century, and still more so in the U.S.A. of recent years, comparative histology has attracted the attention of many zoologists. This has largely been responsible for the fact that experimental embryology blossomed in Germany and is now bearing fruit in North America.

Undoubtedly that great French genius Bichat (1771-1802) founded the subject of general anatomy or histology by concentrating on tissues rather than organs, with a hand lens rather than a microscope. The cell theory of the structure of tissues, both animal and vegetable, was founded by Schwann and Schleiden in 1838. Histology bore the name "general anatomy" for some years. Fr. Gerber, of Berne, wrote his textbook of general anatomy in 1840. This was translated by George Gulliver in 1841 with considerable additions. Gerber is worth remembering if only for the statement, "Anatomy and physiology, however, ought never to be regarded as separate sciences, altogether disjointed and different; they are indeed, so closely linked together, that they are all but one and the same; in anatomy, we study the organs in *repose*, in physiology, we study them in *action*." As an example of early teamwork Dr. Gulliver registers his thanks for the engravings to "Mr. Siddall, a zealous micrographer and the worthy veterinary surgeon to the Blues," and to "Dr. Boyd, the excellent resident physician of the St. Marylebone Infirmary, for his friendly assistance on various occasions."

In 1837 William Sharpey was appointed to the chair of anatomy and physiology at University College, London, at the time when Richard Quain (1800-87) held the chair of practical anatomy and served as surgeon to the hospital. Sharpey, with tremendous energy, established a course in microscopic anatomy. The large round table was fitted with a lamp at the centre and a brass rail near the edge, along which the microscope circulated from one student to the other. Sharpey instituted a lectureship in practical physiology "with a view to supplying medical students with instructions in the use of the microscope in examining the texture and fluids of the body." Sharpey, having become professor of physiology, took over the teaching of histology and neurology, so that the department of anatomy was left with no equipment beyond the cadaver, and sank to be the handmaid of surgery.

William Sharpey and Richard Quain published the fifth edition of Jones Quain's *Anatomy* in 1848 with the assistance of Potter, Viner Ellis, and John Marshall. This edition had a new section on general anatomy and also one on surgical anatomy.

The first distinct work in English on general anatomy was that of Dr. Craige, of Edinburgh (1828). The second was that of Mr. R. D. Grainger, of St. Thomas's Hospital (1829), followed almost immediately by Robert Knox's translation of the textbook of Béclard (1785-1825), which passed through successive editions to 1895. Knox also wrote anonymously one of the earliest books on prostitution, "the greatest of social evils," translated Cloquet's *Descriptive Anatomy*, and wrote on *The Races of Man*. It is sad that this great anatomist is remembered scandalously only as a resurrectionist.

That strange man A. H. Hassall, who not only described the corpuscles of the thymus but wrote the *History of the British Freshwater Algae*, published his two volumes (text and atlas) on the *Microscopic Anatomy of the Human Body* in 1846-9. From the point of accuracy of delineation the lectures on histology delivered by John Quekett at the Royal College of Surgeons in 1851-2, and published in two volumes in 1852, show an improvement on Hassall's work and covered both vertebrate and invertebrate forms, so that the study was comparative in the broad sense. This was followed by the masterly works of Kölliker, who published his compendium

Mikroskopische Anatomie, in 1850-4 and his shorter *Handbuch der Gewebelehre des Menschen* in 1852. The latter was translated by George Busk and Thomas Huxley and published for the Sydenham Society in 1853. Another translation, by Dr. George Buchanan, of Glasgow, was published in 1860.

There is some doubt when the term histology came to replace the older terms general anatomy and microscopic anatomy. H. D. Rolleston, in his history of the Cambridge Medical School, attributes the origin of the word histology to Michael Foster (1836-1907), who deserted the chair of practical physiology at University College, London, to become Prae-electore of Physiology at Trinity College, Cambridge, in 1870. Rolleston says: "In addition to creating the Cambridge School of Physiology and making physiology an aspect of biology, instead of the younger sister of anatomy, he set the example of practical classes in physiology; the work in these classes included histology, a word introduced by Foster in consultation with F. B. Westcott (1825-1901), Regius Professor of Divinity"—and later the most liberal Bishop of Durham. This statement is obviously wrong, since as early as 1853 Theodor von Hensling published a paper entitled "Histologische Mittheilungen" in Vol. 5 of *Zeitschrift für Wissenschaftliche Zoologie*, and in 1859 Arthur Farre, professor in medical obstetrics at King's College, refers to "histological changes" in the uterus after labour (Todd and Bowman's *Cyclopaedia, Supplement*, 1859). Whereas Hassall spoke of microscopic anatomy in 1849, Quekett spoke of histology in 1851, as did W. B. Carpenter in his book *The Microscope* in 1856. Who really established the usage of the term histology?

The word histology, as distinct from general anatomy or microscopic anatomy, seems to have been introduced by A. F. J. K. Mayer in his book, *Ueber Histologie und eine neue Eintheilung der Gewebe des Menschlichen Körpers bei Gelegenheit der Eröffnung seiner Vorlesungen über Anatomie*, an octavo volume of 40 pages published in Bonn by A. Marcus in 1819. This book is not in the University Library at Cambridge or in the British Museum. It is to be hoped that a copy may be unearthed somewhere amidst that dust which is the bloom of age.

The greatest of all textbooks is still the *Manual of Human and Comparative Histology*, edited by S. Stricker (1869) and published post-haste in an English translation by Henry Power, ophthalmic surgeon to St. George's Hospital, in 1870. The three volumes may still be bought for a song, like so many other historic publications of the New Sydenham Society. The contributors to Stricker's *Manual* included such men as J. Arnold, S. Brücke, Cohnheim, Eberth, Engelmann, Gerlach, Klein, W. Kühne, Ludwig, Meynert, W. Müller, Obersteiner, Pflüger, Preyer, Recklinghausen, Rudinger, Max Schultze, Sehwalbe, Schweiger-Seidel, Toldt, Waldeyer, and others. The book is a joy because of the conflicting views of the contributors, the different methods of approach to the subject, and the rich historical background. As Stricker said, "Controversy is the mother of inquiry."

The most exhaustive textbook of comparative histology at present is the *Lehrbuch der vergleichenden Anatomie der Wirbeltiere*, by Albert Oepel and his contributors. Eight volumes appeared over the years 1896-1914.

The third edition of Professor Kendall's book, the *Microscopic Anatomy of Vertebrates*,* which provoked this brief historical review of general anatomy and histology, is a sound attempt to present the students of zoology with an interest in the wider fields of the lowlier vertebrates as well as mammals. His chapter on the integument deals with the skin of dogfish, bony fish, frog, reptiles, and birds as well as mammals. The excretory system of pronephros, mesonephros, and metanephros is pictured in the hagfish, the frog, and the mammal. In the skeletal system the terminology is not clear, as such terms as "precartilaginous,"

**Microscopic Anatomy of Vertebrates*. By James I. Kendall, Ph.D., D.Sc. Third edition, thoroughly revised. (Pp. 354; 225 illustrations £1 10s.) London: Henry Kimpton.

"chondroid tissue," and "pseudo-cartilage" are used. The weakest part of the book is the section dealing with the female reproductive system, a field in which most of our knowledge is due to American workers such as Edgar Allen, Leo Loeb, Stockard, H. M. Evans, and the various contributors to the *Carnegie Contributions to Embryology*. It is confusing to talk of the tunica albuginea of the ovary rather than of the tunica propria, for the former term really belongs to the inelastic coat of the testis. As Astley Cooper pointed out so long ago, this inelastic tunic of the testis has much in common with the dura mater, in that haemorrhage into either testis or brain inevitably leads to destruction of tissue. The placenta, that organ which, like the ideal University of Comenius, supplies sap, vitality, and strength to all, deserves a little more space if only because of its importance in classification of the mammals. The decidual cells are said to develop after the onset of pregnancy, whereas they really develop in every premenstrual phase as well and are heavily stored with pabulum for the nourishment of a fertilized ovum which may never arrive. Nature does not ration essential amino-acids, fats, lipoids, or glycogen. She lays a feast, and is prepared to discard it in toto in the menstruum.

It is a useful book for any zoology department, and would be better for the inclusion of a brief historical introduction so that the student might appreciate the part played by the original founders of the subject. The book is on the whole well illustrated, but a few of the diagrams are not up to the level of the photomicrographs. The high-water mark of histological diagrams is found in the woodcuts of Todd and Bowman's *Cyclopaedia of Anatomy and Physiology* (1835-59) and their *Physiological Anatomy and Physiology of Man* (1845).

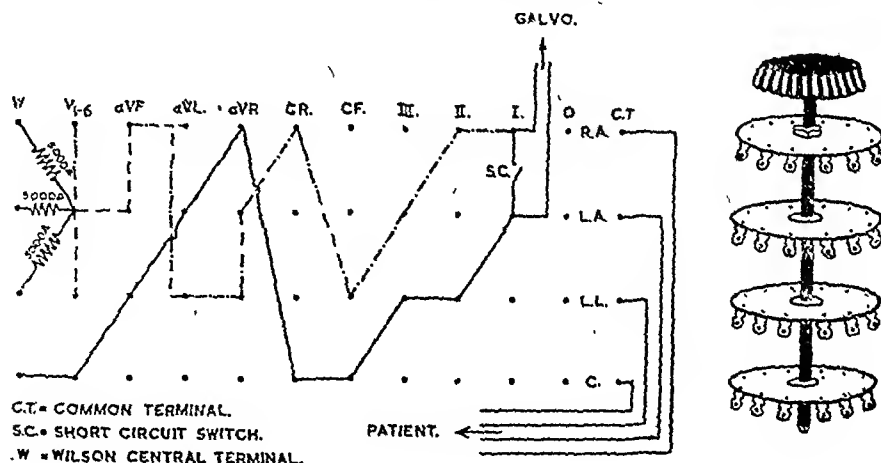
H. A. HARRIS.

Preparations and Appliances

A SWITCH AND WIRING CIRCUIT FOR UNIPOLAR LEAD ELECTROCARDIOGRAPHY

Mr. A. G. BARRITT, electrocardiographic technician, Royal Infirmary, Sheffield, writes: The use of unipolar lead electrocardiography in the diagnosis of cardiac disorders is rapidly becoming recognized as a standard procedure. Its adoption in this country has been hindered by the difficulty in obtaining suitable apparatus. It is laborious and time-consuming when carried out on a standard electrocardiograph. Records are simple to obtain with the Sanborn Viso-Cardiette, but it is doubtful if the instrument is robust enough for heavy routine work. It was felt, therefore, that it would be advantageous to convert a full-size standard type of Cambridge electrocardiograph so that unipolar leads could be taken rapidly and easily.

An electrical circuit has been constructed in which the substitution of a rotating lead-change switch for the existing one in the Cambridge electrocardiograph has made it possible for standard, unipolar extremity, bipolar, and unipolar precordial



leads to be taken with ease. There is thus no need to interchange the leads, the only adjustment necessary being the alteration of position of the chest electrode.

The circuit has been devised by utilizing a 4-pole, 11-way radio switch, which is cheap and easily obtainable. The accompanying schematic diagram outlines the method of wiring.

A four-lead cable runs from the patient's couch to the electrocardiograph, and the R.A., L.A., L.L., and chest leads are attached in this order to the common terminals of each pole. Starting at position I, a pair of wires leading from the galvanometer circuit is connected round the switch as illustrated. A single-pole short-circuiting switch is incorporated in the circuit to allow the electrocardiograph to be tested without a patient in the circuit. Provision is made for the inclusion, if required, of three 5,000-ohm resistances in the unipolar lead circuits, so that Wilson or Goldberger augmented leads may be taken as desired. No provision has been made for taking lead C.L., as various authorities have stated it to be unreliable.

An additional stop has been placed in the film-lowering mechanism on the camera so that only half the film is exposed on each occasion, giving a shorter record of each lead. Instead, therefore, of having only three leads on a film, it is possible to record up to six leads. It has often been convenient to record leads I-III with precordial leads on one film. Alternatively, when unipolar leads are being taken leads I-III, aVR, aVL, and aVF are recorded on one film and leads V₁₋₆ on a second film.

Some types of valve-amplifier electrocardiograph, such as the Sanborn Cardiette, are fitted with an interference suppressor that is automatically switched to the lead which is out of the patient's circuit. This may be provided for by connecting the L.L. lead from the machine to the L.A. lead and then connecting this junction to the terminal I (L.A.) above. The electrocardiograph is then used with its switch in the lead I position, and all alterations are made on the rotating switch.

The apparatus has proved very suitable for routine electrocardiography, and the saving in time and effort expended on each examination has been considerable.

This adaptation was carried out in the electrocardiography Department of the Sheffield Royal Infirmary under the direction of Professor E. J. Wayne. I am indebted to him and Dr. A. G. Macgregor for their help and encouragement.

[Since writing this description I learn that a device incorporating a similar switch for use in unipolar lead electrocardiography was demonstrated at the autumn meeting of the British Cardiac Society by Dr. V. Edmunds, of the cardiac department of the Charing Cross Hospital.]

Under new regulations the maternity grant of £4 can now be claimed at any time within eleven weeks before (instead of seven weeks before) the expected week of confinement and three months after the confinement. The attendance allowance of £1 a week for four weeks after confinement can now be claimed at any time between the eleventh week before the expected date of confinement and the fourth week afterwards. Previously the allowance could be claimed only within ten days after the birth. If the allowance is claimed in advance it must be accompanied by a certificate of expected confinement, and the same claim form will do for the attendance allowance and maternity grant. The attendance allowance, unlike the maternity grant, cannot be paid in advance or until a certificate of confinement is received. The time limit for putting in this certificate is 28 days after confinement. The maternity allowance—a special benefit in place of attendance allowance for mothers who usually work for employers or in their own business—can now be claimed between the eleventh and sixth weeks before the expected confinement instead of only between the seventh and sixth weeks. This allowance of 36s. a week begins six weeks before confinement and continues for thirteen weeks provided the mother gives up work for this period. If the claim is late and good cause cannot be shown for the delay the allowance may be reduced or withheld. The certificate of expected confinement should be completed by the doctor or midwife; as the examination on which this is based can now be carried out at any time between the eleventh and sixth weeks before confinement instead of only during the seventh week before, the certificate can be obtained after a routine antenatal examination and should not require a special visit. The time for notifying the date of confinement on the certificate enclosed in the order book has now been extended from 21 days to 28 days after confinement. The regulations have been made provisionally, pending the report on them by the National Insurance Advisory Committee. The committee will consider objections to them sent before May 10 to the Secretary, National Insurance Advisory Committee, 6, Curzon Street, London, W.1.

IMPERIAL CANCER RESEARCH FUND ANNUAL REPORT

The annual general meeting of the Governors of the Imperial Cancer Research Fund was held on April 20, when the Earl of Halifax was re-elected President of the Fund. Dr. W. E. Gye, who is retiring on Aug. 11, will be succeeded as general superintendent of investigations and director of the central laboratory by Dr. James Craigie.

Much of the forty-sixth annual report of the Fund is devoted to the work which was undertaken by the present director, his successor, and Dr. A. M. Begg and Miss Ida Mann on the propagation of mouse tumours by means of dried tissue. This work was the subject of an article by Dr. W. E. Gye which appeared in our opening pages in the *Journal* of March 26 (p. 511).

The report mentions the continuing investigation of mammary tumours in hybrid mice by Dr. L. Foulds; studies of the carcinogenic action of azo-compounds by Mr. H. G. Crabtree; and work by Mr. P. C. Williams on endocrinology. Dr. C. C. Spicer has completed an investigation into the incidence of lung cancer in some London teaching hospitals. The last investigation of this kind made in England by Passey and Holmes and by Bonser showed that the great increase in lung cancer recorded by the Registrar-General was not paralleled by the incidence of the disease in teaching hospitals, where the possibilities of errors in diagnosis are presumed to be reduced. Over the 20 years that have elapsed since Passey and Holmes published their findings the increase in the incidence of lung cancer recorded by the Registrar-General has continued. Dr. Spicer's investigation, which is now being prepared for publication, suggests that there has also been an increase in the incidence of lung cancer in London teaching hospitals.

CLASSIFICATION OF DISEASE SIXTH REVISION OF THE INTERNATIONAL LIST

The first of the two volumes of the new *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death* was published this week. The work of preparing this new list was fully described a few months ago in a leading article in the *Journal* (Sept. 4, 1948, p. 480). The first International List of Causes of Death was compiled towards the end of the last century and was revised at ten-yearly intervals. The present manual represents not merely the sixth revision of the old International List: it now provides a single list which is applicable to morbidity as well as to mortality statistics. This new classification, together with international regulations about its use, was adopted at the First Assembly of the World Health Organization in August, 1948.

The manual contains an introductory historical review and a description of the methods by which the classification has been worked out. The purpose of a statistical classification is to provide a list of disabilities for compiling statistics and not a nomenclature of diseases and injuries. In the words of the introduction:

"Not every condition receives a particular number, but there is a category to which every condition can be referred, and this has been achieved by the method of selective grouping. For instance, a broad group of conditions such as the psychoses is given a two-figure number and is then divided into nine categories corresponding to fairly well defined types of psychoses, and lastly there is a tenth or residual category to which the psychoses which are not already characterized or are ill-defined can be allocated. The principles of determining what conditions should be specified as definite categories are based on frequency, importance, and clarity of characterization of the condition."

The detailed list consists of 612 categories of diseases and morbid conditions, plus 153 categories for classification of the external cause of injury and 189 categories for characterization of injuries according to the nature of the lesion. A decimal system of numbering has been adopted in which the detailed categories of the classification are designated by three-digit

1 H.M.S.O., 1949, London. Published by arrangement with the World Health Organization, Geneva. Price for the two volumes, 30s. net.

numbers. In many instances the first two digits designate important broad groupings. The third digit divides each group into categories which represent specific disease entities or a classification of the disease according to some characteristic, such as anatomical site. This first volume also contains (1) a tabular list of diagnostic terms included within each category (many of the three-digit categories are here subdivided into four-digit categories); (2) three special lists for tabulation of morbidity and mortality data; (3) a section on medical certification and rules for classification provided to assist the compiler of medical statistics; (4) a suggested form of multiple-cause tabulation; and (5) the text of the regulations adopted by the World Health Organization which will govern the use of the classification and the presentation of official statistics from Jan. 1, 1950. The second volume, which is now in the press, will be an alphabetical index of terms and the code number assigned to them.

In the preface to the manual it is stated that the World Health Organization is offering it in the expectation that "it will be not merely an object of interest to medical statisticians, but the instrument for collecting information into a common pool of knowledge from which in time all mankind will benefit." The Registrar-General has expressed the hope that on its publication in this country it will have the widest use among the medical profession, hospital officers, and all others interested in medical statistics.

Reports of Societies

RESECTABLE CARCINOMA OF THE STOMACH

In the Section of Surgery of the Royal Society of Medicine on April 6 a discussion was held on "Resectable Carcinoma of the Stomach."

Professor JOHN MORLEY mentioned, in opening, that he had thought it right to hand over cases of carcinoma of the cardiac end of the stomach to those of his colleagues who were accustomed to the transpleural approach. Whether the transthoracic approach to carcinoma of the upper half of the stomach, which so greatly extended the scope of surgery in this field, was left to the thoracic surgeon or whether the abdominal surgeon should accustom himself to this route was a matter for serious discussion. The ideal solution, that the two specialists should work together, was hardly feasible in most hospitals, because the harvest was so great and the labourers so few. But it might be agreed that all surgeons who undertook transpleural gastrectomy must be well versed not only in the technique of gastro-intestinal suture but also in the after-care of patients suffering from a thoracotomy wound.

There was in the profession a widespread feeling of pessimism about the end-results of gastrectomy for cancer. This was not altogether justified, and it did tend to hamper their efforts by leading to undesirable delay before the patient was brought to operation. Doctors who believed that all patients suffering from cancer of the stomach were bound to die within two or three years were not likely to send the patient to the surgeon as a matter of urgency.

As for the proportion of cases in which the cancer could be resected, out of Harnett's (British Empire Cancer Campaign) cases from London hospitals resection was undertaken in only 17.3%, but Harnett himself considered that 26% might be considered as the average rate at present. That accorded with Professor Morley's own experience over the last thirty years. Figures from the Mayo Clinic for cases operated on in 1947 showed that of 275 patients 148, or 53.8%, had growths that were resected; these figures were not comparable with Harnett's or his own because they referred only to the cases operated on and not to all cases diagnosed.

Mortality and Results

The operative mortality in his own list of 140 cases of gastrectomy for cancer was 21.4%. This was far too high, judged by present standards, but these cases included a large proportion operated on in the dark ages of gastric surgery, before much account was taken of such things as the state of

the patient's blood, the serum-protein, etc., and before the "sulpha" drugs and penicillin had robbed chest complications of their terrors. He had always felt that where there was a remote chance of radical cure the patient should be given the benefit of surgery without too tender a regard for one's own statistics. In a series of cases at the Manchester Royal Infirmary from 1940 to 1948 the mortality from gastrectomy was 19.7%. It was worth noting that the mortality rate for the palliative operations was very much the same as for the radical operation—a clear enough indication of the poor material these patients presented. Of those of his patients who survived operation, just over one-half died within three years. Once the patient had got through the first three years the chance of permanent cure was not inconsiderable.

Of the 110 survivors of the operation among his 140 cases, 64 died within three years, but one died after twenty-one and a half years without any recurrence, and the cause of death was coronary thrombosis. Two were alive and well after twenty-one years, two after twenty years, and one after eleven years. Of the late recurrences one was eight years after operation; three were four years after operation. With cancer of the stomach there was not the same remarkable tendency to late recurrence as in cancer of the breast, where local recurrences were not at all uncommon after ten, fifteen, twenty, or even twenty-five years. The main problem in these cases of cancer of the stomach, Professor Morley continued, was to refer them to the surgeon early, though it must be admitted that in the early stages clinical diagnosis amounted to nothing more than a shrewd guess, and they were entirely dependent on radiological findings, fortified on occasion by gastroscopic studies.

Hypertrophic stenosis of the pyloric canal in adults Professor Morley mentioned as closely simulating early cancer of the stomach. Some of these pyloric stenoses were associated with ulcer, some with no other lesion, and in these cases it was difficult to account for its aetiology. The condition might disappear spontaneously. In one of his cases diagnosed radiologically in 1934 in a woman who had complained of indigestion for fifteen years previously there was the typical radiological appearance of hypertrophic pyloric stenosis. He operated on her nine years afterwards and found a chronic ulcer on the lesser curvature, but by that time there was no sign whatever of the hypertrophic pyloric stenosis.

The type of gastrectomy for cancer which he had found most satisfactory was a modification of the Billroth I operation usually associated with the name of Schoemaker, who devised it. He thought that after this operation there was less tendency for post-gastrectomy anaemia to appear. For cancers of the cardiac end of the stomach, transthoracic gastrectomy was the method of choice. Many of these operations would be total gastrectomies, but in his view the real hope of controlling this condition lay not in ever more extensive operations but in diagnosing the condition so early that as far as the more favourable pyloric growths were concerned a subtotal gastrectomy would be effective. Some surgeons had suggested that total gastrectomy ought nowadays to be preferred to subtotal gastrectomy even for neoplasms in the pyloric half of the stomach. He thought that was wrong. Total gastrectomy would mean a greatly increased operative mortality, without much prospect, if any, of a compensating increase in the number of permanent cures. Ultimately, in the back of their minds at any rate, they might cherish the hope that the biochemists would find a remedy which would make the surgeon's efforts in this field no longer necessary.

Truly Radical Resection

Mr. N. C. TANNER agreed with Professor Morley that a pessimistic attitude was wrong. Radical resection of the tumour, even if death took place within five years, as it did in the majority of cases, relieved pain, vomiting, and anaemia, and restored the patient to his home and usually to his work. In view of the age at which gastric carcinoma usually appeared, a year or two of this relief represented a valuable addition to the patient's life. Diagnosis was little or no better than it was ten years ago, but the operative mortality had diminished for operations on all parts of the stomach, so that with the much higher number of resections and the higher proportion of survivals an increase in the number of patients surviving for five years or more could be predicted.

R Fersolate for iron therapy

in any case

Whatever the cause of iron deficiency anaemia, Fersolate provides the certain, simple answer. Fersolate was the first tablet to combine iron, copper and manganese, and this same formula has been adopted in the National Formulary. Indeed, Fersolate has held a unique reputation with the medical profession for sixteen years. Following a new government regulation, Fersolate is again available in dispensing sizes under the brand name, and can be supplied against your prescriptions without being subject to purchase tax. Once again, therefore, you can specify Fersolate *by name* on all iron prescriptions ensuring that your patients receive the original, well-proven preparation.

In tins of 1,000 & 5,000
for dispensing purposes



GLAXO LABORATORIES LTD.,
GREENFORD, MIDDLESEX. BYRON 3434

★ The dispensing size of the vitamin-mineral tonic, Syrup Minadex, is also now freed from purchase tax, together with all sizes of Ethamolol—the sclerosing treatment for varicose veins.

Nearly home . . .

but it seems like miles



Doctors today find that a large number of their patients complain of constant tiredness, of 'finding everything too much', of 'feeling generally run down'. Cases of debility and lassitude caused by present-day conditions are becoming increasingly prevalent. For these conditions 'Vibelan' is of particular value. It counteracts B vitamin deficiencies, containing as it does the principal members of the B group in the balanced proportions which are necessary for effective utilisation of proteins, fats and,

more especially, carbohydrates. Each tablet contains vitamin B₁, 0.5 mg., riboflavine 0.75 mg., nicotinamide 7.5 mg., in a yeast extract base. Four tablets provide the normal daily requirement of these vitamins. 'Vibelan' is available in bottles of 50 tablets. Further details are available on request.

'Vibelan'

VITAMIN B COMPOUND B.D.H.

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1
TELEPHONE: CLERKENWELL 3000 TELEGRAMS: TETRADOME TELEX LONDON

a NEW antihistaminic
with increased activity
more sustained action

trade mark

'PHENERGAN'

brand

promethazine hydrochloride

In laboratory experiments 'Phenergan' has been shown to be several times more active as a histamine antagonist than any of the drugs hitherto available.

In clinical use the greater potency and more prolonged action of 'Phenergan' permits less frequent administration and lower dosage. Some cases resistant to other antihistaminics have responded satisfactorily to treatment with 'Phenergan'.

Supplies : Containers of 25 and 500 x 0.025 Gm. sugar-coated tablets

OUR MEDICAL INFORMATION DIVISION
WILL BE PLEASED TO SEND A COPY OF
THE MEDICAL BOOKLET 'PHENERGAN'
ON REQUEST

manufactured by

**MAY & BAKER LTD**

distributors PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD, DAGENHAM

LONDON HOSPITAL CATGUT

*(Mortley's Process)***AND****TENSILE STRENGTH**

THE self-imposed arbitrary standard set for London Hospital Catgut at its inception is above that of the B.P. Codex and the U.S.A. Pharmacopoeia. The London Hospital standard has never been departed from and is still maintained.

This outstanding feature, together with an

elasticity (elongation) approximating 40%, affords the Surgeon perfect safety in using fine sizes compatible with modern technique.

When using London Hospital Catgut we strongly recommend Surgeons to use B.P.C. sizes 2/0, 0, and 1 for general surgery and B.P.C. sizes 3/0 and 4/0 for very fine work.

THE LONDON HOSPITAL (LIGATURE DEPARTMENT), LTD., LONDON, E.1, ENGLAND

Although total gastrectomy by the abdominal route had been successfully carried out for many years, there was no doubt that, except in a few cases with lax viscera, it was technically difficult, and the end-result was often an insecure anastomosis. For truly radical resection it might be desirable to remove some part of the lower oesophagus, which was often difficult or even impossible by the abdominal route. The more liberal oesophageal resection had almost eliminated that unfortunate group of cases in which recurrence took place on the suture line. Of late years there had been a great widening of the limits of resection; upward and downward extensions to the oesophagus and the duodenum had taken place, but after these massive resections the patients as a rule remained in good condition.

Professor F. A. R. STAMMERS said that the chief hope lay in early diagnosis in these cases of gastric cancer. When a person of 50 developed some dyspepsia unexplained by x rays or gastroscopy laparotomy should be undertaken to make certain that the opportunity of eradicating a growth was not being missed. Most patients died of secondaries in the liver or wider metastasis, but a few died of recurrence in the stomach itself. In a small group of cases in Birmingham, in 12 subtotal gastrectomies there had been one post-operative death, and in 7 total gastrectomies two operative deaths. The decision as between total and subtotal gastrectomy was best left to the surgeon at the time of exploration. Of post-operative features he mentioned regurgitation, especially when the operation went a little above the diaphragm. This often led to glossitis, which, however, responded to the exhibition of vitamin B. This regurgitation was most marked after total gastrectomy. Another post-operative effect was a feeling of fullness after meals.

Mr. R. C. B. LEDLIE showed a film illustrating the operation which he carried out at the Royal Cancer Hospital, and summarized a series of cases which had been under his care. Unfortunately, owing to a technical hitch, Mr. Ledlie's interesting film was not well shown.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM ANNUAL CONGRESS

The annual congress of the Ophthalmological Society of the United Kingdom was held at the Royal Society of Medicine from March 31 to April 2. Mr. FRANK A. JULER, who presided, welcomed the visitors from other countries, and announced that a medal would be presented to future Bowman lecturers and that meanwhile one of these tokens was now available for each of the former lecturers. Sir JOHN PARSONS, FRS, who was the Bowman lecturer in 1924, thereupon received his medal from the president. So also did Professor H. J. M. WEVE (1939) and Professor MARC AMSLER, last year's Bowman lecturer. Arrangements were made to send medals to the other surviving lecturers: Sir ARTHUR KEITH (1930), Professor VAN DEN HOEVE (1932), and Dr. ARNOLD KNAPP (1946).

Scientific Papers

The presidential address embraced two subjects of wide clinical significance: "Some Points in the Operation for Acute Glaucoma" and "Some Reflections on Refraction." Mr. Juler emphasized the enduring value of von Graefe's work on glaucoma and stressed the dangers which might arise from operative wounding of the corneal endothelium. He put in a plea for prompt surgical treatment in cases not responding to miotics and other medical remedies. On the subject of refraction, certain fallacies in connexion with retinoscopy were mentioned, and the need for accuracy, especially in working with children, was discussed. The president also reviewed the special problems of presbyopia and anisometropia. In considering oblique astigmatism he dwelt on the possibility of exploiting the work of Bielschowsky and others on ocular torsion consequent upon tilting of the head towards either shoulder.

A lucid and well-illustrated survey of the technique of plastic operations in the neighbourhood of the orbit was contributed by Mr. D. N. MATTHEWS. He demonstrated some of his results in cases of congenital ptosis treated by a modification of Błaskowicz's operation, and described his method of treating epicanthus. Other subjects touched on were the reconstruction

of damaged eyelids and tear-ducts and the plastic repair of a socket.

Dr. S. P. MEADOWS described the symptoms and signs arising from internal carotid artery aneurysms. Two other neuro-ophthalmological contributions were read by Dr. MACDONALD CRITCHLEY. In discussing the problem of awareness or non-awareness of visual field defects he emphasized the importance of associated disturbances in cerebral function whereby large gaps in the visual field might be masked. In ordinary clinical practice patients complaining of metamorphopsia were usually found to be suffering from macular lesions, but Dr. Critchley's second paper served as a reminder that changes in the apparent shape of objects could be caused by intracranial disorder. Toxic, traumatic, vascular, and neoplastic disturbances of the occipital cortex could all produce metamorphopsia, to say nothing of elaborate hallucinations.

Dr. E. HARTMANN, of the Hôpital Lariboisière, Paris, spoke on the clinical estimation of pressure in the retinal arteries. He admitted that Baillart's ophthalmodynamometer was not entirely accurate, but pointed out that few clinical methods were foolproof. If the observer learnt the technique of application and realized its limitations, then Baillart's instrument would serve as a guide to the comparative pressure in the retinal arteries of different subjects or of the same subject at different times.

The reduction of intra-ocular tension by curare, retrobulbar procaine, and di-isopropyl fluorophosphate was the subject of a review by Mr. J. R. WHEELER. Mr. EUGENE WOLFF showed some excellent histological pictures to illustrate his notes on normal and pathological ocular pigment. Mr. W. J. WELLWOOD FERGUSON and Dr. ALASTAIR G. MACGREGOR spoke about congenital total colour-blindness, with otosclerosis and hypertension as associated hereditary abnormalities. They described four cases and discussed the genetical significance of this syndrome.

Dr. A. C. COPPER (Leiden) read a paper on the measurement of the retrobulbar resistance. He discussed the concept of orbital tension, explained how the results of orbitonometry could be set out in graphic form, and stressed the value of the orbitonometer in distinguishing between inflammatory and neoplastic proptosis.

Dr. G. KARPA (Stockholm) described his work on clinical electroretinography, and indicated its practical importance in diagnosis and prognosis. Some problems in ophthalmic dispensing were discussed by Mr. J. PIKE from the standpoint of a dispensing optician. Dr. J. BERKSON read a paper dealing with the clinical significance of retinal arteriolar spasm in the toxæmias of pregnancy.

Corneal Grafting

Intensive work on corneal grafting has been facilitated in many countries by permission to obtain donor material from the fresh cadaver. Those who attended the discussion on this subject were fortunate in being able to hear the experiences of so many recognized authorities. Professor A. FRANCESCHETTI (Geneva) gave a brief historical review of corneal grafting, and pointed out that equally good results might be obtained from techniques exhibiting many differences in detail, so long as the operator worked with discrimination. They were now in a position to give a more accurate prognosis than had been possible formerly. It was generally realized now that aphakic cases and those with traumatic leucoma were not good subjects for grafting. Some of the best results, on the other hand, had been obtained in cases of corneal dystrophy, although Fuchs's endothelial dystrophy was in this respect an unfavourable exception.

Details of operative technique were discussed by Mr. J. W. TUDOR THOMAS, who said that in his experience the chances of a successful graft were enhanced by the presence of opaque cornea at the site of implantation. He also pointed out the danger of trying at the time of operation to remove the membrane which is so frequently found beneath the cornea in cases of old endocyclitis. Professor G.-P. SOURDILLE (Nantes) discussed the influence of associated ocular and palpebral lesions upon the outcome of corneal grafting, and made special reference to the adverse effect of aphakia and of a large symblepharon. Dr. L. PAUFIQUE (Lyons), who was part author with Professor G.-P. Sourdille and Dr. G. Offret of the 1948 report

of the Société Française d'Ophthalmologie on corneal grafts, showed a film of a peripheral lamellar graft to demonstrate his technique. Such grafts might directly improve the vision in cases of superficial scarring, or prepare the way for a subsequent whole-thickness graft, or exert a therapeutic effect upon certain disorders of the cornea—especially neurotropic lesions.

Other films of operative technique were shown by Dr. J. I. BARRAQUER (Barcelona), Dr. A. FRITZ (Brussels), and Mr. B. W. RYCROFT. Mr. D. P. CHOYCE described the work which he is doing at the Institute of Ophthalmology on superficial lamellar keratoplasty in rabbits. Dr. R. CASTROVIEJO (New York) showed colour photographs of his operative results after whole-thickness grafting. The possibility of encouraging a graft by the administration of vitamins and amino-acids was mentioned by Professor G. B. BIETTI (Pavia), who also gave an account of his technique and operative results.

THE LIPOIDOSES

At a joint meeting of the Liverpool Medical Institution and the Manchester Medical Society on March 2 Professor Sir HENRY COHEN delivered an address on the lipoidoses.

He said that interest in the lipoidoses began nearly a century ago with the description by Addison and Gull of the lesion now labelled xanthoma multiplex. Several diseases were subsequently regarded as lipoidoses, their common feature being the "foamy" cell. Increasing knowledge of lipid metabolism and more intensive histological study had helped towards a clearer understanding of these conditions, which though superficially diverse had been shown to be different facets of a uniform process. Excluding neutral fats, the lipoidoses revealed disturbances in the metabolism of (i) *phosphatides*, of which the monoaminophosphatides, lecithin and cephalin, and the diaminiophosphatide, sphingomyelin, were of major importance; (ii) *cerebrosides*, among which kersin was significant; and (iii) *cholesterol*, which played an important part in sex hormone disturbances and in connexion with bile and vitamin D.

In disease excess of lipid might appear in the intercellular spaces or within the cell. Extracellular lipid deposits were seen in such degenerative changes as lipid proteinosis and necrobiosis lipidica diabetorum. Accumulation of lipid within the cell could arise from hyperlipaemia, the excess lipid being taken up by cells of the reticulo-endothelial system; from abnormal cellular metabolism leading to excessive production of lipid within the cell; or from both factors. It seemed that in disease one of the lipoids was primarily involved and that the others were affected in lesser degree. Thus phosphatide metabolism was disturbed in Niemann-Pick disease and Tay-Sachs's disease; in Gaucher's disease, kersin appeared the predominant cellular lipid.

Xanthomatoses

The xanthomatoses associated with disturbances of cholesterol metabolism fell into three groups. The first appeared to be the direct outcome of a hyperlipaemia, and disappeared when its cause was removed; this group included familial types and those associated with diabetes mellitus, hepatic inadequacy, glycogen storage disease, lipid nephroses of all types, and myxoedema. In this group extensive and diffuse cutaneous xanthomatosis of the neck, back, palms, and soles was often found. The second group comprised xanthoma palpebrarum, xanthoma tuberosum et planum, xanthoma tendinosum, xanthoma of blood vessels and endocardium (often responsible for familial and hereditary forms of coronary occlusion), and xanthomatous biliary cirrhosis. These, though associated with hypercholesterolaemia, showed evidence of intrinsic cellular dysfunction; they were not separate diseases and all the types might be found in the same patient. In these cases there was no significant reversal of the changes on withholding lipoids. In the third group were included xanthoma disseminatum, Hand-Schüller-Christian syndrome, and eosinophilic granuloma of bone; in these the blood cholesterol was normal. The pathological changes had a common pattern; all variations and gradations of change occurred, depending on the sites of the lesions and whether the predominant cell was the primary histiocyte or its acidophil or "foam" cell modification.

Correspondence

An Unfortunate Precedent

SIR,—In the leading article headed "An Unfortunate Precedent" (April 23, p. 717) you suggest that Fellows of the Royal College of Physicians may hesitate in future to criticize the President lest they be passed over when distinction awards are made. This is regarded by us as an unwarranted insult.

If, as is suggested, the presidents of the Colleges are not to sit on the Awards Committee because they might favour their own Fellows, it is a little difficult to see why you raise no objection to the presence on the committee of the President of the British Medical Association, who presumably might be tempted to hold a brief for those specialists connected with his Association. The three surgeons on the Awards Committee, who represent English surgery, are prominent Fellows of their College. Are they too to resign? The logical issue of your argument is that no one who holds office of any kind or is connected with any university or medical school should serve on the committee, because he is liable to a charge of favouritism. It would be convenient, of course, to those who have been hostile to the Awards Committee from the outset if its authority were undermined in this way, for it would hardly command the confidence of the profession and of the public if no one who was anyone was a member.

It was Lord Moran who proposed in the House of Lords that there should be a Spens Committee on the remuneration of specialists, and, as you yourself admit, "he has by his skill in negotiation rendered the profession notable service." Though he would be the first to admit how much he owed to the sympathetic attitude of the Minister of Health, his efforts have been rewarded by terms of service which are considered by most consultants and specialists to be just and even generous. Of these terms the awards are an essential part. It is easy, of course, before the committee has got to work, to excite suspicion that it will not be in possession of the necessary information and that it will not be impartial. But when a responsible medical journal fosters that mistrust we believe it is doing a grave disservice to consultants and specialists.

We are convinced that the Awards Committee will eventually disarm any opposition there may be to what is, after all, a novel idea by its care in sifting evidence and by its desire to be just to every section of specialists.

It is surely unfortunate that, at a time when the presidents of the Colleges have been trying to help to get more favourable terms for general practitioners, particularly in the matter of betterment, there should be attacks of this kind which threaten unity.—We are, etc.,

DONALD HUNTER,
J. CRIGHTON BRAMWELL,
J. FOREST SMITH,
R. V. CHRISTIE,
Censors.

Royal College of Physicians, London, S.W.1.

W. G. BARNARD,
Treasurer.
H. E. A. BOLDERO,
Registrar.
W. D. W. BROOKS,
Assistant Registrar.
ARCHIBALD GILPIN,
Harveian Librarian

SIR,—You are not alone in feeling some disquiet at the appointment of the President of the Royal College of Physicians as chairman of the Committee for Distinction Awards to Specialists. Many young specialists, especially physicians, who incidentally, if they are members of the College, have no voice in the election of their president, must feel that a cloud no bigger than a man's hand has risen on their professional horizon.

That no one questions for an instant the integrity of Lord Moran, that his services to the profession command respect if not always approval, are matters beside the point: the fact is that from now on a young man with an eye to his future will have to think twice before he criticizes, however legitimately, any matter within the province of the President of the Royal College of Physicians, and even the mildest terms of approval, not normally to be reckoned as the "base coin of adulation," must be suspect in the eyes of his own contemporaries and competitors.

There is no reason to believe that Lord Moran wishes to make himself immune not only from the criticism of the

ambitious but also from the praise and openly expressed admiration of the self-respecting. Therefore it is to be hoped that he will reconsider his acceptance of this chairmanship, which may not only undermine the high esteem in which he is held both by his own contemporaries and by many younger specialists but also—and perhaps this is more serious—prove a heavy blow to the integrity and independence of the great College of which he has the honour to be president.

Finally, Sir, under the circumstances I beg to be allowed to sign myself,

YOUNG SPECIALIST.

Second Thoughts on Proguanil

SIR,—Owing to the fact that the *Journals* of Jan. 15 and 29 have only just reached me, having had to be returned to England from my station in Nigeria, the article on proguanil by Sir Gordon Covell, Dr. W. D. Nicol, and Messrs. P. G. Shute and M. Maryon (Jan. 15, p. 88), your leading article (p. 106), and Sir Gordon Covell's letter (Jan. 29, p. 192) have only now come to my notice. I have had considerable clinical experience of the prophylactic use of proguanil, as well as its therapeutic use in the treatment of subtertian malaria, during my last tour of eighteen months on the plateau in Nigeria.

I think that you were perfectly correct in stressing in your leading article the question of lack of appetite, etc., caused by the drug as a matter of moment. In my experience a complaint of lassitude, lack of appetite, and, quite often, looseness of stool is common in Europeans taking a 100-mg. dose of proguanil daily prophylactically. Examination of these cases, including blood and stool examination, revealed nothing except, in rare cases, an occasional *Plasmodium falciparum* parasite. I diagnosed them as "low fever" and prescribed mepacrine, 100 mg. thrice daily for five days or more. The effect of this was spectacular, and about the fourth day the symptoms had cleared up so much that in several cases I was asked if mepacrine was a "tonic." It was interesting that in most cases the symptoms did not appear until the patient had been taking proguanil for at least two or three months, so it is to be presumed that the effect of the drug is cumulative. Or are the symptoms due to malaria breaking through the prophylactic?

In the clinical treatment of malaria I was very much disappointed with the results when using proguanil alone, and finally gave up its use as a sole cure when one patient showed ring forms of the subtertian parasite after 800 mg. of the drug on the three previous days (that is, two tablets four times daily). It was obvious from a clinical point of view that there was a time lag in the disappearance of clinical symptoms. This is a serious defect, especially in cases where cerebral symptoms are present.

The cases in which vomiting is a symptom of acute malaria are very common, and my records show that over 50% of Europeans met with have this symptom. In many cases the vomiting is not severe, and a little sedative premedication allows the oral administration of the antimalarial drug. In probably about 10% of cases the parenteral administration of a remedy becomes necessary, either because of vomiting or because of the need to obtain immediate action of the drug owing to the presence of cerebral symptoms. In these cases quinine or mepacrine has had to be used, as no soluble proguanil was available. I stress this point in order to emphasize that any drug for the treatment of acute subtertian malaria must be available for use either by the intravenous or intramuscular route. In unconscious cerebral cases immediate action by intravenous methods is essential, so up to the present we have been limited to the use of quinine in such cases.

I have seen Dr. John Lowe's letter (April 2, p. 589). I am judging the efficacy of proguanil by its use in controlling and eradicating malaria in Europeans. Nearly all my practice has been among such people since the drug was introduced, but a small supply used in the infant-welfare clinic at Aba early in 1947, during my previous tour, did not impress me with its efficacy. The cases were, however, more allied to the non-immune European, as they had not lived long enough to acquire the immunity that the adult indigenous populations of malarious areas in the Tropics do acquire, so I can say that I have had practically no experience of the treatment of malaria with proguanil in a native population.

I agree with Dr. Lowe that mepacrine is much more toxic than proguanil, but the toxic effects of the latter are not as negligible as he and Sir Gordon Covell suggest. I do not think that your leading article overstated the case, and great care will be required in introducing proguanil on a large scale in the already undernourished populations so often found in malarious areas of the Tropics.—I am, etc.,

Southborough, Kent.

GAVIN SHEARER.

Fish Poisoning

SIR,—In response to the annotation on fish poisoning (Feb. 19, p. 317) I am stimulated to record my experience in another Pacific island—namely, Niue or Savage Island. During the early nineteen-thirties, long before there was any possibility of dumped war materials, I would occasionally see practically a whole native village down with fish poisoning. The toxin was presumably neurotoxic, as paralysis of the legs and extreme bradycardia (pulse rate 30-40) were common symptoms. Poisonous fish fed to cats gave rise to paralysis of the hind legs.

Poisoning occurred through the consumption of a fish known to the natives as "meito." The interesting feature was that, although on the "liku" or windward side of the island this variety is never poisonous, yet on the leeward side of the island the fish is poisonous at certain times of the year which were quite unpredictable. The Niueans, although well aware of the danger, were always ready to take the risk, possibly on account of the shortage of protein in their diet. Taking into consideration the geographical and seasonal distribution, I concluded that the fish became poisonous through eating some poisonous marine growth.—I am, etc.,

Dunedin, New Zealand.

G. O. L. DEMPSTER.

Hospitality for Overseas Visitors

SIR,—The response to my appeal last year (*Journal*, April 24, 1948, p. 809) for hospitality in doctors' homes for our medical visitors from the Dominions and Colonies was most generous and, in fact, more than covered our needs at that time. The Empire Medical Advisory Bureau is now well established, and a report of its work (*vide Annual Report of Council, 1948-9, Supplement*, April 2, p. 199) shows that we are in touch with some hundreds of overseas doctors and families with correspondingly great opportunities of getting to know one another.

Most of our overseas medical visitors are in this country for postgraduate education lasting at least a year and often 2-3 years, and while the more fortunate ones may get about and see the country during vacations many do not, and in any case "sight-seeing" is not getting to know one another in our homes. A week-end in the country or by the sea is a most welcome change to men working hard in unaccustomed grimy cities.

May I appeal again, therefore, through your columns to the generously hospitable instincts of our members to help make our visitors welcome in their visits to "the old country." I shall be very glad if doctors willing to offer hospitality to our overseas visitors for one or two days, or even longer, would write to me stating what they are able to offer.—I am, etc.,

HUGH A. SANDIFORD.

Empire Medical Advisory Bureau, B.M.A. House,
Tavistock Square, London, W.C.1.

The Deaf-blind

SIR,—In England and Wales there are more than 4,000 deaf-blind persons on the official register. This number may be a matter of surprise to many. These doubly handicapped people present a problem of peculiar difficulty to the local authorities responsible for their welfare. Obviously they need special attention in addition to financial help. Teaching the manual alphabet is one of the services which local authorities, through their home teachers, provide for the deaf-blind.

Last year an appeal for the deaf-blind on the wireless was made by a deaf-blind man, Mr. Arthur Sculthorpe. His voice was normal and his articulation perfect. His letter in reply to an inquiry about how long he had been deaf was of unusual interest, and some of the points in it seem deserving of wider publicity. He is 44 years of age, had perfect hearing up to

the age of 24, and had been "stone-deaf" since he was 27. He writes :

"I was able to live an ordinary life until I lost my sight also ten years ago. I cannot explain why it is that I retain normal speech, unless it is that I have never ceased to use my voice. Most deaf people are forced, by the shunning of them by ordinary people, to seek their company among other deaf people, where the voice is not used, and so there is a lack of that practice which is absolutely essential when the hearing is not there, to keep the voice in proper condition. I never went into the deaf world, but determined that I would have normality or nothing. I have some idea of control of pitch and volume by the feel of my throat. But although I can speak normally, I find I cannot sing. The range has so contracted that I cannot now reach beyond one octave, nor can I control the pitch of a note to hold it . . . I have noticed since I became deaf that I can 'hear' and 'see' a nerve shock. If I have a sudden nerve shock (as when someone taps me when I thought I was alone) I hear a sound like the banging of a heavy door, and I can see a flash of light. This also occurs when dropping off to sleep. 'Noises' are always there, but normally are so much of the background that one does not worry about them. They increase when one is tired or under some special strain."

There is admittedly considerable room for development in this very difficult field of welfare. The need for and importance of voluntary helpers are recognized. Our profession has its share of responsibility in seeing that these unfortunates are placed on the official register so as to be able to obtain the help provided by the authorities, and also in forming a more informed public opinion in this regard so that the voluntary helpers needed may be forthcoming.

Information about ways of assisting these doubly handicapped sufferers can usually be obtained by getting into touch with the home teacher employed by the local authority or by writing to the National Deaf-Blind Helpers League, 40, Green Road, Hall Green, Birmingham, 28.

—We are, etc.,

HERBERT CAIGER.
L. HADEN GUEST.

Smallpox Contacts

SIR,—I had to deal with four smallpox contacts from the s.s. *Mooltan*. Fortunately—with their consent—I was able to keep them under close observation at our isolation hospital.

This is an age of travel, and it seems to me that if certain countries insisted on the protective inoculation of persons leaving their shores the procedure would be of the highest practical importance in preventing variola major from entering this country. This applies particularly to ships calling at Indian ports. I take it this is a matter for the World Health Organization.—I am, etc.,

Halifax.

G. C. F. ROE,
Medical Officer of Health

Dosage of Heroin

SIR,—Dr. Cranston Walker's memorandum (April 9, p. 619) entitled "Dangerous Symptoms after Injections of Heroin (Diamorphine)" must not be allowed to go unchallenged. It must be pointed out that in Case 1 a dangerous overdose was given. The official dose by injection is 1/24 to 1/8 gr. (3 to 8 mg.), and here in a woman already very ill—"pale and rather limp, pulse rapid and breathing shallow and rapid"—X. Y. Z. gives a dose of 1/2 gr. (22 mg.). Now this is equivalent to nearly 1 gr. (65 mg.) of morphine in effect, and the signs and symptoms that followed could only have been expected. In Case 2 a woman obviously unfit and aged 65 is given a dose greater than the pharmacological one, again with alarming results which might have been foreseen.

Heroin is a very potent and very valuable drug, and it would be a great misfortune for it to be brought into disrepute on account of these two cases. Its chief disadvantage, of course, is the liability to bring about addiction because of its pleasant effects, but if this is borne in mind it is the analgesic of choice in many cases.—I am, etc.,

Hove, Sussex

J. H. CRAWFORD.

SIR,—I was interested to read the memorandum by Dr. Cranston Walker (April 9, p. 619) in which he describes two cases of severe and dangerous respiratory depression produced by heroin. Might I suggest that the cause of the trouble in both cases was overdose?

Most authorities nowadays regard heroin as being about four to five times as powerful as morphine. Cushing,¹ for example, states that "a study of the analgesia resulting from the use of the opium group of alkaloids showed that to produce equal degrees of effects heroin in 1.5-mg. doses was as efficient as 8 mg. of morphine." The maximum official dose of heroin, incidentally, is 1/2 gr. (8 mg.). Is it any wonder, then, that a woman of 40, in a state of exhaustion, should develop alarming symptoms after a dose of 1/2 gr. (22 mg.)?—an equivalent dose of morphine would be 1 1/2 gr. (87 mg.). Dr. Walker mentions that in three or four previous cases X.Y.Z. had injected 1/2 gr. (11 mg.) of heroin with little apparent effect. If this is true, those cases must either have been habituated to the drug or have had an abnormally high metabolic rate. In the second case reported by Dr. Walker a woman aged 65 developed severe respiratory depression after a dose of 1/2 gr. of heroin.

I submit that in both these cases it was the dosage which was at fault and not the drug. An important point to remember is that the dose of any of the opium derivatives per pound of body weight is directly proportional to the metabolic rate. Guedel,² pointing this out, writes :

"The employment of a routine dose of morphine is folly. With a low metabolic rate (hypothyroidism), morphine 1/2 gr. (16 mg.), or even 1/4 gr. (11 mg.), may paralyse respiration in an apparently well-developed adult. With a high metabolic rate, morphine 1/2 gr. will make but little impression. For example, morphine 1/2 gr. (24 mg.) will produce no more effect in a patient with a metabolic rate of 25% above normal than 1/2 gr. will produce in normal, or 1/4 gr. with metabolism 10% below normal."

In this connexion it is worth noting that the metabolic rate of a woman in labour is greatly increased. It is possible, therefore, to give relatively large doses of heroin with safety during labour³ and thus exploit the analgesic properties of the drug to the full.—I am, etc.,

Garlands, Carlisle.

JAMES ROSS.

REFERENCES

- ¹ *Pharmacology and Therapeutics*, 1940, Philadelphia, p. 389.
- ² *Inhalation Anaesthesia*, 1937, New York, p. 65.
- ³ *British Medical Journal*, 1944, 1, 59.
- ⁴ *Ibid.*, 1947, 1, 738.

Marriage Neurosis

SIR,—I was very glad to read Dr. R. Macdonald Ladell's condemnation (April 9, p. 635) of the indiscriminate use of E.C.T. and of the equally dreadful operation of leucotomy. It has become apparent to me in practice that there is a great increase in the use of E.C.T. in difficult cases without any previous attempt at psychiatry. Surely the resort to E.C.T. is a confession of failure on the part of the psychiatrist, as it is purely a mechanical operation divorced from all conception of the aims of psychology. I am grateful to Dr. Ladell for calling attention to a practice which must bring discredit to psychiatrists in particular and to the profession in general.—I am, etc.,

Manchester, 12.

J. I. MILNE.

SIR,—I was with considerable pleasure that I read Dr. R. Macdonald Ladell's letter on "marriage neurosis" (April 9, p. 635), and I would like to affirm his contention that E.C.T. in out-patient use is in danger of being used as a short cut to alteration of behaviour which leaves hidden the real distortions of relationship which are the core of a neurosis. His letter is the more timely in that in the psychiatric clinic of the future the temptation to use E.C.T. more and more instead of less and less will be considerable.

E.C.T. is still an empirical treatment. I have been using it as an adjunct to psychotherapy since 1943, and I have come to the conclusion that it has many effects, of which the most noticeable both to psychiatrist and patient is the physical rejuvenating effect, which may be through activation of basal metabolism *per se* or may be an action on the endocrine system via stimulation of the subthalamic structures. In the purely psychic field it seems to have the property of putting a brake on a vicious circle of intolerable anxiety, and it also has a later effect of bringing together the cracking façade of a perfectionistic attitude. It would be a pity if psychiatry took only the narrow view of the first, and perhaps the second, effect, and in this lost sight of the disturbed psychodynamics behind the third, and even the second, effect. If the wider outlook

is not taken and enough psychotherapy, simple and direct as it may have to be, not given to inelastic mentalities, what we are doing is no more a "cure" than is the giving of opium to a case of phthisis the curing of consumption.

There is no denying that for some cases E.C.T. is an indicated therapy, but this should never blind us to the fact that the end of therapy for the neuroses is an improvement of human relationships, even though this may mean the offering at the clinic of a stable relationship once a week for a year or more. Marriage is one of the largest of human relationships, and to attempt to assess and deal with the difficulties of one partner without coming to know something of the other, and without regard to the relationship between them, is like trying to lift a log by one end only.—I am, etc.,

Erefter.

L. F. DONNAN.

Tuberculous Meningitis

SIR.—I have been reading with interest the excellent article on tuberculous meningitis by Drs. J. Rubie and A. F. Mohun (Feb. 26, p. 338) and the annotation (p. 357) that remarks, "Perhaps the strongest impression made by this paper is the necessity for early diagnosis and the skill which may be required in reaching it." The authors stated that the commonest interval between the first appearance of signs or symptoms and the day of diagnosis was 8-15 days. We should not be satisfied with these results. We are compelled to admit that streptomycin has brought about a revolution in treatment but not in diagnosis. The revolution to be made in diagnosis consists of not waiting till the diagnosis is sure, but sending the child to hospital without delay where there is the slightest suspicion of tuberculous meningitis. It would be too much to suspect a child in out-patients, at the first examination, of having tuberculous meningitis because he has slight fever or is complaining of headache, constipation, diarrhoea, or anorexia. But when the child is under 4 years of age and the Mantoux reaction is positive, the situation is changed; then irritability, listlessness, fatigue, failure to gain (or loss of) weight might be symptoms of tuberculous meningitis.

The means of reaching the earliest diagnosis of tuberculous meningitis is: (1) To perform the Mantoux reaction on all children who come to examination. (2) To send all Mantoux-positive children for regular supervision in the first year of the infection. (3) The mothers must be taught to bring these children for occasional examination whenever they are unwell. In a young tuberculin-positive child all symptoms might belong to tuberculous meningitis unless an alternative diagnosis is clearly demonstrated. So thinking, we should not attribute minor degrees of irritability to teething and feeding difficulties before excluding tuberculous meningitis. Should fits occur, we should perform lumbar puncture without delay. When a child has the symptoms of appendicitis we should not hesitate to perform the operation, but careful investigation whether or not the abdominal signs are those of tuberculous meningitis is necessary. When we see a child with otitis media and meningitis it is not certain that the meningitis is of otic origin: there may be two separate illnesses—otitis media and tuberculous meningitis. I have seen two unnecessary operations.

I stated in 1923 that the low sugar level may be the earliest informative change in the C.S.F. in tuberculous meningitis.¹ The low and falling sugar curve I described was often helpful in the diagnosis of tuberculous meningitis. I learned for the first time in 1925 that convulsions can increase the sugar level in the C.S.F.² For this reason I do not accept a normal or high level of sugar in the C.S.F. as a sign excluding the diagnosis when convulsions have appeared before lumbar puncture was made, but we repeat it two days later. It was pointed out in investigations by Beck and myself in 1924 that the chloride content of the C.S.F. is often insignificantly lowered at the early stage, and a falling chloride content occurs in meningism also.³

It is important to separate tuberculoma of the meninges and brain from tuberculous meningitis. In the former illness the protein level and the number of the cells could be elevated, but the sugar level in the C.S.F. is normal. In tuberculous meningitis the protein is raised, the cell count increased, and the sugar is low. Acid-fast bacilli can be detected in the C.S.F. in both illnesses. When the prodromal stage lasts as long as three months and the child recovers completely we should consider this the first seeding of a tuberculoma in the meninges

or in the brain. The long duration argues against the tuberculo-toxic meningeal irritation. In my cases, when the first lumbar puncture was normal and the C.S.F. became abnormal five to fifteen days later (after the onset of the symptoms), it appeared that the first symptoms originated from the small caseous cortical tubercles and caseous meningeal plaques. Meningitis developed when these foci broke down, with the dissemination of organisms.—I am, etc.,

Budapest.

B. STEINER.

REFERENCES

- ¹ J. Kinderheilk., 1923, 102, 173.
- ² Orv. Hetil., 1925, 69, 89.
- ³ J. Kinderheilk., 1924, 103, 224.

Whither Tuberculosis?

SIR.—While agreeing with Dr. S. G. Tippet (April 9, p. 634) in his desire to eradicate tuberculosis and his implied desire to see the end of sanatoria, several points in his letter provoke comment. If it is expected to discover every case of tuberculous infection in its infancy or before it has a chance to manifest itself in tuberculous disease—though the overwhelming majority of such infections never do so anyway—tuberculin testing would have to be reapplied every few months to the entire tuberculin-negative population, for in young people the development of tuberculous disease can be a pretty rapid process.

Would the information gained have any value in preventing the onset of the disease, which more often than not manifests itself in persons who have had their primary infection (positive reactors to tuberculin) years before? I think we should still have to rely for early diagnosis on the awareness of the patient's relatives and the medical practitioner.

Dr. Tippet proposes a questionnaire for the consideration of the public, and unless I am being over-imaginative the framing of his questions appears to suggest that the public would have something here to smack its lips over. It is evident to all tuberculosis workers that the public is already superficially and embarrassingly informed in all aspects of the disease through the medium of the lay press, and much time has to be spent in correcting ill-digested impressions of a malady and its handling, which is, after all, a difficult and specialized matter.

The Ministry of Health's criterion for "arrest" of pulmonary tuberculosis demands a period of two years' "quiescence"; and a cured or "recovered" case must have been arrested for three years. The Ministry's caution in classifying a case as "recovered"—i.e., five years since the last symptom or sign of activity—truly indicates the uncertain outcome of this "foul" disease. It will be calculated, then, that a case discharged from a sanatorium in 1948 as "recovered" must have been continuously inactive since 1943, and an "arrested" case since 1945. Any sanatorium that claimed such cases would, with the present demand for a quick turnover, be an unusual institution. In reality, sanatoria have never aimed at anything curative beyond returning their patients home well set to continue their progress towards recovery. A few could be labelled "quiescent" on discharge.

So far as I am aware all cases discharged from public sanatoria in this country are regularly followed up by the local tuberculosis officer, and a good number of statistics on their progress have been compiled by local authorities and others. They tend on the whole to indicate that despite the good work of the sanatoria and the vigilance of the tuberculosis officers the poor man's home is, so far, not a very good environment for the ultimate cure of tuberculosis.

If, therefore, we cannot to-day afford sanatoria, then the need for a substitute is overwhelmingly urgent before we let loose on the community, as we did in 1939, all the potentially infectious inmates—many of them advanced chronic cases given refuge therein often for lack of anyone at home either willing or able to feed and nurse them. There is in all conscience enough tuberculous infection being spread about by lack of sanatorium facilities without our inviting an epidemic through hasty action. By all means let us welcome any new well-considered step in the prevention of tuberculosis, but in the meantime let no well-intentioned spanner be thrown into the groaning, though still working, machinery of the tuberculosis service.—I am, etc.,

Hereford.

T. V. R. PHILIP.

Diagnosis of Phthisis in General Practice

SIR.—Attention has been drawn by Dr. Peter Stradling (Nov. 6, 1948, p. 832) and Dr. Bertram Mann (Nov. 20, p. 917) to the practitioner's duty and delay in the diagnosis of phthisis. As one who has been specially interested in this condition I make the following comments with the hope that useful knowledge may be added for those who write such articles and have no sustained experience of general practice.

X Rays.—Hopelessly overworked departments have been the rule in most areas visited, and they are usually under-staffed; since the State Service came into being chaos has prevailed. How can one therefore send cases up—other than to a mass x-ray unit—for a host of suggested symptoms without considerable sifting? Shortage of films is another factor.

Cough.—Where this is found to be due to disease of the upper respiratory system, chronic bronchitis or heart failure, smoking to excess with or without alcohol, or secondary to acute infections, x-ray examination is *not* recommended unless the cough persists with other signs or symptoms. When one considers the huge numbers of cases of bronchial catarrh in the English climate, this can hardly be regarded as pathological; no x-ray examination is suggested for these. Dyspnoea and laryngitis are so common in non-tuberculous conditions that other causes should be eliminated first. Some four patients with tuberculous laryngitis have been seen in my practice in twenty-two years, two before the chest condition was diagnosed. Of the many pneumonias, a similar number proved to be due to phthisis.

Lassitude.—For every case found to be tuberculous in origin many hundreds are due to other conditions, especially functional causes.

Haemoptysis.—Whilst this indicates x-ray examination, many other conditions such as neoplasm, mitral disease, bronchiectasis, papilloma of bronchus, and acute bronchitis are commoner causes by far.

Pain in the chest, pleurisy, loss of weight, anorexia, and anaemia, while being symptomatic of tuberculous disease, so commonly occur in other conditions as often to rule it out without further thought. Ischio-rectal abscess, erythema nodosum, and phlyctenular conjunctivitis have become so increasingly rare for a number of years in my practice that as signs they seem remote compared with the commoner features. P.U.O. cases have mostly proved blanks to all investigations. Very few cases of influenzal and recurrent febrile chills have been found to be tuberculous.

Before condemning the practitioner in the delay of diagnosis of phthisis we must remember that there are other illnesses which take up his time. Any cough unaccounted for by multitudinous other causes and which persists for 2 to 4 weeks is investigated for phthisis by any reasonably modern or ancient competent family doctor, especially when accompanied by wasting, night sweats, and haemoptysis. Far too many criticisms are levelled at the family doctor by those who are quite ignorant of prevailing conditions of general practice, and what is more have no prolonged practical experience of this branch of medicine.—I am, etc.,

Hove, Sussex.

J. HARTSILVER.

Living Anatomy

SIR.—In the review of *Living Anatomy, a Photographic Atlas of Muscles in Action and Surface Contours* (April 2, p. 577), Professor H. A. Harris, discussing the platysma muscle, states, "This muscle is not figured." In point of fact, the platysma is shown with a photograph and title to itself in Fig. 8, p. 12.—I am, etc.,

Aberdeen.

R. D. LOCKHART.

B.C.G.

SIR.—Before we get carried away in our enthusiasm for spending large sums on B.C.G. vaccine and subjecting large numbers of helpless people to it, let us take note of one aspect of the matter that seems to have been ignored. What are the facts? We know that a person with a naturally acquired positive Mantoux reaction is not so likely to develop the disease when exposed to further doses of tubercle bacilli. But is not this only what one would expect in any case? After all, the

individuals with a positive Mantoux are those who—to use a biblical simile—have been tried in the fire and not found wanting. In other words, they have demonstrated that they already have an innate resistance to the disease, or they would not have survived to tell the tale. Obviously they will continue to show that resistance, and there should be nothing remarkable in that.

A naturally acquired Mantoux reaction, therefore, is merely a certificate, as it were, that they have successfully come through this ordeal; and in that sense it is, of course, of great value, say, in the selection of nurses. But does it follow that by inducing positive Mantoux reactions artificially, one can imitate that same degree of resistance? The Mantoux test itself does not confer the immunity but is merely a reported phenomenon. By analogy with other disease we can speculate that it may indicate resistance, but we can be by no means certain as yet. We know that the Mantoux reaction can be positive with the patient going steadily downhill; we also know that the dividing line between immunity and allergy in tuberculosis is a fine one. Until we have some really convincing proofs of the efficacy of B.C.G. let us remember that we are—I continue my metaphor in all seriousness—playing with fire. By all means let us have experiments, but let them be properly controlled ones with the full realization of the risks involved.—I am, etc.,

Fort Hare, Cape Province.

W. NORMAN TAYLOR.

Repetitive Auricular Flutter

SIR.—In a recent paper in this *Journal* (Jan. 1, p. 10) two of the undersigned (G.P.-S. and D.W.) reported a case of a boy who developed a cardiac dysrhythmia following contusion. The case was unusual in that an embolic hemiplegia had followed the contusion—the embolus presumably having arisen from a mural thrombus above the damaged endocardium. Electrocardiographic records which illustrated that paper were described as demonstrating an unusual example of heart block. We have heard from Dr. Cornelio Papp that the records were characteristic of repetitive auricular flutter,¹ and this opinion has since been confirmed by examination of a longer section of the record.

Dr. Papp's information is of particular interest, since repetitive auricular flutter is generally held to be a congenital arrhythmia, although there were good reasons for believing that in this case it followed a blow on the chest. As we were unable to find any other record of this aetiological association, we thought it desirable to correct the opinion which was expressed in the *Journal*, particularly in view of the fact that the mechanism responsible for the repetitive auricular flutter in this case was an unusual one.—We are, etc.,

GERALD PARSONS-SMITH.

DENIS WILLIAMS.

ALASTAIR HUNTER.

London, S.W. 1.

REFERENCE

¹ Parkinson, J., and Papp, C., *Brit. Heart J.*, 1947, 9, 241.

Diparcol in Parkinsonism

SIR.—I read with interest Dr. R. S. Duff's report (April 9, p. 613) dealing with the results of treatment with "diparcol" in some cases of Parkinson's syndrome, and consider that the details of the following case, which came under my care recently, are of sufficient interest to warrant publication.

A female patient, 57 years of age, developed encephalitis lethargica twenty years ago. Before diparcol was given she was unable to attend to the simplest personal duties, gait was markedly affected, and there was excessive salivation. Treatment commenced on Jan. 4, 1949. Initially, one tablet of 0.05 g. was given daily for three days, then later one tablet of the same size night and morning. The patient appeared to be very depressed, and salivation became more troublesome. On Jan. 25 the dosage was increased to three tablets of 0.05 g. daily, and *dextro-amphetamine sulphate* was also given three times daily one hour before the diparcol. Six days later a further increase to four tablets of 0.05 g. per day was made, and slight improvement followed. From this date dosage was progressively raised, until three tablets of 0.25 g. were being

given each day. On Feb. 22 there was a marked improvement: the patient was sleeping well, was able to use a knife and fork and do some housework, and had become much more cheerful. On March 1 five tablets of 0.25 g. were given daily, and this dose has been maintained ever since. Withdrawal of the dextro-amphetamine sulphate seemed to cause slight deterioration of the patient's condition, and for this reason it was continued. The patient can now cook for herself and can walk considerable distances. Before treatment her speech was almost unintelligible, but it has now, after diparcol therapy, become practically normal.—I am, etc.,

Wishaw, Lanarkshire.

OLIVER GRAY.

Amoebic Hepatitis

SIR,—The correspondence in the *Journal* on pre-suppurative amoebic hepatitis has just reached me here. From the evidence of the cases described there would appear to be no doubt that amoebic hepatitis can arise primarily in the British Isles, and this is not surprising, as it occurs in the U.S.A. in areas of similar climate. The correspondence, however, shows that the discovery of cysts morphologically resembling those of *Entamoeba histolytica* is still reported as clinching the diagnosis of amoebiasis. It is most unfortunate that this opinion is still widely held, as it was in the late war responsible for more unnecessary treatment in the Tropics than any other single factor.

Just as in the first world war the confusion of macrophages with vegetative entamoebae gave rise to a great deal of misdiagnosis, so in the late war the identification of yeasts and non-pathogenic cysts as *E. histolytica* led both to widespread incorrect treatment and to the disrepute into which the emetine treatment fell. It was also responsible for the introduction of the prolonged courses of ineffective polytherapy in the so-called cases of amoebiasis, which were sometimes apparently effective, since in many cases the patient never had the disease at all.

Dobell¹ estimated that 10% of the population of England, where the disease is a rarity, had *E. histolytica* cysts in their stools, and Craig² has stated that 95% of the population of the warmer States of the U.S.A. are infected. So the search for, or the discovery of, cysts in the stools is in reality a complete waste of time, and though the clinical accounts of the cases reported leave little doubt that the conditions described were of amoebic origin the discovery of cysts in the gut wall or in the stools was a finding of no importance. Amoebiasis, particularly in its chronic form, must be diagnosed clinically, and the laboratory is of little value, though this is undoubtedly one of the conditions where a therapeutic test with adequate emetine injections can be of the greatest value.—I am, etc.,

Nelson, New Zealand.

R. L. HAVILAND MINCHIN.

REFERENCES

- ¹ *Spec. Rep. Ser. med. Res. Coun., Lond., No 59, 1921, London.*
- ² *Etiology, Diagnosis and Treatment of Amebiasis, 1944, Baltimore.*

What is Normal?

SIR,—I think the letter of Dr. David Pyke (April 16, p. 682) under this heading should not go unchallenged. Exaggerated materialism has given rise to many unpleasant and reprehensible practices and much moral deterioration—as we know to our cost in this enlightened twentieth century—but I never expected to see an opinion put forward by a member of the medical profession such as that expressed by your correspondent.

Homosexuality used to be known commonly by a very different name and its indulgence recognized as a very unpleasant, immoral, and unnatural practice. Your correspondent suggests that it is not abnormal and "can hardly be regarded as a grave menace to social security." Apart from other considerations, a practice which runs counter to normal procreative activities must be considered abnormal; and, as regards the statement that it is not a menace to social security, the absence of moral control in its devotees and weakening of moral fibre associated with it is a sufficient answer.

I refuse to believe that "37% of all American males have homosexual experience after adolescence (and more before)," and, even if it were true, there is no reason for condoning this loathsome practice or suggesting its normality. It can only

lead to moral and, in the long run, to physical deterioration. In that sense it is a distinct menace to social security.

Those of us who have been to boarding school know of its existence among some of the degenerate, or immature and ignorant, youth of the nation and have seen some of its evil consequences. The fear of it has been an anxiety to many conscientious parents and schoolmasters, and it is incumbent on us all to try to help the young, by advice and example, to a better understanding of their impulses and the necessity of keeping them under control. Where responsible adult offenders are concerned, sterner measures for the repression of this odious vice, by classing it as a criminal offence, should be enforced.—I am, etc.,

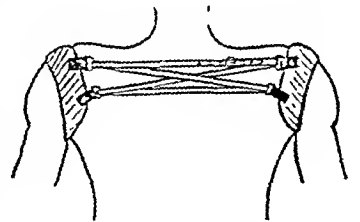
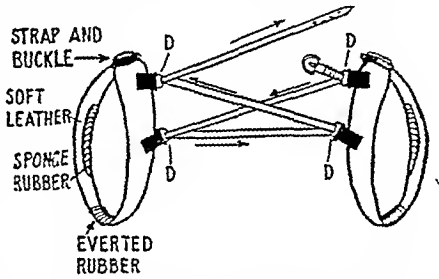
Ditchling, Sussex.

W. BARRINGTON PROWSE

Shoulder-harness

SIR,—Having had the fortune to break a collar-bone for the third time, and having experienced the discomfort of strapping, plaster, and bandages—on the last occasion most carefully and efficiently applied by the surgeon according to Robert Jones's approved method and adjusted every two or three days in the beginning—the idea of the shoulder-harness occurred to me. It was carried out by the local saddler—Mr. L. O. Illsley—in one day.

The harness consists of two soft leather rings 2½ in. (6.4 cm.) wide, the circumference of which can be adjusted by a strap and buckle or by press-stud fasteners and need not be stitched; they are lined with sponge-rubber glued to the under surface of the leather with rubber solution and everted with a few stitches to fit comfortably in the axillae. Each ring has two buckles with runners from which the tongues have been removed to facilitate the sliding of the adjusting strap. The adjusting strap is of similar leather but not lined, about 60 in. (132 cm.) long, with a buckle at one end and a number of holes punched at the other end for adjustment as required. This strap is threaded through the runners as shown in the sketch.



HARNESS APPLIED

This device holds the shoulders back most efficiently and comfortably, and an ordinary arm sling may be worn in addition if considered necessary.

The advantages claimed for this harness are: (1) Its perfect comfort whether worn on the bare anatomy or preferably over a thin vest or shirt. (2) Its easy removal and reapplication by any person who may be assisting the patient in his or her toilet and dressing in the earlier stages of the disability, or even by the patient himself. (I was able to do this for myself after the third week.) (3) The rapidity with which it can be applied and adjusted without discomfort to the patient caused by the application of plaster or yards of roller bandage. Although my bandage was most efficiently applied, carefully padded with plenty of cotton-wool, and readjusted with infinite care every second or third day during the first fortnight, the cotton padding invariably lumped under the armpits and the bandage rucked up or slackened or chafed; this did not occur with the rubber padding, which retained its resilience even on sweaty occasions. I have ridden a push bicycle or a horse after the fourth week of the injury wearing the harness over my shirt, having applied it myself without any assistance.—I am, etc.,

Oakham.

H. J. MANOCKJEE CURSETJEE.

Complication of Podophyllin Therapy

SIR.—Since the appearance of the article by Mr. J. E. Semple entitled "Papillomata of Bladder Treated with Podophyllin" (June 26, 1948, p. 1235) a trial has been given to this form of treatment, using weekly instillations of 15 ml. of 4% podophyllin.

A woman, aged 63, was first seen in 1935, when she had three papillomata near the left ureteric orifice. During the next thirteen years she had regular treatment with perurethral diathermy. At cystoscopy on Aug. 16, 1948, a tiny seed-like recurrence high up on the left wall was seen. Five weekly instillations of 15 ml. 4% podophyllin were then given. The last instillation was on Dec. 16, 1948. Twelve days later the patient passed a mass about the size of a date stone *per urethram*, with considerable pain and difficulty. Analysis reports this to consist of podophyllin resin. On Jan. 5, 1949, the patient passed a further mass equal in size to the first. The weight was about 0.7 g. Each instillation of podophyllin contained 0.6 g. Approximately 50% of the podophyllin was therefore returned in the form of the calculi. Cystoscopy on Jan. 10 showed no evidence of further podophyllin. High up on the left side of the bladder three tiny papillomata were seen in a group about the size of a pin-head.

While there has been no apparent destruction of the growths by podophyllin, it was not for this reason that the treatment was adopted. It was felt that podophyllin may destroy the microscopic recurrences still not visible. It will therefore take several years to assess the ultimate value of such a course.

I should like to thank Mr. Hugh Donovan for permission to publish this case.

—I am, etc.,

Birmingham, 15

A. G. JARRAMS.

Teaching First Aid

SIR.—At the recent conference of first-aid workers and instructors held under the auspices of the ambulance department of the National Fire Brigades Association, some 150 delegates from all parts of Great Britain and Northern Ireland attended. Many of them were emphatic that the standard and teaching of first aid in this country are seriously handicapped by the inadequate number of doctors who are prepared to spare time for this purpose.

It is true that first-aid treatment ends where medical treatment begins and that many of us know very little about first aid. Yet we rely (especially those of us on the staff of a casualty hospital) even more than the general public do upon efficient first aid for those who are brought in under our care or are transferred by ambulance at our request.

It is therefore a disservice both to the public whom we serve and to our medical colleagues if we cannot find time—busy as we may be in these days—to take an interest in and instruct those (whether St. John, Fire Service, or other ambulance workers) who seek our help and guidance in this matter. The medical background which we doctors can supply to the practical common sense of first aid makes all the difference to the enthusiasm with which the subject is approached by those who learn it.

May I therefore appeal through your columns to those doctors who are approached by any organization for first-aid lectures or examinations to do their utmost to lend a helping hand and so encourage the voluntary spirit on which this sort of work must always rely?—I am, etc.,

F. J. CURTIS.

Redhill, Surrey.

Hon. Chief Surgeon,
National Fire Brigades Association.

Approach to the Frontal Lobes

SIR.—I am amazed at Dr. Max Valentine's enthusiastic support (March 5, p. 411) of Dr. Freeman's assumption that transorbital lobotomy cuts only the thalamic connexions of areas 9 and 10. Everyone who has some experience in experimental brain surgery knows the difficulty in producing a predictable lesion even under favourable circumstances.

I certainly do not want to belittle the neurosurgical work done in the past to alleviate mental illness, but it has always been a medical practice to give a specific indication for an operational intervention. The present state of frontal-lobe psychosurgery may be compared with the procedure of an abdominal surgeon who introduces a knife through a small abdominal incision in the hope of cutting certain portions of

the intestine and thus curing constipational trouble for which no organic basis can be found. No one would defend such a procedure, even if temporary relief were obtained, yet a similar procedure within the brain cavity seems to attract many followers.

I entirely agree with Dr. Valentine that appropriate teams in excellent collaboration are working in this field in the States. An example of critical teamwork can be found in a paper by the Connecticut Lobotomy Committee.¹ As Dr. Valentine has misunderstood my plea for this collaboration I would like to restate the main points of my letter (Jan. 29, p. 193)—namely, that further advances in the field of lobotomy can only be hoped for if the operational route chosen allows a clear assessment of the anatomical regions which have been undercut or removed. Only if one is reasonably certain about this can a correlation of psychiatric results and the operation be attempted. The desirability of this becomes obvious if one reads Freeman and Watt's remark that "each surgeon seems to have his own preference."

Dr. Valentine quotes the favourable results of Dr. Freeman's 100 cases started in 1946. It is certainly too early yet to draw definite conclusions from this material. A surgical intervention at the highest level of human personality—the frontal lobes (cf., Halstead's *Brain and Intelligence*, 1947, Chicago)—should be done with great caution, and only very critical evaluation of the results can lead to progress and prevent disappointment in a method which raises high hopes at present. I do not want to deliver a counterblast to psychosurgery, as Dr. Valentine suggests; I only maintain that this branch of neurosurgery is still in an experimental stage and any new blind approach will delay the understanding of the underlying mechanism of mental recovery after lobotomy.—I am, etc.,

Oxford.

P. GLEES.

REFERENCE

¹ *Proc. Ass. Res. nerv. ment. Dis.*, 1948 27, Ch. 35.

Injury Caused by Ear-rings

SIR.—The following case is reported on account of its rarity.

A young lady, aged 23, complained that the lobes of both ears had been severed following the use of spring ear-rings. The photograph shows the condition of one ear. The other was similar. She stated that she had been in the habit of wearing stud ear-rings which fastened on with spring clips. She never noticed any unusual pain or discomfort, but after wearing the ear-rings for some weeks without removing them (exact time unknown) she found them difficult to take off. When they were taken off she found the ears had sloughed under the clips. Both ears healed rapidly, but she felt they were so unsightly that she did not go out in public without her head and ears being covered. Surgical repair was easily accomplished.



Ear-rings of this type are in universal use. The lobes of the ears are insensitive, and damage can occur without noticeable discomfort unless such clips are removed frequently.—I am, etc.,

Dublin.

C. SOMERVILLE-LARGE.

Diathermy Prong Forceps

SIR.—Mr. A. Wilfrid Adams (April 9, p. 631) has added a new diathermy appliance to our list of special instruments. I have always been interested in the surgical uses of diathermy, and I have described¹ how any instrument may be used for diathermy by simply soldering to a convenient spot on it a length of ordinary electric flex. (Stainless-steel instruments cannot be soldered.)

Since writing that paper I have found that it is unnecessary to solder the lead to the instrument. Two inches (5 cm.) of insulation is removed from a piece of lamp flex and the bare wire is then fixed to the instrument by winding and held in position by covering the union with surgical adhesive tape. If



WHEN FUNGUS IS AFOOT . . .

'Tineafax' brand preparations contain *undecylenic acid*—a new, specific antifungal agent of proved effectiveness in "athlete's foot" and similar dermatophytoses.

'Tineafax' brand Ointment is intended for the treatment of established infection; 'Tineafax' brand Powder as an adjunct to the Ointment and for prophylactic use. Both products are clean and pleasant to use, non-staining and free from objectionable odour. The Ointment is issued in collapsible tubes of 1 oz. (approx.); the Powder in tins of 2 oz.

the answer is 'TINEAFAX'

COMPOUND UNDECYLENATE OINTMENT AND UNDECYLENATE POWDER



B 105

BURROUGHS WELLCOME & CO. (The Wellcome Foundation Ltd.) LONDON



NEO-OCTON

BRAND
ISOAMYLAMINOMETHYLHEPTENE
(KNOLL)

**A NEW SYNTHETIC ANTISPASMODIC FOR
THE RELIEF OF SMOOTH MUSCLE SPASM**
Non-narcotic. Prompt in action. No side-effects

TABLETS AND DROPS FOR ORAL USE
AMPOULES FOR PARENTERAL INJECTION

LITERATURE AND SAMPLES ON REQUEST

SAVORY & MOORE

WELBECK STREET, LONDON, W. 1.

Telephone: Welbeck 5555 (20 lines) Telegrams: Instruments, Wesco, London

Obituary

J. R. CURRIE, M.D., F.R.C.P.Ed.

John Ronald Currie, who was the first professor of public health at Glasgow University, died in Edinburgh on April 13 at the age of 78. Professor Currie had retired from the chair in 1940, but until just about a year ago he had retained the posts of medical officer of health for the county of Bute and the burgh of Rothesay, thereby completing almost a half-century in the field of public health. His emergence as a teacher came only in 1922, when he accepted the chair of preventive medicine at Queen's University, Kingston, Canada. A year later the Henry Mechan chair of public health was founded at Glasgow, and Currie returned to Scotland to be its first occupant. His early academic training reflected that scholarly and humanistic approach to medicine—so rare nowadays—which was to mark his later life. After receiving his early education at Ayr Academy Currie went to Edinburgh University, to graduate M.A. there in 1891. A period at Oxford followed, and he obtained first-class honours in Classical Moderations, taking his B.A. in 1896. Returning to the West of Scotland, he studied medicine at Glasgow and won many distinctions as a student, graduating in 1898 with commendation. He took his D.P.H. from Birmingham in 1904.

During the early 1900's the fever hospital at Belvidere in Glasgow had as its physician superintendent Dr. John Brownlee, who collected round him a group of men most of whom were later to make their own reputations in the public health service. At that time to be chosen as one of Brownlee's residents was itself a mark of distinction. Currie came under his influence in 1905, and in the succeeding few years he made his first contributions to medical literature, writing a number of scholarly papers on the new subject of serum disease. In 1910 he presented for the M.D. a thesis which was highly commended. It was on this firm foundation of experience in infectious diseases, then so important to a public health career, that he proceeded to build further practical knowledge from posts at Stirling, Dumbarton, Chester, and Fife. During the first world war Currie served as a sanitary specialist in the R.A.M.C., returning to Scotland to work with the Board of Health, which later became the Department of Health for Scotland. Such a breadth of practical experience, added to his earlier classical education, made an academic career a natural choice. It may have been something of an accident that caused Canada to be the scene of his first teaching post, but it was most appropriate that he should return so speedily to his old medical school. He was elected F.R.C.P.Ed. in 1934, and on his retirement from the chair he received the honorary degree of LL.D. For many years he was a valued anonymous contributor to this *Journal*.

It was easy to overlook Professor Currie's many excellent qualities. Naturally shy and retiring, his erect, rather soldierly appearance made him a somewhat forbidding figure to his students. But the stern exterior was an easily displaced mask behind which lay a sense of the absurd which would emerge to reveal a very lovable personality. His mind, nurtured on a course of "fine, confused feeding," had that richness which comes from a reverence of the classics; and his breadth of outlook was best appreciated in after-dinner conversation.

FELIX D'HERELLE, M.D.

Professor Felix d'Herelle, who was well known for his work on bacteriophage, died in Paris on Feb. 22.

Felix d'Herelle was born at Montreal, Canada, in 1873 of French-Canadian parentage, and though he retained throughout life his British nationality, of which he was always proud, he gave to his acquaintances the impression of being rather more French than British in temperament and outlook. Educated at the Lycée Louis le Grand, Paris, he took his baccalaureate in 1888, and then returned to his native Canada to study medicine, and graduated M.D. at Montreal. He was professor of bacteriology at Guatemala from 1901 to 1907, and bacteriologist to the Mexican Government for the next two years. He joined the staff of the Pasteur Institute in Paris in 1909. There he was *chef de laboratoire* from 1914 to 1921. During these years his services were often at the disposal of foreign Governments.

Thus he went on special missions to the Argentine in 1911-13, Turkey in 1914, Tunis in 1915, and to Indo-China in 1921. After leaving the Pasteur Institute, d'Herelle went to Leiden University, Holland, as professor extraordinary in 1922. Two years later he was appointed to the International Quarantine Council, Egypt, as director of the laboratory service, which was based on Alexandria. There he remained until 1926, when he went to India on a special mission at the request of the British Government. He was appointed professor of protobiology at Yale University in 1928, retiring from that post in 1933 in order to found his Bacteriophage Laboratory in Paris. In the years that followed he was entrusted by the Government of the U.S.S.R. with the setting up of bacteriophage research institutes at Tiflis, Kiev, and Kharkov.

It was in 1917, in a note to the French Academy, that he published his observations, "Sur un Microbe Invisible, Antagoniste des Bacilles Dysentériques." The phenomenon of bacteriophage had been discovered earlier by Twort (1915), who spoke freely of it during his war service, but the graphic description given by d'Herelle, and his insistence that he was dealing with what is now recognized to be a virus, startled the scientific world, and the importance of his findings was immediately appreciated. He received many honours. Doctorates were conferred upon him by the Universities of Montreal, Quebec, Yale, Leiden, Tiflis, and Bakou. He was an honorary member of several learned societies—the Royal Society, Canada; the Société de Biologie, Paris; the Société de Microbiologie, Leningrad; and the Scientific Club, Winnipeg. But he was specially proud of the Loewenhoeck Medal of the Académie des Sciences, Amsterdam, which he was awarded in 1925. The only French scientist to have received this distinction before d'Herelle was Louis Pasteur.

Of d'Herelle's better-known English writings, mention may be made of "Immunity in Natural Infectious Disease" (1924), which was followed by "The Bacteriophage and its Behaviour" (1926), "The Bacteriophage and its Clinical Applications" (1930), and "Studies on Asiatic Cholera," the latter in conjunction with Malone (1930). His most important writings in French were: "Le Bactériophage, son Rôle dans l'Immunité" (1921); "Les Défenses de l'Organisme" (1923); "Le Phénomène de la Guérison dans les Maladies Infectieuses" (1938); and *Étude d'une Maladie: le Choléra, Maladie aux Paradoxes* (1948). A clear thinker, with an impeccable laboratory technique, and endowed in high degree with the logical outlook of his race, d'Herelle appeared at times somewhat intolerant to those who differed from him. Yet to his friends and associates he was one of the kindest and most loyal of men.

Dr. ARTHUR ERNEST WHITEHEAD died at Bridlington on March 13 at the age of 75. Educated at University College, Sheffield, he qualified in 1900, and after the usual house appointments and a short period in practice at Almondbury he settled in Bridlington in 1905. He soon built up an extensive practice and became prominent in the social life of the town. He served the Lloyd Hospital for forty-four years as a medical officer on the staff and as a member and later chairman of the board of management. Dr. Whitehead had many interests. He was a keen yachtsman and an active freemason. After his retirement from practice in 1938 he was elected a member of the East Riding County Council, and he became a J.P. and acted for some years as chairman of the juvenile court. During the 1914-18 war he served in the R.A.M.C. at Salonika, and in the 1939-45 war he was in charge of the civil defence scheme for Bridlington. Dr. Whitehead's interest in mankind—especially the local variety—remained with him to the end, and confinement indoors he found a sore trial. He must have known and been known by nearly everyone in the East Riding, and his short, stocky figure and cheerful smile were very much part of the local scene. He leaves a widow, two sons, and a daughter, and to them the sympathy of his colleagues and friends will be extended. Both sons were awarded the Military Cross in the recent war.—C. J. G. T.

FRANK GRIFFITH THOMAS, who died at his home at Bonneworth on March 22 at the age of 76, was a native of Swansea and a son of Dr. Jabez Thomas, the founder of the first eye hospital in that town. He succeeded his father as ophthalmic surgeon to the Swansea General and Eye Hospital in 1900. He remained in Swansea until about eighteen months ago, when he retired because of ill-health, which unfortunately left him unable to enjoy to the full a well-earned rest. Frank Thomas

graduated M.B., B.Ch. in 1897. He was a student at Cambridge and at Guy's Hospital, where he became house-physician and clinical assistant. He was also clinical assistant at the Royal London Ophthalmic Hospital, and later registrar at the Royal Eye Hospital. After studying in Vienna he returned to Swansea, and was the ophthalmic surgeon to the hospital there until 1924, when he was appointed consulting ophthalmic surgeon. He was also ophthalmic surgeon to the Gorseinon, Aberdare, Port Talbot, and Brecon hospitals as well as to the Swansea Institution for the Blind, the Cambrian Institution for the Deaf and Dumb, and the Orphan Home. In addition, Thomas was an ophthalmic medical referee for the South Wales courts and for the Ministry of Pensions. During the 1914-18 war he held the rank of captain in the R.A.M.C., and in the last war he took his full share of responsibility in the E.M.S. As Swansea suffered badly from air raids this meant a great deal of work for a man of advancing years, but he never shirked it. Frank Thomas was an ophthalmic surgeon of exceptional ability, and his knowledge of ophthalmology, and of medicine in general, was profound. He was a man whose opinion on difficult eye conditions was always worth having, and, apart from his large experience and his love for the subject of ophthalmology, he had an almost uncanny flair for spotting the cause of, and for knowing the best treatment for, many puzzling diseases. He was one of the originators of the Oxford Ophthalmological Congress, and he was a vice-president of the Ophthalmological Section when the Annual Meeting of the B.M.A. was held in Swansea in 1928. His wide experience of compensation cases, in which he reported with strict impartiality, made his findings of great value to both employers' and workmen's representatives. Frank Thomas was good at games, and rowed for Caius while an undergraduate. His golf was sound, and he also played a very good game of billiards and excelled at croquet. Frank Thomas was very fortunate in meeting his future wife when she, a doctor's daughter and a doctor herself, was a resident at the Swansea Hospital assisting him in the eye department. Throughout his life she looked after his welfare devotedly, and in addition was able to assist him at his work, being on the honorary staff of some of the hospitals he visited. He survives him with two daughters and two sons, one of the sons being an orthopaedic surgeon in Hereford and the other an ophthalmic surgeon at Bournemouth. Although Frank, as his friends knew him, or "Dr. Frank," as his patients affectionately called him, has passed away, his memory will always remain green in Swansea and, indeed, in South Wales. To work with him was a privilege.—R. T.

H. E. Q. writes: Frank Thomas was a skilful diagnostician and an accomplished operator. He will long be remembered by his colleagues on the hospital staff and by general practitioners in South Wales as well as by his patients for his ready help and advice. Outside his professional work his chief interest for many years was golf, and he was closely associated with the development of Pennard Golf Club from its earliest days until a few years ago, when failing health put an end to his active participation in the game.

Dr. HAROLD WACHER, who died on April 11 after a long illness, was the son of a well-known physician. He was born in Canterbury in 1876, and educated at the King's School, Canterbury, St. John's College, Cambridge, and Guy's Hospital. He joined his father in practice in Canterbury shortly after he graduated M.B., B.Ch. in 1903. Apart from service in Egypt and France from 1914 to 1918, he practised continuously in Canterbury until the onset of his illness nearly two years ago. For many years Dr. Wacher was senior physician at the Kent and Canterbury Hospital, and he worked hard at the planning and financing of the new hospital which was opened in 1937. He also served as poor-law officer and medical officer to the municipal hospital, Canterbury, from the time of his father's retirement. A born actor, he was well known at Guy's in the "Disguised Minstrels" and as one of the founders of the residents' play. He was even better known in Canterbury for his acting with the "Old Stagers" in the last forty years. As an antiquary and a fellow of the Society of Antiquaries he had studied the history of Canterbury, and he wrote his M.D. thesis in 1928 on the medical history of Canterbury. To a wide circle of friends he was a lavish entertainer, and his good fellowship and his artistry as a raconteur and after-dinner speaker made him welcome at many social gatherings. Canterbury has lost a good friend and servant and one who did a great life's work in practical medicine, in common humanity, and in lightening the lives of his fellows with good humour and laughter.

Dr. FOSTER COATES died at the age of 68 at his home in Belfast on March 23. The son of Dr. Stanley Coates, he was educated at the Methodist College and Queen's College, Belfast. He graduated B.A. in 1900, M.B., B.Ch., B.A.O. in 1905, and succeeded M.D. in 1907. He took the D.P.H. in the same year,

also in the Royal University of Ireland. He was an R.M.O. and afterwards a registrar at the Royal Victoria Hospital, and on his return in 1919 from active service in France he was appointed an assistant physician. He was also for some years a visiting physician to the Forster Green Hospital for Diseases of the Chest. In 1946 Foster Coates was elected an honorary consulting physician to his old hospital, which he had served so faithfully for over forty years. An active member of the B.M.A., he was president of the Ulster Branch in 1928-9, and vice-president of the Section of Medicine at the Belfast Meeting in 1937. He was also a member of the Association of Physicians, and in 1935-6 was president of the Ulster Medical Society. Dr. Coates was a lecturer in clinical medicine in the Queen's University of Belfast and a member of the Senate. A sound physician with a greater love for purely clinical than for laboratory or even radiological methods of diagnosis, he gained the respect and affection of generations of house-physicians and students, who quickly appreciated his integrity and his acumen. These qualities were much valued by his Majesty's judges and members of the legal profession when he gave evidence in many medico-legal cases, particularly under the Workmen's Compensation Acts. Those who were his colleagues will not soon forget his kind heart and unselfish comradeship. He is survived by his widow, two sons, and a daughter.

SARAVANAMUTTU THAMBIAH, who died on Feb. 18, was born in Ceylon in 1891. After taking his B.A. at Madras University in 1913 he entered the Medical College there and qualified in 1917. He served in the Army from 1918 to 1926 and was awarded the Military Cross. Until 1929 he was lecturer in materia medica at the Stanley Medical School, Madras, and then he came to Britain to continue his studies. Dr. Thambiah took the Scottish triple qualification in 1929 and the Edinburgh M.R.C.P. a year later. Returning to India, he was appointed professor of medicine at the Prince of Wales Medical School at Tanjore, and six months later was posted to the Government General Hospital at Madras as lecturer in dermatology and physician in charge of the skin department. He was responsible for the organization of this clinic, which he raised to a very high standard of efficiency. In 1940 he was made an additional professor of medicine at the Madras Medical College, and in 1945 professor, though he still continued to hold the post of dermatologist to the Government General Hospital. In recognition of his services he had conferred on him in 1945 the title of Rao Bahadur. A year later he left the service on completing his fifty-fifth year, and led a quiet life in retirement, though continuing his consulting practice in Madras. In October, 1948, he was elected F.R.C.P.Ed., and shortly afterwards his final illness began. Dr. Thambiah's popularity was such that he was consulted by patients from the north of India, Malaya, and Ceylon. His untimely death at the age of 58 leaves a gap which it will be difficult to fill. He is survived by his widow, two daughters, and a son.

Medico-Legal

DEATH FOLLOWING TREATMENT WITH DICOUMAROL

What seems to be one of the first cases of death following the administration of dicoumarol to be considered by a coroner's court was reported recently. The evidence was heard by the Battersea coroner, Dr. R. B. Hervey Wyatt, on April 4.

A woman of 70 went to her doctor on March 7, 1949, complaining of pain in her left leg. Her general practitioner, in his evidence, said that he found a deep thrombosis of the left femoral vein from the calf right up to Poupard's ligament. He ordered her to stay in bed and gave her some glycerin and belladonna paint. He also left a prescription for 100 tablets of dicoumarol and told her to take six tablets on the first day and then four tablets daily.

On March 14 the patient was restless and excitable, so he told her to discontinue the glycerin and belladonna paint and to take only two tablets of dicoumarol a day. The doctor said that the dose he ordered was that recommended by the makers, and he also consulted the *British Encyclopaedia of Medicine*. He had used the drug on four other cases in a similar dosage, and in one of them for 16 days without ill effect. He did not recall hearing of the danger of the drug or that its effect should be checked by examinations of the patient's blood.

On March 26 he saw the patient again, diagnosed renal colic, and sent her into hospital. She had had severe pain in the left

P. Allebone, Margaret Bagshaw, U. C. Bardolai, E. L. Barr, Aileen V. Barrett, W. A. Benson, Kathleen N. Berger, S. W. Beswick, G. F. Bigwood, P. M. Brett, D. M. Brodie, Margaret Brodigan, G. H. Burgess, Elizabeth B. Butler, Rachel Cameron, K. G. Casey, Jean Cleghorn, W. W. Coppinger, A. C. Coulthard, J. K. Craig, S. Dalziel, J. A. R. Debenham, D. S. Desai, G. Dixon, Janet McK. Donald, Freyda F. Dougall, R. W. Drewer, Mary E. Egan, T. H. Eustace, Marjory F. Foyle, R. L. Gadd, J. E. Gilbert, Philippa A. Glyn, Beryl J. Goff, L. Goodman, G. E. L. Graham, E. P. Griffiths, W. Gross, H. Hanson, J. C. Harrison, A. P. B. Harston, Vivien P. Helme, M. J. T. Hewetson, Mary Higgs, Agnes M. Highet, T. R. Hunt, Rachel Jacobs, S. T. James, C. M. Jones, N. M. Jones, D. H. Joseph, S. Kanapathippillai, C. H. Kaye, Katie Keane, Katherine M. Kelly, H. A. Kemi, R. F. Kingston, A. I. I. Klopfer, H. J. Knight, G. W. Korn, G. D. Lees, Lillian J. Leely, J. C. S. Leverton, M. G. H. Lewis, G. H. Lloyd, H. J. Love, Jessie B. Macaulay, A. MacLellan, R. L. Macphersoo, D. Magoet, A. Mathew, Mary I. Milne, M. Mirchandani, Catherine H. Mitchell, L. I. O. Morgao, Monica M. A. Murphy, Barbara J. Nathan, L. I. M. Norburn, Susan B. G. Ofori-Atta, H. O'Hara, N. L. Owen, Ethel W. W. Owston, T.-C. Pang, W. M. Patterson, Pauline M. Philpott, G. D. Pinker, Jessie McA. Pope, B. Pownall, D. B. Price, D. Puffett, E. Quehl, Mairead M. Robinson, O. Rosensweig, W. I. Russell, Margaret M. P. Ryan, Jean M. Sandel, Eileen P. Scanlan, R. D. Simpson, M. L. Slattery, G. M. P. Smith, J. S. Smith, Roberta A. Stewart, R. J. Still, K. S. Subbalakshmi, H. P. Tamesby, J. S. Taylor, Alice P. Thomas, Glenys M. Thomas, T. A. Thompson, H. S. Trafford, Doreen G. Warnock, J. L. Warr, P. F. A. Watkins, N. E. Wood.

Medical Notes in Parliament

Hospital Endowments Commission

The Secretary of State for Scotland announced on April 14 that Professor Sir Sydney Smith, dean of the Faculty of Medicine at Edinburgh University, had been appointed chairman of the Hospital Endowments Commission. Dr A. Greig Anderson, of Aberdeen, who is a member of the North-Eastern Regional Hospital Board, is the only medical member. The Hospital Endowments Commission is a purely Scottish body. There is no corresponding body under the National Health Service in England and Wales.

Clinical Details Confidential

Mr JOHN LEWIS reported on April 14 that the senior administrative medical officer of the Manchester Regional Hospital Board had advised the secretary of the Bolton Hospital Management Committee that if medical officers of health asked for information about patients discharged from hospital and in need of aftercare only the address need be given.

Mr BEVAN replied that the Board had encouraged management committees to co-operate fully with local authorities but had rightly advised them not to disclose to them clinical details of patients, which should generally be treated as confidential.

On the same date Mr LEWIS further asked whether Mr Bevan knew that the senior administrative medical officer of the Manchester Regional Hospital Board had instructed medical officers at venereal disease clinics in the area that information about patients attending the clinics should not be disclosed to medical officers of health, even if requested for purposes of contact tracing. Mr Lewis said that medical officers of health in all parts of the country had always had free access to information about patients.

Mr BEVAN answered that the Regional Hospital Board had rightly taken this step to ensure that the statutory regulation about the secrecy of V.D. treatment was scrupulously observed.

Private Practice

On April 14 Dr SEGAL asked whether Mr Bevan was aware that medical practices were still advertised by private agencies for sale and purchase, and what steps he proposed to take to put an end to this practice. He further asked if Mr Bevan could make arrangements to establish official agencies for the transfer of medical practices, partnerships, and assistantships.

Mr BEVAN said there was no prohibition on the sale and purchase of purely private practices. He saw no objection to such transactions being handled by private agencies. The transfer of practices and the introduction of new partners and assistants in the National Health Service were already controlled by the appropriate official bodies.

Industrial Injuries Special Hardship Allowance—The Minister of National Insurance, Mr JAMES GRIFFITHS, has laid before Parliament regulations which enable the special hardship allowance provided under the National Insurance (Industrial Injuries) Act to be paid with industrial disablement gratuities whatever the period for which the disablement has been assessed. The new regulations came into operation on April 13. Previously the allowance could only be paid with a disablement gratuity based on an assessment of disablement for a period of over two years. This special hardship allowance is an allowance of up to 20s a week which can be paid with an industrial disablement pension or gratuity if the disabled man or woman is unable to return to his regular occupation and cannot work at a job of a similar standard.

Vaccination—Mr BOSWELL inquired on April 14 what was the approximate proportion of the population now vaccinated as compared with that which was immunized against smallpox before the last war. Mr BEVAN answered that records were available up to 1946 at present, only on infant vaccination. These showed that about 42% of children born in 1946 were vaccinated in infancy as against about 34% in 1938.

The Samuel Kress Foundation has given about £2,000,000 to the New York University Bellevue Medical Centre for the development of postgraduate medical education on a national and international scale. The Kress Foundation stated: "Privately financed medical education is more effective, more economical, and more in keeping with the essential tradition of American democracy, now subject to a radical challenge in our country and throughout the world, than Government financed medical education." Mr Kress is the founder of a chain of stores.

EPIDEMIOLOGICAL NOTES

Smallpox

The period of surveillance of passengers and crew of the *s.s. Mooltan* ended on April 19. The total of confirmed cases of smallpox arising from the first fatal case on board is 11. Four of the fatal cases were in persons who were unvaccinated at the time of infection the fifth being a man of 61 who was vaccinated in infancy. In other cases there is evidence that vaccination has produced considerable modification of the disease, and this has sometimes given rise to difficulty in diagnosis. It is advisable that all contacts showing doubtful lesions should be isolated for observation and bacteriological examination. Contacts with such signs have been admitted to hospital from Southwark, Sutton and Cheam, Romford, St Pancras, and West Ham. Up to April 25 there has been no confirmation of the diagnosis of smallpox in any person who was not on board the *s.s. Mooltan*. Further clinical observation and laboratory investigation have removed any suspicion that the two patients in Lacey Smallpox Hospital mentioned last week (April 23, p. 732) are suffering from smallpox.

Influenza

The number of deaths provisionally ascribed to influenza in the 126 great towns in the week ended April 16 was 95 compared with 192 in the preceding week. The peak figure of 360 deaths was reached in the week ended March 19, and since then there has been a fairly rapid decline. Notifications of acute primary and influenza pneumonia reached a peak of 918 cases in the week ended March 12 and have since declined to 522 in the week ended April 9.

No further reports of outbreaks have been received recently, and it would appear that the outbreak of virus influenza is now over. It was characterized by a high incidence in the Midlands and North, with, however, a low fatality rate. In several outbreaks a strain of virus A nearly related to the strain isolated in this country in 1947 was found. There were also a few isolations of virus B from outbreaks in semiclosed communities.

First Quarter of 1949

The number of stillbirths registered in England and Wales during the first quarter of 1949 was 4,418 giving a rate of 23.1 per 1,000 total live and still births, the lowest rate ever recorded for a March quarter in this country. For the same period a year ago the rate was 24.3, and there has now been a progressive fall in the rate for the first quarter for the past nine years.

The number of deaths of children under 1 year of age was 7,462, representing a record low rate of 40 per 1,000 related live births. This compares with the previous record of 41 in the corresponding quarter a year ago and 55 in the March quarter of 1947.

There was again a fall in the number of live births registered in England and Wales. For the March quarter of 1949 the figure was 186,561 compared with 202,184 in the March quarter, 1948, and 241,530 in the first quarter of 1947. The corresponding rates per 1,000 total population were 17.4, 18.7, and 22.8 respectively. In the following table the numbers of live births, stillbirths, total deaths, and deaths of infants under 1 year of age registered in the March quarter, 1949, and the corresponding rates are compared with those for the March quarters 1948, 1947, and 1938.

	Live Births		Stillbirths		Deaths (including Non-civilians)		Deaths of Infants under 1 Year	
	Number	Per 1,000 Total Population	Number	Per 1,000 Total Live and Still Births	Number	Per 1,000 Total Population	Number	Per 1,000 Related Live Births
1st Quarter, 1949	186,561	17.4	4,418	23.1	161,279	15.0	7,462	40
" " 1948	202,184	18.7	5,043	24.3	152,706	12.3	8,358	41
" " 1947	241,530	22.8	6,347	25.6	181,746	17.1	12,561	55
" " 1938	155,187	15.3	6,185	39.3	137,497	17.6	10,595	69

Discussion of Table

In England and Wales infectious diseases were less prevalent during the week. There were decreases in the notifications of measles 1,095, acute pneumonia 388, whooping-cough 390, and scarlet fever 66.

The largest decreases in the notifications of measles were Yorkshire West Riding 326, Middlesex 240, Essex 223, Staffordshire 177, Surrey 171, Lancashire 164, and Glamorganshire 101; the largest increases were London 266, Derbyshire 134, Warwickshire 101, and Hertfordshire 76. In most areas the incidence of whooping-cough was unchanged, the decline being due to the experience of a few counties, notably Lancashire 101, Kent 79, and London 76.

There were decreases in the notifications of scarlet fever in Essex 31 and London 22. The chief feature of the returns for diphtheria was an increase of 9 in the notifications in Durham. The decrease in the incidence of acute pneumonia was general throughout the country.

An outbreak of dysentery affecting 10 persons was notified in Norfolk, Norwich C.B.; other large returns were London 11, Yorkshire West Riding 11, and Lancashire 10.

In *Scotland* a decrease was recorded in the notifications of whooping-cough 54, measles 10, and diphtheria 9. There was an increase in the incidence of acute primary pneumonia 23. Of the 23 cases of dysentery 20 were notified in Glasgow.

In *Eire* there were increases in the incidence of measles 40 and scarlet fever 28, and a decrease of 10 was recorded in the notifications of whooping-cough. Notifications of diarrhoea and enteritis in Dublin C.B. were 10 fewer than in the preceding week.

In *Northern Ireland* increases were reported in the notifications of measles 42 and whooping-cough 40. The largest increases in the incidence of measles were in County Down 24 and County Tyrone 21. A rise of 25 in the notifications of whooping-cough was also recorded in County Down.

Corrected Notifications

Corrected notifications have been given in the quarterly reports of the Registrar-General since the June quarter of 1944. These show, except in the case of diphtheria, that the proportion of diagnostic errors has remained fairly constant over this period. In the notifications of diphtheria, however, there has been a continuous increase in the proportion of errors. Corrected notifications amounted to three-quarters of the original notifications in 1944, but to only two-fifths at the end of 1948. Of the other common infectious diseases of childhood, measles and whooping-cough have a negligible diagnostic error and scarlet fever an error of about 2%. The corrected notifications of cerebrospinal fever recorded as a percentage of the original notifications ranged from 53.6 to 84.5 during the period. During the epidemic of acute poliomyelitis in the third quarter of 1947 there was an error of 20% in the notifications, which increased to 30% in the second quarter of 1948.

Corrected Notifications Expressed as a Percentage of the Original Notifications

Year	Qtr	Scarlet Fever	Diphtheria	Enteric fever (Typhoid and Paratyphoid)	Acute Pneumonia	Dysentery	Cerebrospinal Fever	Measles	Whooping-cough	Acute Poliomyelitis
1944	1	97.3	76.2	78.4	99.7	97.1	77.6	99.2	99.8	94.0
	2	98.1	77.0	83.0	99.6	98.1	74.7	99.9	100.0	95.8
	3	98.4	75.9	84.6	100.0	98.1	72.1	100.1	99.9	95.3
	4	98.3	74.1	77.2	99.9	95.6	73.2	99.1	99.6	94.6
1945	1	97.7	74.7	83.0	99.9	99.8	82.7	100.1	99.4	83.9
	2	97.8	73.3	73.5	99.8	97.8	73.1	99.9	99.9	95.6
	3	97.9	72.5	80.7	100.1	93.4	66.6	99.8	99.7	96.4
	4	98.3	74.1	77.2	99.9	95.6	73.2	99.1	99.6	94.6
1946	1	97.8	70.7	87.8	99.9	97.2	84.5	100.0	99.7	79.8
	2	96.8	64.6	68.6	100.0	93.2	76.8	99.9	99.7	85.6
	3	97.2	61.0	89.9	99.1	87.4	64.6	99.8	99.8	90.3
	4	98.1	62.8	88.9	99.9	85.5	67.0	100.0	99.4	92.5
1947	1	97.3	58.7	76.0	99.4	91.3	81.2	100.0	99.6	88.7
	2	96.1	53.8	75.3	99.5	92.0	76.6	99.9	99.8	91.0
	3	97.5	50.9	84.9	99.4	86.4	58.8	99.7	99.6	81.8
	4	98.3	50.6	82.4	99.7	93.8	64.6	99.8	99.5	83.1
1948	1	98.1	50.5	75.2	99.5	94.5	64.1	99.9	99.5	72.1
	2	97.0	44.7	77.0	99.3	91.9	54.8	100.0	99.8	70.2
	3	97.6	40.4	81.3	99.7	92.2	53.6	100.2	99.9	85.9
	4	98.2	42.0	84.6	99.8	91.6	69.3	100.0	99.2	86.3

Week Ending April 16

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,039, whooping-cough 2,267, diphtheria 103, measles 13,066, acute pneumonia 731, cerebrospinal fever 27, acute poliomyelitis 5, dysentery 49, smallpox 7, paratyphoid 1, and typhoid 2.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended April 9.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week of the previous year: (a) England and Wales (London included). (b) Scotland. (c) Eire. (d) Northern Ireland. (e) Northern Ireland. (f) Deaths recorded under each infectious disease, towns in England and Wales (including London). (g) Deaths recorded under each infectious disease, towns in Scotland. (h) The 16 principal towns in Scotland. (i) The 13 principal towns in Eire. (j) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	39	4	21	5	1	36	2	19	6	—
Deaths	—	2	1	—	—	—	—	—	—	—
Diphtheria	106	11	19	3	4	155	15	48	14	10
Deaths	—	—	—	—	—	4	—	—	—	—
Dysentery	63	11	23	1	—	111	18	50	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	3	—	1	—	—	—	1	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	25	10	6	—	—	43	7	8
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	—	—	—	—	—	—	—
Deaths	25	1	4	43	3	48	5	6	30	1
Measles*	14,724	1753	386	194	193	11,193	1809	445	130	44
Deaths†	—	—	—	—	—	—	—	—	—	—
Ophthalmia neonatorum	56	6	11	—	—	65	7	16	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	5	—	—	—	—	3	—	1(B)	2(B)	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	1,093	31	16	17	9	703	45	6	11	1
Deaths (from influenza)*	192	5	5	—	2	9	—	1	1	—
Pneumonia, primary	—	—	233	46	—	—	—	226	44	—
Deaths	296	34	—	9	11	207	35	—	10	11
Polio-encephalitis, acute	—	—	—	—	—	2	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	14	3	—	—	1	14	—	3	1	—
Deaths‡	—	—	—	—	—	2	—	—	—	—
Puerperal fever	—	—	5	—	—	—	1	9	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| .. ..	96	11	6	1	2	135	8	8	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,191	65	193	108	38	1,196	79	238	28	34
Deaths§	—	—	—	—	—	—	—	—	—	—
Smallpox	4	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	1	—	1	1	—	7	1	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,608	171	222	111	104	3,303	231	45	35	24
Deaths	16	1	3	4	—	14	2	1	—	1
Deaths (0-1 year)	300	43	36	26	7	349	45	46	23	12
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	5,778	781	610	200	133	4,853	741	589	189	130
Annual death rate (per 1,000 persons living)	—	—	—	—	—	—	—	—	—	—
Live births	7,672	1199	940	329	200	8,752	1460	1020	482	293
Annual rate per 1,000 persons living	—	—	—	—	—	—	—	—	—	—
Stillbirths	183	27	32	—	—	226	30	38	—	—
Rate per 1,000 total births (including stillborn)	—	—	—	—	—	—	—	—	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

Medical News

British Journal of Urology

The *British Journal of Urology* celebrates its coming-of-age with important editorial changes. Mr. H. P. Winsbury-White, who had edited the journal since its beginning in 1929, at first in collaboration with the late Frank Kidd and later with the assistance of Mr. A. E. Roche, has retired from the editorial chair to become consulting editor. Mr. David Band will in future edit the journal, assisted by Mr. J. D. Fergusson and Mr. N. M. Matheson, and supported by an editorial committee drawn from all parts of the Commonwealth. The journal will in future be published by Messrs. E. and S. Livingstone, of Edinburgh, and will include original papers from urologists in Britain and the Commonwealth. The issue of the journal for March, 1949, which appears under this new regime, incorporates several improvements in style, with a very high standard of production. The valuable abstracts from current literature and the index of current urological literature appear as usual. The British Association of Urological Surgeons, which was formed in 1945, adopted the *British Journal of Urology* as its official publication in 1946, and its support should assure the future of the journal. British urologists owe a debt of gratitude to Mr. Winsbury-White for his most able editorship for a period of 20 years, as also to Mr. Roche, who has assisted him for the past 15 years.

National Formulary

The *National Formulary* comes into operation on May 1. The Ministry of Health is anxious that the use of the *N.F.* and the pre-war edition of the *N.F.* should be discontinued. The use of old titles which differ from those in the new *N.F.* will inconvenience the chemist and may necessitate reference back to the doctor. It will be a help if all formulae which are not *B.P.*, *B.P.C.*, or *N.F.* are written out in full by the prescriber. Where a formula preparation is being prescribed the new *N.F.* should be used. No formula for linctus diamorphinae is included in the new *National Formulary*. From May 1, a prescription for linctus diamorphinae *N.F.* described by title does not meet the requirements of the regulations under the Dangerous Drugs Acts, and where the preparation of the *N.F.* is required the formula must be written out in full. The Ministry of Health has announced that, in agreement with the medical profession, where linctus diamorphinae or linctus diamorphinae *N.F.* is prescribed by title the new linctus diamorphinae of the *B.P.C.* will be dispensed.

New Radiographic Department at Queen Square

The chairman of the National Hospital gave a dinner on April 5 at the Staff Residence in celebration of the opening of a new radiographic department on the third floor of the building in Queen Square. Among the guests were Dr. S. Cochrane Shanks, consultant adviser in radiology to the Ministry of Health, and Dr. Cecil Teall, President of the Faculty of Radiologists. In a speech after dinner, Dr. Erik Lindgren paid tribute to Dr. Erik Lysholm, of Stockholm, the celebrated neuro-radiologist, who planned and designed the layout of the new radiographic floor. "His tragic death a few weeks after the plans were finished," he said, "robbed medical science of one of its outstanding figures." Dr. Lindgren succeeded Dr. Lysholm as head of the Radiological Department at the Seraphimer Hospital in Stockholm and assisted him in the design of the National Hospital's new department. In thanking all who helped in bringing the scheme to fruition Dr. Hugh Davies, President of the British Institute of Radiology and radiologist to the National Hospital, paid a special tribute to Mr. Shönander, who co-operated with Dr. Lysholm in the manufacture of skull table apparatus. He supplied four, as requested, but would accept payment for only three. He presented the fourth to the National Hospital in memory of his great friend, Dr. Lysholm.

COMING EVENTS

Edinburgh Lectures

In connexion with the postgraduate courses in medicine and surgery a series of open lectures on subjects of wide biological interest will be given during the summer term in the Anatomy Lecture Theatre, University New Buildings, Edinburgh. The first lecture was given by Sir James Learmonth on April 19, on "Reflections on Portal Hypertension." Details of the remaining lectures to be given on May 3, 17, and 31 and June 7 and 21 will be published in the diary column of the *Journal* week by week. All graduates and students are invited to attend the lectures.

Tropical Medicine Course at McGill

A course for the Diploma in Tropical Medicine and Hygiene at McGill University will start in October. Applications should be received by June 1 by the Dean of the Faculty of Medicine, McGill University, Montreal, P.Q., Canada.

Hospital Administrators

The Annual Conference of the Institute of Hospital Administrators will be held at Southport on May 6-7. Papers to be read include "Administrative Problems of the Hospital Service" and "Hospital Development—Present and Future." Information may be obtained from the Secretary of the Institute at Tavistock House North, Tavistock Square, London, W.C.1.

Marriage Guidance Conference

The National Marriage Council will hold a conference, a counsellors' training course, and the annual general meeting at the Esplanade Hotel, Belmont Road, Scarborough on May 14-21. Subjects to be discussed at the conference include sex education, the divorce law, and artificial insemination. Particulars may be obtained from the Conference Secretary, National Marriage Guidance Council, 78, Duke Street, Grosvenor Square, London, W.1.

Hospital Chaplains' Conference

The Annual Conference of the Church of England Hospital Chaplains' Fellowship will be held at St. Edward's House, 22, Great College Street, Westminster, S.W.1, on May 17-18. Clergy doing hospital work will be welcome whether they are members of the Fellowship or not. Information may be obtained from the Rev. J. Gordon Cox, Horton Hospital, Epsom, Surrey.

West London Medico-Chirurgical Society

The annual banquet of the West London Medico-Chirurgical Society will be held at the Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., on Wednesday, May 18, at 7.30 p.m. for 8 p.m. The Triennial Gold Medal will be presented by Lord Moran to Professor R. A. McCance, F.R.S., Professor of Experimental Medicine, University of Cambridge. The Right Hon. Sir Norman Birkett, P.C., and the Right Hon. the Lord Burghley will also speak.

Conference of M.O.s.H.

The County Borough Group of the Society of Medical Officers of Health will hold their annual meeting and conference under the presidency of Dr. R. M. Galloway (Bolton) at "Low Wood," Windermere, on May 6-9. The programme includes talks on "The Working of the National Health Service Act, 1946," by Drs. C. Metcalfe Brown and John A. Guy; on maternity and child welfare; by Mrs. Baker, formerly Matron of St. Mary's Hospital, Manchester; on "Mental Health Service Responsibilities of Part III Authorities under the National Health Service Act, 1946," by Dr. W. Rees Thomas, Ministry of Health; on "The Care of the Deaf in the Community," by Drs. A. W. G. and Irene Ewing; on "The Training of Health Visitors," by Professor I. G. Davies; and on "Medicine—Social and Anti-social—in West Africa," by Professor Andrew Topping. The honorary secretary is Dr. J. Greenwood Wilson, of Cardiff.

Professor J. C. Spence

Professor J. C. Spence, Nuffield Professor of Child Health at Newcastle-upon-Tyne, has been appointed by the President and Fellows of Harvard College as Cutter Lecturer in Preventive Medicine for 1948-9, and will visit Boston to deliver the lecture on May 11. He will serve also as Visiting Physician-in-Chief for a week to the Boston Children's Hospital, and then travel to Canada to deliver the Blackader Lecture in the general session at the Annual Meeting of the Canadian Medical Association in Saskatoon.

Charities Ball

A Charities Ball organized by the Metropolitan Counties Branch of the B.M.A. will be held at B.M.A. House, Tavistock Square, London, W.C.1, on Thursday, May 26, at 8 p.m. for 8.30 p.m. The proceeds will be devoted to medical charities in urgent need of support. Patrons include the President of the Association and the Presidents of the three Royal Colleges. There will also be a cabaret and facilities for bridge. The cost of tickets including a buffet supper is two guineas each. Applications should be sent to the Secretary, the Charities Ball Committee, Metropolitan Counties Branch, B.M.A. House. Contributions to charities from those unable to attend the ball would also be most welcome and should be sent to the same address.

SOCIETIES AND LECTURES

Monday

EDINBURGH UNIVERSITY.—At Physiology Lecture Theatre, University New Buildings, Teviot Place, Edinburgh, May 2, 5 p.m., "The Value of History in Medicine," by Dr. Douglas Guthrie.
INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 2, 5 p.m., "Congenital Defects of the Kidney and Ureter," by Mr. J. G. Sandres.
LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., May 2, 4.45 p.m., "Selective Toxicity with Special Reference to Chemotherapy," by Professor Adrien Albert.

Tuesday

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Anatomy Lecture Theatre, University New Buildings, May 3, 5 p.m., "Anticoagulant Therapy," by Professor H. W. Fullerton.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—May 3, 5 p.m., "Psoriasisiform Eruptions," by Dr. F. R. Bentley.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 3, (1) 11 a.m., "Neurosiphilis," by Dr. H. Nicol, (2) 5 p.m., "Injuries of the Kidney and Ureter," by Mr. A. W. Badenoch.

LONDON UNIVERSITY.—At London School of Economics and Political Science, Houghton Street, Aldwych, W.C., May 3, 5 p.m., "The National Health Service," by Sir James S. Ross (Ministry of Health).

LONDON UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., May 3, 5.15 p.m., "Physiological Properties of Ethyl Alcohol," by Dr. M. Grace Eggleston.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—May 3, 5 p.m., "Malaria with Special Reference to Recent Experimental Clinical and Chemotherapeutic Investigations," Croonian Lecture by Dr. N. Hamilton-Fairley, F.R.S.

WRIGHT-FLEMING INSTITUTE OF MICROBIOLOGY, St. Mary's Hospital Medical School, Paddington, W.—May 3, 5 p.m., "Surface Properties of Bacteria," by Professor E. W. Rideal, F.R.S.

Wednesday

GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—May 4, 8 p.m., "European Vacation," by Professor W. J. B. Riddell.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 4, (1) 11 a.m., "Syphilis of the Skeletal System," by Dr. W. N. Mascall; (2) 5 p.m., "Hydronephrosis," by Mr. H. P. Winsbury-White.

LONDON COUNTY MEDICAL SOCIETY.—At Bethnal Green Hospital, London, E., in conjunction with St. Leonard's Hospital, May 4, 4 p.m., clinical meeting.

Thursday

EDINBURGH UNIVERSITY.—At Anatomy Theatre, University New Buildings, Teviot Place, May 5, 5 p.m., "Developments in the Surgery of the Labyrinth," Honyman Gillespie Lecture by Dr. A. Brownlie Smith.

FACULTY OF HOMOEOPATHY.—At Royal London Homoeopathic Hospital, Great Ormond Street, London, W.C., May 5, "Homoeopathy and General Practice," by Dr. O. E. Manasse.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—May 5, 5 p.m., "Physio- and Electro-therapy," by Dr. R. T. Brain.

INSTITUTE OF LARYNGOLOGY AND OTOTOLOGY, 330, Gray's Inn Road, London, W.C.—May 5, 5.15 p.m., "The Surgical Treatment of Otosclerosis," by Dr. I. Simson Hall.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 5, (1) 11 a.m., "Syphilis in Pregnancy," by Dr. W. N. Mascall; (2) 5 p.m., "Anaesthesia in Urology," by Dr. T. A. B. Harris.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—May 5, 5 p.m., "Malaria, with Special Reference to Recent Experimental Clinical and Chemotherapeutic Investigations," Croonian Lecture by Dr. N. Hamilton-Fairley, F.R.S.

ROYAL PHOTOGRAPHIC SOCIETY MEDICAL GROUP, 16, Prince's Gate, London, S.W.—May 5, 7 p.m., "The Future of Medical Photography," by Dr. R. G. W. Ollerenshaw.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—May 5, 4.30 p.m., "Neurology," lecture-demonstration by Dr. D. J. Williams.

Saturday

BRITISH MEDICAL SOCIETY.—At Department of Biochemistry, University Museum, Oxford, May 7, 1 p.m., 276th meeting.

INSTITUTE OF LARYNGOLOGY AND OTOTOLOGY, 330, Gray's Inn Road, London, W.C.—May 7, 11.30 a.m., "The Rehabilitation of the Deaf," by S. R. Silverman, Ph.D.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Archibald.—On April 11 1949 at 119, Moss Road, Northwich, to May, wife of Dr. R. McL. Archibald a daughter.

Davis.—On April 6 1949 in London, to Renate (née Loeser), M.B., B.S., wife of A. Davis F.R.C.S. a son.

MARRIAGE

Stillel—Baxter.—On April 16 1949, at Dunfermline Abbey, Dunfermline, Scotland. George P. Stillel, M.A., L.R.C.P.S. Ed., D.T.M. & H. Ed., Major R.A.M.C. and Miss Dorcas Baxter, M.B., Ch.B. Ed.

DEATHS

Barker.—On April 20, 1949, Chesman Barker, M.B., of Fair Haven, 9, Pevensey Road, Worthing, aged 80.

Bone.—On April 14, 1949, at the Luton and Dunstable Hospital, John Wardle Bone, LL.D., M.B., Ch.B. Ed., of Rookwood, Luton, aged 79.

Currie.—On April 13, 1949, at 40, Inverleith Place, Edinburgh, John Ronald Currie, M.D., LL.D., D.P.H., F.R.C.P. Ed., Emeritus Professor of Public Health, University of Glasgow.

Correction.—Relying on a press report which we now know to be inaccurate, we erred in recording in our issue of April 16 (p. 688) the death of Dr. William Thomas Baker. In hastening to correct the error we very much regret any distress that this may have caused Dr. and Mrs. W. T. Baker.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Vitamin D and the Skin

Q.—Is it possible to say how much ergosterol is present in the skin, and how much vitamin D is produced after exposure to natural or artificial ultra-violet light? Does the ergosterol in the skin play any major part in contributing to vitamin-D metabolism?

A.—Only traces of ergosterol occur in the skin. It forms about 0.5% of skin sterols, the most important of which are cholesterol and 7-dehydrocholesterol. It is the latter, and not ergosterol, which provides the vitamin D produced by irradiation of the skin—that is, vitamin D₂. It is not possible to say how much vitamin D is produced by exposure of the skin sterols to natural or artificial ultra-violet light, because the amount formed depends, among other things, on the quantity of sebum secreted, the time of exposure, and the concentration of the light rays. It is known, however, that rickets can be both prevented and cured by exposing the skin to ultra-violet irradiation without vitamin D being taken by mouth. Vitamin D appears to be formed by irradiation on the surface of the skin rather than in it, because if the sebum is removed from the skin surface little or no vitamin D is formed.

"Bat" Ears

Q.—What are the latest views on the treatment of "jumbo" ears (whinged pinna)? What operation is performed, and is it wise to correct one ear at a time?

A.—"Jumbo" ears presumably means what are more commonly called "bat" ears. These should be reduced and set back in the proper position by means of careful excision of the ear cartilage and of the skin posteriorly. Both ears are done at once. The operation is far from easy and is best undertaken by an experienced plastic surgeon. The difficulty is, of course, to get the ears evenly placed; even more troublesome is the question of reducing each one in size, for they are usually hypertrophied.

Feeding Difficulties in a Small Child

Q.—What is the best treatment for a child with persistent anorexia? I have in mind a girl aged 4 whose two brothers are at boarding-school, so that for most of the time she is virtually an only child. She shows very little interest in food. She is active and has a lively imagination, but because she is thin and does not gain weight her parents are naturally anxious. They avoid pushing food into her because this results only in vomiting or regurgitation, and they feel that there is a danger of inducing a permanent dislike of certain foods, as happened in the case of one of the parents. The child does not ask for food between meals, and eats few sweets. The standard textbook advice to offer food, and to remove it unconcernedly and without comment if not eaten, appears to be a counsel of perfection, for if this is done she would have no meals. At children's parties the example of other children leaves her unmoved.

A.—It is misleading to consider the symptom of anorexia in isolation. As in adult life worry leads to loss of appetite and digestive disturbances, so in childhood any persistent lack of emotional ease is likely to be reflected in feeding difficulties. Factors affecting a child of 4 lie almost certainly in the home background, and especially in the mother-child relationship. It is significant not only that the parents are anxious about the child's lack of appetite but that this anxiety about food in one parent goes back to childhood and is now reflected upon this youngest child and only girl. It is highly probable that from early infancy parental over-anxiety about feeding has sensitized her to go off her food whenever she is herself anxious. In the absence of her brothers it may be that too much emotional

response is demanded from her, her activity may be the hyperactivity commonly reactive to such a demand. Remedies should be directed to reducing the parents' disturbance by every means possible, and to ending the "only child" position by the companionship of other children in a nursery school or similar group, preferably one where meals are provided. At home the routine of meals should be changed to provide novelty of eating, time, and food, and the "Do-eat-to-please-Mummy" attitude strictly avoided. If these measures are tried without success a child-psychiatrist should be consulted.

Blood-pressure Readings at Altitude

Q.—How does elevation above sea-level influence the readings of a sphygmomanometer of the Bourmanometer type? Is there any formula by which the readings could be reduced to sea-level values in a locality at a considerably higher altitude?

A.—The only effect of altitude on the readings of mercury sphygmomanometers is that due to the decrease in the value of gravity with altitude. At altitudes up to about 10,000 ft (3,000 m) this effect is negligible in comparison with the accuracy obtainable from ordinary sphygmomanometers. Instruments of the aneroid type are unaffected by this change in gravity.

It is useful to keep in mind the distinction between "blood pressure" and "the absolute pressure of the blood." "Blood pressure" as recorded by a sphygmomanometer is the amount by which the "absolute pressure of the blood" exceeds the ambient atmospheric pressure. Since atmospheric pressure varies with altitude, roughly by 25 mm of mercury per 1,000 ft. (300 m), and also changes from day to day, it follows that the "absolute blood pressure" may vary considerably although the observed "blood pressure" may remain constant. This statement is based on the assumption that the pressure on the sphygmomanometer—that is, the pressure in the sleeve applied to the patient—does represent the "absolute pressure of the blood."

Parity and Uterine Cancer

Q.—Is cancer of the uterus more common in women who have borne many children than in women who have had few or no children?

A.—Married women are more likely to die from cancer of the uterus than single women, but it is not possible, from official statistics, to determine whether the risk increases with the number of children the women have borne, since data are not available. The following compares the death rates per million among single and married women.

Age Group	1911-20		1930-2	
	Single Women	Married Widowed or Divorced	Single Women	Married Widowed or Divorced
15-19	14	49	12	39
20-24	89	259	85	215
25-29	296	628	220	473
30-34	537	864	405	654
35-39	608	932	522	817
40-44	709	811	626	856

The improvement during this period in the married women's mortality cannot be attributed to the declining birth rate, since the mortality of single women improved, relatively, at the same rate as that for married women.

Concretion Obstructing Milk Duct

Q.—A healthy woman aged 29 had been lactating normally for five months, when a swelling developed in the upper and outer part of the left breast due apparently to distension of one of the lobules. It was relieved after about 24 hours by expressing from the nipple a shiny white rubbery concretion 3 mm in diameter, during massage of the nipple this object got out, and was followed by a profuse discharge of milk from the affected duct. The obstruction occurred almost daily for the next two months affecting always the same duct. On some days as many as a dozen concretions would be expressed. At no time did infection arise although the engorgement was often prolonged and painful. The duct has now given no trouble for

several weeks. Lactation was normal after a previous pregnancy. What are the pathology and significance of the condition?

A.—The condition described is clearly one of milk engorgement of a lobule of the breast secondary to an obstruction of the main duct. The unusual features about the case are, first, the development of the trouble so late in lactation (it usually occurs in the earlier weeks) and, secondly, the character of the obstructing agent. The commonest causes of obstruction to a breast duct are either inspissated milk or a keratin plug at the skin orifice. White rubbery concretions must be an exceedingly rare cause of duct obstruction. The presumption is that they were derived either from inspissated milk or from a keratin plug. In view of the fact that the duct has now given no trouble for several weeks, and of the normal lactation after the previous pregnancy, it would be reasonable to hope that a subsequent lactation would be normal.

Sterilizing Syringes for Procaine Penicillin

Q.—The instructions for giving procaine penicillin specify the need for a dry sterile syringe and needle. How could this best be obtained under busy general-practice conditions?

A.—The only preparation of procaine penicillin should not be mixed with water, which may dissolve out some of the penicillin, a dry syringe is therefore recommended for injection. For the general practitioner the syringe may be sterilized by boiling in the evening and after assembly placed in a sterile glass tube of such a diameter that the flange of the syringe rests on the top of the tube. The syringe is then secured by a piece of adhesive cellulose or Scotch tape. Needles are similarly sterilized and can be left in small sterilized plugged test tubes with the mount resting on the bottom of the tube. During the day the syringe, provided it is used only for injections of penicillin, need not be re-sterilized, but a fresh sterile needle must be used for each injection. For further advice about the sterilization of syringes the Medical Research Council Memorandum No. 15, issued by HMSO (price 4d), may be consulted.

Proctalgia Fugax

Q.—Could you give me the latest information on the aetiology, course, prognosis, and treatment of proctalgia fugax?

A.—By proctalgia fugax is meant a pain, located in the rectum, occurring in attacks which last from a few minutes to an hour and often make their appearance at night. The symptom is without organic basis, and, because it commonly attacks middle-aged tired, overworked, and over-anxious men, many doctors are among its victims. It has been described as a "visceral neurosis," but the pain must arise in some neuromuscular disturbance in the rectal wall, because many sufferers have found that distension of the rectum relieves it instantly. The symptom will often recur during periods of anxiety or emotional stress. General measures aimed at control of the factors noted are the basis of treatment. It is important to maintain a regular bowel habit. Sedatives may ensure an undisturbed night in minor cases, many sufferers are forced to use some local means of relieving the pain, such as distension of the rectum with air or saline by a Higginson's syringe. Sometimes a glycerine suppository is effective.

Indications for Thyroidectomy

Q.—Is thyroidectomy ever called for in the absence of symptoms of thyrotoxicosis? A married woman aged 41, not yet at the menopause, has for two years had a moderate degree of enlargement of both lobes of the thyroid. No cysts are present in the substance of the gland which is soft and uniform in texture. There are no signs of thyrotoxicosis but it has been suggested that a hemithyroidectomy should be performed. Is this advisable?

A.—This patient would seem to have what in old terminology was called a small parenchymatous goitre. As its consistence is uniform, and there are no pressure signs and no evidence of toxicity, it would seem that the only possible grounds (and these are slender) for advising operation would be appearance. Even in this case a hemithyroidectomy would certainly not

produce the required result. Such a goitre as that described in a patient aged 41 obviously needs to be kept under observation, but in the absence of signs and symptoms no operative treatment would appear to be indicated at present.

Terpenes as Industrial Hazards

Q.—I am medical adviser to a chemical factory producing insecticides. It is proposed to subject pinene, terpene, and camphene to chlorination by exposure to chlorine gas, and I have been consulted about the potential danger of absorption through the skin to workers or customers. The product would be used as an insecticide spray. I would be glad of any information.

A.—The substances named are constituents or derivatives of turpentine oils, and consist of the essential or volatile oils of numerous plants. Camphene, a colourless crystalline terpene, is prepared from pinene hydrochloride by treating with alcoholic potash. The irritant action of terpenes on the skin is well known. Chlorinated camphene is highly effective against the codling moth and Mexican bean beetle and also against human body lice. In the latter case, human research subjects wore arm and leg coverings which had been treated with chlorinated camphene in concentrations of 0.0025% in an inert base, and under which lice were also placed. All the lice were killed, but apparently no damage was suffered by the human volunteers with this low concentration. No toxicological study has as yet been published regarding the effects of chlorinated terpenes on the human subject, though their insecticidal effect is well established. There may be a toxic risk in the manufacture and handling of the concentrated material, and it would be wise to exercise precautions until experiment has shown that there is no danger, especially since highly chlorinated phenols, diphenyl, and naphthalene are known to have certain toxic properties. For the effects of chlorinated camphene on insect pests the recent papers by Stearns and others (*J. econ. Ent.*, 1947, 40, and 1948, 41) should be consulted.

Infertility

Q.—What is the explanation of the following case of infertility? The husband's post-coital urethral smear shows normal active spermatozoa. In the wife's vaginal-vault specimen one hour after coitus all spermatozoa are dead and show swollen heads. There is no leucorrhoea, and the hysterosalpingogram is normal.

A.—The important factor is the condition of the spermatozoa after they have invaded the cervical mucus plug. Provided the test is made at about the time of ovulation, the cervical mucus should be well populated by active spermatozoa for many hours following coitus. If spermatozoa are few or immobile, the failure may be caused by factors in the cervical mucus, but is more likely to be due to initial seminal deficiencies. It is not possible to judge seminal efficiency merely by finding active spermatozoa: their quantity, longevity, mobility, and the proportion of abnormal sperms are the diagnostic features. The inquirer might refer to *Problems of Fertility in General Practice*, by Margaret Jackson *et al.* (1948, Cassell).

Tonic Effect of Neoarsphenamine

Q.—Has neoarsphenamine any virilizing effect or does it act as a tonic when given to a healthy individual?

A. The writer knows of no evidence that neoarsphenamine increases virility, but it is a common observation that it has a marked tonic effect on patients suffering from syphilis. Whether this is due to a direct effect of the drug on the patient or to its antisyphilitic therapeutic effect is not clear, since the drug is rarely used, except in comparatively low dosage, in conditions other than syphilis.

Oxyuriasis

Q.—Would suppositories of gentian violet be efficacious in the treatment of oxyuriasis? My impression is that none of the regular treatments in this country is specific.

A.—In cases of infection with *Enterobius vermicularis* several members of the same family are usually infected, this communal infection being maintained by the ingestion of infective eggs, both by direct transfer from hand to mouth and by scatter

in dust. The larval worms, together with the adults of both sexes, occur in the small intestine, but the females, when gravid, make their way to the rectum and from there pass through the anus to lay their eggs on the perianal skin, a proportion of the "spent" worms regaining the rectum. Treatment with suppositories containing gentian violet would thus affect directly only the gravid females in the rectum and not those higher up in the colon. Though gentian violet may be absorbed by the rectal mucosa and excreted in the gall-bladder, as is suggested by the destruction of liver flukes after oral administration, it seems unlikely that a high concentration in the gut would be attained.

NOTES AND COMMENTS

Leukoplakia and Kraurosis Vulvae.—Mr. STANLEY WAY (Newcastle-upon-Tyne) writes: Dr. Elizabeth Hunt (March 5, p. 422) attempts to defend her untenable thesis concerning the value of excision of the leukoplakic vulval skin as a prophylaxis against cancer, and again repeats her erroneous claim that when cancer occurs in association with leukoplakia only the mucous surfaces are involved with tumour, and she calls to her aid two rather ancient references. Even though Blair Bell states that cancer has never been observed in extragenital lesions, I hardly think that this supports Dr. Hunt's thesis, for I do not think that Blair Bell would include the skin of the labium majus as extragenital; in fact in the earlier editions of his textbook (1910 and 1917) he states (p. 411 in both editions) that leukoplakia is pre-malignant and may spread from the vulva to the skin of the neighbouring structures. Dr. Hunt has not correctly followed the statement I made concerning my recent personal experiences. Indeed, on reading again my letter I feel that some ambiguity may arise from my wording, and I would like to repeat my figures more simply: total cases, 20; tumours involving mucous surface only, 2; tumours involving both surfaces, 6; tumours involving skin surfaces only, 12.

Because Dr. Hunt has never seen cancer associated with leukoplakia arising on the skin of the vulva, that does not appear to me a valid reason for her to adopt an ostrich-like attitude and deny its existence. Since writing my first letter I have operated on two further patients who showed small cancers limited to the outer surface of the labium, both of which were associated with leukoplakia. Dr. Hunt hopes that few people will have undergone what she describes as the "ordeal" of Taussig. She will no doubt be horrified to learn that I regularly carry out this operation, not only as a prophylactic against cancer but also to relieve women from the intolerable symptoms of leukoplakia; and I shall continue to do it until some effective alternative as a cure for leukoplakia is forthcoming. As a gynaecologist, I often see these women after the dermatologist has failed to cure them, and the only "ordeal" which many of the patients go through is that of going from dermatologist to dermatologist, from ointment to ointment, and from x-ray tube to x-ray tube, until in the end they either go mad or develop cancer. Finally, I would suggest that Dr. Hunt joins with me in persuading the Sections of Pathology, Dermatology, and Gynaecology of the Royal Society of Medicine to set up a committee to thrash out this vexed problem of terminology which is causing so much confusion at the present moment.

Family Planning Association.—The general secretary states that the address of the Family Planning Association's Seminological Centre is now 64, Sloane Street, London, S.W.1. Extension of the facilities previously provided (for the investigation and treatment of male subfertility) will include a laboratory for the diagnosis of early pregnancy. The results of the pregnancy test will normally be available within 24 hours of receipt of the specimen of urine. Practitioners wanting to avail themselves of these services or to refer patients are invited to write to the director of the laboratories at the above address. Introductory forms for patients will be sent on request.

Correction.—In the paper entitled "Medical Fitness for Air Travel," by Sir Harold Whittingham, Dr. A. Buchanan Barbour, and Wing Commander J. C. Macgown (April 9, p. 603), the words "into each site" should be deleted from the sentence, "Pneumo-peritoneal refill cases should not have more than 2,000 ml. of air introduced into each site." The same words should be deleted from column 2 of the Table at the cross-heading "Pneumoperitoneum" (11, viii).

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atiology, Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Brimedads, Westcent, London.* MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, EUSTON 2111. TELEGRAMS: *Medicero, Westcent, London.* B.M.A. SCOTTISH OFFICE: 7, Drumshugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY APRIL 30 1949

THE SECRETARY REPORTS

LETTER FROM A DIVISION CHAIRMAN

The chairman of a Division with a fine record of service to the Association has felt impelled to send a personal letter to the members of his Division. It is of more than local interest, and is reproduced here in full.

Dear Sir,

There was a meeting of the Division of the B.M.A. last Sunday out of a possible attendance of 157, exactly 19 practitioners attended. There was no apology. As you received an agenda paper there is no need for me to emphasize the importance of the meeting.

Naturally the paucity of the attendance caused comment, and four explanations were proffered. First, that the men in the Division were so satisfied with the conditions of service that no change was expedient, or, secondly, that doctors were so overwhelmed with work that they could not possibly spare the time to attend even so important a meeting as this. Both these suggestions were received with derision. The third explanation, that the Division placed such confidence in its executive that even a formal assent to the policy advocated would be supererogatory, though flattering to the officers concerned, was rejected by them as contrary to every known trait of the medical profession.

The fourth explanation, and the most reasonable, was that a condition of complete and profound apathy pervaded the bulk of the doctors.

After forty-four years' service to my colleagues in the B.M.A. I feel that I am entitled to a little plain speaking. The Association is essentially democratic. All its actions are governed by the whole body of medical practitioners expressed at Divisional meetings throughout the country. Each Division elects its officers and appoints a representative, who is charged with the duty of expressing the will of the Division at the meeting of representatives. This meeting considers an agenda consisting of resolutions emanating from the Council of the B.M.A. together with amendments and further resolutions sent up by individual Divisions. The Council's resolutions are matters referred to it by a previous Representative Meeting and matters which arise between such meetings. The Council is self-elected and has power to institute the most complete investigation in all matters in its purview, calling in expert and professional advice wherever this is indicated as necessary. The amount of work done by the Council is literally enormous and involves a heavy rain on its members, whose services are entirely unpaid. This important fact—the full and complete analysis and scrutiny of any matter put before it—is not infrequently overlooked by Divisions which lightly-heartedly burden the agenda paper with resolutions which little knowledge of the facts would have shown to be foolishly vague. There is no excuse for this, because full data are published in the *Journal*, and any member who has failed to grasp the full implication of a resolution can always seek enlightenment from one of the Divisional officers at the meeting.

Don't imagine for a moment that even a Divisional officership is sinecure far from it, and I speak, as I have said, with over forty years' experience. The work is often tedious and exacting and frequently thankless.

Now, are you doing your share? Are you assisting in the task of putting State medicine on a proper basis or are you just letting time slide? The very least you can do is only as some mark of appreciation for the unpaid work of your fellow doctors on your behalf, is to turn up to the meetings and take an intelligent interest in the matters under discussion. Make every possible effort to attend. I know that sometimes—but not really often—this is impossible. In such case, let the honorary secretary—please note the word honorary—know so that I may absolve you of apathy.

We are frequently asked to test the feeling of general practitioners in our Division on important matters of policy. How can we do

this if we have to report that 8% of our members approved unanimously, 92% did not turn up to the meeting and their wishes are accordingly unknown?

Please think this over. We shall inevitably have important meetings ahead. Do your bit.

Yours sincerely,
Chairman,
Division B.M.A.

Payment for Treatment of Miscarriages

In its determination to secure satisfactory terms and conditions of service the General Medical Services Committee continues to press upon the Ministry a number of points which have emerged during the early months of the new Service. For example, it was reported in these columns in January that the committee was contesting the Ministry's view that treatment for a miscarriage should be regarded as part of the ordinary obligations of a general practitioner under his terms of service. In order to meet the situation where a doctor is called in (otherwise than by a local health authority midwife) to deal with miscarriage in a woman with whom he has not made prior arrangements to provide maternity medical services (or to deal with some other Part I emergency in similar circumstances), the Ministry has agreed to allow form EC 24 or 24A to be completed afterwards so as to enable the doctor to claim payment of the Part I fee, provided that the miscarriage (or emergency) occurs after eight weeks from the beginning of pregnancy. Before that time any case requiring treatment would be dealt with as an emergency under ordinary general medical services.

If the doctor called in is not a general practitioner obstetrician and not the patient's own N.H.S. practitioner (or his deputy) the former would hand over responsibility to the latter as soon as possible; the latter would claim the appropriate fee, to be divided up with his colleague by mutual agreement.

The Ministry has agreed that emergency confinements will qualify for Part II payments by the same procedure, provided that the woman had not booked with any other doctor and that the doctor was not called in by a local health authority midwife. If the doctor called in is not a general practitioner obstetrician and not the patient's own N.H.S. doctor (or his deputy), the position as regards claiming and apportioning the appropriate fee would be the same as that described for miscarriages.

Bulk Prescribing

The question of bulk prescribing for residential schools and institutions has also been under discussion. The Ministry's first reaction was that provision could be made for the prescription on a single form of drugs needed for a number of persons, the number to be specified by the practitioner. The G.M.S. Committee objected to the suggestion that the prescription should relate to a precise number of people. It argued that if there was to be economy in public funds from bulk prescribing the practitioner should be able to prescribe for the school or institution as a whole and should not be limited to the actual number of persons in respect of whom medicines, etc., are necessary. The Ministry has accepted this proposal in principle. It has not, however, agreed to the inclusion of dressings in the bulk arrangements; it expects that every home or institution would carry a small stock of equipment of this kind for its own purposes.

National Health Service

INCIDENCE OF SICKNESS

Some have thought that there has been a large increase in the number of persons consulting a doctor since the Health Service started last July. Among the suggestions for this rise are that it is partly due to an increase in the number of women and children seeking advice and partly because treatment is sought for minor ailments more frequently than before. The December issue of the quarterly return of the Registrar-General includes the Survey of Sickness for the September quarter of 1948. The experience of this quarter may be compared with that of the corresponding quarter of 1947. A slight rise in sickness has occurred among adults; the percentage of persons interviewed, aged 16 and over, who reported no sickness during the month was 31.0 for the three months in 1947 and 29.4 in 1948. The rise in sickness was reported by persons of working age and occurred in each of the three months. The distributions are as follows:

TABLE I.—Percentage of Persons Interviewed Who Had an Illness during the Month

	1947		1948	
	Ages 16-64	Ages 65+	Ages 16-64	Ages 65+
July	69.0	85.1	73.0	81.3
August	65.9	83.0	69.3	80.0
September	64.9	83.6	67.2	84.2
Average	66.6	83.8	68.7	81.8

The increase in incidence was accompanied by an increase in the number of medical consultations and by a rise in the proportion of sicknesses which incapacitated for one day or more, as Table II shows.

TABLE II.—Percentage of Illnesses among Persons Aged 16 and Over

	Medical Advice Sought		One or More Days of Incapacity	
	1947	1948	1947	1948
July	14.2	15.7	6.0	6.7
August	13.0	14.8	5.2	7.1
September	11.9	14.9	5.9	7.6
Average	13.0	15.1	5.7	7.1

The increase in medical consultations was due to the females, who showed an increase in each of the three months, while the males showed a decrease (Table III).

TABLE III.—Medical Consultations per 100 Persons Aged 16 and Over

	Females		Males	
	1947	1948	1947	1948
July	37.0	43.8	36.3	36.0
August	36.3	39.2	33.8	32.1
September	35.0	42.3	33.4	30.8
Average	36.1	41.8	34.5	33.0

An examination of the age distribution of the females (Table IV) shows that the increase in consultations was mainly due to the older women.

TABLE IV.—Percentage of Women Interviewed Who Consulted a Doctor during the Months July-September

Ages	1947	1948
16-	29.8	30.7
25-	29.5	30.4
35-	30.4	33.7
45-	37.7	46.6
55-	48.4	51.3
65-	41.1	55.7
75-	57.9	78.4
All ages	36.1	41.8

The Survey of Sickness shows that, compared with the corresponding quarter of the preceding year, an increase of about 4% has occurred in the numbers of adults seeking medical advice. This is a smaller increase than would be expected from individual doctors' reports, but no account has been taken of sickness among children, which may account for the difference. The increase has been due to the females, and the rise has been largest among the older women. This is not quite in accord with expectation, which was that a considerable part of the increase was due to women with families, mother and child both attending as patients more often now than in the past.

NUMBER OF PRESCRIPTIONS

The Ministry of Health has supplied the following information on the prescribing done by doctors in England only from July to Sept. 30, 1948.

	July 5-31	August	September (Partly Estimated)
No. of patients on doctors' prescribing lists	33,501,762	33,501,762	33,501,762
Total no. of prescriptions	10,059,903	11,088,781	12,668,408
	£693,123	Not available	Not available
	£525,771	Not available	Not available
	£104,743	£115,317	£131,746
Total prescription costs	£1,323,637	£1,471,386	£1,677,984
Average cost per prescription	31.578d.	31.844d.	31.789d.
Average no. of prescriptions per patient on doctors' prescribing lists	0.300	0.311	0.378

The Ministry adds that it has no exact figures for the number of patients on prescribing lists. It has taken the estimated number of people who decided to make use of the general medical services and assumed that 90% of them are on prescribing lists, 90% being approximately the percentage under N.H.I.

The figures show an average of one prescription for each patient on doctors' prescribing lists for the quarter ending Sept. 30, 1948.

HIGHLANDS AND ISLANDS

The Standing Advisory Committee on Health Services in the Highlands and Islands held its first meeting on April 8 and elected Councillor Donald Macpherson chairman and Dr. Isaac Maciver vice-chairman. (Members were listed in the *Supplement* of March 5, p. 123.) The committee is to advise the Secretary of State on problems in the Highlands and Islands. It will meet next at Inverness on May 14.

N.O.T.B. ASSOCIATION

The N.O.T.B. Association, representing 594 ophthalmic medical practitioners and dispensing opticians, held its first General Meeting on April 1. A resolution was unanimously passed by the medical members urging a fuller representation of the part-time ophthalmic medical practitioner, and ophthalmic medical practitioners solely concerned in the Supplementary Ophthalmic Service, on the Ophthalmic Group Committee of the B.M.A. and the Ophthalmic Negotiating Committee.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar

Non-County Borough Councils.—Dartford, WallSEND.

Urban District Councils.—Denton, Droylsden, Houghton-le Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

GENERAL MEDICAL SERVICES COMMITTEE

ARBITRATION AND SPENS

At a meeting of the General Medical Services Committee held on April 21 at B.M.A. House the chairman, Dr. S. Wand, gave a report of the unsatisfactory meeting which the committee's representatives had had with officials of the Ministry on the remuneration of general practitioners, and referred to a statement from the Ministry that "it must not be assumed without further discussion that participation in the Whitley machinery necessarily involves, in the event of disagreement, the right to resort compulsorily to arbitration on all subjects."

Before the committee considered the business of the meeting members stood in silence for one minute in tribute to the late Dr. Bone, and a message of sympathy has been sent on its behalf to Dr. Bone's relatives.

The committee also received with regret the resignation owing to pressure of other work of Dr. J. Hallam, and expressed appreciation of his assistance on this and the Insurance Acts Committee.

Giving his report of the meeting with representatives of the Ministry of Health on April 14, at which the committee's representatives presented a memorandum on the inadequacy of the central pool and its distribution, the chairman said that it was very unsatisfactory. The Ministry did not discuss the document at all. Despite the statements made in the House of Commons, the Ministry said it was unable to state precisely how many doctors were in the Service. It was asking executive councils for information on this and the total remuneration received by general practitioners from National Health Service funds, and they anticipated that this information would be available about the middle of May. Until the Ministry had this information it could not state whether Spens was being applied, and it could give no assurance that any adjustment which might be made would be retrospective to the appointed day.

After referring to the Ministry's statement that Whitley machinery did not, in all circumstances, carry the right to arbitration, Dr. Wand pointed out that the profession had always understood that on matters of remuneration arbitration could be claimed. Dr. Dain (Chairman of Council) indicated that, had they known it was not, a different decision might have been made about joining the Service.

The Ministry estimated that about £49.41 million was being received by general practitioners, a sum which included inducement money, additional mileage, superannuation, and other remuneration, such as maternity fees, grants for trainee assistants, etc.

The Chairman of Council, who was also a member of the deputation to the Ministry, agreed that the interview was "very unsatisfactory." The Ministry was obviously aiming to meet the profession's claims by the suggestion that it was already implementing Spens, and it would not agree to any adjustment or discussions until its present inquiry had been completed.

"We must wait until the Government knows the numbers in the Service," continued Dr. Dain. Then it would be for the committee to decide whether Spens was in fact being implemented. If it was not they should ask for the matter to be put to arbitration; there the Association could develop the argument for the betterment factor in public. Whitley machinery or no Whitley machinery, they should ask for arbitration. The Ministry had stated that it must not be assumed, without further discussion, that Whitley machinery necessarily involved the right to resort compulsorily to arbitration "on all subjects." "But," remarked Dr. Dain, "we never asked for arbitration on all subjects, but on remuneration it was essential."

Dr. W. Jope thought a firm stand should be taken against the Ministry's attitude that whether they had been underpaid or not the 1948-9 period was finished and they would get no more money for it.

Dr. H. H. D. Sutherland felt the ground for a probable dispute with the Government should be prepared at once. The view that the profession should be taken into confidence

and work done on public relations was also expressed by Dr. F. M. Rose.

Dr. J. A. Brown recalled that at an earlier meeting at the Ministry the Minister had been asked whether remuneration was an appropriate matter to bring before a Whitley Council, and Mr. Bevan replied: "Yes." "His promise did not seem to have any strings to it," said Dr. Brown, "and he should be held to it."

Summing up, the chairman remarked that the Ministry could have given the profession what it asked, or given a smaller sum, or nothing at all. In fact, the Ministry gave nothing at all—and raised the crucial issue of arbitration. "Although the discussions with the Ministry had been unsatisfactory," said Dr. Wand, "I think the Ministry has underestimated the feeling of the profession on arbitration. On this question we have got the consultants, the public health people, and the nurses with us."

The committee then passed the following resolution, to be sent to the Ministry of Health, local medical committees, and (for their information) to the Public Health Committee and Consultants and Specialists Committee:

The committee records its dissatisfaction with the Ministry's inability to state, nine months after the appointed day, the number of principals taking part in the Service, and the statement that, in so far as the pool may prove to have been inadequate for the first nine months of the Service, any increase may not be adjusted retrospectively to the appointed day.

In view of the statements made by responsible Ministers prior to the appointed day, the committee is of opinion that the Ministry's view that disputes concerning remuneration referred through Whitley machinery do not carry the right of arbitration on either side is a gross breach of faith.

In considering the Executive Subcommittee's report, the committee passed a resolution expressing concern at the delay in bringing forward the amending Bill.

The subcommittee considered it was "not in the interest of private practice that facilities for seeing private patients should be available at health centres." A number of members of the committee, however, pressed for the right of private patients to be seen at health centres if they and their doctor wished it and subject to any safeguards that they should not receive preferential treatment. The matter was referred back. Dr. A. T. Rogers also raised the question of what might happen if a doctor gave up a lock-up surgery to go into a health centre and the local executive council allowed another doctor to take over his premises. This was referred to the executive subcommittee.

The subcommittee's attention had been drawn to a letter issued by a regional liaison officer of the Ministry of Health stating that the executive council could, under certain circumstances, acquire compulsorily an outgoing doctor's premises. Legal advice is being sought to find whether councils have in fact this power.

On the question of certificates for corsets, it was explained that a certificate was still needed if the garment was made with certain materials. It was agreed to take the matter up.

Dr. A. T. Rogers presented the minutes of the Subcommittee on the Training of Assistants, of which he was chairman. The subcommittee reported that the Ministry's scheme was primarily for the benefit of the trainee and should be regarded as such. Any financial benefit which the principal might hope to derive from the help given by the assistant could and should be met in other ways. The present scheme should be reviewed within 12 months of its commencement.

The report of the Rural Practitioners Subcommittee was given by its chairman, Dr. J. C. Pearce. The subcommittee considered that areas with geographical difficulties should be given extra payment for mileage. The committee agreed with a recommendation from the subcommittee that a practitioner practising in an area where a mileage scheme normally operates, whether he is on the obstetric list or not, should be entitled to a single payment for each maternity case booked, at the rate of 3s. per mile (outward) over two miles from the practitioner's residence to the patient's address, such payment being a first charge on the Central Mileage Fund. The subcommittee thought that, having regard to the alternative open to doctors

of being paid for dispensing on the drug tariff, no action should be taken on a motion from Hexham at the Special Representative Meeting in March calling for an increase in the dispensing allowance. The Ministry of Health has agreed to claims for special payment where the cost of dispensing for a patient is abnormally high, the minimum now to be 20s. a quarter instead of 10s. under National Health Insurance. The committee is asking that the 10s. minimum be retained.

The minutes of the Scottish Subcommittee were received. One resolution called for priority treatment under the Supplementary Ophthalmic Service; this is to be discussed with the Department of Health.

A letter from the Ministry referring to the treatment of foreign visitors under the National Health Service declared that there was "no question of change of view or of a Government Department 'making or breaking the law.'" In discussion members complained that people on extended visits abroad were being taken off their doctor's lists, although their absence was only temporary.

A resolution from the Private Practice Committee asked the committee to consider a War Office suggestion that officers and men who fell sick on leave should be treated as "temporary residents." The committee favoured adhering to existing arrangements.

The committee received with concern the decision of the Ophthalmic Group Committee not to take any action in the matter of provision for an appeal against the decision of the Ophthalmic Qualifications Committee, and asked the Group to reconsider their view and allow members of the General Medical Services Committee to discuss the matter with them.

The chairman described as "not satisfactory" a refusal by the Board of Inland Revenue to make any general arrangements for the collection of tax from doctors by quarterly instalments, but said if any doctor had difficulty in paying owing to reduced earnings he could discuss the matter with the Inspector of Taxes, and any local refusal would be taken up centrally by the Association on the basis of the letter. The Chancellor had declined to recognize that conditions under the National Health Service were comparable to those in the war. The committee asked for evidence of specific cases of financial difficulties, on which the Association could ask the Ministry of Health to advise the Chancellor to alter his attitude.

Arising out of a motion passed at the last Annual Conference which the committee had sent to the Central Consultants and Specialists Committee for their observations, the committee decided that a practitioner should be able to engage a consultant for domiciliary consultation either through an official channel or directly, as he wished.

It was announced that the Central Consultants and Specialists and Public Health Committees agree to the setting up of a joint subcommittee with the General Medical Services Committee on the report of the Working Party on Midwives.

National Insurance Defence Trust

As Trustees of the National Insurance Defence Trust, the Committee voted £500 to start the funds of the British Medical Guild. Dr. W. D. Steel felt it might be better to choose the executives of Divisions as local executives of the Guild. The chairman explained, however, that the view had been expressed that the Guild should not have the same constitution as the Association all the way through; some doctors in an area who were not members of the Association might not regard the executive of Divisions as the proper "task force" to raise subscriptions from all medical men and women. The committee postponed further consideration of the Guild until its next meeting.

It was agreed that under the new Trust Deed a simple majority of the trustees (that is, the members of the General Medical Services Committee) should be sufficient to vote sums up to £1,000, and that for sums over £1,000 a quorum of 50% and a majority of two-thirds of those present and voting should be necessary. Further legal advice is to be obtained before the present arrangements are formally wound up and the new Trust established. The chairman suggested that in the future the Trust should continue to raise funds from general practitioners and vote sums to the Guild as desired.

PRIVATE PRACTICE COMMITTEE

The Private Practice Committee met at B.M.A. House on April 20, with Dr. I. D. Grant in the chair.

A number of items on the agenda concerned increased fees for medical examinations. Communications from the Ministries of Labour and National Service, Pensions, and National Insurance contained proposals for mileage payments of 1s. per mile, with a maximum of 20s., for any one journey for doctors attending panels and boards. In view of the urgency, these proposals had been accepted by the chairman on behalf of the committee and took effect from March 17.

The Admiralty has agreed to pay 25s. for the medical examination of candidates for Civil Service appointments.

Territorial Army

There was some discussion about medical examination of recruits for the Territorial Army. The chairman said the War Office agreed that where possible these examinations should be carried out by medical boards, and arrangements would be made to use the boards administered by the Ministry of Labour and National Service. In exceptional circumstances, however, such as in rural areas, it might be necessary for the examination to be made by a single practitioner. The committee agreed that it was most desirable that the Pulheims examination should be carried out by a board wherever practicable. The Association had suggested £1 11s. 6d. as the fee for such an examination; the War Office doubted whether the Treasury would sanction more than £1 1s., as the fee had already been raised to 10s. 6d. The committee agreed to give further consideration to this question when the reply of the War Office was received. The Chairman of Council (Dr. H. Guy Dain) explained that any proposal received regarding fees would go first to the Co-ordination Committee for their examination.

The committee again considered the medical report required by licensing authorities in the case of applicants to drive public service vehicles. A letter from the Ministry of Transport stated: "I believe the Association and the Ministry are at one in desiring a uniform and reasonably low fee . . ." for such a report, and asked for suggestions. The committee agreed that, as the fee for this report would ordinarily be paid by the applicant and was therefore a matter between doctor and patient, no recommendation as to fee should be made.

The committee considered that the fee for a "certificate of health" required for prospective employees of a certain county council—a matter raised by the Yorkshire Branch—ought to be paid by the employing authority.

A reply from the Treasury stated that the purpose of the new Treasury Health Service would be to advise Departments, regarding the health of individual officers and on environmental and working conditions in relation to the health of the staff, and to provide emergency attention in cases of accident or sudden illness occurring on Government premises. The committee agreed to a scale of fees for local Treasury medical officers.

Criminal Justice Act

It was reported that practitioners had been asked to make examinations of prisoners under Section 26 of the Criminal Justice Act, 1948, for a fee of £1 1s. and that appropriate action had been taken to inform these practitioners that in the view of the Association the fee for this service should be £2 2s. In reply to a question the view was expressed that when a local medical committee was asked to help in forming panels for work of this or any other kind the fairest way was for them to circularize all general practitioners, who could then apply or not, as they wished.

A letter from the National Deposit Friendly Society stated that, despite the National Health Service, the Society wished to continue to pay grants in aid to its members in respect of private doctor's bills. The committee approved the Society's proposals in principle and decided to recommend that doctors who did not do their own dispensing should make arrangements with the chemist regarding the supply of medicines.

so that the patient might receive an inclusive account. The patient would pay the doctor and receive from the Society the grant-in-aid to which he or she was entitled.

It was agreed that, when a statement of the future policy of the National Coal Board with regard to the terms of service of part-time colliery medical officers had been obtained, a conference of part-time colliery medical officers should be called to discuss the method and rates of remuneration. This had been recommended by a joint subcommittee of the Private Practice and Occupational Health Committees. It was revealed that there is at the moment much variation of practice in different divisions of the board.

Further discussion took place on the recommendation that a distinctive motor badge should not be made available to members of the Association, but the committee saw no reason for changing its views. The chairman thought they had fulfilled the remit from the Representative Meeting, for they had had a badge designed, which could be available for inspection at the meeting at Harrogate.

Questions Answered

Study Leave

Q.—Employed in a National Health Service hospital, I am training to become a specialist. Am I entitled to any time off work (in addition to my annual vacation) in order to sit an examination (a) in my chosen specialty, and (b) in general medicine—i.e., for a higher medical qualification?

*A.—*The proposed terms and conditions of service of hospital medical and dental staff (Supplement, March 19) contain provisional proposals for "study" leave. Professional examinations are included in the purposes for which such leave may be granted. Study leave additional to annual leave cannot be claimed as a right but may be granted for periods up to seven days

(1) without pay or expenses, at the discretion of the board of governors or hospital management committee;

(2) with pay, but with or without expenses, at the discretion of the board of governors or regional hospital board, subject to certain qualifications regarding the payment of expenses. Authority to grant leave with pay but without expenses may be delegated to the hospital management committee.

For periods between seven days and three months study leave may be granted with or without pay and expenses at the discretion of the regional hospital board or board of governors, again subject to the conditions regarding the payment of expenses. Periods of study leave in excess of three weeks involve the surrender of a proportionate amount of annual leave. Periods of study leave with pay in excess of three months may be granted only with the sanction of the Ministry of Health.

Dental Anaesthetics in Hospital

Q.—I recently administered an anaesthetic for a dental case in a hospital. The dentist, under his contract with the hospital, is entitled to a fee of 2 guineas plus mileage, as the case was an emergency to which he was summoned by the hospital. I am informed that as I hold no specialist appointment for anaesthetics my remuneration is covered by the £25 per bed staff fund. Dental anaesthetics in the dentist's surgery are regarded as outside the terms of service and are the subject of special payment. I submit that dental anaesthetics in the hospital should likewise be subject to special payment. Am I correct?

*A.—*A general practitioner appointed to the staff of a cottage hospital is required to attend his own patients in the hospital, sharing with the other members of the staff any attendance on the patients of practitioners not on the staff and taking the appropriate share in any necessary emergency in-patient or out-patient work. In order to provide remuneration for this work the hospital management committee creates a staff fund by making a payment of £25 per annum for each bed occupied on the average in the hospital, and the fund is shared between the general-practitioner staff as they may themselves determine.

An anaesthetic rendered for a dental emergency would be regarded as part of the normal in-patient work undertaken by the general practitioner for which he is remunerated out of this staff fund.

Compensation

Q.—I have received the compensation value of my practice under Section 36 of the National Health Service Act, but not the number of years purchase payable to me. Will the increased number of doctors serving lessen the compensation originally calculated at 1½ years? If so, is it known by how much?

*A.—*It is impossible for the time being to determine the rate, expressed as years' purchase, applicable to individual assessments. The factor to be applied to the annual loss cannot be ascertained until the aggregate of all claims is known. The increased number of doctors serving does not necessarily affect the calculations, since compensation is payable only to those who were on the list of executive councils on July 5, 1948.

Prescribing Syringes

Q.—What are the arrangements under the N.H.S. for the repair of broken glass barrels of hypodermic syringes prescribed for diabetic patients for the self-administration of insulin?

*A.—*The patient's practitioner may prescribe another syringe on Form E.C.10.

HEARD AT HEADQUARTERS

A General Practitioner in Natal

The Science Committee, which decides on the award of the Association prizes, found itself confronted with a little difficulty over the Sir Charles Hastings prize this year. The prize is supposed to be awarded for general practitioner work, but lately hospital records have been rather prominent in the essays submitted. An outstanding essay was submitted this year on a series of operations; it was a remarkable record of 2,844 operations carried out over a number of years by a general practitioner in Natal. They had been performed many miles from his home, some of them in fairly large hospitals, but more than half in small hospitals or in the patient's home or in a hut. In view of the resourcefulness and skill displayed by a general practitioner the adjudicators had no hesitation in considering it worthy of the prize which bears the name of the founder of the Association. The prizewinner is Dr. C. E. L. Burman, of Pietermaritzburg, a graduate of Durham University.

The "Medresco" Hearing-aid

A correspondent recently stated (Supplement, March 19, p. 157) that the Government-sponsored Medresco hearing-aid is being sold abroad, but the Ministry of Health denies this: it is available only through the National Health Service. At present there are insufficient to meet the large demand quickly, but considerably more are expected to be available shortly.

Reluctant Patients

There are indications that the National Health Service is causing some illness to be missed—illness that did receive medical attention before. In the old days, if people wanted a doctor they sent for him and paid him for his services and so felt themselves under no obligation. Now a lot of people are reluctant to send for the doctor early in illness for fear of imposing on him, for whatever may be said about abuses of the Service many people are like that. When the child wakes up ill in the morning, the mother, anxious not to trouble the doctor, waits in the hope that as the day goes on the trouble will disappear, and eventually very often has to send for the doctor at night. One busy urban practitioner told us that during the first six weeks of the new Service there were only two evenings on which he was not called out to see such cases. He has now made it known among his patients that if there is illness in the morning, even if it seems to be of only a temporary character, he would rather be called in at once so that he could see the case on his rounds than be called at a late stage when the illness had become worse.

Correspondence

Status of Specialists

SIR,—I have noted with some surprise that so far no one has made any comment on the current trend of events in official circles with regard to hospital specialists and their classification and salary scales. I am well aware that the Iron Curtain is still the order of the day so far as the policy-makers of the N.H.S. are concerned, but the pattern for the immediate future is emerging with increasing clarity, even though it may not be displayed in its unsavoury entirety.

Wide publicity has been given in the general press to the proposed salary scales for hospital specialists, which are sufficiently generous to meet with uniform approval; but the public has not been informed of the stringent and arbitrary limitations which are being contemplated on the number of individuals who are to be officially recognized as specialists. It has already been stated—in an unobtrusive amendment to the first announcement—that the category of senior hospital officer may include whole-time members of hospital staffs employed in specialized duties, and it is becoming abundantly clear that the Minister intends to relegate the maximum number possible to this status. This implies that on completion of the specified term as a trainee specialist one is automatically "graded" as a senior hospital officer, in which category one may continue indefinitely unless a vacancy "on the establishment" occurs. In this way, by the time the age of 40 is reached the Government is saving £1,000 per annum.

In the proposed terms of remuneration no definition is made of a specialist. This is a much too convenient omission, which I suggest should be rectified, and I would offer this as a possible definition: "A specialist is one who is wholly employed in a particular branch of medical science in which he has, over a period of years, acquired experience and training of a scientific and technical nature which is not catered for in the ordinary course of undergraduate training."

It is utterly indefensible to suggest that any individual should, on the completion of a prolonged apprenticeship in a recognized specialty, be then placed on the same footing as other members of the profession who have not undergone such training. The Government recognizes the existence of specialized duties, but if, as it would appear, it proposes to pay specialists' salaries only to a minute percentage of the staff who perform these duties, then the B.M.A. is under an immediate obligation to make it clear that this cannot be tolerated.

It has been obvious of course that, having committed itself to the allocation of merit awards to a fixed percentage of specialists, the Government would take steps to ensure that its financial liabilities in this respect should be kept to the barest minimum. However, when the steps envisaged amount to compelling the vast majority of the members of specialized departments in the N.H.S. to give their services without recognizing their right to be paid accordingly, the strongest possible action is called for—I am, etc.

G. G. W.

D. M. McCCLURE.

Pay of Service Medical Officers

SIR—The B.M.A. Council's proposed increased scale of remuneration for medical officers of the armed Forces (para 151 of the Annual Report of Council, *Supplement*, April 2) will be received with little enthusiasm by most serving officers. The proposals, so apologetically summarized in the last paragraph of the memorandum, confirm the prophecies of the sceptical and are unlikely greatly to change present dissatisfaction. They suggest rather a lack of real appreciation by the Council of the true feelings of many serving officers. As a medical officer serving in the armed Forces has so few opportunities of expressing his views on his own remuneration, perhaps you will permit me to record a few facts as I see them as a regular officer neither very junior nor very senior.

There exists to-day widespread dissatisfaction among serving officers both at conditions of service and in particular at remuneration. While the former is largely reluctantly accepted

as an unavoidable consequence of special post-war circumstances shared by all Service personnel, the latter has been pointedly brought to a head by the publication recently of the Government's proposed scale for full-time specialists in the National Health Service.

The Council now proposes that all regular Service officers should be classified as the equivalent of average general practitioners for purposes of remuneration. This I most strongly challenge. However accurately it may reflect the opinion of the civilian profession on Service doctors as a whole, it is far removed from fact. The regular Service doctor of to-day, by the time he reaches field rank or its equivalent, is a specialist if ever there was one, in no way inferior professionally to his civilian counterpart in the National Health Service. In most cases, with the completion of the 18 months' postgraduate studies (to take the Army for example) which follow his selection for a permanent commission, he becomes a recognized full specialist with a higher qualification, Service or civilian. As often as not he has already been a graded specialist for some years previously. In the remainder of cases he has chosen medical administration, itself a skilled special branch of medicine which must receive official recognition as such. As one who has had some experience both as an administrator and as a specialist, I would have little hesitation in putting the former among the most exacting and important of all special branches of medicine. In brief, the Service doctor, after the age of, say, 35, rightly considers himself to be in every way the equivalent of the full-time specialist in the National Health Service, and he expects, differing merely in the Government Department in which he is employed, to be remunerated at a strictly equivalent scale. His case for this is unassailable.

Voluntary recruitment to the medical branches of the armed Services is unsatisfactory. There have been resignations since the war, including some very able and experienced officers whose loss the Services can ill afford. Other resignations have not been accepted, because of the continued existence of the "emergency." In nearly all cases the real reason has been financial. These facts are well known to the Defence Ministry. What is perhaps not so well known is that there are at present many more officers "sitting on the fence" waiting to see what is going to happen about their pay. They are profoundly disturbed by the financial situation in which they have found themselves since the war. Their pay at home is so inadequate, with their many commitments, as to make living, even with greatly restricted standards, extremely difficult without running into debt. Service abroad has for various reasons, one of which is the enthusiastic abandonment of a large part of the Empire, lost much of its pre-war attractions. Now it usually means just more separation from one's family and extra expense. They feel they did not become doctors for this.

Loyalty to the Service is all very well, but one has other loyalties, in particular to one's family. Can, therefore, the specialist regular doctor be blamed if he quietly waits for a suitable job to turn up under the National Health Scheme and then puts in his papers? As things are at present it is not a question of if, but when. He will get congenial work in his specialty; with luck he will double his pay; he will have a permanent home with no more family separation; his superannuation will compensate for the loss or reduction of his pension; and, finally, he may rest assured, from experience during the last war, that his recall in another emergency will involve him in loss of neither status nor promotion. This is what most Service medical officers are shirking at present. This is why they are contemplating resignation. This is why recruitment is poor and will remain so. Refusal to accept resignations, except under special circumstances, is no cure for it. The emergency cannot last for ever. Meanwhile it merely strengthens doubts as to the wisdom of accepting a permanent commission.

There can be but one cure for this. That is for the senior Service doctor to receive exactly equivalent remuneration to his civilian specialist counterpart in the National Health Service. Nothing shows if this will attract the type of officer required or even retain many serving specialists who, still young enough to be ambitious and with little wish for compulsory retirement while still in their professional prime, now know of another Government service in which they can obtain employment with remuneration appropriate to their professional skill and qualifications. Until this is done, the armed Forces will attract only the very wealthy (!), the adventurous bachelor, or the failure elsewhere. The proposal of a scale already rejected by G.P.s as inadequate may perhaps attract young graduate doctors to a temporary short-service commission, but it leaves the more senior officer cold. And this from the B.M.A., which has made such a principle of equity within the profession!

There must be a uniform scale for all doctors of equivalent status who are paid by the Treasury whether in the armed Forces or the Health Service. Let this be Principle I. Although the G.P. equivalent

is appropriate for more junior officers below substantive field rank, thereafter all Service officers must be accorded full specialist status for which they are fully qualified. Only officers suitable for this should be selected for permanent commission. Let this be Principle II. Subsequent promotion, being by selection, represents a well-earned rise in professional status and should carry a Special Distinction Element as in the Health Service (accepting that medical administration is itself a specialist branch of medicine). Let this be Principle III. This would give a Director-General the full £5,200 (adjusted as necessary for pension and betterment) which his position certainly demands. Substantive majors, etc., the equivalent of full specialists, would receive £2,000-£2,500 according to service, and more senior ranks appropriate increases corresponding, with suitable modifications, to the Special Distinction Awards of the N.H.S. The distinction between general duty and specialist officers would cease to exist once substantive field rank had been reached. Below field rank the rates proposed are not unsatisfactory.

This represents quite a rise. The Treasury will not like it (but with little justification, as they have already accepted it for N.H.S. specialists), and claims for rises in other arms will no doubt follow. These facts, however, interest neither the serving officer contemplating resignation nor the potential regular volunteer looking for a suitable specialist career. And they in the long run are the only ones who really matter.

It is what must come eventually, and it is a pity that B.M.A. leadership, which is all the serving officer has, has only been able to take us half-way.—I am, etc.,

R. A. M. C.

Marriage Allowances for Medical Officers

SIR,—The Secretary of the Association stated in a footnote to my letter (*Supplement*, Jan. 1, p. 8), referring to the marriage allowance of National Service officers, that the matter was not decided. May I point out that this is no longer so, and that the Minister has now attempted to clarify this point?

Although the increased scale of allowances was alleged to offset the high cost of living, the Minister states that they cannot apply to National Service medical officers who are apparently too young to incur any increased costs of living. To quote his own words in the House of Commons on March 23, 1949: "If at this very young age men were married, knowing the basis of the allowances, then they came into the Services knowing what they were doing." It would be easy to argue with this bizarre statement in many ways, but I would like to draw attention to one point.

Prior to this recent increase full marriage allowances were payable to all officers over the age of 25 years, regardless of rank or type of engagement. A doctor joins the Service as an officer and has an officer's expenses during his Service engagement, whether that engagement lasts 1½ or 4½ years. No difference in these expenses exists other than that they may fall rather more heavily upon the man with the shorter term of service, and yet this makes a difference of 6s. per day to the Service doctor.

A medical officer's responsibilities and duties, within his own rank, are in no way minimized by the fact that he is on national service. He is, in fact, not comparable with the 18-year-old National Serviceman who enters the Service from school or apprenticeship—i.e., completely untrained and unqualified for any immediate useful service. This, I feel, makes the Minister's ruling appear both unfair and false.

Finally, I can see medical officers on national service looking longingly to the Association's proposed increases in pay, which might ease their penury. I humbly suggest that they purge their minds of such adventitious thoughts, as these increases will apply only to the regular or semi-regular minority and not the National Service majority of medical officers.—I am, etc.,

London, N.3.

E. J. TRIMMER.

* At a recent meeting the Armed Forces Committee considered the fact that National Service officers are not entitled to the recently announced increases in marriage allowances in the Forces, and the fact that their leave entitlement is substantially less than that of regular and short-service officers. This discrimination reacts especially hardly upon medical officers, many of whom, because of the relatively late age at which they do their national service, are married before entering the Forces. A recommendation on the subject has been forwarded to the Council.—ED. B.M.J.

Graduated Capitation Fee

SIR,—I cannot believe that Dr. J. W. O. Holmes (*Supplement*, March 26, p. 164) really means what he implies, for he has made a gratuitous insult to about 90% of the G.P.s. So anybody who does not run a large N.H.I. list is either lazy or incompetent! Is that really so? The doctor with a very large list will always give reasons, flattering to himself, why he has a large list—viz., he is a good doctor, he is a hard worker, he has a pleasing personality, patients like him; he has, in fact, all the virtues. It might also occur to him that the possession of a large list may be really due to chance. Before the N.H.S. came into being the commonest way of getting a large practice was to buy one. To-day the only way is to walk into one, and what a chance! Conditions now are static, and, since all patients are equal from the remuneration aspect, those doctors with medium- or small-sized lists have little hope of increasing their practices however hard they are prepared to work and however excellent they may be as clinicians. Those who are practising in "over-doctored" areas and have suffered a sharp fall in income might like to transfer to "under-doctored" areas. Just let them try and see what happens!

In pre-war days owners of swarming panel practices were hardly considered to be the élite of the profession, and with good reason. What does Dr. Holmes mean by being able to manage 5,000 with ease? As Dr. Joad might say, it all depends on what is meant by "manage." If general practice is to consist in writing certificates and Forms E.C.10 and making spot diagnoses, then it should be possible to "manage" even 10,000 patients, in which case the profession is grossly overmanned; and yet we are told that there are not enough doctors to run the N.H.S. properly.

No doubt the owners of large lists will protest that they deal adequately with every patient, but I would never believe them. Owing to the very nature of their practices they are bound to deteriorate as doctors, using the title "doctor" in the truly professional sense.

Viewpoints such as those of Dr. Holmes are irritating and depressing, as they show the difficulty of getting all G.P.s to organize and work together for better conditions, and incidentally for a better National Health Service. A few more such jetties and some people may start thinking about the advantages of a salaried service. A doctor can only work well when he is free from financial anxieties and able to give full attention to a reasonable number of patients, since there are only twenty-four hours in the day. These are the two things we strive for, and we are not asking for the moon. I see that the specialists have obtained these conditions, neatly and quietly. "Managing" a list of four to five thousand is not medical practice.—I am, etc.,

London, N.12.

A. J. ROUSE.

A Form of Absenteeism

SIR,—I am in no way connected with the National Health Service, and perhaps for that very reason am impressed by the difficulties of a colleague who joined the Service some months ago. I asked him how he was liking it, and he said his life was a series of explosions which brought his wife to him with cups of strong coffee and words of comfort. He gave me the latest example, which he said was typical.

An apparently healthy young woman presented herself and demanded an iron tonic. He refrained from the obvious remark—that she had come to the wrong place—and spent some ten minutes or so in unravelling her symptoms, when the fact was revealed that she had a young man in the Merchant Navy who was away on a voyage and she was feeling his absence. My friend suggested that a mild sedative might be more helpful, but she persisted in her demand for an iron tonic, which he then refused her.

Then she asked for a certificate for a new body-belt. He spent a further ten minutes in examining her, and finding no trace of visceroptosis or hernia or even undue adiposity, said that he did not feel justified in prescribing a belt for her. Whereupon she expressed herself dissatisfied with the interview and demanded her card.

By trying to administer this Service in a fair and intelligent manner, as it is intended to be administered, and by acting as z

responsible individual instead of a dog's body, my friend wastes 20 minutes and loses a patient. At the same time the patient's new doctor will gain another capitation fee without expending more than two minutes on the transaction.

What a system! What a magnificent encouragement to the upholding of professional integrity! What a noble career for an aspiring student!

Can nothing be done to encourage my friend and those like him? Can nothing be done to penalize a man who is content to distribute the taxpayer's money in a reckless, slipshod manner without even troubling to examine his patients? My friend receives letters from his headquarters asking him to explain his reasons for declining to prescribe (he showed me such a letter). Surely he might be saved this additional burden on his time by the investigation of complaints by a medical umpire or umpires, and if it were found that the doctor's refusal was reasonable he could be reimbursed for the time and trouble he had taken in preventing an abuse and in saving the taxpayer's money.—I am, etc.,

London, S.W.7.

J. N. LORING.

Telephone Costs

SIR,—Does the Minister intend to reimburse us with the increased costs of telephones in view of the fact that the Chancellor states that the increases on the budget are necessitated by the cost of the social services? Unless my arithmetic is more than usually wrong I can only assume that in paying an increased charge to the P.M.G. I am really paying a contribution towards my own income. If this is so, then equity has been made subservient to law, whereas it is a maxim laid down over centuries that "where equity and law are in conflict equity shall prevail."—I am, etc.,

Carbis Bay, Cornwall

L. P. LOCKHART.

The B.M.A. War Memorial

SIR—At a recent meeting of the Harrow Division held on April 5, 1949, paragraph 6 of the Annual Report of Council (*Supplement*, April 2, p. 174) was discussed at length, and I have been asked to express the views of the meeting.

It is fitting that an organization such as the B.M.A. should express its appreciation of those who have served and given their lives in the second world war, and the monetary sum of £10,000 is but a token of that appreciation, but that this sum should be spent on a fountain is a most inadequate expression of our feelings. By all means let us record the names of those who served on a Roll of Honour to be kept at B.M.A. House, but let us do something far more active and tangible for the dependants of the fallen. One suggestion would be to use the fund for scholarships to educate the dependants.

Whatever may be the eventual use to which we put the money it is essential that a much fuller and more widely published discussion should first take place, and for this purpose it is desirable that the Council should refer the matter to the next Annual General Meeting of the Association before proceeding further.—I am, etc.

J. S. LINDSAY.
Hon. Sec. Harrow Division

Domiciliary Midwifery Payments

SIR—The payment of the G.P. with regard to domiciliary midwifery is anomalous, there being no comparison between the N.H.S. fees and the emergency fees payable through the Midwives Medical and Emergency Summons.

Under the N.H.S. scheme a fee of 7 guineas is payable for every booked case, and although this is a very low fee it does in fact average fairly satisfactorily if the doctor is only called to a proportion of these cases.

The position with regard to the Midwives Medical Aid request is in a totally different category. The doctor is only paid for the actual case that he attends—invariably a complicated one or he would not have been summoned—yet the maximum fee that he can claim to cover every attendance to the mother and child during the confinement and puerperium is 4½ guineas. Either this fee should be increased to bring it into line with present-day values or the doctor should be paid a retaining fee for every case booked by a midwife.—I am, etc.,

London, S.W. 16

HARRIS AVERY.

Senior Hospital Officers

SIR,—I was amazed to find in a medical journal this week an advertisement for a specialist stating that the officer appointed would hold the rank or grade of senior hospital officer. I was under the impression that the Minister's proposals based on the Spens Committee Report (I could find no basis in this report for the insertion of this grade in these proposals) was under discussion by the profession and that no action would be taken until negotiations had taken place and agreement had been reached.

At two meetings which I have attended recently the specialists present unanimously condemned this grading, expressed an opinion that it was contrary to the spirit of the Spens Report, and stated that it was unnecessary and undesirable. I hope, Sir, that you will not accept any advertisement in your *Journal* for such posts, and I hope that all young specialists will refrain from replying to such advertisements. It is quite obvious that, alarmed at the annual bill for the Health Service (the cost of which was so grossly underestimated by the experts), the administrative side are trying to "pull a fast one" on the specialist side of the profession. Many of us have seen capable young men in the Forces working as graded specialists with a junior rank and lower pay than their merits deserved. Surely these young men will take warning from their wartime experience and will refuse to go into the blind alley of senior hospital officer appointment.—I am, etc.,

MENS SANA.

* * The Secretary of the Association states: Pending the completion of negotiations with the Government on the permanent scales, no advertisements inviting applications for specialist posts, the successful applicant to be graded as a senior hospital officer, will be accepted for publication in the *British Medical Journal*.

Association Notices

Diary of Central Meetings

MAY

- | | |
|----------|---|
| 1 Tues | Central Ethical Committee, 2 p.m. |
| 4 Wed | Finance Committee, 2 p.m. |
| 5 Thurs. | Coroners Acts Committee, 2 p.m. |
| 6 Fri. | Venereologists Group Committee, 2.30 p.m. |
| 9 Mon | Joint Committee of B.M.A. and National Veterinary Medical Association, 2 p.m. |
| 10 Tues | Conference of Honorary Secretaries of Divisions and Branches, 11.30 a.m. |
| 11 Wed. | Council, 10 a.m. |

Branch and Division Meetings to be Held

BOURNEMOUTH DIVISION.—At Boscombe Hospital, Friday, April 29, 8.15 p.m., Address by Dr. T. Sommerville, of the Research Unit (National Institute for Medical Research), Harvard Hospital, Salisbury: "Common Cold."

EAST SUFFOLK DIVISION.—At Lecture Theatre, Pathology Department, East Suffolk an... Friday, April 29, 8.15 p.m., Lecture by Surgeon... Milne, R.N.: "Pain in the Fore-part of the..." by lantern slides.

GOOLE AND SELBY DIVISION.—At The Lodge, Snaith, Sunday, May 1, 3.30 p.m., annual meeting.

GUILDFORD DIVISION.—At Royal Surrey County Hospital, Guildford, Thursday, May 5, 8.30 p.m.: Agenda: (1) Address by Dr. N. Lloyd-Rusby: "Some Recent Advances in the..." and Treatment of Diseases of the Chest"; (2) Report on... Meeting of March 29 and 30; (3) Instructions to Representatives to Annual Representative Meeting, etc.

LEWISHAM DIVISION.—At Lewisham Hospital, 390, High Street, London, S.E., Friday, May 6, 8.30 p.m. Annual general meeting.

NORTH MIDDLESEX DIVISION.—At Prince of Wales's Hospital, Tottenham, N., Wednesday, May 4, 8.45 p.m., annual general meeting.

OXFORD DIVISION.—At School of Geography, Mansfield Road, Oxford, Wednesday, May 4, 8.15 p.m., combined meeting of Oxford, Reading, and Buckinghamshire Divisions. Agenda: Address by Dr. Charles Hill, etc.

RICHMOND DIVISION.—At Royal Hospital, Richmond, Tuesday, May 3, 9 p.m. Annual meeting.

WESTMINSTER AND HOLBORN DIVISION.—At Holborn Town Hall, High Holborn, London, W.C., Thursday, May 5, 8 p.m., annual meeting.

WIGAN DIVISION.—At Hindley, Wednesday, May 4, 2 p.m., golf competition open to all members of the medical profession in Wigan and district. Entrance fee 5s.

PATHOGENESIS OF ESSENTIAL HYPERTENSION*

BY

F. H. SMIRK, M.D., Ch.B., F.R.C.P., F.R.A.C.P.
Professor of Medicine University of Otago, New Zealand

The purpose of this paper is to present in a preliminary way some suggestions in regard to the pathogenesis of essential hypertension. An introductory historical review of the subject is omitted, as several reviews are available already.

1. Evidence that Physiological Elevation of Blood Pressure Predisposes to Essential Hypertension in Later Life

Even when the blood pressures lie within limits regarded as normal, individuals whose pressures are higher than the average have a higher-than-average incidence of hypertension and circulatory disorder in later life, whereas those whose pressures are below the average have a decidedly lower-than-average incidence of essential hypertension and of circulatory disorders in later life (Symonds, 1923; Association of Life Insurance Medical Directors and the Actuarial Society of America, 1925; Diehl and Hesdorffer, 1933; Trans Internat Congress Life Ass Med, 1935; Actuarial Society of America, 1939; Robinson and Brucer, 1939; Hunter, 1939; Hines, 1940; Actuarial Society of America, 1941).

Reference will now be made to some of the factors influencing the blood-pressure level. Especial attention will be given to the relationship of such factors to the expectation of the development of essential hypertension in later life.

Race and Geographical Environment

European and North American white people have somewhat higher average and modal casual blood pressures than certain Indian, Chinese, African, Philippine, and American Indian peoples, and the incidence of high blood pressure is decidedly lower among the latter group. The differences between the average blood pressures of such groups may be 10 to 20 mm systolic and 8 to 15 mm diastolic for comparable ages. While race seems to influence the liability to essential hypertension (Kirk, 1931; Shattuck, 1933; Flaxman, 1934; Kean, 1941), environment also has a strong influence, and this predisposition seems to be closely related to the levels of the blood pressures encountered in the populations under consideration.

For example, China appears to provide an environment favouring lower blood pressures and less essential hypertension. North America favours higher levels of the normal blood pressures and much essential hypertension. The blood pressure of Chinese in China is below that of Canadian and United States citizens resident in their own countries (Cadbury, 1922, 1923; Yine, 1926; Kilborn, 1926; Foster, 1927; Tung, 1928, 1930). Essential hypertension in much of China is also uncommon (Cadbury, 1922, 1923; Cruickshank, 1923; Kilborn, 1926; Foster, 1927, 1930) even among well fed sections of the community (Houston, 1929). Krakower (1933-4) states that the blood pressure of Chinese after long residence in Canada resembles that of other Canadian residents and that essential hypertension is common. Tung (1928) found that 30 Chinese resident in the United States had falls of pressure on returning to Peking. Tung (1927) reported that 58 Americans had a distinct fall of blood pressure on taking up residence in China and Foster (1927) found that 120 Americans in Hunan had an average pressure close to that of the local Chinese.

African negroes have lower blood pressures than those of their race who live in America (Donnison, 1929) and the

incidence of high blood pressure is low among negroes in Africa (Hermann Strachan, and Heyman, 1929; Shattuck, 1930; Schulze and Schwab, 1936). The latter authors also quote personal communications from Taylor, Odalev, Drv and Wakeford. American negroes after the age of 20 have higher blood pressures than American whites (Alvarez and Stanley, 1930; Adams, 1932), and the incidence of high blood pressure is greater in negroes than in white residents of the United States (Stone and Vanzant, 1927; Donnison, 1929; Alvarez and Stanley, 1930; Allen, 1931; Holmes, 1931; Kirk, 1931; Adams, 1932; Laws, 1932-3; Flaxman, 1934; Weiss and Prusmack, 1938; Hedley, 1941). Hypertension of a few days' duration after exposure to explosive blast was more common in negroes than whites (Ruskin, Beard and Schaffer, 1948). Hypertension is greater among town dwellers than among country dwellers of the same race and land (Holmes, 1931; Flaxman, 1934). East Africans also have lower blood pressures and less essential hypertension than North American or Western Europeans (Donnison, 1929; Williams, 1944a, 1944b). Egyptians on the whole have lower blood pressures than Anglo-Saxon peoples and a somewhat lower incidence of essential hypertension (Ismail, 1928; Smirk, unpublished observations). British residents in Egypt have slightly lower blood pressures than the average in Great Britain (Smirk, unpublished observations).

The blood pressure in Filipinos and in Porto Ricans is lower than in people of the United States (Concepcion and Bulatao, 1916; Ashford and Dowling, 1929; Torgerson, 1929; Salcedo and Pascual, 1932; Lantin, 1933) and hypertension is probably less frequent (Ashford and Dowling, 1929; Torgerson, 1929; Lantin, 1933).

Among the poorer classes in India blood pressures are lower (McCay, 1907) and essential hypertension is less common than in Anglo-Saxon lands (Raghavan, 1941).

The South American Indians of Yucatan have low blood pressures and a low incidence of essential hypertension (Shattuck, 1933). The Cuna Indians, living relatively isolated, had an average pressure of 105/69 for 407 adults, and no case of hypertension was discovered among them (Kean, 1944). The Zuni Indians have low blood pressures and little hypertension (Fleming, 1924).

Hicks (personal communication) found a systolic blood pressure of 110 was the most common in young Australia aboriginals, and in 120 aboriginals between 60 and 65 he found no blood pressures higher than 130 systolic. Benign hypertension is not uncommon in Australian Whites. Nye (1946) also remarks on the low incidence of hypertension in Australian aboriginals.

Certain environments favour higher "normal" blood pressures and other environments favour lower "normal" pressures. Populations exhibiting higher "normal" pressures have a higher incidence of essential hypertension and those with lower "normal" blood pressures have a lower incidence.

Hereditv

Hereditv influences the level of the blood pressure. According to Ayman (1936) the children of two hypertensives have higher blood pressures and a 47% chance of hypertension in later life. When both parents are hypertensive the blood pressures of the children are lower and the incidence of essential hypertension is only 3%. This is evident from observations on identical twins, though differences may sometimes lead to different blood pressures in identical twins. Additional evidence is cited by

*The subject matter of lectures delivered as visiting Professor of Medicine at the British Postgraduate Medical School, Hammersmith.

Obesity

Obesity is statistically associated with over-average blood-pressure levels (Dublin, Fisk, and Kopf, 1925; Huber, 1927; Hartman and Ghrist, 1929; Kirk, 1931; Nuzum and Elliot, 1931; Short and Johnson, 1939; Robinson, Brucer, and Mass, 1940; Adlersberg, Coler, and Laval, 1946). This relation is found not only in the common forms of obesity but also in the obesity of Cushing's syndrome and in cortical hyperadrenia. Under-average body weight is associated with under-average levels of the blood pressure (Symonds, 1923; Huber, 1927; Robinson, Brucer, and Mass, 1940). Over-average blood pressures in children of over-average weight is also reported (Stocks and Karn, 1924; Short and Johnson, 1939). Manifest essential hypertension is also more frequent in the obese (Symonds, 1923; Terry, 1923; Dublin, Fisk, and Kopf, 1925; Barach, 1928; Master and Oppenheimer, 1929; Gager, 1930; Kirk, 1931; Nuzum and Elliot, 1931; Palmer, 1931; Short and Johnson, 1939; Robinson, Brucer, and Mass, 1940; Rony, 1940; Moschcowitz, 1945; Adlersberg, Coler, and Laval, 1946). Essential hypertension and obesity are to some extent genetically determined (Gates, 1946), although the relationship between them is scarcely understood (O'Hare, Walker, and Vickers, 1924; Page and Corcoran, 1945). Like twins exhibit very similar body weights (Rony, 1940), and their blood pressure is usually about the same level (Weitz, 1923; Hines, 1937-8; Klemola, 1938).

The relationship of obesity to hypertension, however, is not purely genetic, for loss and gain of weight from altered food intake are associated with fall and rise of blood pressure. This relationship between alteration in body weight and blood pressure has been observed in the obese and in persons of normal weight, in normotensives (Benedict, 1915; Benedict, Miles, Roth, and Smith, 1919; Preble, 1923; Bauman, 1928; Master and Oppenheimer, 1929; Moschcowitz, 1945), and in hypertensives (Preble, 1923; Rose, 1923; Terry, 1923; Master and Oppenheimer, 1929; Moller, 1931; Moschcowitz, 1945; Adlersberg, Coler, and Laval, 1946). In normal dogs and in hypertensive (Goldblatt, 1947) dogs, Wood and Cash (1939) showed that gains and losses of weight were associated with rises and falls of blood pressure. The effect of overweight on the blood pressure in man seems to be more pronounced after 40, corresponding to the age when the incidence of essential hypertension rises.

The blood-pressure fall corresponding to an average reduction of 24 lb. (10.4 kg.) was about 32 mm. systolic and 16 mm. diastolic in the 72% of obese hypertensives in the series of Adlersberg, Coler, and Laval (1946), who had a fall of blood pressure. The difference in the average blood pressure between more or less unselected groups of overweight and underweight individuals is about 10 mm. systolic and 8 mm. diastolic. The effect of obesity is more obvious, however, when the comparison is made between the percentage of hypertensives encountered in individuals who are over the normal standard weight as compared with the percentage among subjects who are under the normal standard weight.

It is clear that overweight is associated with a tendency to higher blood-pressure levels, and in the course of time a higher incidence of essential hypertension. Under-average weight is associated with lower blood pressures and decreased tendency to essential hypertension in later life. Errors in blood-pressure measurement by cuff methods and due to upper-arm obesity require further evaluation.

Transient Blood Pressure Increases

Of the blood pressure rises which occur in response to all emotion most are transient, but many are of longer duration. Tivon Monakow, 1920; Fahrenkamp, 1926; Weitz and Sieben, 1926; Grollman, 1929; Houston, 1929; Brown, 1929-30; Aidikan, 1930; Mueller and Brown, 1930; Stieglitz, 1930; Alcatrazfeld, 1932; Schultz, 1932; Ayman and Goldshine, 1940; Alam and Smirk, 1943a, 1943b; Ehrström, 1945). Emotional rises of pressure of 10 or 20 mm. are common, and rises of 45 mm. or more are encountered. Such transient pressure increases are exhibited particularly at the first visit in connexion with an examination for military

service, life assurance, student health survey, or clinical examination. That most of these transient rises are due to emotion, tenseness, alertness, or some such mental state is very highly probable, because nearly all subside, sometimes in a few minutes, if the subject can be put at ease (Weitz and Sieben, 1926; Mueller and Brown, 1930; Ayman and Pratt, 1931; Alam and Smirk, 1943a, 1943b; Smirk, 1944, 1947; Kilpatrick, 1948). The pressure often can be made to rise promptly again if emotion be provoked, for example, by a tactless remark or the entry of a nurse with a tray of instruments (Alam and Smirk, 1943a; Kilpatrick, 1948). Those who exhibit such transient blood-pressure elevations have a much greater chance of developing permanent arterial hypertension (von Monakow, 1920; Frost, 1926; Palmer, 1930; Stieglitz, 1930; Robinson and Brucer, 1939; Hines, 1940). Even in young people transient rises carry an enhanced expectation of developing essential hypertension later (Palmer, 1930; Diehl and Hesdorffer, 1933; MacKenzie and Shepherd, 1937; Master, 1943; Rogers and Palmer, 1944; Levy, White, Stroud, and Hillman, 1945a, 1945b).

I am aware of no evidence which points to the existence of any pathological process in young subjects exhibiting transient hypertension and which might explain it. Transient blood-pressure elevations in otherwise healthy individuals under the age of 25 probably represent physiological responses of a magnitude greater than average. These might occur if vasomotor reactions or the mental reactions to physical stimuli or stress are excessive.

The reactions to vasomotor reflexes, such as the cold pressor test of Hines and Brown (1935), and the blood-pressure-raising reflex from voluntary muscle (Alam and Smirk, 1937) are usually greater in cases of essential hypertension than in healthy subjects of the same age group (Alam and Smirk, 1938). The elevations of blood pressure in response to psychical stimuli and in response to cold do not invariably show parallelism (Ruskin, Beard, and Schaffer, 1948). Hines and Brown (1935) state that the pressure-rises in response to cold are greater in the children of hypertensive parents than in those of normotensive parents. They consider that hyperreacting normotensives are more likely to develop hypertension in later life. Evidence in the same direction comes from Dieckmann and Michel (1935). Evidence against the views of Hines and Brown has been published (Pickering and Kissin, 1936; Yates and Wood, 1936; Feldt and Wenstrand, 1942; Russek, 1943; Russek and Zohman, 1945). The matter is not yet settled.

Not all patients respond to nervousness or tenseness of blood-pressure rises (Hall, 1927), but those who do, and whose environment causes nervous tension, may be expected to exhibit those increases more often than normal individuals. Fischer (1930) states that mental exertion unaccompanied by emotion had no notable effect on the blood pressure, whereas Hill (1898), Bickel (1914), and Gillespie (1924) report that mental work elevates the blood pressure. Changes in the mental state of melancholic and other psychotic and psychoneurotic patients may be associated with considerable alterations in the blood pressure (Mueller, 1922). There are large individual differences in the reactions to mental stimuli, but many authors consider essential hypertensives are over-reactive, overtense physiological types (Moschcowitz, 1919; Ayman, 1933; Menninger, 1938; Binger, 1945).

No doubt transient hypertension is due in many cases to a combination of vascular lability with emotional lability, but sometimes one or other of these will predominate. The more restless and competitive environment of urban as distinct from rural life has been held responsible in American negroes and whites for the higher incidence of essential hypertension in urban communities (Holmes, 1931; Hashimoto, Akatsuka, Tsujii, and Shiraishi, 1933-4; Schulze and Schwab, 1936). Stocks and Karn (1924) state that the average blood pressure of children is higher in schools with strict discipline than in those where discipline is lax. Tigerstedt (1926) refers to the higher blood pressures in students in the few weeks before an examination. Ruskin, Beard, and Schaffer (1948) report considerable hypertension of some days' duration in persons exposed to explosive blast. Fraser and Cowell (1918) refer to the higher level of the blood pressure in front-line troops.

when compared with supporting troops, and somewhat similar results have been reported by others (Gelshtein, 1943; Ehrström, 1945; and Graham, 1945). It has been claimed by Farris, Yeakel, and Medoff (1945) that repeated exposure of rats to an air blast may set up a lasting arterial hypertension. This has been confirmed by Restall and Smirk (unpublished observations), who have shown also that this hypertension is not abolished by anaesthesia.

The tendency to exhibit transient hypertension in response to mental and other stimuli may be taken to indicate a physiological make-up which is likely to express itself in daily life by abnormally strong and frequent blood-pressure elevations. The balance of evidence suggests that such elevations, if sufficiently frequent or prolonged, predispose the subjects towards the development later of essential hypertension.

2. Casual, Basal, and Supplemental Pressures

If the level of the blood pressure in health is an important indication of the future liability to essential hypertension, it will be important to know what significance should be attached to single or to multiple readings of the blood pressure.

The blood-pressure level in a ward or consulting-room is not an accurate guide to the average blood pressure of the patient throughout the day and during the night (Brooks and Carroll, 1912; Müller, 1921; MacWilliam, 1923; Campbell and Blankenhorn, 1925-6; Friedlander, 1927; Ayman, 1931; Master, 1943; Gubner, Silverstone, and Ungerleider, 1946). Were it possible to obtain some indication of the average of the pressures to which the vascular system was exposed a much closer correlation between this average pressure and the subsequent development of essential hypertension might be possible. It is, however, possible to discover the ranges over which the blood pressure is likely to fluctuate.

The blood pressure, even in health, is not to be regarded as an indivisible unity but as having two components. If the blood pressure (systolic and diastolic) taken under ordinary clinical conditions be considered as the casual blood pressure and that taken under defined basal conditions as the basal blood pressure, the difference between the casual and the basal blood pressure may be described as the supplemental pressure (Alam and Smirk, 1943a; Smirk, 1944). The supplemental blood pressure is, by definition, that part of the casual blood pressure which represents the response to the person's physical, metabolic, and cerebral activity at the time of measuring the pressure. Kilpatrick (1948) has confirmed and extended my observations on the basal blood pressure and has shown that in health the basal blood pressure is a physiological constant for the individual. In a series of 50 normal subjects (Smirk, 1944) the basal and supplemental pressures were independent variables in the sense that the possession by an individual of a high basal pressure neither increased nor appreciably diminished the expectation of that individual having a high supplemental pressure. Analysis of further experiments by Kilpatrick gives the same result. In a sense, therefore, among normals a person comes into the higher pressure range through the statistical coincidence of having both a high basal and a high supplemental pressure.

During undisturbed dreamless sleep the supplemental pressure falls to, or almost to, zero, whereas the basal pressure is substantially unaffected. The cardiovascular strain will be less if a given level of the casual blood pressure is derived from a low basal pressure and high supplemental pressure than if the reverse holds. Clinical experience (Alstad and Smirk, unpublished) suggests that high casual blood pressures due chiefly to a higher basal pressure are of more serious significance than casual blood pressures of equal height caused chiefly by an increase in

the supplemental pressure, but the latter may be associated with pathological sequelae of hypertension.

Further relevant observations on basal and supplemental pressures have been reported elsewhere (Alam and Smirk, 1943a, 1943b; Smirk, 1944, 1947; Kilpatrick, 1948). Statements are made that blood pressures over 135 in young adults are to be regarded as abnormal. It is suggested that the decision rests to some extent on our concept of abnormal. I believe some confusion would be avoided if the decision about the normality or abnormality of a blood-pressure level were held to depend upon whether it is attained through the normal operation of physiological processes or whether it is elevated to some extent by pathological processes. Moderate elevations of the blood pressure may at first be induced entirely by the operation of physiological processes. Some of these physiological processes are intrinsic and represent a physiological set or a resultant of the many intrinsic factors influencing blood pressure. Some factors influencing the blood pressure, such as geographical and social environment, are extrinsic, and others, such as obesity, are probably both intrinsic and extrinsic.

The hypothesis suggested by the circumstantial evidence outlined above is that physiological elevations of the blood pressure, if high enough or of sufficient duration, predispose strongly to, or in some cases cause, the development of a pathological elevation of the blood pressure—namely, essential hypertension. Those influences which lead to elevation of the basal pressure probably predispose more strongly to the subsequent development of essential hypertension than influences which elevate only the supplemental pressure.

3. Evidence that in Essential Hypertension Blood-pressure Elevation Sometimes Precedes the Development of Arteriosclerosis

The evidence comes partly from the many clinical reports of high-blood-pressure tendencies at an early age, when primary pathological changes in the vessels are unlikely (Glomset, 1931; Ayman, 1934; Hines, 1940; Kerley and Lorenze, 1942; Levy, Hillman, Stroud, and White, 1944; Graham, Hines, and Gage, 1945; Platt, 1948), and partly from histological and renal function studies. The temporary nature of the blood-pressure rises initially also suggests that an established humoral mechanism (e.g., Goldblatt) is not operating at this early stage.

Cases of essential hypertension in which the kidney taken at necropsy was normal have been reported by many authors (Pal, 1919; Bell and Clawson, 1928; Moritz and Oldt, 1937; Fishberg, 1939; Garretton-Silva, Rodríguez, and Aspillaga, 1941), although most of them regarded this as an exceptional finding. When, however, cases are selected deliberately from patients in the early stages of the disorder, normal kidneys or those showing minimal changes are often encountered (von Monakow, 1920; Wallgren, 1922). Thus kidney samples from early cases, removed at biopsy in the course of sympathectomy operations by Castleman and Smithwick (1943), have shown few of the findings characteristic of the more advanced cases encountered at necropsy.

Scott (1944) and Goldblatt (1947) criticized Smithwick (1944), in that his biopsy samples were too small. Smithwick's histological observations, however, are supported by the finding of almost normal diodrast excretion, which corresponds with results published by Page and Corcoran (1945). My histological observations on post-mortem material from moderate hypertensives under the age of 40, and dying of unrelated disorders, suggest that recognizable defects in arterioles may be lacking. Where

arteriolar changes were found they were much less in degree than those exhibited by the arterioles of elderly normotensives.

Cox and Dock (1941) perfused the kidneys of patients with essential hypertension and of controls and found the flow through the kidneys decreased with age, the decrease being but little greater with essential hypertension kidneys than with control kidneys from the same age group. Kimmelstiel (1933), perfusing kidneys, found little vascular obstruction in many early cases of benign hypertension, with equal or greater vascular obstruction in some elderly normotensives. McGeorge (1945) demonstrated a decrement in the renal function with increasing age, and pointed out that the renal function of young hypertensives was similar to that of young normotensives and both exhibited a better capacity to concentrate urea and chloride simultaneously (Smirk, 1933-4, 1934) than either old normotensives or old hypertensives. The decrease in renal function progresses more rapidly in cases of essential hypertension than in non-hypertensive controls. It seems very probable that the decrements in renal function with advancing years in normotensives and in essential hypertensives are due largely to decrease with age in the blood supply to the kidneys, with a more rapid decrease in the latter. Aitken in his unpublished work for a New Zealand M.D. thesis in 1944 undertook at my suggestion some observations on injected specimens of kidneys from young subjects of essential hypertension and also found the vascular beds to be substantially normal.

Indeed, it would seem that the evidence of gross pathology, microscopical pathology, intra-arterial injection studies of kidneys, biopsy studies of kidneys, perfusion of dead kidneys, renal function tests of various kinds, and the intermittent character of the blood-pressure increase in its early stages all suggest that the degree of permanent renal ischaemia in the early stages of essential hypertension in young subjects is unimportant and is not to be regarded as an adequate explanation of the blood pressure increases. *The evidence available at the present time suggests that when the disorder starts or when a "prehypertensive" state is present in comparatively young people the elevation of the blood pressure is often, probably usually, manifest before the characteristic pathological changes make their appearance in the kidney and in other organs.*

In many patients, however, the blood pressure does not start to rise appreciably until after the age of 40 or 50. When the blood pressure first rises after the age of 45 pathological changes in renal arterioles of one kind or another will almost certainly be present before the blood-pressure increase has reached the level ordinarily regarded as abnormal. It is possible, therefore, that in at least some of the cases in which the blood pressure begins to rise appreciably for the first time in middle life the renal ischaemia may have initiated the increase.

4. Evidence that High Blood Pressure Accelerates or Causes the Development of Arteriosclerosis

In almost every muscular organ an increase in work beyond the physiological range of any kind of muscle—cardiac, voluntary, or involuntary—leads to hypertrophy. The cardiac hypertrophy in hypertension and the development of voluntary muscles with physical labour are well known. In the alimentary, urinary, and biliary tracts partial obstruction leads to hypertrophy of the muscle behind the obstruction. In the larger vessels of well-established cases of essential hypertension hypertrophy of the media is encountered. Vascular hypertrophy is seen in small pulmonary arteries obstructed by the bilharzia ova (Shaw and Ghareeb, 1938).

The walls of veins hypertrophy when exposed to raised pressure in arteriovenous aneurysm, the portal veins in cirrhosis of the liver, and the great systemic veins in congestive heart failure (Pei-Lin Li, 1940). In high blood pressure of varying types, essential hypertension, glomerulonephritis, pyelonephritis, polycystic kidneys, medullary hyperadrenia, cortical hyperadrenia, and in experimental hypertension of different types the typical thickening in the walls of arterioles has been described. Such changes may occur even in young children with hypertension of various origins. It seems that this hypertrophy also is due to the effect of increased pressure on the walls of blood vessels. Although the vast majority of observations strongly favour the idea that high blood pressure can cause hypertrophy of the walls of arterioles and of larger arteries a certain amount of evidence is either opposed to or fails to support this idea. In coarctation of the aorta it is stated (Graybiel Allen, and White, 1935) that the arterioles in muscle samples taken in the upper part of the body showed no hypertrophy when compared with muscles taken from the lower part of the body. On the other hand, arteriolar hypertrophy in coarctation cases has been reported (Heyer and Keeton 1941).

Again, there are a number of instances in the literature of high blood pressure of appreciable duration with few changes in the arterioles. In experimental hypertension in animals of various types arteriolar changes are sometimes found and sometimes lacking (Hamperl and Heller, 1934; Wilson and Pickering, 1937-8; Wilson and Byrom, 1939). Negative results may mean that there has not been enough time for hyperplasia or that the degree of increase in the blood pressure was insufficient. It seems that the dog often can tolerate prolonged experimental hypertension without exhibiting substantial arteriolar changes; on the other hand, it has been shown by Wilson and Byrom (1939), in the rat, that high blood pressure induced by ischaemia of one renal artery may lead to typical changes in the arterioles of the non-ischaemic kidney.

The observations of Wilson and Byrom were not accepted by Goldblatt and Kahn (1940), on the grounds that white rats are particularly susceptible to pyelonephritis, and the latter workers considered that the results obtained might have been explained by the development of this condition. Restall (unpublished observations) has shown that rats rendered hypertensive for a period of approximately one year by unilateral renal ischaemia exhibit arterial changes in the other kidney. His histological observations and the bacteriological studies by Kirschner rule out pyelonephritis in most of the experiments.

That high blood pressure gives rise to medial hypertrophy in the smaller arteries and in arterioles may be regarded as proved. There is also evidence that other arteriosclerotic changes, such as increase of elastic tissue and perhaps intimal hyperplasia (Restall, unpublished observations), may develop as the result of increased intravascular tension. The literature is summarized by Hueper (1944). The arteriolar changes secondary to high blood pressure are usually more pronounced in the kidneys than in other organs.

5. Ways in which Pathological Changes Induced or Accelerated by Hypertension may lead to Further Elevation of Blood Pressure

It seems probable that, irrespective of the cause, prolonged elevations of the blood pressure of sufficient degree both physiological and pathological, tend to be followed by processes which lead to the further elevation of the blood pressure, with the ultimate development of essential hypertension. Any pathological or physiological changes brought

about by the primary hypertension and leading to secondary rises of blood pressure could set up a vicious circle. At least five such mechanisms must be discussed.

(i) Inelasticity of Larger Arteries

In hypertension, arteriosclerosis of great vessels is accelerated with the loss of distensibility (Bramwell, 1924; Fahr, Davis, Kerkhof, Hallock, and Giere, 1932; Wiggers, 1938) causing systolic hypertension. It is stated that the mean blood pressure is not raised (Fahr, Davis, Kerkhof, Hallock, and Giere, 1932), and therefore it is uncertain whether such hypertension will or will not tend to accelerate arteriosclerosis and arterio-sclerosis further. *It is not suggested that this systolic hypertension caused by decreased elasticity of large arteries is sufficient to explain the progressive increase of blood pressure, but that it is a factor which participates.*

(ii) Exaggerated Contraction of Hypertrophied Arterioles

Measurements of arterioles and small arteries in almost all tissues of the body, and notably in muscle, indicate that at a certain stage in the development of essential hypertension there is medial hypertrophy. It seems likely that more vigorous responses by hypertrophied blood vessels would account for the fact that both rises and falls of blood pressure in response to various stimuli are commonly exaggerated in essential hypertension. Experimental evidence in favour of this has been obtained by Restall (unpublished observations), who compared the response to adrenaline of blood vessels from chronically hypertensive and control rats, and found greater responses from the vessels of hypertensives, especially renal vessels. Even if medial hypertrophy does not of itself raise the blood pressure it seems probable that it would render other hypertensive agents more effective. *If the medial hypertrophy caused by blood-pressure elevations leads to further increase of the blood pressure another vicious circle has been set up.*

(iii) The Goldblatt Mechanism and Variable Reactivity of Blood Vessels to Pressor Agents

The suggestion has been made that essential hypertension might be due to the liberation of pressor substances from kidneys rendered ischaemic by arteriolar changes in the renal blood vessels (Goldblatt, 1947). The arteriolar changes in essential hypertension are most prominent in the kidney (Fahr, 1922; Fishberg, 1925; Russell, 1929; Moritz and Oldt, 1937; and others). I favour the view that such arteriolar changes, more particularly in the later years, may occur primarily, but some at least of them may be caused or accelerated by the prodromal rises of blood pressure referred to in the first part of this paper.

The experimental evidence that ischaemic kidneys sometimes liberate pressor substances is so strong that it may be taken as proved. The presence of some degree of renal ischaemia in almost all advanced cases, especially elderly cases, may be regarded as established. It seems probable that such renal ischaemia will cause a rise in blood pressure at certain stages and in certain cases of established essential hypertension. The suggestion has been made also that functional renal vasoconstriction might initiate a Goldblatt type of hypertension (Goldring, Chasis, Ranges, and Smith, 1941). At my suggestion Restall (unpublished observations) studied the response to adrenaline of blood vessels in rats rendered chronically hypertensive by unilateral renal ischaemia and in control rats. He found that vasoconstriction was much more pronounced in the vessels of the unoperated kidneys of the hypertensives than in the renal vessels of controls. Such observations indicate a means by which renal vascular changes may become progressive.

On the other hand, renal ischaemia is not always associated with an elevation of the blood pressure (Kimmelstiel, 1933; Cox and Dock, 1941). Whether the absence of hypertension is due to failure of the kidneys to release pressor agents, to the subsequent inactivation of such agents (Fasciolo, Houssay, and Taquini, 1938; Katz, Mendlowitz, and Friedman, 1938; Rodbard and Katz, 1941), to the operation of homeostatic controls preventing an elevation of the blood pressure, or even to antipressor agents, it is impossible to say at the present time. The experimental study of renal hypertension is made more difficult by the fact that the available experimental animals

behave dissimilarly (Braun-Menéndez, Fasciolo, Leloir, Munoz, and Taquini, 1946). In the rat and rabbit it has been suggested that, whereas the initial rises of blood pressure following renal ischaemia are due to the Goldblatt mechanism, the subsequent maintenance of the high blood pressure is effected by some other means. The application of the results to human hypertension remains uncertain. The processes whereby renal ischaemia leads to hypertension in experimental animals is complicated and not yet fully evaluated. Liberation of an enzyme-like substance, renin, from the ischaemic kidney acts upon a substrate-like substance, preangiotonin, which is a constituent of plasma, to form a pressor agent, angiotonin. The angiotonin causes vasoconstriction by a direct action on smooth muscle, but has a limited period of action owing to its enzymic destruction.

From the observations of Black (unpublished) it seems that, apart from destruction, the amount of circulating angiotonin could not be the only factor deciding the magnitude of blood-pressure increase. Black has shown that there is no consistent difference between hypertensives and normotensives in respect of their sensitivity to the pressor action of intravenous angiotonin. Some individuals are insensitive to doses of angiotonin which in others cause large rises in blood pressure. Vascular sensitivity to the pressor action of angiotonin runs parallel with sensitivity to the pressor action of S. methyl isothiourrea. A non-specific reactivity of blood vessels governs the pressor response as well as the amount of circulating angiotonin.

The formation of hypertensive agents depends upon the degree of ischaemia and the amount of renal tissue involved; and the rate of destruction of hypertensive agents is related to the amount of non-ischaemic renal tissue in the body. The kidneys both of essential hypertension and of elderly normotensive cases may have within them areas which are ischaemic and areas which are adequately supplied with blood. It is therefore possible that while parts of the renal tissue are forming, other parts may be destroying, the hypertensive agents. Increased formation of V.E.M. or decreased elimination of pressor amines by amine oxidase have been suggested as alternative or additional mechanisms by which renal ischaemia could cause blood-pressure elevations. *It seems clear, however, that elevated blood pressure favours renal arteriosclerosis, and if this in turn gives rise sometimes to further elevations of the blood pressure due to the renal ischaemia a vicious circle would be set up.*

(iv) Elevations of the Blood Pressure Persisting After the Initial Cause has Ceased to Operate

(a) *Hypertension Persisting After Removal of a Single Ischaemic Kidney.*—In the rat the removal of the ischaemic kidney after several months of experimental hypertension did not usually restore the blood pressure to normal (Wilson and Byrom, 1941; Grollman, Harrison, and Williams, 1943; Patton, Page, and Ogden, 1943). It seems that in many cases pathological changes have developed in the unoperated kidney (Patton, Page, and Ogden, 1943; Restall, unpublished observations), and the persistence of the blood-pressure elevation has been attributed to these. Pickering (1945) has indicated the possibility of a non-renal mechanism. Likewise in the rabbit Grollman (1944) found that nephrectomy after ten weeks of hypertension from renal compression does not abolish the hypertension. In the dog the evidence is insufficient. It has been shown that removal of a single ischaemic kidney abolishes the hypertension in the dog if the removal is carried out within the first few weeks (Goldblatt, Lynch, Hanzal, and Summerville, 1934; Blalock and Levy, 1937; Houssay and Fasciolo, 1937; Verney and Vogt, 1938, 1943; Rodbard and Katz, 1939). Isolated experiments suggest that, in the dog, hypertension may persist if removal of the ischaemic kidney is postponed for three months or more. Goldblatt, however, reported an experiment in a dog with unilateral renal hypertension of nine months' duration which was completely cured by nephrectomy.

(b) *Hypertension Persisting After Bilateral Nephrectomy.*—Pickering (1945) has shown that blood-pressure elevations may be made to outlive the stimulus which produced them. He raised the blood pressure in rabbits by unilateral nephrectomy and constriction of the main artery of the remaining kidney, and noted that if hypertension had lasted but a few days and

the remaining ischaemic kidney was removed the blood pressure fell to normal in a few hours. If the hypertension had lasted seven weeks or more excision of the ischaemic kidney no longer removed the hypertension. The response of the blood vessels was altered as the result of the prolonged hypertension. There are clinical experiences which may be analogous. For example, where the blood-pressure rise due to toxæmia of pregnancy has been of short duration, even if high, termination of the pregnancy often is associated with a comparatively rapid fall of the blood pressure back towards normal. If, however, the blood-pressure rise has been of long duration the blood pressure may not return to normal for several months after the termination of the pregnancy, and in some cases a permanent hypertension results. The incomplete fall or absence of a fall of blood pressure following the removal of a unilateral ischaemic kidney even when there is good evidence that the remaining kidney is healthy (Abeshouse, 1941a, 1941b) may be another example.

Some observations concerning the effect of bilateral nephrectomy by Flemming (unpublished observations) on hypertensive rabbits confirm the observations of Pickering.

(c) *Experimental Audiogenic and Neurogenic Hypertension.*—Medoff and Bongiovanni (1945) and Farris, Yeakel, and Medoff (1945) showed that rats subjected for long periods to intense intermittent audiogenic stimuli developed elevations of blood pressure. Restall and Smirk (unpublished observations) confirmed these findings and found in agreement with Medoff and Bongiovanni that the blood-pressure elevations were not abolished by light or ether anaesthesia. We noted that the blood-pressure increase persisted for at least several months after the audiogenic stimulation ended, that there was no histological evidence of renal damage in the early stages of the experimental hypertension, and that the blood pressure remained elevated for 36 hours after bilateral nephrectomy. The possibility that the nervous system was damaged by supersonic waves has not yet been eliminated.

In some other experiments, however, rats were exposed first to a signal noise (buzzer), no question of supersonics being involved. The signal noise was followed by electrification of the cage causing a mild-to-moderate faradic stimulation of the rats' feet. This also led within a few weeks to a rise of blood pressure, though of smaller degree, which was not abolished by light ether anaesthesia. It seems that the initial blood-pressure elevation is due in this case to nervous stimulation, and that this has given rise to an increase in blood pressure which apparently is maintained by some process other than that which initiated the hypertension.

This would appear to be experimental confirmation in the rat of the suggestion that certain blood-pressure increases if frequent or prolonged enough may outlive the stimuli which caused them. These persisting blood-pressure increases in rats following audiogenic and electrical stimulation often persist after bilateral nephrectomy, and in this resemble those described by Pickering (1945) in rabbits after hypertension induced by renal ischaemia. Apart from the general resemblance there is as yet no evidence of a single underlying mechanism. The significance for human hypertension is undetermined.

(v) Absence of Appreciable Increase of Passive Resistance in Hypertrophied Vessels

The idea that pathological changes in the arterioles may result in a permanent increase in the peripheral resistance and thereby be responsible for continued elevation of the blood pressure was discussed by Volhard (1931). The elevation was looked on as being passive and anatomical rather than contractile in origin. The changes in the blood vessels outside the kidney, however, are thought to be insufficiently advanced to give support to this explanation. The considerable fall in blood pressure which may occur for a short time after sympathectomy, after nitrates, or from thiocyanate overdosage suggests that no great part of the peripheral resistance is the result of purely passive changes in the vascular bed. Restall perfused through the aorta the hind quarters of rats which had been hypertensive for a period of 12 to 18 months (approximately one-third to one-half of the normal duration of a rat's life), and, compared with normal rats, he found but little

difference in the peripheral resistance. It appears from this experiment that the continued high blood pressure was maintained by active vasoconstriction and even after one year only a minor part of the peripheral resistance of the lower limbs was of a passive character. I have not, therefore, been able to find experimental support for the idea that pathological changes in vessels lead in time to the development of any important generalized increase of passive peripheral resistance.

6. Other Factors which may Elevate the Blood Pressure

1. *Increased Reactivity to Blood-Pressure-Raising Reflexes in Cases of Arterial Hypertension.*—High reactivity to the cold pressor test (Hines and Brown, 1935) and to the blood-pressure-raising reflex from muscle (Alam and Smirk, 1938) is often encountered in essential hypertension, but this does not by itself explain a high level of the resting blood pressure. It is probable that a high degree of reactivity of the blood pressure to blood-pressure reflexes may express itself in daily life by abnormally strong and frequent blood-pressure variations. The blood pressure from this cause may be found at a higher level in the non-basal conditions which ordinarily are present at the time of measurement. The reactivity to blood-pressure-raising reflexes increases with age, but to a greater degree in essential hypertension than in health (Alam and Smirk, 1938; Russek and Zohman, 1945).

2. *Natural Increase of Blood Pressure with Age.*—The recorded blood-pressure averages increase with age. To some extent this is due to the effect of including the pressures of hypertensive individuals in the figures. The general impression, however, is that there is also an increase in the average blood pressure with age which does not depend on the inclusion of hypertensives. This "natural" blood-pressure increase with age is likely to be one of the several factors responsible for the increase in the incidence of essential hypertension in the later years of life.

3. *Alteration in the Response of the Carotid Sinus to Blood-Pressure Increase.*—While my observations confirm Pickering, Kissin, and Rothschild (1936) in their view that the carotid sinus mechanism in cases of essential hypertension responds to digital stimulation, I found that in response to blood-pressure increases produced reflexly the pulse rate tends to rise instead of falling in most cases of essential hypertension, the natural relationship between pulse rate and blood pressure being reversed (Alam and Smirk, 1938). A corresponding observation was made previously by MacWilliam (1925). A possible interpretation of this is that the carotid sinus offers a less effective control over the blood-pressure level in cases of essential hypertension.

4. *Increase of the Secretions of the Suprarenal Gland.*—The suggestion has been made that cortical hyperadrenia may be concerned in the pathogenesis of essential hypertension (Perera, Knowlton, Lowell, and Loeb, 1944; Perera and Blood, 1947a, 1947b). In terms of the present hypothesis, blood-pressure increases of suprarenal origin or any other, if sufficiently frequent and prolonged, would be expected to play their part in pathogenesis.

Comment

If elevation of the blood pressure in essential hypertension depends upon the total effect produced by the combined action of several components, it becomes important to know whether the magnitude of the total effect is equal to the sum of the effects of the various components acting separately. The answer appears to be that the blood-pressure rise produced by two blood-pressure-raising stimuli acting simultaneously is less than the sum of the blood-pressure rises produced by the two stimuli acting separately (Bruce, Martin, and Smirk, 1945). This may be a part of the

explanation of why the rate of increase of the blood pressure is slowed up as higher levels are attained.

No reference has been made earlier in this paper to malignant hypertension, largely because it is thought that malignant hypertension is something other than a severe or accelerated form of essential or benign hypertension. After a survey of 169 consecutive deaths in hypertensive individuals, residents of the province of Otago, New Zealand, and on the basis of clinical experience in that province, Istad and Smirk (1948) reached the conclusion that, whereas benign hypertension is a very common condition, malignant hypertension and the classical advanced omerulonephritis are both most exceptional, particularly the former. It is sometimes stated that malignant hypertension is an accelerated form of benign hypertension. But experience goes to show that benign hypertension in Otago province does not differ fundamentally from benign hypertension in other countries, although its course appears to be rather milder; yet malignant hypertension is decidedly uncommon. It seems very probable, therefore, that the condition of malignant hypertension is not merely an accelerated form of benign hypertension but involves some additional factor over and above those responsible for benign hypertension. It is of great interest that there is also a correspondingly low incidence of chronic glomerulonephritis in Otago province. It is clearly worth considering whether the infrequency of advanced chronic glomerulonephritis and of malignant hypertension in this province is in some way related to the absence of a common aetiological factor.

Summary

It seems probable that there is no single or simple primary use of essential hypertension.

It is thought that the disorder may originate in some cases on the simple overactivity of physiological processes, whereas in other cases pathological changes such as renal arteriolosclerosis may be primary.

It is suggested that the blood-pressure increases are of composite origin but that these increases, if frequent, high, or prolonged enough, give rise to a number of pathological and functional changes which tend to maintain or elevate the blood pressure further. Once this self-perpetuating cycle of changes has been set up the condition may be described as essential hypertension. Under-average blood pressures are associated with a much decreased incidence of essential hypertension in later life. It is difficult to explain this protective influence of low blood pressure except by the hypothesis that the tendency to develop high blood pressure in later life is influenced strongly by the precise level of the blood pressure even when this lies within the normal range.

Examples of factors various combinations of which may raise the level of the blood pressure enough to enhance strongly the liability to the subsequent development of essential hypertension include: certain geographical environments, race, heredity, emotional liability or disposition to over-alertness and inactivity, occupations or domestic environments involving a tendency to stress and strain, over-average liability of the vasomotor system to respond by vasoconstriction to tenseness and emotion, physical activity or metabolic stimuli, over-average body weight or sthenic habitus.

Elevations of the basal pressure are likely to throw greater strain on the heart and on small arteries and arterioles than the elevations of the supplemental pressure. The degree to which blood vessels are able to withstand exposure to over-average blood pressure or vasoconstriction without undergoing pathological change varies from one individual to another and is likely to have an important influence both on the rate of increase of the blood pressure and on the development of complications.

Examples of a number of pathological and functional changes which in various combinations it is thought might be responsible for further elevations of the blood pressure are cited and discussed in the text. These include: (a) inelasticity

of large arteries; (b) exaggerated contraction of hypertrophied arterioles; (c) the release of pressor agents from ischaemic kidneys; (d) to a very minor degree, increased passive resistance of hypertrophied arterioles; and (e) an unknown non-renal factor or factors capable of perpetuating certain blood-pressure increases after the primary exciting causes of these increases have ceased to operate. Other factors are referred to which probably contribute increments of pressure increase.

The fundamental unity of the clinical picture in essential hypertension is not dependent upon the blood-pressure elevation being regarded as the result of a single or simple pathological process. It is due to the fact that the clinical manifestations and complications are due almost entirely to events which are secondary to a single characteristic of the disorder—namely, high blood pressure brought about mainly by vasoconstriction.

The above general hypothesis holds that elevations of blood pressure in man and certain other mammals tend to be self-perpetuating. It is to be expected, therefore, that the cycles of changes concerned in the secondary elevations of the blood pressure which occur in essential hypertension will be responsible in part for the perpetuation, and perhaps for the further increase, of blood pressure in certain other conditions such as post-toxaemia of pregnancy, cortical hyperadrenia, and some cases of chronic pyelonephritis, medullary hyperadrenia, and chronic nephritis.

There is evidence suggesting that malignant hypertension is something other than an accelerated form of benign or essential hypertension.

Grateful acknowledgment is made to Miss Walsh and Mrs. Tyson for extensive secretarial help, and to the Medical Research Council of New Zealand for grants-in-aid.

REFERENCES

- Abeshouse, B. S. (1941a). *Surgery*, 9, 942.
 — (1941b). *Ibid.*, 10, 147.
 Actuarial Society of America and the Association of Life Insurance Medical Directors (1939). *Blood Pressure Study*.
 — (1941). *Supplement to Blood Pressure Study*.
 Adams, J. M. (1932). *Amer. J. med. Sci.*, 184, 342.
 Adlersberg, D., Coler, H. R., and Laval, J. (1946). *J. Mt Sinai Hosp., N.Y.*, 12, 984.
 Alam, M., and Smirk, F. H. (1937). *J. Physiol.*, 89, 372.
 — (1938). *Clin. Sci.*, 3, 259.
 — (1943a). *Brit. Heart J.*, 5, 152.
 — (1943b). *Ibid.*, 5, 155.
 Alkan, Leopold (1930). *Anatomische Organkrankheiten aus seelischer Ursache*. Hippokratesverlag, Stuttgart. Cited by Dunbar (1935).
 Allen, F. P. (1931). *J. industr. Hyg.*, 13, 164.
 Alistad, K. S., and Smirk, F. H. (1948). *N.Z. med. J.*, 47, 298.
 Alvarez, W. C., and Stanley, L. L. (1930). *Arch. intern. Med.*, 46, 17.
 Ashford, B. K., and Dowling, G. B. (1929). *P.R. J. publ. Hlth*, 5, 477.
 Association of Life Insurance Medical Directors and the Actuarial Society of America (1925). *Blood Pressure, Report of the Joint Committee on Mortality*.
 Ayman, D. (1931). *New Engl. J. Med.*, 205, 424.
 — (1933). *Amer. J. med. Sci.*, 186, 213.
 — (1934). *Arch. intern. Med.*, 53, 792.
 — (1936). *Medical Papers Dedicated to Henry Asbury Christian*. Waverly Press.
 — and Goldshine, A. D. (1940). *Amer. J. med. Sci.*, 200, 465.
 — and Pratt, J. H. (1931). *Arch. intern. Med.*, 47, 675.
 Barach, J. H. (1928). *J. Amer. med. Ass.*, 91, 1511.
 Bauman, L. (1928). *Ibid.*, 90, 22.
 Bell, E. T., and Clawson, B. J. (1928). *Arch. Path.*, 5, 939.
 Benedict, F. G. (1915). *A Study of Prolonged Fasting*. Carnegie Institution of Washington.
 — Miles, W. R., Rohlf, P., and Smith, H. M. (1919). *Human Vitality and Efficiency under Prolonged Restricted Diet*. Carnegie Institution of Washington Publication, No. 280.
 Bickel, H. (1914). *Neural. Zbl.*, 33, 90. Cited by Fishberg (1939), p. 602.
 Binger, C. (1945). *Bull. N.Y. Acad. Med.*, 21, 610.
 Blacklock, A., and Levy, S. E. (1937). *Ann. Surg.*, 106, 826.
 Bramwell, J. C. (1924). *Quart. J. Med.*, 17, 225.
 Braun-Menéndez, E., Fasciolo, J. C., Leloir, L. F., Munoz, J. M., and Taquini, A. C. (1946). *Renal Hypertension*. Thomas, Springfield, Illinois.
 Brooks, H., and Carroll, J. H. (1912). *Arch. intern. Med.*, 10, 97.
 Brown, G. E. (1929-30). *Ann. intern. Med.*, 3, 1177.
 Bruce, M. B., Martin, R. T., and Smirk, F. H. (1945). *J. Physiol.*, 103, 412.
 Cadbury, W. W. (1922). *Arch. intern. Med.*, 30, 362.
 — (1923). *China Med. J.*, 37, 823. Cited by Krakower (1933-4).
 Campbell, H. E., and Blankenhorn, M. A. (1925-6). *Amer. Heart J.*, 1, 151.
 Castleman, B., and Smithwick, R. H. (1943). *J. Amer. med. Ass.*, 121, 1256.

- Concepción, I., and Bulatao, E. (1916). *Philipp. J. Sci., Sec. B.*, 11, 135.
- Cox, A. J., jun., and Doek, W. (1941). *J. exp. Med.*, 74, 167.
- Cruickshank, E. W. H. (1923). *China med. J.*, 37, 1. Cited by Krakower (1933-4).
- Daley, R. M., Ungerleider, H. E., and Gubner, R. S. (1943). *J. Amer. med. Ass.*, 121, 383.
- Dieckmann, W. J., and Michel, H. L. (1935). *Arch. intern. Med.*, 55, 420.
- Diehl, H. S., and Hesdorffer, M. B. (1933). *Ibid.*, 52, 948.
- Donnison, C. P. (1929). *Lancet*, 1, 6.
- Dublin, L. I., Fisk, E. L., and Kopf, E. W. (1925). *Amer. J. med. Sci.*, 170, 576.
- Dunbar, F. (1935). *Emotions and Bodily Changes*. Columbia Univ. Press, N.Y.
- Ehrstrom, M. C. (1945). *Aeta med. scand.*, 122, 546.
- Fahr, G., Davis, J., Kerkhof, A., Hallock, P., and Gier, E. (1932). *Amer. J. Physiol.*, 101, 376.
- Fahr, T. (1922). *Virchows Arch.*, 239, 41.
- Fahrenkamp, Karl (1926). Die psycho-physischen Wechselwirkungen bei den ... Hippokrates-verlag, S.
- Farris, E. J., Yencel, E. H., and Medoff, H. S. (1945). *Amer. J. Physiol.*, 144, 331.
- Fasciolo, J. C., Houssay, B. A., and Taquini, A. C. (1938). *J. Physiol.*, 94, 281.
- Feldt, R. H., and Wenstrand, D. E. W. (1942). *Amer. Heart J.*, 23, 766.
- Fischer, R. (1930). *Med. Klinik*, 26, 625. Cited by Fishberg (1939), p. 602.
- Fishberg, A. M. (1925). *Arch. intern. Med.*, 35, 650.
- (1939). *Hypertension and Nephritis*, 4th ed., p. 235. Lea and Febiger, Philadelphia.
- Flaxman, N. (1934). *Amer. J. med. Sci.*, 188, 639.
- Fleming, W. D. (1924). *J. metab. Res.*, 6, 87. Cited by Shattuck (1933).
- Foster, J. H. (1927). *Arch. intern. Med.*, 40, 38.
- (1930). *New Engl. J. Med.*, 203, 1073.
- Fraser, J., and Cowell, E. M. (1918). *J. Amer. med. Ass.*, 70, 520.
- Friedlander, A. (1927). *Medicine*, 6, 143.
- Frost, H. M. (1926). *Life Insurance Med.*, Boston, 1, 178.
- Gager, L. T. (1930). *Hypertension*, p. 329. Williams and Wilkins Co., Baltimore.
- Garretón-Silva, A., Rodríguez, A., and Aspíllaga, A. (1941). *Rev. med. Chile*, 69, 629. Cited by Braun-Menéndez et al. (1946), p. 282.
- Gates, R. G. (1946). *Human Genetics*. Macmillan Co., N.Y.
- Gelshtein, E. M. (1943). *Khu Med.*, 21, 12, 10. Cited by A. Ruskin, *Amer. Rev. Soviet Med.*, 1946, 3, 260.
- Gillespie, R. D. (1924). *J. Physiol.*, 58, 425.
- Glomset, D. J. (1931). *J. Iowa med. Soc.*, 21, 220.
- Goldblatt, H. (1947). *Physiol. Rev.*, 27, 120.
- and Kahn, J. R. (1940). *Studies on Experimental Hypertension XIII*, p. 266. Science Press, Washington.
- Lynch, J., Hanzal, R. F., and Summerville, W. W. (1934). *J. exp. Med.*, 59, 347.
- Goldring, W., Chasis, H., Ranges, H. A., and Smith, H. W. (1941). *J. clin. Invest.*, 20, 637.
- Graham, A. W., Hines, E. A., and Gage, R. P. (1945). *Amer. J. Dis. Child.*, 69, 203.
- Graham, J. D. P. (1945). *Lancet*, 1, 239.
- Graybiel, A., Allen, A. W., and White, P. D. (1935). *J. clin. Invest.*, 14, 52.
- Grollman, Arthur (1929). *Amer. J. Physiol.*, 89, 584.
- Grollman, A. (1944). *Ibid.*, 142, 666.
- Harrison, T. R., and Williams, J. R. (1943). *Ibid.*, 139, 293.
- Gubner, R., Silverstone, F., and Ungerleider, H. E. (1946). *J. Amer. med. Ass.*, 130, 325.
- Hall, S. B. (1927). *Lancet*, 2, 540.
- Hampner, H., and Heller, H. (1934). *Arch. exp. Path. Pharmacol.*, 174, 517.
- Hartman, H. R., and Ghrist, D. G. (1929). *Arch. intern. Med.*, 44, 877.
- Hishimoto, H., Akatsuka, K., Tsujii, I., and Shiraishi, H. (1933-4). *Ann. intern. Med.*, 7, 615.
- Hedley, O. F. (1941). *Publ. Hlth. Bull., Wash.*, No. 268. Cited in *Bull. Hyg.*, 1942, 17, 553.
- Hermann, H. L., Strachan, A. S., and Heyman, S. C. (1929). *British Medical Journal*, 1, 344.
- Hlever, H. E., and Keeton, R. W. (1941). *Amer. J. clin. Path.*, 11, 818.
- Hill, L. (1898). *J. Physiol.*, 22, xxvi.
- Hines, E. A., jun. (1937-8). *Ann. intern. Med.*, 11, 593.
- (1940). *J. Amer. med. Ass.*, 115, 271.
- and Brown, G. E. (1935). *Proc. Mayo Clin.*, 10, 371.
- Holmes, S. J. (1931). *Hum. Biol.*, 3, 203.
- Houssay, B. A., and Fasciolo, J. C. (1937). *Rev. Soc. argent. Biol.*, 13, 284.
- Houston, W. R. (1929). *Med. Clin. N. Amer.*, 12, 1285.
- Huber, E. G. (1927). *J. Amer. med. Ass.*, 88, 1554.
- Hueper, W. C. (1944). *Arch. Path.*, 38, 245.
- Hunter, A. (1939). *J. Inst. Actuaries*, 70, 60. Cited by Daley et al. (1943).
- Ismail, Abd-El-Aziz (1928). *Lancet*, 2, 275.
- Katz, L. N., Mendlowitz, M., and Friedman, M. (1938). *Proc. Soc. exp. Biol., N.Y.*, 37, 722.
- Kean, B. H. (1941). *Arch. intern. Med.*, 68, 466.
- (1944). *Amer. J. trop. Med.*, 24, 341. Cited by Taylor (1945).
- Kerley, C. G., and Lorenze, E. J. (1942). *J. Paediat.*, 20, 383.
- Kilborn, L. G. (1926). *China med. J.*, 40, 1. Cited by Krakower (1933-4).
- Kilpatrick, J. A. (1948). *Brit. Heart J.*, 10, 48.
- Kimmelsiel, P. (1933). *Virchows Arch.*, 290, 245.
- Kirk, E. J. (1931). *J. industr. Hyg.*, 13, 314.
- Krakower, A. (1933-4). *Amer. Heart J.*, 9, 396.
- Klemola, Erkki (1938). *Z. Konstleure*, 22, 69. Cited by Gates (1946), p. 932.
- Kronfeld, A. (1932). Kreislaufneurosen bezw. Herzneurosen vom standpunkt des Psychotherapeuten. In *Herzneurosen und Modern Kreislauftherapie*, Steinkopff, Dresden und Leipzig, 18. Cited by Dunbar (1935).
- Lantin, G. T. (1933). *J. Philipp. med. Ass.*, 13, 191.
- Laws, C. L. (1932-3). *Amer. Heart J.*, 8, 608.
- Levy, R. L., Hillman, C. C., Stroud, W. D., and White, P. D. (1944). *J. Amer. med. Ass.*, 126, 829.
- White, P. D., Stroud, W. D., and Hillman, C. C. (1945a). *Ibid.*, 128, 1059.
- (1945b). *Ibid.*, 129, 585.
- McCay, D. (1907). *Lancet*, 1, 1483.
- (1908). *Sci. Mem. Govt India*, 34, 23.
- McGeorge, M. (1945). *Quart. J. Med.*, n.s. 14, 171.
- MacKenzie, L. F., and Shepherd, P. (1937). *Proc. Ass. Life Insur. med. Dir. Amer.*, 24, 157. Cited by Levy et al. (1945a).
- MacWilliam, J. A. (1923). *British Medical Journal*, 2, 1196.
- (1925). *Physiol. Rev.*, 5, 303.
- Master, A. M. (1943). *Bull. N.Y. Acad. Med.*, 19, 704.
- and Oppenheimer, E. T. (1929). *J. Amer. med. Ass.*, 92, 1652.
- Medoff, H. S., and Bongiovanni, A. M. (1945). *Amer. J. Physiol.*, 143, 297.
- Menninger, K. A. (1938). *Bull. N.Y. Acad. Med.*, 14, 198.
- Moller, E. (1931). *Aeta med. scand.*, 74, 341.
- von Monakow, P. (1920). *Dtsch. Arch. klin. Med.*, 133, 129.
- Moritz, A. R., and Oldt, M. R. (1937). *Amer. J. Path.*, 13, 679.
- Moschowitz, E. (1919). *Amer. J. med. Sci.*, 158, 668.
- (1945). *J. Mt. Sinai Hosp.*, 11, 357.
- Mueller, O. (1922). *Die Kapillaren der menschlichen Koerperflaeche*, p. 118. Stuttgart.
- Mueller, S. C., and Brown, G. E. (1930). *Ann. intern. Med.*, 3, 1190.
- Muller, C. (1921). *Aeta med. scand.*, 55, 381.
- Nuzum, F. R., and Elliot, A. H. (1931). *Amer. J. med. Sci.*, 181, 630.
- Nye, L. J. J. (1937). *Med. J. Austral.*, 2, 1000.
- O'Hare, J. P., Walker, W. G., and Vickers, M. C. (1924). *J. Amer. med. Ass.*, 83, 27.
- Page, I. H., and Corcoran, A. C. (1945). *Arterial Hypertension. Its Diagnosis and Treatment*, p. 252. Year Book Publishers, Chicago.
- Pal, J. (1919). *Med. Klinik*, 15, 662. Cited by Braun-Menéndez et al. (1946), p. 282.
- Palmer, R. S. (1930). *J. Amer. med. Ass.*, 94, 694.
- (1931). *New Engl. J. Med.*, 205, 1233.
- Patton, H. S., Page, E. W., and Ogden, E. (1943). *Surg. Gynec. Obstet.*, 76, 493.
- Pei-Lin, Li (1940). *J. Path. Bact.*, 50, 121.
- Perera, G. A., and Blood, D. W. (1947a). *Ann. intern. Med.*, 27, 401.
- (1947b). *J. clin. Invest.*, 26, 1109.
- Knowlton, A. I., Lowell, A., and Loeb, R. F. (1944). *J. Amer. med. Ass.*, 125, 1030.
- Pickering, G. W. (1945). *Chin. Sci.*, 5, 229.
- and Kissin, M. (1936). *Ibid.*, 2, 201.
- and Rothschild, P. (1936). *Ibid.*, 2, 193.
- Platt, R. (1947). *Quart. J. Med.*, n.s. 16, 111.
- (1948). *Ibid.*, n.s. 17, 83.
- Preble, W. E. (1923). *Boston med. surg. J.*, 188, 617.
- Raghavan, P. (1941). *J. Indian med. Ass.*, 10, 365. Cited in *Bull. Hyg.*, 1942, 17, 33.
- Robinson, S. C., and Bruce, M. (1939). *Arch. intern. Med.*, 64, 409.
- and Mass, J. (1940). *J. Lab. clin. Med.*, 25, 807.
- Rodbard, S., and Katz, L. N. (1939). *Amer. J. med. Sci.*, 198, 602.
- (1941). *J. exp. Med.*, 73, 357.
- Rogers, W. F., and Palmer, R. S. (1944). *New Engl. J. Med.*, 230, 36.
- Rony, H. R. (1940). *Obesity and Leanness*. Lea and Febiger Philadelphia.
- Rose, R. H. (1923). *Amer. Med.*, 18, 418.
- Ruskin, A., Beard, O. W., and Schaffer, R. L. (1948). *Amer. J. Med.*, 4, 228.
- Russek, H. I. (1943). *Amer. Heart J.*, 26, 398.
- and Zohman, B. L. (1945). *Ibid.*, 29, 113.
- Russell, D. S. (1929). A Classification of Bright's Disease. Priv. Council Med. Res. Coun. Sp. Rep. Ser., No. 142. London.
- Salcedo, Juan, jun., and Pascual, Wenceslao (1932). *J. Philipp. med. Ass.*, 12, 205.
- Schultz, J. H. (1932). *Das autogene Training (konzentrierte Selbstentspannung)*, p. 305. Thieme, Leipzig. Cited by Dunbar (1935).
- Schultze, V. E., and Schwab, E. H. (1936). *Amer. Heart J.*, 11, 6.
- Scott, R. W. (1944). *Arch. Surg.*, 49, 192.
- Shattuck, G. C. (1930). *The African Republic of Liberia and the Belgian Congo*. Harvard Univ. Press, Cambridge. Cited by Schulze and Schwab (1936).
- (1933). *The Peninsula of Yucatan; Medical, Biological, Meteorological, and Sociological Studies*. Carnegie Institution of Washington.
- Shaw, A. F. B., and Ghareeb, A. A. (1938). *J. Path. Bact.*, 46, 40.
- Short, J. J., and Johnson, H. J. (1939). *Amer. J. med. Sci.*, 198, 22.
- Smirk, F. H. (1933-4). *Chin. Sci.*, 1, 131.
- (1934). *Proc. roy. Soc. Med.*, 27, 1485.
- (1944). *Brit. Heart J.*, 6, 176.
- (1947). *N.Z. med. J.*, 46, 86.

- Smithwick, R. H. (1944). *Arch. Surg.*, 49, 180.
 Stieglitz, E. J. (1930). *Amer. J. med. Sci.*, 179, 775.
 Stocks, P., and Karn, M. N. (1924). *Blood Pressure in Early Life*. Camb. Univ. Press.
 Stone, C. T., and Vanzant, F. R. (1927). *J. Amer. med. Ass.*, 89, 1473.
 Symonds, B. (1923). *Ibid.*, 80, 232.
 Terry, A. H. (1923). *Ibid.*, 81, 1283.
 Tjersstedt, C. (1926). *Skand. Arch. Physiol.*, 48, 138. Cited by Dunbar (1935).
 Torgerson, W. R. (1929). *P.R. J. publ. Hlth.*, 5, 438.
Transactions of the International Congress on Life Assurance Medicine, London, 1935.
 Tung, C. L. (1927). *Arch. intern. Med.*, 40, 153.
 — (1928). *Chin. J. Physiol.*, 93, 1. Cited by Krakower (1933-4).
 — (1930). *Ibid.*, 4, 117. Cited by Krakower (1933-4).
 Verney, E. B., and Vogt, M. (1938). *Quart. J. exp. Physiol.*, 28, 253. (1943). *Ibid.*, 32, 35.
 Volhard, F. (1931). In Mohr and Staehelin's *Handbuch der inneren Medizin*, 2nd ed., 6, 508.
 Wallgren, A. (1922). *Acta med. scand.*, 56, 356.
 Weiss, M. M., and Prusmack, J. J. (1938). *Amer. J. med. Sci.*, 195, 510.
 Weitz, W. (1923). *Z. klin. Med.*, 96, 151.
 — and Sieben A. (1926). *Münch. med. Wschr.*, 73, 2197. Cited by Dunbar (1935).
 Wiggers, C. J. (1938). *Amer. J. Physiol.*, 123, 644.
 Williams, A. W. (1944a). *E. Afr. med. J.*, 21, 328.
 — (1944b). *Ibid.*, 21, 368.
 Wilson, C., and Byrom, F. B. (1939). *Lancet*, 1, 136.
 — (1941). *Quart. J. Med.*, n.s., 10, 65.
 — and Pickering, G. W. (1937-8). *Clin. Sci.*, 3, 343.
 Wood, J. E., and Cash, J. R. (1939). *Ann. intern. Med.*, 13, 81.
 Yates, M. R., and Wood, J. E. (1936). *Proc. Soc. exp. Biol. N.Y.*, 34, 560.
 Ying, Y. Y. (1926). *China med. J.*, 40, 641. Cited by Krakower (1933-4).

THE ROLE OF INFECTION IN GRANULOPENIA

BY

KENNETH ROBERTSON, M.D., F.R.C.P.

Physician, Royal Hants County Hospital, Winchester, and
Royal South Hants Hospital, Southampton

In 1922 Schultz first reported a condition of severe and progressive oral sepsis associated with granulopenia, which often ended fatally. There can be no doubt that in the earlier cases the importance of sepsis was realized and stressed, but during the twenty years which followed Schultz's paper the aetiological emphasis shifted from infection to the leucotoxic drugs, the administration of which often coincided with the appearance of "malignant neutropenia," as this syndrome was now called.

Reports of cases associated with the taking of compounds containing amidopyrine began to appear on the Continent in 1930, and later in this country. The evidence against these drugs seemed irrefutable, particularly when it was shown that, in some patients who had recovered, a further small dose immediately produced a profound fall in the number of circulating granulocytes. With further experience other therapeutic agents fell under suspicion, and cases of dangerous neutropenia were reported after the use of organic arsenic, gold salts, sulphonamides, and, more recently, the thiouracils. This list is by no means complete, but is sufficient for the present purpose.

As familiarity with the condition increased, more and more importance was focused upon the leucotoxic agent, while the infection which invariably accompanied the condition came to be regarded as a purely secondary matter, due to invasion of the defenceless organism by bacteria. Thus Wilkinson (1936) uses such phrases as "the primary cause is clearly not bacteriological" and "it is apparently true, however, that the oral, throat, and other ulcerative or necrotic lesions are secondary to the blood condition, and not vice versa."

This view has undoubtedly held the field with little or no question, though all writers on the subject have referred to the fact that malignant neutropenia is from time to

time encountered in certain severe infections, particularly staphylococcal septicaemia and osteomyelitis, pneumonia, and liver abscess, when none of the usually accepted leucotoxic drugs have been used. Witts (1936) points out that patients whose white cells have been depressed by one of these drugs may or may not develop the acute illness, depending upon chance exposure to infection. He also refers to animal experiments which seemed to show that such drugs make impossible the normal leucocyte response to infection.

Dameshek and Wolfson (1942) made a preliminary report on the treatment of agranulocytosis by sulphonamides. Nixon, Eckert, and Holmes (1943) described three cases in which agranulocytosis developed while infections were being attacked by sulphadiazine. Instead of withdrawing the drug, it was continued in larger doses, with the result that the blood pictures returned to normal and the patients recovered.

Since these papers, the part played by infection in granulopenic conditions has assumed increasing importance. There can be no doubt that many physicians have accepted Dameshek's advice regarding treatment and no longer worry about the blood picture, concentrating their efforts in overcoming the infection which is threatening to overwhelm the victim.

Boland, Headley, and Hench (1946) reported the cure of a case of total agranulocytosis following the use of gold—a particularly fatal combination—by means of penicillin. In the same paper they refer to fourteen other cases associated with various drugs successfully treated in the same way.

Nevertheless, Israëls (1948), writing of penicillin treatment, says: "Several cases have been reported in the literature, but the results are not very convincing. If there is evidence of sepsis, it is clear that penicillin should be given promptly." Acute agranulocytosis unassociated with sepsis must be exceedingly rare, though Hickie (1948) has described the case of a 70-year-old man whose blood appears to have been almost devoid of cells of the granular series for a period of three years, and in whom it seems that sepsis was infrequently seen, and only as mild superficial episodes.

In March, 1946, I had under my care a woman who developed a complete agranulocytosis while undergoing treatment with gold for rheumatoid arthritis. Two previous similar cases under my care had quickly ended fatally in spite of vigorous treatment, using all the recognized methods of bone-marrow stimulation. In this case penicillin was added to the treatment, and recovery was prompt and complete.

A Series of Cases

While serving on the Medical Division of a military hospital during 1947 I had the opportunity of treating a number of cases in which severe granulopenia complicated arsenical treatment of syphilis. In addition to N.A.B. all these cases were receiving bismuth, an agent which appears in the list of leucotoxic materials given by Beaumont and Dodds (1947), though I have been unable to discover the report of any case in which granulopenia followed the use of bismuth without arsenic.

In the earlier cases British anti-Lewisite (BAL), "pen-tide," blood transfusion, ascorbic acid, liver extract, and other bone-marrow stimulants were used in addition to penicillin. In six subsequent cases penicillin alone was employed, with very satisfactory results. McManus (1946) records a similar experience. A case of "arsenical agranulocytosis" treated with BAL and pentide failed to improve until penicillin was added to the treatment. In a second case cure was rapidly achieved by the use of penicillin alone.

In every instance sepsis, particularly in the mouth, was striking and severe, and haematological improvement went hand in hand with resolution of the infection. This was so striking that I wondered if the infection was of greater importance in the causation of the condition than the arsenic. I wondered, too, if it could be shown that cure could be assured, provided the infection was controlled, even when further arsenic was administered. Further cases of arsenical granulopenia provided the material necessary to put this view to the test.

Several doses of N.A.B. were given to a man (Case 1) immediately after his recovery from the acute illness, for which he had been treated with penicillin alone. These produced no untoward effects either clinically or in the blood picture, and he went on to complete his full course of antisyphilitic treatment. In Case 2 the same procedure was followed, with the same result.

It now remained to observe the effect of arsenic administered before the acute illness had been controlled. In Case 3, 0.6 g. of N.A.B. was given 24 hours after starting penicillin. This appeared to make no difference to the patient's response to treatment. In Case 4 a full dose of N.A.B. was given before starting penicillin treatment. In this case recovery was somewhat delayed, but it was discovered that the infection involved a penicillin-resistant strain of staphylococcus, and the local sepsis did not respond until very large doses of the antibiotic had been given. The haematological improvement followed immediately upon control of the local infection. Reports of the four cases are given below.

Case 1

A private soldier aged 25 was admitted seven weeks after starting routine treatment for a dark-ground-positive chancre. Treatment had been interrupted by mild febrile reactions to arsenic injections, and on admission he had received 3.15 g. of N.A.B. and 1.4 g. of bismuth in addition to 4 mega units of penicillin.

He presented with gross oral sepsis, the gums, which were swollen and congested, being particularly affected. His temperature was 104° F. (40° C.) and his pulse rate 110. There was considerable adenopathy involving all the superficial glands, his spleen was palpable, and he was covered with a well-marked pigmented secondary syphilide. His white cells numbered 5,000 per c.mm., only 5% of which were of the granular series (total polymorphs 250). The Kahn test was positive, two nits, and the Paul-Bunnell test negative. He was treated with 0.000 units of penicillin three-hourly. At the end of 48 hours, with his temperature falling and his mouth improving, his white cells numbered 6,000, 24% of which were granulocytes (total 1,440). On the fifth day his temperature was normal, and his mouth almost normal, while his white count had risen to 7,600, 13% polymorphs (total 3,268). Two days later, the penicillin being continued, 0.3 g. of N.A.B. was injected intravenously. There was a slight febrile reaction, but his white cell count remained satisfactory; indeed, when comparing counts made immediately before the injection with those made at 12 and 18 hours after the injection there was a definite increase in the number of circulating polymorphs.

Two days later a further injection of 0.45 g. of N.A.B. was given. To this injection there was no reaction, but 36 hours later he showed a leucocytosis of 20,000 with 65% polymorphs (total 13,000). During this stage of treatment penicillin cover had been maintained. This was now discontinued, and he subsequently completed his course of antisyphilitic treatment with N.A.B. and bismuth without further incident, his blood count remaining normal throughout.

Case 2

A soldier aged 24 should have received his final dose of N.A.B. and bismuth on July 5. This was withheld because of swollen gums, and he was referred to the dental department. He was admitted three days later with a temperature of 104° F.

(40° C.), pulse 130, and showing gross swelling of his lower jaw, gingivitis, and many boils on the arms and trunk. He had received 7.5 g. of N.A.B. and 2.6 g. of bismuth. His blood showed 3,650 white cells per c.mm., with 10% polymorphs (total 365). The Kahn test was negative. Penicillin was started 50,000 units being given every three hours. His response was immediate, and in 24 hours his temperature had fallen to 100° F. (37.8° C.) and there was considerable local improvement, while his polymorph count had risen to 896. Three days later the condition of his mandible and gums seemed normal while all his boils had healed and his white cell count showed that 56% of 3,600 cells were polymorphs (total 2,016). Penicillin was discontinued, and two days later, with a normal white cell count, he was given 0.45 g. of N.A.B. intravenously. Thirty-six hours after the injection he showed a leucocytosis of 14,000 with 64% polymorphs (total 8,960). Two weeks later his white cell count was normal.

Case 3

A 43-year-old officer received his fifth injection of arsenic on Oct. 16. The total amount of arsenic received was 2.55 g. On the 18th his mouth and gums became painful. He was admitted on Oct. 25 with high fever, great swelling of the gums and buccal ulceration. His white cell count was 6,200 per c.mm. with 18% polymorphs (total 1,116). Treatment was withheld and the next day his count had fallen to 5,100, with 16% polymorphs (total 816). Penicillin was now started—50,000 units three-hourly—and by the 27th, with clear-cut clinical improvement, his white cells had increased to 6,000, 32% of which were polymorphs, 9% being eosinophils (total granulocytes 2,460). N.A.B. 0.6 g. was given intravenously on this day. An urticarial rash resulted, lasting 24 hours. Next day, with his temperature normal and showing marked local improvement, his white cell count had improved to 7,100 (52% polymorphs, 7% eosinophils; total granulocytes 4,189). From this point his illness rapidly resolved, and he was discharged to continue his course of antisyphilitic treatment, without further episode.

Case 4

A private soldier aged 20 was admitted on Dec. 3. He had received 1.95 g. of N.A.B. and 0.8 g. of bismuth. The earlier stages of his arsenical treatment had been decelerate on account of some skin reactions. Two days before admission he had felt ill, with pain in his left cheek. The next day the cheek was swollen and a sty had developed on the right lower lid. He reported sick and was sent to hospital 24 hours later. He then had a temperature of 104° F. (40° C.) and showed all the signs of considerable toxæmia. On the buccal surface of the left cheek there was a deep painful ulcer. The lower lid had a staphylococcal infection, and furuncle was present on his chin. A blood count showed 4,200 white cells per c.mm., 2% of which were polymorphs (total 84). Before the beginning of treatment he was given 0.6 g. of N.A.B. Two hours later penicillin was started in 100,000-unit doses every three hours. The next day his white count had fallen to 2,400 and no polymorphs could be seen in a smear. Subsequent counts were as follows:

Date	Leucocytes	Polymorphs	Eosinophils	Total Granulocytes
Dec. 5 ..	2,600	4%	13%	442
" 6 ..	4,300	6%	8%	602
" 7 ..	4,000	10%	3%	520
" 8 ..	5,500	15%	7%	1,210
" 9 ..	4,400	17%	4%	924
" 10 ..	8,800	14%	9%	2,024
" 11 ..	7,000	36%	4%	2,800
" 12 ..	7,150	35%	8%	3,074
" 15 ..	9,350	46%	6%	4,862
" 20 ..	8,000	60%	2%	4,960

On Dec. 6 the staphylococcus obtained from his lesions was reported to be penicillin-resistant. The dose of penicillin was immediately doubled. At this time, though his temperature had subsided and his general condition was excellent, the buccal ulcer was showing no signs of healing. During the next few days this situation was reversed and the ulcer healed steadily.

It will be seen that restitution of the blood picture was delayed, and it seems reasonable to assume that this was

related to the fact that the infecting organism proved relatively resistant to penicillin and that it was not subjugated until the dosage was considerably increased. This patient received in all 15 mega units of penicillin.

Discussion

In this small investigation it appeared that infection was playing the major part in the aetiology of the condition, and that its control allowed recovery of the bone marrow, a recovery which further arsenic was unable to prevent.

In other conditions associated with granulopenia I have noticed serious deterioration as a result of superadded infection. A man convalescent from glandular fever sustained a streptococcal infection of his throat. His polymorphs promptly fell from 1,800 to 90 per c.mm., to rise again immediately the infection had been subdued by penicillin. A woman suffering from chronic lymphatic leukaemia developed gross infection in her mouth and throat. This resulted in a grave illness, with high fever, widespread purpura, and a rapid fall in the haemoglobin level, which reached 25%. Treatment with parenteral and intraoral penicillin rapidly overcame the infection, the fever fell to normal, the mouth lesions healed, the purpura vanished, and the haemoglobin began to rise, eventually reaching over 100%. She has remained well during six months' subsequent observation, though her blood picture is still, of course, that of chronic lymphatic leukaemia. In other cases of leukaemia acute and threatening episodes have been initiated by sepsis, the control of which has resulted in temporary improvement in the patient's condition.

There seems to be little doubt that a functionally damaged bone marrow is particularly vulnerable to the toxins resulting from sepsis. It is well known, for example, that infection can interfere with the full therapeutic effect of liver extract in the treatment of Addisonian anaemia.

The factors giving rise to neutropenia are doubtless multiple. In addition to the part played by leucotoxic drugs—and no one will challenge this factor—it seems that idiosyncrasy, sensitization, age, sex, and endocrine factors must all be taken into account. But it may well be that infection, which is, I believe, the only factor common to almost every case, is the most important of all. A recognition of this possibility is clearly of considerable therapeutic and preventive importance. It would seem wise to exclude sepsis in cases of rheumatoid arthritis and thyrotoxicosis before embarking upon treatment with gold or the thiouracils. At the same time patients undergoing treatment by any of the recognized leucotoxic drugs should be warned to avoid infection and to report the smallest infective process immediately. Printed instructions might be valuable from this point of view. It is doubtful if the white cell count is of any value in giving warning of white cell depression, and may even lead to a false sense of security.

It has always been said that the appearance of a blood dyscrasia while undergoing treatment by any of these drugs precludes for ever the use in such a patient of the particular material thought to have been causative. The observations recorded here suggest that this dictum may not need to be adhered to when there are indications for further administration of the offending preparation. McGibbon and Glyn-Hughes (1943) came to the same conclusion after describing a case of agranulocytosis following arsenic.

In 1942 a fulminating case of agranulocytosis under my care, following the use of sulphapyridine, was given after recovery 3 g. of the drug by intravenous injection. Frequent white cell counts made during the subsequent 48 hours revealed no fall in the number of granulocytes.

Conclusions

It is suggested that in conditions of serious neutropenia infection plays a predominant part; that in its prevention, while undergoing treatment with possibly leucotoxic drugs, avoidance of infection, both endogenous and exogenous, is of more importance than repeated blood examinations; and that in the treatment of the established condition attention should be centred upon the immediate arrest of the infective process by the free use of the most suitable specific drug, which at present is likely to be penicillin in most cases. It should be given in large doses, in the region of 1 mega unit daily. In these circumstances pentide, blood transfusion, etc., may with advantage be withheld during the first 72 hours. If there has been no response at this stage pentide should be started and continued until response is well established. Fresh blood, folic acid, pyridoxin, ascorbic acid, liver extract, and thyroid may all be useful in individual cases. Where there has been satisfactory response to penicillin alone it may be possible to resume the supposedly leucotoxic drug, if necessary.

My thanks are due to the Director-General, Army Medical Services, for permission to publish this paper, and to Brigadier F. J. O'Meara, Consulting Physician, B.A.O.R., Colonel C. A. Gavan Duffy, Officer Commanding Medical Division, 94th (Hamburg) British Military Hospital, Colonel F. E. Buckland, Director of Pathological Services, B.A.O.R., and Captain W. T. Hendry, for their interest and help in this investigation.

REFERENCES

- Beaumont, G. E., and Dodds, E. C. (1947). *Recent Advances in Medicine*, 12th ed., p. 333. London.
 Boland, E. W., Headley, N. E., and Hensch, P. S. (1946). *Proc. Mayo Clin.*, 21, 197.
 Dameshek, W., and Wolfson, L. F. (1942). *Amer. J. med. Sci.*, 203, 819, 823.
 Hickie, G. (1948). *Quart. J. Med.*, n.s. 17, 165.
 Israels, M. C. G. (1948). In Daley and Miller's *Progress in Clinical Medicine*, p. 199. London.
 McGibbon, C., and Glyn-Hughes, F. (1943). *Lancet*, 1, 173.
 McManus, J. F. (1946). *New Engl. J. Med.*, 234, 17.
 Nixon, N., Eckert, J. F., and Holmes, K. B. (1943). *Amer. J. med. Sci.*, 206, 713.
 Schultz, W. (1922). *Disch. med. Wschr.*, 48, 1495.
 Wilkinson, J. F. (1936). In Rolleston's *British Encyclopaedia of Medical Practice*, 1, 262. London.
 Wits, L. J. (1936). *British Medical Journal*, 1, 1061.

INSTRUCTION OF THE MEDICAL STUDENT IN PAEDIATRICS

AN INSIGHT INTO FAMILY PRACTICE

BY

W. S. CRAIG, M.D., F.R.C.P.Ed., M.R.C.P.
F. CHARLOTTE NAISH, M.D.

AND

M. F. G. BUCHANAN, M.B., Ch.B.Ed., D.Ch.

Instruction of the medical student is concerned primarily with the training of the future family doctor. Undergraduate training suffers from having to be provided under conditions dominated by hospital considerations of disease. As a result the recently qualified doctor entering general practice has to adjust his outlook. He is not long in practice before he realizes that many of the problems which appeared simple of solution when seen in hospital are complex when considered in relation to the needs of the home. Short of restoring the old-time apprenticeship system it is difficult to see how this handicap can be completely offset.

The handicap applies particularly to undergraduate study of health and disease in infancy and childhood. Ward instruction is deficient because of the absence of the mother and of any visual reminder of home conditions. The

deficiency is made good in part, but only in part, by teaching in hospital out-patient departments, at infant-welfare sessions, and at school medical inspections. These sessions, no matter how efficiently they are run, are apt to suffer from a routine intended to cope with a considerable number of children in a set period of time. Health and disease in childhood are studied in an atmosphere of organized efficiency rather than one of intimacy of understanding. The student is left with an impression of a limitless tide of "cases," some of interest, others of doubtful interest. The tide is apt to flow with such speed that in his concern over physical findings the student is insufficiently impressed by the human family problem presented by each child. Nor can the hospital clinician, be he ever so able a teacher, convey to the students that full depth of understanding of mother and child and family circle which makes for successful care of child life in general practice.

Experiment at Leeds

The medical student taking out his course of clinical instruction in paediatrics and child health at the University of Leeds is given opportunities of seeing healthy and ailing children in hospitals and at clinics, handicapped and "deprived" children in day and residential homes, and some of the homes from which sick children have been admitted for treatment in hospital wards. In the course of his studies the same student meets practitioners on the visiting staffs of hospitals and in the employ of local authority child-health services, nurses working in hospital or as health visitors, school nurses, and district nurses or district midwives. He is given a didactic lecture by a family doctor on the theme of paediatrics as met with in general practice, but until recently has not seen the family doctor at work.

We are convinced that the family doctor has a vital part to play in care of the child in health and disease. We are equally convinced that training of the future doctor in paediatric care would derive immeasurable benefit from early insight into such care as is provided in the course of everyday general practice. Ourselves (W.S.C. and F.C.N.) brought up from childhood in the households of family doctors, we are acutely aware in our professional work to-day of the debt we owe to that privileged experience of the past. Over a number of years one of us (F.C.N.) has made a special study of infants and children seen in the course of day-to-day family practice. Study pointed to the desirability of expanding the range of service offered to mothers and children in practice. One way in which expansion was developed was to reserve an afternoon each week for consultations for mothers and their children. In effect a clinic was established as an integral part of the activities of the family practice. The clinic proved a success from the start and has now run uninterruptedly for almost two years. There is implied recognition of its value in the authority recently given by the local executive council to continue the established policy of reserving one afternoon each week for mothers and children.

We felt that the training in paediatrics of the future general practitioner would benefit by insight into the work of a clinic conditioned by the circumstances of family practice. Experimental arrangements were therefore made to enable students, while attached to the University Department of Paediatrics and Child Health, to visit the clinic. We are satisfied that the arrangements have proved their value. The purpose of this paper is to give an outline of the arrangements and their results, because it is considered they indicate means whereby undergraduate, and indeed postgraduate, instruction of the medical student can be widened and improved.

The General Practice

The practice is one of a number in a non-university city with an approximate population of 100,000. The bulk of the work is concerned with the families of manual labourers, clerical workers, and shop employees. Of other persons on the practice list a small number are members of professional and military families. Midwifery constitutes an important part of the activities of the practice, and in the matter of social groups reflects the distribution characteristic of the practice as a whole.

The Clinic

The clinic is held in the family doctor's private house, which is situated in a working-class district. Accommodation consists of a weighing-cum-secretarial room, a waiting-room, and a consulting-room with screened examination couch. The accommodation is in fact the "surgery." Furnishings include low seats suited to use by nursing mothers.

Sessions are held weekly. The family doctor (F.C.N.) has the assistance of a secretary and nurse, and has recently been offered the services of a health visitor by the maternity and child-welfare authority. Attendance is on a voluntary basis and by appointment. Mothers who attend with their babies consist of those delivered by the doctor, of those who are on the doctor's National Health Service list but who have been delivered in hospital or by a midwife, and a few referred by the doctor's partners in the family practice. Of newly born infants in the practice approximately 80% attend the clinic. Mothers are advised to attend weekly until the baby is 3 months old, fortnightly during the next three months, and thereafter at monthly intervals until the baby reaches his first birthday. Older children attend at longer intervals or at any time, prior to school age, when their mothers wish advice on account of any difficulties in upbringing.

Attendances average twenty-six a session. All children are weighed, and individual records are kept on separate cards. Duplicate cards are kept by the mothers. At any one session rather more than 50% of those attending are seen personally by the doctor at the request of the mother, at the instigation of the nurse, or in accordance with arrangements made by the doctor at the time of a previous visit.

Work of the Clinic.—The ages of children attending range from a few weeks to 5 years. Infants predominate. All children are accompanied by their mothers, who know that they must not bring any child thought to be incubating or harbouring infection. It is one of the objects of the clinic not to divorce care of the infant from care of the mother or family. Health and disease are not arbitrarily differentiated. General management, the promotion of health, and the prevention of disease receive equal attention. The indications for consultations arise from an infinite variety of circumstances. They include comprehensive routine inspections; the supervision of infant feeding, whether breast, complementary, or wholly artificial; attendance for vaccination or immunization; requests for advice concerning symptoms which, were there not a clinic, might be ignored; family problems such as those arising from ill-health of the mother or from enuresis on the part of the child; and social problems such as those concerned with adoption and illegitimacy.

Arrangements for Medical Students

Attendance at the clinic is entirely voluntary. Provision is made for three students accompanied by a registrar (M.F.G.B.) to be present at each session. A number of

factors, including those related to distance and transport, make it impossible to arrange for any one student to be present at more than one session. At the time of his visit the student is encouraged to discuss the individual problems he has seen and any general considerations which particularly interest him.

All students have taken advantage of the opportunities offered them. They know they are taking part in an educational experiment. No attempt has been made to influence them in their views, and particular care has been taken not to initiate comparisons concerning different services for the care of child life. The students have willingly co-operated when asked after their visit to give a written account not so much of their impressions concerning detail as of their reactions to inclusion of the visit in the course of their training.

The Student's Reaction

A point of practical importance is that at no time has there been any unfavourable reaction to the presence of students on the part of mothers attending the clinic. As to the students themselves, while some few were constructively critical of certain aspects of the arrangements made for them, all testified to the value of their visits to the clinic. Many were unreservedly enthusiastic. Significance attaches to the reasons given for their opinions.

Almost all the students stressed that the visits had given them their first opportunity to "see general practice in operation." Of those who made this comment a number wrote of having appreciated for the first time the part which the family doctor can play in the care of child life in health and disease. Reading their remarks, it is evident that a number of students had had borne in on them how many of the children they see in the hospital out-patient department could be properly dealt with in the more suitable environment of a family doctor's consulting-room. Others, again, were impressed by seeing conditions which are rarely encountered in hospital but which, although they may have no serious immediate clinical significance, bulk more largely in general practice.

Most of the students remarked upon the advantages to child care of the mutual understanding and trust which it is within the power of the general practitioner to establish with the families he attends. Other students appreciated the initial advantage possessed by the family doctor whose care of children starts in the form of antenatal supervision of the mothers and who knows the background and capabilities of families in his practice. A number of students, men and women, sensed the benefits to infant feeding of supervision being undertaken by a doctor herself the mother of a family. Women among the students realized that marriage and a family do not necessarily debar a woman from making a vital and special contribution to child care in general practice.

We consider that the various views expressed by those visiting the clinic support the opinion that the experiment has justified itself. Evidence in favour of this opinion is to be found from the following extracts from notes sent in by three of the students who have taken part in the experiment. Telling of his outlook before visiting the clinic, one student wrote: "As a medical student one of the impressions I had conceived of general practice was that any case which required a little more trouble taken over it than normal was immediately referred, especially in paediatrics, to the already overworked hospital."

Another student wrote: "It [the visit] helped my sense of proportion in realizing the great value of the general practitioner in the promotion of child health." A third student summed up his impressions as follows: "The visit

made me realize that general practice is not static and can be made progressive . . . and can provide intellectual satisfaction."

Summary

Measures for the care of child life must be based upon the home. The family doctor has a vital part to play in any such measures. If it is to fulfil its primary function medical training of the undergraduate must be directed towards preparation for family practice. Teaching instruction in the care of child life is handicapped by difficulties in the way of giving the medical student practical insight into conditions prevailing in family practice.

An educational experiment is described which is intended to offset these difficulties in part at least. It is considered that the experiment has been a success, is capable of further development, and might be extended to a wider field of medical training than that concerned solely with health and disease in childhood.

INTERMENSTRUAL PAIN (THE "MITTELSCHMERZ") AND THE TIME OF OVULATION

BY

P. L. KROHN, B.M., B.Ch.

(From the Department of Anatomy, the Medical School, Birmingham University)

Cyclically recurring pain in the pelvis which can be related to the phases of the menstrual cycle is not uncommon in women. The condition was described by Priestley as long ago as 1872, although it is just possible that his observations were confused by the coexistence in his patients of chronic appendicitis, which at the time he wrote had not been defined as a clinical entity. Subsequent reports, in which corresponding pelvic pains have been referred to, mainly concern acute conditions that have called for operation, and in many instances laparotomy at the time of the pain has disclosed a recently ruptured ovarian follicle.

The periodicity of intermenstrual pelvic pain is one of the many signs that have been taken to indicate the time of ovulation in women. In view of the very clear-cut symptoms over a long period it is of interest to report the following case history.

Description of Present Case

The patient is a married woman aged 28 in whom cyclical intermenstrual pain has been recorded without interruption during the last 4½ years. It has occurred over at least seven years, but at first it was irregular. She has no recollection of similar pains before the age of about 16.

The pain is characteristic and easily recognized. It lasts for no more than 24 hours, and varies somewhat in intensity from time to time. It is never severe and can be controlled with simple analgesics. It begins suddenly in one or other iliac fossa and is gradually referred to the pubes, from which it spreads as a generalized pelvic pain.

The occurrence of the pain and the menstrual periods from April, 1944, to November, 1948, are charted in Fig. 1. The Table shows the duration of the two "phases" of the cycle. The following points may be noted.

Table Showing Distribution of Duration of Phases of Menstrual Cycle

	Duration in Days														
	10	11	12	13	14	15	16	17	18	19	20	24	25		
1st day of menstruation to mittelschmerz					1	6	8	13	6	4	2	2	2		
Mittelschmerz to onset of menstruation	1		10	22	7	1	1								

1. The onset of the pain is regular. The mean interval from menstruation to the onset of the pain is 17.3 ± 0.33 days, and from the pain to the beginning of menstruation 13.0 ± 0.15 days. In agreement with most other statistics on the duration of the pre-ovulatory and post-ovulatory phases of the menstrual cycle, the second phase has a significantly smaller variance than the first pre-ovulatory phase (see Table). Although the length

of one of the later cycles was prolonged to 39 days, the mittelschmerz occurred as usual 13 days before the next period. Presumably the extra length of the cycle was due to some interference with normal follicular development.

2. In July, 1944, the patient wished to become pregnant and was advised to regard the mittelschmerz as the most likely indication of the time of ovulation. Ten days after the mittelschmerz in that cycle, and before the next period was due, the patient correctly believed that she was pregnant. No further pains were noted during either her pregnancy or her lactation. About three weeks after the end of lactation the pain was again recorded, and was followed ten days later by the return of menstruation. Since then it has continued its regular rhythm without interruption.

3. The pain has occurred 29 times on the right side and 14 times on the left. This predilection for the right side is significantly different from a 1:1 ratio for the two sides. Similar differences in favour of the right side have been reported for ovulation in the sheep (McKenzie and Terrill, 1937) and the monkey (Morse and van Wagenen, 1936), and, assuming that the pain indicates ovulation, the observed ratio in this case does not differ significantly from the figures reported by these workers. There does not seem to be any regularity of alternation from left to right side. The pain has never occurred twice in one cycle.

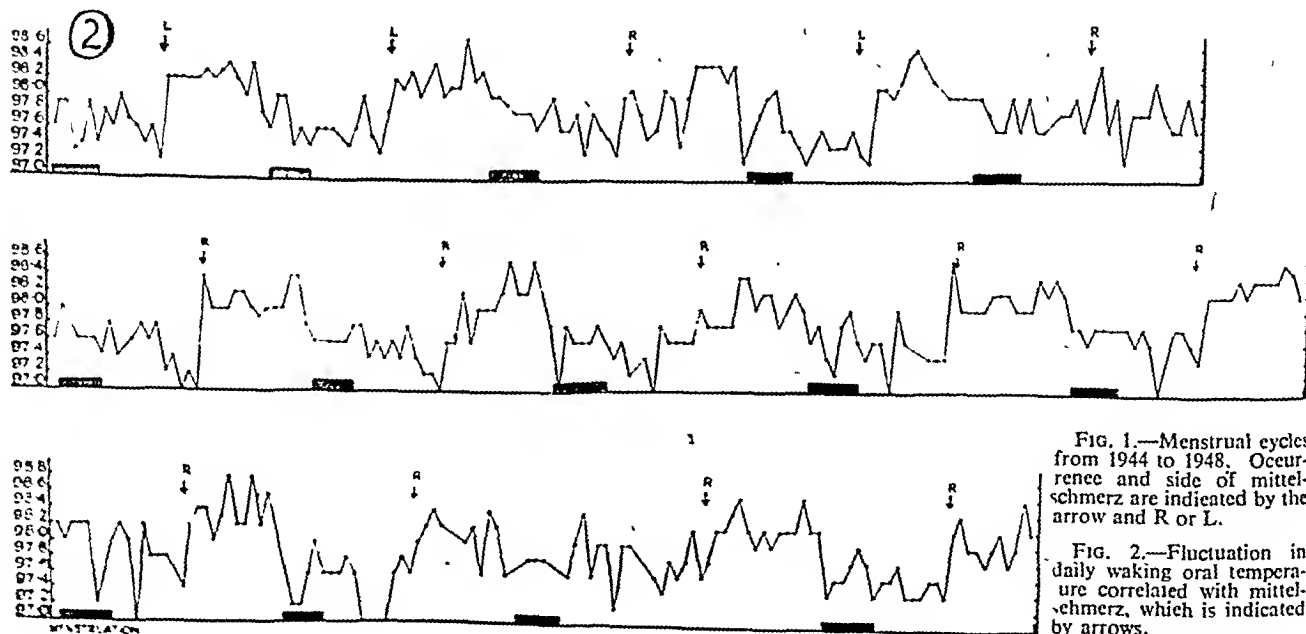
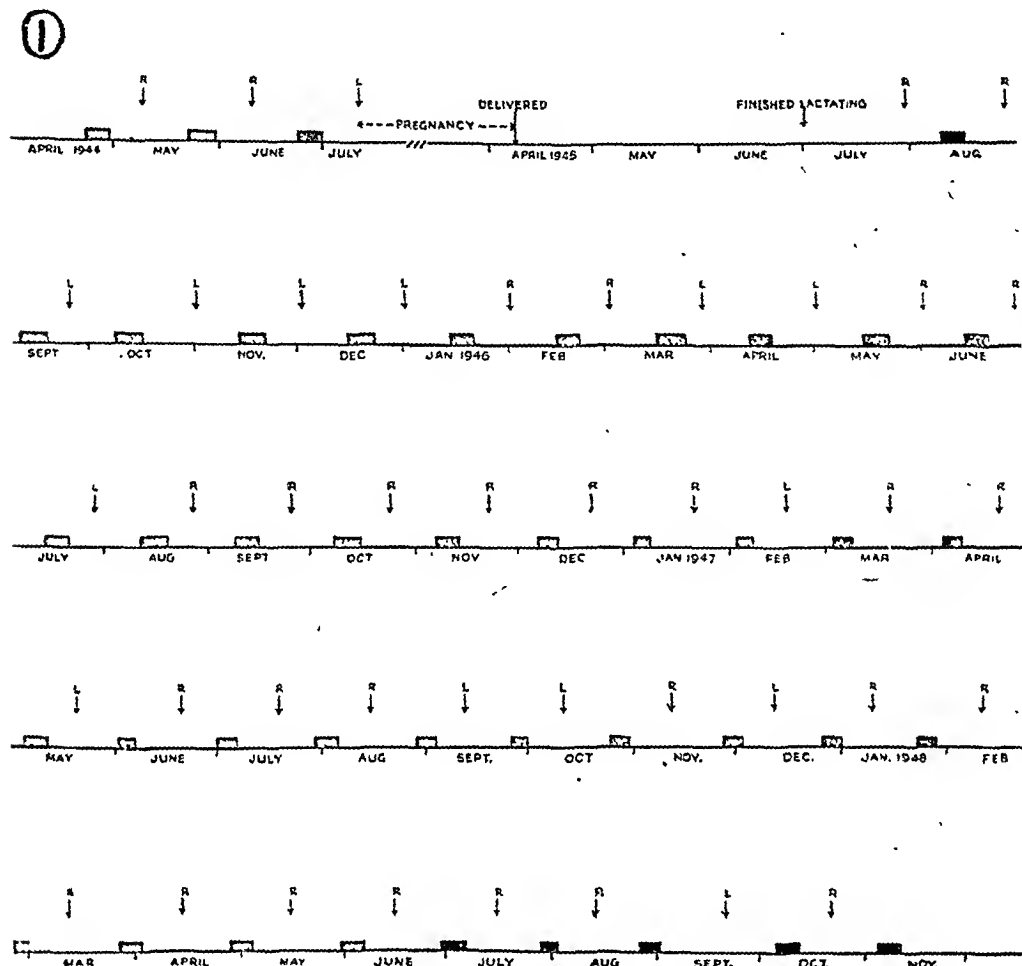


FIG. 1.—Menstrual cycles from 1944 to 1948. Occurrence and side of mittelschmerz are indicated by the arrow and R or L.

FIG. 2.—Fluctuation in daily waking oral temperature correlated with mittelschmerz, which is indicated by arrows.

Correlation of Mittelschmerz with Fluctuations in the Waking Oral Temperature

Since fluctuations in the body temperature are now widely used to indicate the time of ovulation a record of the daily waking oral temperature has been kept for the last 13 cycles. The results are plotted in Fig 2, the mittelschmerz being indicated by arrows.

The temperature recordings conform in general to the usually accepted pattern, though they are not so clear-cut as some that have been published. In the middle of the cycle, however, there is usually a slight fall in temperature, followed by a steep rise to a plateau, which is maintained until near the onset of the subsequent period. Occasionally this rise is indistinct.

An independent observer was asked to estimate the most likely time of ovulation from temperature charts alone. In eight of the 14 cycles ovulation, as judged in this way, agreed with the day of onset of the mittelschmerz. In three cycles the estimate was one day early, and in three it was one day late.

A change in the temperature curve, particularly when the whole chart is available and when attention is directed to the mid-cycle, is at best only indirect evidence of ovulation, but the close relation between the temperature change and the mittelschmerz is of interest.

Discussion

Early workers who described the mittelschmerz were in difficulties in ascribing a cause to the pain. This was due primarily to the fact that ovulation was thought to be closely related temporally to the onset of menstruation. It is now known from both direct and indirect evidence that ovulation occurs at some moment in the middle of the cycle. Intermenstrual pain, like changes in hormone excretion in the urine, physical changes in the cervical mucus, electrical potential changes, and so on, is obviously an indication of some alteration in the reproductive tract, and may be accepted as further evidence that ovulation occurs in the middle of the cycle.

The cause of the pain is still obscure. It is abolished by ovariectomy, but is not affected by operations that interfere with nervous pathways from the uterus. Painful tubal contractions may, however, be a possible explanation.

If, as the evidence suggests, the pain is connected with ovarian changes, the immediate cause may be either the pressure of a distending follicle just before ovulation or the actual rupture of the follicle.

It seems probable that the pain gives a closer indication of the time of ovulation in those women who are aware of it than any other method. In view of the experience of McSweeney and Wood (1940) that 21 out of 134 women could identify some discomfort in the mid-cycle, careful questioning about the mittelschmerz of patients who attend fertility clinics would seem to be worth while. Cases have certainly been reported (Wharton and Henriksen, 1936) in which the pain had been severe enough to prevent intercourse and in which advice to disregard the pain was immediately followed by conception.

Summary

The cyclical occurrence of intermenstrual pain (mittelschmerz) has been followed for 4½ years in a married woman aged 28.

The onset of the pain is closely correlated with changes in the waking oral temperature, and is taken to be a reliable index of ovulation.

REFERENCES

- McKenzie, F. F., and Terrill, C. E. (1937) *Agric. exp. Sta. Univ. Mo. res. Bull.*, No. 264.
- McSweeney, D. J., and Wood, F. O. (1940) *New Engl. J. Med.* 222, 174.
- Morse, A. H., and van Wazenen, G. (1936) *Amer. J. Obstet. Gynec.* 32, 823.
- Priestley, W. O. (1872) *Brit. sh. Med. cal. Journal*, 2, 431.
- Wharton, L. R., and Henriksen, E. (1936) *J. Amer. med. Ass.* 107, 1425.

SYNDROME OF DIAPHRAGMATIC HERNIA AND ANAEMIA

BY

A. D. CODOUNIS, M.D.

Associate Professor of Clinical Medicine, University of Athens;
Director of Medical Clinic III of the Red Cross Hospital,
Athens

No medical or surgical disease presents a clinical symptomatology so varied and unstable as that of congenital or acquired diaphragmatic hernia. Harrington (1945) studied 320 cases of oesophageal hiatus hernia and found that an average of three previous erroneous diagnoses had been made before the correct diagnosis was established. In order of frequency the most common erroneous diagnoses were: cholecystitis, cholelithiasis, gastric ulcer, secondary anaemia, duodenal ulcer, hyperacidity, cardiac disease, carcinoma of the cardia, stricture of the oesophagus, appendicitis, and intestinal obstruction. Chevallier and Danel (1944) reported that diaphragmatic hernia was commonly associated with anaemia.

Katsigras (1946) reviewed the published reports of 955 cases of oesophageal hiatus hernia and observed that anaemia was associated with the hernia in 80 cases, a proportion of 8.3%.

In my view (Codounis, 1946) diaphragmatic hernia can provoke the appearance of microcytic or hypochromic anaemia, or of macrocytic or hyperchromic anaemia. The personal case here described appears to be unique in medical literature. A severe anaemia persisted for 24 years, as did the diaphragmatic hernia. At first there was a microcytic anaemia and later macrocytic anaemia.

Case Record

J. A., a man of 60, had previously suffered from malaria and jaundice. He had three children in good health, two born after the beginning of the anaemia. His present illness started in April, 1922. After an emotional disturbance he had been feeling increasingly weak, tired, and anxious. His skin was pale and his eyes yellowish. These symptoms, with anorexia and loss of weight, became more serious, and he consulted Professor Schlesinger in Vienna, who diagnosed hypochromic anaemia and prescribed iron and a change of climate.

Phase of Microcytic Anaemia—After three months' rest at Semmering J. A. returned feeling better. In December, 1922, pallor and progressive weakness reappeared, with vomiting, nausea, and epigastric swelling after meals. In February, 1923, he went to Vienna to consult Dr. Eppinger, who diagnosed Bant's disease and advised splenectomy. X-ray examination of the gastro-intestinal tract revealed no abnormality—probably due to a technical defect.

J. A. later went to France, where the diagnosis of hypochromic anaemia was confirmed. After four months' rest in the country he came home in good health and noticed no symptoms during the year 1923.

In 1924, after the same clinical and haematological symptoms and some loss of weight (100 kg. to 82 kg.), he returned again to France and consulted Dr. P. E. Weill, who confirmed the diagnosis of hypochromic anaemia. The patient was given iron and liver extracts, which improved his condition. His red cell count fell to 3,000,000 per cmm in 1925, and Dr. Weill gave him a blood transfusion, after which the improvement was nearly complete. Between 1926 and 1938, during which twelve years he had iron therapy and a change of air each summer, the patient was free from symptoms and lost no more weight. His usual weight was 100 kg., which was considered normal in relation to his height.

After an attack of influenza in November, 1938, J. A. felt very weak and dizzy. There was marked pallor of the skin.

and mucous membranes, and a generalized oedema. Iron and liver extracts were prescribed and he was given three blood transfusions; the second provoked a severe anaphylactic shock, which was nearly fatal. Five days later the red cell count was only 900,000 per c.mm. Slowly the anaemia improved again; large doses of iron, 10 to 12 g. daily, were prescribed, but the patient could take only 4 to 5 g. daily.

He felt no pain between 1939 and 1941, but because of wartime food shortages he lost 25 to 30 kg. in weight.

In July, 1941, apart from weakness and pallor, J. A. complained of pains in the left upper abdomen and palpitations. Dr. Maroulis, a colleague who saw him during this period, noted besides the anaemia hyperresonance in the left chest. The same iron therapy was continued and the patient improved again over the next five years (October, 1945).

Altogether the evolution of the first phase of microcytic and hypochromic anaemia included three long periods in which the condition was absolutely quiescent; after the appearance or reappearance of symptoms improvement was brought about by treatment with iron, and the patient could live a normal life.

Phase of Macrocytic Anaemia.—Marked pallor and oedema reappeared in November, 1945, together with pain in the left upper abdomen radiating to the scapular and lumbar regions. A blood count showed: r.b.c., 4,120,000; w.b.c., 6,400; Hb, 70%; colour index, 0.85. His symptoms grew rapidly worse, however, and on Dec. 26, 1945, J. A. came under my care.

At that time his temperature was 38.4° C. (101.2° F.), pulse rate 80, and he had slight tachypnoea. His face was like that of a case of nephritis, oedematous and very pale. His lips were bloodless, he was very weak and, besides the puffiness of the face, there was marked oedema of legs and meteorism. He had a slight thoracic kyphosis. His chest was of the emphysematous type; the percussion note was tympanitic; rales were heard at both bases.

Blood pressure: 170/90 mm. Hg. X-ray examination of the chest and heart indicated no abnormality. Radiographs of the spine revealed changes in the third and fourth dorsal vertebrae, probably due to a healed spondylitis. Examination of the urine showed some white cells and some calcium oxalate crystals.

Final Diagnosis

With this history and the findings here tabulated it was easy to assume a relapse of the anaemia which had affected the patient for 24 years. But we were surprised to see that instead of a microcytic and hypochromic anaemia there was a macrocytic and hyperchromic anaemia. Then, Jan. 5, 1946, an x-ray examination by Dr. Xanthakis,

TABLE I.—Haematological Findings

Date	R B C End of Microcytic Phase	Hb %	Colour Index	W B C	Differential Count %			
					Poly- morphs	Lympho.	Eosino.	Mono.
7.11.45	4,120,000	60	0.85	6,400	60	32	4	4
Macrocytic Phase								
27.12.45(A)	1,880,000	37	1.02	8,600	50	46	—	4
5.1.46	2,440,000	50	1.04	—	—	—	—	—
7.1.46	2,770,000	50	0.92	—	—	—	—	—
11.1.46	3,080,000	43	0.70	8,400	78	22	—	—
14.1.46(B)	2,540,000	46	0.72	6,000	66	28	4	2
15.1.46	3,000,000	45	0.75	—	—	—	—	—
21.1.46(C)	3,430,000	52	0.76	7,000	62	34	2	2
30.1.46(D)	3,040,000	55	0.91	5,200	56	38	2	4
2.3.46	3,660,000	65	0.90	4,600	66	22	8	4
6.3.46(E)	4,480,000	75	0.85	5,000	66	28	4	2
Phase of Relapse								
29.3.46	4,000,000	70	0.87	—	69	25	3	3
1.4.46	3,800,000	72	0.94	—	78	16	2	4
4.4.46(E)	3,120,000	—	—	—	—	—	—	—
5.4.46	1,550,000	35	0.94	12,000	—	—	—	—
9.4.46	1,030,000	17	0.82	18,400	—	—	—	—

A. Evidence of polychromasia, anisocytosis, poikilocytosis, and predominance of macrocytes—among them are oval and well-coloured macrocytes (Nageli's macrocytes). No granular erythrocytes. Some white cells with globular nuclei.

B. Average anisocytosis and poikilocytosis and hypochromia. Predominance of macrocytes and among them some Nageli's macrocytes. Some giant platelets.

C. Average hypochromia and anisocytosis and poikilocytosis. One acidophilic neutrophil per 100 white cells.

D. Some polychromasia, slight anisocytosis and poikilocytosis.

E. Bleeding time, 3 minutes; coagulation time, 9 minutes; blood urea, 0.45%; 3-2,000 platelets.

TABLE II.—Bone-Marrow Picture

Reticulo-endothelial Series	I	II	III
Reticulocytes	2	2	13
Endothelial cells	—	—	3
Fatty cells	—	—	—
Erythroblasts:			
Proerythroblasts	5	2	2
Basophilic erythroblasts	12	6	1
Polychromatophilic erythroblasts	8	34	85
Normoblasts	10	37	12
Megaloblasts	8	—	—
White cells:			
Myeloblasts	2	2	2
Promyelocytes	5	4	6
Myelocytes	7	12	25
Metamyelocytes	10	20	15
Rod cells	15	17	16
Polynuclear cells	50	31	18
.. .. .	1	—	1
.. .. .	1	—	—
Monocytes	1	—	—
Lymphocytes	1	7	—
Ferrata cells	—	1	—
Platelets:			
Megakaryocytes	—	2	—

I.—Dec. 27, 1945. Mitosis chiefly among the basophilic erythroblasts and anisocytosis with predominance of Nageli's macrocytes. Vacuoles in the protoplasm and in the cellular nuclei.

II.—Jan. 17, 1946. Normoblasts present with relatively few mature nuclei in comparison with the protoplasm. Mitosis. Rods of giant cells and a good number of cells with lobulated nuclei.

III.—Immediately after death on April 10, 1946. Majority of reticulocytes are of Ferrata type. Majority of nuclei of polychromatophilic erythroblasts are in mitosis. Macroblasts rarely found. Asynchronism in maturation. Immature megakaryocytes noted with basophilic protoplasm and without lobulation of the nucleus.

undertaken to exclude the possibility of gastric ulcer or cancer, explained clearly the anaemia and the digestive symptoms and thoracic pains.

Immediately after the patient had taken the barium meal a displacement to the right of the lower end of the oesophagus was observed. A large pocket of air in the herniated and distended stomach extended seven finger-breadths above the diaphragm. The stomach was elongated, and immediately below the diaphragm, on the lesser curvature, a diverticulum was noted. Another small diverticulum was observed in the descending part of the duodenum. Here then was a case of diaphragmatic hernia in a man who had been treated for anaemia for over twenty-four years. This is the fortieth case of this syndrome to be described in the literature and the first case to be observed in Greece up to April 16, 1945, when a preliminary communication was made to the Medical Society of Athens. Reviewing the long history of this case, it may be seen to fall into six successive stages.

Stage 1.—Apparently perfectly healthy until the age of 36.

Stage 2.—Onset of hypochromic anaemia, from 36 to 39 years of age. It is at this stage that J. A. complained of the first dyspeptic disturbances—post-prandial discomfort, epigastric fullness, and occasional vomiting. Over these four years improvement in the anaemia would be followed by recrudescence, followed again by rapid improvement.

Stage 3.—The twelve years from the age of 39 to 51 are characterized by almost normal good health.

Stage 4.—From the age of 52 to 54 there was a new and intense recrudescence of anaemia, following a severe attack of influenza in 1938. He lost 25 to 30 kg. in weight and his red cell count fell to 900,000 per c.mm. Later, on consulting the patient's wife, we were told that at this period she heard some gurgling in his stomach, even at some distance away from him. At the same time he complained of acute pains in the left hypochondrium, disappearing a few minutes after protracted belching. Physical examination at that time showed a pronounced hyperresonance of the left hemithorax.

Stage 5.—Quite well again from 55 to 60 years of age.

Stage 6.—The final stage lasted six months, and coincided with a hyperchromic and macrocytic anaemia.

In our opinion this hernia was congenital, favoured by the patient's kyphosis, and it progressively dilated through

the diaphragmatic hiatus over a period of 24 years and was responsible for provoking the alternating anaemic syndrome. Diagnosis in these cases is extremely difficult. Often a secondary anaemia due to cancer is suspected, but an x-ray examination reveals the diaphragmatic hernia instead of cancer. This was true with our case as with the cases of Welti and Mahoudeau (1948). The discovery of a diaphragmatic hernia must often lead to surgical intervention. In fact, according to Welti and Mahoudeau, the only effective cure is surgical. In addition, the results of operation prove that the diaphragmatic hernia is the cause of the anaemia, since the latter disappears after operation.

Cause of the Anaemia

To explain the mechanism of this anaemia, Anglo-Saxon authors have invoked repeated haemorrhages. But in our case, and in many others, analysis of the stools has not revealed the least evidence of melaena. Chevallier (1944) suggested that the anaemia might be due to atrophy of the gastric mucosa and gastric achylia. Chevallier could not determine this point in his case, and the same applied to J. A. We tried several times to withdraw gastric juice, but failed to do so because of the extreme nervousness of the patient. Nevertheless, it was possible to withdraw gastric juice from another patient of approximately the same age and with a diaphragmatic hernia. This showed a complete achylia, even after the caffeine test. This patient, in spite of his pronounced emaciation and severe illness, paradoxically does not show any anaemia. His red cell count was 4,200,000 per c.mm., with haemoglobin 100%.

It is the fact that a proportion of cases of diaphragmatic hernia show some degree of anaemia. In most cases this is a microcytic hypochromic anaemia responding as rapidly to iron therapy as to surgical treatment of hernia. Hyperchromic macrocytic anaemia is very rare in these cases. Only one case was mentioned by Cain and his collaborators (1939), with a colour index of 1.50 and a severe hyperchromic and aplastic anaemia. This hyperchromic macrocytic anaemia has nothing in common with Biermer's anaemia. The anisocytosis is not accompanied by megalocytosis but by normoblastosis and macrocytosis, although to-day, according to some authors, megalocytosis and macrocytosis are almost synonymous. This anaemia also presents a distinct resemblance to that of avitaminosis B₁₂ and to certain other primitive or secondary anaemias. In the case described by Cain liver therapy proved ineffective, whereas cure was effected by gastric extracts.

In the macrocytic stage in our patient liver extracts and small direct transfusions of fresh blood over 27 days raised the red cell count from 1,800,000 to 3,430,000 per c.mm. and notably improved the myelogram (see Table II). The improvement was remarkable, both clinically and haematologically.

In the 44 days following admission our patient received 350 ml. of fresh blood (by direct transfusions), 48 g. of iron, and 78 ml. of liver extract (by intramuscular injection). Clearly our patient needed not only anti-anaemic factor but also iron, owing to the presence of alternating microcytic and macrocytic anaemia.

Crisis and Death

After his discharge on March 6, 1946, with 4,180,000 red cells per c.mm., the patient remained well only until March 15.

He then began to feel slight pains in the left hemithorax and in the abdomen, which from time to time was distended. These pains were intermittent, and were relieved by belching. On March 30 the patient complained of

severe pains in the right and left chest. At the same time he presented pallor, anorexia, insomnia, and extreme asthenia.

On March 31 he was much worse and was readmitted. The radiologist's examination showed that the intrathoracic gastric pouch seemed more voluminous. There was also a gross distension of the ascending and transverse colon, displacing the liver to the left. We were obliged to assume that a sudden dilatation of the intrathoracic hernial pouch due to fermentative gases had provoked diaphragmatic spasms at the level of the oesophageal hiatus, which, by exciting the vagosympathetic system, affected in turn the abdominal segment of the stomach as also the small and large intestines.

These spasms, being repeated, disturbed the function of the digestive tract and respectively, by compression, the circulatory and respiratory functions. It is possible that this spasm contributes (by a mechanism which we have still not explained) to the production of putrefaction and fermentation (given the existence of an obstinate constipation), and so to the dysfunction of the haematopoietic system. In a case of this nature it may be that haemolytic factors discharged by the digestive tract into the circulatory system contribute to the production of this kind of anaemia. In any case, this last stage of severe anaemia was provoked from the second day by an intense hernial crisis simulating a strangulation. Once and only once we noted a positive Meyer's reaction in the faeces after an enema. There had been such obstinate constipation that we were obliged to extract the faeces digitally, and this probably caused small anal erosions which would explain this positive reaction.

We claim that this stage of the disease in our patient furnished indisputable proof that a diaphragmatic hernia can provoke an anaemia so severe that it may lead, with or without strangulation, to a fatal issue. On the eleventh day of this intense crisis J. A. died. We regret to say we could not proceed to necropsy owing to the objections of the relatives.

Conclusion

During the evolution of any form of diaphragmatic hernia different anaemic syndromes can occur. These ordinarily take the form of a microcytic or hypochromic anaemia—rarely the hyperchromic or macrocytic anaemia; and sometimes these syndromes alternate, as in our case.

In any case of anaemia in which the aetiology is not known a complete x-ray examination should not be omitted. This may reveal a diaphragmatic hernia. Conversely, whenever a diaphragmatic hernia is found we should not neglect a complete study of the patient's blood and bone marrow.

Summary

A case of diaphragmatic hernia is described in which a long-standing microcytic anaemia was succeeded by a severe and ultimately fatal macrocytic anaemia.

I am indebted to the Director of the laboratory of the Red Cross Hospital, Dr. S. Papageorgiou, for his help in the detailed study of the blood and the bone marrow.

REFERENCES

- Cain, A., Cattani, R., and Claisse, R. (1939). *Bull. Soc. méd. Hôp. Paris*, 55, 1130.
Chevallier, P., and Danel (1944). *Sang.*, 16, 67.
Codouris, A. (1946). At a meeting of the Medical Society of Athens on April 17, 1946.
Harrington, S. W. (1945). *Ann. Surg.*, 122, 546.
Katsigras (1946). *Thèse*, Athens.
Welti, H., and Mahoudeau, D. (1948). *Mém. Acad. Chir.*, 74, 132.

The Ministry of Health has issued a circular drawing the attention of hospital management committees and boards of governors to the importance of close liaison with the resettlement services of the Ministry of Labour. During the war the Ministry of Labour set up a staff of disablement resettlement officers to give advice and assistance on the employment of disabled people who have difficulty in getting or keeping a job. In many cases the disability was mental or complicated by mental factors. This service will now be extended as widely as the mental health resources of the National Health Service permit. The Ministry hopes that psychiatrists and D.R.O.s will get into personal touch with each other and co-operate in working the scheme.

AMOEBIC VAGINITIS

BY

N. C. SEN, M.B., D.G.O., F.R.C.S. Ed.

Sanctoria Hospital, Burdwan, West Bengal

Amoebic vaginitis is rare. In a study of 200 cases of leucorrhoea Bickers (1943) observed that 0.5% were due to *Entamoeba histolytica*, but he did not report any case. Between 1916 and 1948 only fourteen cases have been recorded, notably by May (1943), Morse and Seaton (1943), Cleland (1944), de Rivas (1944), Weinstein and Weed (1948), and others. Most textbooks are silent about a condition which should receive more attention, particularly in the Tropics and subtropics, where the incidence of amoebic infestation is fairly high.

Case Report

A nulliparous Nepalese widow, aged 35, was seen in May, 1948. She complained of a profuse seropurulent vaginal discharge first noticed in January of that year. There was some soreness of the vulva and a slight burning sensation in the vagina and during micturition. The discharge was almost continuous, and there was no alteration in its character or amount before or after menstruation.

She had had a severe attack of dysentery, presumably amoebic, in December, 1947, when she was treated elsewhere and no specific remedy was administered. Soon afterwards she noticed swelling and pain in the perineum and the lower parts of both labia majora. The present symptoms followed and the discharge increased until she was forced to come to the hospital for treatment.

Pelvic examination had to be undertaken under general anaesthesia. The lower part of the right labium majus was slightly swollen. The fourchette presented a small ulcer in its right half. In the vagina there were many linear ulcers, lying mostly transversely in the furrows between the folds of mucosa. They were superficial, punched-out ulcers with slightly overhanging edges which bled easily. The bases were raw and red except for a few ulcers near the fornices covered with a thin yellowish slough. The cervix was slightly enlarged, soft, and ulcerated over the whole of its surface except for a small rim near the reflection of the vaginal mucosa on the portio. The external os could not be detected. The uterus was bulky, ft. and anteverted.

Examination of the thick seropurulent vaginal discharge, both dry and hanging-drop smears, disclosed many active forms of *E. histolytica*. The discharge was acid in reaction and presented a few pus cells, many eosinophils, red blood cells, and vaginal cells, with Gram-positive cocci and a few Gram-negative bacilli. Scrapings from the ulcers again revealed active *E. histolytica*. The discharge obtained by milking the urethra presented, both by dry and hanging-drop smears, active forms of *E. histolytica*. Biopsy of an ulcer showed evidence of subacute inflammation but no *E. histolytica*.

Examination of the stools revealed cysts of *E. histolytica*, but proctoscopy showed no ulcer in the lower anorectal canal. Other evidences of amoebiasis were the enlarged tender liver and slight tenderness and thickening of the descending and iliac colon. There were a few leucodermic patches in the region of the waist.

Treatment

Treatment with emetine hydrochloride was started. It was given in daily doses of 1 gr. (65 mg.) intramuscularly. The vagina was cleaned twice daily with warm normal saline douches. After five days the discharge and discomfort were much relieved and examination could be undertaken without anaesthesia. The ulcers were healed or healing. The cervical lesion looked smaller and the external os could be detected. The cervical discharge was aspirated and showed a few *E. histolytica* with very sluggish movement. They were almost round, and looked like the precystic forms of the parasite.

The patient was complaining of some vague hypogastric pain associated with frequent micturition. A catheter specimen

showed a number of entamoebae again moving sluggishly. No local treatment was given for this amoebic trigonitis or cystitis. Treatment with emetine was continued, and "stovarsol" vaginal compound was given every night after the saline douches. She was also given an alkaline mixture.

After 12 gr. (0.8 g.) of emetine in fifteen days the ulcers were completely healed and the patient felt perfectly well. No urinary symptoms remained, and examination of urine and vaginal discharge revealed no abnormality.

Discussion

Three points favour the diagnosis of amoebic vaginitis (1) Vegetative forms of *E. histolytica* in the discharges and scrapings from the ulcer. (2) Rapid cure with specific amoebicidal drugs. (3) The punched-out character of the ulcers, with slightly overhanging edges and sometimes yellowish bases, situated mostly in the furrows between the folds of the vaginal mucosa, which shows very little inflammatory reaction.

Infection of the vagina is presumably by continuity and contiguity with the anorectal canal, and this may be helped mechanically by the method of ablution practised in Bengal to cleanse the part after defaecation.

The cervix is involved in about 70% of the reported cases, and the ulcer is usually placed eccentrically and away from the external os. The uterus is often enlarged, and it may be that many or all of the cases in which the uterus is enlarged, soft, and tender have some infection of the uterus. Uterine aspiration was not done in any of the reported cases.

Leucorrhoea due to *E. histolytica* may be fairly common in India. Cases should be investigated thoroughly from this point of view.

REFERENCES

- Bickers, W. (1943). *Virginia Med. Monthly*, 70, 135.
 Cleland, J. (1944). *Brit. J. trop. Med.*, 47, 54.
 de Rivas, D. (1944). *Amer. J. trop. Med.*, 24, 185.
 May, M. Y. (1943). *Ind. Med. Gaz.*, 78, 250.
 Morse, E. M., and Seaton, S. P. (1943). *Amer. J. trop. Med.*, 23, 325.
 Weinstein, B. B., and Weed, J. C. (1948). *Amer. J. Obstet. Gynec.* 56, 180.

Medical Memoranda

Perforation of Stomach in Scrotal Hernia

Owing to the rarity of this condition (only one other case of this type occurs in the literature: Jayle, 1893) I feel that the following is worthy of record.

CASE REPORT

The patient, a man aged 66, was sent into hospital for ? strangulated left inguinal hernia. He had had a left inguinal hernia for 35 years. Two months previous to his admission he had undergone prostatectomy here, with an uneventful recovery. At the time it was noticed that he had a small left inguinal hernia; since the operation he had been perfectly well. Twenty-four hours before admission the hernia had descended into the scrotal sac, and one hour before admission the patient experienced a sudden severe pain over the left inguinal region, accompanied by nausea and vomiting, the vomitus being gastric contents. The pain was continuous; he was crying out in agony, and disliked being moved. His last bowel motion had been twelve hours before admission, and he had passed urine that day.

Examination showed a well-covered muscular man. His general condition was reasonably good, but he was dehydrated. Temperature 96.4° F. (35.8° C.); pulse 126; respirations 44. He had a large scrotal swelling 12.5 cm. in diameter, which filled the whole of the scrotum. The scrotum was tender, but not excessively so, and was resonant on percussion. The patient complained of severe pain and tenderness over the region of the external inguinal ring. There was some slight abdominal rigidity. Peristaltic sounds were heard and the abdomen was generally resonant. The tongue was furred and dry, and the lungs and heart were normal. A diagnosis of strangulated left inguinal hernia was made, and the patient was given ½ gr. (16 mg.) of morphine, was put on a glucose-saline drip, and was prepared for the theatre.

Operation.—This was done by Mr. Ganz (anaesthetic: thiopentone, cyclopropane, and curare, administered by Dr. Waters). A T-shaped incision was made over the left inguinal region—the horizontal part of the incision parallel to the inguinal ligament and the vertical part over the scrotum. The coverings of the hernia were separated and the peritoneum was opened. Fragments of yellowish inspissated material and about 4 oz. (56 g.) of golden-coloured fluid were present in the scrotal sac. The bowel was delivered from the scrotum and found to consist of a portion of the stomach, some coils of small intestine, the transverse and pelvic colons, also the descending colon, which was provided with a mesentery. There were also small pieces of food in the scrotal sac. The bowel was returned to the abdominal cavity and the skin incision prolonged upwards; a large perforation 5 cm. by 5 cm. was found on the lesser curve of the stomach. The adjacent stomach wall was extremely thin. The perforation was sutured and oversewn with a double layer of stitches and an omental graft. The wound was closed and nylon skin sutures were inserted. On the return of the patient from the theatre he was given penicillin, sulphathiazole, and continuous oxygen, but his condition deteriorated and he died the following day.

Necropsy.—The abdomen was moderately distended. On opening the peritoneum a purulent acute generalized peritonitis was found, with much pus under the right lobe of the liver and in the right paracolic gutter. Inspissated yellowish-brown faecal-looking lumps of material were scattered all over the peritoneal cavity. A large hernial sac was occupied by loops of both small and large bowel and a number of similar lumps of material as mentioned above. The orifice of the sac was three fingerbreadths and was surrounded by a firm fibrous ring. The stomach was exceedingly mobile and elongated, with a scarcely definable lesser omentum. A piece of greater omentum was sutured over and partly closed a long oval hole (8 cm.) about the centre of the lesser curve. This perforation was through a blackened gangrenous area of stomach wall, and gastric contents had exuded into the peritoneal cavity and lesser sac. Obviously necrotic stomach wall extended 4 cm. around the perforation. There was no evidence of a chronic peptic ulcer. A few small thrombosed veins were present in the affected stomach wall, but no other vascular occlusion could be found. The right and left gastric arteries were normal. No pressure ring could be discerned to suggest the site of strangulation.

Examination of the C.V.S. failed to show any source of embolism. The pathologist's comment was: "It appears that this was a Richter's hernia in which the stomach was strangulated followed by perforation."

COMMENT

The probable course of events was that a portion of the large bowel had entered the hernial sac, this being rendered easy by its mobile mesentery; the stomach had been dragged into the sac by the gastrocolic omentum, and the lesser curve had been strangulated at the neck of the sac, with subsequent perforation of the stomach wall. Though the perforation was sealed at operation it is apparent that a further area of stomach wall had necrosed and subsequently perforated, resulting in the death of the patient.

My thanks are due to Mr. J. B. Marinar, medical superintendent, for his permission to publish this case and for his interest and helpful suggestions, and to Dr. J. Ennis for his post-mortem report.

H. SIMMONS, L.R.C.P., L.R.C.S.Ed.,
Late House-surgeon, Dryburn Hospital, Durham

REFERENCE

Jayle (1893). *Bull. Soc. Anat. Paris*, 68, 42.

A "Third Ureter" in Prostatectomy

Despite the sanguine views of many of my surgical confrères regarding the control of haemorrhage in the various forms of prostatectomy with bladder closure, I am dissatisfied in this respect. While not unmindful of the wholesome effects of the closed bladder after prostatectomy, sisters and house-surgeons have come to regard it with no little concern and even apprehension because of reactionary bleeding and clots lodging in the urethral drain, with distressing results. One finishes the operation with a gratifying degree of haemostasis, yet a day or two later one too often meets with disquieting reports of catheter difficulties, and evidently the staff have been somewhat anxious and harassed. The patient shares in the agitation instead of resting quietly after his ordeal. For his comfort and safe healing, and for the contentment of the surgical team, something more is needed in post-operative technique.

Catheter drainage depends on two factors—paucity of blood and plenitude of urine delivered by the ureters. Unfortunately,

owing to the shock of operation and the subnormal intake of fluids, the kidney action is all too often in abeyance. Accordingly I have tackled the problem from this direction. Since we cannot rely on adequate repression of bleeding, the logical remedy is to compensate for surgical oliguria by artificial "diuresis," using a rubber tube drip of dilute antiseptic from a bedside reservoir. This "third ureter" pleases everyone, including the patient, who prefers an automaton to intermittent service by nurses punctuating his repose for a day or so after operation and sometimes resorting to regrettably forceful syringing and sucking to clear his clogged drain.

The technique is not intended to cover slackness in surgical haemostasis but to confer on residents and nurses a feeling of calm confidence instead of anxiety that taxes their energies unduly during aftercare. I use the procedure after all three operations (Harris, Hey, or Millin), and even after resectomy occasionally insert a small suprapubic drain. As "third ureter" I employ a Jacques (No. 4) catheter, the orifice of which rests on the base of the bladder.

METHOD

A small Lister bougie is introduced (via the bladder-neck in Millin's operation) and pressed up against the dome of the bladder, which is incised for the tip to protrude. On this I slide the catheter by its open end after having cut off the tip. The sound is withdrawn with the catheter into the bladder and then detached. A stitch tethers the catheter to the skin, and anchorage is reinforced by "elastoplast" to prevent its being dragged out by inadvertent pulls. A glass connexion joins the outer end with light rubber tubing, which is interrupted by a glass drip on its way to a douche-can of irrigating fluid on a stand by the patient's bedside. The urethral catheter (24E) draining the bladder is suspended by a single nylon



Photograph showing the "third ureter" on the day after Millin's prostatectomy.

thread which pierces the bladder and abdominal walls about 1 in. (2.5 cm.) from the midline and is tied to a Harris metal rod. The outer end of this urethral drain is joined to a rubber tube of about the same calibre and not too readily compressible (see Figure), which ends a foot from the bottom of the bucket. Irrigation is set going at about 50 drops a minute for the first few hours, and the speed is adjusted by a screw-clamp to the safe degree of dilution. To dispel doubts arising about a clear channel, release the clamp and flush through the system.

The constancy of the irrigation is assured not only by the staff's seeing the issuing drip, but the patient or the nurse, even in the dark, can also tell by the friendly sound of the drops. This continues for about 48 hours, by which time the water is generally a pale red hue or clear. The vital injunction to the nurse is, "Never leave the drip running unless there is a corresponding outflow." The procedure can continue with the patient sitting out of bed, or it may be interrupted while he moves about. The "third ureter" is removed on the third or fourth day. Subsequent leakage is absent or negligible.

A. WILFRID ADAMS, M.S.

Reviews

STATE MEDICINE IN THE U.S.A.

Voluntary Medical Care Insurance in the United States. By Franz Goldmann, M.D. (Pp. 228, 16s.) New York: Columbia University Press. London: Geoffrey Cumberlege. 1948.

All the signs point to the early provision of some form of national health insurance in the U.S.A. There is a voluminous literature on the subject, and Dr. Goldmann has added to it a useful objective examination of how far voluntary schemes have provided, or failed to provide, medical care for the community. Every writer on the topic agrees that the usual system of payment per service rendered fails to meet the needs and financial capacity of a considerable section of the community. The organized medical profession, while admitting this, has claimed that the problem would be manageable by a voluntary system of prepayment.

This book shows that efforts to achieve such a solution have been numerous. Some have been sponsored by commercial insurance companies, some by combinations of employers and employees, some by organized groups of doctors. The majority of the schemes provide only for hospital cases. At the end of 1946 over twenty-four million persons were enrolled in hospital service schemes, as against some five million in schemes providing home and general treatment. Dr. Goldmann says that many practitioners view with apprehension the popularity of the hospital schemes, which could, and sometimes do, favour practice from as well as in the hospitals. The author comes to the conclusion that so far as plans for general medical care are concerned "the lower income groups are not reached to any considerable extent," and that most of these schemes are "far from comprehensive in the benefits they offer." The difficulty with all these projects is that of attracting, and retaining, the more favourable risks. In order to remain solvent the sponsors must restrict either the freedom to join or the scope of the service. The low premiums within the reach of the poorer classes yield funds which will not allow of a complete service. The author is of opinion that the group practice schemes have been the most successful from the point of view of scope of service. The objections of the medical profession and others to compulsory insurance are stated and appreciated, but one is left with the impression that Dr. Goldmann is driven to the conclusion that no complete system of medical care can be brought within the reach of a considerable section of the population without the help of the State. The question now to be debated is. How much help, and in what form?

ALFRED COX.

MALARIA IN AFRICA

Malaria. With Special Reference to the African Forms. By W. K. Blackie, M.D., Ph.D., F.R.C.P.Ed., D.T.M.&H. (Pp. 104, 10s. 6d.) Capetown "The African Bookman." P.O. Box 3115.

Malaria Control by Coastal Swamp Drainage in West Africa. By A. B. Gilroy, O.B.E., M.B., B.S.(Melb.), D.T.M.&H.(Eng.). (Pp. 97; 22 plates. No price.) London: Ross Institute of Tropical Medicine.

If in the past Africa has had a reputation for backwardness this should not apply to the future. For if Africa could be ridged, as now seems possible, of malaria and tsetse fly it promises to play in the future a large part in the economic affairs of the world. These two small books are indicative of the interest now taken in Africa in the control of the first of these adverse conditions. Dr. Blackie gives a good short description of malaria. It is likely to be useful to the practising medical man as providing an up-to-date account of modern antimalarial treatment; though the reviewer would have thought it better to refer to the intramuscular administration of quinine only as a form of treatment that need never now be used, since, if intramuscular injection must be given, mepacrine is preferable.

The second work is more unusual. Dr. Gilroy gives an account of malaria control operations carried out since 1942 at Lagos. Lagos is a town originally crowded on to a small

sandy estuarine island, but with its increasing population and importance it has lately extended on to the only land available—low-lying tidal swamp, much of it mangrove. Fortunately recent research on malaria under these conditions has been helpful, and the study of the mangrove and of the special habits of the species of anopheles concerned in transmission has given a clear indication of the kind of measures to be adopted. The description given of the natural history of the different kinds of mangrove, the kinds of swamp they give rise to, and the relation of these to the tides and the breeding places of anopheles makes interesting reading, as also do the very clear accounts of the different operations undertaken. The book is enlivened with some clever sketches of operations in progress and with photographs giving the different types of swamp and the nature of the engineering work carried out.

S. R. CHRISTOPHERS.

PRACTICAL GUIDE TO LEPROSY

Manual of Leprosy. By Ernest Muir, C.M.G., C.I.E., M.D., F.R.C.S.Ed. (Pp. 208; 70 illustrations, several in colour. 17s. 6d.) Edinburgh: E. and S. Livingstone. 1948.

This small book has been written for the guidance of doctors, nurses, and lay workers who undertake leprosy work. For this reason the author discusses mainly clinical features, treatment, and the methods of prevention in common use, and devotes little space to history, prevalence, and epidemiology. His account of the histology and the reaction of the tissues to the infection is good and illustrated by sections—some in colour—showing the tissue changes and the causative bacilli. He has adopted the recent South American classification based on histological changes instead of the clinical one of the Cairo Conference. The former is the more scientific, but it will prove to be rather confusing to the large proportion of field workers who have neither time nor facilities for making such examinations.

The clinical chapters are the most detailed and useful part of the book, and they are illustrated by photographs taken by the author. He records the treatment that he has long used, but omits to mention some preparations that other authorities have given with advantage. Dr. Muir advises injections of hydnocarpic oil intradermally and into the deeper tissues; he also mentions the use of the ethyl esters, which are generally relied on by American workers but are more expensive. He differs from some authorities in recommending intermissions in the courses of injections. He advises sulphone treatment in lepromatous cases and also suggests that it be tried in the "uncharacteristic" type with negative lepromin reactions. Recent trials of sulphetrone indicate that it is less toxic than other forms, but it is still too early to decide on the precise value of this new line of treatment. The concluding section of the book is a practical account of the methods now in general use for the control of leprosy. He advocates compulsory segregation in endemic areas when accommodation is available, and also discusses home isolation. He recommends the examination of school-children and gives much good advice. This book embodies great practical experience and will be of value to those for whom it is intended.

LEONARD ROGERS.

ESSAYS IN PSYCHIATRY

The Yearbook of Psychoanalysis. Edited by S. Lorand, M.D., and others. Volume 3, 1947. (Pp. 308. £1 10s.) London: Imago Publishing Company. 1948.

The third volume of this series maintains the standards set by the first two. It is to be regretted that the publishers persist in describing it as a compendium of recent advances in the theory and practice of psycho-analysis. Although it contains few research contributions of value, it is certainly an interesting collection of essays on a wide range of subjects from a correlation of the basic ideas common to Freud and to Spinoza (Bernard, New York) to such curious matters as the charming away of sties by means of barley and wedding-ring rituals (Inman, London). Of the clinical papers the most outstanding are those by Garma (Buenos Aires) and by Jacobson (New York) on various aspects of melancholia and on the effect of disappointment on depressive development.

d one by Schönerger (Budapest) on the nightmare syndrome. A summary by W. C. Menninger (Topeka) of modern concepts of war neurosis is notable mainly as demonstrating the presence of any significant advances in this field despite the opportunities afforded by the second world war.

Although yearbooks of this sort usually demand considerable technical understanding on the part of the reader, this particular issue contains a number of papers of more general interest, in particular Ernest Jones's valedictory address and D. Adrian's lecture on the mental and physical origins of behaviour. A number of articles on applied psycho-analysis, among others, Wittels (New York), Marie Bonaparte (Paris), and the late Hanns Sachs provide additional attractions for the non-analytical reader.

Excellent as it is, the volume would have been greatly improved by the omission of several rather platitudinous short notices and of a longish but very superficial and unilluminating study on the anti-Semitic character.

EDWARD GLOVER.

MENTAL DEFICIENCY

A Textbook of Mental Deficiency (Amentia). By A. F. Tredgold, M.D., F.R.C.P., F.R.S.E. Seventh edition (Pp. 534; 47 plates 30s.) London: Baillière, Tindall and Cox 1947.

For forty years Dr. Tredgold's scholarly textbook on mental deficiency has held a unique position. A medical subject which is tended to be neglected in the writings of neurological and psychiatric specialists receives attention here in a manner particularly well adapted to the needs of both clinicians and administrators. In the new edition the original illustrations—many of them wisely chosen from Dr. Brushfield's and Dr. Turner's case photographs—have been supplemented by other excellent pictures. New features include notes on amentia due to Rh incompatibility and on the Laurence-Moon-Biedl and Rud syndromes, but the discussions on pre-natal infections have not been expanded. The author provides copious information on legal and administrative problems and is brought up to date by including an account of the effects of the Education Act of 1944.

Readers will be glad to find that the attractive discussions on isolation amentia and idiot savants still hold their places in the book. The only disappointment is that the classification of the clinical varieties of amentia summarized on p. 65 is substantially unaltered. The grouping is not easy to justify in the light of modern genetical thinking, though it is admittedly difficult to find any really logical method of classification. Dr. Tredgold's lucid style of writing makes the book a pleasure to read. This is most fortunate in a textbook which it is essential for all serious students of the subject to master, whether or not they agree with all the views expressed.

L. S. PENROSE.

HOSPITAL MANAGEMENT

On Hospitals. By S. S. Goldwater, M.D. (Pp. 395, illustrated 59.00 or 45s.) New York and London: The Macmillan Company 1947.

Dr. S. S. Goldwater, who died in 1942, had a distinguished career as a health-service and hospital administrator, having been Superintendent and Director of the Mount Sinai Hospital, New York, Commissioner of Health of the City of New York, and Consultant in Hospital Organizations and Planning. This book is a collection of the essays, papers, and reports written by him during his long career, together with plans of many of the hospitals for which he was responsible.

He discusses the whole range of hospital management and construction, and every word is inspired by his obvious devotion to the cause he had at heart. Most of his ideas were far ahead of his time, but very few have not now been accepted: those concerned with the social aspects of hospital administration are in point and most of them are now implicit in all our thinking. While many of the essays are lucid expositions of the whole philosophy underlying provision of care for the sick, the author never loses sight of the material aspects. His influence on the development of community health care and on the planning of hospitals was probably greater than that of any other man of his time.

ANDREW TOPPING

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

New and Nonofficial Remedies, 1948. (Pp. 800 21s.) London: J. B. Lippincott, 1948.

Issued by the Council on Pharmacy and Chemistry of the American Medical Association.

Pediatrics and the Emotional Needs of the Child. Edited by H. L. Witmer. (Pp. 180 8s. 6d.) London: Geoffrey Cumberlege 1948

Papers read at a joint discussion by American paediatricians and psychiatrists

The Biology of Bacteria. By A. T. Henrici, M.D. 3rd ed. (Pp. 571. 25s.) London: George G. Harrap 1948

An introduction to general microbiology

The Management of Binocular Imbalance. By E. Krinsky, M.D. (Pp. 464. 63s.) London: Henry Kimpton 1948

From the New York Polyclinic Medical School

Primary Anatomy. By H. A. Cates, M.B. (Pp. 478 33s.) London: Baillière, Tindall and Cox. 1948

For nurses, physiotherapists, and others of similar interests

Psychiatry. By H. C. Beccle, M.B., M.R.C.P., D.P.M. (Pp. 245. 17s. 6d.) London: Faber and Faber 1949

Theory and practice for nurses and students

Surgical Pathology. By P. A. Herbut, M.D. (Pp. 710 60s.) London: Henry Kimpton 1948

A new American work.

The Plant Alkaloids. By T. A. Henry, D.Sc. 4th ed. (Pp. 804 63s.) London: J. and A. Churchill 1949.

The new edition is largely rewritten

Kayne, Pagel, and O'Shaughnessy's Pulmonary Tuberculosis. Revised by W. Pagel, F.F.D., and others 2nd ed. (Pp. 720 67s.) London: Geoffrey Cumberlege. 1948

An extensively revised edition

The Third Mental Measurements Yearbook. Edited by O. K. Buros (Pp. 1,246 \$12.50) New Brunswick Rutgers University Press 1949.

A guide to recent work.

Penicillin and Other Antibiotics. By G. W. S. Andrews, M.B., B.S., and J. Miller, B.Sc. (Pp. 160 7s. 6d.) London: Todd Publishing Group 1949

A short survey of antibiotics

Science in Liberated Europe. By J. G. Crowther (Pp. 226 18s.) London: Pilot Press 1949

An account of the activities of European scientists before and after liberation

Medical and Nursing Dictionary and Encyclopaedia. By E. Pearce 9th ed. (Pp. 723 17s. 6d.) London: Faber and Faber 1949.

A further edition of the well-known dictionary for nurses

Polio and its Problems. By R. H. Berg (Pp. 174 18s.) London: J. B. Lippincott. 1948

A popular account of poliomyelitis

Widening Horizons in Medical Education. A Report of the Joint Committee of the Associated American Medical Colleges and the American Association of Medical Social Workers (Pp. 228 15s.) London: Geoffrey Cumberlege 1948

A study of the teaching of social and environmental factors in medicine

The Situation in Biological Science. (Pp. 631 9s. 6d.) London: Collet's Holdings 1949

Proceedings of the Lening Academy of Agricultural Sciences of the U.S.S.R., 1948

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY MAY 7 1949

A NEW TREATMENT FOR RHEUMATOID ARTHRITIS

Rheumatoid arthritis is known to have existed in prehistoric times, and the search for a cure has presumably continued ever since. In the course of time much information has accumulated about the natural history, pathology, and the provocative factors of the disease, but since the waning of belief in an all-important infective factor little certain information exists about its aetiology. In his recent Oration before the Heberden Society in London, Dr. P. S. Hench¹ reiterated the known facts and pointed out that rheumatoid arthritis has two sharply contrasting characteristics—that of potential chronicity and that of potential reversibility. He divided the causes of reversibility into spontaneous, therapeutic, and accidental. Spontaneous remissions have always been recognized as a possible occurrence even in cases in which the prognosis seems hopeless²; therapeutic remissions can be induced in a proportion of cases by means of gold therapy or blood transfusion; whilst accidental remission may frequently occur in pregnancy and in jaundice of certain types.

Consideration of these facts makes it increasingly difficult to harmonize the microbic theory of the origin of rheumatoid arthritis with modern knowledge. It seems more probable that the disease is part of a basal biochemical disturbance of unknown type which is accidentally and transiently corrected by some biological change common to a number of apparently unrelated conditions—pregnancy and jaundice being the most notable. Hoping to reproduce the beneficial effects of pregnancy, physicians have administered fairly large doses of female hormones to non-pregnant sufferers from rheumatoid arthritis, but the results have mostly proved to be disappointing, as has the employment of transfusions of blood from pregnant women—a form of therapy which was recently advocated³.

Last year workers at the Mayo Clinic put forward the conjecture that the anti-rheumatic factor might prove to be one of the adrenal hormones. Recent work by Selye^{4,5} and others on the biochemical changes induced in animals exposed to a wide variety of noxious agents has shown that the changes vary with the intensity and the duration of the stress but are independent of its nature. This has been termed the "general adaptation syndrome," and has been shown to be due to excessive secretion by the anterior

pituitary gland of corticotropin, which in turn stimulates increased adrenocortical secretion. Continued application of the stress is accompanied by continued hyperactivity of the hypophysis-adrenal mechanism, and for a time there is high resistance to the particular agent used and increased susceptibility to all others. Ultimately all resistance breaks down when the adaptive energy is exhausted.

Interest in this syndrome was aroused when Selye pointed out that it lent itself to a concept of "adaptation diseases." By various experimental procedures he produced in animals changes in the joints and the heart similar to those observed in human rheumatism, and concluded that "the adrenal cortex may play an important role in the pathogenesis of rheumatic and rheumatoid conditions in man."⁶ Further experiments have shown that the essential requirement to enable these and other pathological changes to be brought about is an excess of salt-active corticoid hormone. This would suggest that during the phase of resistance the increased corticoids, which are normally beneficial, are capable in certain circumstances of producing recognized disease syndromes. Knowlton,⁷ searching for the modifying factors which in most cases presumably prevent the effect of stress resulting in "adaptation" disease, suggests that such disease is the result of a dual mechanism, the one factor being the non-specific effect of corticoids and the other a property specific for the given stress and the determinant of the site of the effect.

In September, 1948, Kendall was able to provide for Hench and his colleagues at the Mayo Clinic a supply of 17-hydroxy-11-dehydrocorticosterone (compound E) for clinical trial.⁸ This was administered to a female patient, aged 29, who had had severe rheumatoid arthritis for 4½ years. She had not responded satisfactorily to any method of treatment, and many joints were swollen, stiff, and very painful on any movement. Radiographs disclosed severe destructive changes in her right hip and less severe lesions in other joints. The blood sedimentation rate was 108 mm (Westergren), and the patient's condition appeared to be deteriorating. On Sept. 20, 1948, she could hardly get out of bed, and on that day intramuscular injections of compound E were started in daily doses of 100 mg. No change was noted until Sept. 30, when she rolled over in bed for the first time with ease and reported much less muscular stiffness and pain. On the next morning all muscular stiffness had left her, her appetite returned, and she was able to walk with only a slight limp. By the seventh day of treatment all tenderness and pain on movement and even swellings were greatly lessened. The next day she went out shopping for three hours, returning tired but with no stiffness or pain. The progress made by this patient was for various reasons not fully maintained, but since then a total of 14 other cases have been treated, in all of which considerable and rapid improvement has been noted. Since January, 1949, compound E acetate, a more easily prepared and less expensive product, has been used in place of compound E, with equally good results.

Two female patients with severe rheumatoid arthritis were also treated with 100 mg. of pituitary adrenocorticotrophic hormone (ACTH) intramuscularly for 12 days. The results of metabolic studies on these patients have yet to be published, but it is reported that clinical improvement

¹ *Ann. N.Y. Acad. Sci.* 1949, 5, 1-15.
² Davidson, L. S. P. in Cepeman, W. S. C., *Textbook of the Rheumatic Diseases* 1948, Edinburgh.
³ *Brit. J. Rheumatism* 1947, 2, 252.
⁴ *J. Endocrinol.* 1946, 6, 117.
⁵ *J. Endocrinol.* 1948, 9, 237.
⁶ *J. Amer. med. Ass.* 1944, 124, 201.
⁷ *Lancet* 1948, 2, 315.
⁸ *J. Clin. Endocrinol.* 1949, 10, 181.

similar to that resulting from the use of compound E occurred promptly in both.

The number of patients so far treated by this new method is small. This is due principally to shortage of supplies of the hormone; great efforts have been made to overcome this, but the technique of preparation is difficult, time-consuming, and expensive. As a control experiment the injections of compound E were at times, unknown both to the patient and the administrator, replaced by an inactive solution. When this was done articular and muscular symptoms recurred within a few days, and the sedimentation rate rose in every case. No serious toxic reactions have been noted as the result of administration of compound E or its acetate, with the exception of transient oedema. Nevertheless much more experience is needed before sufficient knowledge will be acquired about its efficacy and safety with prolonged administration.

The effects of related compounds such as dehydrocorticosterone (compound A), 17-hydroxycorticosterone (compound F), desoxycorticosterone (DCA), and pituitary adrenocorticotrophic hormone (ACTH) are being investigated by Hench and his colleagues. Some years prior to the recent war a small-scale trial of the effect of desoxycorticosterone on rheumatoid arthritis was carried out by the Empire Rheumatism Council in this country, with negative results, but, so far as is known, none of the other compounds mentioned have yet been applied to the treatment of the rheumatic group of diseases.

It would appear from the information so far available that a therapeutic discovery of the greatest importance has been made. It is of course unfortunate that the amounts available of both compound E and of the adrenocorticotrophic hormone are so small, and are likely to remain so until these substances can be synthesized. However, arrangements are in hand for a thorough trial in this country when supplies are adequate.

ESSENTIAL HYPERTENSION

Since Sir Clifford Allbutt¹ first recognized 50 years ago that arterial hypertension sometimes arises in the absence of renal disease research into what is now called essential hypertension has gained such impetus, especially during the last decade, that it has become a difficult task for the clinician to keep in touch with the rapid advances being made, and still more difficult for him to correlate their significance. Clamping of the renal arteries in animals seems far removed from non-renal hypertension in man, and the recognized influence of heredity is at first glance a paradox, since there is a growing impression, recently referred to in this *Journal* by Ogilvie,² that hypertension is a stress disease. It is not even clear whether it is a single disease or a symptom complex. The lectures given by Professor F. H. Smirk at the British Postgraduate Medical School and reported elsewhere in this issue of the *Journal* are therefore welcome, since they help to put the many current problems of essential hypertension in clear perspective.

It is generally accepted that the raised blood pressure in essential hypertension frequently precedes pathological changes in the arterioles, and that sustained hypertension causes or accelerates the development of arteriosclerosis. It follows that renal ischaemia due to vascular changes cannot be the initial factor in the production of essential hypertension in young subjects. In later life, however, pathological changes in the renal arterioles are always present. Essential hypertension arising after the age of 45 may possibly be secondary to these changes, and it is conceivable that the disease in youth is aetiologically distinct from that arising after middle age. It is fundamental to the understanding of essential hypertension to realize that an increase in the blood pressure due to any cause, physiological or pathological, may be followed by a further increase, this secondary hypertension often persisting after the primary cause has ceased to operate. The mechanism by which the secondary rise in blood pressure is brought about is not clearly understood. Arteriosclerotic changes in the large vessels are not the cause, for they increase only the systolic pressure; and Volhard's theory that pathological narrowing of the arterioles causes increased peripheral resistance has now been disproved. It is known that ischaemic kidneys liberate renin, a pepsin-like enzyme; this is activated by a substrate (pre-angiotonin) found in normal serum to form a polypeptide, angiotonin, which causes vasoconstriction. Thus any stimulus producing vasoconstriction, and therefore renal ischaemia, will lead to angiotonin formation, further vasoconstriction, and an additional rise in the blood pressure.

The stimuli capable of starting this vicious circle may be functional rather than pathological, and the possible role of the renal shunt demonstrated by Trueta and others³ is plain. Another important factor is that the enlarged arterioles in hypertension respond excessively to vasoconstricting stimuli, so that once medial hypertrophy has taken place vasoconstriction is more readily maintained. The relative importance of these two factors is difficult to assess, but the variable response of different experimental animals subjected to the Goldblatt clamp serves as a warning against the unreserved acceptance of this mechanism in man. The persistence of hypertension after the cessation of the primary stimulus is usually attributed to renal arteriosclerosis, which develops during the period of primary hypertension. However, a non-renal mechanism is also possible, as shown by the persistent raised blood pressure in rats after bilateral nephrectomy.

Though the exact nature of these complicated mechanisms may not be clear, the implications are plain: any stimulus producing vasoconstriction will in time lead to permanent hypertension, and essential hypertension may arise either from exposure to excessive stimulation or from exaggerated vascular response to normal stimuli. The basic causes of hypertension are therefore to be sought in undue stress or in individual diathesis. The hypertensive diathesis can often be demonstrated clinically by an abnormal rise in the blood pressure following immersion of the arm in ice-cold water—subjects showing a positive response to this test being more liable to develop hypertension than those who respond normally. It is well known that the incidence of essential hypertension is higher

¹ *Abstr. Trans. Hunterian Soc.*, 1895-96, 38.

² *British Medical Journal*, 1949, 1, 645.

³ *Studies of the Renal Circulation*, 1947, Oxford.

⁴ *Quart. J. Med.*, 1947, 10, 111.

⁵ *Hypertension and Nephritis*, 1939, Philadelphia.

in some races than in others, and Platt⁴ has recently shown that hypertension is largely a hereditary disease, being transmitted as a Mendelian dominant. But stress factors are equally important; for example, African negroes lose their immunity to hypertension when living in the environment of Western civilization. The link between obesity and hypertension is not purely genetic: the obese hypertensive patient may become thin and normotensive through dieting alone—a fact sometimes overlooked in the treatment of the obese middle-aged patient with hypertension. Response of the blood pressure to emotion and mental effort varies greatly, but it has been shown that those who react to such stimuli with the greatest rises of blood pressure are more liable than others to develop permanent hypertension in later years.

Malignant hypertension is regarded by most authorities as a form of essential hypertension with a great increase of the diastolic pressure and acute arteriolar necrosis, and Fishberg⁵ prefers to call it the malignant phase of essential hypertension. Professor Smirk does not accept this concept as proved. He points out that malignant hypertension is rare in the province of Otago, New Zealand, and so also is chronic glomerulonephritis. He suggests that the two diseases may have some aetiological factor in common. Whatever may be the outcome of further studies on this possible relationship, the suggestion is in keeping with the theme of Professor Smirk's hypothesis: essential hypertension is not a single disease but a clinical state arising as the end-result of numerous primary causes. The cause may be physiological, as in environmental or emotional stress, or pathological, as in renal and endocrine disorders. The disease perhaps arises for different reasons in old age and in youth, and it may well be that malignant hypertension has a different primary cause. This wider concept of the disease should lead to further investigations of the factors in everyday life which are responsible for essential hypertension ranking so high in the diseases of civilization.

STILBOESTROL THERAPY IN PREGNANCY

Another contribution to the study of gynaecological and obstetrical endocrinology comes from O. W. Smith,¹ who now describes the results of four years' clinical and laboratory research on the action of diethylstilboestrol in pregnancy. Having persuaded clinicians in various parts of the U.S.A. to join in the work she is in a position to assess the value of giving stilboestrol as a routine from the results obtained in 632 pregnancies. The theoretical basis of the investigation lies in the claim by O. W. Smith and G. V. Smith² to have shown that oestrogens increase production of progesterone in non-pregnant women by stimulating the pituitary and in pregnant women by bringing about better "utilization of chorionic gonadotropin." In this respect diethylstilboestrol is held to be superior to the naturally occurring oestrogens because its action is not depressed

by progesterone already in circulation. O. W. Smith postulated that stilboestrol should be beneficial in pregnancy not by virtue of its own oestrogenic properties but by stimulating the placenta to secrete both oestrogen and progesterone. She therefore administered stilboestrol in cases of threatened and habitual abortion in "physiological" dosage, calculated according to the period of gestation. The results were good. Of 127 patients who had had at least two previous consecutive abortions, 102 (80%) were still pregnant after 28 weeks and 98 (77%) bore living babies; while of 38 women who had had three successive abortions 33 produced living children.

These are higher figures than the rates for spontaneous cure calculated by Malpas³ and Eastman⁴ in similar series of cases. Moreover, there was no evidence that the hormone treatment of threatened and habitual abortion increased the incidence of viable malformed foetuses. Vaux and Rakoff⁵ had previously reported good results with combined oestrogen and progesterone therapy in habitual abortion, as also had White⁶ in pregnant diabetic women. These writers regarded their form of treatment as substitution therapy, whereas Smith looked upon hers as stimulative—which should give better results, since the secreted hormones are likely to be supplied at a more uniform rate and in closer conformity to physiological needs. Many of Smith's patients received small daily doses of stilboestrol during the cycle of conception in order to improve luteal secretion and thereby provide a more thorough preparation of the endometrium for the fertilized ovum. This theory might therefore be used to explain the successful results recently reported in this *Journal* by Christie Brown,⁷ who treated sterility and abortion with small doses of dienoestrol and progesterone, though according to Smith the progesterone is unnecessary.

Since the Smiths had claimed² that the toxæmias of late pregnancy are invariably preceded by a state of oestrogen and progesterone deficiency, it was natural that they should also inquire into the value of stilboestrol in the prevention of these conditions. They argue that it is unlikely to cure established toxæmia, because by the time signs appear syncytial degeneration and placental vascular damage are already present and the placenta is incapable of increasing its hormone production even under an extrinsic stimulus. Encouraging results were obtained in the prophylactic treatment of 95 patients, only 18 of whose previous 197 pregnancies had been normal. Late pregnancy toxæmia and premature labour are relatively common in women with essential hypertension, yet in 17 hypertensive patients a 42% foetal loss sustained in previous pregnancies was reduced to 12% with this treatment. Again, 11 pregnant diabetic women, whose 13 previous pregnancies had resulted in only two living babies, produced eight living children following routine stilboestrol therapy, and none of them developed toxæmia. Three of the babies were large, which tends to support the statement by Barns⁸ in a paper recently published in this *Journal* that there is no apparent connexion between the large size of babies of diabetic mothers and the presence of hormone imbalance or toxæmia in the mother.

The complicated theoretical basis of Smith's work may not meet with general acceptance. For instance, there is little evidence as yet to support the idea that the production of hormones by the placenta is under endocrine control. Again, other workers⁹ have failed to find that a fall in oestrogen and progesterone output invariably precedes the development of toxæmia. Furthermore Davis and Fugo¹⁰ gave stilboestrol to ten pregnant women and found no increase in pregnanediol excretion, though after the administration of progesterone this was increased. Their cases, however, were normal pregnancies, while Smith's original

¹ *Amer. J. Obstet. Gynec.*, 1948, 56, 821.

² Smith, O. W., Smith, G. V. S., and Schiller, S., *J. clin. Endocrinol.*, 1941, 1, 461.

³ *J. Obstet. Gynaec. Brit. Emp.*, 1938, 45, 932.

⁴ *Progress in Gynaecology*, 1946, p. 262. London.

⁵ *Amer. J. Obstet. Gynec.*, 1945, 50, 353.

⁶ *Penn. med. J.*, 1947, 50, 705.

⁷ *British Medical Journal*, 1948, 2, 851.

⁸ *Ibid.*, 1949, 1, 51.

⁹ Taylor, H. C., and Scadron, E. N., *Amer. J. Obstet. Gynec.*, 1939, 37, 963.

¹⁰ *Proc. Soc. exp. Biol.*, 1947, 65, 283.

¹¹ Smith, O. W., Smith, G. V. S., and Hurwitz, D., *Amer. J. Obstet. Gynec.*, 1946, 51, 411.

work¹¹ was carried out on pregnant diabetic women; and their dosage of stilboestrol was considered by Smith to be so excessive that it might depress rather than enhance placental function. It could also be argued that the general care and close supervision which inevitably accompany any special therapeutic trial might in part explain the good results. Indeed, all manner of theoretical and practical questions arise, but the latter at least might be settled by observing the results of giving stilboestrol as a routine during pregnancy in further large-scale, carefully controlled clinical experiments.

GONORRHOEA IN WAR

The management of gonorrhoea in the second world war was very different from that in the first. The sulphonamides, which became available in 1937, and penicillin, which was first used in the treatment of gonorrhoea about May, 1943, completely changed the outlook. Whereas in the first world war enormous numbers of patients languished in large hospitals for weeks or even months, in the second a few days in hospital was the rule, and many Service patients were not even admitted to hospital but, particularly in the U.S. Forces, were treated on a "duty status." The incidence of complications fell from 28% in 1937 to less than 1% in 1944, and after the introduction of sulphonamide therapy the proportion of "carriers" decreased from between 5-20% to negligible figures. The progress made in World War II has been described by Altshuler,¹ who explains what lay behind the various orders issued for the management of gonorrhoea in the U.S. Army. The first of the sulphonamides to be used for this purpose was sulphathiazole, and this was succeeded in turn by sulphapyridine, sulphathiazole, and sulphadiazine. In 1941 the usual course of treatment was 19 g. of sulphathiazole in nine days, but it soon became apparent that 20 g. in five days gave better results, being successful in something like 75% of cases. When the first course failed a second similar one was given after five days, and in 1943 this second course was increased to 33 g. in five days. About this time sulphonamide resistance became a serious problem, with increasing numbers of patients failing to react. Many hospital beds were blocked, and morale suffered considerably. Almost the only effective treatment in such cases was hyperpyrexia; this meant maintaining the patient's rectal temperature at 105.8° F. (41° C.)-106.2° F. (41.2° C.) for eight hours—a procedure requiring much labour and skill, and by no means without risk.

Early in 1943 penicillin was found to be very effective against the gonococcus, and by June in that year 1,600 patients had been successfully treated on various dosage schedules. At first 10,000 units of penicillin were given every three hours for five doses, and if this failed 10,000 units were injected every hour for ten hours. These schedules were modified from time to time. One retained for a long period was 100,000 units in 15 hours. Later this was increased to 200,000 units, with correspondingly larger total doses in cases of relapse. Towards the end of 1945 there were indications that the gonococcus was developing some slight degree of penicillin resistance, and it was feared that the sulphonamide experience would be repeated. However, no well-authenticated case has yet been recorded, and most of the supposed cases have been due to faulty technique, insufficient dosage, or relatively inactive preparations of the drug. Relapse and development of the carrier state both proved to be much less common after penicillin than after sulphonamide therapy. In order to save the trouble of repeated injections various methods of prolonging the action of penicillin in the body

by delaying absorption or excretion were investigated. Penicillin in peanut oil and beeswax proved effective and popular, though the viscosity of the preparation is troublesome; recently procaine penicillin in oil has come into use. With this preparation penicillin in the blood can be maintained at an effective level for 24 hours or so. At room temperature the solution will pass easily through an ordinary intramuscular needle. The use of penicillin made practicable the out-patient treatment of Servicemen suffering from gonorrhoea, and in the U.S. Forces this became the rule in 1945, though in the British Army the patient was normally seen by a specialist venereologist and "detained" for 24 to 48 hours—a more economic procedure than admission to hospital. Diagnosis in the Services has always presented a problem, since the normal "medical inspection room" or other centre to which a Service man ordinarily reports sick contains no facilities for smear or culture work, and a diagnosis of gonorrhoea is never justified (either in the U.S. or British Forces) on clinical grounds only. In the male a smear alone is usually sufficient, but in the female a culture is frequently necessary as well, particularly in subacute or chronic cases. However, the great majority of Service women suspected to be suffering from gonorrhoea were admitted to hospital for examination and treatment.

Criteria of cure were more exacting in the British than in the U.S. Forces. In the former three months' observation, with periodical clinical and pathological examinations, was the rule for both sexes; in the latter, three weeks' observation for men and three months' for women were considered adequate. One reason for this discrepancy was the much freer availability in the American Forces of penicillin, which was provided for the treatment of gonorrhoea in the latter long before similar provision was made for the British. The remaining problem was to determine the necessary period of observation in order not to miss a concurrently acquired syphilitic infection in patients who developed gonorrhoea and were treated with penicillin: opinions differ about how long this should be, but most authorities consider the period should be four months at least, and preferably six, while some put it at twelve. There can be no doubt that the treatment of gonorrhoea was one of the great medical triumphs of the war. Penicillin reduced what was a very serious medical problem to negligible proportions, and if it did not appreciably reduce the incidence of the disease it must have saved many thousands of hospital days, and thus much expense and manpower.

MUSCLE BIOPSY IN RHEUMATOID ARTHRITIS

The comprehensive term "rheumatism" has long been recognized to include a variety of conditions of different aetiology, and any unification that may be attempted in future must depend on something more than the common factor of pains in the limbs. One promising method of investigating the rheumatism problem was evolved by Curtis and Pollard¹ in America. They obtained from patients with rheumatoid arthritis pieces of skin and calf muscle in parts remote from the affected joints: these biopsies showed the presence of small foci of round cells of chronic inflammatory type. Two years later Freund and his co-workers² demonstrated similar inflammatory nodules in the nerve sheaths of patients with rheumatoid arthritis, and they followed up this work by confirming the results of Curtis and Pollard.³ In this country Gibson, Kersley,

¹ *Amer. Int. Med.*, 1940, 13, 2265.

² *Amer. J. Path.*, 1942, 18, 865.

³ *Science*, 1945, 101, 202.

⁴ *Amer. Rheum. Dis.*, 1946, 5, 131.

⁵ *Ibid.*, 1948, 7, 132.

¹¹ *Amer. J. Syph.*, 1943, 32, 115.

and Desmarais carried out a series of similar investigations and showed that the pathological lesions in muscle were of two kinds: (1) pericapillary collections of lymphocytes, plasma cells, and sometimes eosinophils, between the muscle fibres; and (2) paravascular collections of lymphocytes only, associated with sclerotic arterioles in the perimysium. They also found similar lesions in the perineurium of the radial nerve and in the fat surrounding the synovial membrane of the knee-joint.

More recently the same authors⁵ have examined biopsy material obtained, not only from patients with rheumatoid arthritis, but also from patients suffering from joint pains caused by other conditions, which included non-specific polyarthritis, post-gonorrhoeal arthritis, acute and subacute rheumatism, osteoarthritis, spondylitis ankylopoietica, gout, and Still's disease. Fifteen non-rheumatic patients were used as controls. The patients with polyarthritis were divided into two groups, one with a diagnosis of idiopathic rheumatoid arthritis and the other with a diagnosis of non-specific infective arthritis. Typical lesions were found in the muscles of 34 of the 56 cases in the former group (60.7%), but their incidence appeared to have no relationship to the activity of the disease as estimated by the severity of the symptoms, muscle wasting, or the blood sedimentation rate. The duration of the patients' symptoms, however, seemed to be a more closely connected factor. Clear-cut negative results were obtained in spondylitis ankylopoietica, rheumatic fever, and post-gonorrhoeal arthritis, as well as in the fifteen non-rheumatic controls. Out of the seven cases of osteoarthritis and the five cases of gout there was only one doubtful muscle lesion in each group; in the four cases of non-specific infective arthritis there were changes in muscle and synovial membrane in one, and in the synovial membrane only in two; there was a muscle lesion in one of the three cases of Still's disease and a skin lesion in another; and out of the four cases with subacute rheumatism and cardiac involvement a skin lesion only was found in one.

These lesions, therefore, are not specific, but occur in a significantly high proportion of cases of rheumatoid arthritis, hardly at all in osteoarthritis, and not at all in spondylitis ankylopoietica. Kersley and his colleagues suggest that muscle biopsy might be used as an aid to diagnosis in difficult cases, but since muscle lesions were found in less than two out of three of their patients with rheumatoid arthritis it is difficult to see what significance a negative finding would possess. The value of the work lies in its demonstration that rheumatoid arthritis is not localized to periarticular tissues but is a disease causing widespread pathological changes in mesodermal tissues, of which lesions in muscle are only a part. The negative results obtained from muscle biopsies in the case of osteoarthritis and spondylitis ankylopoietica suggest that the origin of these diseases differs from that of rheumatoid arthritis.

RADIATION AND LYMPHOCYTES

A method of detecting changes in the blood of persons exposed to ionizing radiations has been described by Dickie and Hempelmann.¹ They carried out blood examinations on 364 individuals, 195 of whom were either exposed to small doses of various kinds of radiation, or worked with radioactive material, or were exposed to uranium in the form of oxide fumes; the remaining 169 individuals were not so exposed, and acted as controls. Using supravital staining methods, they recorded the presence or absence of neutral red granules (Gall's granules) in the lymphocytes, and they were able to

show that in the lymphocytes of the individuals exposed to radiation and uranium fumes abnormally large numbers of these granules were present before any change in the total lymphocyte count occurred. In order to obtain satisfactory preparations the authors had to use stronger solutions of dyes than are customarily employed, and they found that phase-contrast microscopy was of much assistance in detecting the inclusions, which they believed to be granular in composition. Analysis of their findings also showed that there was a significant reduction in the total number of leucocytes in the workers exposed to radiations compared with the individuals in the control group. If the results of this research are confirmed, a further method of checking the health of workers in these dangerous occupations will be available.

THE TREATMENT OF NOMA

Noma, or cancerum oris, is fortunately rare in Western Europe, though during the war it was not uncommon among those confined in internment camps. It can still be seen in children and occasionally in adults in Africa, South America, and India, and in the last country it sometimes occurs as a complication of kala azar. Its exact aetiology is not known, but the associated infection is due to spirochaetes and fusiform bacilli, accompanied by diphtheroids and streptococci—organisms also present in tropical ulcers, ulcerative stomatitis, and Vincent's angina. If these organisms are removed the lesions heal. A decrease in the numbers of polymorphonuclear leucocytes, such as occurs in inanition and agranulocytosis, appears to be an essential precursor of noma. Good results were occasionally obtained with local applications of cod-liver oil or with sulphonamides,² but in 1944 Findlay, Hill, and Macpherson³ reported the successful treatment with parenteral penicillin of two cases of noma in tropical Africa. Confirmation of the value of penicillin came from Benhamou and his colleagues⁴ in North Africa, who successfully treated five cases and from Vaizey,⁵ who cured two children and one adult in Ethiopia. Among the starving prisoners in Belsen there were several with noma. Dawson⁶ treated five patients with penicillin intramuscularly and sulphonamides and penicillin locally. Four were cured, but one did not respond to this treatment. For children 300,000 units of penicillin in three days would appear to be a minimal dose. The results are often quickly apparent, as in the case recently reported by Dr. D. Mackay⁷ in this *Journal*, in which improvement was obvious within 24 hours. Dana and his colleagues⁸ used penicillin to cure a child who developed noma after being treated for syphilis with bismuth. There have been similar good reports from many parts of the world,⁹⁻¹⁶ but it sometimes happens that although the lesions clear up and the toxæmia decreases the patient may die from the extreme inanition which is probably responsible for the onset of noma. Only one failure to respond to penicillin treatment has so far been recorded, and it is clear that the mortality of noma, previously a very fatal disease, can be reduced to negligible proportions.

¹ La Scaïn, F., *An. paullist. Med. Chirurg.*, 1945, 49, 523.

² *Nature*, Lond., 1944, 154, 795.

³ *Algérie méd.*, 1946, p. 264.

⁴ *British Medical Journal*, 1946, 2, 14.

⁵ *Erit. dent. J.*, 1945, 78, 151.

⁶ *British Medical Journal*, 1949, 1, 223.

⁷ *Bull. Mém. Soc. méd. Hôp. Paris*, 1945, 61, 348.

⁸ Klossner, A. R., *Ann. chir. gyn. Jenn.*, 1946, 36, 5.

⁹ Sen Gupta, P. C., and Chakravarty, N. K., *Indian med. Gaz.*, 1945, 80, 542.

¹⁰ Chaudhuri, K. C., *Indian J. Paediatr.*, 1946, 13, 124.

¹¹ Dajani, M. T., *J. Palestine Arab. med. Ass.*, 1946, 1, 183.

¹² Alvarez Salas de Alja, E., *Acta derm. sif.*, 1946, 32, 220.

¹³ Pernetta, C., et al., *Hopital, Rio de Janeiro*, 1945, 28, 709.

¹⁴ Carnevale, A., *Pediatr.*, 1946, 54, 303.

¹⁵ Tupas, A. V., and Jongco, A. P., *J. Philippine med. Ass.*, 1946, 22, 153.

¹⁶ Shrand, H., *Clin. Proc.*, 1947, 6, 197.

¹ *J. Lab. clin. Med.*, 1947, 32, 1045.

ISRAEL'S BEVERIDGE PLAN

NEW HEALTH SERVICES

The Beveridge Plan of 1942 aroused great interest in Palestine, specially among Jewish Agency leaders, who were then working on the assumption that they would form the nucleus of a Cabinet when Jewish independence was achieved. The Beveridge report was immediately translated into Hebrew by Mr. I. Kanievsky, an expert on social welfare and administration.

Social insurance in Palestine is exactly as old as it is here. In 1912, while Lloyd George was initiating national health insurance in this country, the *Histadruth*, which is the trade union confederation embracing most Jewish workers, founded the *Kupat Cholim* or sick fund. The pioneers in this movement were a handful of agricultural workers in Judaea and Galilee who were opening up a desolate and undeveloped area. Palestine was still under Turkish rule; settlers were rare birds distrusted not only by the Arabs but also by the old Jewish population in the towns. Such medicine as there was in this environment was synonymous with witchcraft, though probably less honoured. From these beginnings there developed a comprehensive health service covering 75% of all Jewish workers in Palestine, all paying a unified contribution according to earning capacity. Under the aegis of the *Histadruth* there were established health insurance schemes providing maternity benefit, an invalid fund, unemployment fund, and old age, widows', and orphans' funds.

Health services in Palestine, however, suffered from the lack of a single co-ordinated system of insurance. Many Jewish offices outside the General Federation of Labour provided facilities that did not always work in harmony with the main organization, and many schemes were still dependent on outside charity. The British were themselves developing social services to include the Arab population, which in Palestine was perhaps served better than anywhere in the Middle East. Some Arabs came within the framework of the *Kupat Cholim*, especially where Jews and Arabs were employed together. In these cases Arab workers received medical care against compulsory payments by their employers.

The Kanievsky Plan

A Cabinet subcommittee is now working on draft proposals to centralize these different schemes so as to include all the citizens of Israel. Administration will be the responsibility of the Ministry of Social Welfare under Mr. I. M. Levin, the Minister, a comparatively new immigrant to Israel who escaped from the Warsaw ghetto. This special subcommittee has the task of putting the "Plan for Social Insurance in the State of Israel," commonly called the Kanievsky Plan, into operation. This plan was first submitted to the *Histadruth* executive, which sponsored the research, in May, 1948. It includes the following main points:

- 1.—Free medical aid, including hospital treatment, for all citizens of Israel.
- 2.—Compulsory social insurance for all wage-earners, including members of the free professions, artisans, etc.

This insurance scheme will include medical treatment; workmen's compensation; special allowance for expectant mothers and maternity aid; assistance to invalids; unemployment insurance; old age pensions and assistance to widows and orphans. According to the original plan the scheme will be financed from contributions by employees, employers, and the State. These contributions would correspond to 8% of the employee's wages; 5% contributed by the employee, 8% by the employer, and 5% by the State.

Taking into consideration the rapidly changing structure of Israel's population, which is expected to be doubled within the next four years, such a plan can be carried out only step by step. The general opinion is that the first step would be the provision of free hospital treatment for the whole population. At present the available accommodation in Israel's civilian hospitals is only 2 beds per 1,000 population. However, there are a number of military hospitals which should soon be at the disposal of the Government. In addition, the Government and existing medical organizations are already considering plans or the early establishment of many new and modern hospitals, and to this "capital investment" it is expected that the Jewish Agency, the international Zionist fund-raising organization, will make its contribution.

In implementing this scheme it is not intended to abolish the present status of physicians in private practice. A large proportion of the country's medical profession may find employment in these Government schemes, but the remaining private practitioners will not lack work.

The Cabinet subcommittee, headed by Mr. Kanievsky, is composed of the Directors-General of the Ministries of Finance and Health and Social Welfare, three specialists whose experience during the Mandate and in the government departments of other nations should prove valuable. The main employers' associations have not yet had time to consider the plan officially and so far have not made their views known. But in view of the fact that such schemes are already in operation in almost all progressive countries it is believed that opposition to the plan will not be too strong, although some of the employers' representatives feel that the introduction of such a comprehensive plan may be premature.

WOUNDED AND SICK PRISONERS
OF WAR

DRAFT RED CROSS CONVENTIONS

A Red Cross draft convention which the diplomatic conference referred to last week (p. 768) is studying at Geneva lays down regulations concerning the mixed medical commissions appointed on the outbreak of hostilities to examine wounded and sick prisoners of war. Each of these commissions is to be composed of three members—two belonging to a neutral country (one of whom is to be the chairman) and the third to the detaining power. The neutral members are to be appointed by the International Committee of the Red Cross and approved by the two belligerent powers. If possible, one of the neutrals should be a physician and the other a surgeon. They are required to be entirely independent of the warring powers, which must grant them all facilities in discharge of their duties, including a visit to each prisoner-of-war camp at intervals not exceeding six months. These mixed medical commissions may either propose repatriation or may refer a prisoner for a later examination, and the detaining power is required to carry out these decisions within three months. A proposed regulation not in the existing (1929) Geneva Convention for the Wounded and Sick is that prisoners of war who, in the opinion of the medical authorities of the detaining power, are manifestly in a serious condition shall be repatriated without having to be examined by the commission.

Prisoners of war who are to be repatriated direct, according to a draft model agreement which has been drawn up, include all wounded prisoners suffering from lesions equivalent at least to the loss of a hand or foot, and all sick and wounded in whom recovery appears to be unlikely within a year. Prisoners of war eligible for accommodation in a neutral country include those who have better chances of recovery in such a country than in captivity; those suffering from any form of tuberculosis and whose treatment in a neutral country is likely to lead to recovery or to considerable improvement; those suffering from other conditions in which treatment would clearly have better results in a neutral country; those who have undergone a nephrectomy as prisoners; cases of osteomyelitis latent or on the way to recovery, of diabetes mellitus not requiring insulin, and of exanthematic typhus acquired in captivity. Cases of captivity neurosis not cured or on the way to complete cure after three months in a neutral country are to be repatriated. Excluded from accommodation in a neutral country are all cases of duly verified mental affections; prisoners with nervous affections, whether organic or functional, considered to be incurable; chronic alcoholics; and all cases of contagious disease during the infective period, with the exception of tuberculosis.

A list of conditions has been set out in which the decision of the mixed medical commission must be based to a great extent on records kept by camp physicians and prisoner doctors of the same nationality, or on an examination by medical specialists of the detaining power. These include chronic asthma and bronchitis, chronic cholecystitis, serious chronic diseases of the central and peripheral nervous system, and auditory disorders, such as total unilateral deafness, if the other ear does not discern the spoken word at a distance of one metre.

Marking of Hospital Ships

Some work on the visibility of hospital ships has been undertaken by the research laboratory of the Admiralty and laid before the conference. The present convention states that hospital ships shall be painted white and display vermilion red crosses, three of them, of a height of three metres, on each side of the hull, two others in a horizontal position so as to be plainly visible from the air, and two more vertically above the main deck, one to be seen from astern and the other from ahead. During darkness or reduced visibility the crosses on each side of the hull are to be floodlit and the crosses on the superstructure to be made luminous by means of lamps. There are also provisions for an automatic switching mechanism to give flashing or alternating illumination.

The Admiralty experiments suggest that these devices may not be the best possible. In daylight, at the range at which a ship is first seen, there is no possibility of identifying a vessel as a hospital ship. In many cases the range must be halved before recognition is possible, and sometimes, as with the white hospital ship of the Geneva convention, which is most difficult to identify because it can easily be confused with a warship painted a light grey, the range must be reduced to one-third or one-quarter before identification can be certain, and even then the first recognition is not of the painted red cross. The proposal is that a hospital ship should be painted black and light yellow (or white) on either side of a vertical line drawn at the mid-point of the length of the ship, and that the black half should carry a yellow or white cross and the yellow or white half a black cross. With such a design the unmistakable half-and-half pattern first shows itself, and the crosses appear later. The object of introducing yellow, with its high reflectivity, is to obtain any advantage due to colour. Some complicated experiments have been carried out on the required dimensions of the cross if it is to be seen under varying conditions of meteorological visibility. Under some conditions if the cross is to be seen at all it would have to be of a height which is usually impracticable. The only recommendation on the point which can be made is that the cross should be the full height of the freeboard of the ship and larger if possible. The most conspicuous cross is one which has a thickness of limb equal to one-quarter of its height, and a red cross must be about 10% larger than a black cross to give equal ease of recognition under the same viewing conditions.

For visibility of hospital ships at night the Admiralty workers advise against floodlighting, and consider that luminous signs are preferable. However well floodlighting may be arranged, a red cross on a white ground will at a distance, if any atmospheric haze is present, give a whitish glow with few distinguishing features. The better plan is to use diffusing glass with a row of lamps behind it.

Preparations and Appliances

EXPULSION OF VACCINE LYMPH FROM CAPILLARY TUBES

A MEDICAL OFFICER OF THE MINISTRY OF HEALTH writes: Antismallpox vaccine lymph is now put up in capillary tubes which are not of uniform size, and the special device that used to be sold for expelling the lymph from the tubes is not always readily available and is sometimes ineffective. A simple alternative is to use a baby's feeding-bottle teat, the open end of which is easily occluded by the thumb. The teat can be sterilized by boiling, and the nipple hole is usually about the right size to make an airtight joint with a capillary tube.

Another method, suggested by Dr. O. H. Bowen, of Kingsbury, N.W.9, is to break off both ends of the lymph tube and then to insert into one of the open ends the sterilized needle of a hypodermic syringe with the plunger pulled out. If the junction of tube and needle is surrounded by a small sterile pledget of wet cotton-wool to make an airtight joint the lymph can be expelled without difficulty by pushing down the plunger of the syringe. It is obvious that care must be taken to sterilize needle and syringe before they are used for other purposes.

Reports of Societies

PATHOLOGICAL TESTS IN RHEUMATIC DISEASE

A meeting of the Section of Physical Medicine of the Royal Society of Medicine on April 13 was devoted to a discussion of the significance of pathological tests in rheumatic disease. The president, Dr. L. C. HILL, was in the chair.

Dr. D. H. COLLINS discussed the contribution which the histologist or cytologist could make to the diagnosis and management of the patient who presented himself at the rheumatism clinic. Investigations requiring the removal of material by aspiration or excision biopsy were not applicable in all cases, but where they could be employed usefully direct information about the pathological process could often be obtained.

If the fluid in an acutely inflamed joint was withdrawn and examined, septic arthritis could be identified by the presence of pus and organisms. Traumatic effusions always contained either blood or blood pigments. Many investigations had been made on the mucin content of synovial effusions. Although generally the mucin content and viscosity of an inflammatory effusion were low and of an effusion due to osteoarthritis high this examination was of little value in differential diagnosis because it was never known to what extent the bulk of the effusion was contributed to by watery transudate.

Synovial biopsy in cases of suspected tuberculous arthritis was a routine procedure. It should be used in all cases of arthritis where there was a possibility of tuberculosis, especially in monoarticular disease. A positive histological diagnosis could almost always be made in cases of rheumatoid arthritis when the following five features were found together: hyperplasia of the synovial membrane and villi; hyperplasia of the synovial lining; massive lymphocytic or plasma-cell infiltration; inflammatory hyperaemia and oedema varying in degree with the duration and intensity of the inflammatory process; and absence of other specific histological characters. This histological diagnosis of rheumatoid arthritis must be considered of course, in relation to the clinical features, but he was sure that it had prognostic value and probably diagnostic value, even in the monoarticular case; but unless the five features were clearly recognizable the diagnosis of rheumatoid arthritis was not justified.

Relative Viscosity of Blood Plasma

Dr. H. J. GINSON confined himself to a discussion of the relative viscosity of blood plasma in comparison with other empirical tests of rheumatic disease. The estimation of plasma protein changes was of value in diagnosis, especially in the rheumatic group, and in the objective assessment of activity. Such estimations were also important tests of cure. The blood sedimentation rate had been the sheet anchor in investigation; it had stood the test of time, and there must be few rheumatism clinics in which it was not used extensively. Its advantage was the ease with which it was carried out and the understanding they had of its interpretation. The disadvantage of the blood sedimentation test was that it was an indirect estimation: a plasma abnormality was tested for by the effect on a second reagent—namely, the red blood cells. Plasma was already a very complicated physico-chemical system, and when red blood cells were added the picture became still more complicated. If a test could be found which would eliminate the use of red cells and would estimate abnormalities in the plasma directly, a great advance would be made. A formalin gel test and a colloidal gold test had been described. The latter might be positive in about 75% of cases of rheumatoid arthritis—strongly positive reaction being found only in about 50%—but this test did not correlate well with the blood sedimentation rate. It appeared to estimate a different abnormality, although both abnormalities might be the result of the disease.

The increase of plasma viscosity was an old observation, but recent work had revived interest in it. The test was applied first in cases of tuberculosis, and a high correlation was found between clinical activity and the viscosity zone—a rather narrow zone—associated with pleural effusions. It was found in tuberculosis that normal viscosity might be found first in the

early stages and later in remissions, and also, rather paradoxically, in the terminal stages of the disease.

This work seemed to be of interest as proposing a relatively simple test which might replace the blood sedimentation rate or supplement the information it afforded. It was an estimate of the viscosity of plasma relative to distilled water, carried out at 20° C. with undiluted oxalated plasma. Dr. Gibson showed the results obtained in 365 observations on 286 cases of rheumatoid arthritis, the relative viscosity and the sedimentation index being correlated. The activity of the disease was reflected in the results with both tests, though detailed correlation was difficult to discern. In this series of cases, if the blood sedimentation rate only was examined, abnormalities shown by viscosity readings would have been missed in 13 observations, and if the viscosity only had been taken abnormalities shown by the blood sedimentation rate would have been missed in 20 observations. Abnormalities were demonstrated by both tests in 94.2% of the observations. There was thus an advantage in carrying out both tests if the maximum abnormality was to be ascertained. The inferences to be drawn from the tests were concurrent, and yet the tests were not testing quite the same thing.

Indeed, the value of the viscosity test was that it did not appear to be estimating the same abnormality as the blood sedimentation rate. The abnormalities were different, or at least were different facets of the same plasma abnormality. He was not advocating that the blood sedimentation rate be abandoned. There was a place for both tests, especially in cases where it was desired to have close supervision and control, as, for example, in therapeutic trials. If there were two different indices of improvement or deterioration to band to the statistician it was a great advantage. The tests should be regarded as complementary.

Asked whether the cases in which there was a discrepancy between the relative viscosity and the sedimentation rate had been checked back clinically to exclude the possibility of some other infection such as a cold or influenza, Dr. Gibson explained that it was not a single observation which was made in these cases, it was a follow-through observation, and the discrepancy existed throughout. He added that he had avoided mentioning individual cases, because in rheumatism "almost anything can be proved by selecting your cases."

The brief ensuing discussion, in which Dr. W. S. TEGNER, Dr. J. HARKNESS, and Dr. COKE participated, was mostly concerned with the types and use of viscometers and the desirability of standardization.

ULSTER PAEDIATRIC SOCIETY

The inaugural meeting of the Ulster Paediatric Society was held in the Royal Belfast Hospital for Sick Children on April 5. Dr. ROWLAND HILL was elected chairman, and Dr. W. A. B. CAMPBELL honorary secretary. The main business of the meeting was to draw up the constitution and rules of the Society, after which the film "Patent Ductus Arteriosus" was shown. It is planned to hold at least three clinical meetings in each year.

A meeting of the North of England Obstetrical and Gynaecological Society was held in the Jessop Hospital, Sheffield, on March 18, with the president, Mr. S. B. HERD, in the chair. Mr. O. V. JONES, of Bangor, described a case of hydatidiform mole. The pathological findings in this case were discussed by Dr. G. EVANS. Dr. C. G. PAINÉ described a case of haemolytic disease in a newborn child with group A Rh-positive blood, the mother's blood being group O Rh-positive. Mr. P. MALPAS reviewed the gynaecological aspects of regional ileitis.

The Nurses and Midwives Whitley Council announces that it has agreed on the following revised rate of remuneration for student district nurses: £140 per annum plus emoluments valued at £100 per annum, or a living-out allowance of £100 per annum for non-resident students. As this is part of the student-nurse settlement, which came into operation on Sept. 1, 1948, the new rates will apply retrospectively to that date. If in any case an existing student would receive a lower rate of remuneration under these arrangements than before, the present rate may be continued on a personal basis. The new rate is provisional and may be revised. The rate previously paid to student district nurses in training for the certificate of the Queen's Institute of District Nursing was £95 per annum plus emoluments valued at £100 per annum.

Correspondence

An Unfortunate Precedent

SIR,—The fear of favouritism in respect of the Awards Committee is probably quite unfounded and, in the case of Lord Moran, of course ridiculous. But it seems to me that the ideal future composition of such a committee would include a chairman who was not a medical man at all but either an eminent jurist used to weighing evidence or a Fellow of the Royal Society of accepted standing and experience. The presidents of the Royal Colleges should be *ex-officio* members while in office, and the other members of the committee should be elected annually, biennially, or as seemed most practicable. This would minimize, if not abolish, any fear of favouritism and would probably also be acceptable to such people—of whom I happen to be one—as believe that the Royal Colleges should be mainly concerned with preserving and fostering the educational and ethical standards of the profession and not meddle—*qua* colleges—with such questions as salaries, fees, and mileage.—I am, etc.,

Easton Royal, Wilts.

H. H. BASHFORD.

SIR,—Your courageous and pertinent leading article (April 23, p. 717) on the above has produced an undignified reply from the inner cabal of the Royal College. The eight signatories of this reply not unnaturally regard themselves as the henchmen or bodyguard of their President; but in their haste to express their sharp resentment of your free criticism they expose the weakness of the regulations by virtue of which they hold office. And it is to these weaknesses that I wish to address myself rather than to the question whether you had not expressed simply and clearly what so many of us have felt and thought.

I wonder if the general body of practitioners, including the large number of Members, realize how the R.C.P. is actually governed in practice, or how much of their professional life is affected by the senior Royal College. Put as briefly as possible, it is as follows. In theory the whole body of Fellows rule and govern the College. In practice they do nothing of the kind. So archaic are some of their procedures that even to the present day the assembled Fellows at the meeting of the Comitia for the election of a President are solemnly presented each with a half-crown. By all means revere and venerate long-established custom when no harm is done thereby. But this ancient custom is merely a reminder of the time when the College of Physicians was essentially the College of the Physicians of London and attendance by the great majority could be expected.

It is still the rule that those actually present and voting are the only Fellows who can elect the President. But to-day Fellows of the highest repute and learning live and direct the studies of rising generations in parts of the world not even discovered when the charter of the Royal College was granted. These have no say or place in framing the policy of the College, nor have they even a representative committee, and still less nominees to the Council of the College. Are these exponents and judges of good medicine to be excluded merely because some rule was laid down before their country was known to exist?

From this one defect comes the majority of all the other defects in the College constitution. Once the President is re-elected the cabal reasserts its hold on all policy; and by diffusing an atmosphere of "Touch not established custom" subsequent meetings of the Fellows in Comitia all too often become formal and routine acceptance of the Council's recommendations. It is true that printed agenda are circulated to every Fellow containing the recommendations of the Council, and that these recommendations are technically open to discussion. But to question these instantly produces a sense of trespassing on strictly preserved coverts and using time that will produce no change.

What is the obvious result of such an atmosphere? It is and must be that unless a Fellow is *persona grata* to the inner

council, however good a counsellor he may be, or however anxious to give his best to the College, there is no probationary forum where he could be welcomed and tried out, and so he will probably remain outside. It is equally obvious that the whole body of Fellows scattered all over the world cannot run the day-to-day business of the College. But there is much room between the two extremes for moderate and sensible development without offence to our ancient foundation. In this gap there is ample space to make the rules of the College more consistent with twentieth-century methods of true democratic government.

To introduce changes that would bring the knowledge and advice of a wider circle of Fellows into the policies and development of the Royal College would find an immediate response from many who now realize that they have no means of contributing to these matters and are, therefore, irregular in their attendance at Comitia. The College would then rapidly become the deeply loved and respected head of all that is best in true world medicine. I feel that it is only dormant and waiting to be led back into its true path. Had this been the trend of the last nine years instead of efforts to entrench the established rules and to combine local and parochial medico-politics with the high office of President to which your article refers, then there would have been no occasion for your leading article. The joint position of P.R.C.P. and Chairman of the Awards Committee would have been unthinkable.

There are many other matters besides those that I have raised, such as conditions for the membership examination, that have long called for readjustment to the changed conditions of medicine.

The recent meeting of the Prime Ministers of the Commonwealth and the nature and result of their deliberations give true point to my argument.—I am, etc.,

London, W.1.

C. B. HEALD.

SIR,—The reply (April 30, p. 774) provoked by your leading article (April 23, p. 717) on the above subject and published over the signatures of the censors and other officials of the Royal College of Physicians will doubtless provoke much correspondence. May I, as a surgeon with no personal interest in merit awards, say that I believe you, Sir, in your article to have voiced the real views of the consultants and specialists in the country?

It is quite obvious to me that the gentlemen who have written the reply are, like too many distinguished members of the profession, completely out of touch with the realities of the situation that faces us and with the opinions of the rank and file of specialists. "The sympathetic attitude of the Minister of Health"—the expression is almost humorous, if the situation were not so serious. "Terms of service which are considered by most consultants and specialists to be just and generous"—when the truth is that most consultants and specialists are seriously perturbed and gravely dissatisfied with those terms, *when they are examined intelligently*.

Like some of the signatories, I am getting on in years, but I am not yet in my dotage and I do go to meetings and listen to the views of my younger colleagues. Whilst I appreciate the loyalty which rallied these gentlemen to the defence of their President, I tremble for the future of my profession when those who should be among its leaders are obviously so gravely misled as to the facts which face us and as to the feelings of their colleagues. I would beg them all to read, mark, learn, and inwardly digest your leading article at p. 762 of the *Journal* of April 30. Surely that will open their eyes a little.—I am, etc.,

Southport.

R. R. M. PORTER.

SIR,—If the fears expressed in your leading article (April 23, p. 717) and "Young Specialist's" letter (April 30, p. 774) are well founded the moral condition of our profession is such that the particular composition of an Awards Committee seems of small importance. The picture of the President on the one hand dispensing "awards for the boys," and a group of aspiring young specialists on the other silently stifling their valuable criticism or warm-hearted admiration with a weather eye on the awards barometer, should certainly cause concern;

though I suspect the reaction may generally be a rather more light-hearted one.

I do not share your pessimism, but fear that arguments of this sort if taken seriously may encourage faction at a time when harmonious unity for the main purposes of our profession is more important than it has ever been.—I am, etc.,

Oxford

C. W. M. WHITTY.

The Intervertebral Disk

SIR,—Mr. Michael Kelly misquotes me in his letter (April 23, p. 725) on the subject of the intervertebral disk. In the Mackenzie Lecture, an abridged edition of which was published in the *Journal* of Feb. 12 (p. 255), I did not say that "when a stooping man begins to extend his spine the posterior margin of the disk is compressed. . . ." This would imply that this condition invariably happened. In fact, it is only in exceptional circumstances, as I was at pains to prove, that this circumstance does arise.—I am, etc.,

London, W.1.

HUGH E. GRIFFITHS.

Use of the Term "Coliform"

SIR,—The term "coliform" has for some time had an obscure meaning and it has become increasingly clear that a definition is desirable. Those interested in medical and veterinary bacteriology have used it to embrace only the morphological characters of many species, not of *Bacterium coli* alone but of the dysenteric bacteria, the salmonella, and other Gram-negative rods similar to *Bacterium coli*. On the other hand, the term "coliform" is restricted by many water and dairy bacteriologists to those organisms which are not only morphologically similar to *Bacterium coli* but which resemble it in its cultural and biochemical characteristics; some have even regarded it as being synonymous with *Bacterium coli* of faecal origin.

Because of this confusion, and also because there is now a closer liaison between all those who study bacteria from whatever aspect, a committee of nine, representing this variety of interests, was appointed by the Society for General Microbiology and by the Society for Applied Bacteriology. This committee met on several occasions and discussed the matter from wide angles, and the relevant portion of their report is quoted below.

1. The term "coliform" means "like *Bacterium coli*." or "coli-like."

2. "Coliform" is an adjective and as such has no generic or ecological significance.

3. It is proposed that the term "coliform" should refer to *Gram-negative rods resembling Bacterium coli in morphology and staining reactions but not necessarily in cultural and biochemical characteristics*.

4. It is hoped that the widest publicity will be given to this definition to prevent the term being employed to define different specific types by different workers, or to restrict the term to particular branches of bacteriology.

The committee are convinced that the proposed definition is the only one satisfactory to all interests in bacteriology and are opposed to any definition based on ecology or biochemical reactions. They hope that bacteriologists in general will understand and agree upon the meaning of the term "coliform." Existing systems allow for classification of organisms grouped under the wide term now proposed.—We are, etc.,

REGINALD LOVELL,
(Society for General Microbiology)
Royal Veterinary College, London, N.W.1

C. B. TAYLOR,
(Society for Applied Bacteriology)
Butterwick Research Laboratories,
Welwyn, Herts.

Needle Biopsy of the Liver

SIR,—In his excellent paper on liver biopsy Dr. Richard Terry (April 16, p. 657) recommends local anaesthesia, and this seems to be the usual practice. However, it is worth considering whether this procedure is not better done under thiopentone anaesthesia. During the war years overseas, when mysterious diseases with enlargement of the liver were so common, it

was sometimes desirable to examine material by biopsy of liver, spleen, gland, or marrow before a diagnosis (e.g., of kala azar) could be determined. These procedures are all rather unpleasant, and tend to be associated in some measure with anxiety to patient and doctor alike. It was found that, if needs be, even three to four such procedures could be safely and expeditiously carried out by a team of workers using thiopentone anaesthesia.

There are several advantages: anxiety, pain, or discomfort are eliminated, and the operator is free to concentrate on the various manoeuvres without worrying about the patient's feelings. This added confidence also means a surer thrust, and if by any chance no tissue is obtained the puncture can be immediately repeated. Safety is increased, because absence of movement of the patient and his liver can be assured if the sole duty of one member of the team is to press firmly upwards from below the right costal margin, so that the liver is held fast against the diaphragm. The patient is always grouped first, and vitamin K is given no matter what the prothrombin time. Very firm pressure over the site of puncture is maintained for a few minutes as a precaution.

There has been only one untoward incident, and that not directly related to the biopsy. During the early phase of the anaesthetic, when the patient was apparently semi-conscious, he suddenly swung left and dealt the anaesthetist a shrewd blow amidships which crippled him, and then knocked the needle out of my waiting hand with his elbow. An able assistant restored the situation by reinserting the thiopentone needle into the vein whilst the biopsy needle was boiled up again. Liver tissue was then obtained without difficulty.

In this country liver biopsy alone is usually all that is required; but, if at all likely to be necessary, sternal puncture, for example, may conveniently be carried out at the same time under the same anaesthetic. Many will testify to the satisfactoriness of this technique, which has been used consistently over the past five years.—I am, etc.,

Edinburgh

R. W. D. TURNER.

Herpes Zoster Recurring in a Baby

SIR.—The following case is reported, as it appears to be unusual.

The mother of a baby who was born on April 17, 1948, developed varicella when four months pregnant; she caught this from her daughter, who was attending day school. There were no complications. The gestation was otherwise normal. The child was delivered at full term—a spontaneous breech. She was breast fed for seven weeks and then given modified cow's milk four-hourly.

On June 7, 1948, the child developed a rash on the left side of the chest and back. This I first saw on the following day, when I found a typical herpes zoster with a distribution over the left scapular region, the left lateral chest wall, and the left breast. The lesions were kept dry, and cleared up spontaneously in about 14 days, leaving no scars. During the illness the feeding was changed to National dried milk, on which the child thrived.

On Dec. 29, 1948, the mother noticed a similar rash on the right scapular region. I saw the child the following day and found a similar typical herpes zoster rash distributed over the right scapular region, the right axilla, the right inner arm, and the left forearm and inner side of the wrist. Over the scapula the lesions were few and discrete, but the axilla and arm were covered with confluent patches of vesicles which faded out towards the ulnar border of the hand. At no time did I find any constitutional disturbance: there was no raised temperature, no anorexia, no loss of sleep, no apparent pain. The baby remained just as active as ever.

Vaccination was performed in August, 1948—i.e., about 8 weeks after the beginning of the first attack of shingles. There have been no sequelae.

—I am, etc.,

London, N.19

C. H. JOHNSON.

Diparcol in Parkinsonism

SIR.—The article by Dr. R. S. Duff (April 9, p. 613) has been of great interest to me, as I too have been using the drug for some considerable time. After reading the paper by Sigwald, Bovet, and Dumont I sent for the original French drug "novocainique" (2987 R.P.), and have since been able to continue the treatment for over a year now by the courtesy

of the manufacturers of "diparcol" (the corresponding preparation), who kept me supplied until the drug was put on the market.

My experience, I must admit, consists of one case only, but as it is at great variance to that of Dr. Duff, and the result seems to have been more favourable, I feel I should put my own observations on record.

My patient was not a case of post-encephalitic Parkinsonism, but of Parkinson's disease proper (paralysis agitans). Like Dr. Duff, I started with a small amount, but then, according to the suggestion of Sigwald and Bovet, I gradually increased the dosage until the limit of tolerance was reached, which in this case I found to be 3 g. daily (12 tablets of 0.25 g.). Above that dosage the patient became very giddy, whereas a dosage below that amount increased the tremor. As advocated by the French authors, I also gave the patient tab. amphetamine sulphate, 5 mg., one tablet before breakfast and one before lunch. Further, I gave a sleeping-tablet at night, and like Dr. Duff continued for a while with the alkaloids. The results have been most striking. The tremor has disappeared for periods of one or two hours at a time—amounting to a total of about 12 hours per day—and was much reduced in severity.

The patient is a woman aged 64 who has been suffering from Parkinson's disease for about 11 years. It started with an accident, when her hand was caught in a wringer. The symptoms were aggravated during an air raid and two years later by an accident to her husband. At the time treatment was started she was quite helpless, could not walk, and was trembling all day. She was in a state of persistent stupor, did not take any notice of her surroundings, and was unable to remember anything. She had to be carried from her bedroom downstairs. Now, apart from the considerable reduction in her tremor, she is able to walk about, walk up and down stairs, wash up, set the table, cook a little, change her shoes, read a little, and even knit. She is very bright, and can take full part in everyday life.

In conclusion I wish to point out that, apart from the cases of post-encephalitic Parkinsonism, the drug appears also to be applicable in cases of Parkinson's disease. The maximum dosage should be assessed individually by very gradual increases or decreases. It can be much higher than 1 g. (given as maximum dose by Dr. Duff), as proved in my case, where the optimum dose was 3 g. Drowsiness, cramp, and depression in the initial stages seem to be controlled by the addition of amphetamine sulphate, which is well tolerated by patients with Parkinson's disease. Indeed, these side effects seem to be more pronounced with the smaller dosage, and disappear as the amount of diparcol is being increased.—I am, etc.,

Spennymoor, Co Durham

E. BRAUER.

REFERENCE

1 *Rev. neurol.*, 1946, 78, 581

Vertigo and Influenza

SIR.—Dr. A. H. Gregson (April 16, p. 683) mentions vertigo as a symptom in some cases of influenza. In the last few weeks I have seen four patients in whom severe vertigo was the presenting symptom, and in two of them the only symptom. Whether they were cases of influenza I cannot say, but at the time I regarded them as cases of acute influenzal labyrinthitis.

The first case will serve as typical of the others. He was a man of 70, who came staggering into the surgery as though drunk. He had been perfectly fit the night before on going to bed, but was woken up in the night by violent giddiness. The furniture appeared to be going round from right to left, and when he tried to walk he always fell towards the left side. He vomited and retched the whole night. He had slight nystagmus on looking to the right, but no other abnormalities in the C.N.S. On inquiry, he admitted to a fairly severe lumbosacral backache and a frontal headache, but had no other influenzal symptoms. Temperature and pulse were normal. The vertigo gradually wore off after some three days, and for a further week he got short attacks if he turned his head suddenly. His wife and daughter went down with typical influenza five days later. It will be seen that the evidence for this being a case of influenzal labyrinthitis rests only on the presence of the concomitant headache and backache, and the fact, which incidentally I prophesied, that other cases of influenza followed in this household.

The other three cases were similar. In all the onset was unexpected;—one moment the patient was perfectly well, the next moment he would be hanging on to the furniture to keep upright.

The experience was apparently very alarming. Three of the patients were elderly, and two of them said afterwards that they had thought they were going to die. The fourth was a child of 3, and her mother said that she was terrified during the attack. Three of the four had severe vomiting, and all were very consistent in describing objects as rotating about a vertical axis, and always in the same direction. All tended to fall towards the side to which objects seemed to rotate. After the acute attack, which lasted one to three days, all tended to get minor recurrences on rapid rotation of the head. Two had nystagmus on looking away from the side to which they tended to fall. Subjectively, none complained of deafness. Objectively, one had been stone deaf for years, and two others showed differences in auditory acuity between their two ears, but in view of their ages this was of doubtful significance. The child was not tested. Three of the four occurred in influenzal households, but two of them had no concomitant influenzal symptoms.

In any household in which some members have influenza it is a common occurrence for others to develop either a lumbosacral backache, frontal headache, muscle pains, or giddiness. If one assumes that these are abortive cases of influenza it seems reasonable to suppose that severe vertigo may also occur as the sole manifestation of influenza.—I am, etc.,

Great Dunmow, Essex.

PETER A. WALFORD.

Marriage Neurosis

SIR,—Dr. R. Macdonald Ladell (April 9, p. 635) revives the old controversy of E.C.T. versus psychotherapy. There are, I fear, many wrong assumptions in Dr. Ladell's communication. In the first place he appears to suggest that if a psychic stress can be unearthed there is no place for E.C.T. This is really a dangerous doctrine.

Those of us who use E.C.T. daily are often only too well aware of stresses which have at least helped to produce, say, an anxiety state or a condition of involutional melancholia. Often the patients themselves are only too conscious of these stresses. (A few days ago I saw two sisters who had both displayed anxiety symptoms from the death of their mother one and a half years ago. Both, I feel sure, will rapidly clear up with E.C.T.) To withhold E.C.T. in such cases could result in much unwarrantable suffering on the part of the patients, not to speak of risks of disaster—e.g., suicide.

E.C.T. intelligently applied, with, whenever possible, the patient's co-operation and after a careful physical and psychological examination, is one of the great boons of modern psychiatry. It can cut short all varieties of anxiety and depression, and in many cases the patient is more efficient mentally after its use than almost at any time in his life. (Old, unnoticed, mild states of depression and apprehension which may have existed for years before the acute breakdown are usually also swept away.) It can be used in extreme old age, and is usually a life-saver in delirious cases, which may be almost moribund on admission. Therefore, because some may use this treatment unintelligently, I would deprecate Dr. Ladell's suggestion that "the advocates of E.C.T. made no attempt to understand the cases and thus were turning their backs on all we have learned about the origins and meaning of neurosis during the last fifty years."—I am, etc.,

Armagh, N. Ireland.

ROBERT THOMPSON.

Treatment of Varicose Veins

SIR,—In his letter on the treatment of varicose veins (March 19, p. 500) Dr. H. M. Hanschell sets forth his experiences and disappointments with sclerosing agents. He (and others) describes how recanalization of veins takes place in a high percentage of cases following their apparent obliteration by this method. He goes on to describe an operation which in his hands, over a large series of cases, has given excellent results.

This most interesting letter was answered by Mr. R. Rowden Foote (April 9, p. 635), who, although obviously disagreeing with Dr. Hanschell, fails to put forward any evidence refuting Dr. Hanschell's argument against the use of sclerosing substances, and who instead devotes the major part of his letter to the irrelevancy of ulcer, which Dr. Hanschell never mentioned. He ignores the real point at issue, which is whether or not the injection of sclerosants is justifiable, in view of the high recurrence rate as compared with the very much better

results following ligation or extirpation by the method which Dr. Hanschell advocates.

In Mr. Rowden Foote's book on this subject it is stated that 85% of varicose veins treated by sclerosing injections had recurred, and furthermore he accepts figures which show that these recurrences are for the most part due to recanalization of the thrombosed veins. It seems reasonable, therefore, to assume that by removing a varicose vein entirely any recurrence can be due only to the formation of new varices in the superficial venous system—an event which is responsible for only 15-25% of recurrences and eliminates the large group of recurrences due to recanalization.

Dr. Hanschell has described a reasonable operative technique which in his hands has given splendid results, but Mr. Rowden Foote has scorned it on the grounds that this treatment has a long history of failures. Granted the principle of the operation may be associated with lack of success when older operative methods are used, but judging from Dr. Hanschell's results it would appear that his method has overcome most of the disadvantages associated with other operations designed to eradicate this condition and at least is worthy of more consideration than has been accorded to it by Mr. Rowden Foote.

Finally, may I draw attention to the virtues of the operation which in the past few months I have carried out a number of times? The operation itself is simple, the patient suffers very little pain and the minimum of inconvenience, and the cosmetic results are good. Thus far have I satisfied myself that Dr. Hanschell's claims for this method of treatment are well founded. What percentage of my own cases will recur I cannot know until I have followed them up for some years, but if my results are as good as Dr. Hanschell's I shall be satisfied the sclerosants have indeed a limited place in the treatment of this condition; and this has already become more than a mere suspicion, following some years' experience of injection therapy in treating varicose veins.—I am, etc.,

Dublin.

NORMAN RUTHERFORD.

Pressure Cooking

SIR,—The paper by Miss Gweneth M. Chappell and Miss Audrey M. Hamilton (April 2, p. 574) and your annotation (p. 582) on the effect of pressure cooking on vitamins are of topical interest, but consider only one aspect of pressure cooking. Some years ago Dr. P. Kouchakoff described experimentally he had undertaken to determine the relationship between cooked food and post-prandial leucocytosis (*Lancet*, 1937, 1, 425). He was able to prove by a large number of tests that post-prandial leucocytosis occurs only after the ingestion of cooked food, but not after the same food consumed raw, and that in order to produce a post-prandial leucocytosis the food has to be heated above 83°-87° C., according to the kind of food.

Kouchakoff therefore assumed that heating of food above the critical temperature of 83°-87° C. produces toxic substances in the food and that the leucocytosis is a defensive reaction against these toxins. Furthermore, he found that no leucocytosis occurs when raw food is consumed simultaneously with the cooked food, as, for example, when eating a raw salad with cooked meat. But when the food has been heated above 100° C., as in the case of canned food or of pressure cooking no amount of added raw food is capable of preventing the post-prandial leucocytosis. If Dr. Kouchakoff's main thesis is right, then routine pressure cooking should be condemned, even though it does not destroy the various vitamins.

I know that a number of physiologists deny the existence of a post-prandial leucocytosis, but this is perhaps because in their tests they failed to differentiate between raw and cooked food.—I am, etc.,

St. Peter Port, Guernsey.

A. ORLEY.

Handling of Corned Beef

SIR,—I have been appalled at the way tinned corned beef, used to make up the meat ration, is served to the public. The procedure in the majority of butchers' shops is to open a large tin of corned beef and place the contents on a wooden cutting board. The same knife used for cutting uncooked sausages, uncooked beef, uncooked mutton, uncooked pork, and slain

Alert... AND FREE FROM PAIN

When the burden of pain proves too heavy, mental outlook becomes distorted. In such a case the drug of choice is 'Physeptone' which gives satisfactory analgesia while leaving the mind clear.



'PHYSEPTONE'

d,l 2-DIMETHYLAMINO-4,4-DIPHENYLHEPTANE 5-ONE HYDROCHLORIDE

THE ESTABLISHED ANALGESIC



BURROUGHS WELLCOME & CO.
(The Wellcome Foundation Ltd) LONDON

MYCIL

TRADE MARK

The B.D.H. Non-Mercurial Fungicide

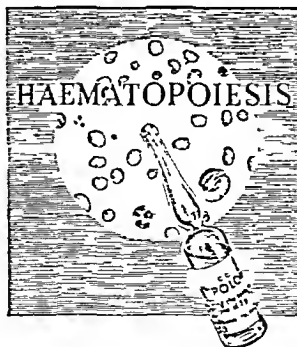
Mycil is indicated in the treatment of fungal infections of the skin and particularly in athlete's foot.

By the combined use of Mycil Ointment and Mycil Dusting Powder clinical cure is effected; and the dusting powder used alone prevents reinfection.

Literature available on request

B.D.H.

THE BRITISH DRUG HOUSES LTD LONDON N 1
M5-E 8



Hepolon is produced by special processes which conserve all the known haematopoietic principles of the whole liver. It approximates to the extract described by Gässlen.

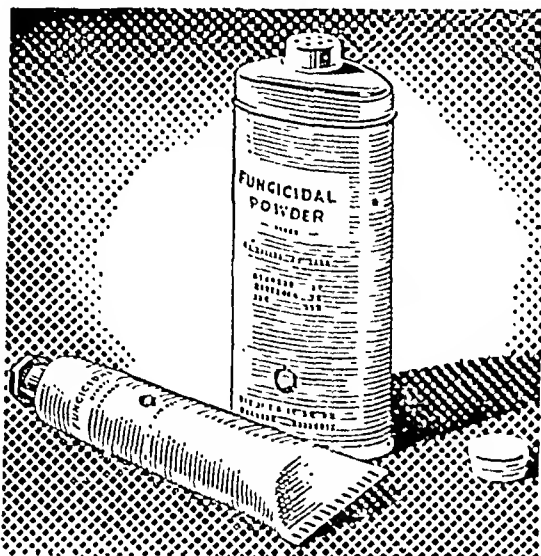
Hepolon not only passes the highest clinical tests for potency against pernicious anaemia but contains Whipple's factor, Wills's factor, riboflavin, nicotinic acid, and the haematonic minerals of liver; it gives no reactions for histamine or undesirable protein matter.

Ampoules of 2 c.c. box of 6, 6 c., box of 12, 11 c., and box of 24, 22 c.
Rubber-capped vial of 10 c.c., 5 c., and of 33 c.c., 12 c.

HEPOLON

Contains in 100 c.c. the total soluble extract—measured of 2.5 g. fresh liver

ALLEN & HANBURY LTD, LONDON, E. 2



Undecylenic Acid in the treatment of fungous infections of the skin

THE STUDY of possible fungicidal agents in sweat led to the use of naturally occurring fatty acids in therapeutics.

It has been found that undecylenic acid and its derivatives are among the most effective fungicidal agents, especially valuable in the prophylaxis and treatment of tinea pedis and other dermatophytoses.

Fungicidal Ointment-Boots contains 5% undecylenic acid and 20% zinc undecylenate in a vanishing cream base. Fungicidal Powder-Boots contains 2% undecylenic acid and 20% zinc undecylenate in a starch and kaolin base. They do not irritate the skin and may be used safely by patients for self-treatment over long periods.

Fungicidal Ointment-Boots

Tubes of approx. 1 oz.

Fungicidal Powder-Boots

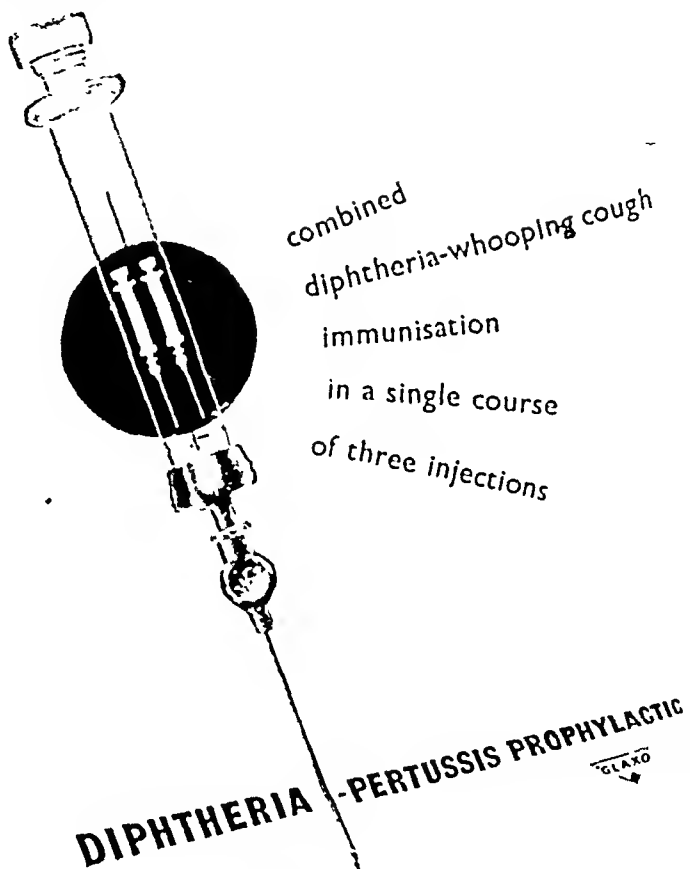
Sprinkler containing approx. 2½ oz.

Literature and further information sent on request to the Medical Department

BOOTS PURE DRUG CO. LTD.
NOTTINGHAM ENGLAND



S.43



GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX, BYRON 3434



Watson X-Ray Apparatus WORKS RELIABLY AND WELL

Long experience has taught us how to make X-ray apparatus on which the user may rely implicitly. Electrically and mechanically, it is built for continuous use under all climatic conditions with the minimum of interruption for maintenance.

Radiologists throughout the world specify Watson equipment certain in the knowledge that it embodies the best features of contemporary design.

We will gladly submit proposals for the layout of modern X-ray departments on request.

WATSON
British Made
X-RAY EQUIPMENT

WATSON & SONS (Electro-Medical) Ltd., SUN-C HOUSE, PARKER STREET
KINGSWAY, LONDON, W.C.2

of sausage meat is used, without any attempt at cleaning it, for cutting slices of corned beef. The corned beef is then placed on the weighing-machine plate, which quite normally in a butcher's shop is covered with blood. The corned beef is next, in some cases, wrapped in a small piece of grease-proof paper and placed on top of the raw meat, but in other cases it is placed in direct contact with the raw meat.

The recent Ministry of Food Circular MF5/48, "Cysticercus in Meat," is in my opinion of minor importance compared with the procedure stated above. Most, if not all, raw meat in this country is cooked before consumption by human beings, but cooked corned beef supplied to make up the meat ration is not usually recooked. If parasitic worms or cysts are present in the meat, offal, sausage, etc., and evade the meat inspector during inspection, they will be transferred to the corned beef by knives, by butchers' hands, by the scales, and by contact with the raw meat. In 1941 it was proved after the outbreak of trichinosis in Wolverhampton that this disease was endemic in the Black Country. I consider that the Ministry of Food and the Ministry of Health should give careful consideration to the serving of cooked corned beef.—I am, etc.,

Solithull, Warwickshire

IAN McLACHLAN.

Dystocia after Amputation of Cervix

SIR,—With reference to Dr. Robert S. C. Fergusson's letter (Feb. 5, p. 241) and Mr. Walter Calvert's memorandum (Jan. 8, p. 58), I believe that the extensive scarification of the cervix resulting from trachelorrhaphies, and even amputations, done so often for chronic endocervicitis associated with milder degrees of lacerations, can be avoided by resort to the operation known here as the Sturmdorf procedure or tracheloplasty. This is fully described in American textbooks on gynaecology, and involves the cutting out of a conical segment of the cervix, extending if necessary to the level of the internal os. The diseased and infected tissues are thus effectually eliminated and the greater portion of the circular muscular fibres retained. There is little or no scar tissue left to impede adequate dilatation in subsequent pregnancies. I have delivered many women subsequent to this operation without difficulty.

Unfortunately the operation is not well known abroad, but may be recommended in appropriate cases as a way to avoid the dystocia described by your correspondents.—I am, etc.,

New York, N.Y.

GEO. W. KOSMAK.

POINTS FROM LETTERS

Temperature Recording

Mr. H. J. RAYNER (London, W.1) writes: As one of the students who performed some of the experiments summarized by Professor Samson Wright (April 9, p. 610) perhaps I might suggest that the common practice in recording temperatures is not so misleading as he indicates. He points out that a thermometer inscribed "half-minute" or "two minutes" will not accurately record the blood temperature when kept in the mouth (or axilla or groin) for the time indicated. He also suggests that it is undesirable to have a mark at 98.4° F. (36.9° C.) on clinical thermometers, because the "normal" temperature varies greatly with individuals and with external conditions. The experiments performed do certainly show this to be true, but as regards the clinical assessment of an abnormal temperature they may not be of great importance. In the surgery, the home, or the hospital a "half-minute" thermometer is normally placed in the mouth for one minute, or in the groin or axilla for two minutes, and a reading of over 98.4° F. is then generally considered to be above normal. The reading may not be the same as that of blood temperature, and perhaps if it were then a reading of 100° F. (37.8° C.) might not necessarily indicate pyrexia, but it is a reading taken under fairly standard conditions, and both the doctor and the layman have some idea of what such a reading is worth. I think that a further fact shown by the series of experiments was that in most people in health the average figure was lower than 98.6° F. (36.7° C.)—even when a thermometer was held in the mouth until a steady reading was obtained. For this reason any reading above the "normal" mark on the thermometer could be considered as abnormally high, except late in the evening. Personally I should favour retaining both the "half-minute" or "two minutes" inscription and also the mark at 98.4° F., because I think that a reading above this mark obtained in the time indicated does show an abnormal temperature.

Obituary

A. E. BARCLAY, O.B.E., M.D., F.R.C.P.

Dr. A. E. Barclay, who died at Oxford on April 26, was one of the outstanding figures in the world of radiology. Barclay of Manchester, as he was often known, though the later years of his life were spent at Oxford, was interested in every aspect of radiology. His special subject was the radiological study of the alimentary canal, on which he published papers as early as 1912. He was too young to be one of the original founders of the Roentgen Society, but he can be said to have belonged to the second rank of pioneers, eagerly interested in the rapidly opening field of radiology in the early decades of this century. He was one of those who saw the necessity for ensuring that those who set out to use x rays in medicine had the proper background of knowledge and the required standard of skill in the interpretation of what they saw. Barclay had much to do with the establishment of training courses in radiology and with the integration of this new discipline in the medical curriculum. He played an important part in the setting up of the diploma in medical radiology and electrology at Cambridge, which he himself took in 1921, and for which he was examiner for many years. His voice was heard more and more often in the counsels of radiologists in those early years. In 1919 he was elected president of the Electrotherapeutic Section (now the Section of Radiology) of the Royal Society of Medicine. He was president of the Roentgen Society in 1924, and, after the reorganization, president of the larger body, the British Institute of Radiology, in 1931. His work was recognized beyond the confines of this country, as attested by his honorary fellowship of the American College of Radiology and his honorary membership of many radiological societies in the Dominions and elsewhere. It was not only his scientific ability which brought him to the front rank, but also his attractive personality and his readiness on all occasions to help colleagues and juniors.

Alfred Ernest Barclay was born in Manchester on Sept. 30, 1876. He went to the Leys School, Cambridge, and from there to Christ's College. His clinical years were spent at the London Hospital, and he graduated in 1904. He was house-surgeon and clinical assistant in the aural and skin departments at the London Hospital, and it was probably his assistantship in the electrical department there and in the Finsen light department which aroused his interest in radioactivity. Barclay proceeded M.D. in 1912, and many years later, in 1937, he was incorporated D.M. at Oxford. In 1935 he became a member, and six years later was elected a fellow, of the Royal College of Physicians. Early in his career he returned to Manchester, where he became a consultant in radiology in private practice and honorary radiologist to the Manchester Royal Infirmary, with charge also of the x-ray department at Ancoats Hospital. He was appointed lecturer in radiology to Manchester University, and later held a similar position at Cambridge. The Nuffield Institute for Medical Research was established at Oxford in 1935 for the study of clinical, physiological, pharmacological, and anatomical problems by means of radiological and allied techniques, and Barclay was appointed honorary radiologist, serving also for a time during the war as acting director of the Institute. Here he collaborated in some important work with Trueta and others. It was in 1946 that Trueta, Barclay, and their colleagues demonstrated the renal shunt which may carry such a high proportion of the arterial blood into the renal vein that the cortex is left too anaemic to function properly. Subsequently, in spite of his serious illness, Barclay continued this work and applied the same technique of microradiology of injected blood vessels to the study of the human stomach. In collaboration with F. H. Bentley he was able to show what appears to be the same type of arterio-venous shunt in the gastric submucosa. Their work on this subject was published as recently as February of this year.

During the first world war Barclay served as a captain, R.A.M.C., and during the second world war he was consultant adviser on radiology to the Ministry of Health, and travelled all over the country inspecting hospital departments. His published work was chiefly on the application of x rays to the study of the abdominal viscera. In 1912, with W. J. S. Bythell,

a fellow radiologist of Manchester, he published *X-ray Diagnosis and Treatment*, for many years a standard textbook on the subject. *The Digestive Tract: A Radiological Study of its Anatomy, Physiology, and Pathology* appeared in 1933, and there was a second edition in 1936. He was the author of many other publications in British and foreign medical journals. In 1920 at Cambridge, and again in 1930 at Melbourne, he was president of the Section of Radiology at the B.M.A. Annual Meeting.

Barclay had been chosen to deliver the Mackenzie Davidson Memorial Lecture under the auspices of the British Institute of Radiology in March, 1949, but when the time came he was far too ill to do so, and the Institute as a mark of respect to him met only for formal business, arranging no other event to take the place of the expected lecture. Its president travelled to Oxford to present him with the lecturer's medal, and brought back a story of a long and painful illness most bravely and cheerfully borne. It was characteristic of Barclay that within two days of his second operation he was sitting up in bed tracing out on paper exactly what the surgeons had done to him. The university of his native Manchester intended to confer on him the honorary degree of D.Sc. on founder's day, May 18. The D.Sc. of Oxford was conferred on him in 1947. In 1946 he was made an honorary member of the Liverpool Medical Institution, and on that occasion the public orator described Barclay as one of the pioneers who had helped to build "a well-fitted dark-room in the house of Medicine." He went on: "Once upon a time he was a Manchester man, but he has long lived that down in the genial air of Oxford. He has given us the work of a master in his book on the radiology of the digestive tract. . . . To craftsmanship he adds a scholar's integrity. He has always taught that the study of the normal is the beginning of radiological wisdom. . . . As Socrates felt about words, so he feels about x-ray shadows. To use them in the improper sense is not only a bad thing in itself, but it also generates a bad habit in the soul."

Dr. S. Cochrane Shanks writes: Others will tell the story of Alfred E. Barclay's life. I want to record some aspects of his character that won for him his outstanding reputation as a radiologist and the affection and regard of all who knew him. Barclay was a man irrepressibly good-humoured and benign. It was impossible for a normal individual not to like him. As a consultant adviser in the E.M.S. during the last war he was inevitably subject to occasional ill-informed criticism. I well remember his reaction to one vicious letter: that of sympathetic concern for the state of mind of the writer. It simply didn't occur to him to take offence, and the charm of his personality rallied the radiologists of the country round him when he organized the x-ray services of the E.M.S. His success in that task was due also to two other qualities—imaginative enthusiasm and untiring industry; qualities which were also responsible for his deserved reputation as a young radiologist at Manchester and as a researcher in the last phase of his life. The generation who knew Barclay only as a doyen may not appreciate how much he contributed to the radiology of the alimentary tract. His two early books on that subject, published in 1912 and 1914, are classics of their time. In them there is much that is now quaint, but much more that was new then and has stood the test of time. That Barclay, an able young man with an inquiring mind, should contribute to the knowledge of a new and growing subject is not so very remarkable. Many young men have done the same. What is remarkable is that he should, after the age of 60, re-enter the field of research and, in the Nuffield Laboratories at Oxford, lead a team in a series of brilliant anatomical researches on the foetal circulation and on hitherto unknown vascular shunts in the kidney and stomach. Very few have done that. Indeed, alike in youth and in age, he flamed into recurrent brilliance, and radiology is the richer for his long and active life.

SIR SIDNEY SEWELL, M.D., F.R.C.P., F.R.A.C.P.

Sir Sidney Sewell, one of the best-known physicians in the State of Victoria, died on March 13. The prominent part he took from 1928 to 1938 in the formation of an Association of Physicians of Australasia, which led finally to the foundation of the Royal Australasian College of Physicians, will long be remembered. He was Vice-President of the College from 1938 to 1940 and President from 1940 to 1942.

After a brilliant undergraduate career Sidney Valentine Sewell completed his medical course in 1905 and graduated at the head of his year with first-class honours in medicine, surgery, and obstetrics, sharing the exhibition in medicine with G. C. M. Mathieson and winning the exhibition and the Beane Scholarship in surgery. He was appointed senior resident medical officer to the Royal Melbourne Hospital in 1906, and clinical assistant to medical out-patients in 1910, after his return from two years' postgraduate work in England and Germany. Sewell's public hospital work was almost exclusively confined to the Royal Melbourne Hospital. He became physician to out-patients in 1911, and when he retired in 1939, after nearly thirty years of unremitting service, he was made consulting physician to the hospital. Like many of the senior men, he returned to full duty in the wards during the recent war. Sewell obtained his M.D. in 1910. He became a foundation fellow of the Royal Australasian College of Physicians in 1938, and in 1939 was elected F.R.C.P. He was knighted in 1945.



Sewell's ambition was to follow in the footsteps of his guide and friend, the late Sir Richard Stawell. Sir Richard had set a high standard of medical teaching in Melbourne, based on the best English tradition and practice. Sewell followed his example and never spared himself or his students. His teaching at the bedside will not easily be forgotten by medical practitioners now scattered over all the States of the Commonwealth. The first world war of 1914-18 always held painful memories for Sewell. Owing to a persistent infection following an acute attack of appendicitis in early manhood, his health from his early student days was far from robust. It was remarkable that he subsequently accomplished so much in spite of this constant handicap. He volunteered for active service in the war, but, after more than one medical examination, acceptance for military service overseas was refused on the ground of unfitness. This was a severe blow to him. He served at home and was particularly successful in his treatment of "shell-shocked" cases.

Sir Sidney Sewell had been interested for more than twenty-five years in the management and treatment of tuberculosis. His proclaimed aim was a constructive scheme to wage war against tuberculosis in Victoria so as to stamp it out within a defined number of years. He endeavoured by every means in his power to obtain the co-operation of Federal and State Governments together with the understanding and sympathetic assistance of the community in general. Sewell fought vigorously and uncompromisingly against what he considered to be the apathy, ignorance, and inertia of Government departments on this subject. His crusade was not popular in official circles and it earned him some enmity. He was ultimately effective, however, in arousing general interest in this most difficult problem. He took up vigorously the question of money allowances for public patients during their stay in sanatoria. Here he was in advance of his time in recognizing that often when medical treatment was refused by patients, or its acceptance delayed, the reason was financial. He also insisted that treatment when it was accepted lost much of its beneficial effect if the family breadwinner carried with him into the sanatorium anxieties about the financial welfare of his family. Sewell fought strenuously for adequate monetary allowances for these patients, and was rewarded with a considerable measure of success. During the last few months of his life Sir Sidney was recognized by the State Government of Victoria as its unofficial adviser and consultant on questions connected with pulmonary tuberculosis. Official recognition of his work has also been made in the decision to establish "The Sir Sidney Sewell Pathological Wing" in the new sanatorium for 400 male patients, to be erected at any early date at Watsonia, near Melbourne.

Sir Sidney Sewell died from a malignant growth of the lung, which was diagnosed several months before his death. Knowing all the facts, he determined to put his affairs in order and to die in harness. During the final three months, and under increasing difficulties, he was true to his ideals and continued to work for the better management of tuberculosis. Sir Sidney was in the first flight of physicians in Australasia. His knowledge was extensive, his intellectual grasp of medical problems was profound, and he kept well abreast of all major developments in his subject. Many patients and colleagues will mourn his passing and miss his inspiring help in time of need.—C. V. M.

C. W. M. HOPE, O.B.E., M.D., F.R.C.S.

Mr. C. W. M. Hope, consulting surgeon for diseases of the ear, nose, and throat to King's College Hospital, London, died at his home in Knaresborough on April 21 at the age of 68. A memorial service was held at the Hospital Chapel on Monday, May 2.

Charles William Menelaus Hope was educated at Clifton College and the University of Durham, where he graduated M.B., B.S. in 1903. He took the F.R.C.S. in 1908, and proceeded M.D. a year later. After holding three resident appointments at the Royal Infirmary, Newcastle-upon-Tyne, he came to London in 1908, where at first he was resident anaesthetist at St. Mary's Hospital and then clinical assistant to Mr. William Hill in the ear, nose, and throat department. Hope was registrar and later assistant surgeon to the Throat Hospital, Golden Square. In 1914 he was appointed to the honorary staff of King's College Hospital as assistant surgeon for diseases of the nose and throat under the late Sir St. Clair Thomson. He became the first head of the combined nose and throat and aural departments in 1932, and remained in charge until his retirement in 1941. He was also consulting surgeon to the Finchley Memorial Hospital and the Royal Eye Hospital, Southwark.

Mr. Hope served in the two world wars. In the 1914-18 war he was a surgeon with the rank of major, R.A.M.C., attached to the St. John Ambulance Brigade Hospital, B.E.F. For his services he was awarded the O.B.E. and was made an officer of the Order of St. John of Jerusalem. At the outbreak of the second world war he at once joined the Emergency Medical Service as a full-time surgeon, and he was posted to Horton Emergency Hospital, Epsom, where he worked until continued ill-health led to his retirement in 1941.

Hope was a very fine operator, and all who worked with him, whether as students, residents, clinical assistants, or registrars, will always remember his kindness, thoroughness, and patience, and his meticulous attention to every detail affecting the welfare of his patient, whether in the out-patients department or the theatre. Until ill-health compelled him to slow down, he was a hard and conscientious worker, and though he did not write a great deal he gave a fine training to all who worked under him, and set an example to students and junior staff that they will always remember. He was interested in all the students' activities of King's College Hospital Medical School, and was associated with the Students' Club and Societies Union for nearly twenty years, first as secretary and later as president. In this work he came into close contact with the students, who always knew him affectionately as "Charlie Hope."

Outside medicine he had many interests, including fishing, gardening, and carpentry. He enjoyed using his hands, in play as well as in work, and no matter what he did he always did it thoroughly. He had a keen appreciation of values and always insisted on the best. His annual holiday was spent in the north of Scotland salmon fishing, and many friends will remember the fine fresh salmon which came to them in late June or early July from Brora. He was a bachelor whose kindness, generosity, and compelling personality ensured him a wide circle of friends. He will be greatly missed, though never forgotten, by all those who worked under him and learned so much from him.—T. C.

The Joint Committee of the Order of St. John of Jerusalem and the British Red Cross Society has issued its *Register of Ambulance Stations* listing the addresses and telephone numbers where ambulances may be obtained. The service covers many types of cases that do not fall within the ambit of the National Health Service.

Medico-Legal

DEATH FOLLOWING ABORTION

Verdict of Misadventure

At an inquest held at Slough on April 4 and April 13 evidence was given that the death of a girl of 19 was due to shock resulting from an operation for the induction of premature labour.

The mother of Marianne Elise Gotzky said her daughter had not told her that she was pregnant. One day her daughter had turned on the gas. Only after this incident did she confide in the mother, and she said that she would rather end her life than continue with the pregnancy. Her own father, an elderly medical man, arranged for her to take her daughter for examination by a psychiatrist. The psychiatrist had arranged for her to see Mr. Norman Haire and she had given Mr. Haire her own cheque for £150. After her daughter's death Mr. Haire sent her a cheque.

Dr. Ellis Stungo said that he saw Miss Gotzky on three occasions. She was so distressed and unbalanced that he felt she might make another attempt at suicide. He came to the conclusion that her pregnancy should be terminated, and he accepted full responsibility for having advised this. He suggested to the mother that the case was one which would be dealt with by any hospital, but that if she wished he would make arrangements for the girl to be operated on as a private patient. He said that he was paid 12 guineas for these consultations. So far as he knew there were no ill effects following skilled therapeutic interference. It was impossible to treat a patient by psychotherapy in such circumstances. The treatment was the removal of the cause of her symptoms. She could have been admitted to a mental hospital, but he would not have advised that.

Evidence was then given by the night nurse at the Parkside Nursing Home, Upton Court Road, Slough, and by the matron of the home, who explained that she had no certificates and her knowledge of nursing had been acquired by experience. Miss Gotzky was admitted on the evening of April 1 and the operation was performed the following morning. As a general rule, the matron said, she received her fees from the patients, but in this case her account for £7 18s. was paid by Mr. Haire.

The anaesthetist, Dr. Oswald Stuart Thompson, said that the patient was given thiopentone intravenously. He then administered gas and oxygen and a minimum quantity of trileone. The operation took ten or fifteen minutes. He was dismantling his apparatus and packing it away when he noticed that the patient had changed colour and was gasping for breath. Pure oxygen, coramine, and adrenaline were administered, and finally adrenaline was injected into the heart muscle, but without effect. Artificial respiration was continued for probably three-quarters of an hour. The patient had recovered from the anaesthetic to the extent that she was trying to push the airway from her mouth, and her laryngeal reflexes had returned.

Mr. Norman Haire, who reported the death to the coroner, said there was some uncertainty about the period of pregnancy. He judged that the patient was approaching the 28th week and it seemed possible that the child might be saved. For that reason he took good care not to rupture the membranes before injecting the paste. It was extremely rare for shock to take place in connexion with these operations. He said that he did "quite a lot of this kind of work—more than the average gynaecologist."

Findings at Necropsy

Dr. Keith Simpson reported that at necropsy the most careful routine examination failed to reveal any evidence of organic disease of any kind. There was no deformity or disproportion of the pelvis likely to interfere with the normal termination of a full-term pregnancy. A seven-months gestation was present and in a healthy state, capable of continuation to term. The cervix had been dilated and a gelatinous paste introduced, separating the sac of the pregnancy for about an inch around the internal orifice of the neck of the womb. There was no pulmonary embolism and only the slightest bleeding had occurred. The entire absence of any organic cause of death

gave proper grounds for the inference that death was due to reflex shock. Shock would not reflect lack of skill in the procedure, but light anaesthesia in an emotional subject would predispose to it. In his opinion the cause of death was shock due to artificial abortion. It would have been perfectly easy to deliver this child alive by immediate operation on the apparent death of the mother. It was viable in law, having reached the 28th week, and his examination revealed no reason to suppose that it was not alive in the uterus.

Shock was a well-recognized possible consequence of either dilating the cervix or of injecting any substance into the uterus. Death in such cases was quite sudden, unheralded, and might ensue within a few seconds. He thought it was remotely possible, but unlikely, that death did not take place until ten minutes after the operation, as had been suggested by the matron. There was no evidence that what had been done had not been done skilfully. There were facilities in any general hospital for performing such operations if they were necessary. This could come under the National Health Service without cost to the family of the patient.

The jury returned a verdict of misadventure in accordance with the medical evidence and added a rider recording its opinion "that decisions to undertake operations of this type should be more strictly safeguarded, and such operations should be carried out only in State hospitals under the National Health Scheme."

Medical Notes in Parliament

LONDON CENTRE FOR TROPICAL MEDICINE

Mr. IVOR THOMAS on April 27 recalled how in 1898 Mr. Joseph Chamberlain, Sir Patrick Manson, and Sir Percival Nairne had founded at the Albert Dock Hospital the London School of Tropical Medicine. Manson's idea was that teaching, treatment, and research should be carried on by one organization in one group of buildings. When the first world war ended, the Hospital for Tropical Diseases was established in Gordon Street, and the school was reopened there in 1920. In 1924 the school was merged in the London School of Hygiene and Tropical Medicine. This separated teaching from the treatment of tropical diseases, but nevertheless Britain maintained a high place in both teaching and treatment until the outbreak of the second world war. The building in Gordon Street then had to be closed because it was unsuitable as a hospital under threat of air attack. A little later a land mine fell behind it. It then became necessary to consider what provision should be made after the war, and in April, 1941, Lord Moyne appointed an interdepartmental committee to go into the question. After the end of the war a temporary hospital was opened in Devonshire Street. Good work had been done there and the staff had rendered devoted service, but accommodation was very limited, and no one would claim that the hospital was an adequate centre. He thought there should be set up in London a comprehensive hospital for tropical diseases with the status of a post-graduate teaching hospital and with its own board of governors. It should be erected within the curtilage of the University of London to be close to the London School of Hygiene and Tropical Medicine. It would probably cost £1,000,000, but nothing short of such a scheme would meet the need.

Mr. Bevan had told him on Feb. 10 (*Journal*, Feb. 19, p. 328) that it was proposed to develop a tropical diseases centre as a unit of the University College Hospital group. What was wanted was a tropical diseases hospital with 150 beds and an outpatient department of the polyclinic type.

Dr. HADEN GUEST said Mr. Thomas was out of touch with the present difficulties in regard to staffing. Anything like the scheme Mr. Thomas suggested was out of the question at present.

Dr. STEPHEN TAYLOR said, as a comparatively recently appointed governor of University College Hospital, that the collection of tropical cases was a practical difficulty. Until recently places in the existing temporary hospital were nothing like filled. This was due in part to the fact that many medical officers and specialists had had experience in the Forces of the treatment of tropical diseases and were anxious to use that experience in treating cases in non-tropical disease hospitals and general wards in London. On behalf of the governors of University College Hospital he assured Mr. Thomas that their desire was to see a worthy tropical diseases hospital and unit developed as part of that hospital. The governors hoped the

new location of the tropical diseases hospital would be in the old St. Pancras Hospital not much farther away from the University of London than the old building was.

Mr. BLENKINSOP, replying to the debate, said everybody desired proper provision in London for the treatment of tropical diseases and the teaching of tropical medicine. After the report of the interdepartmental committee had been submitted a decision was taken that instead of going forward on the line then suggested, which was out of keeping with the development of the National Health Service, it would be preferable not to develop a completely isolated and separate hospital but to have a separate unit in close association with one of the large teaching hospitals. In accordance with that decision the Devonshire Street Hospital had been associated with the University College Hospital group. It was true that the accommodation at Devonshire Street was too crowded, although some very good equipment was available and very valuable services had been given there. It was proposed to improve the facilities by adding a more adequate inoculation centre. The proposal now being considered by the University College Hospital group would provide a considerable unit distinct from but at the same time associated with St. Pancras. The suggestion was that a modern block could be utilized there which would have the facilities of a great hospital by its side. The Ministry hoped a decision would be reached on this soon. Quite properly University College Hospital must have regard to other factors. If this accommodation was used for tropical medicine other plans must be re-examined. But, after seeing both premises and meeting some of those concerned, Mr. Blenkinsop was satisfied that University College Hospital was as anxious as was the Ministry to ensure that proper facilities should be available as rapidly as possible. As it became possible to undertake larger building projects larger schemes could be undertaken. He thought the proposal under consideration would meet immediate needs adequately.

Beds Not in Use

Mr. BEVAN said on April 28, replying to Colonel STODDART-SCOTT, that the number of beds closed for want of staff in hospitals in Great Britain on Dec. 31, 1948, was 59,903, made up as follows:

Tuberculosis sanatoria	..	5,669
Fever hospitals	..	15,915
General hospitals	..	21,642
Other specialized institutions	..	16,677
		<u>59,903</u>

Colonel Stoddart-Scott further asked how much of the £15,000,000 required to staff and maintain these 60,000 hospital beds had been included in Mr. Bevan's estimates for the coming year.

Mr. Bevan said the annual budgets of the hospital management committees did not specify separately anticipated expenditure on the reopening of closed beds, so that he was unable to give the information desired.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

On April 23 the degrees of M.B., B.Chir., were conferred on Muriel E. Sidaway.

A Pinsent-Darwin Studentship has been awarded to John McFie, M.B., B.Chir.

A course in paediatrics and obstetrics will be held at Addenbrooke's Hospital, Cambridge, from May 16 to 27. Eleven half-day sessions will consist of lectures and demonstrations. Details of the course, the number attending which is limited, may be obtained from the secretary, the Medical School, the Naval Hut, Downing College, Cambridge.

UNIVERSITY OF BIRMINGHAM

Professor E. B. Verney, F.R.S., Sheild Professor of Pharmacology in the University of Cambridge, will deliver the William Withering Lectures in the Anatomy Theatre of the Medical School of the University on May 12, 13, 16, and 17, at 4 p.m. His subject is "The Excretion of Water by the Kidney, with Special Reference to its Neurohypophyseal Control."

The Ingleby Lectures will be delivered by Mr. Charles D. Read, Director of Postgraduate Studies, Chelsea Hospital for Women, in the Anatomy Theatre of the Medical School of the University on May 19 and 26, at 4 p.m. His subject is "The Problems of Stress Incontinence of Urine in the Female."

Members of the medical profession and students of medicine are invited to attend the lectures.

No 15

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended April 16

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for (a) England and Wales (London included) (b) London (administrative county) (c) Scotland (d) Eire (e) Northern Ireland
Figures of Births and Deaths, and of Deaths recorded under each infectious disease are for (a) The 126 great towns in England and Wales (including London) (b) London (administrative county) (c) The 16 principal towns in Scotland (d) The 13 principal towns in Eire (e) The 10 principal towns in Northern Ireland
A dash — denotes no cases, a blank space denotes disease not notifiable or no return available

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever Deaths	27	2	8	2	—	47	3	15	3	2
Diphtheria Deaths	103	7	28	4	4	136	12	53	11	3
Dysentery Deaths	49	7	16	—	3	110	30	47	—	—
Encephalitis, acute Deaths	—	—	—	1	—	—	—	—	—	—
Erysipelas Deaths	—	—	19	7	4	—	—	46	10	1
Infective enteritis or diarrhoea under 2 years Deaths	24	3	3	22	—	35	3	5	27	—
Measles* Deaths†	13,066	1635	299	207	172	9,681	1360	315	96	45
Ophthalmia neonatorum Deaths	44	2	13	—	—	54	1	13	—	—
Paratyphoid fever Deaths	1	—	1(B)	—	—	7	—	1(A)	—	—
Pneumonia, influenzal Deaths (from influenza)‡	731	30	9	21	18	639	54	8	12	2
Pneumonia primary Deaths	95	6	2	2	—	10	—	2	1	1
Pneumonia primary Deaths	277	36	202	43	9	205	45	213	30	8
Polio-encephalitis, acute Deaths	2	—	—	—	—	1	—	—	—	—
Poliomyelitis, acute Deaths§	5	2	1	—	—	19	1	2	1	—
Puerperal fever Deaths	—	—	5	—	—	—	2	11	—	—
Puerperal pyrexia Deaths	81	9	3	2	1	114	4	8	6	—
Relapsing fever Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever Deaths¶	1,039	65	162	73	36	1,290	76	252	37	38
Smallpox Deaths	7	3	—	—	—	—	—	—	—	—
Typhoid fever Deaths	2	—	—	—	1	9	—	—	2	—
Typhus fever Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* Deaths	2,267	194	150	79	73	3,888	286	61	69	22
Deaths (0-1 year) Infant mortality rate (per 1,000 live births)	335	39	30	27	1	335	53	44	25	12
Deaths (excluding stillbirths) Annual death rate (per 1,000 persons living)	5,187	753	642	206	130	4,651	738	619	180	120
Live births Annual rate per 1,000 persons living	6,680	1152	894	375	253	8,469	1366	1062	341	259
Stillbirths Rate per 1,000 total births (including stillborn)	180	27	22	—	—	211	30	31	—	—

* Measles and whooping-cough are not notifiable in Scotland and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county) will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county) and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county) are combined.

¶ Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Typhoid Fever at Crowthorne

The diagnosis of typhoid fever was confirmed on April 30 in a patient admitted to the Royal Berkshire Hospital from Crowthorne, which has a population of 3,500. During the next two days the diagnosis was confirmed in four other patients, and a total of 32 persons were suspected of suffering from the disease. The earliest of the dates of onset so far mentioned is April 21. The usual steps have been taken by way of prevention and control, but in any event an outbreak of considerable magnitude is to be expected. It cannot be assumed that the disease will remain confined to Crowthorne until the source and vehicle of infection have been identified.

Crowthorne is at the junction of the territory of three regional hospital boards: North-west Metropolitan, South-west Metropolitan, and Oxford. Cases are known to have been admitted to hospital at Winchester as well as at the Reading hospital. The organism has been identified as Vi-phage Type E1.

Smallpox

The last of the eleven cases of smallpox imported on the s.s. *Mooltan* was removed to hospital on April 16. The period of surveillance of the numerous contacts with these cases has now expired without notification of the disease in any of them. Although there is reason to hope that the infection has not passed to anyone in this country it is too early to exclude the possibility of a missed case, because at least one of the patients may have been in contact with persons who could not be brought under surveillance. Special vigilance should therefore continue for a further two or three weeks.

Fortunately the passengers and crew of the s.s. *Mooltan* gave the public health authorities helpful co-operation. The persons who developed the disease were removed early and before they could do much damage. With very few exceptions contacts accepted vaccination promptly and remained under surveillance. The several public health departments concerned, particularly those for the ten districts in which the imported cases were taken ill, appear to have carried out the routine measures for the control of smallpox without a hitch.

The patients who survived are now making satisfactory progress, and the case fatality, 6 out of 12, is unlikely to alter. In two patients modification by previous vaccination had reduced the disease to a triviality, varicella virus was recovered, however, on egg culture. Virus was also recovered from the remaining cases except the one at Liverpool.

Future Population Trends

The birth rate during 1948 was 17.9 per 1,000 and 2.7 below the post-war peak of the preceding year. Except for 1946 and 1947, however, this rate was the highest since 1922. The rise in the birth rate following the war was apparently of a temporary nature and was not, as has been suggested, due to a permanent increase in the average size of families. The effective reproduction rate corresponding to the births which occurred in 1948, after making allowance for a continuing improvement in the likelihood of survival, has been provisionally assessed at 1.070. With present trends this rate will fall during the next year or so to below 1.0, which is the level of replacement. The marriage rate at 18.1 remained fairly high. From 1921 to 1937 this rate varied between 14.3 and 17.5. The maintenance of a high marriage rate means that the birth rate may remain above the level of the years immediately preceding the war.

A forecast by the Registrar General, based on the present trends, suggests that in 1950 there will be 22.3% of the population under the age of 15 and 12.1% aged 65 and over, compared with 21.4% and 10.7% in 1948. The school population will be at its peak, and with the present trends a decline must be expected after this date. On the other hand the number of pensioners will continue to increase and become proportionately more important, placing a gradually increasing burden on the social services.

Notifications During First Quarter

In the first thirteen weeks of this year whooping-cough and acute pneumonia have been unusually prevalent, and so has measles. The fall in the incidence of diphtheria has continued, and the notifications were only one-quarter of the number recorded four years ago and about one-fourteenth of the number recorded in the first thirteen weeks of 1938. Notifications of dysentery and of cerebrospinal fever were the lowest of recent first quarters. The incidence of acute poliomyelitis showed a considerable improvement on the preceding year but remains above the pre-epidemic level. The number of deaths

Medical News

England and Wales	1945	1946	1947	1948	1949
Scarlet fever ..	19,163	16,952	15,527	23,346	16,087
Whooping-cough ..	19,780	20,033	27,922	35,034	37,221
Diphtheria ..	6,061	6,220	2,832	2,466	1,523
Measles ..	247,455	17,652	165,895	88,489	201,140
Acute pneumonia ..	14,782	16,278	15,500	10,969	17,147
Cerebrospinal fever	968	906	1,110	629	479
Acute poliomyelitis	61	104	114	381	224
Dysentery ..	4,681	4,444	931	2,100	886
Enteric (typhoid and paratyphoid fevers)	140	138	98	103	100
<i>Great Towns</i>					
Influenza deaths ..	693	2,156	1,335	272	2,278

Discussion of Table

In England and Wales infectious diseases were less prevalent during the week, and there were decreases in the incidence of measles 1,658, whooping-cough 341, acute pneumonia 362, scarlet fever 152, and dysentery 14.

Large decreases in the notifications of measles were recorded in Southampton 213, Lancashire 150, Hertfordshire 138, London 118, and Essex 111; the chief exception to the general decline was an increase of 109 in Middlesex. There was a fall in the incidence of whooping-cough in every area except in London and the south-eastern counties, where an increase of 39 in the notifications was reported.

An outbreak of diphtheria affected 8 persons in Berkshire, Wokingham R.D., and there was an increase of 9 in the notifications in Staffordshire. A small decrease was recorded in the notifications of scarlet fever in most areas, the largest exceptions to the general trend being rises in Lancashire 15 and Yorkshire 11. A fall in the incidence of acute pneumonia was general throughout the country.

The chief centres of infection for dysentery were Lancashire 11 (Liverpool C.B. 8) and Yorkshire West Riding 13 (Huddersfield C.B. 11).

In Scotland there was a rise of 9 in the incidence of diphtheria, and there were falls in the notifications of measles 87, whooping-cough 72, scarlet fever 31, and acute primary pneumonia 31. Dysentery reappeared in Edinburgh, where 8 cases were notified during the week. In Glasgow the notifications of dysentery fell from 20 to 5.

In *Eire* decreases were recorded in the notifications of scarlet fever 35, whooping-cough 32, and diarrhoea and enteritis 21. These changes were mainly due to the experience of Dublin C.B.

In Northern Ireland decreases were reported in the notifications of whooping-cough 31 and measles 21. In contrast to the general trend, increases in the notifications of measles were reported from Belfast C.B. 10 and County Antrim 11.

Week Ending April 23

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 953, whooping-cough 75, measles 13,514, acute pneumonia 759, diphtheria 34, acute poliomyelitis 8, dysentery 52, cholera 1, typhoid 7, and typhoid 3. Deaths from influenza in the great towns numbered 51.

The Services

DEATHS IN THE SERVICES

Surgeon-Lieutenant JOHN MICHAEL ALDERTON, R.N., was killed in action in H.M.S. *Amethyst* on April 20. Born at Colchester on Oct. 19, 1924, he came of a medical family, his father, grandfather, and great-uncle all being members of the medical profession. He was educated at Epsom College, having gained the Leverhulme Scholarship there in 1938. On leaving Epsom he won a scholarship at University College Hospital, London. After graduating M.B., B.S. in 1946, he held the post of casualty officer at the British Post-graduate Medical School, Hammersmith. John Alderton was commissioned in the Royal Navy in September, 1947, and sailed for Hong Kong to join H.M.S. *Amethyst* in the following January. Outside medicine his two main interests were music and yachting. He was a keen member of the United Hospitals Sailing Club. He also played hockey for University College. He was of a naturally shy disposition but had a lovable character and keen sense of humour. All who knew him well will not be surprised that he merited the high tribute paid to him by the Admiralty: "He moved round the ship unflinchingly, aiding the wounded until he himself was killed." Our sympathy goes out to his parents and younger brother.—M.H.C.

Dr. Douglas Fairley

Dr. Douglas Fairley has been appointed a Nominated Member of the Executive Council of the Island of St. Helena.

Dr. John Gilles

Dr. Jolin Gillies, one of the doctors in attendance on the King at his recent operation, has been appointed a Commander of the Royal Victorian Order.

Spectrographic Research Unit

By arrangement with the London Hospital, the Medical Research Council has established there a Spectrographic Research Unit under the direction of Dr. E. R. Holiday. The primary function of the unit is to undertake original research work in the field of absorption spectrophotometry as applied to biological problems of medical interest, but advice and assistance will also be given to other branches of the Council's organization using such methods. The unit has been based on the spectrographic department originally established by the London Hospital, and during the last five years partly supported by the Council for the purposes which are now being developed.

Invitation from Professor C. R. Marshall

An invitation is extended to all members of the class of materia medica at Aberdeen University from 1919 to 1930 inclusive who are attending the B.M.A. Meeting in Harrogate to a dinner at the Troutbeck Hotel, Ilkley, on Friday, July 1, at 7 p.m. Buses from Harrogate will be provided. Those wishing to accept should write, saying if accompanied by a lady, to Professor Marshall, Annisholme, Manor Park, Burley-in-Wharfedale, Yorkshire, before June 7.

Lecturing in Italy

Dr. Margaret Tod, Deputy Director of the Holt Radium Institute, Manchester, is visiting Italy between May 5 and 21 to meet Italian radiotherapists in preparation for the International Radiological Congress to be held in England in 1950. She will also lecture for the British Council in Milan, Bologna, Florence, and Rome on "Cancer Organization and Our Clinic System" and "Accurate Dosage in Radium and X-ray Therapy."

Royal Commission on Capital Punishment

Dr. Eliot Slater has been appointed a member of the Royal Commission on Capital Punishment. The following are the other members: Sir Ernest Gowers (chairman), Mrs. E. D. C. Cameron, Mr. N. R. Fox-Andrews, K.C., Miss Florence Hancock, Mr. William Jones, Mr. Horace Macdonald, Mr. John Mann, Sir Alexander Maxwell, Professor G. A. Montgomery, K.C., Lord Peel, Professor Leon Radzinowicz. The secretary is Mr. F. L. T. Graham-Harrison, of the Home Office. The terms of reference of the commission are: To consider and report whether liability under the criminal law in Great Britain to suffer capital punishment for murder should be limited or modified, and, if so, to what extent and by what means; for how long and under what conditions persons who would otherwise have been liable to suffer capital punishment should be detained, and what changes in the existing law and the prison system would be required; and to inquire into and take account of the position in those countries whose experience and practice may throw light on these questions. Those wishing to give evidence should apply to the secretary, submitting a written statement of the evidence which they wish to give. Communications should be addressed for the present to the secretary, Royal Commission on Capital Punishment, Home Office, Whitehall, London, S.W.1.

Control of Tropical Diseases

In accordance with proposals agreed to by the Economic Co-operation Administration in Washington to aid development of certain areas in the British Empire, Dr. Frederick J. Brady, of the U.S. Public Health Service, and Mr. Harry H. Stage, of the U.S. Department of Agriculture, will visit Africa to study the control of trypanosomiasis and malaria. They will leave New York on May 10, and after consulting the Colonial Office in London will visit East and West Africa, will survey the conditions there, and make recommendations on further U.S. assistance in combating the tsetse fly and mosquito.

Aftercare of Delinquents

The Home Secretary has approved the establishment of a Central Aftercare Association for England and Wales to supervise persons released from Borstal training, corrective training, and preventive detention, and young prisoners released on licence. The Borstal Association, the Aylesbury Aftercare Association, and the Central Association for the Aid of Discharged Convicts are to be merged in it.

Streptomycin under Marshall Aid

The Economic Co-operation Administration has stated that streptomycin to the value of £2,500,000 has been provided under Marshall Aid for the treatment of tuberculosis in Europe. E.C.A. funds are also financing the reconstruction of two French plants to produce the drug.

Soap for Bedridden Patients

On the recommendation of his medical advisers the Minister of Food has decided that bedridden patients who suffer also from a condition for which extra soap is granted may receive both the special allowance of soap appropriate to their condition and the one extra ration of soap to which they are entitled because they are bedridden. Doctors are asked, when authorizing extra soap for their bedridden patients, to write the word "bedridden" on the R.G.50 and not quote the classification of this condition in MED.2 (Revised 1948). If a bedridden patient also qualifies for soap under another classification in the MED.2 (Revised 1948), that classification should be quoted and the word "bedridden" added to it, so that extra soap can be made available to the patient on both counts. Patients whose condition requires the liberal application of ointments, pastes, or similar preparations qualify for one extra soap ration a week. They must present at the Local Food Office a medical certificate stating that soap is required for that reason.

Director of Army Health

The title of Director of Hygiene at the War Office has been changed to Director of Army Health. The titles of Deputy Directors, Assistant Directors, and Deputy Assistant Directors have been changed similarly. Specialists in Hygiene are now entitled Specialists in Army Health. The present Director of Army Health is Brigadier A. E. Richmond.

Association of Independent Hospitals

The independent hospitals and kindred organizations—by which is meant hospitals, convalescent homes, epileptic colonies, and other institutions that have either been disclaimed from, or were not transferable under the Acts to, the National Health Service—have formed an Association of Independent Hospitals and kindred organizations. Its objects are to safeguard and develop the interests of these hospitals, which are the remaining voluntary hospitals of the country and therefore are wholly dependent on the public and on themselves for maintenance.

Peruvian Academy Honours Medical Historian

At a special meeting of the Peruvian Academy of Surgery held in Lima on Feb. 11 Dr. Douglas Guthrie, lecturer on the history of medicine in the University of Edinburgh, who has been acting as visiting professor to the University of San Marcos, was admitted to the honorary membership of the Academy. Dr. Guthrie is the first British surgeon to receive this distinction, which was accompanied by the presentation of an enamel badge bearing the emblem of the academy, the spade-shaped knife or "tumi" which was used by the Incas for their primitive trephining operations.

World Federation for Mental Health

The first number of the *Bulletin* of the World Federation for Mental Health has been issued as a successor to the series of twelve bulletins distributed by the International Congress on Mental Health held in London last year. The *Bulletin* is intended to serve as a link between the Federation and member associations in different countries. It is also intended for the exchange of ideas and information on the principles and practice of mental health throughout the world. In each issue it is proposed to publish at least one original article on some topic relevant to the Federation's work. It may be obtained for 5s. a year (post free) from the editor, at the World Federation for Mental Health, 19, Manchester Street, London, W.1.

Blockaded Berlin

An official pamphlet, *Notes on the Blockade of Berlin, 1948*, touches on the public health problems of the blockaded area. So 8,652 undernourished children have been flown out to the Western zones by the British air lift. The first medical supply to be flown was ether, which had formerly come from the Eastern Zone. A number of patients have been removed from hospitals to the Western zones so that the beds in Berlin may be used so far as possible for cases of serious or acute sickness. The chief types of cases treated are those requiring specialized treatment unavailable in Berlin or a long rest and good food, and cases of early and fulminating tuberculosis and of convalescent poliomyelitis.

Acknowledgment for War Service

The President of the Czechoslovak Republic has conferred the ration of Chevalier of the Order of the White Lion upon Drs. or Macdonald Walker, O.B.E., and Thomas Forrest Cotton in recognition of services rendered during the war.

Aberdeen Children's Welfare Council

At a recent conference at Aberdeen of organizations whose principal objects include the care of children it was decided to form a Children's Welfare Council. It will help to correlate the work of the various bodies concerned with child care in all its social aspects. Professor John Craig, of the Department of Child Health, Aberdeen University, is chairman, and Mr. Auld, of the Association of Social Service, is secretary.

Wills

Dr. Theodore Shennan, Regius Professor of Pathology at Aberdeen University 1914-36, left £4,561. Dr. Herbert John Pulling, of Brighton, left £37,909; Dr. Archibald Deane, formerly of Eastbourne, £18,907; Dr. Frederick Henry Healey, formerly medical superintendent of Hellesden Mental Hospital, £4,226; and Lieut.-Col. Henry Smith, late I.M.S., £57,240.

COMING EVENTS**Royal Society Lectures**

The Bakerian Lecture for 1949 will be delivered on May 12 by Professor H. Raistrick, F.R.S., Professor of Biochemistry at London University. The Croonian Lecture for 1949 will be delivered on June 30 by Dr. D. W. Bronk, Foreign Member of the Royal Society. Dr. Bronk is Foreign Secretary of the National Academy of Sciences and Chairman of the National Research Council of the U.S.A. The Wilkins Lecture for 1949 will be delivered on Dec. 15 by Professor E. N. da C. Andrade, F.R.S., Quain Professor of Physics at London University.

National Industrial Safety Congress

The Royal Society for the Prevention of Accidents will hold the National Industrial Safety Congress on May 13-15 at Scarborough. It is open to non-members as well as members. Speakers include Sir Geoffrey King, Deputy Secretary at the Ministry of National Insurance, and Sir Charles Bartlett, managing director of Vauxhall Motors Limited. Particulars may be obtained from the Industrial Safety Division of the Royal Society for the Prevention of Accidents, 131, Sloane Street, London, S.W.1.

Lectures on Psychology

The Institute for the Scientific Treatment of Delinquency has arranged a course of eight lectures on "Selected Topics in Psychology" to be given by Miss Gertrude Keir, M.A., at the Institute, 8, Bourdon Street, Davies Street, London, W., on Thursdays, commencing May 26, at 6.30 p.m. The lectures are intended for students who have some basic knowledge of elementary psychology, and the fee for the course is 10s. Those wishing to attend should make early application to the Education Secretary.

Charities Ball

A Charities Ball organized by the Metropolitan Counties Branch of the B.M.A. will be held at B.M.A. House, Tavistock Square, London, W.C.1, on Thursday, May 26, at 8 p.m. for 8.30 p.m. The proceeds will be devoted to medical charities in urgent need of support. Patrons include the President of the Association and the Presidents of the three Royal Colleges. There will also be a cabaret and facilities for bridge. The cost of tickets including a buffet supper is two guineas each. Applications should be sent to the Secretary, the Charities Ball Committee, Metropolitan Counties Branch, B.M.A. House. Contributions to charities from those unable to attend the ball would also be most welcome and should be sent to the same address.

Tuberculosis Meeting at Liverpool

A joint meeting of the British Tuberculosis Association and the North-Western Tuberculosis Society will be held at the Medical Institution, Mount Pleasant, Liverpool, on Friday and Saturday, May 27 and 28. The programme is as follows: May 27, 2 p.m., Sir Henry Cohen, "Tuberculosis and General Medicine"; 2.45 p.m., discussion on "Domiciliary Treatment of Pulmonary Tuberculosis," to be opened by a representative of the British Tuberculosis Association, followed by Dr. R. Heller and Dr. C. H. C. Toussaint; 4.45 p.m., discussion on "Tuberculosis in Seamen," to be opened by Dr. R. N. Walker; 5.45 p.m., extraordinary meeting of British Tuberculosis Association; 7.30 for 8 p.m., informal dinner at Reece's Restaurant, Parker Street, Liverpool. May 28, 9 a.m., general meeting of British Tuberculosis Association; 9.15 a.m., demonstration of a series of cases of pulmonary tuberculosis treated by the more recent developments of surgery, as follows: "Thoracoplastic Operation using the Polythene Pack," by Mr. H. Morrison Davies and Mr. Leslie J. Temple, and (1) "Periosteoplastic Pneumonolysis" and (2) "Lung Resection," by Mr. F. Ronald Edwards; 10.45 a.m., "Rehabilitation in Surgical Tuberculosis," by Mr. J. P. Heron; 12 noon, colour film, "Surgical Treatment of Tuberculous Epididymitis" (by courtesy of Mr. J. Cosbie Ross).

SOCIETIES AND LECTURES

Monday

- EDINBURGH UNIVERSITY.—At Physiology Lecture Theatre, University New Buildings, Teviot Place, Edinburgh, May 9, 5 p.m., "The Prehistory of Medicine," by Dr. Douglas Guthrie.
- LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., May 9, 4.45 p.m., "Selective Toxicity with Special Reference to Chemotherapy," by Professor Adrian Albert.
- MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—May 9, 8 p.m., annual general meeting; 8.30 p.m., "Temperament," Annual Oration by Mr. A. C. Palmer.
- WEST LONDON MEDICO-SURGICAL SOCIETY.—At Royal Society of Medicine, 1, Wimpole Street, London, W., May 9, 8.30 p.m., Cavendish Lecture: "The Contribution of Law to Literature," by The Rt Hon Mr Justice Birkett.

Tuesday

- CHelsea CLINICAL SOCIETY.—At South Kensington Hotel, Queen's Gate Terrace, London, S.W., May 10, 7 for 7.30 p.m. Annual dinner.
- INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—May 10, 5 p.m., "The Sclerodermas," by Dr. C. B. Dowling.
- INSTITUTE OF LARYNGOLOGY AND OTITIS, 330, Gray's Inn Road, London, W.C.—May 10, 2.15 p.m., "The Respiratory Tract in Infectious Diseases," by Dr. E. H. R. Hargreaves.
- INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 10, (1) 11 a.m., "Serological Tests in the Diagnosis of Syphilis," by Dr. R. Thomson; (2) 5 p.m., "Genito-urinary Tuberculosis, I," by Mr. F. J. F. Barrington.
- LONDON UNIVERSITY.—At London School of Hygiene and Tropical Medicine, Keppel Street, W.C., May 10, 5.30 p.m., "Some Advances in Chemotherapeutic Research at the Pasteur Institute," by Professor Jacques Tréfouël (Pasteur Institute, Paris).
- LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., May 10, 5.15 p.m., "Physiological Properties of Ethyl Alcohol," by Dr. M. Grace Eggleston.
- WRIGHT-FLEMING INSTITUTE OF MICROBIOLOGY, St. Mary's Hospital Medical School, Paddington, W.—May 10, 5 p.m., "Biochemical Properties of the Bacterial Cell Wall," by Dr. E. F. Gale.

Wednesday

- GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—May 11, 8 p.m., "Pupillary Movements," by Dr. Fergus Campbell.
- INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 11, (1) 11 a.m., "Biological False-positive Reactions for Syphilis," by Dr. R. Thomson; (2) 5 p.m., "Calculous Disease of the Kidney and Ureter, I," by Mr. H. P. Winsbury-White.
- SOUTH-WEST LONDON MEDICAL SOCIETY.—At Bolingbroke Hospital, Wandsworth Common, S.W., May 11, 8.30 p.m. Seventh meeting of session in conjunction with Wandsworth Division of B.M.A. Subject: Demonstration of cases by the honorary medical staff of Bolingbroke Hospital.

Thursday

- BIRMINGHAM UNIVERSITY.—At Anatomy Theatre, Medical School, Birmingham, May 12, 4 p.m., "The Excretion of Water by the Kidney, with Special Reference to its Neurohypophyseal Control," William Withering Lecture by Professor E. B. Verney, F.R.S.
- DURHAM UNIVERSITY.—At Royal Victoria Infirmary, Tyne, May 12, 5.15 p.m., "The Morison Disease," Fifth Rutherford Morison Lecture by Dr. H. P. Saint (Capetown).
- EDINBURGH UNIVERSITY.—At Anatomy Theatre, University New Buildings, Teviot Place, May 12, 5 p.m., "Medical Aspects of Splenectomy," Honyman Gillespie Lecture by Dr. H. N. Robson.
- INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—May 12, 5 p.m., "Anogenital Pruritus," by Dr. B. Russell.
- INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 12, (1) 11 a.m., "Congenital Syphilis," by Dr. S. M. Laird; (2) 5 p.m., "Genito-urinary Tuberculosis, II," by Mr. F. J. F. Barrington.
- ROYAL SOCIETY, Burlington House, Piccadilly, London, W.—May 12, 4.30 p.m., "A Region of Biosynthesis," Bakcrin Lecture by Professor Harold Rastriek, F.R.S.
- ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—May 12, 4.30 p.m., "Psychiatry," lecture-demonstration by Dr. D. Curran.

Friday

- BIRMINGHAM UNIVERSITY.—At Anatomy Theatre, Medical School, Birmingham, May 13, 4 p.m., "The Excretion of Water by the Kidney, with Special Reference to its Neurohypophyseal Control," William Withering Lecture by Professor E. B. Verney, F.R.S.
- LONDON UNIVERSITY.—At King's College, Strand, W.C., May 13, 5.30 p.m., "Heart Metabolism and Coronary Disease," by Professor K. L. Gollwitzer-Meier (Hamburg).
- ROYAL MEDICAL BENEVOLENT FUND.—At Medical Society of London, 11, Chandos Street, Cavendish Square, W., May 13, 5.15 p.m., 113th general meeting.

Saturday

SOUTH-EAST METROPOLITAN REGIONAL TUBERCULOSIS SOCIETY.—At Royal Sea Bathing Hospital, Margate, May 14, clinical session, presided over by Dr. B. W. Armstrong, followed by luncheon at Nayland Rock Hotel, Margate.

APPOINTMENTS

MIDDLEMISS, J. H., M.D., D.M.R.D., F.F.R., Director of Radiodiagnostic Department, United Bristol Hospitals.

Dr. Middlemiss graduated at Durham University in 1940 and proceeded M.D. in 1947. He was formerly Assistant Radiologist at the Royal Victoria Infirmary, Newcastle-upon-Tyne, and is the author of several papers on radiodiagnosis.

Dr. James A. Doull, Medical Director, U.S. Public Health Service, has been appointed Medical Director of the Leonard Wood Memorial (American Leprosy Foundation). Dr. Doull succeeds Dr. H. Windsor Wade, who, because of ill health, has been relieved of administrative duties and appointed associate medical director. Dr. Wade will continue his pathological studies at Culion, Philippine Islands, and the editorship of the *International Journal of Leprosy*. The headquarters of the medical department of the Memorial has been transferred from Culion, P.I. to 1832 M Street, N.W., Washington 6, D.C., U.S.A.

BAIRD, Miss Eva Crickton, M.B., Ch.B., D.P.H., Assistant Medical Officer, Burgh of Hamilton, Lanarkshire.

FAY, I.R.O. M.D., D.P.H., Deputy County Medical Officer, Somerset County Council.

LAWSON, T. O. P. D., M.B., Ch.B., D.Obst. R.C.O.G., D.P.H., Medical Officer of Health and School Medical Officer, County Borough of Dudley.

PARKER, W. S., M.B., Ch.B., D.P.H., D.I.H., Deputy Medical Officer of Health, County Borough of Brighton.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

- Armin.—On April 18, 1949, to Dr. Margaret Armin (née Conway), wife of Dr. Richard Armin, a third daughter.
- Brownlee.—On April 1, 1949, at Edinburgh, to Margaret, wife of T. J. Brownlee F.R.C.S. Ed., twin sons.
- Glanville.—On April 10, 1949, at Maternity Wing, General Hospital, Sunderland, to Dr. Catherine Glanville, wife of Dr. Terry Glanville, a daughter.
- Green.—On April 25, 1949, to Drs. Mildred and Norman Green, of Stoke-on-Trent, a son.
- Rieby.—On April 19, 1949, at Lewisham, to Joan, wife of Dr. J. P. V. Rieby, a daughter.
- Woodruff.—On April 25, 1949, at the Middlesex Hospital, London, W. to Helen, wife of Dr. A. Waller Woodruff, a daughter.
- Yeates.—On April 3, 1949, at Newcastle-upon-Tyne, to Mr. and Mrs. W. Keith Yeates, a daughter.

MARRIAGES

- Gordon-Harris-Wright.—On April 23, 1949, at St. George's, Hanover Square, London, W., Ian James Gordon, M.B., Ch.B., Aberdeen, to Pamela Nonette Harris-Wright, M.B., B.S., M.R.C.S., L.R.C.P., London.
- Thomson-Mowat.—On April 14, 1949, at Heath Congregational Church, Halifax, George William Rosslyn Thomson, M.B., B.S., to Mary Stewart Mowat, M.B., Ch.B.

DEATHS

- Barelay.—On April 26, 1949, at Oxford, Alfred Ernest Barelay, O.B.E., M.D., D.Sc., F.R.C.P., of Oxford and Manchester.
- Churchill.—On April 23, 1949, Joseph Henry Churchill, M.R.C.S., L.R.C.P. of Byland House, Cleveland Walk, Bath.
- De'va.—On April 21, 1949, at Fielden House, London Hospital, Joseph Datta M.D., of Hatherley House, Central Park Road, East Ham, E 6.
- Hallday.—On April 18, 1949, at Highlands, Lacey Green, near Princes Risborough, Bucks, John Rutherford Hallday, M.D.
- Hocken.—On April 16, 1949, at 8, Tremena Road, St Austell, Cornwall, Melville Hocken, M.B., B.S., formerly of Halesworth, Suffolk.
- Hodson.—On April 18, 1949, at his home, Snarebrook, Bergholt Road, Colchester, Essex, Howard Bluntisham Hodson, M.D., D.P.H., aged 42.
- McKertrieh.—On April 14, 1949, Frederick John McKertrieh, M.B., C.M. Ed., of Dane View, Danbury, Chelmsford, Essex, aged 84.
- Melville.—On April 14, 1949, at Millbank Military Hospital, London, S.W.1 very suddenly, Charles William Francis Melville, C.B., M.B., Ch.B. Ed. Major-General I.M.S., Ret., aged 72.
- Neilson.—On April 13, 1949, at Woking, Surrey, Henry John Neilson, C.B.F. M.D., aged 86.
- Pattison.—On April 9, 1949, at 39, Montpelier Villas, Cheltenham, Blanche Sutton Pattison, M.R.C.S., L.R.C.P., aged 52.
- Panson.—On April 12, 1949, at Dyerth, Flintshire, Edward Basil Panson, M.B., B.Chir.
- Peach.—On April 5, 1949, at Palmerston North, New Zealand, Charles William Peach, M.B., C.M., aged 76.
- Richards.—On April 18, 1949, at Downes, Monkleigh, Bideford, Devon, Owen William Richards, C.M.G., D.S.O., M.Ch., F.R.C.S.
- Sewell.—On March 13, 1949, Sir Sidney Valentine Sewell, M.D., F.R.C.P., F.R.A.C.P., of Victoria, Australia.
- Syme.—On April 14, 1949, at Barnellian, Bardowie, Stirlingshire, William Smith Syme, M.C., M.B., Ch.B., F.R.F.P.S. Glas.
- Turner.—On April 17, 1949 (Easter Day), at Ty Newydd, Rugbo, North Wales, Annie Catharine (née Lyon), the faithful and beloved wife of Dr. A. H. Turner, and mother of Arthur and Isabel.
- Warner.—On April 20, 1949, at Royal Devon and Exeter Hospital, Harold Percy Warner, M.B., B.S., of Rydal, Woodford Green, Essex, aged 63.
- Wills.—On holiday at St. Helier, Jersey, James Robertson Wills, M.B., B.Ch. aged 46.



for the treatment of
HAYFEVER

'Benadryl'

It has been found possible to control the symptoms of hayfever in many patients by the oral administration of 'Benadryl.' This potent histamine antagonist is also invaluable for those who have not had time to acquire complete tolerance to grass pollen after desensitizing courses with pollen extract.

One 50 mgm. capsule of 'Benadryl' taken when hayfever symptoms first appear often gives relief for from three to five hours. Subsequent dosage depends on the response of the patient and on the prevailing atmospheric conditions. For infants and children Elixir 'Benadryl' or 25 mgm capsules are available.

Capsules : (25 and 50 mgm.) in bottles of 50 and 500
Elixir : In bottles of 4 and 16 fluid ounces

Parke, Davis & Co., Hounslow, Middx.

Inc. U.S.A., Liability Ltd

Telephone: Hounslow 2-6 (11 lines)

An important advance in Antisepsis

Strep is an important advance in antiseptics, being non-selective in action and effective against a wide range of pathogens.

Its activity is maintained in the presence of proteins and it is non-necrotic, non-toxic and non-staining.

It is miscible with water, normal saline and alcohol. Strep is a powerful deodorant and approximately



three times as effective as Liq. Chloroxenolis or lysol.

These advantages make Strep the better antiseptic for medical, surgical and obstetrical use.

STREPH

THE BETTER ANTISEPTIC

Literature and sample on application to
JEYES' LABORATORIES LIMITED
LONDON, E.13

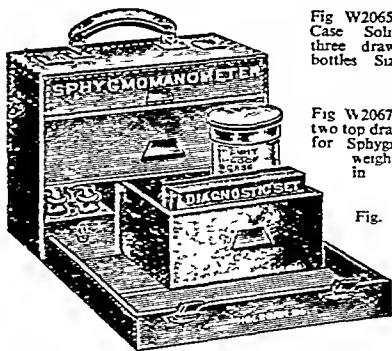
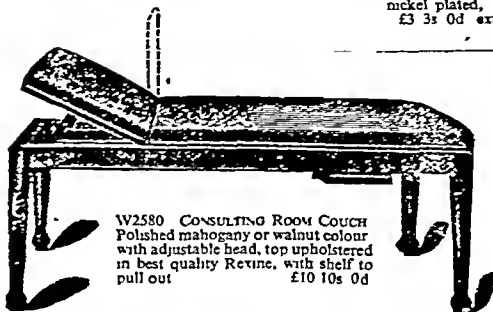


Fig. W2065 Surgeon's Visiting Case. Solid brown hide with three drawers and rack for bottles. Size 15x12x6 1/2 in. £9 15s 0d.

Fig. W2067. A similar bag with two top drawers and space below for Sphygmomanometer, light weight. Size 15 1/2 x 5 1/2 in. £7 13s 0d.

Fig. W2070 Midwifery Case. Brown cow-hide with washable lining, compartment below for rack of 6 bottles and sterilizer. £12 12s 6d

Sterilizer with stand and lamp, nickel plated, £3 3s 0d extra.



W2580 CONSULTING ROOM COUCH. Polished mahogany or walnut colour with adjustable head, top upholstered in best quality Revine, with shelf to pull out. £10 10s 0d

HOLBORN SURGICAL INSTRUMENT CO., LTD.,
15, Charterhouse Street, Holborn Circus, E.C.1
Hol. 2267/8

DILAUDID[®] (KNOLL)

brand
DIHYDROMORPHINONE
THE
MODERN ANALGESIC

A prompt and persistent
suppressant of acute pain
without the emetic & constipating
side effects of morphine.

Does not cause vertigo or
depression of mental faculties.

LITERATURE AND SAMPLES ON REQUEST

SAVORY AND MOORE LTD.
WELBECK STREET, LONDON. W.1

two important aids in infant care



BABY LOTION — for nappie changing and skin irritation

BABY POWDER — for use after every bath

Johnson's Baby Lotion for the routine care of infants' skin has already received wide medical support. A smooth, white, antiseptic oil-in-water emulsion, it reduces effectively surface bacteria, urine irritation, and other types of rash. Together with Johnson's Baby Powder, these are two important products every mother needs in the care of her baby.

Johnson & Johnson

JOHNSON & JOHNSON (GT BRITAIN) LIMITED SLOUGH AND GARGRAVE



JELONET is an improved non-adhesive, open-mesh dressing evenly and thoroughly saturated with petroleum jelly and 1 per cent Balsam of Peru. It is sterilized ready for use. When used as a dressing for shallow wounds or skin grafts its unique 'ventilating' character provides optimum conditions for the delicate epithelium or transplanted graft. Jelonet is obtainable in tins containing 36 cut pieces ($3\frac{1}{2} \times 3\frac{1}{2}$) or 8 yd. continuous strips.

SPECIAL PRICES TO HOSPITALS

JELONET
TRADE MARK
PETROLEUM JELLY GAUZE DRESSING

MADE IN ENGLAND BY T. J. SMITH AND NEPHEW LTD., HULL

THE POTENT NATURAL OESTROGEN



'PROGYNON' B OLEOSUM

(OESTRADIOL MONOBENZOATE
FOR INJECTION)

'Progynon' B Oleosum, by intramuscular injection, provides complete oestrogen replacement therapy with absence of toxic effects. It exerts a beneficial psychological action which is not found in treatment with synthetic oestrogens. Presented in strengths of 1 mg. (10,000 International Borgeate Units), and 5 mg. (50,000 International Borgeate Units), 'Progynon' B Oleosum is indicated in all conditions associated with oestrogen deficiency, such as the menopause, hypomenorrhoea, amenorrhoea, certain forms of dysmenorrhoea, oligomenorrhoea, etc. For local therapy, in atrophic vaginitis, kraurosis vulvae, etc. 'Progynon' Ointment and Vaginal Suppositories are available.

**BRITISH SCHERING
LIMITED**

ORIGINAL PACKS

1 mg. (10,000 I.B.U. in 1 cc ampoules) Boxes of 5 & 10
5 mg. (50,000 I.B.U. in 1 cc ampoules) Boxes of 2 & 5

167/169 GREAT PORTLAND STREET, LONDON, W.1

317/H

Painless INTRAMUSCULAR INJECTIONS

e.g. of **PENICILLIN, LIVER EXTRACTS, ARSENO-BENZOLS, BISMUTH, etc.**

Many substances create some pain on intramuscular injection. Novutox injected at the same time will prevent this pain.

Most substances are compatible with Novutox, which is also non-destructible to penicillin during the time that the latter is undergoing absorption.

Mixtures with Novutox should be made immediately before use **ONLY**.

NOVUTOX
*Self-Sterilising
Local Anaesthetic*

Each c.c. of Novutox 2% contains 0.02 gm. ethocaine hcl., 0.00002 gm. epinephrine and 0.00002 gm. capryl hydrocupreitol hcl. Other strengths of Novutox contain these elements (with or without epinephrine) in varying proportions.

PHARMACEUTICAL MANUFACTURING CO. LTD.
THE LABORATORIES, CHELTENHAM, GLOS.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

First Aid for Carbolic Poisoning

Q.—What first-aid treatment should be given in cases of poisoning by phenol and by cresol antiseptics?

A.—The object of first-aid treatment in poisoning by phenol or related antiseptics must be to evacuate from the stomach as much of the ingested poison as possible and so prevent or minimize its absorption and its local effects. The main form of first-aid treatment is therefore gastric lavage. Repeated large quantities of lukewarm water should be used until the washings are free from the smell of carbolic. This end-point may be difficult to determine, as the operator, often working in an atmosphere laden with the smell of carbolic, will fail to detect by smell the relatively faint traces of the substance in the later washings. After this repeated lavage one of the reputed antidotes may be introduced into the stomach—for example, magnesium sulphate or sodium sulphate, 1 oz. (31 g.), or sugar of lime, $\frac{1}{2}$ oz. (15.5 g.), in half a pint (284 ml.) of lukewarm water. The value of these substances is not satisfactorily established, however, and in any case they should be removed from the stomach after an interval of 10 to 15 minutes, and renewed if considered advisable. Alternatively, white of egg in milk may be administered, or liquid paraffin, either of which may be of some use in diminishing absorption and protecting the alimentary mucosa. If the respiration is failing, artificial respiration should be maintained and respiratory and cardiac stimulants can be injected. Caffeine and fluids may be given by rectum. The administration of fluids intravenously is of value but can hardly be considered a first-aid measure.

It must be emphasized, however, that the feature of first-aid treatment most likely to be of substantial value is the prompt evacuation of the poison before absorption and severe local necrosis have taken place. Too much must not be expected from the routine use of any known antidote. It should be remembered that carbolic is absorbed through the skin and also by inhalation. Where the skin surface has been contaminated the area should be thoroughly cleansed, and for this purpose alcohol is recommended.

Intravenous Saline in Intermittent Claudication

Q.—What is the rationale of the use of intravenous hypertonic saline in cases of intermittent claudication? Has this method of treatment proved of any value in cases with arterio-sclerotic changes?

A.—Intravenous injections of hypertonic saline have been used widely in the treatment of intermittent claudication, whether due to thrombo-angiitis or to arterial degeneration. Temporary benefit has often been reported. The effect is thought to be produced by suddenly increasing the blood volume and thus promoting vasodilatation, which favours the collateral circulation in the affected limb. The results obtained with saline are transient, and the method has fallen into disuse because it was often necessary to infuse a litre daily. Promising results were reported with plasma transfusion, but enthusiasm was damped when several patients developed homologous serum jaundice.

Serological Diagnosis of Whooping-cough

Q.—To what extent can the serological diagnosis of whooping-cough be relied on? What recorded experiences are there bearing on this subject?

A.—Various methods have been used to demonstrate the presence of specific antibodies in the blood of patients with whooping-cough. These antibodies develop rather late in the course of the infection, usually from the third week onwards, and are therefore of little value for early diagnosis. The two methods which have been most commonly used in this country are the complement-fixation test and the agglutination reaction.

In a child a positive reaction to the complement-fixation test in a dilution of 1 in 4 or more of the patient's serum, using a killed culture of *Haemophilus pertussis* as antigen, is very suggestive of infection. The agglutination reaction is more variable and requires a fresh living culture for its performance. In the U.S.A. the opsonocytaphag reaction and a mouse test for protective antibody are also used. British references to the use of the complement-fixation test and agglutination reaction in pertussis are, respectively, Donald, A. B., *British Medical Journal*, 1938, 2, 613; and Evans, D. G., and Maitland, H. B., *J. Path. Bact.*, 1939, 48, 468.

Teaching Writing to the Left-handed

Q.—Is there any standard method of teaching writing to the left-handed child? I know that such children should not be forced to use the other hand for writing, as this may lead to stammering or other forms of hesitancy.

A.—In teaching left-handed children to write, the following method has been found useful: (1) Place the paper slanting to right, not left. (2) Hold the pencil $\frac{1}{2}$ to 2 inches (3.75 to 5 cm.) from the point, so that the hand does not block the view of what is being written. (3) Train the child to visualize beforehand what he is going to produce, as he would if drawing an object. (4) To encourage the movement from left to right, start by using both hands at the same time, making circles and strokes. Practise slope towards right. (5) Write from a copy, very slowly and carefully, beginning with repeated single letters and without lifting the pencil from the paper. (6) Develop ambidexterity in other skills, such as woodwork and games.

It is very important to avoid fatigue and hurry. Exercises should be carried out slowly and for short periods. The mechanical difficulties of left-handers are sometimes made worse by the anxiety of feeling an oddity, so this should of course be avoided so far as possible. It may be useful to stress the fact that the left-handed cricketer or tennis-player may confound his opponents by his sinister dominance.

Burning Buddleia

Q.—When old Buddleia wood was burned in the garden I noticed a sweetish smell in the air and was affected in the nose and chest (I am a hay-fever subject). Not only did I sneeze, but I was rendered heavy and drowsy and "queer in the head." What particular ethereal oils or olkoloids in the tree would cause these reactions?

A.—Hypersensitivity to odours of plant origin has often been recorded as a cause of asthma and rhinitis. Thus asthma may occur in carpenters working with the wood of coniferous and other trees. With regard to Buddleia, however, no record can be found in the standard botanical reference books of any ethereal oil or alkaloid occurring in any species growing in this country. A Mexican species—*Buddleia perfoliata*—has leaves which contain an oil with a peculiar but pleasant odour, due apparently to the presence of fatty aldehydes. This species, so far as is known, is not in cultivation in this country.

Weight Increase in Pregnancy

Q.—What is the normal gain in weight of a pregnant woman, and what are the limits of normal variation? How is the increase accounted for?

A.—The gain in weight during normal pregnancy is subject to wide variation, but for practical purposes is generally reckoned as 24 ± 10 lb. (10.9 ± 4.5 kg.). According to L. G. Chesley (*Amer. J. Obstet. Gynec.*, 1944, 48, 563) two-thirds of normal women gain between 13 and 35 lb. (5.9 and 15.9 kg.) but one-sixth more than 35 lb. The total increase in any one case, however, is to some extent dependent on the woman's initial bulk, and Stander, H. J., and Pastore, J. B. (*ibid.*, 1940, 39, 928), suggest that it should not exceed 25% of the pre-pregnancy weight. There are, however, many exceptions even to this. The gain does not take place regularly throughout pregnancy. In the first three months there is often little change, and even a loss may be recorded, especially when the woman has vomiting or anorexia. In the last two or three weeks there is also a tendency to lose, or to cease to gain, weight, probably as a result of increased fluid excretion. It has been said that at no time should the monthly increase exceed 5 lb. (2.26 kg.), otherwise

it may indicate occult oedema and the threatened onset of toxæmia. In fact this sign is quite unreliable, and there may be a gain of as much as 10 lb. (4.5 kg.) in any one month without the development of toxæmia.

The increase in weight is accounted for by: full-term child, 7½ lb. (3.4 kg.); liquor amnii, 2½ lb. (1.1 kg.); placenta, 1 lb. (0.45 kg.); enlargement of uterus, 2 lb. (0.9 kg.); breast development, 3½ lb. (1.58 kg.); protein retention not included under other items, 4 lb. (1.8 kg.); increase in blood volume, 3½ lb. (1.58 kg.); while the remainder is due to fluid retention in the tissues and a general deposition of fat.

Sterilizing Skin before Injection

Q.—What do you consider the best method of sterilizing the skin before immunization?

A.—For sterilization of the skin before subcutaneous or intramuscular injection of antitoxin, toxoid, or vaccine used in passive or active immunization a quickly acting disinfectant is needed, and preferably one which stains the skin so that the sterilized area can readily be seen. For this purpose tincture of iodine, or 1 to 2% iodine in 70% alcohol, is undoubtedly the most effective, since it sterilizes the skin in the least time it takes to dry—about 15 to 20 seconds. The skin should not be previously washed. Alternatively, 70 to 80% alcohol by itself may be used; absolute alcohol and methylated spirit are much less effective. Some cationic detergent preparations like "cetavlon" or "zephiran" are also quickly effective if used in 70% alcohol. The mercurial preparations, antiseptic dyes, hypochlorite, ether, and "dettol" have a slower or otherwise imperfect disinfecting action on the skin.

Hyoscine Hydrobromide for a Child

Q.—Is it safe to give hyoscine hydrobromide to a child of 23 months? If so, in what dosage? The child in question is always travel-sick, and is shortly going to Ireland.

A.—It would be quite safe to give hyoscine hydrobromide to a child of 23 months. A suitable dosage would be 1/400 gr. (0.16 mg.) half an hour before sailing, and a second 1/400 gr. at sailing time.

Disturbed Micturition in Disseminated Sclerosis

Q.—Can you suggest any treatment to counteract precipitancy and frequency of micturition in a case of disseminated sclerosis?

A.—The precipitancy and frequency of micturition in disseminated sclerosis arise, of course, from interference with the pathways concerned with the higher control of the bladder reflexes. As the cause is the actual damage to or loss of these fibres, medical treatment is of necessity disappointing. Theoretically, decrease in sensation of the bladder will improve the complaint, but this is difficult to attain, and the nearest approach to it is the use of sedatives, which the patient has probably already tried. Any infection, ill-health, or deterioration in general well-being makes these symptoms worse, and therefore should be prevented if at all possible. Limitation of fluid intake within reasonable limits also helps. Atropine has been used, but is disappointing.

Toxicity of Phenobarbitone

Q.—I am interested in the toxic reactions to phenobarbitone (soluble). What symptoms have been reported so far? What effect, if any, has it on the appetite?

A.—Most of the reported cases of phenobarbitone poisoning by ordinary doses have occurred in people who have an idiosyncrasy to the drug. The most frequent symptoms have been various types of skin eruptions, often accompanied by fever, mental disturbances, and sometimes nausea, gastric pain, and diarrhoea. There is much variation in the central nervous symptoms, which include delayed effects, extreme depression, excitement, and sometimes even mania. As with alcohol, there is a certain amount of habituation, but little real tolerance develops, and withdrawal reactions characteristic of morphine have not been observed. Prolonged use may lead to the development of psychical degeneration and nausea.

Its effect on appetite has been studied only in rats (M. R. Jones, *J. comp. Psychol.*, 1943, 35, 1). In these experiments

each rat received 80 mg. per kilo of body weight daily, which is large by human standards. During the first week the drugged rats ate more than the control animals; after the first week they ate less. Cessation of injections after the sixth week caused a drop in the food intake in the experimental but not in the control groups. This decrease in food intake may be permanent, for the lower rate of growth persists.

Treatment of Gout

Q.—What treatment is likely to benefit an active man aged 60 who has suffered for years from rheumatism and had his first attack of gout in the left big toe eight weeks ago? He has lived for some years in a hotel, and any request for a special diet, or any serious disability, would almost certainly result in his being asked to leave.

A.—The presumption in this case appears to be that all the patient's previous "rheumatism" has in fact been due to latent gout, which has at last declared itself in its true colours. With regard to treatment, this of course implies a permanent regimen, although this need not be made unduly difficult in this case, for the reasons given. The patient should, however, avoid alcohol, lead as quiet and regular a life as possible, with early bed, and feed on simple, plainly cooked food without condiments. He should endeavour to avoid "offal," such as liver, heart, kidney, etc., and should considerably increase his intake of non-alcoholic fluids, preferably between meals. If in the future he has an acute attack, it will be essential to put him to bed for a day or two. Even if it is possible for him to struggle along, it is more likely to become chronic if he does so. For one day he should be given cinchophen 7½ gr. (0.5 g.) thrice daily. During this period he should also start taking tab. colchicine, 1/64 gr. (1 mg.) hourly until he develops slight diarrhoea or vomiting; he should then drop the colchicine to one tablet thrice daily for two weeks. In the intervals between the acute attacks, as regards medicinal treatment (provided there is no contraindication, such as liver disease), he should continue one day every month (say, Sunday) on cinchophen for the next six months; if the cycle can thus be broken, he may then develop no further acute attacks.

NOTES AND COMMENTS

Spread of Tuberculosis by Books.—Dr. T. PETERSON (Plymouth) writes: With reference to the question and answer on the possibility of books handled by tuberculous patients carrying tubercle bacilli ("Any Questions?" April 2, p. 601), I was surprised to see the statement made in your answer: "Fortunately the bacilli become non-viable in about 48 hours when they are dry. . . ." Surely this is not in accord with accepted teaching. For instance, Muir and Ritchie (*Manual of Bacteriology*, 1937, London, p. 414) state that dried phthisical sputum has been found to contain virulent bacilli after two months. Another authority gives a life of ten days or more in road dust, or up to two months if kept in the dried state in the dark. The latter condition might well be found in an untreated library book. I may say that this question is of particular interest to me, since I have for some time been considering the problem of the provision of separate library facilities for tuberculous patients not in hospital.

Cause of Rib Fracture.—Dr. KEVIN BYRNE (Lakemba, New South Wales) writes: A patient—muscularly strong—owner of a dairy, used to collect as cow-feed waste cabbages from Sydney's "Paddy's Markets," tossing them on a large fork over a high-sided receptacle fitted to his lorry. One day a particularly heavy forkful slipped off as he started to toss. The anticipated exertion was used on the lightened load. Muscular effort alone accounted for six very badly fractured ribs, three on each side.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atiology, Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Westcent, London.* MEMBERS' SUBSCRIPTIONS should be sent to the British Medical Association, 11, St Andrews Place, London, N.W.1. TELEPHONE: EUSTON 2111. B.M.A. SCOTTISH OFFICE: 7, Drumshough Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY MAY 7 1949

THE SECRETARY REPORTS

THE WORLD MEDICAL ASSOCIATION

In the week following Easter I was away in Spain attending the council of the World Medical Association. It may be of interest to members of the Association if I describe some of the work that this body is doing. But first a few words about its history. Before the war there existed a useful international body, the Association Professionnelle Internationale des Médecins, which provided a convenient medium for the exchange of ideas and information among the national medical associations of European countries. Towards the end of the war the need was felt for an even more comprehensive body which would not only continue and extend the work of the A.P.I.M. but would make available to the international governmental organization—the World Health Organization—the considered views of the profession. After preliminary conferences in London in July, 1945, and in September, 1946, at the latter of which 33 countries were represented, it was resolved to build upon the basis of the old A.P.I.M. a more ambitious body, to be called the World Medical Association, and a committee was appointed to prepare a constitution. In Paris in September, 1947, the constitution was approved and the first formal meeting of the assembly of the association was held. Over 40 countries were represented, and almost all of them have become members of the association. A council of 10 members, with *ex officio* members, was elected.

Objects of WMA

The assembly adopted the following as the objects of the association:

(i) To promote closer ties among the national medical organizations and among the doctors of the world by personal contact and all other means available.

(ii) To maintain the honour and protect the interests of the medical profession.

(iii) To study and report on the professional problems which confront the medical profession in the different countries.

(iv) To organize an exchange of information on matters of interest to the medical profession.

(v) To establish relations with, and to present the views of the medical profession to, the World Health Organization, Unesco, and other appropriate bodies.

(vi) To assist all peoples of the world to attain the highest possible level of health.

(vii) To promote world peace.

The World Medical Association is supported partly by the subscriptions of its members—national medical associations of the different countries—and partly by a very generous annual donation from a mixed medical and lay committee in the United States of America. The headquarters was established in New York and Dr. Louis Bauer appointed secretary-general. In its first year the World Medical Association was necessarily preoccupied with problems of organization, though it managed to deal with at least two subjects of wide interest. The council met in New York in the spring of 1948, and prepared for the second general assembly, held in Geneva last year, a report on German war crimes and another giving information about the medical profession and forms of State medical provision in 23 countries. The Geneva assembly, like its predecessor, was well attended, and the British representatives included the Chairman of Council of the B.M.A. and the Chairman of the Representative Body.

Madrid Meeting

The Madrid meeting of the WMA council, which was attended by Dr. Pridham as a member of that body and by myself as president-elect, got down to a number of important problems

in preparation for this year's general assembly, to be held in London from Oct. 11 to 14. Following preparatory work by subcommittees, conducted by post, the council completed a report on the standards of medical education, an analysis of unqualified practice and such limitations as are applied to it, and a report on what we should call the patent-medicine problem. Both these reports embodying information from many of the countries of the world. In addition it approved, for report to the general assembly, a document in which the national health or social security schemes of 20 countries were analysed in relation to the principles adopted in Geneva last year.

A committee of the council, over which Dr. Cibré presides, is at present at work on a draft international code of ethics, and Dr. Pridham is chairman of a committee on postgraduate medical education.

My impression of the recent council meeting is that although its members come from different parts of the world, with all the difficulties of language which that involves, they have really begun to get down to problems of mutual concern and to collating information. Dr. Routley, secretary of the Canadian Medical Association, is chairman of the council, and its members are: Dr. Henderson, of the United States; Dr. Pridham, of Great Britain; Dr. Bustamante, of Cuba; Dr. Yui, of China; Dr. Sen, of India; Dr. Cibré, of France; Dr. Knutson, of Sweden; Dr. Glorieux, of Belgium; Dr. Tornel, of Spain; with, as *ex officio* members, Dr. Leuch, of Switzerland (treasurer); Professor Marquis, of France (president); and Dr. Hill, of Great Britain (president-elect). Every member of the council turned up, almost all having travelled by plane. The expenses of council meetings are met, as are the expenses of the New York office, from the moneys provided by the American committee. The expenses of delegates attending the general assembly are met by the member countries which send them.

The World Medical Association publishes a *Bulletin*, which is to appear quarterly. The first issue has just been published, and a copy of it will be sent in due course to members of Council, members of the Representative Body, to Division Secretaries, and to any individual practitioner who cares to send me a postcard.

Contact with WHO

One of the most interesting reports made to the Madrid council meeting was that of its observer at the World Health Organization, Dr. Maystre, of Geneva. From what he said it is clear that, just as the British Medical Association needs to maintain a close if somewhat critical association with the Ministry of Health, so the profession throughout the world needs, through the World Medical Association, to maintain close touch with what is a purely governmental body—the World Health Organization. For the most part the World Health Organization consists of governmental representatives, although it is significant that in the case of the United States, Canada, and India the governments have thought fit to include in their delegation practitioners not in governmental employment. While the World Health Organization meets for weeks at a stretch, the World Medical Association can meet only twice a year, once in assembly and once in council, and the need for its existence—if only to maintain this liaison—is becoming pretty clear.

The present position can perhaps be best summed up by saying that, thanks to some very enthusiastic workers and America's generosity, the World Medical Association has made a good start and has begun to get down to some very useful work, not the least of which is the preparation of factual reports describing and comparing what is going on in different parts of the world in a number of fields, including the relations between the profession and the State.

National Health Service

REGIONAL ORGANIZATION OF MINISTRY OF HEALTH

The Ministry's regional organization has been adjusted to meet the changed circumstances due to the National Health Service Act and the National Assistance Act. The Minister has transferred the functions of the principal housing officers to principal regional officers, who are working in the regions. They are assuming full regional responsibility for the housing work and carrying out (with the help of public health nursing officers, welfare officers, and other regional staff) the duties previously performed by general inspectors and the regional officers for health services, whose appointments as such will be ended.

The principal regional officers have no executive functions in relation to regional hospital boards, hospital management committees, boards of governors, executive councils, or local health authorities. They collaborate with the regional medical officers in the regions and maintain close contact with these boards and committees in order to exchange information and keep the Minister informed of local developments over the whole range of the health services. They also exercise the powers of inspection prescribed by the National Assistance (Powers of Inspection) Regulations, 1948.

Principal Medical Officers

The functions of the principal regional officers are complementary to those of the principal medical officers, who work on the basis of hospital regions and operate mainly from Whitehall. In general a principal medical officer deals with a group of three regional hospital boards and with the local health authorities and local authorities wholly or mainly within those regions. Each has a small team of nurses and medical officers working under him. The names of the principal medical officers and their medical staff are as follows:

Newcastle, Leeds, and Sheffield Hospital Regions.—Principal Medical Officer: Dr. G. Lilico. Medical Officers: Maj.-Gen. A. D. Fraser (at Newcastle R.O.); Dr. K. M. Hirst; Dr. Johnstone Jervis (at Leeds R.O.); Maj.-Gen. R. W. D. Leslie (at Nottingham R.O.); Dr. D. M. Lyon.

East Anglian, N.W. Metropolitan, and N.E. Metropolitan Hospital Regions.—Principal Medical Officer: Dr. A. L. Banks. Medical Officers: Dr. R. M. Shaw; Dr. C. Sims-Roberts; Dr. D. S. Todd-White.

S.E. Metropolitan, S.W. Metropolitan, and Oxford Hospital Regions.—Principal Medical Officer: Dr. G. E. Godber. Medical Officers: Dr. M. Manson; Dr. A. E. Martin; Dr. A. L. Winer.

South-Western Hospital Region.—Principal Medical Officer: Dr. J. Ferguson. Medical Officers: Dr. R. Elliott; Dr. C. Grant Nicol.

Manchester and Liverpool Hospital Regions.—Principal Medical Officer: Sir Alexander Hood. Medical Officers: Dr. M. G. Gorrie; Dr. J. M. Ross (at Manchester R.O.).

Birmingham Hospital Region.—Principal Medical Officer: Dr. G. A. Clark. Medical Officer: Dr. C. A. Seeley (at Birmingham R.O.).

ANAESTHETICS FOR DENTAL OPERATIONS

The Ministry of Health has issued a statement on payments for giving anaesthetics for dental operations. An anaesthetist on the staff of a hospital who assists a dentist holding a hospital appointment does the work as part of his hospital services and does not receive a fee from the dentist. A general practitioner holding an appointment at a general-practitioner hospital solely for the purpose of giving general medical services would receive payment from the dentist when the dentist holds no hospital appointment but is treating an in-patient in a general-practitioner hospital where such facilities have been given by arrangement with the management committee. However, if the general practitioner is on the staff of the hospital as an *anaesthetist* he would not receive a fee.

Where the patient is in a private pay-bed by private arrangement with the dentist and has not been accepted by the dentist under Part IV of the Act: if the anaesthetist is a whole-time officer of the hospital board or management committee and not entitled to private practice, he would do the work as part of

his hospital services; if the anaesthetist is a part-time officer and entitled to private practice, he may be paid by the patient if the patient arranges for his services privately. Where the patient is in a private pay-bed by private arrangement with the dentist and has been accepted by the dentist under Part IV of the Act: if the anaesthetist is a whole-time officer and not entitled to private practice, he would do the work as part of his hospital services; if the anaesthetist is a part-time officer and entitled to private practice, he may be engaged and paid by the dentist.

NATIONAL SERVICE AND N.H.S. SUPERANNUATION RIGHTS

Under the National Health Service Superannuation Regulations a medical practitioner who joins H.M. Forces may reckon his service in the Forces for superannuation purposes provided he continues to pay the contributions he would have made had he remained in civilian employment. Similarly, the employing authority is required to continue the contributions it would have paid. In general, the amount of the contribution in the case of a practitioner is 6%, and in the case of the employing authority is 8%, of the salary the practitioner was receiving before joining the Forces. If these contributions are not continued the practitioner will be unable to reckon his service in the Forces and will also lose the right to reckon any hospital or other service before joining the Forces in respect of which he paid superannuation contributions. In this case the practitioner is entitled to claim a refund of superannuation contributions already paid plus compound interest at the rate of 2½% per annum.

In the case of practitioners who were assistants to general practitioners in the National Health Service before entering H.M. Forces and who decide to continue their superannuation contributions, the employing authority's contribution of 8% of the assistant's salary is payable not by the general-practitioner employer but by the executive council of the area concerned.

Practitioners entering H.M. Forces who desire to preserve their superannuation rights and to continue their contributions should send prompt notification to the hospital authority or executive council under whose jurisdiction they were last employed, and should make arrangements about the method of paying their own contribution of 6% to these bodies.

LOWER FEES FOR OPTICIANS

Opticians' fees for sight-testing and for dispensing glasses under the National Health Service have been reduced by an agreement of the Optical Whitley Council. The revised fees are being paid from May 1 pending the results of a fact-finding inquiry by a working party, on which opticians will be represented, under the chairmanship of Mr. W. Penman, a past president of the Institute of Actuaries. The working party will investigate the average time taken to provide the services, and there will be a separate investigation into the cost of overheads. The revised rates are as follows:

	New rate	Old rate
Sight-testing by ophthalmic optician	14s.	15s. 6d.
Dispensing glasses	24s.	25s.
Dispensing second pair of glasses of different power for same patients	10s.	25s.
Altering one lens, following a sight-test	12s. 6d.	25s.

In the case of bifocal glasses the fee has been increased from £1 5s. to £1 11s. 6d. Where the optician is not a dispensing optician, or where it is not necessary to prescribe glasses, the fee for sight-testing remains at 15s. 6d.

CLOSED AREA

The Medical Practices Committee has decided that the number of doctors providing general medical services is adequate in the Minchinhampton district of Gloucestershire.

CONTROL OF HOSPITAL EXPENDITURE

The Ministry of Health states that hospital management committees should not in future, without the prior approval of the regional board, incur expenditure on

(a) specific items and increases in staff not included in their estimates, even though the total for the particular sub-head is not likely to be exceeded; or

(b) extension of services likely to involve supplemental estimates. Where the board considers a particular development to be essential, the Ministry should be consulted, full details being supplied with an estimate of the maintenance expenditure likely to be incurred in the particular year and the subsequent annual cost.

This does not apply to expenditure outside the control of the management committee—e.g., wage awards, changes in policy, or sudden emergencies.

RHEUMATISM AND THE N.H.S.

MINISTER'S ASSURANCE

The Liaison Committee of the Empire Rheumatism Council and the British Rheumatic Association has written to the Minister of Health on the development of schemes for the specialist diagnosis and treatment of rheumatism and received his reply. The two letters are published below.

From Lord Horder, chairman of the Empire Rheumatism Council, and Dr. F. Herniman-Johnson, chairman of the British Rheumatic Association:

"We are writing on behalf of the Empire Rheumatism Council and the British Rheumatic Association at the unanimous request of our Liaison Committee to beg you to safeguard the interests of the rheumatic patient in the present economy drive.

"We recognize the need for economy in the administration of the Health Service Act. We are cognizant that your policy is to meet proportionately the needs of the different types of sick persons. We wish to point out that the rheumatic sufferers are in a particularly unfortunate position and are likely to suffer disproportionately unless a definite assurance is given that such is not your intention.

"In recent years new knowledge has been acquired, but when the health services and hospitals were taken over these had not been made available throughout the country. The absence of facilities for up-to-date diagnosis and treatment increases the economic burden of the country by the steady drain from productive work due to preventable disablement. Regional hospital boards have already, by the guidance and encouragement of the Ministry, started to provide schemes for the specialist diagnosis and treatment of rheumatism. Two have already done so, some others have them in preparation. There is a real danger that on grounds of economy all schemes other than those already approved will be dropped and those boards that have no schemes will continue to do nothing.

"We hope it is your intention that the rheumatic patients should have their fair share of service under the Act, and in the interests of national economy and of human suffering we ask that you will safeguard their position."

Reply from the Minister of Health:

"I appreciate the representations you have put forward in your letter of March 21 on behalf of the Liaison Committee of the Empire Rheumatism Council and the British Rheumatic Association about the provision of diagnostic and treatment facilities for rheumatic patients. As no doubt you will be aware, I have made it known to regional hospital boards that in seeking economies in the administration of the hospital and specialist services they should have particularly in mind the safeguarding of the interests of patients; and I have had no indication that the boards contemplate singling out for curtailment the services for the treatment of rheumatism, or that developments in this field will not continue so far as medical and other resources allow."

INCOME TAX

A proposal has been put to the Board of Inland Revenue that, as the financial position of many doctors has been adversely affected by the National Health Service, practitioners should have the opportunity, if they wish, of paying income tax by quarterly instalments. The Board has replied that it cannot authorize any general arrangement for the collection of tax from doctors by quarterly instalments. It suggests that any doctor who, because of reduced earnings, is unable to meet his tax liability on the due date should explain the position to the Collector of Taxes, who will consider each case on its merits.

PUBLIC HEALTH COMMITTEE

The Public Health Committee met on April 22 under the chairmanship of Dr. J. Fenton.

On the present position with regard to negotiations with the associations of local authorities no progress could be reported, and the policy of the Association with regard to advertisements for appointments in the public health field was being applied. It was reported that no advertisement in accordance with the Association's recommendations had been received, but that twelve had been refused. Ten advertisements had appeared in the lay press and had been made the subject of an "Important Notice" in the *Journal*.

The Chairman of Council reported that representatives of the G.M.S. Committee had recently met officials of the Ministry of Health, and in the course of their discussions a statement was made regarding arbitration (*Supplement*, April 23, p. 237). The profession had regarded arbitration as an integral part of the Whitley machinery. Dr. Dain suggested that the refusal of the associations of local authorities to participate in the approved Whitley machinery might be on account of the associated method of arbitration, in addition to other reasons. The chairman stated: "I think the Public Health Service to a man would never have agreed to Whitley machinery if we had known we were not to have arbitration." The committee agreed unanimously to express to Council its concern and dismay at the Ministry's attitude on this whole matter.

The committee was asked for advice on the position of medical officers shortly due to retire who have been requested by their local authority to remain in office in view of the Association's policy and the non-acceptance of advertisements for public health appointments by the medical press. The committee agreed that no exception be taken to any such arrangement made before Feb. 28, 1949, the remuneration being in accordance with the Modification of the Interim Revision of the Askwith Agreement. Where, however, such a request is made after that date the remuneration must be at the appropriate step on the scales as recommended by the Association. Any other arrangement would be unacceptable.

A "historical review," circulated by the County Councils Association regarding certain discussions on Whitley machinery and the question of negotiating permanent scales of remuneration for medical officers employed by local authorities, was discussed. The chairman called attention to a number of inaccuracies, but as these points had already been dealt with in correspondence by the Association and the Society of Medical Officers of Health the committee decided to take no further action.

Occupational Health Service

Dr. D. Stewart, chairman of the Planning Subcommittee of the Occupational Health Committee, attended by invitation and spoke on the subcommittee's report on the establishment of a co-ordinated occupational health service. The committee expressed general approval of the report, which will be published when it has been approved by the Occupational Health Committee and the Council.

British Medical Guild

The committee next considered the position of medical officers in the Public Health Service in connexion with the British Medical Guild. Dr. Dain referred to the method of contribution by general practitioners through the N.I.D.T., but stressed that other methods would be required for consultants and specialists and public health medical officers. The committee discussed the problem, together with the suggestions before them regarding the local committees. It was agreed to discuss the matter further with the Society of Medical Officers of Health before making final recommendations.

Other business included the reception of several reports of outside bodies and the information that an amendment of the Local Government (Compensation) Regulations, 1948, now enabled a period of war or national service to count in the appropriate period necessary to qualify for compensation on loss of employment or diminution of emoluments.

The Country's Money

Abuse of the Health Service by some patients seems to be worrying the Treasury. It annoys doctors too, for it tends to break up the relationship of trust that all agree should exist between doctor and patient. A doctor tells us that the wife of a diabetic patient on his list asked a few weeks ago for a prescription to replace a broken Record syringe for her husband. She produced the broken syringe and the doctor gave his prescription. A week later she returned with another broken syringe and asked for another prescription. The doctor pointed out that he had supplied one only a week before, but nevertheless gave it. When the same thing happened a week later he declined to give yet another prescription. A few days later he received the following letter from the patient: "Dear Doctor. In future please note if I send over to you for anything which I am entitled to I do not want you to tell my wife that I should buy a syringe, when I want to buy anything I don't want your advice or your complaints as I pay 9s. 8d. per week for your services and everything that goes with it, and I intend to have every ounce of flesh this is the second time you grumbled at my wife and please don't try and save the country money hoping you will keep this in mind."

Trend

A doctor sent us the following letter he has received from a patient "to show," as he says, "the trend of general practice": "Gauze (large roll), powder for my foot, lint, tablets for reducing, have you anything to take a quicker effect than the tablets I am now taking. I have a skin rash of small pimples mostly on the fingers round the nails, they itch very much also on my face, please could I have something for it, also a note for glasses, my old ones are broken, one of the lens have come out, I need them urgently. Thanking you. Please could my daughter have a large bottle of Bland's Pills."

Health Service Tax

We have recently heard suggested another scheme for saving money spent on the Health Service and commend it also to the Chancellor of the Exchequer, whose hints in the Budget speech about a special tax are unlikely to deter any Englishman from altering his accustomed ways until disaster, in this case financial, is upon him. The patient would be taxed 6d. when he visited the doctor, or the doctor visited him, by making him buy a 6d. postage stamp from the doctor. Doctors would buy sheets of them from the post office and stick one on their patients' cards on each occasion. There are some drawbacks: the scheme would make more work for already harassed doctors, and the patients might forget to bring their cards. Again, the Government might think it rather unsocialistic—but many Labour members thought that of Sir Stafford's Budget.

Brass Plates

The brass plate, although there is a certain flourish about it, is not always the most legible means of conveying information. In a doctors' quarter in a provincial town the other day we had occasion to look at a number of brass plates, and on some of them the name could only with difficulty be made out, and the surgery hours were quite indecipherable. Small wooden panels such as have come into vogue in Harley Street, and on which the name can be painted and repainted, although they may have a certain temporary look, can at least be read, as a good many names "writ in brass" cannot.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.
Non-County Borough Councils.—Dartford, WallSEND.
Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

Medicines for Private Patients

Q.—In "Medical Notes in Parliament" (Journal, Nov. 20, 1948, p. 921) Mr. Beyan, in reply to a question on the above subject by Sir Wavell Wakefield on Nov. 11, is reported to have stated that "he would not feel justified in supplying [private patients] medicines or appliances ordered by doctor who were not taking part in the Service. . . ." May it be understood from this that doctors who are taking part in the Service may order medicines and appliances on Form E.C.10 for such private patients as may remain to them?

If the answer to the above is in the negative, what is the position with regard to the supply of medicines and appliances by a doctor (who is taking part in the Service) to a patient who wishes to be his private patient and has previously registered on the list of another practitioner?

A.—The reply given by the Minister to Sir Wavell Wakefield on Nov. 11, 1948, is one of many which have been given on the subject of medicines for private patients. In other replies the Minister has made it clear that he is not prepared to admit the right of private patients to receive drugs, medicines, and appliances under the public Service, irrespective of whether or not the practitioner concerned is taking part in the public Service. Under the present regulations a practitioner cannot issue a prescription on E.C.10 to a patient who is consulting him privately, even though that patient may be registered with another practitioner.

Call from Police

Q.—Is it in order for the police to question a doctor on whether he is going to attend a patient on his list? I recently received a telephone call to visit a patient—no statement whether it was urgent or not. I replied that cases requiring visiting should be sent before 10 a.m. An hour later the police rang up to say they understood I had had a call to visit the case and was I going to attend? Thinking it was urgent I went at great inconvenience, to find the man had been in bed for four days with influenza. His chief anxiety was that he wanted a note to say he was unable to attend before the Regional Medical Officer the next day.

A.—No statutory duty is vested with the police to question a doctor on whether he is going to attend a National Health Service patient. In this case it is presumed the patient got on to the police and asked them to find out whether the doctor intended to visit him, and the police, not knowing whether the case was urgent or not, thought it right to get in touch with the doctor. The onus of deciding when a patient is visited must rest with the doctor, and the patient has his remedy if he considers his request to the doctor has not been reasonably dealt with.

Earnings and Superannuation

Q.—I am employed by a regional board as a part-time consultant. My work includes hospital sessions and domiciliary consultations as a surgeon. Does the amount I earn from domiciliary consultations count for pension in the same way as the salary for hospital sessions?

A.—Yes. Superannuation deductions and benefits are related to remuneration, and the Superannuation Regulations define the term "remuneration" to include all salary, wages, fees, and other payments paid or made to an officer as such for his own use, and also the money value of any apartments, rations, or other allowances in kind appertaining to his employment. It does not include payments for overtime or any allowances paid to him to cover the cost of providing office or laboratory accommodation or clerical or other assistance, or any travelling or subsistence allowance or other moneys to be spent, or to cover expenses incurred by him, for the purposes of his employment.

Correction.—Under the heading "Salary for Trainee Assistant" in the Supplement of April 23 (p. 239) the figure £750 should have been £700 as the maximum sum payable to a trainee assistant to provide for salary and boarding expenses. The figures tabulated in the example are correct.

Correspondence

Loading by Age

SIR,—In the *Journal* of April 16 (p. 685), under "Medical Services in Parliament," Mr. Bevan is reported as saying that there were doctors with lists of 4,000 who had fewer patients attend than had some doctors with a list of only 3,000. In parts of the country where the average age of the population is high, a higher percentage of people would need to see a doctor."

This is clearly a statement of fact, but it is not easy to assess the amount of extra work involved by having older patients, and this would only be possible by means of a complicated analysis of work done for patients at all age levels. The issue which arises is whether doctors should be paid more or caput if their practices contain high proportions of old people, and this could be done in two ways: (a) by increasing the number on the list by multiplying by the average age, or giving the district concerned a larger local pool in proportion to the average age of the local population; (b) by giving extra capitation fee for patients over a certain age, say years. Both of these methods involve complications and extra administrative work and therefore must be justified as necessary.

Offsetting them is the theory that the older age groups congregate only in the more desirable areas, and that the doctors to practise in these areas should not expect to be as well paid as their colleagues who practise in other less desirable places. How can this factor be evaluated? I suppose that the answer to allow doctors to distribute themselves as freely as possible, which has been B.M.A. policy, but I am surprised that the matter of loaded capitation fees for older patients has been little discussed.—I am, etc.,

Walsington, Devon.

J. F. BURDON.

Medical Service Committees

SIR,—We read under the heading "Medico-Legal" (*Journal*, April 9, p. 638) that a medical service committee has investigated a complaint of negligence. We read that "the committee found as follows. . . ." Finally we learn that representations are to be made to the Minister to withhold £10 from a certain practitioner's remuneration. In plain English, he is to be fined a sum of £10.

Certain thoughts arise from this affair, which is not the first of its kind. It is odd to find a committee, or for that matter Minister of the Crown, assuming the robes of justice. I had always thought that in this country the executive and the judiciary were widely apart in their functions.

We may expect cases of this kind to multiply in the future, perhaps with consequences that will be diverting and instructive. Suppose that a complainant also institutes proceedings under common law. What will the position be if the court finds negligence proved after a "committee" has recommended, and the Minister has imposed, a fine for negligence?

Some of your readers with legal qualifications may have something to tell us if they think it worth while, and will perhaps correct me where I am wrong.—I am, etc.,

Leeds.

W. J. BOLD.

Whitley Machinery

SIR,—At the Special Representative Meeting on Wednesday, March 30, when opposing the formation of a Medical Guild, I pointed out that the policy of the British Medical Association is in favour of Whitley Council machinery involving negotiations between employers and employees, and, in the event of dispute, recourse to independent arbitration.

In his reply the Chairman of Council stated (*Supplement*, April 9, p. 223): "If it were true that the Whitley Council covered all possibility of disagreement with the Government, there would be no need for this new body. But the Whitley Council would cover only certain aspects of their contract and there would be a field outside Whitley Council procedure which must be covered by themselves."

This reply is quite beyond my comprehension, as I have always been led to believe that the function of the Whitley

Council would be all-embracing. Adherence to the Whitley Council machinery being the accepted policy of the Association, I feel it is essential that the position be clarified at once. What are the items of service or salary conditions with which that Council will not be competent to deal? It is known, of course, that the proper interpretation of the Spens Committee findings is being argued at present; but, once Whitley machinery were in existence, what matters, as I say, would not come under their purview?

Our greatest asset as a democratic organization is our moral strength, and recourse to independent arbitration would inevitably ensure our just demands being met. If the proposed machinery cannot meantime deal fully with the position, then surely our efforts should rather be directed towards any alteration necessary to ensure that this defect is remedied.—I am, etc.,

Edinburgh

JOHN RIDDELL.

The Secretary of the Association writes: It is not expected that there will come within the ambit of Whitley machinery every question which arises between the Ministry of Health and the profession. For example, the terms of service of the general practitioner go into considerable detail about certification, prescribing, forms of records, and allocation of patient. It is probable that discussions on such matters as these will take place directly between the Ministry and the profession's representatives. On the other hand it has been clearly understood that major issues of remuneration do fall within the ambit of Whitley machinery. It was with this in mind that the Chairman of Council made his statement. The whole picture is now changed by the Ministry's change of attitude on the subject of arbitration in association with Whitley machinery, a point which has been fully dealt with in recent issues of the *Journal*.

Breach of Faith

SIR,—I wish to congratulate you on your leading article in the *Journal* of April 30 (p. 762). Some of us, who have never ceased from warning the profession, never expected any other result from the Ministry. However, I do not agree with your contention of the value of the British Medical Guild, and I have no intention of supporting it as it stands. Many changes are needed badly, and I do not support men who do not know their own minds from one Saturday to the following Wednesday, nor understand the meaning of the word freedom. Surely the time is fast approaching when the dictatorial methods of the Minister must cease, or the profession will put an end to his Health Service.—I am, etc.,

London, N.W.3

H. V. DEAKIN

Position of Registrars

SIR,—I heartily endorse all that Mr. I. Langdale Gregory states with regard to the position of registrars (*Supplement*, April 9, p. 227), and entirely agree that the B.M.A. should do something for the registrar class. So much notice is being taken of the complaints of the G.P.s and consultants. It is disappointing to read that negotiations concerning the appointments and remuneration under the N.H.S. Act for registrars are few and far between.

I beg to disagree with Mr. Langdale Gregory that war service in the armed Services should count towards seniority in any new appointment. I am sure there were many men who were graded out of the Services on medical grounds. Many of them immediately joined the E.M.S. and served their country in that way. I feel that it would therefore be unfair if a new appointment was denied to a man who had not been admitted to the Services simply on medical grounds. No "grant" was given to those who served in the E.M.S., which would have helped towards paying the expenses of gaining a higher degree.

It has been stated that registrars are to be divided into three grades. We do not know, however, whether a registrar is to be graded according to the number of years he has held registrar posts or according to the post he holds at the time of grading. The former is much the fairer method, and I feel that the B.M.A. should urge that point. If a registrar is to be graded according to the post he holds, then that man may never have held a registrar post before and yet find he is

graded I; on the other hand, a registrar who had held similar posts for some years may find that he is only in a Grade II post. That method of grading would, I think, be most unfair.

Permit me to add two further points: (a) no allowance has been given for superannuation contributions and deductions for N.H.I., which is a considerable added expense; (b) some registrars will have changed their posts since July 5, 1948. I trust that retrospective remuneration will still be from that date and not from the date of acquiring the new appointment.—I am, etc.,

Banbury, Oxford

K. MACKLESSACK LITCH.

Rules for Patients

SIR,—At last, after nine months of the N.H.S., the B.M.A. has realized that it would be a good thing to have a few rules and obligations for patients. Why this important point was not discussed before the appointed day will remain as much of a mystery as the omission of discussion of the mundane details of remuneration and compensation.

Fatigued though I am, and nine months nearer to my coronary thrombosis, I can just summon sufficient energy to request the B.M.A. to create some form of machinery whereby (a) the doctor would be protected from flippant night calls (e.g., when the baby won't go to sleep); (b) the patients would be prevented from whistling and shouting from doorways and windows in order to obtain visits; (c) the patients would be prevented from waylaying the doctor on his rounds in order to save a visit to the surgery; (d) the patients would be prevented from leaving messages for multiple visits in houses where the doctor is known to be attending. While such a state of anarchy exists no doctor can plan his day—or night.—I am, etc.,

Steafield Lines

ROLAND CUBITT.

Senior Hospital Officers

SIR,—To vigilant observers it must by now have become sufficiently clear that a rigorous process is going on, apparently for reasons of economy, whereby contracts conferring "full staff specialist and consultant status" will numerically be reduced to a minimum. This process will have most serious consequences for hundreds of senior officers in hospitals who on account of long years of service in a specialty (in some cases amounting to more than a decade), and also of scientific contributions, were until recently confident that they would have to be regarded as specialists.

Under these circumstances it would be only fair if, in order to avoid a widespread sense of frustration, the appropriate representatives would urge for an amendment whereby senior hospital officers would become eligible for one or two of the lower grades of the distinction awards, which for this purpose could be arranged in four grades. Quite a number of colleagues concerned with whom the writer has contact hold these views on the matter, and it is in the interest of such and like that the above suggestion is put forward for consideration.—I am, etc.,

Sedgefield, Co. Durham

STEPHEN KRAUSS.

Sickness Benefit

SIR,—May I be permitted to draw attention to an obviously unpremeditated injustice inherent in the National Insurance Act? Many tuberculous patients are incapacitated from earning their livings for much longer than 12 months. A patient who fell sick with this disease just before Jan. 5, 1948, and had only made 25 contributions to the N.H.I., receives no sickness benefit whatever. Another patient who became incapacitated just after and had 26 contributions to his credit is receiving and will continue to receive benefit, but at a reduced rate, for one year (312 days). Before he can afford a relapse he must make 13 contributions, when he will be entitled to benefit for a further period of 312 days.

Looking ahead, there will be patients falling sick with pulmonary tuberculosis in June, 1951, who will only have paid 152 to 155 contributions. It appears that if they allow themselves to be incapacitated at once they will receive full benefit for 312 days only, whereas if they postpone it until they have

paid 156 contributions they will be entitled to sickness benefit "without limit of time up to pensionable age."

Is there any legal onus on the Class II (self-employed) patient to "go sick" as soon as he is diagnosed, or upon his doctor to "put him on the club"? Or can the patient say, "All right, I will go to bed, to hospital, to sanatoria, and will follow all the advice you suggest, but I shall continue to employ myself, thinking beautiful thoughts and planning a better future for myself. I have 156 stamps on my card, and then I will chuck it and you shall put me on the club"?

Could a Class I (employed) patient who falls sick in similar circumstances say, "All right, I am for the time being no longer of any use to my employer but I am still a lot of use to myself, so I will transfer to Class II and will employ myself, thinking beautiful thoughts, etc."?

If the above suggestions are in order, prospective tuberculous patients and their doctors should be advised in order that they may not suffer unnecessary hardship. If not, they should be warned not to try it on.—I am, etc.,

Murderley, Norfolk.

GEORGE DAY.

Night Service for Doctors

SIR,—Having practised medicine continuously for fifty years and intermittently for the last ten years, I advise young doctors to try to combine and secure a night service of doctors for patients, and to take the strain off their nervous system. At the age of 82 all my confreres seem to be dead—as far as I know. In towns of a small population one doctor could do night duty for one week and so have a rotation, but in a large town the best plan would be special doctors to be appointed night work.

I have advocated all midwifery to be handed over to specialists in the interest of the patient as well as of the doctor. Thus a medical man would not be continuously on the chain and would get some relief from the daily exhausting grind of day and night work; and I believe the expectation of life would rise at least ten years.—I am, etc.,

Rothesay, Bute

J. T. MACLACHLAN

Special Tax

SIR,—Sir Stafford Cripps in his Budget speech mentioned the possibility of having to introduce a special tax or charge to help pay for the cost of the National Health Service. Mr. George Schwartz has elaborated this theme in an extremely enlightening article in the *Sunday Times* of April 24. I suggest that a charge of 10% of the cost of treatment should be made to the patient, and argues that this would cut down the demands on the Health Service besides helping to pay for it.

Collection of fees by hospitals, institutions, and chemists would be simple, but payment for general-practitioner services would be more difficult unless a flat rate of, say, 1s. per item of service was introduced—payable at the time to the doctor.

There is no doubt that the Service is being somewhat abused by the public and that the cost to the country is likely to increase in the future. Under these circumstances the prospect of an increase in remuneration for the medical profession will become more and more remote.

I suggest that the British Medical Association should very seriously consider this principle of contributory payments by the patient for use of the Health Service, and urge its introduction in due course.—I am, etc.,

London, S.W.1

F. G. WOOD-SMITH

Assistantships

SIR,—May I again express some of my views regarding assistantships and partnerships? I agree heartily with "Another Assistant" and "X. Y. Z." (*Supplement*, April 23, p. 250). With regard to hospital experience I consider this to be an invaluable apprenticeship to any branch of medicine and surgery and especially to G.P. work. The last sentence in "X. Y. Z.'s" contribution is in my opinion absolutely correct.

My own experience as an assistant is that, if adequate provision is not made for G.P.s, "partners," and "assistants," I too, already well advanced in the process of "unlearning" (very aptly put by "X. Y. Z.") because I have no time or leisure

which to study, keep up to date, or even re-learn, shall soon be "reduced to the ranks" of those whose panacea for most ills appears to be a certificate and a bottle of medicine. Is this that the N.H.S. wants? Incidentally I am not encouraged to attend confinements or do vaccinations or immunizations, and I am rash enough to undertake the latter I am asked to return the cards to my "hoss" for signature. The answer to this is surely obvious.

May I again make a few suggestions for serious consideration by the B.M.A.?

- (1) Provide adequate capitation fee and *no* sliding scale.
- (2) Restrict doctors' lists to 3,000 or under.
- (3) Let doctors with lists in excess of this be advised, later if necessary, to take on *another* doctor (not assistant), but
- (4) In the name of all justice and fairness (not to mention common sense) let executive councils pay the new doctor for the number of patients he is brought in to take over.
- (5) If a sliding scale of capitation fee is to be used the new doctor, even with a list of 1,000, should benefit from the increased capitation fee for the first 1,000. I am sure no doctor with a sense of fairness would object to this.
- (6) Regarding the free choice of doctor one hears so much about, his is liable to cut both ways. A good "new doctor" with an interest in his work would soon have more patients than he could handle. But patients who wish to transfer to him should put *his* name on their cards, and executive councils should pay him for these patients who transfer. This would encourage all doctors to give of their best. Why make it all one-sided and study the old G.P.s only?

Give the younger men, married and single, and in particular the ex-Servicemen with wives and children who are here to get to start and do a good job of work, encouragement and a fighting chance. Surely it is the object of the N.H.S. to provide a good service. Let it then provide for the men and women willing to give that service and make it a success.—I am, etc.,

ASSISTANT.

Trainee Specialists Association

SIR,—A Trainee Specialists Association in the North-West Metropolitan Region has been formed. The objects of the association are to further the professional interests and well-being of the trainee specialists. Will all hospitals which have not been notified to date accept the apologies of the Working Committee?

The next meeting will be held at Charing Cross Hospital on Monday, May 9, at 5 p.m. in the board-room, and it is hoped that all hospitals in the Region will send representatives.—I am, etc.,

A. B. BACKUS,
Chairman, Working Party.

25, Hospital Bridge Road,
Twickenham, Middlesex.

POINTS FROM LETTERS

Pay or Go Without

Dr. R. E. M. COKE HARVEY writes: Mr. X, who required merely a new frame for spectacles which suit him perfectly, called at an optician's shop. There he was informed that under the N.H.S. he could not have a new frame without making an appointment with the optician to test his eyes (unless he demanded to see a specialist); that such an appointment could not be made before April; that the specialist's prescription for the spectacles X does not need to change counted for nothing as against the optician's test. When X protested that the lenses were sound and all he needed was to have a fresh frame, the optician told him, "It is up to you to pay for them if you want them quickly." This, Sir, looks to me like the beginning of a racket which, unless nipped in the bud, will be able to trade on the urgency of the need of the myopic. I do not like the implied threat of "Pay or go without"; I do not see why an optician should be able to question a specialist's prescription, and indeed represcribe. . . .

Foreign Visitors

Dr. G. R. FABER (Maidstone, Kent) writes: It is reasonably obvious that public opinion is against free medical provision for foreign visitors, and I believe that if the profession would mutually decline to accept such persons as Health Service patients the general public would acclaim us, and the Government would alter their present attitude to this problem.

B.M.A. LIBRARY

The following books have been added to the Library:

- Adrian, E. D.: *Physical Background of Perception*. 1947.
Advances in Military Medicine. Two volumes. 1948.
 Appleton, A. B., Hamilton, W. J., and Tchepareff, I. C. C.: *Surface and Radiological Anatomy*. Third edition by A. B. Appleton *et al.* 1948.
 Bailey's *Textbook of Histology*. Twelfth edition revised by P. E. Smith and W. M. Copenhaver. 1948.
 Bancroft, F. W., and Wade, P. A. (Editors): *Surgical Treatment of the Abdomen*. 1941.
 Barton, B.: *And Now to Live Again*. 1948.
 Berson, M. I.: *Atlas of Plastic Surgery*. 1948.
 Biggart, J. H.: *Pathology of the Nervous System*. Second edition. 1949.
 Blackie, W. K.: *Malaria: with special reference to the African forms*. 1947.
 Buchanan, A. R.: *Functional Neuro-anatomy*. 1948.
 Cameron, H. C.: *Joseph Lister: the friend of man*. 1948.
 Clarke, H. T., *et al.*: *A Symposium on the Use of Isotopes in Biology and Medicine*. 1948.
 Corlette, C. E.: *A Surgeon's Guide to Local Anaesthesia*. 1948.
 Corner, G. W. (Editor): *The Autobiography of Benjamin Rush*. 1948.
 Cowan, A.: *Refraction of the Eye*. Third edition. 1948.
 Craig, C. F.: *Laboratory Diagnosis of Protozoan Diseases*. Second edition. 1948.
 Crew, F. A. E.: *Measurements of the Public Health: essays on social medicine*. 1948.
 Cunningham's *Manual of Practical Anatomy*. Eleventh edition revised and edited by J. C. Brash. Volume 1. 1948.
 East, T.: *Cardiovascular Disease in General Practice*. Third edition. 1949.
 Egel, F. F.: *Technique of Treatment for the Cerebral Palsy Child*. 1948.
 Eggston, A. A., and Wolff, D.: *Histopathology of the Ear, Nose, and Throat*. 1947.
 Flack, I. H.: *Lawson Tait, 1845-1899*. 1949.
 Franklin, K. J.: *Cardiovascular Studies*. 1948.
 Giglioli, G.: *Malaria, Filariasis, and Yellow Fever in British Guiana*. 1948.
 Gilroy, A. B.: *Malaria Control by Coastal Swamp Drainage in West Africa*. 1948.
 Guttmacher, A. F.: *The Story of Human Birth*. 1949.
 Hale-White, W.: *Materia Medica, Pharmacy, Pharmacology, and Therapeutics*. Twenty-eighth edition revised by A. H. Douthwaite. 1949.
 Heaton, T. G.: *Artificial Pneumothorax in Pulmonary Tuberculosis*. Second edition. 1947.
 Herhut, P. A.: *Surgical Pathology*. 1948.
 Hess, W. R.: *Die funktionelle Organisation des vegetativen Nervensystems*. 1948.
 Hevesy, G.: *Radioactive Indicators*. 1948.
 Housden, L. G.: *Handbook of Parentcraft*. 1948.
 Huffman, E. K.: *Manual for Medical Records Librarians*. Second edition. 1948.
 Ilgenfritz, H. C.: *Preoperative and Postoperative Care of Surgical Patient*. 1948.
 Isaacs, S.: *Childhood and After*. 1948.
 Israel, M. C. G.: *An Atlas of Bone-marrow Pathology*. 1948.
 Jones, E.: *Papers on Psycho-analysis*. Fifth edition. 1948.
 Joslin, E. P.: *Diabetic Manual for the Doctor and Patient*. Eighth edition. 1948.
 Kayne, Pagel, and O'Shaughnessy's *Pulmonary Tuberculosis*. Second edition revised and partly rewritten by Walter Pagel *et al.* 1948.
 Kendall, J. I.: *Microscopic Anatomy of Vertebrates*. Third edition. 1947.
 Kraines, S. H.: *Therapy of the Neuroses and Psychoses*. Third edition. 1948.
 Lawrence, R. D.: *The Diabetic A B C: a practical book for patients and nurses*. Tenth edition. 1948.
 Libman, E., and Friedberg, C. K.: *Subacute Bacterial Endocarditis*. Second edition. 1948.
 Lillie, R. D.: *Histopathologic Technic*. 1948.
 Luisada, A. A.: *Heart: a physiologic and clinical study of cardiovascular diseases*. 1948.
 Martindale, H.: *Some Victorian Portraits and Others*. 1948.
 Means, J. H.: *The Thyroid and its Diseases*. Second edition. 1948.
 McKie, E. C., and Mackenzie, I.: *Handbook of Surgery*. Second edition. 1949.
 Moss, J.: *Health and Welfare Services Handbook*. 1948.
 Padgett, E. C., and Stephenson, K. L.: *Plastic and Reconstructive Surgery*. 1948.
Recent Progress in Hormone Research. Volume 3. 1948.
 Soffer, L. J.: *Diseases of the Adrenals*. Second edition. 1948.
 Solé, A.: *Technik der Kinderärztlichen Differentialdiagnostik*. 1948.
 Southgate, B. A.: *Treatment and Disposal of Industrial Waste Waters*. 1948.
 Swire, M. E.: *Handbook for the Assistant Nurse*. 1949.
 Whillis, J.: *Elementary Anatomy and Physiology*. Third edition. 1949.
 Wolberg, L. R.: *Medical Hypnosis*. Two volumes. 1948.
 Wolf, G. D.: *Ear, Nose, and Throat: symptoms, diagnosis, treatment*. 1947.
 Zeta: *The Diagnosis of the Acute Abdomen in Rhyme*. Second edition. 1949.

Association Notices

COUNCIL OF THE B.M.A.

Election of 22 Members by Grouped Branches in the British Isles, of 2 Public Health Service Members, and of 1 Woman Member

The following have been elected for the session 1949-50:

North of England Branch:	Weldon P. T. Watts, Newcastle-upon-Tyne.
East Yorkshire and Yorkshire Branches:	Ian G. Innes, Hull.
Isle of Man, and Lancashire and Cheshire Branches:	Percy Malpas, Liverpool
Derbyshire, Leicestershire and Rutland, Lincolnshire, and Nottinghamshire Branches:	D. R. Owen, Chester.
North Wales, and Shropshire and Mid-Wales Branches:	J. Cottrell, Grimsby.
South Wales and Monmouthshire Branch:	D. B. Evans, Coedpoeth.
Bath, Bristol, and Somerset, Gloucestershire, and Worcestershire and Herefordshire Branches:	J. W. Tudor Thomas, Cardiff.
Southern and Surrey Branches:	H M Golding, Bristol
Kent and Sussex Branches:	N. E. Waterfield, Little Bookham.
Aberdeen, Dundee, Northern Counties of Scotland, and Perth Branches:	R. P. Liston, Tunbridge Wells.
Edinburgh and Fife Branches:	Mary Esslemont, Aberdeen.
Glasgow and West of Scotland Branch (Glasgow Division):	J. G. M. Hamilton, Edinburgh
Border Counties, Glasgow and West of Scotland (Five County Divisions), and Stirling Branches:	W. M. Knox, Glasgow.
	W. Jope, High Blantyre.

The following candidates have been nominated:
Bedfordshire, Cambridge and Huntingdon, Essex, Hertfordshire, Norfolk, Northamptonshire, and Suffolk Branches:
Metropolitan Counties Branch:

A. Staveley Gough, Watford
J. C. Pearce, Diss.
R. Kelson Ford, S.W.10
J. A. Gorsky, S.W.1.
F. Gray, W.C.1.
R. Hale-White, N.W.1
Lord Horder, W.1.
J. F. Murphy, S.W.8
Eric Steeler, W.1.
G. de Swiet, W.10.

Dorset and West Hants, South Western, and Wiltshire Branches:
J. A. Pridham, Weymouth
S. Noy Scott, Plympton.

Voting papers will be issued to the members of these Groups on May 14, 1949.

No nominations have been received for Group F (Berks, Bucks, and Oxford, Birmingham, and Staffordshire); Group R (Northern Ireland).

PUBLIC HEALTH SERVICE

The following have been elected: C. Metcalfe Brown (Manchester); R. H. H. Jolly (Wolverhampton).

WOMAN MEMBER

Janet Aitken (London), being the only candidate nominated for election by women members, is elected as a member of Council, 1949-50.

CHARLES HILL,
Secretary.

Diary of Central Meetings

	MAY
9 Mon	Joint Committee of B.M.A. and National Veterinary Medical Association, 2 p.m.
10 Tues	Conference of Honorary Secretaries of Divisions and Branches, 11.30 a.m.
11 Wed.	Council, 10 a.m.
24 Tues.	Scholarships and Grants Subcommittee, 11 a.m.
24 Tues.	British Pharmacopoeia Subcommittee, 2 p.m.
27 Fri.	Committee on the Postgraduate Education of General Practitioners, 2 p.m.
31 Tues	International Relations Committee, 2 p.m.

Branch and Division Meetings to be Held

BOURNEMOUTH DIVISION.—At Boscombe Hospital, Thursday, May 12, 8.15 p.m., annual Division meeting. Agenda: (1) Report of Representatives to Special Representative Meeting of March 29 and 30. (2) Instructions of Representatives to Annual Representative Meeting.

CAMBERWELL DIVISION.—At Dulwich Hospital, Friday, May 13, 8.30 p.m., annual general meeting. Dr. Charles Grosse: "Black Medicine."

EAST SOMERSET DIVISION.—At Small Hall, Wells, Sunday, May 8, 3 p.m., general meeting.

HASTINGS DIVISION.—At Roynl East Sussex Hospital, Wednesday, May 11, 8.30 p.m., annual meeting.

HENDON DIVISION.—At Hendon Hall Hotel, Friday, May 13, 8.30 p.m., annual general meeting.

LEPDS DIVISION.—At Medical School, Wednesday, May 11 8 p.m., annual general meeting.

METROPOLITAN COUNTIES BRANCH.—At B.M.A. House, Tavistock Square, London, W.C., Thursday, May 26, 8 p.m. for 8.30 p.m., Charities Ball. Tickets, including a buffet supper, 2 guineas each, obtainable on application to the Secretary, the Charities Ball Committee, Metropolitan Counties Branch, B.M.A. House.

NORTHERN IRELAND BRANCH.—At New Nurses' Home, Royal Victoria Hospital, Grosvenor Road, Belfast, Wednesday, May 11, 10.30 a.m., annual meeting. 1.30 p.m., at Grand Central Hotel, Royal Avenue, Belfast, luncheon.

TUNBRIDGE WELLS DIVISION.—At Kent and Sussex Hospital, Wednesday, May 11, 8.15 p.m. Dr. P. M. F. Bishop: "Hormone Therapy."

H.M. Forces Appointments

ROYAL NAVY

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Commander H. P. Widdup, V.R.D., has been placed on the Retired List.

Surgeon Lieutenant-Commander D. M. Sheppard, D.S.C., has terminated his commission on transfer to the R.C.N.(R.).

Surgeon Lieutenant-Commander N. M. Hancox has been removed from the Active List.

Temporary Surgeon Lieutenant-Commander D. Ross has terminated his temporary commission.

Surgeon Lieutenants W. S. Johnston, J. C. Jones, and E. O. Davies D.S.C., to be Surgeon Lieutenant-Commanders

ROYAL AIR FORCE

E. W. R. Fairley to be Squadron Leader.

DENTAL BRANCH

D. C. P. Battersea to be Squadron Leader.

ROYAL AUXILIARY AIR FORCE

Wing Commander J. P. Huins, O.B.E., A.F.C., has relinquished his commission on appointment to the reconstituted R.A.F.V.R., retaining his rank.

ROYAL AIR FORCE VOLUNTEER RESERVE

Squadron Leader (Honorary) H. L. Walker has relinquished his commission on cessation of duty.

Squadron Leaders G. B. Grayling, O.B.E., M. L. Maley, and G. P. Arden have relinquished their commissions on appointment to the reconstituted R.A.F.V.R., retaining the rank of Wing Commander.

Squadron Leaders R. G. H. Cunningham and K. A. Boughton-Thomas have relinquished their commissions on appointment to the reconstituted R.A.A.F., retaining their rank.

Flight Lieutenant T. J. Evans has relinquished his commission on account of medical unfitness for Air Force service, retaining the rank of Squadron Leader.

Flight Lieutenants G. A. Mandow, F. W. Ford, and S. C. Frazer have relinquished their commissions on appointment to the reconstituted R.A.F.V.R., retaining the rank of Squadron Leader.

Flight Lieutenants J. D. Nelson and R. J. Gampell have resigned their commissions, retaining the rank of Squadron Leader.

Flight Lieutenant J. B. Good to be Squadron Leader.

COLONIAL MEDICAL SERVICE

The following appointments have been made: A. C. de C. Kerr, M.R.C.S., Medical Officer, ... P. Fok ... L.R.C.S., Assistant Medical Officer, ... S. Robertson ... F.R.C.S., Medical Officer, Grade ... M.B., M.S., Medical Officer, North Borneo; H. ... Medical Officer, Grade "A" Surgeon, Trinidad; P. B. Adamson, M.B., Pathologist, Nigeria; T. F. Anderson, M.D., D.T.M.&H., Deputy Director of Medical Services, Kenya; D. A. Baird, M.B., Senior Medical Officer, British Somaliland; A. J. Board, M.B., D.T.M., and T. Evans, M.R.C.S., D.P.H., Senior Medical Officers, Northern Rhodesia; K. Edmundson, M.B., Assistant Director of Medical Services, Tanganyika; H. S. Rassim, M.R.C.S., D.M.R.E., Radiologist, Hong Kong; J. I. Rerrie, M.R.C.S., D.P.H., Tuberculosis Officer, Jamaica.

EXTRATHORACIC PAIN IN CARDIOVASCULAR DISEASE*

BY

J. L. LOVIBOND. M.D., F.R.C.P.

Assistant Physician, Westminster Hospital; Assistant Cardiologist, London Chest Hospital

The pain which a crippled heart can inflict is one of the more frightening experiences of clinical medicine. To most of us its essential distribution and typical radiations have an accepted and well-recognized pattern. But occasionally cardiac pain is encountered whose qualities are different, or a pain from other causes in a disordered cardiovascular system occurs, for instance, in the head, in the limbs, or in the abdomen, and presents a less familiar problem of diagnosis.

The purpose of this paper is to present some conditions where extrathoracic pain is the dominant symptom of structural or functional cardiovascular disease and to explore its clinical significance. In reviewing a large subject the exclusion of chest pain will serve to emphasize other clearly defined syndromes of pain, some of which are perhaps not so widely recognized.

Pain is a prevalent symptom which is notoriously difficult to assess, being entirely subjective and dependent on the acuity of the individual's sensory perception and also on his ability to describe it in words. An attack of coronary thrombosis in a labourer may cause less constitutional disturbance than a chilblain in a typist. To judge the relative gravity of a pain it is therefore desirable, whenever possible, to witness its occurrence or at least, by interrogation, to record accurately the patient's personal statements; the description may be graphic and, as we shall see, sometimes distinctive. On the other hand, a painful episode becomes exaggerated in the telling of it, and this is proportional to the number of times the subject has been interrogated; due allowance must therefore be given to possible distortion of symptoms.

Headache

Headache more often than not is a symptom which recurs without signs. We can, however, distinguish several varieties which are peculiar to specific circulatory disorders, though it is not easy to find a single common cause. However, largely as the result of Pickering's (1933) studies on histamine headache, we recognize that pain perception arises in the tissues of the dura round the meningeal arteries, where the sensitive trigeminal nerve-endings are affected by stretching or traction. Pressure changes within the minute vessels of the brain are probably of importance in the pathogenesis of hypertensive headache.

The interpretation of headache calls for a very careful interrogation and clinical understanding of the patient: we must not forget that he or she may have two kinds of headache—the one perhaps of little consequence, while the other may be the symptom of a fatal illness.

Temporal arteritis is a malady of older age, and appears to be commoner in countrymen and countrywomen. Its special feature is a constant, dull, and throbbing pain in one or both temples, at times sharp, stabbing, and severe, aggravated by cold winds and by movements of the head. The headache tends to wax and wane, often enough preventing sleep, and persists for several months before gradually dying away. But it is also accompanied by a vague sense of malaise, weakness and fatigue, bodily aches, loss of weight, and low fever. Indeed, the patients seem ill out of all proportion to their physical signs, and may at the height of the disease become very ill indeed. The blood pressure is normal and there is no significant arteriosclerosis, but blindness may follow, due presumably to retinal ischaemia from involvement of the vessels behind the globe (Harrison, 1948). The temporal arteries are conspicuously thickened, nodular, and very tender. The overlying skin may be reddened and oedematous. Pulsation in them is diminished or absent. Histologically we find an inflammatory reaction in the adventitial coat, invading the media, with focal necrosis and granulation tissue in which giant cells are numerous. It seems probable that the arterial tree throughout the body is similarly affected, and there is a good deal of evidence to indicate that we are here considering a generalized disease, somewhat resembling polyarteritis nodosa, though with a better prognosis possibly because the kidneys are spared. Excision of a piece of the temporal artery for biopsy is followed by relief of the pain: procaine injections along the artery or of the stellate ganglion are said to have the same therapeutic effect (Roberts and Ashey, 1948).

The headache of *subarachnoid haemorrhage* is characteristic. I recall a patient who collapsed while pumping her bicycle. On regaining consciousness she recollected stooping over the punctured tyre, but insisted that someone had hit her across the back of the head with a steel bar, so sudden and arresting had been the onset of her pain. The rupture of the internal carotid aneurysm usually occurs on physical straining. Sudden agonizing headache is followed by clouding of consciousness, with evidence of meningism, a raised intracranial pressure, and blood in the cerebrospinal fluid. Sometimes localizing signs may appear, such as pulsating exophthalmos with knife-like retro-orbital pain or a third-nerve lesion with contralateral hemiplegia.

Aortic incompetence is occasionally attended by a troublesome pulsating headache.

A hairdresser, aged 45, had contracted a chancre at the age of 17 and was pronounced cured after three months' treatment. When using a hair-massage vibrator on a customer he was suddenly overcome by a noisy beating in his chest. At the age of 42 his blood Wassermann reaction had been found

*From a postgraduate lecture delivered on Jan. 28.

positive on routine testing as a blood donor, and antisyphilitic treatment was begun. In this attack he had no pain or breathlessness, but when examined a loud "twanging" diastolic murmur could be heard all over the chest, front and back, with a diastolic thrill present at the aortic area. Blood pressure was 220/40 and the pulse regular. Radioscopy showed slight general enlargement with increased pulsation, but a normal aorta. The blood W.R. was then negative. Six months later he developed a continuous occipital headache with violent throbbing in his temples. The collapsing nature of the pulse in his temporal, carotid, and subclavian arteries was so pronounced that it could best be described as "detonating." This prostrating headache was relieved by sleeping with the head propped up by pillows.

Here the symptoms were evidently related to the unusually high pulse pressure resulting from probable partial rupture of an aortic valve cusp.

Headache develops in prolonged *anoxia* and in *polycythaemia*, but in the cyanotic plethora of *superior caval obstruction* it is perhaps uncommon. Intense headache may be a symptom of *dissection of the aorta* involving the carotid artery.

Many patients with *hypertension* wake every morning with an occipital or frontal headache, which varies in degree from a dull ache to a savage pounding and then gradually wears off as the morning progresses, only to recur day after day for many weeks at a time. It seldom awakens the patient, unlike the pain of increased intracranial pressure, and is not affected by straining but only by posture. Possibly this particular headache is more frequent in the unstable case of early or mounting blood pressure, being a less common finding in long-established benign hypertension. On the other hand, it may disappear without any fall in pressure: moreover, some patients with high-grade hypertension (Group IV), papilloedema, and a raised C.S.F. pressure have no headache.

A number of remedies have been tried for this distressing symptom, but in my experience bed-rest with the head propped high on pillows, barbiturate sedation, and aspirin are as useful as any of the more active lines of treatment and have at least the advantage of simplicity. Venesection often relieves the patient for a few days, but lumbar puncture, intravenous sucrose, dehydration, thiocyanate therapy, and even thoraco-lumbar sympathectomy may all prove disappointing.

Fishberg (1948) points out that the relief of headaches, which lumbar sympathectomy undoubtedly does achieve, may be due to a resultant redistribution of cardiac output, with a reduction of the fraction going to the head and arms. As evidence for this post-operative redistribution of blood flow he cites the clinical finding of cooler hands and warmer feet and the phenomenon of postural hypotension. That the vascular territory is not in fact denervated is supported by the persistence after operation of retinal arterial narrowing in the absence of headache. One of the clinical circumstances where diminished blood flow to the head is usually attended by relief of hypertensive headache is with the appearance of congestive failure, when, though the systolic blood pressure falls, the diastolic remains high.

Angina

The conventional reference of cardiac pain to the throat, arms, or lower jaw is familiar. But problems of diagnosis arise when a referred pain occurs alone or with insignificant pain in the chest. I have known a patient consult his dentist because of severe aching pain in the teeth when walking in the cold air. This could be relieved by closing his mouth and resting for a few seconds, but was in fact a true anginal pain. Cardiac pain may arise predominantly in the arms.

A retired Army colonel of 65, three months after a coronary thrombosis from which he had made a good functional recovery, was having to get up several times a night with severe pain in both wrists, eased more by papaverine than by trinitrin. Aching pain in the left forearm and left-sided toothache had been a prominent accompaniment of the heavy sternal pain which woke him at 3 a.m. in his original attack. Serial cardiograms in this case were typical of anterior infarction of the left ventricle.

A departmental manager, aged 63, complained of bac neuralgic pains on exertion, eased at once by rest, which always started in his left arm below the elbow and radiated up the arm to the jaw, the suprasternal notch, and right chest. The pain was also brought on in bed by cold linen sheets. His cardiogram showed changes of posterior infarction, returning later to normal. This pain syndrome is an instance of so-called "reversed angina."

That the pain of angina may be felt in a phantom limb suggests that the pain reference is not a simple segmental sensory reflex but possibly depends on cortical connexions (Harman, 1948). A patient whose left arm was amputated 4 in. (10 cm.) below the elbow-joint developed angina pectoris and began to be troubled by pain on effort in the phantom hand of such severity that he was obliged to obtain a new artificial limb, thinking that the old bucket was chafing his stump.

In considering differential diagnosis it is wise to remember that in the older age groups where coronary disease is more prevalent many patients are also subject to spinal-root pains, fibrositis, and lumbago of varying degrees, due to spondylarthritis and other degenerative skeletal processes. Effort pain may then arise in the back and, resembling cardiac pain in its distribution, be referred to the front of the chest or abdomen, and sometimes to the arms. However, these pains typically come on, not on ordinary physical exertion, but with specific movements such as bending, turning, lifting weights, or straining. After prolonged sitting—e.g., in the cinema or at the wheel of their car—these individuals develop a restless discomfort, eased by standing up or stretching their back, not unlike the relief obtained in sufferers from hiatus hernia. Such symptoms can be reproduced by pressure over the dorsal vertebrae, by hypertonic saline injection of the interspinous ligament, or by forced flexion of the head, and alleviated by rehabilitation and orthopaedic correction of faulty posture (Davis, 1948).

Upper abdominal pain on exertion, eased by rest, but due to the hepatic congestion of early right heart failure, must also be distinguished symptomatically from angina pectoris. Patients may describe their distress as more of a feeling of epigastric fullness or discomfort on exertion than a pain; or they may state that the abdomen is "tender to the bedclothes." Occasionally an acute surgical abdominal incident, such as a perforated gastric ulcer, closely simulates coronary thrombosis, particularly during the initial stages. After the first twenty-four hours, however, the distinction more often than not becomes apparent.

Pain in the Hands

We have seen that both angina and fibrositis can cause pain in the arms, but now and then a cramp-like pain arises in the arms of manual workers with repeated muscular use of those limbs which is due to *obliterative arterial disease* an ischaemic manifestation identical with claudication in the legs.

An upholsterer, aged 53, whose work involved the pulling and stretching of heavy materials to cover sofas, complained for four years of an aching, stiff pain in the forearms and backs of the hands, mainly right-sided. He habitually experienced this pain at his work, particularly in the cold and

towards the end of a heavy week, yet it always subsided at once on resting. He had no other symptoms, and physical examination disclosed moderate arteriosclerosis only.

The disagreeable, sometimes very severe, aching pain in the fingers of sufferers from *Raynaud's disease* when exposed to cold is due partly to nutritional changes and areas of necrosis in the fingers and partly to the sudden release of warm blood into chilled fingers which follows the release of arterial spasm (Lewis, 1936). Exquisite local tenderness is often associated, and can be so intolerable that it will reduce a man to a state of quivering sobs. Lewis disproved the earlier conception that arterial spasm was the cause of the pain in this condition, for, although digital arterial spasm accompanies every attack, pain is not complained of in the more benign cases of *Raynaud's disease*.

The *glomus tumour* is a more uncommon lesion but is clinically important because of the paroxysms of pain which it produces. It consists of a benign hypertrophy of the microscopic arteriovenous capillary anastomoses which exist in the skin, chiefly of the pulp and nail-bed of normal fingers (Masson, 1924), and in health probably subserves the function of controlling skin temperature. The *glomus tumour* appears as a small slate-blue elevation on the skin, though if subungual in position it may not even be visible, and its most discriminative feature is the agonizing pain which the patient feels on the slightest pressure, friction, or exposure to cold. Now and then localized erosion of the terminal phalanx can be demonstrated by radiographs. The rich supply of nerve fibres which terminates about the epithelioid cells that comprise the vascular spaces of the *glomus body* would seem to be unduly sensitive to changes in vascular tension and so account for the inordinate pain which simple manipulation produces. These tumours may be single or multiple, and vary in size from a pin's head to a cherry stone. Surgical excision is usually curative.

Abdominal Pain

Aneurysm of the abdominal aorta was stated by Osler (1905) to be seven times less common than thoracic aortic aneurysm. Improvements in antisyphilitic therapy and an increasing average age of the population are modern factors which have probably diminished this ratio, so that the present picture has somewhat altered. Aneurysm of the abdominal aorta seldom arises before the age of 50, and is generally arteriosclerotic in origin. It is said to provide some of the most varied and dramatic pictures seen in clinical medicine (Jennings, 1941). The "dull, boring, steady pain with awful paroxysms," wrote Stokes (1854), "enables us to diagnose the disease with probable accuracy." The pain, he observed, could be relieved by lying on the face or turning on the side. The following personal case would appear to be an example of this condition.

A housewife, aged 72, complained of a throbbing, aching sacral pain of six months' duration, eased by walking about and made worse when she sat on a chair or lay down. She also stated that her feet had always felt cold. The only significant clinical finding was weak pulsation in the arteries of the left leg, but x-ray examination showed a calcified abdominal aorta of irregular calibre. Physiotherapy has not affected her symptoms.

In these instances the pain may be due in part to bony erosion of the vertebral column, yet it is interesting to note how, owing to their resilience, the intervertebral disks often resist. Palpation of the abdomen perhaps discloses a fixed, expansile, tender, pulsating tumour, maybe with a murmur heard or a thrill felt over it. The epigastric pulsation of an enlarged right ventricle must not be confused with an aortic

aneurysm—the systolic thrust of the latter comes appreciably after the ventricular pulse—or with the symptomless dynamic pulsation of a normal aorta which is so easily demonstrated in the patient with a scaphoid abdomen and exaggerated lumbar lordosis, particularly if there is nervous overaction of her heart. Although an aortic aneurysm may rupture several months after the pain first appears, the prognosis is very often better, depending on the location and size of the aneurysm. Rupture is not always fatal.

Dissecting Aneurysm

During the last 25 years at Westminster Hospital there were 26 deaths from this cause, giving an incidence of 1 in 152 necropsies (Pulvertaft, 1949, personal communication). Elsewhere the necropsy incidence has been 1 in 430 (Glendy *et al.*, 1937) and 1 in 454 (Warren and McQuown, 1948). Although clearly a rare and often fatal condition, the number of cases diagnosed during life is steadily increasing, and we now realize that survival for some years may be possible, especially when re-entry of the dissection takes place into the original aortic lumen.

The important clinical feature to recognize is the dramatic suddenness of the onset of the pain and its initial overwhelming severity. Tearing, stabbing, choking pain strikes the patient usually across the chest and arms, but may spread to the back and down the abdomen to the labia or testicles, later to the legs. It may be intermittent and disappear gradually, to recur in subsequent attacks at lower levels as the dissection extends. Unlike the pain of cardiac infarction it is singularly maximal at its onset: a sense of constriction is unusual, hypertension is invariably present, and the dissection commonly begins during an act of physical exertion or sudden emotional strain. Severe pain in the back or spine indicates splitting up of the walls of the descending aorta, with rupture of the intercostal and lumbar arteries (Shennan, 1934). The dissection may obliterate the coeliac axis to cause infarction of the bowel, or the renal arteries may be involved.

From a detailed study of 28 cases Shennan decided that the essential aetiological lesions in this condition were multiple faults in the aortic media, which were filled with homogeneous connective tissue. Contrary to the common belief, the development of aortic dissection by penetration of the blood into the wall of the vessel through the base of an atheromatous plaque is extremely rare. The fact that the intima was sometimes intact suggested that haemorrhage might originate from the *vasa vasorum*.

In the symptomatology of *mass thrombus of the left auricle*, which occurs in certain cases of mitral stenosis, Evans and Benson (1948) point out that attacks of anginal pain in the chest are usual.

A woman, aged 57, with mitral stenosis and fibrillation, whom I have at present under observation, was seized with sternal pain for 12 hours: next day she developed an equally severe pain in the back and right loin. Her blood pressure was normal. The whole sequence of symptoms, from which she eventually made a good recovery, was at the time striking enough to invite possible confusion with dissection of the aorta, yet the aetiology was probably *mass thrombus* causing acute coronary insufficiency, followed by a small right renal infarct.

Embolic or Thrombotic Occlusion of the Aorta

In a patient with long-standing rheumatic mitral stenosis and fibrillation, or with a past history of coronary thrombosis, the onset of an abrupt, sharp, intense, and agonizing pain in the legs, loins, abdomen, or back, followed by shock, loss of power, and gangrene, with absence of pulsation in the abdominal aorta, suggests embolism at the aortic bifurcation (Morest and Rubin, 1948). Multiple viscer

embolic incidents may have preceded or may accompany it. Thrombosis of the aorta, on the other hand, is characteristically of gradual onset and develops usually in an arteriosclerotic subject; it is often preceded by symptoms of claudication in the legs (Banowitch and Ira, 1928). These features are illustrated by the following case.

A stock foreman, aged 50, with 2½ years' history of bilateral saphenous thrombophlebitis, followed by a coronary thrombosis and increasing claudication in the right calf, was in hospital for treatment of gangrene of the right big toe. He had clinical signs of generalized arteriosclerosis with an impoverished arterial circulation in both feet. Electrocardiograms showed fibrillation and left bundle-branch block. One morning a month later a mild gripping umbilical pain developed, gradually increasing in intensity. By midday it was severe, and vomiting, bloody diarrhoea, and shock came on. By evening morphine eased the pain, but two days later a sudden haematemesis closed the scene. Necropsy revealed an old apical infarct of the left ventricle with a large mural thrombus. An extensive thrombus occluded the aorta from above the origin of the superior mesenteric to below the bifurcation of the iliac arteries. The whole of the small intestine was infarcted. Atheroma was present in the coronary arteries, aorta, and right popliteal.

From time to time, as in the following case, the pain of a *false aneurysm* presents difficult diagnostic features.

An ice-cream manufacturer, aged 26, with a history of previous rejection for military service because of a rheumatic heart, developed a septic rash and fever. Three weeks later, when admitted to hospital, the blood culture yielded haemolytic *Staphylococcus aureus*; penicillin therapy was started at once (500,000 units a day).

On examination there was a loud apical systolic murmur and a mitral diastolic murmur. Rhythm was regular. After three weeks the fever was still present, so the penicillin dosage was doubled. He now began to complain of a series of pains which baffled his physicians, though admittedly examination was always difficult because he was a grossly obese and excitable subject: first a severe suprapubic pain with vomiting; five days later acute cramping pain in the right leg, yet without any unusual physical signs. Three weeks later he had an intense pain in the right groin, with shock, and developed signs of psoas irritation. Rectal examination was negative. A week later, with groin pain and thigh flexion continuing, thrombosis became evident in the right saphenous vein, and within a few days his leg was oedematous. Although he repeatedly complained of a great deal of pain throughout the next few weeks, his temperature fell to normal, and a non-tender cord-like thickening of the vein in the groin could then be made out. Three months after admission he became suddenly breathless with pain in the chest; anuria set in, and in forty-eight hours, with signs of a left lung infarct, he succumbed.

Necropsy showed that his attacks of pain had been due to a false aneurysm of the pelvic vessels, probably mycotic. A blood cyst the size of a large grapefruit lay against the right brim of the pelvis, containing laminated clot and compressing the right common iliac artery and vein. Venous thrombosis extended down the veins in the thigh and up the inferior vena cava to the right renal vein. Old infarcts were present in the right kidney. In the heart the left ventricle was considerably hypertrophied, and the aortic cusp of the mitral valve contained a perforation ¼ in. (1.9 cm.) in diameter surrounded by healed vegetations. The upper lobe branch of the left pulmonary artery was occluded by recent thrombotic embolus.

Pain in the Legs

The uncomfortable, continuous, aching pain that arises in the calf of the healthy leg when walking fast in tight puttees, or in the shin when bicycling hard or skating, is identical with the pain of *intermittent claudication*. It is produced by a relative ischaemia of the working muscle. There are, indeed, many pathological processes in which this disproportion between the blood requirement of the leg and its blood supply is enough to induce such a pain,

but the commonest is *obliterative arterial disease*. Claudication is an occasional symptom of *severe anaemia*, *aortic stenosis*, *arteriovenous fistula*, *coarctation*, after *aneurysm thrombosis*, or *embolism* of the *femoral* or *popliteal* artery, in some cases of *mitral stenosis*, and, rarely, in a prolonged attack of *paroxysmal tachycardia*. The pain is described as cramp-like only because of its resemblance to the pain of muscle cramp, for tonic spasm of the ischaemic muscle does not in fact take place.

The reason why the effects of arterial obstruction by intravascular thrombus are more profound than simple ligation is because the collateral vessels are usually already diseased and clotting is often extensive, obliterating the mouths of many collaterals.

An office worker, aged 49, for five months had a localized pain in the right calf on walking, which had gradually become so severe that slow walking for 100 yards brought it on and made him stop to obtain relief. Skin temperatures of the feet were normal, but pulsation in the right popliteal, tibial and dorsalis pedis arteries was reduced. Arteriograms showed an obstruction in the middle of the femoral artery with collateral channels. He was operated upon and 4.5 cm. of the right femoral artery excised; this contained organized thrombus on an atheromatous plaque. The vessel was reconstituted with a portion of saphenous vein from the left leg and joined by vitallium tube. A month later, although he still had no palpable pulse in the right foot, he was able to walk a mile without pain.

Many patients such as he provide a clear enough description of their symptoms to make recognition easy, but it may be remembered that various orthopaedic conditions give rise, on using the limb, to pain which is also eased by rest. It will be noted, for example, that the pain of arthritis is not relieved by simple halting, but that the patient has to sit down to be relieved of it. Exercise tolerance in claudication relates to the extent of the arterial disease, frequently an asymmetrical process: so it happens that pain in the worse limb may restrict walking before the sounder limb is fully tested. Similarly, an advanced degree of arterial insufficiency in both legs can be masked by a limitation of the capacity for exercise which angina or dyspnoea may impose; the converse is also true. In arteriosclerosis obliterans the reduced blood supply to the limb sooner or later causes coldness in the foot, and the toes are often cyanosed. The skin may undergo further trophic or inflammatory changes as a result of damage by cold, and become glossy, telangiectatic, and unduly sensitive to warmth and friction. In these circumstances pain is felt *at rest*.

A clerk, aged 71, for two years complained of pain in his calves which pulled him up after five minutes' walking. Resting eased it at once. For the previous nine months he had also had constant pain in the toes of the right foot—"They burned in bed at night"—so that he was obliged to hang his foot out in the cool air or stand up by his bed to obtain relief. The toes were cold and plum-coloured, and arterial pulsation was absent from both feet.

In cases of rest pain the simple correction of a bed whose mattress sags in the middle may prevent some postural ischaemia of the feet.

The third variety of pain in arteriosclerotic disease of the lower limbs is that of *gangrene*. When the vitality and healing power of the tissues is so reduced that infection and necrosis may proceed unchecked, gangrene starts readily from a superficial abrasion, a corn, or a damaged toenail. Pain may be extreme. Lewis's advice to care for the feet as though they were pieces of porcelain cannot be given early enough to sufferers from this complaint.

With *arterial embolism* the dramatic onset of a sudden severe pain in the leg, becoming more intense, aching, and

ffuse, usually precedes the other signs. Lewis (1936) has pointed out that this pain does not arise in the artery at the site of the obstruction but much lower in the limb in the muscles deprived suddenly thereby of their blood supply, and that its onset even when abrupt is delayed. It is relative in severity to the size of the occluded artery, partly because a greater territory of tissue is rendered ischaemic, and it is relieved instantly when the blood supply is restored by removal of the clot, or it is reduced in degree if the plug passes on. Thus embolism of the brain or spleen is painless, because those organs contain no muscle. There is no evidence that arterial spasm alone directly produces pain.

The clinical associations of embolic catastrophes are well illustrated by the following case.

A man aged 38, who eight years previously was found to have mitral stenosis, developed auricular fibrillation and at the same time a sudden (painless) right hemiplegia due to cerebral embolus. Two years later his digitalis was inadvertently stopped for a while and his heart began to race. Ten days after redigitalization he woke with a violent pain in the hemiplegic leg and the foot went cold. The agony of his limb lasted twenty-four hours and was relieved only by hanging a foot down. From 4 in. (10 cm.) below the knee his leg was found to be cyanosed, oedematous, and icy cold. The agnosia of popliteal embolus was made and he was treated unsatisfactorily. Within ten months he could walk unaided for 10 yards without pain, but four months later he suffered another stroke and died.

Tragic examples of this nature are only too common here embolic incidents have accompanied the onset of fibrillation or have followed mistakes in treatment. Because the pulse rate is slow or the symptoms have abated, digitalis maintenance therapy is stopped; the insidious acceleration of the ventricular rate which ensues is fraught with dangerous consequences. Such accidents would happen so often if we always remembered to warn each patient with auricular fibrillation that digitalis was his life-line, to be depended upon perpetually for the rest of his days.

Conclusions

In those circulatory conditions where a prevailing symptom is extrathoracic pain (in the head, limbs, or body) the regenerative arterial disorders play an important part with their attendant thrombotic and embolic incidents. Hence the symptom of extrathoracic pain in cardiovascular disease or the most part is rare in childhood, unusual in youth, and commoner as age advances. The pain usually conforms to some distinctive clinical picture. Examples are considered in this paper with the object of promoting familiarity with their qualities.

REFERENCES

- Amowitz, M. M., and Ira, G. H. (1928). *Med. Clin. N. Amer.*, 11, 973.
 Davis, D. (1948). *Amer. Heart J.*, 35, 70.
 Evans, W., and Benson, R. (1948). *Brit. Heart J.*, 10, 39.
 Sulzberger, A. M. (1948). *J. Amer. med. Ass.*, 137, 670.
 Sherry, R. E., Castleman, B., and White, P. D. (1937). *Amer. Heart J.*, 13, 129.
 Arman, J. B. (1948). *British Medical Journal*, 1, 188.
 Harrison, C. V. (1948). *J. clin. Path.*, 1, 197.
 Jennings, G. H. (1941). *Lancet*, 1, 719.
 Lewis, T. (1936). *Vascular Disorders of the Limbs*. Macmillan, London.
 Lissac, P. (1924). *Lyon chir.*, 21, 257.
 Orest, F. S., and Rubin, S. (1948). *Amer. Heart J.*, 36, 277.
 Miller, W. (1905). *Lancet*, 2, 1059.
 McKering, G. W. (1933). *Clin. Sci.*, 1, 77.
 Roberts, A. M., and Ashley, J. M. (1948). *J. Amer. med. Ass.*, 137, 697.
 Tennant, T. (1934). *Spec. Rep. Ser. Med. Res. Coun.*, No. 193. London.
 Stokes, B. (1854). *The Diseases of the Heart and Aorta*. Dublin.
 Warren, A. S., and McQuown, A. L. (1948). *Amer. J. med. Sci.*, 215, 209.

VIOFORM IN THE TREATMENT OF SKIN DISEASES

BY

I. MARTIN-SCOTT, M.D.

The quinoline derivative known as "vioform" (5-chloro-7-iodo-8-hydroxyquinoline) is a stable, almost odourless, greyish-yellow powder which is only slightly soluble in water. It contains 41% iodine and 12% chlorine, and its use in the treatment of amoebiasis is world-wide (Cameron, 1947). For several decades it has been used as an antiseptic dusting powder and as the active ingredient of Alexander's ointment on the Continent (Perutz *et al.*, 1933). Only within recent years has its value in dermatology been appreciated in America (Wise and Sulzberger, 1942; Sulzberger and Wolf, 1942; Pillsbury *et al.*, 1943), and the external therapeutic uses were recorded by the American Medical Association in 1944. In Great Britain its value in dermatology has not yet been estimated.

Early in 1948 I obtained a small quantity of vioform powder and, in a 3% strength in a water-miscible cream, found it to be most useful in the treatment of pyococcal skin infections. The importing chemists then kindly offered to manufacture two types of preparation for trial, and a clinical investigation was started in June, 1948.*

Preparations Used.—Guided by the experience of Sulzberger and Baer (1946), it was decided to use only the following two preparations: (1) vioform cream (V.C.), which consists of 3% vioform in a water-soluble base composed of sodium lauryl, stearyl alcohol, spermaceti, glycerin, yellow soft paraffin, and water; (2) vioform ointment (V.O.), consisting of 3% vioform in a simple petroleum-jelly base.

Selection of Cases.—The majority of the cases were treated as out-patients. The greater number and variety of such cases outweighed the uncertainty of proper application by the patient. Patients of any age or sex were treated, but in view of the limited supplies of vioform no cases of widespread dermatoses were included. With the knowledge that other hydroxyquinoline ointments were useful in the management of pyodermias, it is not surprising that many cases of this type were chosen.

Control of Results.—It was considered that the number of cases would be too small to compare this remedy against a standard topical treatment by the method of treating alternate cases suffering from the same skin disease. Likewise, the better method of comparing the results of two similarly affected and symmetrically situated lesions in the one person treated by two different methods was thought impracticable in dealing with out-patients. Where it is considered to be of interest, however, reference will be made to previous treatments which had failed.

Classification of Cases.—A total of 115 consecutive cases of various skin diseases were treated. These have been grouped thus:

Group A	..	Sycosis barbae	..	..	15 cases
.. B	..	Folliculitis of other areas	..	..	17 "
.. C	..	Impetigo contagiosa	..	..	14 "
.. D	..	Acne vulgaris	..	..	10 "
.. E	..	Impetiginized eczema	..	..	14 "
.. F	..	Post-auricular dermatitis	..	..	10 "
.. G	..	Miscellaneous group	..	..	35 "

Where more than one type of infection was present the case was listed under the more prominent condition.

*I am indebted to Messrs. Ciba Laboratories, Ltd., Horsham, Sussex, for kindly supplying the applications used in this study.

Results of Treatment

Group A. Syccosis Barbae

The patients were instructed to use V.C. for shaving, and to leave a film on the face thereafter. A second application was advised at midday, and V.O. was used at bed-time. They were told that this was a treatment under trial, and all promised to report any relapse which might occur.

TABLE I

Case No	Duration of Disease	Type and Severity	Previous Treatment	Bacteriology	Treatment Time Using Vioform	Follow-up
6	7 months	Average	Pen, Hg	—	3 weeks	Relapse 3 mths later
8	12 years	"	Quin	—	4 "	No relapse
11	6 "	Superficial	Pen, Hg	—	3 "	2 mths later
16	2 "	Average	Pen	Pen-sensit SPA	6 "	No relapse
18	2 weeks	Superficial	Pen, Hg	Pen sensit SPA	3 "	3 mths later
33	4 "	"	Pen cream	SPA	1 week	No relapse
37	3 years	Deep seated	Pen, Quin, 1 rays	Staph albus SPA ++	12 weeks	3 mths later
39	3 "	"	Pen, Hg, Sulpha, Quin	SPA ++	8 "	Improving
41	2 weeks	Superficial	Pen, Hg, Sulpha, Quin	SPA ++	1 week	No relapse
44	2 "	"	Quin, Sulpha	—	1 "	1 mth later
74	15 months	Deep seated	Pen, Hg	SPA +	6 weeks	No relapse
84	6 weeks	Superficial	Pen ung and cream	Pen-sensit SPA	2 "	5 mths later
89	18 months	Average	Pen cream, Hg	—	1 week	No relapse
90	5 years	"	Pen, Quin, 1 rays, Vaccine	—	2 weeks	6 mths later
93	2 weeks	Superficial	Not known	—	2 "	No relapse

Hg = A mercury ointment Pen = Penicillin preparation Sulpha = Sulphonamide cream Quin = Ung Quinolol Co SPA = *Staphylococcus pyogenes aureus*

Table I shows that 13 out of the 15 cases had no signs of active disease after treatment with vioform alone. Only two of these 13 cases had slight relapses, which quickly responded to further treatment. The average treatment time of the 11 cases which were apparently cured after one course was three weeks, and the average duration of the disease before treatment was over 2½ years.

With such a short follow-up period it cannot be claimed that 87% of the cases were "cured." It will be noted that four of the cases failed to report back after apparent cure. These cases may be considered to have remained free from symptoms for the following reasons: (1) three of them had suffered for several years and had been "cured" in a few weeks; (2) vioform preparations could not be renewed without further consultation and were not yet on sale to the public, and (3) three of the cases lived in a country district served by one local hospital.

The only two failures were Cases 37 and 74. The former patient volunteered that it was "easily the best stuff" he had used in his three years of treatment. In both cases the lesions were indurated and deep-seated, and the pus was caseous. Case 74 was eventually cleared up by cauterizing the four remaining pustules with pure phenol, and Case 37 is at present having fractional doses of x rays in conjunction with vioform treatment.

It is of interest to note that twelve of these cases had previously been treated unsuccessfully with local penicillin, and that in four of these the causative *staphylococcus* was found to be penicillin-sensitive.

Table II shows that all 17 cases responded well to treatment. The average duration of treatment was just under three weeks, but this includes two cases which required six weeks, these two cases were infections of the forearms

Group B: Folliculitis of Other Areas

TABLE II

Case No	Site	Duration of Disease	Previous Treatment	Vio-form Prep Used	Bacteriology	Time to Cure
2	Hand	3 weeks	Pen cream	VO	—	10 days
14	Legs	3 months	Sulpha, Pen	VO	Pen sensit SPA	4 weeks
24	Thighs	Few days	Nil	VO	SPA	10 days
36	Pubis	2 weeks	G V	VO	SPA	7 "
38	"	4 "	Hg	VO	SPA and Str haem C	7 "
40	Arms	4 "	Pen syst and local	VC	SPA ++	2 weeks
45	Scalp	18 months	Quin G V, Hg	VC	Sterile	4 "
55	Pubis	6 weeks	Pen ung	VC	SPA	3 "
77	Arms, neck, Groin	8 days	Nil	VO	SPA	Relapse 3 mths later
86	"	4 months	Not known	VO	—	6 weeks
94	Pubis, axillae	5 years	Pen syst and local	VO	SPA ++	4 "
97	Back	8 months	Hg	VO	Pen resist Sterile (2)	Improved
101	Forearms	4 weeks	Pen syst and local	VO	Pen sensit SPA +	2 weeks
105	Nape of neck	2 "	Hg AgNO ₃ , B G, Pen	VC	—	7 days
110	Temples	2 months	Hg	VC, VO	Pen sensit SPA	2 weeks
111	Groin	5 "	Hg, Pen	VO	—	4 "
114	"	2 "	Pen local	VO	—	4 "

Pen = Penicillin preparation AgNO₃ = Silver nitrate lotion 1% Hg = A mercury preparation G V = 1% Gentian violet lotion SPA = *Staphylococcus aureus* B G = 1% Brilliant green Str haem C = *St. haemolyticus* Group C

in manual workers, and it was thought that the mode of application was unsatisfactory: both cleared up quickly when V.O. was applied under a "viscopaste" bandage. All patients continued their normal activities whilst under treatment.

Group C: Impetigo Contagiosa

TABLE III

Case No	Site	Duration of Disease	Previous Treatment	Vio-form Prep Used	Bacteriology	Time to Cure
24	Nose	4 months	Pen, Hg, Quin	VC	SPA	1 week
64	Ears, face	1 month	Pen cream	VC	Pen-resist SPA	2 weeks
73	"	5 days	"	VC	—	3 "
79	Pubis	9 months	Pen local	VC	Pen-sensit Str haem C	4 "
85	Scalp	8 weeks	Not known	VC	SPA	2 "
92	Ears	3 "	"	VC	—	1 week
96	Face	3 months	"	VC	Sterile	1 "
98	"	2 weeks	Pen cream	VC	Pen-sensit SPA ++	1 "
99	Ears, face	4 months	Pen, Sulpha, Quin	VC	Pen sensit SPA	1 "
100	Scalp	4 "	Not known	VO	—	2 weeks
102	Neck, ears	6 weeks	Pen, Resorcin	VC, VO	Pen sensit SPA	2 "
103	Face	3 "	Pen	VC	Pen-sensit SPA ++	1 week
107	Face, neck	2 "	Sulpha, Ung S & S	VC	Pen-sensit SPA	1 "
109	Temples	4 "	Pen local	VC	Pen resist SPA	2 weeks

Pen = Penicillin preparation SPA = *Staphylococcus aureus* Sulpha = Sulphonamide cream Str haem C = *St. haemolyticus* Group C Quin = Ung Quinolol Co Ung S & S = Ung sulphur and salicylic acid B P

The results in all cases were good, and no relapses have been reported (Table III). In no case was any additional application used to remove infected crusts. Six cases in which the organism cultured was reported to be penicillin-sensitive failed to respond to local penicillin therapy. In many cases the patients claimed to be cured in two to three days, and the duration shown in Table III was the time interval till the patient was actually seen to be cured. Even with this possible overestimation the average treatment time for all types was only 10 days.

Group D: Acne Vulgaris

Ten cases of pustular acne were treated, and only five showed some slight improvement after four weeks of VC

daily. The results were not impressive, as it must be remembered that, while vioform was the only local application, the patients were advised regarding general hygiene diet, and in several cases oestrogens and/or vitamins given simultaneously.

formerly used "ung. quinolor co." (Squibb) in cases of pustular acne with decidedly better results, possibly due to the benzoyl peroxide content in this preparation.

Group E: Impetiginized Eczema

There were 14 cases of eczema (mostly exogenous) which had become secondarily infected, and all presented crusted scaly lesions. In two-thirds of the cases the hands and fingers were affected. The more exudative cases were treated with V.C. thrice daily, while the other half applied O. twice daily. In the four cases investigated *Staph. pyogenes aureus* was cultured. The average duration of treatment was just over two weeks, and during this time the treatment was sheltering the affected area from external irritants. The underlying eczema was cured in only two cases, but in all cases the crusting and inflammation subsided satisfactorily.

Group F: Post-auricular Dermatitis

TABLE IV

Case No.	Sex	Age	Duration of Disease	Previous Treatment	Bacteriology	Prep. Used	Time to Effect Cure
1	F	44	6 weeks	G.V., Pen.	S.P.A., Str. haem. A.	V.C.	2 weeks
2	F	41	4 years	Hg. Pen., AgNO ₃ , Pen.	—	V.O.	2 "
3	M	30	Not known	AgNO ₃ , Pen., Ung. S. & S.	S.P.A. + +	V.O.	3 "
4	F	72	1 year	Ung. S. & S.	S.P.A. + +	V.O.	2 "
5	F	68	8 months	Ung. S. & S.	Strept.	V.O.	1 week
6	M	37	5 weeks	Lot. calamin.	S.P.A. + +	V.O.	2 weeks
7	F	24	2 years	Pen. syst. and local	—	V.O.	10 days
8	F	50	3 months	Not known	—	V.O.	6 weeks
9	F	32	3 weeks	Hg.	S.P.A.	V.O.	1 week
10	M	45	2 months	Ung. S. & S.	Str. haem.	V.O.	1 "

Pen. = Penicillin preparation. S.P.A. = *Staph. pyogenes aureus*. Str. haem. A. = *Str. haemolyticus* Group A. Hg. = A. mercury preparation. AgNO₃ = Silver nitrate lotion 1%. G.V. = Gentian violet lotion. Ung. S. & S. = Ung. sulphur id salicylic acid B.P.

Every case had associated seborrheic eczema, and two also had menopausal symptoms. Clinically the skin behind the ears was found to be reddened, glazed, and often exuding serum. The response to treatment was very good, and the average treatment time was just over two weeks. No relapses have been reported (Table IV).

Group G: Miscellaneous

This group comprises a miscellaneous collection of dermatoses which are often rather resistant to treatment. There were 35 such cases.

Angular Stomatitis.—Four of the five cases treated with V.C. twice daily cleared up after an average treatment time of 10 days; no other therapy was given simultaneously. In two of the cases there was associated naso-labial fissuring, which also responded well. The one failure is discussed later when dealing with toxicity.

Intertriginous Dermatitis.—There were five cases, which occurred in elderly patients. Clinically they did not suggest a fungous infection. The apposing skin surfaces were red and denuded, and in the midline there was often some superficial fissuring. Three of the five cases were considerably improved after four weeks' treatment with V.O.

Furunculosis.—Three of the four cases had suffered from recurrent boils for many years. In all four the septic conditions were cured within two weeks, but fresh boils occurred in two. These cases were found to have high fasting-blood-sugar levels, and when suitably dieted had no further furunculosis.

Chronic Paronychia.—Two of the four cases treated showed the typical chronic bolstering of the nail-folds, with dystrophy

of the nails but no purulent discharge. Staphylococci were cultured in both cases, and after four weeks' treatment they showed considerable improvement. The other two cases had purulent lesions of the nail-folds from which *Staph. pyogenes aureus* was cultured; there were no whitlows. Both cleared up after applying V.O. for an average treatment time of three weeks, though they had been resistant to local penicillin treatment.

Septic Excoriations.—Two cases of generalized pruritus and one of excoriated acne were treated. V.O. cleared up the crusted lesions in a short time but did not lessen the pruritus.

Chronic Lichen Simplex.—Two cases of localized lichenified skin without any associated infection were not improved by the use of V.O., nor was the irritation lessened.

Pruritus Ani.—One case, in which no changes in the skin could be seen, failed to be relieved after four weeks on V.O.

Pustular Psoriasis.—Three cases of the toxic bacterioid type, with small intra-epidermic lakes of pus and light-brown punctate scabs affecting the soles and palms, were not improved after several weeks' local treatment with V.O.

Pustular Epidermophytosis.—Two cases of secondarily infected epidermophytosis interdigitalis in which *Staph. pyogenes aureus* was cultured from the pus, but in which there was no acute pain or lymphangitis, were treated. All evidence of sepsis had gone when seen 14 days later.

Ulcers.—Two simple chronic ulcers of obscure origin, one of the chin and one of the thigh, were slightly improved after dressings with V.O. twice daily.

Acne Necrotica.—One case showed improvement after treatment with V.O., but was not cured.

Furfuraceous Impetigo.—One case of four years' duration showed no significant improvement after four weeks' treatment on V.O.

Herpes Zoster.—This patient was an elderly man who was febrile and had a large crusted plaque over the frontal region. *Staph. pyogenes aureus* was cultured. He was treated with V.C. thrice daily, and within one week all evidence of infection had gone.

Pemphigus Vulgaris.—In one case V.O. was found to be a useful antiseptic dressing which assisted the healing of the raw areas after rupture of the bullae.

Mode of Action; Toxicity

Animal experiments in the past (Ciba, Ltd., 1948) and also the following observation on a patient have failed to support the theory that the disinfecting action of vioform is due to the liberation of free iodine. A patient who had a severe contact dermatitis due to tincture of iodine and who reacted with an extensive vesicular eruption to painting 1 sq. in. (6.45 cm.²) of her arm with liquor iodi mitis had no reaction after 48 hours' contact with 3% V.O.

About 5% of the patients treated admitted that there was a mild initial stinging of short duration, but in none of these cases was treatment discontinued.

In only one of the 115 cases was there severe primary irritation when V.O. was applied to the diseased skin. This patient was a nervous man who had had a long history of sycosis barbae, and his clinical record indicated that he was sensitive to sulphathiazole and "elastoplast." He reported with a slight angular stomatitis and erythema, scaling, and fissuring of the naso-labial folds. He was advised to apply V.O. twice daily to the affected areas, and when he reported two weeks later the condition was unchanged and he complained of intense irritation on each application of the ointment—he had stopped using it after only ten days. V.C. was applied in the consulting-room and he complained of irritation, though no inflammation was noted after 40 minutes. A patch test of V.O. applied to the healthy skin of the arm was negative after 48 hours. This is similar to the case of irritation reported by Reque (1947) in which true epidermal sensitivity was also absent. It seems probable that in my case the irritation was due to the vioform and not to the

paraffin base, as he subsequently improved on ung. hydrarg. ammon. dil.

Saunders (1946), who used vioform 1% in petrolatum in a mixed series of 14 cases, did not attempt any further study of the medication, because the incidence of irritation was too high and the beneficial results too poor.

No systemic toxic effects due to absorption from the skin were encountered. In view of the internal use of "enterovioform," this was not surprising.

Comment

In a study of a comparatively small number of cases in which the results of treatment were not controlled it is not possible to evaluate the efficiency of vioform scientifically. The clinical impression, however, in the management of several dermatological problems was extremely good. The ability to confront the chronic case of sycosis barbae and persistent post-auricular dermatitis without foreboding signifies at least the possession of a therapeutic agent of prowess. A safe and relatively non-irritant antiseptic or antibiotic is always welcome in dermatology; thus penicillin became the practitioner's friend. Later many pyococci were found to be resistant to it. It is probable that since the introduction of penicillin the number of skin infections referred to hospital has diminished—e.g., no cases of impetigo of children's faces have been seen in the last six months for inclusion in this series. No doubt the proportion of penicillin-resistant cases seen in hospital has increased. Whether vioform is superior to penicillin in the treatment of pyodermias cannot be assessed from this report, but it is a fact that in at least 37 cases in which penicillin had failed vioform produced the desired result. In the 16 cases in which penicillin sensitivity was estimated four were resistant and 12 were sensitive to penicillin. In 11 of these 12 cases penicillin had previously been used and had failed to improve the skin infection.

Summary and Conclusions

The value of 3% vioform in an ointment and in a cream base has been studied in 115 dermatological cases.

The results indicate that vioform is a valuable therapeutic agent in dermatological practice, and particularly in the treatment of pyococcal skin infections such as impetigo, folliculitis (especially sycosis barbae), impetiginized eczema, angular stomatitis, and post-auricular dermatitis. The cases of acne vulgaris in this series were not greatly improved.

It is relatively non-irritating, and the occurrence of epidermal sensitization is rare.

While it relieves the prickling of infected eczemas, it does not seem to have any antipruritic effect on non-infected dermatoses.

The only slight disadvantage revealed was the yellowish-grey colour. The cream is easily washed out of cotton fabrics, but stains from the use of the ointment are more difficult to remove.

Further study is required to estimate its value in other vehicles in dermatology, and also in other branches of medicine where antiseptic applications are required.

It is concluded that 3% vioform is a valuable addition to the medicaments at present used in this country for pyococcal dermatoses.

REFERENCES

- American Medical Association: Council of Pharmacy and Chemistry (1944). *New and Nonofficial Remedies*. Chicago.
Cameron, J. D. S. (1947). *Edinb. med. J.*, 54, 76.
Ciba, Ltd. (1948). Communication of Sept. 28 from the Research Department. Basle.
Perutz, A., Seiber, C., and Winternitz, R. (1933). *Derm. Wschr.*, "Pharmakologie der Haut Arzneimittel Allgemeine Therapie."
Pillsbury, D. M., Sulzberger, M. B., and Livingood, C. S. (1943). *Manual of Dermatology*. Saunders, Philadelphia.
Reque, Paul G. (1947). *Mississippi Dr.*, 25, 203.
Saunders, T. S. (1946). *Arch. Derm. Syph., Chicago*, 54, 456.

- Sulzberger, Marion B., and Baer, R. L. (1946). *Year Book of Dermatology and Syphilology*. Year Book Publishers, Chicago.
— (1947). Report on Vioform in Dermatologic Therapy to Ciba Pharmaceutical Co., Summit, N.Y.
— and Wolf, J. (1942). *Dermatologic Therapy in General Practice* 2nd ed. Year Book Publishers, Chicago.
Wise, F., and Sulzberger, M. B. (1942). *Year Book of Dermatology and Syphilology*. Year Book Publishers, Chicago.

THE TOPICAL USE OF VIOFORM IN DERMATOLOGY

BY

JAMES OVERTON, M.D., B.Sc., M.R.C.P.

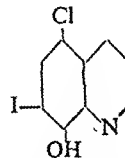
Honorary Chief Assistant, Skin Department,
Leicester Royal Infirmary

The present investigations have been prompted by the shadow of Nemesis which now looms on the dermatological horizon, threatening retribution, in the forms of drug sensitization and drug-resistant organisms, for the indiscriminate topical use of sulphonamides and antibiotics. A spate of literature has indicated that drug sensitization may follow the external application of sulphonamides (*Army Med. Dept. Bull.*, 1943; Barber, 1944; MacKenna, 1945; Phillips, 1946; Tzanck *et al.*, 1947; Council on Pharmacy and Chemistry, 1947) and penicillin (Canizares, 1945; Friedlaender *et al.*, 1946; Chu and Cutting, 1946; O'Donovan and Klorfajn, 1946; Goldman *et al.*, 1946; Hellier, 1947; Templeton *et al.*, 1947; Phillips, 1948) and so seriously interfere with their later use in lethal disorders. Drug resistance, a sequel of sulphonamide therapy and the use of many antibiotics, has been shown by Barber (1947) and Barber and Rozwadowska-Dowzenko (1948) to occur when penicillin is used; their work foreshadows many more strains of penicillin-resistant *Staphylococcus aureus*.

My attention was directed by the work of Ingram (1938) and of Sulzberger and Wolf (1942) to an entirely different group of drugs—namely, the halogen-substituted quinolines. An attempt has been made to assess whether these drugs may be used to replace the sulphonamides and penicillin in external applications so that the aforementioned undesirable sequel may be avoided. The two members of this group under investigation are "vioform" and "sterosan." This paper deals with the former drug only.

Quinoline derivatives have been used for topical application in dermatology for a number of years. "Ung quinolor co." (Squibb) contains a mixture of 5-chloro-8-hydroxyquinoline, 7-chloro-8-hydroxyquinoline, 5:7-dichloro-8-hydroxyquinoline, together with 10% of benzoyl peroxide in a paraffin-lanolin base. It is useful in the treatment of sycosis barbae, impetigo contagiosa, eczematized psoriasis, and psoriasiform or lichenoid neurodermite (Peck, 1934; Carpenter, 1938; Ingram, 1938).

Vioform has the chemical formula: 5-chloro-7-iodo-8-hydroxyquinoline.



It is an amorphous, greyish-yellow, voluminous powder containing 41% of combined iodine. Tasteless and colourless, it is insoluble in water and only slightly soluble in alcohol. It has a melting-point of 156° C. and can be sterilized at 100–110° C. Light and moisture cause a darkening in its colour. Oxidizing agents are chemically incompatible.

Pharmacology.—Widespread oral use of the drug for amoebiasis has shown that it is relatively non-toxic in man (David *et al.*, 1944). *In vitro* it inhibits *Staph. aureus* and *Bact. coli* in a dilution of 0.025%, and *Pseudomonas pyocyanea* in a dilution of 0.5%.*

Mechanism of Action.—Repeated experiments have been performed to ascertain whether the antiseptic action of vioform is due to the liberation of iodine. The investigations reveal that iodine can be liberated only with great difficulty, and that free iodine plays little or no part in its antiseptic action (Bachem and Kriens, 1921; Chargaff, 1929; Jadassohn and Pfanner, 1945).

Clinical Application.—Vioform has been employed on the Continent for the last forty years, and its virtues have been extolled in the treatment of pyoderma, fungous infections, eczematous conditions, and other dermatoses (Jadassohn, 1930; Berlich, 1939; Sulzberger and Wolf, 1942). Montigel (1910) found it a more effective antiseptic tooth-stopping dressing than iodoform. Sulzberger and Wolf (1942), after extensive clinical trials, stated it to be "one of the best anti-eczematous, mildly soothing, and antiparasitic remedies."

Types of Bases Employed and Mode of Application.—Vioform was used in this trial in a strength of 3% in a water-miscible cream† and a soft paraffin ointment. An identical cream and ointment, suitably coloured to camouflage the absence of vioform, were used as controls.

The type of application employed was determined by the characteristics of the lesions. The cream was mainly used to produce a drying effect; in dry, scaly, or lichenified lesions the greasy ointment was prescribed. Occasionally a more neutral effect was obtained by alternating the two, using the cream by day and the ointment by night. The cream was applied three or four times a day, the lesions being kept open wherever possible. The ointment was applied twice a day, and in view of its greasy staining qualities was covered with linen or calico. No other local measures were in use at the same time.

Mode of Assessment.—The only cases included in this series are those which have been adequately controlled by using the active preparation on one side of the body and a control (the ointment or cream base) on the other side. By this means spontaneous improvement becomes evident, the effect of the conveying medium is readily assessed, and aggravation by the active ingredient is apparent, except where the base itself proves irritant, thus sometimes masking any similar action of the drug concerned. Unfortunately, some disorders do not admit of this simultaneous assessment—e.g., pruritus ani—and these have been omitted. The major practical difficulty lies in persuading the patients to adhere strictly to instructions in spite of any difference in response on the two sides. Results were assessed only in terms of visible improvement.

Results

Group 1: Coccogenic Sycosis Barbae.—All these cases had received previous treatment, many with penicillin cream or ointment. A number were chronic cases complicated by seborrhoea oleosa. All were investigated for focal sepsis, and this when found was treated simultaneously. Patients were instructed to shave daily and to apply the cream after shaving, at midday, late afternoon, and night. The face was washed in the normal manner. Among 30 cases, 22 showed a definite improvement, 3 chronic cases

Table of Results

Diagnosis	Total No. of Patients Treated	No. of Patients Affected by Vioform		No. of Patients Affected by Control Base		No. of Patients who Showed no Response to Vioform or Control Base
		Im- proved	Aggra- vated	Im- proved	Aggra- vated	
Coccogenic sycosis barbae ..	30	22		1		7
Seborrhoeic dermatitis ..	22	14		5		3
Otitis externa ..	14	8		4		2
Pityriasis faciei simplex ..	2	2				
Acute vesicular and papular eczema ..	33	15	1	10	2	5
Gravitational eczema ..	18	12		4		2
Cheirropompholyx ..	13	3	1			9
Chronic papular and fissuring eczema ..	7	1				6
Impetigo ..	5	5				
Infantile eczema ..	16		3	8		5
Mumular eczema ..	7	4	2		1	
Neurodermatitis lichen hypertrophicus ..	5	1	1	3		
Poriasis: Classical ..	2					2
Seborrhoeic Pustular ..	2	2		1	2	3
Dermatitis herpetiformis ..	4		1	2	1	

improved temporarily and then relapsed during treatment, 1 showed equal improvement on the base, and 4 exhibited no gross change.

Group 2: Seborrhoeic Dermatitis.—These represented typical examples of the disorder with lesions in the scalp, on the face and ears, and in some cases on the trunk as well. Many of the facial lesions were eczematized. The scalp was treated in the routine manner, the vioform application being used only for the face. Of 22 cases, 14 showed a marked improvement, 5 improved equally on both sides, and 3 showed no change.

Group 3: Otitis Externa.—This group was mainly composed of patients exhibiting the signs of streptococcal otitis externa as described by Kinnear and by Mitchell. In a few the external manifestations followed an attack of suppurative otitis media, and some had a superimposed contact dermatitis. A search was made for evidence of focal infection, and where necessary this was treated. Among 14 cases, 8 showed marked improvement, 4 equal improvement on both sides, and 2 no change.

Group 4: Pityriasis Faciei Simplex.—The two children suffering from this disorder made a slow response.

Group 5: Acute Vesicular and Papular Eczema.—This comprises a mixed group of endogenous and exogenous eczema, comparable in the appearance of their eruptions. They were usually given sedative treatment by mouth. Fifteen patients showed much improvement on the vioform preparation, 10 responded equally to the vioform and the control preparation, 2 were aggravated by both, 1 improved more rapidly on the control cream than on the vioform cream, and 5 showed no improvement on either side.

Group 6: Gravitational Eczema.—Among these patients suffering from bilateral gravitational eczema without active ulceration, 12 showed much improvement, 4 equal improvement on both legs, and 2 no change.

Group 7: Cheirropompholyces.—These were all of constitutional origin. Three appeared to improve more rapidly on the vioform preparation, 1 appeared to be aggravated, and in 9 the course of the disorder was unaffected on either side, spontaneous remissions and exacerbations occurring. Concurrent sedation by mouth was used in this group.

*Information supplied by Messrs. Ciba, Ltd.

†This was supplied by Messrs. Ciba Laboratories, Ltd., and was stated to contain sodium lauryl sulphate, stearyl alcohol, spermaceti, glycerin, soft yellow paraffin, and water.

Group 8: Chronic Papular and Fissuring Eczema.—These were 7 chronic cases of endogenous eczema. One showed some improvement, the remainder no change.

Group 9: Impetigo.—Five cases cleared satisfactorily with vioform cream.

Group 10: Infantile Eczema.—The results of the treatment of this condition were unsatisfactory. Eight cases improved equally on the cream and on the cream base, 5 showed no change, and 3 displayed some irritation on the vioform cream.

Group 11: Nummular Eczema.—Four showed marked improvement; two appeared to be irritated by the vioform and one by the cream base.

Group 12: Neurodermatitis.—One showed improvement, three showed equal improvement on both preparations, whilst in one patient the base proved the more effective.

Group 13: Lichen Hypertrophicus.—In three patients no change was noted.

Group 14: Psoriasis.—In two patients with classical psoriasis no improvement could be attributed to the vioform. In psoriasis involving the flexures (seborrhoeic) two appeared to be improved, and four showed no change which could be attributed to the vioform. Two patients with pustular psoriasis found the active preparation and the vehicle equally effective.

Group 15: Dermatitis Herpetiformis.—Lesions in two patients with this disorder responded equally to the vioform cream and base, one patient was aggravated by both, and one appeared to be aggravated by the vioform cream. In view of the sensitivity of these patients to potassium iodide locally, this measure was tried at first very carefully, but the action expected from an iodide preparation was not noted.

Comments

Unfortunately, vioform is yellow and it stains. When dispensed in a water-miscible base the staining tendency is less marked. It darkens on exposure to air; this does not seem to interfere with its therapeutic efficiency. A few patients stated that on application they experienced a mild burning sensation, which quickly disappeared; when there was intolerance this symptom was more pronounced.

Vioform proved antipruritic in eczematous conditions and soothing in the treatment of contact dermatitis; it showed marked antiseptic action in pyoderma and secondarily infected dermatoses. In the media used it was found to well tolerated.

Conclusions

The effect of 3% vioform in a water-miscible base or in petroleum jelly has been assessed under carefully controlled conditions on a variety of dermatoses in 176 patients. It proved a useful local application in the treatment of the following conditions: cocco-genic sycosis barbae, seborrhoeic dermatitis, otitis externa, acute vesiculo-papular eczema, gravitational eczema, impetigo, and, occasionally, in nummular eczema. The incidence of cases of intolerance was low (4.5%). This investigation suggests that vioform merits more extensive use in these conditions.

REFERENCES

- Army med. Dept Bull., 1943, No. 29, 226.
 Bachem, C., and Kriens, H. (1921). *Biochem. Z.*, 120, 230.
 Barber, H. W. (1944). *Practitioner*, 152, 281.
 Barber, M. (1948). *British Medical Journal*, 2, 863.
 — and Rozwa, J. (1948). *Lancet*, 2, 641.
 Bertlich (1939). *h. med. Wschr.*, 65, 757.
 Canizares, O. (1948). *Arch. Derm. Syph.*, Chicago, 52, 17.
 Carpenter, C. C. (1938). *Ibid.*, 37, 307.
 Chargaff, E. (1929). *Biochem. Z.*, 215, 69.
 Chu, W. C., and Cutting, W. C. (1946). *Proc. Soc. exp. Biol., N.Y.*, 63, 347.
 Council on Pharmacy and Chemistry (1947). *J. Amer. med. Ass.*, 135, 157.

- David, N. A., Phatak, R. M., and Zencr, F. B. (1944). *Amer. J. trop. Med.*, 24, 29.
 Friedlaender, S., Warrus, R. M., and Feinberg, S. M. (1946). *Arch. Derm. Syph.*, Chicago, 54, 517.
 Goldman, L., et al. (1946). *J. Amer. med. Ass.*, 131, 883.
 Hellicr, F. F. (1947). *Brit. J. Derm. Syph.*, 59, 249.
 Ingram, J. T. (1938). *Practitioner*, 141, 475.
 Jadassohn, J. (1930). *Handbuch d. Haut- u. Geschlechts-Krankheiten*, vol. V/1.
 Jadassohn, W., and Pfanner, E. (1945). *Dermatologica*, Basel, 91, 46.
 MacKenna, R. M. B. (1945). *Medical Annual*, p. 307. Bristol.
 Montigel, Th. (1910). *Schweiz. Vsehr. Zahnheilk.*, 20, 247.
 O'Donovan, W. J., and Klorfajn, I. (1946). *Lancet*, 2, 444.
 Peck, S. M. (1934). *Arch. Derm. Syph.*, Chicago, 29, 456, 457.
 Phillips, B. (1946). *Brit. J. Derm. Syph.*, 58, 213.
 — (1948). *Ibid.*, 60, 375.
 Sulzberger, M. B., and Wolf, J. (1942). *Dermatologic Therapy in General Practice*. Chicago.
 Templeton, H. J., Lunsford, C. J., and Allington, H. V. (1947). *Arch. Derm. Syph.*, Chicago, 56, 325.
 Tzanck, A., Sidi, E., and Roujeau, J. (1947). *Pr. méd.*, 55, 188.

DISSEMINATED SCLEROSIS IN SOUTH AFRICA

ITS RELATIONSHIP TO SWAYBACK DISEASE AND SUGGESTED TREATMENT

BY

GEOFFREY DEAN, M.B., Ch.B., M.R.C.P.

It has long been believed, and rightly, that disseminated sclerosis very rarely occurs among the white population of South Africa and that it is most rare among those white people who have been born and bred there. Indeed, some physicians deny that it occurs at all in such people. These opinions, however, were based on individual clinical experience; there were no reliable and exhaustive figures. Therefore the available evidence relating to the incidence, geographical distribution, etc., of the disease among white South Africans during the last ten years has been collected and assessed. It may be said here that disseminated sclerosis is unknown in the native and other coloured peoples of the country.

Incidence and Geographical Distribution

In order to discover the incidence, etc., of the condition it was decided to search the medical records of all the main hospitals in the country for the last ten years. Records of a diagnosis of disseminated sclerosis could be found only at Groote Schuur Hospital, Capetown, at Johannesburg General Hospital, and at the Pretoria Hospital—in fact, at the three university teaching hospitals. In addition, three isolated cases—two at Port Elizabeth and one at Durban—have been reported. The cases are here summarized. In all cases, unless otherwise stated, the Wassermann reaction was negative and the blood count normal.

Groote Schuur Hospital, Capetown.—Between 1938 and 1948 eight patients were diagnosed as suffering from disseminated sclerosis. These cases are summarized in Table I. Two of these patients were white women born in South Africa (one lived at Capetown and one at Vryburg); one was a South African who had spent six months abroad; and two others were South Africans of German origin, though in the case of one of these the diagnosis was doubtful. Of the remaining three cases, in one the diagnosis was probably wrong and in the other two the records were incomplete.

Johannesburg General Hospital.—In the files at Johannesburg General Hospital 22 cases were classified as suffering from disseminated sclerosis between the years 1938 and 1948. The cases are summarized in Table II. Five of these patients were indigenous white South Africans, 14 were immigrants, and in the three others the diagnosis was in my opinion definitely

mistaken. These last three cases will not be considered further. Of the five indigenous patients, the diagnosis is considered to be correct in three and doubtful in two.

TABLE I—Cases in Capetown

Case	Sex	Age	Race	Diagnosis
C1	F	46	S.A.	Symptoms of weakness in legs for 20 years, periods of remission; nystagmus, intention tremor, posterior column and pyramidal tract involvement. Seen by me (DS)
C2	F	40	S.A.	Symptoms of paraesthesia on trunk, a visual episode, dragging of legs, with remissions, for seven years. Sensory loss, pyramidal tract and posterior column involvement (DS)
C3	F	35	S.A. (a)	In England for six months when aged 8. A five-years history, with remissions, of diplopia, tingling in hands, and weakness of both legs. Nystagmus, temporal pallor, and pyramidal tract involvement (DS)
C4	F	54	IMM	Of German origin. Temporary blindness 20 years ago, tremor, clumsiness, weakness right leg, loss of sensation in foot, remissions. Pallor of temporal half of optic disks; cerebellar, sensory, and pyramidal tract involvement (DS)
C5	F	30	IMM	Of German origin. Giddiness and anaesthesia of right side of face. On examination no lesion of central nervous system (Doubtful)
C6	F	47	S.A.	Twelve years ago had a temporary total paralysis and severe pain affecting both legs, a year later the right arm was similarly affected, a year ago blindness of right eye with pain. No physical signs. (Not DS)
C7				Case records incomplete
C8				Case records incomplete

S.A. = South African white who has never been abroad. S.A. (a) = South African who has been abroad. IMM = Immigrant. DS = Disseminated sclerosis diagnosed.

Pretoria Hospital, Pretoria—The records reveal one definite case of disseminated sclerosis in an immigrant who entered the country when he was 2 years old, and two doubtful cases (Table III).

Port Elizabeth—Two cases were found here. The first was that of a woman, aged 60, who was born in South Africa but had spent the greater part of her life up to the age of 39 in England. First one eye then the other became affected by temporary loss of vision more than 20 years ago while in England. Since then she had had attacks of weakness in the

TABLE II—Cases in Johannesburg

Case	Sex	Age	Race	Diagnosis
J1	M	39	S.A.	Weakness in right leg, nystagmus, optic pallor, intention tremor, posterior column and pyramidal tract involvement (DS)
J2	M	40	S.A.	Unsteadiness of gait, hyperaesthesia of right thigh and weakness of right leg. Nystagmus and pyramidal tract involvement (DS)
J3	F	43	S.A.	Blurring of vision, paraesthesia, and weakness of both legs, remissions, urinary incontinence. Temporal pallor, intention tremor, sensory loss and pyramidal tract involvement (DS)
J4	F	17	S.A.	A two-years history of difficulty with micturition and dragging of feet. No physical signs (Doubtful)
J5	M	27	S.A.	Cramp in legs. (Doubtful)
J6	M	50	IMM	Temporary blurring of vision six years ago, now drags the right leg. Nystagmus, temporal pallor and pyramidal tract involvement (DS)
J7	M	30	IMM	Loss of sensation in finger tips of right hand drags the right leg, remissions. Sensory loss in fingers and pyramidal tract involvement (DS)
J8	F	37	IMM	Weakness of both legs and precipitancy of micturition, remissions. Pyramidal tract involvement (DS)
J9	F	45	IMM	Twenty years ago had temporary blurring of vision in one eye. Weakness in right arm and right leg. Pyramidal tract involvement (DS)
J10	F	47	IMM	Blurring of vision a few years ago; weakness in right arm and right leg. Nystagmus and pyramidal tract involvement. (DS)
J11	M		IMM	Insufficient details available
J12	F	31	IMM	Insufficient details available
J13	M	38	IMM	History suggestive of disseminated sclerosis but details of examination are insufficient
J14	F	43	IMM	Weakness right leg and difficulty in starting micturition. Insufficient details available
J15	M	35	IMM	Not disseminated sclerosis
J16	F	40	IMM	History suggestive of disseminated sclerosis, but details of her physical examination are insufficient for diagnosis
J17	M	48	IMM	Insufficient evidence
J18	M	65	IMM	Weakness in both legs and difficulty with micturition. Pyramidal tract and posterior column involvement. W.R. positive. A syphilitic cause for the symptoms has not been excluded
J19	M	31	IMM	Weakness in left leg. Left Babinski response extensor; W.R. positive. Again a syphilitic cause has not been excluded

legs and arms, with remissions, and hyperaesthesia of the left leg. On examination a classical case of disseminated sclerosis was seen: nystagmus; temporal pallor; and cerebellar, pyramidal tract, posterior column, and sensory involvement.

TABLE III—Cases in Pretoria

Case	Sex	Age	Race	Diagnosis
P1	M	44	IMM	Immigrated from Australia when 2 years old. In the last nine years attacks of transient blindness and hemiparesis. Nystagmus, intention tremor, ataxia, and pyramidal tract involvement (DS)
P2	M	53	S.A.	Fifteen years ago pyrexia and polyarthritides. Agglutinations for <i>Brucella abortus</i> positive. He developed ataxia with nystagmus and Rombergism, is occasionally incontinent of urine, and has transient paraesthesiae. There is pyramidal tract, posterior column, and cerebellar involvement. This seems to be a case of focal demyelination following brucellosis.
P3	M	59	S.A.	Account translated from <i>Geneeskundige Tydskrift</i> . Thirty five years ago he had weakness and loss of sensation in both legs, with retention of urine; lumbar laminectomy was performed, a short time later he had double vision for a few days. Six years ago he developed a sudden hemiplegia, since when he has been bedridden. On examination there was right sided hemiplegia with bilateral pyramidal tract involvement, the posterior columns were normal. In my opinion there is not enough evidence to diagnose disseminated sclerosis. The hemiplegia was probably due to a cerebral thrombosis.

The second patient was the brother of the first case. He was also seen by me. He developed a slowly increasing weakness starting at the extremities, over a period of three years; this increased until he died following paralysis of his intercostal muscles. There was a bilateral extensor response, with absent reflexes and slurring of speech. In view of the fact that his sister had disseminated sclerosis this may have been a "forme fruste" of the disease.

Durban—Dr J. Drummond, medical specialist, has informed me that he treated a case of disseminated sclerosis in a South-African-born girl who had not been abroad. Unfortunately the records have been lost, and she has long been dead. As the records are not available, this case will have to be included in the "doubtful" group.

Comparison with England and Wales

My opinion, based on the above analysis, is that disseminated sclerosis does occur among South Africans who have never been abroad, but the incidence is extremely low. There have been two cases at Groote Schuur Hospital, Capetown, both women—one who had spent all her life in Capetown, and one from Vryburg—and three cases at Johannesburg General Hospital—one from Lichtenburg, one from Rouxville, Transvaal, and one of unknown address: five cases in all, scattered throughout the Union, and out of a white population of 2,400,000. This number is too small to enable one to draw any conclusions concerning the geographical distribution of the disease. There may of course have been other cases, but an obscure long-lasting disease would usually be discussed by the local doctor and eventually sent to a specialist in one of the big centres; and because of its rarity the specialist would normally send the case to hospital for investigation.

In South Africans who have been abroad two cases were diagnosed at Capetown, five at Johannesburg, one at Pretoria, and one at Port Elizabeth—making nine cases in all (Table IV). Of the doubtful cases in South Africans who have never been abroad there are two at Johannesburg, two at Pretoria, and one at Durban—five in all. There are ten doubtful cases among South Africans who have been abroad—one at Capetown and nine at Johannesburg. Probably the majority of these patients do suffer from disseminated sclerosis. A striking factor about all cases is the mildness of the disease; only one "doubtful" case is bedridden.

It has already been noted that the disease is unknown among the native and coloured peoples of South Africa. Two cases have been reported in East African natives.

TABLE IV.—*Classification of Cases Diagnosed as Suffering from Disseminated Sclerosis in South Africa*

	Capetown	Johannesburg	Pretoria	Elsewhere	Total
Disseminated sclerosis in South Africans who have never been abroad	2	3	0	0	5
Disseminated sclerosis in South Africans who have been abroad, or immigrated	2	5	1	1	9
Doubtful cases in South Africans who have never been abroad	0	2	2	1	5
Doubtful cases in South Africans who have been abroad, or immigrated	1	9	0	0	10

Brain (1940) gives statistics on the incidence of disseminated sclerosis. His figures are for the year 1930. He estimates the incidence as 160 per million for England and Wales. His method of computation, based on that of Bramwell, assumes an average expectation of life of eight years after diagnosis of the condition—in my opinion a very modest estimate. Therefore the annual number of deaths from disseminated sclerosis multiplied by eight million divided by the population is the incidence per million. Later figures give approximately the same incidence. Deaths from disseminated sclerosis in 1935 were 781; in 1938, 764; and in 1945, 760. The population of England and Wales in 1942 was 42,600,000. On the continent of Europe the disease is widespread in Germany, France, Scandinavia, Austria, and especially in Switzerland.

The figure of 160 per million in England and Wales may be compared with the South African figure of five cases out of an indigenous white population of 2,400,000.

Swayback Disease of Lambs

Campbell *et al.* (1947) reported the occurrence of four cases of disseminated sclerosis among seven workers engaged on research into swayback disease of lambs. This is a demyelinating disease, known to be associated with a deficiency of copper in the soil on which the affected lambs are bred, or with a defective absorption of copper.

In order to obtain some information at first hand about swayback disease I visited Onderstepoort Veterinary Research Station and consulted Dr. de Kock, the Director, and Dr. Schultz, one of the research workers concerned with this disease.

Swayback disease is, as far as present knowledge goes, confined in South Africa to three small areas—a small coastal strip around Mossel Bay from Knysna to Bredasdorp, along Saldanha Bay up to Vredenberg, and around Stellenbosch. It will be noticed that the five proved cases of disseminated sclerosis in native-born white South Africans are not confined to these "swayback" areas.

South African farmers call swayback disease "Lamkruis," which means paralysis of the lumbar region; also "Swaai-gat," or swaying back; and "Litsiekte," or joint disease. Adult sheep are seldom affected by it, but newborn lambs commonly are. The incidence is never high, although it does vary from year to year. Affected lambs are unsteady in their gait and spastic in their movements. Post-mortem examination often discloses cavities in the cerebrum filled with a yellowish fluid. The cerebellum is always involved, though there is never cavitation there. Histological examination of the central nervous system reveals a widespread round-cell infiltration and demyelination. Much more detailed work is still required on the pathology and histology of the disease in South Africa.

Relationship between Swayback Disease and Copper Deficiency—For many years the farmers in the "sway back" areas have given pregnant ewes copper sulphate solution by mouth in order to prevent the occurrence of the disease in their lambs. Further, it has been shown at Onderstepoort that there is a relationship between the copper content of the grazing and the presence of the disease. In the Karroo areas, where swayback disease is unknown, the ruminal copper content (which is an index of the copper content of the soil) is 13 parts per million—a high proportion; but in the coastal areas, where the disease does occur, it is only 5 parts per million. This relationship has also been noted in England; and there, too copper sulphate is given in certain areas to pregnant ewes as a means of prophylaxis against the disease. Less commonly, but successfully, it has been used in the treatment of established cases. A point of interest is that in the Karroo a form of jaundice occurs in sheep, known as enzootic icterus, with gross haemolysis and haematuria. Post mortem, the copper content of the liver is found to be over 200 times the normal. Enzootic icterus seems to be a form of copper poisoning, although why the copper, which is normally fixed in the bones, should be suddenly mobilized is not known. Experiments are now being carried out to find if copper can be mobilized in the same way as lead—by giving acid salts. This research is of particular interest because of the possible toxic results of copper therapy in man.

Relationship between Disseminated Sclerosis and Swayback Disease—No explanation can yet be given for the occurrence, as reported by Campbell *et al.* (1947), of four cases of disseminated sclerosis among seven workers engaged on research into swayback disease. A low copper content of their food could hardly be more than a predisposing factor, as in a highly developed country such as England the copper content of the diet cannot be supposed to vary much from one region to another, while the incidence of the disease among the general public is certainly much less than it was among these research workers.

Margulis, Soloviev, and Shubladze (1946) claim to have isolated a virus responsible for disseminated sclerosis; and perhaps, therefore, an infective factor is common to both diseases, a relative copper deficiency in the host being the predisposing factor. A possible explanation of the observation of Campbell *et al.* would then be that a copper content of the body sufficient to protect against chance infection was not sufficient to do so when the infection was massive. This of course is purely hypothetical; but it is not at variance with the known facts and does provide a hopeful basis for future work on the problem.

Suggested Form of Treatment for Disseminated Sclerosis

Whatever the precise relationship between the two diseases may be, the observation of Campbell *et al.*, supported by the facts recorded in this article, does strongly suggest that there is some relationship, and that it resides most probably in there being a common causative factor (or factors). It is therefore reasonable to suppose that a form of treatment effective against one disease will be effective against the other. Also, there is at present no form of treatment for disseminated sclerosis that is of proved value.

Thus, while mass prophylaxis against disseminated sclerosis by ensuring an adequate copper content of the diet is neither indicated nor practicable at the moment there is in my opinion much to be said for treating established cases with copper sulphate. A daily dose of $\frac{1}{2}$ (16 mg.) is suggested. Even bigger doses than this have been found to be safe when given therapeutically over a period of many months to the four research workers who

contracted the disease. However, in view of the occurrence of enzootic icterus in sheep from copper poisoning, the possibility of overdosage with copper in man must be borne in mind.

Summary

Campbell *et al.* have recorded a striking incidence of disseminated sclerosis among workers engaged on research into swayback disease.

In South Africa disseminated sclerosis is very uncommon. So also is swayback disease; and except in those small areas where it occurs the copper content of the soil is high. Furthermore, treatment with copper is well known to be an effective means of preventing the disease and also of treating it.

It is therefore suggested that copper therapy of established cases be given a trial.

BIBLIOGRAPHY

- Brain, W. R. (1940) In Kinnier Wilson's *Neurology*, vol 1, p 148 London.
Campbell, A. M. G., Daniel, D., Porter, R. J., Russell, W. Ritchie Smith, H. V., and Innes, J. R. M. (1947) *Brain*, 70, 59
Goldstein, B. (1946) *E. Afr. med. J.* 23, 170
McAlpine, D. (1946) *Brain*, 69, 233
Maier, C. (1947) *Schweiz. med. Wschr.* 77, 697
Margulis, M. S., Soloviev, V. D., and Shubladze, A. K. (1946) *J. Neurol. Neurosurg. Psychiat.* 9, 63
Marsh, F. (1947) *Lancet*, 2, 262
Reese, H. H. (1946) *J. Lancet*, 66, 359
Shield, J. A. (1947) *Sth. med. J.* 40, 55
Williams, D. (1946) *Proc. R. Soc. Med.* 39, 599

THE USE OF PROCAINE PENICILLIN IN CHILDREN

BY

J. L. EMERY, M.D., D.C.H.

Clinical Pathologist; Lecturer in Pathology, University of Sheffield

S. M. STEWART, B.Sc.

Bacteriologist, Demonstrator in Bacteriology, University of Sheffield

AND

D. G. H. STONE, M.B., M.R.C.P.

Resident Clinical Assistant to the Department of Child Health,

(From the Children's Hospital, Sheffield)

A penicillin preparation that will give a bacteriostatic blood level between infrequent injections has obvious advantages. There have been many attempts to increase the time interval between injections by suspending soluble penicillin in various media such as beeswax and peanut oil: these preparations have not been satisfactory.

Salivar *et al.* (1948) described the formation of an insoluble compound by the chemical combination of procaine and penicillin in equal molecular proportions. This substance dissociates gradually to liberate soluble penicillin, and when suspended in oil gives prolonged blood-serum penicillin levels in animals (Hobby *et al.*, 1948).

Several reports have been published on the use of an oil suspension of procaine penicillin in man. Since a single daily injection is aimed at, an analysis of the recorded 24-hour blood-serum penicillin levels has been made and is given in Table I. The only paper that is concerned with children is that of Carson *et al.* (1949). It will be seen that, in the larger adult series, 34 of 62 patients (Hewitt *et al.*, 1948), 33 of 78 patients (Thomas *et al.*, 1948), and 21 of 29 patients (Jones and Shooter, 1948) gave penicillin levels of over 0.03 unit per ml. 24 hours after the injection of procaine penicillin.

This communication reports an investigation at the Children's Hospital, Sheffield, of the serum penicillin levels

TABLE I—Summary of Published Work

Reference	Dose in Units	Type of Patient	No. of Patients	No. of Patients with 24-hr Serum Levels u./ml.			Ratio of Cases Giving 24-hr. Levels of Over 0.03 u./ml.
				<0.03	0.03-0.2	>0.2	
Hewitt <i>et al.</i> (1947)	300,000	Mixed	10	1	6	2	8 of 9
Boger <i>et al.</i> (1948)	300,000 300,000 150,000	Ambulatory In-patients Normal	9 10 10	8 4 4	1 6 0	0	1 of 9 6 of 10 9 of 10
Carson <i>et al.</i> (1949)	11 Kg. 300,000 over 11 Kg.	children Bed cases	41	—	—	—	"The great majority" (740 of 41)
Hewitt <i>et al.</i> (1948)	300,000	In-patients	62	28	30	4	34 of 62
Hobby <i>et al.</i> (1948)	600,000 300,000	Ambulatory	3	0	3	0	3 of 3
Jones and Shooter (1948)	300,000	Mixed	29	8	16	5	21 of 29
Sullivan <i>et al.</i> (1948)	300,000 600,000 900,000 1,200,000	In patients " " "	17 2 1 1	1 0 0 0	14 2 0 1	2 0 1 1	16 of 17 2 of 2 1 of 1 1 of 1
Thomas <i>et al.</i> (1948)	300,000	"	78	—	—	—	33 of 78

obtained in 50 children following the administration of procaine penicillin in arachis oil. Twenty-five were referred from the casualty department, and the remainder were cases in bed.

Method

The preparation of procaine penicillin in arachis oil is viscous, and accurate measurement is difficult. Accordingly empirical dosage on an age basis was adopted. The dosage was: 75,000 units (0.25 ml.) to children under the age of 18 months, 150,000 units (0.5 ml.) to children between 18 months and 5 years, and 300,000 units to older children. Eight of the youngest age group received 150,000 units. The injections were made into the vastus lateralis. The penicillin serum levels were estimated by the capillary-tube method described by Fleming (1943), using whole blood inoculated with Richard's strain of *Streptococcus pyogenes*. The blood used for assay was collected in Wright's capsules and was taken at varying times. In eight children the levels in the first few hours were followed to assess the rapidity of absorption. In all cases the serum levels were estimated at the end of 24 hours.

Results

In the eight cases which were observed during the first few hours after injection of procaine penicillin the penicillin serum levels rose rapidly, to reach a peak between two and six hours. Of a further eight cases in which the serum level was estimated 12 hours after injection, all had a concentration greater than 0.25 u./ml.

An analysis of the 24-hour penicillin serum levels is presented in Table II. In 29 of the 50 patients the 24-hour

TABLE II—Analysis of the 24-hour Blood Penicillin Level on 50 Children Following Intramuscular Injection of Procaine Penicillin

Age	Dose Units of Penicillin	No. of Patients	Patients with 24-hr Levels over 0.03 u./ml.
0-17 months	75,000	8	6
	150,000	8	7
18 months-4 years	150,000	16	9
5 years-15 years	300,000	18	7
In patients 18 months-15 years		19	11
Out-patients 18 months-15 years		15	5

levels were above 0.03 u./ml. Of the 16 children under 18 months, six of the eight given 75,000 units and seven of the eight given 150,000 units had a 24-hour level over 0.03 u./ml. Of the children over the age of 18 months, 16 of 34 had a level above 0.03 u./ml. In this group 11 of 19 in-patients showed levels over 0.03 u./ml. compared with five of 15 out-patients.

Thirty-six children received a further injection at 24 hours, and 26 of these showed an adequate concentration at 48 hours. Twenty-three were given a third injection at 48 hours, and 19 of these gave a level of over 0.03 u./ml. at 72 hours. The children presenting a low level after a second injection were not always those having a low level at 24 hours.

No patient showed a general reaction to the injection. In one child there was a localized swelling at the site of injection which resolved in two days.

Discussion

This study was confined to the investigation of serum penicillin levels, and no attempt was made to relate clinical change to the concentrations obtained. We have assumed that a minimum bacteriostatic serum level of 0.03 u./ml. is required. Although this level is that most generally accepted, the minimal penicillin level approved in some studies of procaine penicillin varies from 0.1 u./ml. (Carson *et al.*, 1949) to 0.01 u./ml. (Hewitt *et al.*, 1948); the direct comparison of results is therefore difficult.

The results that we have obtained are very similar to those reported in adults—i.e., that penicillin is present in the blood stream in significant amounts in approximately half of the cases 24 hours after an injection of procaine penicillin in arachis oil (see Table I).

A difference in 24-hour serum levels between ambulatory patients and in-patients was seen in our cases. These groups are small, but when considered with the cases described by Boger *et al.* (1948) they yield results which are just significant and indicate a more rapid absorption and excretion in ambulant cases. This point is important, as this preparation is most likely to be used in ambulant patients.

The results of Carson *et al.* (1949) differ a little from ours. The dose of penicillin that they gave to their children was approximately twice that given in the present series. Although they noted no exact correlation between serum penicillin titres and the amount of penicillin administered, the levels maintained at 24 hours were higher than ours, whereas the levels they obtained during the first six hours after injection were lower. This discrepancy may be due to the use of a penicillin preparation of a different particulate size.

By greatly increasing the dose of procaine penicillin it may be possible to attain a reliable 24-hour serum penicillin level. Higher doses have not been given in this series, because of the bulk of the injection, the possible toxic effects of absorbed procaine, and the inhibitory action on sulphonamides of procaine hydrolysed to para-amino benzoic acid (Carson *et al.*, 1949).

We conclude that procaine penicillin, owing to the variation of the 24-hour serum penicillin levels seen in this series and those of others, is not suitable for once-daily injection.

Preliminary trials with a procaine penicillin preparation containing aluminium stearate indicate that it may maintain more reliable blood levels.

Summary

The serum penicillin concentration after the intramuscular injection of procaine penicillin in arachis oil has been followed in 50 children.

Procaine penicillin was absorbed rapidly, but the penicillin titre in the blood after 24 hours was extremely variable.

Procaine penicillin in arachis oil is not an ideal preparation for the administration of penicillin by once-daily injection in children.

In-patients in this investigation were under the care of Professor R. S. Illingworth. We would also like to thank Dr. S. Doxiadis, of the Department of Child Health, and Professor E. J. Wayne, of the Department of Pharmacology, University of Sheffield, for the interest they have taken in this investigation.

REFERENCES

- Boger, W. P., Oritt, J. E., Israel, H. L., and Flippin, H. F. (1948). *Amer. J. med. Sci.*, 215, 250.
 Carson, M. J., Gerstung, R. B., and Mazur, H. A. (1949). *J. Pediatr.*, 34, 40.
 Fleming, A. (1943). *Lancet*, 2, 434.
 Herrell, W. E., Nichols, D. R., and Heilman, F. R. (1947). *Proc. Mayo Clin.*, 22, 567.
 Hewitt, W. L., Whittlesey, P., and Keefer, C. S. (1948). *New Engl. J. Med.*, 239, 286.
 Hobby, G. L., Brown, E., and Patelski, R. A. (1948). *Proc. Soc. exp. Biol., N.Y.*, 67, 6.
 Jones, P. F., and Shooter, R. A. (1948). *British Medical Journal*, 2, 933.
 Salivar, C. J., Hedges, F. H., and Brown, E. V. (1948). *J. Amer. chem. Soc.*, 70, 1287.
 Sullivan, N. P., Symmes, A. T., Miller, H. C., and Rhodchamel, H. W. (1948). *Science*, 107, 169.
 Thomas, E. W., Lyons, R. H., Romansky, M. J., Rein, C. R., and Kitchen, D. K. (1948). *J. Amer. med. Ass.*, 137, 1517.

ACUTE PORPHYRIA AND ASSOCIATED ELECTROLYTE CHANGES

BY

DEWI DAVIES, M.B., M.R.C.P.

The porphyrias are attracting increasing interest in Britain, though most of the work on the subject still appears in Scandinavian and American literature. The history of the porphyrias is reviewed by Nesbitt (1944).

Acute and latent porphyria are different phases of one disease, a chronic disorder of pyrrole metabolism which is sometimes familial. The aetiology remains unknown. Barbiturates, often cited as precipitating factors of the acute phase, seem to have been given following the onset of clinical manifestations in most cases. Symptoms usually appear between the ages of 20 and 45. The chemistry and reactions of the porphyrins have been reviewed by Dobriner and Rhoads (1940), Prunty (1946), Jørgensen and With (1947), and Discombe (1948).

The case of acute porphyria here presented showed most of the classical features of the disease. The presence of testicular atrophy, not previously reported, may be coincidental. Some cases may show only some of these features and urinary discoloration may be inconspicuous, so that only increasing awareness of the condition and of the test described by Discombe will lead to early and more frequent diagnosis.

Chronic porphyria and porphyrinuria, distinctly separate entities from acute porphyria, are respectively described by Mason, Courville, and Ziskind (1933) and by Rimington (1943).

Case History

A man aged 20 was admitted to a Royal Naval hospital on Nov. 14, 1947, with abdominal pain of four days' duration. His father had suffered from bouts of abdominal pain for several years and died at the age of 43 after a "cold" appendicectomy. His mother, two brothers, and a stepbrother by the same mother were well. Their urine showed no porphobilinogen or spectroscopic evidence of porphyrins. His alcohol consumption was negligible, and there was no evidence that he had taken drugs at any time.

He had been quite well until June, 1947, when he complained of periumbilical pain, vomiting, and constipation, and two days later (June 11) he was admitted to hospital. His symptoms continued for two weeks. The day after admission his pulse rate rose to 90–100. It remained so for three weeks and then fell to 85–90. The only findings were a mild anaemia

nd achlorhydria. He was symptom-free on discharge on July 25.

Apart from the loss of some 10 lb. (4.5 kg.) in weight he remained well until Nov. 11, when he was admitted on the fourth day of this illness. He complained of constant aching pain in the lower abdomen. He had vomited thrice and had obstinate constipation. The temperature was 97.4°F . (36.3°C .) and pulse 80. He looked thin and ill. The sclerotics had an unusual brownish tint, not due to bilirubinaemia. There was no pigmentation of the skin. He had generalized abdominal tenderness and considerable borborygmi. The testicles were small, measuring about 2 cm. in their long diameter. No other abnormality was noted. The temperature remained normal throughout the illness.

On the sixth day his pulse was 80. He was restless at night and was found sleep-walking. The next two days his pulse was 80-100 and the blood pressure 140/90. He was very miserable, lying curled up and complaining of his pain. All tendon-jerks were found to be sluggish. On the ninth day, after being delirious during the night, he had hallucinations. Acute porphyria was at this time first considered as a diagnosis on the combination of abdominal and nervous symptoms. The urine was macroscopically normal, but no chemical tests were done. The nightly administration of pentobarbitone ("nembutal") was stopped. On the 10th and 11th days his pulse was 90-120 and the blood pressure 115/85. Delirium and hallucinations continued, but pain had subsided. The urine on the 11th day had a pinkish tinge.

Examination with a Hartridge reversion spectroscope showed no definite absorption bands (but had a thick layer been used as recommended by Chandler, Harrison, and Rimington (1939) a positive result might have been obtained). The porphobilinogen test was not done. A psychiatrist diagnosed schizophrenia and advised transfer to a psychiatric hospital. This was done, but as it was still considered that the diagnosis was acute porphyria urine was kept for further examination. In three days this became dark brown in colour, and spectroscopy showed the absorption bands of acid porphyrin.

He was brought back to the general ward on the 16th day. He was mentally clear, and had noticed weakness of the arms, with difficulty in sitting up, for the previous two days. The urine appeared normal when passed. The pulse was 80-120 and the blood pressure 120/80. There was only flickering contraction of deltoid and pectoralis major muscles, with slight weakness of all the arm muscles. Biceps-jerks were absent. Flexion of the spine was very weak. On the 20th day the knee- and ankle-jerks were absent and there was some weakness of the legs.

Between the 22nd and 24th days he was again restless and delirious. Impaired pain sensation was found on the inside of the thighs. His condition was critical between the 24th and 28th days, and his pulse rate rose to 140. Thereafter there was very gradual improvement. By the 36th day he was mentally alert, there was some increase in power in arms and legs, the knee and ankle reflexes were normal, and no sensory changes were found. The pulse was still 110-135. By the 55th day the pulse was 85-100 and the blood pressure 115/80.

In the 10th week there was transient nausea and abdominal pain and a phase of hypotension; the blood pressure was 95/70. By the 17th week there was still considerable weakness of the deltoids, and the pulse rate ranged between 85 and 100. During the 21st week he had another attack of abdominal pain lasting about a week. Twenty-six weeks after the onset he was gaining weight and his arms were improving in strength.

Porphobilinogen and porphyrins were found in the urine throughout the period following diagnosis. Detailed examination of the porphyrins was not undertaken.

Subsequent History.—On July 3, 1948, he was admitted to hospital under the care of Dr. G. A. Emmerson with a recurrence of abdominal pain and severe insomnia. Hypertension and tachycardia were present and low serum sodium and chlorides were recorded. His abdominal pain gradually subsided, but the pulse rate rose to 110-130. On July 14 he complained of hoarseness. Phonation appeared to be weak, and there was weakness of extension of the right wrist. He died

suddenly and unexpectedly on the morning of July 16. No barbiturates had been administered.

Post-mortem examination showed pulmonary oedema and some bronchopneumonia and a flabby, thin myocardium. The testicles were not examined. Dr. F. T. G. Prunty reported on some of the tissues sent for examination. The lungs showed bronchopneumonia. There was some old and active tuberculosis in a tracheo-bronchial lymph gland. The liver showed early central necrosis in some lobules, and the liver cells contained brownish pigment granules not yet identified. The kidneys contained epithelial debris in some capsular spaces and there was capillary congestion. The convoluted tubules were the site of cloudy swelling, and in some places atrophy and pyknosis of nuclei had occurred. The adrenals were greatly hypertrophied, and the cells of the fascicula in places gave evidence of lipid depletion.

Investigations.—Body weight: 13th day, 104 lb. (47.2 kg.); 27th day, 91 lb. (41.3 kg.); 40th day, 88 lb. (39.9 kg.); 75th day, 89 lb. (40.4 kg.); 110th day, 92 lb. (41.7 kg.). Urinary creatinine: 5th to 7th weeks, 0.5-1.4 g. per 24 hours. Urinary creatine: 42nd day, nil. Wassermann reaction negative. Fourth week: Serum bilirubin less than 0.5 mg. per 100 ml.; cephalin flocculation and Takata-Ara reaction negative; alkaline phosphatase, 3.8 King-Armstrong units. Quick's intravenous hippuric acid test: (30th day) excretion, 0.78 g. hippuric acid (as sodium benzoate); (107th day) excretion, 0.97 g. hippuric acid. Serum proteins (42nd day), 7.6 g.—albumin 5.3 g., globulin 2.3 g. Glucose-tolerance test (35th day): fasting, 74 mg.; $\frac{1}{2}$ hour, 110 mg.; 1 hour, 158 mg.; $1\frac{1}{2}$ hours, 146 mg.; 2 hours, 128 mg. per 100 ml. White blood count, 7,900-14,000 per c.mm. Red blood cells:—9th day: red cells, 4,790,000; Hb, 12.6 g.; 17th day: red cells, 4,670,000; Hb, 12.7 g.; P.C.V., 46/100; M.C.V., 98.5 μ ; M.C.D., 7.4 μ . 42nd day: red cells, 5,130,000; Hb, 14 g.; P.C.V., 50/100. 79th day: red cells, 4,600,000; Hb, 12.6 g.; P.C.V., 46/100; M.C.V., 100 μ . Electrocardiograms showed left axis deviation and very low T waves in leads I and CR4.

Electrolyte and Renal Function Changes in Acute Porphyria

The occurrence in acute porphyria of low serum sodium and chloride was described by Abrahams, Gavey, and MacLagan (1947) and Linder (1947). They also noted that despite low serum levels the urine still contained considerable quantities of chlorides. Both suggested that there was adrenal insufficiency.

In the present case low serum sodium and chloride levels were confirmed. The patient was placed on a special diet with a varied chloride intake. Desoxycortone acetate and adrenal cortical extract were given in addition for two periods. During the investigation there was no vomiting, diarrhoea, or excessive sweating. The urinary excretion of chloride was estimated daily and the serum levels were estimated at intervals (see Table). Sodium balance might have been of greater value, but chloride estimations taxed laboratory facilities considerably less.

It was found that the chloride output was directly proportional to the intake, and that cortical extract and desoxycortone acetate had no effect on this. During the first period of administration the patient's condition was deteriorating, and during the second period spontaneous improvement had already started. During both periods there was a rise in serum sodium, but this seemed to be part of a gradual rise that took place throughout the period of observation rather than an effect of drug administration. Chloride levels showed considerably less change throughout. Potassium had fallen before the administration of desoxycortone acetate, and the initial high level may have been produced by increased tissue breakdown, as there was a pronounced loss in weight at this time. Dehydration was not obvious clinically, and red-cell estimations suggested its presence about the 42nd day only. The alkali reserve was normal throughout. These findings indicate that

Table showing Chloride Estimations and Serum Levels

Day:	17	18	19	20	21	22	23	24	25	26	27	28	39	47	53	57	64	71	79	107
Fluid intake (litres)		2.50	2.35	2.55	2.27	1.48	3.10	2.30	3.10	2.45	1.94	1.94								
Urine vol. (litres)	1.01	1.13	1.65	1.90	1.88	1.64	?	2.02	1.82	2.15	?	2.10								
Chloride intake (as g. NaCl)	2.75	4.10	4.75	14.5	16.0	11.3	20.5	14.0	18.0	16.5	12.4	12.3		10.4						
Urine Cl (as g. NaCl)	3.8	4.4	4.75	6.5	10.5	12.4	?	19.3	17.8	15.6	?	20.6								
Serum (mg. per 100 ml.)																				
Na		225					230					244		265	280	282	280	320	330	325
K		25					20					19.4		21.4	21.6			20.0	18.2	
Ca		7.5					8.1							9.8	10.0	10.0		9.8	10.0	
Cl as NaCl		495		505			495					495	500	490	515	495	495	520	528	490
HCO ₃ as vol. CO ₂		69		72			69					73		65	72	74		65.5	67	
PO ₄														4.4	4.0	4.05		3.96	3.65	
Urea		50		52			43					43	46	39	26		28	68	32	38
Pulse range	120 80	110 90	110 98	110 98	120 115	120 100	120 105	140 110	140 120	135 110	135 120	125 115	120 105	110 90	100 90	95 85	110 100	90 80	105 95	100 85
Blood pressure		120 80		135 110		135 110		125 95	120 90	125 95	115 85	120 95	120 85	120 80	125 90	115 80	105 70	110 80	110 80	

23rd to 27th days: 10 mg. of desoxycortone acetate were given by injection daily. 48th to 53rd days: 10 mg. of desoxycortone acetate plus 5 ml. cortin B.P.C. were given daily. A total of 500 mg. of pantothenic acid was given intramuscularly between the 57th and 70th days.

adrenal deficiency played no part in the production of the electrolyte picture. This is in harmony with the post-mortem findings, which suggested adrenal overactivity rather than underactivity.

Broch (1945), in a varied collection of conditions, found similar electrolyte changes without any appreciable response to salt therapy. He could find no harmful effect attributable to the electrolyte changes in themselves, and warned of the danger of giving intravenous saline, in the absence of dehydration, in an attempt to correct the electrolyte levels.

Oliguria and a moderately raised blood urea are very often found in acute porphyria and are usually attributed to circulatory disturbance. Albuminuria occurs in the minority and is usually slight. It was absent throughout in the present case. Water balance and serum-urea levels are shown in the Table.

The urea clearance test on the 58th day showed 60% of average normal function in the first hour and 62.5% in the second hour, on the 78th day 64% and 56%, and on the 107th day 58% and 51%. Thus in this case there was evidence of relatively persistent renal disorder. The findings suggest that attention should be directed to the kidneys for the explanation of the alteration in serum electrolytes. That the kidneys are responsible is perhaps further supported by the findings in a recently observed case, not yet fully investigated, in which only minor changes in serum electrolytes were found and renal function appeared to be normal.

Pantothenic Acid Deficiency and Porphyria

Liver and vitamin B have been recommended for acute porphyria, but little improvement attributable to their administration has been recorded.

Pantothenic-acid deficiency in animals results in failure to grow, porphyrin deposits on whiskers, gastro-intestinal symptoms, tachycardia, prostration, neurological changes, and coma, associated with low blood chloride and raised urea. Post mortem there is myelin degeneration of the nervous system, degeneration of the liver, adrenal cortical exhaustion, and renal tubular degeneration (Deane and McKibbin, 1946). No defect in sodium conservation is revealed (McQueeney, Ashburn, Daft, and Faulkner, 1947). In this state there is at least superficial resemblance to acute porphyria. Further, it was shown that pantothenic acid will reduce or abolish porphyrin excretion produced by drugs (Hoesch, 1947). Its effect in acute porphyria was not studied.

In the present case 500 mg. of pantothenic acid was given by intramuscular injection between the 57th and 70th days. There was no appreciable change in the rate of clinical

improvement or in the pulse and blood pressure. It was not practicable to assess the quantitative excretion of porphyrins, but the depth of colour produced in the porphobilinogen test, though of little value in assessing quantitative excretion, showed no appreciable variation. Between the 64th and 71st days the sodium level, previously steady, rose from 280 to 320 mg., and this level was maintained. There was a temporary rise in urea (see Table).

Thus the only evidence of a beneficial effect from pantothenic acid was given by the serum sodium level. Whether this was therapeutic or coincidental can be assessed only by its trial earlier in a crisis. That a deficiency of the vitamin is a factor in precipitating a crisis seems unlikely.

The conclusions arrived at are: (1) that the changes in serum electrolyte levels in acute porphyria are not dependent on adrenal cortical deficiency but are probably due to renal damage; (2) that pantothenic acid, reported as beneficial in chemically induced porphyrinuria, is of doubtful value in acute porphyria, though further trial is advisable. I realize that conclusions drawn from the investigation of a single case may require modification with further experience.

Summary

A classical case of acute porphyria is presented. The previous finding of low serum sodium and chloride is confirmed, and it is shown that these are not due to adrenal deficiency but are probably dependent on renal damage.

The relationship between pantothenic acid and porphyria is discussed and observations during pantothenic acid therapy are described.

I am indebted to the Medical Director-General of the Navy and to Surgeon Captain J. G. Holmes, Royal Navy, for permission to publish this case, and to Surgeon Commander H. J. Bennett, Dr. G. A. Emmerson, and Dr. F. T. G. Prunty for use of their findings. I wish to thank Dr. Philip Hamill and Dr. A. J. Shillitoe for advice and criticism in the preparation of this paper, and, above all, Sick-Berth Petty Officer J. G. Scott for his valuable laboratory work.

REFERENCES

- Abrahams, A., Gavey, C. J., and MacLagan, N. F. (1947). *British Medical Journal*, 2, 327.
- Broch, O. J. (1945). *Acta med. scand.*, Suppl. 166.
- Chandler, F. G., Harrison, G. A., and Rimington, C. (1939). *British Medical Journal*, 2, 1173.
- Deane, H. W., and McKibbin, J. M. (1946). *Endocrinology*, 38, 385.
- Discombe, G. (1948). *British Medical Journal*, 2, 659.
- Dobriner, K., and Rhoads, C. P. (1940). *Physiol. Rev.*, 20, 416.
- Hoesch, K. (1947). *Dtsch. med. Wschr.*, 72, 252.
- Jørgensen, J., and With, T. K. (1947). *Lancet*, i, 54.
- Linder, G. C. (1947). *Ibid.*, 2, 649.
- McQueeney, A. J., Ashburn, L. L., Daft, F. S., and Faulkner, R. (1947). *Endocrinology*, 41, 441.
- Mason, V. R., Courville, C., and Ziskind, E. (1933). *Medicine*, 12, 355.
- Nesbitt, S. (1944). *J. Amer. med. Ass.*, 124, 286.
- Prunty, F. T. G. (1946). *Arch. intern. Med.*, 77, 623.
- Rimington, C. (1943). *Biochem. J.*, 37, xxv.

RETAINED PLACENTA AND POST-PARTUM HAEMORRHAGE

BY

H. L. SHEEHAN, M.D., D.Sc., F.R.C.P.

Professor of Pathology, University of Liverpool

Though the complications during the third stage of labour and immediately after it are really the province of the obstetrician, it may perhaps be of interest to consider them from the somewhat different point of view of the pathologist. The following observations are based on a series of 98 patients with such complications who died and were studied at necropsy at Glasgow Royal Maternity Hospital. Sixty-six of these patients died as a direct result of haemorrhage and shock, nearly always within 12 hours after the delivery of the baby. The other 32 had similar haemorrhage and shock but recovered temporarily; they died later in the puerperium from other causes.

It will of course be clear that the relative frequency of the complications of the third stage in the present series of fatal cases is probably not the same as that in patients who do not die. It should also be remarked that the present data cannot be compared directly with those of Glass and Rosenthal (1948), as the cases have been classified on quite different lines.

Retained Placenta

For the present analysis the placenta has been considered as "retained" if there was delay or difficulty in its delivery, and also if severe haemorrhage occurred early in the third stage and necessitated emergency measures for the removal of the placenta. The cases have been divided into five groups according to the main factors causing the retention. These factors were determined from the necropsy findings when all or part of the placenta remained in the uterus at the time of death, and from the obstetrician's description of the details of removal when the placenta had been removed during life.

Constriction Ring (2 Cases).—In this type the placenta separates completely but is held in the uterus by a constriction ring (Fig. 1). This is only a rare cause of death. Both patients had manual removal, but died a few hours later.

Atonic Non-detachment (45 Cases).—This failure of separation of a normally attached placenta is a common cause of death. If the placenta is still in the uterus at necropsy the uterus does not appear well retracted; the upper three-quarters of the placenta is attached as it had been during the pregnancy, but its lower portion (about one-quarter) is usually separated. The placenta is not pathologically adherent anywhere, and can be peeled off quite easily from the opened uterus (Fig. 2). When the placenta has been removed before death the uterus appears quite normal at necropsy and is well retracted; it does not contain placental remains, though if the patient has lived for a few hours after

the removal there is the usual small mass of clot attached to the placental site.

The haemorrhage that occurs in many of these cases is well accounted for by the separation of the lower edge of the placenta. The failure of separation of the whole placenta appears to be due to uterine atony during the third stage. The present series of cases give no clear information why this atony occurred. Throughout the second stage the uterus had functioned excellently; the labours were nearly always normal, though a few were unduly short, and only two of the patients had an anaesthetic for the delivery. During the third stage there is clear evidence of atony, and it might reasonably be expected that this atony would continue subsequently. However, as soon as the placenta is delivered the uterus appears to act normally: none of the patients in the present series had haemorrhage after the placenta was removed.

A study of the general data shows that a rather high proportion of the patients were advanced multiparae and that two of them had had a retained placenta at the last delivery: the evidence from the present series is insufficient to allow of valid conclusions on the significance of these factors.

Partial Adhesion (18 Cases).—This group of cases is characterized by an abnormality of attachment of the placenta at one part of the uterus, usually in its upper half. The placenta bulges out into a bay in the uterine wall so that the myometrium is thin, sometimes only 2-3 mm. The placenta can be removed from this site at necropsy only by tearing through the attachment, leaving small tags behind. The underlying myometrium is quite tough; in the present series the wall was never perforated in the course of manual removal during life or in tearing off the placenta at necropsy. Occasionally the whole placenta is found in the uterus at necropsy, but the commoner condition is that most of the placenta has been removed, leaving a mass adhering in its bay in the uterine wall (Fig. 3). If the placenta has been completely removed during life the only remaining evidence is the area of very thin uterine wall.

Complete Adhesion (6 Cases).—This is the condition known as placenta accreta. The adhesion is similar to that in the previous group, but is almost universal instead of being limited to only one or two areas. The uterine wall is scalloped out into a series of bays, each of which may be very extensive (Fig. 4). The adhesion is sometimes so complete that no separation occurs at all and there is thus no haemorrhage. Usually the patient dies with the placenta in the uterus, or she has a hysterectomy. However, in two of the present cases the condition happened to be met with in the course of a caesarean section, and the operator removed the placenta by blunt dissection.

The last two groups, the partial and the complete adhesions, appear pathologically to be merely different degrees of the same process. This seems to originate early in pregnancy, as it occurs in some abortions. It was associated with placenta praevia in eight of the present cases; the adhesion in these was commonly in both the upper and the lower segments. Previous retained placenta and previous puerperal

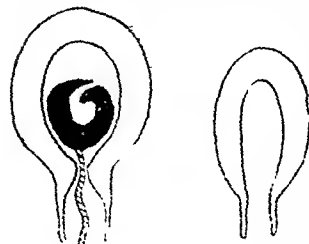


FIG. 1.—Constriction ring



FIG. 2.—Attached non-adherent placenta

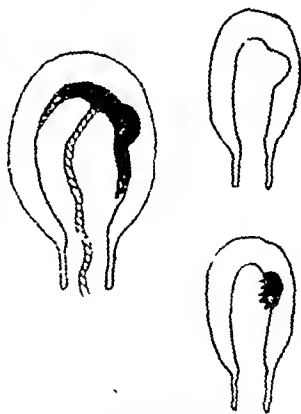


FIG. 3.—Partially adherent placenta

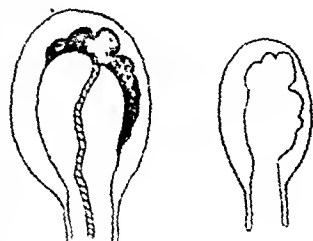


FIG. 4.—Accrete placenta.

infections do not appear to be important factors, as adhesion occurs in primiparae with the same relative frequency as in multiparae. The condition has no obvious effect on uterine function: many of the labours were short, and the average duration of the first and second stages together was 15 hours.

Intraperitoneal Rupture (2 Cases).—These were ruptures of the uterus with escape of the placenta into the peritoneal cavity so that it could not be delivered.

Factors Leading to Death from Retained Placenta

Most of the patients die within eight hours after the birth of the baby; the particular manner of death appears to be a combination of shock and haemorrhage in varying proportions. There are three factors to be considered in this connexion: blood loss, traumatic shock due to the manner of removing the placenta, and the length of the third stage of labour.

Blood Loss

Some patients have brisk haemorrhage; others have a gradual but continued blood loss which may be much greater than is appreciated. These patients may die from haemorrhage unless treated early by adequate blood transfusion. But many patients have relatively little blood loss, and death in these cases seems to be due essentially to shock.

Trauma of Interference

Every obstetrician has seen patients who collapsed shortly after forcible expression of the placenta or after manual removal. This has led to the widespread condemnation of both these procedures: it is usually maintained that manipulations such as these are of their very nature almost bound to lead to shock. On the other hand, the trauma involved cannot be compared with that which occurs in the ordinary process of delivery of the baby, and this does not cause shock. The present series of cases happens to give some information on the problem of whether these methods of removing the placenta are in themselves productive of serious shock.

In the hospital where these necropsies were performed there were three obstetric units, each of about the same size and with the same intake of patients, so that their results may fairly be compared. The chief obstetrician of one of these units held very strong views on "mismanagement of the third stage." His guiding principle was to leave the placenta to separate naturally even if this took a long time. He made strict rules in his unit that there should be no interference with the uterus. Control of the fundus was allowed, sufficient to prevent bleeding, and gentle expression was permitted when the placenta was obviously lying free in the lower segment or vagina. Apart from this, there was a clearly stated policy against expression, Credé's manoeuvre, or manual removal. On the other hand, in the other two units the staff was allowed considerable freedom in attempts to get the placenta away. Expression of various types was attempted, probably in many cases with ascending grades of force, and, if this was unsuccessful, manual removal was performed. (Intravenous ergometrine had not become a recognized treatment at the time these cases occurred.) The Table shows the number of deaths in the three units.

Results of Treatment of Retained Placenta

	Interference Unit 1	Interference Unit 2	Non-interference Unit
Deaths within 12 hours:			
Placenta delivered ..	9	9	5
Placenta <i>in utero</i> ..	4	2	11
Deaths after 12 hours:			
Placenta delivered ..	6	12	7
Placenta <i>in utero</i> ..	0	0	4

The 16 early deaths in the unit where non-interference was the rule are not significantly different from the 13 11 early deaths in the other two units (which are termed, purely for contrast, "interference units"). The only obvious effect of the policy of non-interference was a tendency for the patients in that unit to die with the placenta still *in utero*. So far as these figures go, they suggest that, though forcible expression and manual removal may not be ideal procedures, their omission in cases of retained placenta is at any rate just as harmful to the patient as their performance. It does not appear that progress in the treatment of retained placenta will be achieved along this particular line of non-interference.

Duration of Third Stage

The most striking point in the present series of necropsies is that, with certain special exceptions which are discussed below, the third stage of labour had been allowed to continue for three hours or more. This is shown in Fig. 5

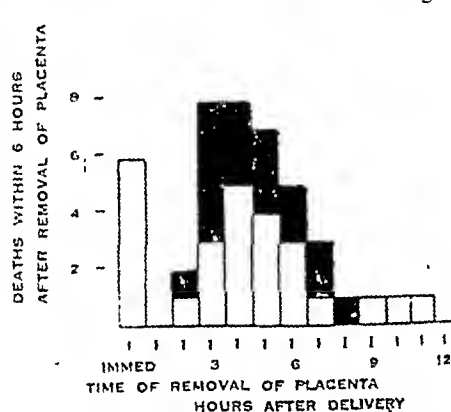


FIG. 5.—Duration of third stage of labour. Clear parts of column = time of removal of placenta; black parts of the columns = patients who died with placenta still *in utero*.

represent patients who died with the placenta still *in utero*.

The six deaths following immediate removal of the placenta form a special group—three cases of caesarean section in which the placenta was found to be grossly adherent, and three cases of enormous haemorrhage which necessitated immediate manual removal but which was followed by rapid death, purely from blood loss. There were no deaths of patients who had the placenta removed between a half and two hours after the delivery of the baby. Most of the deaths occurred in cases in which the placenta had been left *in utero* for three to seven hours. The particular kind of treatment, whether removal of the placenta or leaving it in the uterus, did not seem to be a significant factor at this stage.

A great variety of interpretations can be placed on the significance of this prolonged third stage, but they are all speculative. The important question is whether the mortality would be reduced if the third stage was always completed in less than one hour—by oxytocic drugs or by expression or by manual removal. Unfortunately this question cannot be answered, as there does not seem to be an adequately controlled investigation of the matter.

Post-partum Haemorrhage

In the series there were 25 cases of severe haemorrhage following delivery of the placenta: 16 of these patients died within seven hours after delivery; the other nine recovered temporarily but died later in the puerperium. These fall into two groups.

Rupture of Uterus (6 Cases).—In these patients the cause of the bleeding was found at necropsy to be rupture of the uterus or significant cervical tears; the amount of the haemorrhage varied.

Reviews

MYOTONIA

Myotonia. Thomsen's Disease (Myotonia Congenita), Paramyotonia, and Dystrophia Myotonica. A Clinical and Heredity Investigation. By Eivind Thomsen. Translated from Danish by Finn Brink Carlsen. (Pp. 251; 17 figures. £1.) London: Universitetsforlaget i Aarhus. London: H. K. Lewis 1948.

Myotonia is defined as a peculiar functional disturbance of musculature characterized by an abnormal protracted contraction. It is accompanied by a typical electrical phenomenon whereby muscular contraction continues for seconds and then subsides gradually. Myotonia is a manifestation of the hereditary disorders congenita (Thomsen's disease), paramyotonia (Eulenburg), and dystrophia myotonica (myotonia atrophica). These, though admittedly rare, are among the most neurological affections. Dr. Thomsen's monograph is a valuable contribution to the literature of this subject, and the English-speaking reader a detailed account of the manifestations. The author was fortunate in his personal experience of these affections. The cases of dystrophia myotonica are drawn from 21 of the 874 living members, among whom there are 10 cases of the disease. In the case of Thomsen's disease five families, comprising 465 living members, were afflicted with the disorder. Dr. Thomsen's attention to the syndromes described by Dehré and Semelaigne in which muscle atrophy and atonoid features are associated with myotonia is particularly interesting when discussed in the light of his views on the identity of Thomsen's disease and dystrophia myotonica. He discusses the arguments and comes to the conclusion that the two are identical.

MACDONALD CRITCHLEY.

OBSTETRICS

Obstetrics. By O'Donel Browne, M.D., F.R.C.O.G. 2nd edition. (Pp. 35s.) Bristol: John Wright 1948.

In this book O'Donel Browne has set himself an extremely difficult task, attempting to cover the management and treatment of all obstetrical conditions, normal and abnormal, within the limit of 250 pages. Even when theoretical considerations are omitted as far as possible, the field is large and much of it must of necessity receive a thin and unsatisfactory covering. In a work of this size it is perhaps a better policy to deal adequately with a few common obstetrical problems. This book has, of course, many good features, and among these may be mentioned the clear and well-illustrated accounts of the technical details of obstetrical manoeuvres. In many respects, however, it invites adverse comment, despite criticism being forestalled to some extent by the author's pointing out that the book presents unqualified personal opinions and that it should be read in conjunction with the more standard textbooks rather than in place of them if the reader is to obtain a proper perspective.

Twelve years have elapsed since the first edition was published, and this period has seen great changes in outlook and practice in midwifery. To bring the book thoroughly up to date would therefore have necessitated rewriting it almost completely. As it is, it gives the impression that the revision has been patchy, and the effect is a rather curious mixture of ancient and modern. To take two examples only: penicillin is used for puerperal sepsis but not for acute mastitis; the modern classification of pelvic shapes is included, but the treatment of thrombophlebitis is the same as practised twenty years ago, and there is no mention of anticoagulant drugs. The absence of any attempt to indicate the relative importance of different conditions is also noticeable.

It may be that the author has often deliberately described treatment which is not ideal, having in mind those of his readers who will be called to practise under circumstances far

from perfect in some of the remoter parts of Eire. Indeed, the book is primarily intended for Professor O'Donel Browne's own students and to supplement his personal instruction to them. It may serve this purpose well, but the general reader will find it less helpful.

T. N. A. JEFFCOATE.

ECLAMPSIA

Eclampsie et Eclampsisme. By Henri Vignes. (Pp. 220. 450 francs.) Paris: Masson et Cie. 1948.

By this new publication Henri Vignes has increased his already great reputation. He has compressed into some 200 pages most of what has been written or recorded about eclampsia. Indeed, one cannot recall any comparable work on the subject, and it is hoped that it will be translated into English. The book is a typical French publication, with little effort to produce a table of contents and with none of the precise classification usually provided by German writers. Its success depends essentially upon clarity of expression and the wide knowledge of the author. References are ingeniously incorporated in the text, with references to the important papers placed at the bottom of each page. No publication of importance seems to have escaped notice, and proper stress is placed upon work done in Great Britain, though (on page 70) F. J. Browne is referred to as "Browe." The author stresses no particular theories and no particular therapies. His attitude is one of an impartial judicious summing-up. The volume merits the highest praise.

WILFRED SHAW.

VITAMIN DEFICIENCY SYNDROME

A Neuro-Vascular Syndrome Related to Vitamin Deficiency. By Hendrik Smitskamp. (Pp. 114. No price given.) Amsterdam: Scheltema and Holkema's Boekhandel.

During the recent war a group of Dutch medical men made a study of the malnutritional syndromes which were met with among the inmates of a Japanese P.O.W. camp at Bandoeng, Java. This group included Dr. O. L. E. De Raadt, otoneurologist, Dr. J. Schwartz, ophthalmologist, the late Dr. Buitelaar, neurologist, who did not survive the hardships of war, Dr. Van der Hoeven, neurologist, and Dr. H. Smitskamp, general physician. One section of their observations has already been published and reviewed—an M.D. thesis (Leiden, 1947) entitled "Pellagra in the Oto-neurology and Rhino-laryngology," by De Raadt. This book is also an M.D. thesis, and the author discusses the condition commonly known as "burning feet."

In Part 1 successive chapters are on the clinical manifestations, the results obtained by means of capillaroscopy, laboratory findings, and therapy; in Part 2 on history, current literature, aetiology, pathogenesis, the differential diagnosis from erythromelalgia, acrodynia, and acroparaesthesia. In 1943 some 700 patients were seen at a clinic set up for malnutritional disease; from these 347 were selected and formed the subject for study. The observations made by Dr. Smitskamp do not differ materially from those made by our own medical men in other P.O.W. camps in the Far East, but they form a very interesting and detailed complementary contribution to the subject. He noted that optic neuropathy occurred in 42.8% of the cases of "burning feet," and in 27.8% of those with "otoneurological aberration." "Epithelial lesions" (cheilosis, scrotal dermatitis) were very common, but occurred also among those not suffering from the syndrome—31% and 25% respectively. He remarks on the close association of the syndrome with signs of hyporiboflavinosis to the exclusion of beriberi and pellagra.

This paper will interest those who are familiar with the literature of the deficiency syndromes.

HUGH S. STANNUS.

A POPULAR SIGNPOST

Anaesthetics and the Patient. By Gordon Ostlere, M.A., M.B., B.Chir., D.A. Sigma Introduction to Science 15. (Pp. 166. 7s. 6d.) London: Sigma Books. 1949.

This is one of the "Introductions to Science" series, and fills a real need in being addressed to that large section of the intelligent lay public which is repelled by the sentimentality

and inaccuracies of most of the "popular" works on anaesthesia but cannot follow the highly technical style of scientific textbooks. Dr. Ostlere sets out in lucid and sober fashion the present position of anaesthesia and should reassure many a nervous patient about to undergo an operation. The author has considered his public to be of the average intellectual status of a preclinical medical student, and he has succeeded admirably in presenting his subject accurately without the use of technical terms—a task which must have been difficult. All the latest advances of proved worth have been included, and the book should do much to impress upon the public the importance of being looked after by a highly trained specialist anaesthetist. The type is clear, and four plates on glossy paper are included in the middle of the book.

C. LANGTON HEWER

PRE- AND POST-OPERATIVE CARE

Preoperative and Postoperative Care of Surgical Patients By Hugh C. Ilgenfritz, A.B., M.D., F.A.C.S. Foreword by Urban Maes, M.D., D.Sc., F.A.C.S. (Pp. 898, 110 illustrations, \$10 or £2 12s 6d.) St. Louis: The C.V. Mosby Company. London: Henry Kimpton 1948

During the last twenty-five years the risk in undergoing a major surgical operation has been much reduced, an improvement due in large part to the preliminary study of the patient and his preparation and aftercare. This book deals with these subjects, and is divided into two parts. The first thirteen chapters describe matters from a general standpoint, and the later sections give information about the management of disease in various parts of the body. This makes the book convenient for reference on any particular occasion, but increases its size and leads to a certain amount of repetition. Having said this, one can only praise the manner in which the subject has been presented. The physiological basis for each particularly recommended procedure is clearly explained, which makes the book readable and acceptable. And should the reader need more detailed information there is a good list of references at the end of each chapter. Every house-surgeon will want this book. It is of little use to him in a reference library. But it is expensive.

C. A. PANNETT.

MEDICAL ANNUAL, 1948

The Medical Annual: A Yearbook of Treatment and Practitioner's Index 1948. Editors, Sir Henry Tidy, K.B.E., M.A., 1 D.F.R.C.P. and A. Rendle Short, M.D., B.S., B.Sc., F.R.C.S. Pp. 68, 117 illustrations. £1 5s; subscription price £1 2s. 6d.) Bristol: John Wright and Sons 1948

In its sixty-sixth year the *Medical Annual* maintains the high standard it has long established and the reviewer's task in selecting particular contributions for comment is not facilitated by the general excellence of the work. Professor Tytler's authoritative review of BCG will be read with interest by all whose work brings them in contact with tuberculosis. Dr. Mackenna's article on the treatment of cutaneous tuberculosis with vitamin D., and Mr. Barrett's on the surgery of the heart and great vessels, are both topical and instructive. Professor Crew's report on social medicine reflects the growing appreciation of the importance of this branch of practice. The book closes with the customary indices of pharmaceutical preparations marketed, and of British and American books published during the year. The book production is of the high order expected from John Wright, and the half-tone and colour plates deserve particular commendation.

The *Medical Annual* for 1948, as usual, faithfully mirrors the advances in medicine and surgery for the year.

R. BODLEY SCOTT.

The number of books on chiropody—until recently a rather neglected literary field—grows apace. The *Textbook of Chiropody*, by Mrs. Swanson (E and S Livingstone: 20s.), represents the teaching of the Edinburgh School of Chiropody. The book covers the subject adequately, if briefly within its 200 pages, an outstanding feature being the excellence of the illustrations; the use of a high-grade paper has allowed of almost perfect reproduction of the many photographs and skiagraphs. The production is up to the usual high standard set by Messrs. Livingstone.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Les Plaies du Cerveau. By J.-E. Paillas and J. Bonnal (Pp. 363, 1,100 francs) Paris: Flammarion, 1948

From the Faculty of Medicine of Marseilles

Clearance Tests in Renal Disorders and Hypertension By O. Hogeman (Pp. 264. No price) Uppsala: Appelbergs 1948

English translation of a work originally appearing in *Acta Medica Scandinavica*.

Fortschritte der Tuberkuloseforschung und Behandlung. By H. Birkhauser Vol. 2 (Pp. 446, 27 Swiss francs) Basle: S. Karger 1948

Aspects of tuberculosis, by Swiss authors

Renewal Pages for the Nelson Loose Leaf Medicine Vols 1 and 2

Letters to Margaret. By T. Faithfull, M.R.C.V.S., Ps F (Pp. 108, 8s. 6d.) London: Rylee 1948.

Psychological enlightenment for juveniles

A Handbook of Self Analysis. By T. Faithfull, M.R.C.V.S., Ps F (Pp. 116, 8s. 6d.) London: Rylee, 1948

For the layman.

Religion and Psychotherapy. By A. G. Ikin, M.A., M.Sc., Ps F (Pp. 112, 8s. 6d.) London: Rylee 1948

Reprint of the book first published in 1935

The Value of Neurosis By C. W. Wall, Ps.F. (Pp. 116, 8s. 6d.) London: Rylee 1948

Mainly for the layman.

Hadden's Health and Welfare Services Handbook. By J. Moss, C.B.E. (Pp. 376, 25s.) London: Hadden Best. 1948

A guide to the law relating to the health and welfare services

The Anatomy of Semnopithecus Entellus By A. A. Ayer, B.A., M.B., B.S., M.Sc. (Pp. 182, 20 rupees) Madras: Indian Publishing House 1948.

A study in comparative anatomy

Aids to Psychology. By J. H. Ewen, F.R.C.P.Ed., D.P.M. 3rd ed. (Pp. 192, 5s.) London: Baillière, Tindall and Cox 1948

From the familiar series

Modern Child Psychology By A. H. Bowley, B.A., Ph.D. (Pp. 159, 7s. 6d.) London: Hutchinson's University Library 1949

An outline for the general reader

Brompton Hospital Reports Vol. 16, 1947 (Pp. 248, 10s.) London: Research Department, Brompton Hospital

Papers from the Brompton Hospital in the year 1947.

The Medical Clinics of North America: Chicago Number. Edited by J. H. Mitchell, M.D. (Pp. 292. No price) London: W. B. Saunders 1949

This volume is confined to dermatology

Your Hospital Heritage and Future. By A. R. J. Wise (Pp. 239, 15s.) London: Heinemann 1949

A general survey

Methods of Psychology. Edited by T. G. Andrews (Pp. 716, 30s.) London: Chapman and Hall 1948

For students

Experimental Air-Borne Infection. By T. Rosebury (Pp. 222, 22s.) London: Baillière, Tindall and Cox. 1947

Report of an investigation carried out at Camp Detrick, Maryland, between 1943 and 1945

Skeletal Tuberculosis. By V. Sanchis-Olmos, M.D. (Pp. 261, 27s. 6d.) London: Baillière, Tindall and Cox 1948

A short treatise translated from the Spanish

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY MAY 14 1949

PREVENTION OF SEA-SICKNESS

A dramatic account of a large-scale experiment on sea-sickness has just been published by Drs. Gay and Carliner,¹ of Baltimore. The American soldiers who cross the Atlantic in army transports often suffer from the rough seas. The conditions, according to the authors, are very different from those on ordinary passenger vessels, in which sufferers remain in their cabins and receive attention from stewards and nurses. In the troopship *General Ballou* (13,000 tons), 12 hours out of New York on Nov. 27, 1948, "the corridors of compartments were congested by sick men so ill that they were unable to reach the latrines. The men who reached these areas were unable to return to their compartments and remained stretched out in a semiconscious condition on the floors until more seaworthy individuals managed to drag them to the sick bay or back to their hammocks. The latrines became temporarily indescribably repulsive. . . . On the previous trip of the *General Ballou* from Bremerhaven more than 100 intravenous injections of saline solution were required to relieve a number of dehydrated persons."

During the voyage which began on Nov. 27 a series of tests were carried out with a drug known as "dramamine"—a compound of theophylline (with chlorine substituted for one hydrogen) with the substance well known as the antibistamine agent "benadryl." As soon as the ship left harbour a group of 134 men in one compartment of the ship were given 100 mg. of the drug four times a day for two days; none of these developed nausea and vomiting in this time. They were then left without treatment for 18 hours, and 41 by that time became sick. Dramamine was given again, and 40 regained their normal well-being within one hour of the first dose. These men were compared with a group of 123 men in another compartment who were given a placebo. Of these, 35 were sea-sick within 12 hours of leaving harbour. At the end of two days the sick men were given dramamine and obtained complete relief within one hour of the first dose.

In addition to this experiment in prophylaxis another experiment was carried out in which men were treated after they became sick; they were in a third compartment of the ship. Out of 129 men 15 became sick after 12 hours at sea. These were given 100-mg. doses of dramamine every five hours, and all but one were completely relieved. The one was partially relieved. In a fourth compartment containing 99 men 33 reported sick in 12 hours. They were given a placebo, which cured 19 whose complaints had

been merely of nausea and dizziness. The placebo, however, did not relieve the remaining 14, who became steadily worse until they were given dramamine, when all were cured. Further evidence of the curative value was obtained by treating 195 men who became sick out of 881 in other compartments. Of these there were only eight who were not relieved by taking 100 mg. of the drug every five hours. The 187 men who were relieved were treated for two days, after which administration of the drug ceased; 44 of them then became sick again within 12 hours.

These experiments justify the conclusion that dramamine is a non-toxic drug which can be used to control sea-sickness. It is interesting to observe that it can be taken by mouth or be given per rectum. This route was used successfully in men brought to the sick bay in a semi-conscious state. The capsule was punctured at each end, inserted in the rectum, and 30 ml. of saline was injected. Some of the conditions of the experiment with dramamine interfered with the fairness of the test. Thus in the first test described every man in one compartment was given dramamine and every man in another compartment was given the placebo. It would clearly have been better to give the drug and the placebo to men in the same compartment. Some men are sick when they see others sick and not before. The arrangement adopted therefore favoured dramamine.

During the late war much experience was gained in this country in the testing of remedies for sea-sickness, and a modest report of that work was published by Holling, McArdle, and Trotter² in 1944. They made no statement more definite than that, of a number of drugs examined, hyoscine "appears to be the most generally useful." The principal question which therefore arises is whether the new substance dramamine is a better remedy than hyoscine. The war experience made it clear that reports of the excellence of any one drug when not compared with another were untrustworthy. Some observers were convinced from their experience that amphetamine was of great value for sea-sickness. When compared directly with hyoscine, Holling, McArdle, and Trotter found it to be of no value at all. A comparison is valid only when the two drugs are used at the same time in the same ship, each being given to a sufficiently large group of men. It is therefore impossible to say whether dramamine is superior to hyoscine or not, for experience since the war in sea and air transportation has fully confirmed the value of hyoscine, of which proprietary preparations are on the market.

Gay and Carliner refer to the work of Holling and his colleagues on hyoscine and say that "the side effects from hyoscine were such that they did not recommend repeated doses." There is no statement of this kind to be found in the paper, and the only reaction which was observed was dryness of the mouth, though a careful watch for side effects was kept. The usual dose of hyoscine was 0.6 mg. (of hyoscine hydrobromide), but even after 1.2 mg. it "had no obvious effect on physical performance, ability to shoot, or on near vision." Although dramamine was not found to cause any reaction, it seems unlikely that a substance so closely related to benadryl taken in doses of 100 mg. every five hours will be found as free from unpleasant effects as hyoscine.

¹ *Bull. Johns Hopk. Hosp.*, 1949, 84 (May).

² *Lancet*, 1944, i, 127.

WHITTILING DOWN

The difficulty already experienced of getting acutely ill patients into hospital will be increased by the 10% reduction in hospital costs recently imposed by the Minister of Health. For example, the cut in the budget of St. Bartholomew's Hospital is as much as £300,000. The original gross estimate for the budget of the United Manchester Hospitals was £1,224,720; with allowance for the Spens recommendations and domestic wage increases the total bill comes to £1,292,904. This group of hospitals has now been ordered to impose a cut of about £200,000. As some 60% of the total gross estimates is accounted for by wages, all of which are laid down by law, it follows that a heavy cut has to be made in the rest of the hospital budget. It is worth observing that according to Dr. R. D. Vanderwarker,¹ Director of the Passavant Memorial Hospital in Chicago, the payroll in U.S.A. hospitals is estimated to account for 60% of total hospital costs. Speaking before a section of the American College of Surgeons Dr. Vanderwarker also predicted that hospital costs would continue to rise. It is of interest to note that for the United Manchester Hospitals the medical salaries amount to £182,000, nurses' salaries to £183,000, and all other salaries to £349,000, making a total of £714,000. To illustrate the position in different parts of the country we give details of the 1949-50 budget for some of the provincial teaching hospitals. Oxford, for example, suffers a cut of £170,000 on an estimated expenditure for maintenance of £960,000; Bristol a cut of £120,000 out of an estimate of £970,000; Birmingham a cut of £87,708 out of an estimate of £1,308,329. Leeds and Liverpool on the other hand are incurring no cut in their estimate for maintenance, but on capital expenditure the former is to undergo a cut of £2,000 out of £52,000, and the latter £180,000 out of £300,000. The Provincial Group of the Association of Teaching Hospitals is requesting the Ministry of Health to give it information about the basis on which the cuts have been made, ranging from nothing to 25%. A Ministry of Health official is reported as saying² that even with the £9,500,000 cut the hospitals are getting more than they did last year. In 1948-9, it is stated, they received £172,796,000, and for 1949-50 they will be receiving £177,531,000.

The arbitrary fashion in which these cuts have been made suggests that hospital finance has got out of hand and the Minister of Health has temporarily lost command of the situation. There is much to be said for the suggestion made by Sir Frederick Menzies that a survey of hospital costs should be made by such bodies as the King Edward's Hospital Fund for London and the Nuffield Provincial Hospitals Trust, organizations with great experience in this field. There has, of course, been an increase in the cost of hospital administration. It may be asked whether at a time when hospital building is almost out of the question it is necessary to have architects appointed to Regional Hospital Boards; they receive salaries appropriate to architects but their function in fact seems to be that of clerks of works. The expense of out-

patients' dispensing is heavy, in one group of hospitals amounting to £30,000 a year for patients who should be treated by their general practitioners. In an important eye hospital in London the annual bill for providing spectacles is £63,000, although the dispensing is done more economically than in the Supplementary Ophthalmic Service. It is difficult to see how this hospital can cut its expenditure without curtailing the work in the out-patients' department and closing some wards. In fact, real economy would be effected if it was possible for its work to increase.

The most serious outcome of all this is the threatened closure of hospital beds. The Manchester Regional Hospital Board, for instance, has decided that if the cuts in capital and maintenance estimates are put into effect there will be 2,019 fewer hospital beds available for the already long waiting-list of patients. St. Bartholomew's Hospital had planned to reopen 330 beds, but the heavy cut in its budget now makes it necessary to keep this block closed. According to reports in the Press, Regional Boards fear that some hospitals will also have to be closed. If blocks of wards were to be shut down the cost per occupied bed in the wards remaining open would increase and hospital economy would be in a still more parlous state. All this comes at a time when it has been estimated that nearly 60,000 hospital beds in the country are out of use principally because of the shortage of nurses.

The Minister of Health has said that the reduced expenditure must be met with the least possible detriment to the welfare of patients. But at first glance it is difficult to see how the hospitals in this country can save nearly £10,000,000 without curtailing the services they provide for the public. The present situation should give the country some measure of the monetary value of the voluntary unpaid services rendered by hospital staffs to the community before July 5, 1948. If the Treasury and the Ministry of Health now find themselves unable to meet the bill Mr. Bevan may find it necessary to start once more hospital flag-days. The whole matter calls for urgent examination by those with long experience in hospital administration; it is deplorable that the National Health Service should suffer such a severe setback within a year of its inception.

OCCUPATIONAL DISEASES

It is over forty years since the principle of compensation for industrial diseases was first accepted in this country when, with the passage in 1906 of the Workmen's Compensation Act, six diseases were listed as entitling a workman to compensation. A new step forward was made by the introduction last year of the National Insurance (Industrial Injuries) Act, 1946. This Act introduces a new principle of workmen's compensation, for it establishes a system of insurance with contributions from both employer and employee to a central fund; the workman no longer seeks compensation for his injury from his employer but claims special insurance benefit from the State.

¹ *Science Newsletter*, April 16, 1949, p. 254

² *Daily Telegraph*, April 28, 1949

¹ *Report of the Departmental Committee on Industrial Diseases*, 1948, London: H.M.S.O.

In March, 1947, the Minister of National Insurance set up a Departmental Committee¹ under the chairmanship of Judge E. T. Dale to review the policy of scheduling diseases under the old Workmen's Compensation Act and to give advice on the principles which should govern selection of diseases under the National Insurance (Industrial Injuries) Act. The report of this Committee has recently appeared and contains much of medical interest. Evidence was given by numerous bodies, including the Royal College of Physicians, the British Medical Association, and the Royal College of Nursing. The Committee rejected as outside its terms of reference the suggestion that benefit should be paid under this Act for every disease that can be shown to be due to employment (a scheme known as "blanket cover"). The report points out that the Committee was concerned with the selection of diseases, and that therefore the inclusion of all diseases was not contemplated. The Committee then considered the three tests recommended by the Samuel Committee of 1906, which have guided those charged with the addition of new diseases to the schedule since the 1906 Act became law, and it decided that these tests were no longer appropriate. In the new Act the word "disease" is defined as "any departure from health capable of identification by its signs and symptoms." This wide interpretation should make it no longer necessary to label as accidents conditions (for example, ill effects due to the use of vibratory tools) which medically are regarded as diseases, a practice which leads to confusion.

The Committee rightly welcomes the use of the term "occupational disease" to replace the older term "industrial disease," with its narrower application, and lays down the criterion for judging a disease to be a risk of the occupation. Here again the move to widen the interpretation of the Act is seen; the Committee recommends that a disease be considered for inclusion in the list of "prescribed" diseases if the occupation entails special exposure to risk, such risk being inherent in the conditions under which the occupation is carried out—subject always to the proviso that individual cases of the disease can be attributed to the occupation with reasonable certainty. Incidence of disease alone is not to be regarded as confirming the relationship of a disease to an occupation, for it is recognized that incidence in a potentially dangerous occupation may be within normal limits because special precautions have been taken to control the risk. The report makes only passing reference to the difficult question of "aggravation," but it was agreed that the Minister was not precluded from taking it into account.

The report gives the impression that a rigid interpretation of the terms of reference might have been used to exclude consideration of the two highly controversial issues "blanket cover" and aggravation. The Committee does not, however, interpret these terms of reference with the same rigidity in other directions; this adds to the value of the report, for a useful expression of opinion on "time limits" is given, and the recommendation made that a workman whose employment in the relevant occupation ceased at a date outside a specified period should not be automatically excluded from benefit. The old rule often entailed great hardship and injustice (for example, to patients with malignant occupational disease with a long

latent period). The Committee also suggests that the time limits within which it may be presumed that a worker has developed a prescribed disease should have "closer relation to the nature of the particular disease."

The report concludes by recommending that the Minister should set up a specialized standing committee to consider the advisability of adding to the prescribed list diseases specifically referred to it, to keep under review the schedule of prescribed diseases, and to make suggestions about subjects for research. It is gratifying to find this emphasis being placed on the duty of the Minister to help forward research. Most industrial disease is preventable, and, while everything must be done to care for those who suffer from these conditions, such work can only be regarded as palliative—prevention must be the constant aim, and this should not be hindered by shortage of men or of money.

TOO SOLID FLESH

It is perhaps not surprising that in the U.S.A. interest in obesity as a medical problem is more acute than in this country. Even before the days of rationing American achievement had outstripped British, for Daniel Lambert, of Leicester, who died in 1809 at a weight of 52 st. 11 lb (336 kg.), has long since yielded the palm to Miles Darden, of Tennessee, who weighed 72 st. 13 lb. (463 kg.). For all this, obesity remains to every physician a problem of more than academic interest: its aesthetic disadvantages need no elaboration, but its influence on longevity and on the degenerative diseases are perhaps less well appreciated. American insurance statistics¹ show that the increase in the observed over the expected death rate appears to be closely related to the degree of obesity, particularly above the age of 45 years. A man 90 lb. (41 kg.) overweight is twice as likely to die in the next year as one of normal weight. In addition to arthritis and other disorders of an overtaxed locomotor system, obesity predisposes to diabetes mellitus,² hypertension, arterial degeneration,³ pulmonary emphysema,⁴ and cirrhosis of the liver.⁵ Its control is therefore an essential part of the prevention of these important and common disorders.

Reduced to the simplest terms, obesity can be regarded as the consequence of the body's energy intake exceeding its energy output. When opportunity is unrestricted, energy intake is a function of appetite, and obesity will result when appetite is not geared to the body's metabolic needs. This is true of all forms of obesity, and von Noorden's division into exogenous and endogenous varieties must be discarded. This statement, however, like most simplifications, obscures the intricacies of the problem. The obese do not absorb or utilize nutrients more completely than the normal; their mechanical efficiency is less rather than greater. The only variables are calorie consumption, which ordinarily depends on appetite, and calorie expenditure. The second may be affected by the activity of the endocrine organs, but in most obese patients it is in no way abnormal. Appetite must be accepted as the determinant

¹ Brooks, C., *Med. J. Aust.*, 1948, 1, 327.

² Joslin, E. P., Dublin, L. L., and Marks, H. H., *Amer. J. med. Sci.*, 1935, 129, 163.

³ Levy, R. L., White, P. D., Stroud, W. D., and Hillman, C. C., *J. Amer. med. Ass.*, 1946, 131, 951.

⁴ Kerr, W. J., and Legum, J. B., *Ann. Intern. Med.*, 1936, 10, 569.

⁵ Dublin, L. L., *Hum. Biol.*, 1930, 2, 159.

⁶ *Med. J. Aust.*, 1947, 2, 649.

⁷ *J. Hered.*, 1927, 18, 153.

⁸ *Amer. J. d. Syst. Dis.*, 1947, 14, 397.

⁹ Freed, S. C., *J. Amer. med. Ass.*, 1947, 133, 369.

¹⁰ *Psychosom. Med.*, 1940, 2, 141.

¹¹ Ludwig, A. O., *New Engl. J. Med.*, 1948, 232, 175.

Nevertheless, it is a matter of common observation that the liability to obesity may be familial, and is often combined with a tendency to deposit fat after a definite pattern. The forms taken by this regional lipophilia may be determined by the endocrine organs, and Graham,⁶ in robust Australian idiom which spurns the spurious refinement of terms derived from the Greek, recognizes the "super-droopers, the spare tires, the big pants, and the grand piano legs." Danforth's⁷ account of a strain of yellow mice in which obesity is inherited as a Mendelian dominant confirms the clinical view that heredity is important.

If a constitutional, and often inherited, predisposition is admitted, appetite must still outpace metabolic needs to provide the material. It has been urged that familial liability is no more than a habit of overeating acquired from parental example. Bauer⁸ is unable to accept this view, and holds that there is a constitutional abnormality of adipose tissue throughout the body—a generalized lipophilia—of which voracity is the expression. Hypothalamic lesions, the result of disease or injury in man or experimentally inflicted in animals, are often followed by obesity. Here again increased appetite is mainly responsible, though reduction of basal metabolism and of physical activity plays a minor part.

In conformity with the trend of medical thought, the excessive appetite of many obese persons has been regarded as psychogenic. Neurotic traits are said to be common,⁹ and Bruch¹⁰ claims that the mothers of fat children are emotionally starved women who overfed their offspring to compensate for a repressed feeling of hostility. Others see overeating as a form of addiction, the more insidious and dangerous as it carries no social stigma. Eating, they claim, can assuage a sense of loss, depression, or deprivation,¹¹ and the frustrated victim finds peace in directing his aggressive propensities against the good things of the table.

Whatever view is taken of the cause of the excessive appetite which results in obesity, there is no debate about the basis of treatment. Restriction of calorie intake alone will reduce weight. The too, too solid flesh will melt only when its possessor submits to an unbending discipline and exerts a rigid control over his appetite. There is no easy way.

TREATMENT OF PYOCOCCAL DERMATOSES

Some of the most troublesome and depressing dermatoses to practitioner and patient are the chronic follicular and flexural seborrhoeic infections, such as sycosis barbae, external otitis, and retroauricular, axillary, and inguinal dermatitis. Any treatment holding out hope of success in these conditions is welcome and must be investigated. Chemotherapeutic and antibiotic remedies have proved disappointing, even when laboratory tests have shown the infecting organisms not to be resistant. There is also a risk of aggravation resulting from specific epidermal sensitization to the drugs employed. The halogen-substituted quinolines, as "quinolor" ointment, have been used for several years with some success in the treatment of sycosis barbae. Recently American dermatologists have reported favourably on "vioform," a related quinoline derivative containing iodine and chlorine (5-chloro-7-iodo-8-hydroxyquinoline). This substance has for long been used internally in the treatment of amoebiasis, and on the Continent it is prescribed as an antiseptic powder and paste for septic infections. Elsewhere in this issue Dr. I. Martin-Scott (p. 837) and Dr. J. Overton (p. 840) report promising results with an ointment or cream containing 3% vioform in the treatment of sycosis barbae and allied seborrhoeic infections. The response appears not to be due to the iodine as

such, for vioform can be applied to the skin of patients sensitive to iodine. The number of cases reported on is small, and the period of observation is too short to form any final conclusions, but in most of the patients the improvement was rapid. A few failed to make progress, and in some relapses occurred while under treatment, but the general response was clearly superior to that obtained from most other forms of local therapy. Application of vioform only rarely caused aggravation of symptoms or irritation: in general the treatment appears to have a soothing effect, which is desirable in treating sycosis or flexural dermatitis.

It is unlikely that the promise of these early trials will be maintained. Sycosis barbae, like most constitutional ills, has its fluctuations and is apt to improve temporarily with any new form of treatment. A psychogenic, endocrine, nutritional, or toxic influence plays a major part in the aetiology of most of these dermatoses, and the surface infection is secondary. The cure is not likely to be found among the local antiseptics, but any measure of relief is a comfort to those afflicted with such ills.

MORTON'S METATARSALGIA

In 1876 T. G. Morton¹ described a severe type of metatarsalgia in which the pain was felt in the region of the fourth metatarso-phalangeal joint. In 1940 the late L. O. Betts,² of Adelaide, reported nineteen cases of metatarsalgia in which he had exposed the plantar digital nerve to the cleft between the third and fourth toes: in each case he found and resected a fibrous swelling of the nerve proximal to its point of division. In 1898 Robert Jones and A. H. Tubby³ advocated resection of the fourth metatarsal head for this condition; they feared that nerve resection would leave a painful scar and disliked making an incision through the sole of the foot. In a recent review of this condition Nissen⁴ records that in 1935 the late Sir Harold Stiles, who suffered from severe metatarsalgia, had the nerves to the interdigital cleft between his third and fourth toes explored by Mr. N. H. Dott, who found fibrosis of the epineurium of the branch from the medial plantar nerve: resection gave complete relief. Of the twenty-seven cases investigated by Nissen twenty-one were women and six were men. The ages of the patients varied between 23 and 55. The pain was severe and confined to the third and fourth toes and that part of the sole distal to the necks of the third and fourth metatarsals. The most constant physical sign was pain on upward and backward pressure at the base of the third and fourth toes. Nissen treated these cases by resecting the plantar digital nerve as it approaches the interdigital cleft between the third and fourth toes—a short vertical incision being made through the sole directly over the nerve. Histological findings proved that the lesion was ischaemic in nature. The digital artery may degenerate to no more than a fibrous strand. Thickening of the epineurium accounts for the bulk of the swelling. Local resection gives complete relief from pain, and the plantar scar is not a source of trouble. Similar findings have been reported by McElvenny⁵ and by Winkler and his colleagues,⁶ who regard the lesion as traumatic. Nissen's investigations, however, show that the lesion is caused by local ischaemia. He prefers the name "plantar digital neuritis"; the condition, however, is undoubtedly that described by Morton over eighty years ago.

¹ *Amer. J. med. Sci.*, 1876, 71, 37.

² *Med. J. Aust.*, 1940, 1, 514.

³ *Ann. Surg.*, 1898, 28, 297.

⁴ *J. Bone Jt Surg.*, 1948, 30B, 84.

⁵ *Ibid.*, 1943, 25, 675.

⁶ *Ibid.*, 1948, 30A, 496.

POSTURE AND THE CIRCULATION

Postural hypotension is an expression of an imperfect adjustment of the circulation to bipedal existence. The two conditions in which a falling blood pressure on standing is the predominant sign are fainting and the much rarer orthostatic hypotensions associated with chronic neurological and endocrine disease. In the second group there is a state of long-standing apparent sympathetic paresis. Stead and Ebert¹ concluded that there was an abnormal response to the normal pooling of blood, and that as vasoconstriction failed the blood pressure fell. In the case described by East and Brigden² neurological disease was not present, but anhidrosis and impotence were accompanying symptoms. As in similar cases, there was no change in pulse rate with change in posture or the administration of atropine. They suggested that a central lesion of the sympathetic nervous system, possibly in the hypothalamus, would explain the findings. Vega Diaz³ recently reported in this *Journal* a case in which juvenile orthostatic hypotension disappeared with the development of slight hyperthyroidism, only to reappear after treatment for the latter condition had been given; he ascribed both conditions to hypothalamic disturbance.

Nylin and Levander⁴ have studied the circulation in a case of hypotension with the aid of tagged erythrocytes. Their findings were inconclusive, for the delayed equilibration of tagged cells after a change of posture might be explained by the fall of blood pressure *per se* rather than by a redistribution of blood. These authors give to the two conditions already referred to the names sympathetico-tonic and asympathetico-tonic orthostatism. They place in an intermediate group the cases in which orthostatic hypotension, often with tachycardia, develops after sympathectomy. Currens⁵ has measured the blood pressure of 1,000 men and women lying and standing. His findings confirm that a diastolic hypertension is common on standing; this may be a self-perpetuating mechanism leading to established hypertension. Man spends a large part of his time standing up, and the maladies mentioned are some part of the price paid for his assumption of the upright position.

AUTONOMIC RESPONSES TO BLADDER DISTENSION

In their paper on the automatic action of the bladder in patients with gross injuries of the spinal cord Head and Riddoch⁶ noted that in low cervical lesions distension of the bladder caused profuse sweating of the face, neck, and arms. Guttman and Whitteridge⁷ have recently investigated the autonomic responses to bladder distension in a number of patients with severe injuries of the spinal cord, using cystometry, skin-temperature readings, and plethysmographic studies of fingers and toes, and at the same time recording the pulse, the blood pressure, subjective sensations of the patient, and the appearance of sweating and pilo-erection. The autonomic responses were found to be related to bladder pressure rather than bladder volume. The invariable response to distension in patients with cord injuries at any level was vasoconstriction in the toes. When the spinal lesion was at T.6 or lower, that is below the sympathetic outflow to the arms, there was vasodilatation of the blood vessels in the fingers, little if any change in

blood pressure, and sometimes sweating of the lower part of the trunk and the legs.

It was in lesions above T.6, particularly in low cervical injuries, that the responses to distension were most conspicuous: in three men with severe spinal cord injuries in the upper thoracic region distension of the bladder caused patchy flushing of the face, the lateral aspects of the neck, the shoulders, and the upper part of the chest, and profuse sweating over the same areas and the arms. The nasopharyngeal mucosa became engorged, making breathing difficult, the pulse became slow, with extrasystoles, and the blood pressure rose. In these patients the vasoconstriction in the fingers was intense, and the considerable rise of blood pressure was thought to be due to widespread vasoconstriction caused by the reflex activity of the isolated distal segments of the spinal cord. The slowing of the pulse rate was explained as a reflex response to the rising blood pressure through the carotid sinus and aortic nerves, but it was more difficult to account for the vasodilatation of the face and neck and the congestion of the nasal mucosa. The sympathetic supply to the face and neck emerged from the spinal cord distal to the lesions, and vasoconstriction similar to that in the fingers might have been expected. These autonomic responses were considered to be an "adaptive mechanism," but their physiological basis remains uncertain. They are of some importance in the management of patients with spinal injuries, for they warn the patient and his attendants that bladder distension should be relieved. As Guttman and Whitteridge say, "They represent alarm symptoms indicating abnormal activity of a viscus in the anaesthetic area below the level of the lesion."

THE KING'S DOCTORS HONOURED

Honours for seven of the doctors who attended the King during his recent illness were gazetted on May 3. Sir Maurice Cassidy, Sir Thomas Dunhill, and Sir Morton Smart now become Knights Grand Cross of the Royal Victorian Order. Sir John Weir, who also attended his Majesty, was awarded the Grand Cross, which is the highest rank in the Order, in 1939. Dr. Horace Evans and Professor Paterson Ross have been appointed K.C.V.O., and the M.V.O. (Fourth Class) has been conferred on Mr. C. J. Longland and Mr. A. J. Slessor. It will be recalled that his Majesty invested Professor Learmonth with the insignia of Knight Commander of the Royal Victorian Order some weeks ago, and later Dr. John Gillies was made a Commander of the Order. Promotions in and appointments to the Royal Victorian Order are for extraordinary, important, or personal services to the Sovereign or to the Royal Family. The medical profession will welcome the announcement of these honours and the recent news of a continuing improvement in the King's health.

Sir Edward Mellanby, F.R.S., Secretary of the Medical Research Council, will deliver a lecture to commemorate the bicentenary of the birth of Edward Jenner at the Royal College of Surgeons of England (Lincoln's Inn Fields, London, W.C.) on Tuesday, May 17, at 4 p.m. He will speak on "Jenner and His Impact on Medical Science."

¹ *Arch. Intern. Med.*, 1941, 67, 546.

² *Brit. Heart J.*, 1946, 8, 103.

³ *British Medical Journal*, 1949, 1, 169.

⁴ *Lancet*, 1949, 2, 233.

⁵ *Lancet*, 1949, 2, 233.

⁶ *Lancet*, 1949, 2, 233.

⁷ *Lancet*, 1949, 2, 233.

The next session of the General Medical Council will open on Tuesday, May 24, at 2 p.m., when the President, Sir Herbert Lightfoot Eason, will take the chair and deliver an address.

HEALTH PROPAGANDA

A new and nation-wide scheme of health propaganda was introduced by the Central Council for Health Education on May 1 and put at the disposal of all local health authorities in England, Wales, and Northern Ireland. Dr. E. K. MACDONALD, chairman of the Council, explained at a recent press conference that under the Public Health Act, 1936, and the National Health Service Act the duty of providing health education was laid upon the local health authority, a grant being obtainable from the Ministry of Health for this purpose. The Council's function was to provide advice and assistance to the health authorities, and with this object in view it was arranging the free, extended, and indefinite loan to them of exhibition material. This was in the form of transportable stands on which would be superimposed posters concerned with a series of topics. The material for each of these topics would remain with the authority for two months, after which it would be returned to the Council, refurbished, and reissued to other authorities so that there would be four sets of topics running the whole time for the first eight months of the campaign. New topics would be dealt with as occasion required.

The four topics on which posters had already been prepared were diphtheria immunization, the services provided in Part III of the National Health Service Act, food and drink infections, and sleep. Material relating to other topics was being planned so that each local health authority would receive further exhibition material (in exchange) every two months. The stands were constructed of wood and metal, attractively designed, self-lit, portable, and easily erected and dismantled. Each stand would have boldly inscribed on its fascia the name of the authority to which it was issued. It was suggested by the Council that they should be erected in large shops, show-rooms of gas and electricity companies, schools, cinemas, and other places where people congregated. Such exhibitions should be reinforced by a local campaign, and suggestions for ensuring good publicity as well as literature suitable for the particular topic, lecture-slides, posters, and other material were being offered to the local health authorities. In addition, the Council was preparing a number of leaflets for the use of medical practitioners. It was often helpful for a doctor to be able to hand to a patient a leaflet explaining what he had been telling him.

Medical officers of health who would like more information about the present campaign and other aspects of the Council's work should write to Dr. Robert Sutherland, the Secretary, Tavistock House North, Tavistock Square, W.C.1.

RED CROSS SAFETY ZONES

[FROM OUR CORRESPONDENT IN GENEVA]

The Red Cross is seeking to enlarge the bounds of its responsibilities and privileges. Its guardianship has been primarily concerned with the wounded and sick on the field and with prisoners of war. Now a new convention is being constructed for the protection of civilians in wartime—a big undertaking when the totalitarian shape of modern war is considered. Apart from providing for the protection of sick persons, the aged and infirm, children, and maternity cases, the convention sets out the rights of aliens, refugees, internees, and people in occupied territories. The draft convention was worked out at the International Red Cross Conference at Stockholm last autumn in the course of ten days, and now at Geneva 250 delegates from 56 governments, with 30 observers, are scrutinizing the draft, together with the drafts of the older conventions. But law-making by international assemblies is an exasperating business. Apparently innocent phrases open up unsuspected difficulties, amendments go backwards and forwards between principal commissions and drafting committees and subcommittees, with the result that in ten days the commission which is studying this new convention has considered only 18 articles out of 140, and many of the points which it has discussed have been left undecided.

One question which has come forward is the protection of civil hospitals from attack. Another is the right of free passage

of consignments of medical and hospital stores intended for civilians in an enemy country; a third, the setting apart of safety zones in regions where fighting is taking place, so that wounded and sick, whether combatant or non-combatant, may be sheltered, and those responsible for the supervision and food supply of such zones protected; a fourth, the permission to medical personnel of all categories to carry out their duties, and, again, the removal from encircled or besieged areas of mothers and children, the sick, and the aged.

In the article which proposes the immunity of civil hospitals it is stated that such hospitals must be as far away as possible from military objectives. But what are military objectives? In total war may not factories and industrial undertakings come within that category, and is there to be no hospital within easy reach? The objection was raised by the British delegate that the requirement was impossible in a highly industrialized community. Another article states that civil hospitals and their stores and materials must not be requisitioned or diverted from their purpose. But may not a military commander, faced with a sudden need for medical or hospital provision, seek the transfer of civil hospital accommodation or equipment? Another article lays it down that civil hospitals as well as all vehicles used for the transport of the wounded or sick must carry the Red Cross emblem (or the Red Crescent or Red Lion and Sun, as the case may be), and all medical and other personnel engaged at hospitals shall wear the Red Cross armband. But, as the Canadian delegation pointed out, this seems to be unnecessary in countries which are not themselves the scene of conflict. During the last war Canada suffered no air raids and saw no land fighting, yet by this provision all its hospitals from the Atlantic to the Pacific and all their staff would have to be decorated with the Red Cross. This may not seem very onerous, but if the Red Cross is too widely and familiarly distributed it may tend to lose its value and privilege. These and like points have engaged the commissions in hours of discussion, and one can only hope that the result will be an instrument which, if necessity arises, will be strong and availing. Perhaps it should be added that the five delegates of Soviet Russia are taking a useful and co-operative part in the conference.

BACTERIOPHAGE AND ANTIBIOSIS

PROFESSOR GRATIA'S LECTURE

A special university lecture in pathology was given at the London School of Hygiene and Tropical Medicine on April 22 by Professor A. Gratia, of the University of Liège. Sir Alexander Fleming presided.

Professor Gratia said that the word "bacteriophage" was first used some 45 years ago. This was in 1903, when Vuillemin used the phrase "une acrasie bactériophage." Then in 1917 the late Professor d'Herelle coined anew the word "bacteriophage" as describing the transmissible agent responsible for the lysis of Shiga bacilli. Two years later, during an epidemic of dysentery, d'Herelle observed that the filtrate of stools of recovering patients, when added to a new broth culture of Shiga bacilli, would bring about its dissolution. If the dissolved culture was then filtered and added to a second fresh culture of Shiga bacilli the same dissolution occurred again and so on indefinitely through a series of repeated passages. In the course of these passages the activity of the agent of lysis so far from weakening, was enhanced. Moreover, d'Herelle succeeded in obtaining the dissolution of typhoid, paratyphoid and other bacilli by passages of the active filtrate of these different bacteria. As this filterable lytic agent was endowed with the power both of multiplication and of adaptation d'Herelle claimed that it was a virus of bacterial cells—the same virus for all bacteria—and called it "bacteriophage."

Two Aspects of One Phenomenon

The lecturer then described the opposition to the virus theory in the early 'twenties, which was reminiscent of the famous quarrel about spontaneous generation. About this time the lecturer by chance came upon a forgotten paper by Twort on an attempt to cultivate vaccinia virus. Twort had observed that colonies of micrococci isolated from crude vaccinia pulp underwent a curious form of degeneration, this being carried

on indefinitely from one vitreous colony to a normal colony. Struck by the similarity between Twort's observations and those made later by d'Herelle, Professor Gratia repeated Twort's observations, and then, transferring a vitreous colony of micrococci isolated from vaccinia pulp into a broth culture of *Staph. aureus*, he was able to duplicate all the typical features of d'Herelle's phenomenon. He obtained a true bacteriophage active on almost any strain of *Staph. aureus* but entirely inactive on any bacteria of the enteric group. Thus it appeared that Twort's and d'Herelle's observations were two different aspects of the same phenomenon, and, contrary to d'Herelle's claim, there was not one single bacteriophage for all bacteria but there were different bacteriophages for different groups.

Later work demonstrated that bacteriophages were specific entities, behaving like germs. Nevertheless there appeared to be something of fundamental importance in the fact that phages seemed to multiply only in the presence of living cells of sensitive bacteria. An attempt was made to find out whether a staphylococcus would work on dead cultures of a staphylococcus. The first attempt seemed successful: broth cultures of staphylococci killed by heat underwent lysis when a small amount of phage was added. But it soon became evident that the phage was not directly responsible for that clarification, and that the real cause was the presence of a few living staphylococci in the mixture.

Approach to Antibiosis

This work suggested that there might be organisms endowed with the power of dissolving large quantities of bacteria. The question was how to detect them. The lecturer described at some length work then undertaken which showed finally that active strains of streptothrix or actinomycetes, isolated on bacterial agar, could dissolve as much as 10 times their own weight of bacterial suspensions in plain water of most saprophytic or pathogenic micro-organisms. But while living suspensions of Gram-positive bacteria were as easily dissolved as dead suspensions, Gram-negative bacteria were only dissolved when previously killed. Lysis was strongly inhibited by serum and also by electrolytes. As heavy bacterial suspensions when dissolved by actinomycetes maintained strong antigenic activity and at the same time lost their toxicity, he used them successfully, under the name "mycolysat," for the treatment of staphylococcal infections and in cases of typhoid, paratyphoid, or dysentery, and for carriers.

Thus, starting from research on bacteriophage, the field of antibiotics was entered. Those first steps showed the way and gave rise to the appropriate techniques for later discoveries. Finally, in 1944, *Actinomyces griseus* was isolated by Schatz, Bugie, and Waksman, and produced streptomycin, and now other antibiotics such as chloromycetin were being investigated.

Actinomycetes were not the only organisms which in the early investigations were found growing on plates of agar: there were also moulds as well as micrococci of all kinds. It was at this time (January, 1925) that the lecturer and his colleagues observed a contaminated culture of anthrax bacillus completely dissolved by a green mould, some kind of penicillium. At this time also he isolated a strain of *Bact. coli* which he called "coli V," producing an active substance which was not a phage, properly speaking, but some antibiotic agent, and this he called the "V principle." It was diffusible through "cellophane," while phages were not; it was remarkably stable to heat, while phages were thermostable, and, again, it had no antigenic activity and was not transmissible in series. Even at that early date he had been impressed by certain similarities which led him to consider the relationship between the two phenomena of bacteriophage and antibiosis, and this relationship had been confirmed by further work.

Investigations with a number of collaborators had shown that the antagonism between strains of coliform organisms, for example, was less specific than was originally supposed. Hundreds of active strains had been isolated from diluted human and animal faeces. The antibiotic products of these different active strains were not all identical: the appearance of their inhibition zones, their diffusibility into agar or through cellophane, their resistance to heat, to digestive enzymes or bacterial proteases, and the specificity of the resistant colonies appearing in the zones of inhibition showed great variety. These observations suggested that there were several different active

principles, to which the generic name "colicins" had been given. At least 17 different "colicins" had been recognized and studied, and as a result of further work some 60 new bacteriophages had been obtained and classified into groups.

The lecturer showed a table giving the results of extensive tests of resistant colonies—resistant to "colicins" on the one hand or to bacteriophages on the other. He had previously shown that resistant colonies of coliform organisms selected by his "V principle" remained sensitive to phage and that other colonies which were resistant to phage remained sensitive to the "V principle." An investigation was then undertaken of all the resistant variants in this mass of material, comprising at least 17 "colicins" and 60 bacteriophages. He found that all mutants resistant to certain colicins were also resistant to certain phages, and his conclusion was therefore that, while there was no complete identity between the phenomena of antibiosis and bacteriophage, there was evidence of common factors, confirming the intuition which he had had 20 years ago that there was a relationship between the two. He resisted the temptation to enter into philosophical speculation about the nature of this relationship, and ended his lecture with a quotation from Craigie:

"Most of us probably feel that what is known about these various subjects (bacteriophages, nucleoproteins, transformation of pneumococcal types, genes) represents, so to speak, isolated jigsaw-puzzle pieces belonging to the same picture. When the missing intervening pieces are found and assembled in place a map of new territory will be revealed."

REHABILITATION OF THE DEAF

AMERICAN VIEWS

A postgraduate lecture with a transatlantic flavour was delivered at the Institute of Laryngology and Otology in London on May 7 by Dr. S. Richard Silverman, director of the Central Institute of the Deaf, St. Louis, Missouri.

Dr. Silverman began with the remark that, "with all due respect to my otological friends, the fenestrators, the irradiators, and the puffers and squirters," there was very little, medically and surgically, that could be done for the deaf; yet the otologist had great opportunities in dealing with the problem of the deafened. In the United States many factors had caused a recent surge of interest in this subject. Among them were the rapid developments in the science of electro-acoustics; the evolution of different surgical techniques, particularly the fenestration operation; new investigations into the physiology of hearing—despite the glib expositions in the textbooks. It was not yet known how the ear worked or how sound was converted into a nervous impulse; the popularity of motion pictures and the radio; and, finally, the tendency for "peripheral workers" (meaning politicians, social workers, and psychologists) to come together to do something for war casualties.

Hearing-aids

The greatest help offered to the deafened person was the vacuum-tube hearing-aid. There were two types of deafened persons: one requiring amplified sound, and hearing better when the voice was raised, the other able to hear speech of ordinary loudness but not able properly to distinguish syllables. With this second type, mere amplification only intensified the babel. The majority of persons who had purchased hearing-aids and discarded them belonged to this second group. On the other hand, certain people even in this category could be helped by a hearing-aid.

He had been quoted as saying that audiometers should be thrown out of the window, but that was a misinterpretation. The audiometer was a valuable instrument, but its limitations must be remembered. It could help in deciding in a given case whether a hearing-aid would be useful and to which ear it should be fitted. Broadly speaking, if a person had a loss across the speech-range of 30 to 35 decibels or more in the better ear the use of a hearing-aid should be considered. Putting aside cosmetic considerations, statistics would show that about 90% of patients needed air conduction instruments and 10% bone conduction.

No hearing-aid was perfect, and no hearing-aid could enable a person to hear as though he had normal hearing. Auditory training for the user of a hearing-aid must be insisted on not merely in manipulating the instrument but in obtaining what the lecturer called "cerebral reorientation" to speech. The user of a hearing-aid must learn to listen. Three levels of hearing might be defined: the primitive level, at which the person knew there were sounds but was unable to differentiate them; the awareness level, exemplified in the person about to cross the street; and the highest level, as shown in the exchange of speech. One of the most common expressions among deaf ex-Servicemen was that the world had gone dead; there was an eeriness in not hearing the traffic in the streets or the wind in the trees, and even at the primitive level to get some kind of sound appreciation was helpful.

Lip-reading

Dr. Silverman believed in the value of lip-reading, or "speech reading" as it was called in America. There was not much correlation between native intelligence and ability to lip-read. Many intellectual people—people in the professions—were poor lip-readers. Dr. Silverman tried an experiment on his highly educated audience. He wrote on the board the words "bat," "man," and "pan," then moved his lips without sound, and asked his audience which word he had pronounced. Opinion was about equally divided between the three words, and then he explained that they were all right and all wrong, because in the movement of the lips there could be no distinction between the three. Lip-reading was of value because it evoked some effort from the patient. Too often people supposed that treatment was something which was to be done to them. But rehabilitation, with hearing as with other things, was not effective unless the patient got hold of the idea that he was doing something for himself.

In addition to hearing-aids, auditory training, and lip-reading, one other thing was essential—namely, speech conservation or correction. The ears were the governors of speech. With impaired hearing speech began to deteriorate. He regretted to find in England speech correction so far divorced from the organization for helping the deaf. Finally, if hearing could not be improved or corrected, at least the patient might be taught to live with his disability graciously. Otologists and others often became so engrossed with decibels and frequency responses and articulation tests that they forgot that the patients themselves were not particularly interested in these things. The adjustment of the social and emotional life to the hearing defect was the important thing. The otologist should remember that a person who was hard of hearing was a person with a defective ear—not an ear with a person attached to it.

VISIT OF SWEDISH PAEDIATRICIANS

Last week the British Paediatric Association entertained as their guests some 30 distinguished paediatricians from Sweden. The British Medical Association held a reception on May 2, and later in the week Swedish paediatricians joined the B.P.A. in its annual meeting at Windermere. Many British doctors had the opportunity of meeting our Swedish guests at a dinner held in their honour on May 3 in the Apothecaries Hall, London. Dr. Hugh Ashby, President of the B.P.A., in a speech of welcome said that this was the first time his association had invited a group of paediatricians from another country to attend its meetings. This event happily coincided with the 21st anniversary of the founding of the B.P.A. Great advances had been made in paediatrics in Sweden during recent years and had been followed with intense interest by workers in Britain. At the same time he thought that the fall in infant mortality in this country from 150 to 34 per thousand in 50 years was "pretty good going." New Zealand was the only other country with which the record of Sweden for small infant mortality could be compared. Sweden had perhaps the most modern children's hospital in the world. Medicine, concluded Dr. Ashby, should become more international, and this would be helped by such visits as the present one and the delightful visit paid by the British Paediatric Association to Sweden last year, where they had been so hospitably treated.

In reply Professor Lichtenstein said that during the seventeenth and early part of the eighteenth centuries Swedish doctors were in the habit of visiting the country of Sydenham and Glisson. He mentioned the Swedish indebtedness to British workers, observing that international co-operation was more necessary now than ever before. He ended by saying, "We know in Sweden that if we enjoy freedom of thought and speech and science we owe that to Britain."

Professor E. C. Dodds, Master of the Apothecaries, paid his tribute to Swedish science and said that in no country in Europe did they owe so much in the matter of collaboration. Professor Dodds made some interesting remarks on the history of the Society of Apothecaries. Lord Moran also spoke, and Lord Webb-Johnson praised the Manchester School of Paediatrics, saying that he had sat at the feet of Dr. Ashby's father, the author with G. A. Wright of that well-known work *Diseases of Children*.

Reports of Societies

PROBLEMS OF CHILDHOOD

The problems of young children engaged the attention of the Section of Paediatrics of the Royal Society of Medicine on April 22, Dr. JAMES SMELLIE presiding, and of the Child Psychiatry Section of the Royal Medico-Psychological Association on April 23, when Dr. MABERLY was in the chair.

Toilet Training

The Paediatrics Section first heard Mr. ADAM CURLE, of the Institute of Human Relations, give an account of the methods of training in primitive societies. In the more aggressive communities the belief in the necessity for cleanliness was enforced by threats and punishment, while in peaceful communities there was a more easy-going attitude, the child being allowed to acquire good habits in its own time. In the more sophisticated communities in the last 60 to 80 years better amenities in home life had heightened the impulse towards toilet training at an early age, using methods varying from threats of punishment or ostracism to rewards for success. Mr. Curle described some studies he had made of communities in isolated villages where everyone showed great interest in all the children. Some of the practices of the primitive societies, such as elaborate initiation ceremonies into adult life, gave the members a strong feeling of unity with the group in contrast to the practice in a more highly civilized society of surrounding a child with protective care and then leaving it to its own devices at adolescence, which produced a feeling of isolation.

Miss AGATHA BOWLEY, of the Foundling Hospital Research Centre, said that habit training was a misnomer; it was not a mere matter of conditioning, the emotions were involved. She quoted opinions of workers in this field that the child who was allowed to develop without training would, if provided with the appropriate utensils, train himself after the age of 18 months. It was possible to condition small babies to be clean, but with intellectual development the habit broke down and this caused distress to the mother and might damage the mother-child relationship. "Placid but not premature pottling" was her advice, and the pot should not be too much in evidence until the baby was a year old and had formed a steady emotional relationship with one adult. Approval and disapproval should be only mildly expressed.

The discussion that followed showed a cleavage of opinion. Dr. R. S. MACKERRH pointed out that if no training was undertaken for the first 18 months there was an enormous amount of washing to be done. Dr. I. HELMAN spoke of the results of a survey she carried out to discover whether the attitude of "saving the washing" was justified. She found that few children were clean before the age of 2, regardless of when training was begun. This was important, because a great deal of energy was wasted by too early a start, and the happy relationship between mother and child might be jeopardized. With children whose training started nearer the age of 2 the training seldom took more than a few months.

Dr. LINDSAY BATTEN said that as soon as a child got on to a mixed diet its urine became more irritating, and it was extremely

common for children of over eight months to have very sore genitalia. If they could be persuaded to be wet less often it would be an advantage. Dr. PATRICIA HOLMAN said that it was not good enough to say that the mother should put up with the washing, especially in a working-class home. That might be the last straw which destroyed her health.

Dr. LETITIA FAIRFIELD reminded the meeting that life was not only for babies; adults were entitled to some consideration. It was doubtful whether a child would correct itself automatically; some gentle pressure and direction from adults were needed. Dr. FELIX BROWN said that children should achieve habit training sooner or later, but excessive pressure should not be put upon them. Dr. SMELLIE said that there was such a thing as the gastro-colic reflex, and normal physiological functions could be encouraged, promoted, and trained.

Psychiatric Aspects of Infant Feeding

At the meeting of the Child Psychiatry Section of the Royal Medico-Psychological Association, Dr. RICHARD H. DOBBS said that after birth the most important happening in the child's life was feeding. The mother had comparatively simple instincts, but superimposed on them there might be emotional difficulties; she might have fears that she would fail, or she might have feelings of prudery and disgust which would complicate the process of breast-feeding. Breast-feeding was of great importance for the future character of the child. Breast-fed children suffered much less from ailments and had a lower mortality rate than bottle-fed babies, but the disadvantages of bottle-feeding disappeared as poverty was left behind and there might come a time when it would be difficult to point to a better survival rate as one of the advantages of breast-feeding. Regular feeds were not essential nutritionally or medically, but a certain routine and habit in feeding was a good thing if it could be achieved without any great disturbance either to lactation or to the child's comfort. Motherless babies did not miss their mothers for the first six or seven months, but in later years they might suffer harm if there was a constant stream of nurses; even if there was only one she would not provide the extra love and care which a mother bestowed, and this was of importance in later years.

Dr. MILDRED E. CREAK said that the hurried impersonal routine carried out in many maternity units where the baby was kept in the nursery and given to the mother only at feeding times had created many difficult situations. The baby should be kept near its mother. Dr. MABERLY said that it was desirable that the child-guidance clinics and the maternity and child-welfare centres should work closely together.

Children in Hospital

Dr. A. G. WATKINS, Royal Infirmary, Cardiff, said that every child should be seen first in the privacy of a small room by a responsible medical officer and an experienced sister. The child who caused trouble in the ward was usually the child who was already maladjusted. Normal children settled down quickly, and the grossly defective child did not give much trouble, but the mildly defective child was sometimes difficult. A great deal depended on how the parents had approached the child regarding its need for hospital treatment. The acutely ill child adjusted quickly to the new surroundings and appreciated the comfort provided. The child should be allowed to bring its own toys, especially the ones it usually took to bed. If a child was old enough, any procedure to be carried out should be explained beforehand. A full explanation should also be given to the parents by the doctor; they were more satisfied and then the child was more contented. Certain types of children were upset after visits; others were better after a visit from the parents. This was something one could not be too dogmatic about. It should be left in the hands of the sister to decide whether a child should be allowed visitors or not. He never hesitated to allow visitors when a child was desperately ill.

Miss ANNA FREUD said that when a child was ill it was easy to forget how harmful it was for the child to be in a state of anxiety, separated from its home surroundings. Those who worked in hospitals said that children were better behaved, they resented less what was done to them, they were less easily

emotionally upset, and they usually ate and slept better, but this was because the child became all body and its individuality retreated. Mind and body worked together and it was not profitable to treat them separately. There was a great deal of evidence that in the child, whether ill or well, the life of the body was accompanied by a rich life of the mind. Young children separated forcibly and for a long period from their mothers showed all the signs of a melancholic state, including even the signs of arrested bodily development. The child was not only separated from familiar people, he was separated from all his habits, and this might create as grave a disturbance.

Children of school age put much of their feeling into their interests; in hospital their interests had to be left at home, and such occupation as they had would not take up more than a few hours in the day. Children of that age needed continuous occupation. When a child was ill it lost interest and had the experience of being nursed again. Some children reacted by sinking back into babyhood or else they reacted against nursing care. Many children regarded the pain they suffered and the restrictions imposed upon them as punishment, and to such children the experience of being ill was dangerous. When children went through an illness at home they were helped by the people who knew them. In hospital they went through a difficult experience in isolation.

Dr. MABERLY felt that nurses preferred the depressed melancholic child because it was easier to manage. He mentioned the possibility of the mother coming into hospital and taking part in the nursing of the child, which seemed to be a successful solution to one part of the problem. Dr. HUNTER, of the Tavistock Clinic, said that children were much less keen on seeing their parents after six or eight weeks in hospital. The problem of the child who had to be nursed in a cot was interesting; such children appeared to suffer from a particular form of withdrawal not experienced by children who were up and about.

CARE OF THE ELDERLY

The Medical Society for the Care of the Elderly held a conference at Liverpool on April 1 and 2, in Belmont Road Hospital. The meeting was opened by Sir HENRY COHEN, who paid tribute to the work of Dr. Lloyd Hughes, the regional medical officer for Liverpool, and praised the work which had been done at Belmont Road Hospital.

Dr. LLOYD HUGHES described the steps which were being taken to meet the problems of old age in the region. He mentioned the setting up of a geriatric advisory committee to start work on these matters and outlined the progress which had already been made. Dr. Lloyd Hughes stressed the importance of finding housing and accommodation for those elderly patients who could be discharged from hospital. The Nuffield Foundation were contemplating the creation of experimental "half-way houses" for such cases in Liverpool.

Lord AMULREE told the conference of the interest which the Ministry of Health was taking in the prevention and treatment of sickness in the elderly. It was important for those who were doing the work to make their needs and their plans for future development known to the hospital management committees and regional boards. The Ministry would lend a sympathetic ear to any suggestions likely to free beds badly needed for other patients.

Dr. C. O. STALLYBRASS spoke on the work of the geriatric advisory committee. The members had made it their duty to look into matters personally and had tried to formulate some general principles. They had found that with old people social and psychological problems were as important as the purely physical ones. When all these had been investigated and assessed, treatment of the old person could begin.

Dr. D. G. HENRY, who had been medical officer to the Belmont Road Hospital for eighteen years, spoke as a general practitioner. More old people had to be cared for by fewer young ones. At the same time, the sense of responsibility within the family had altered. Besides the temperamental difficulties arising in the aged, current social conditions sometimes led to malnutrition. Extended social welfare activity was needed.

Miss CAPLE, almoner to the Leeds Geriatric Unit, also emphasized this aspect, while Dr. R. N. TATTERSALL gave an account of the medical work in this unit. He stressed the need for preliminary investigation and assessment of all elderly patients coming into hospital, mentioning the wide variety of pathological conditions encountered.

Inactivity in Old Age

On the second day Dr. J. W. AFFLECK, of Leeds, read a paper on "Personality Factors in the Senile Psychoses." The patient must be regarded as a personality and not just as a case of senile dementia or paranoia. The various types were intermingled in the elderly and were modified by the social surroundings of the old person. Dependence on others, loneliness, and physical disability complicated the picture and gave the patient little opportunity to regain lost self-esteem.

Dr. MARJORY WARREN reviewed the results of inactivity in old age. After describing some aspects of physiological deterioration she mentioned the psychological apathy associated with prolonged rest in bed. Active treatment of all physical disabilities which limited a patient's mobility was necessary. All social and domestic agencies which could lighten the mental or bodily burden must be recruited, and team work was needed to tackle the life problem of the patient in a happy, congenial, and stimulating atmosphere. Whenever possible old folk should be kept at home and not sent to hospital.

Psychological difficulties were mentioned by Dr. R. KEMP. Hitherto the medical profession had turned away from the care of old people, and this neglect had led to many false ideas about disease in the aged. The troubles of the elderly were often more mental than physical. If bedfastness and demoralization were prevented, active treatment would often produce a surprising change in the patient's activity, health, and happiness.

Dr. T. H. HOWELL urged the need for more out-patient clinics for elderly patients. These, especially when combined with domiciliary visits, diminished the numbers of patients needing to enter hospital. He agreed with Dr. Kemp and Dr. Warren on the need to keep old people active and alert in their own homes.

After a discussion on chronic bronchitis by Dr. R. M. EVANS, a paper on malnutrition in the elderly was read by Dr. H. FULF. He compared his experiences at Belsen camp with some of the cases seen in Liverpool. Discussing the physiology of nutrition in old age, he criticized recent experimental work on diet in rats when applied to human beings. A low protein intake was often found in patients admitted to Belmont Road Hospital with tissue wastage, anaemia, and oedema. Avitaminoses were not uncommon, especially among the many old people who appeared to live on bread-and-jam and tea.

ALCOHOLISM AS A NEUROTIC SYMPTOM

Dr. R. D. NEWTON, speaking at the annual general meeting of the Society for the Study of Addiction held on April 19, said that there was still little agreement on the causes of addiction and little progress had been made in prevention or treatment. A primary difficulty seemed to be that alcoholism was sometimes regarded as a disease in itself, while at other times it was viewed as a symptom. Alcoholism or drug-taking might be included among other reactions in a psychopathic personality or might be symptoms of a neurosis or psychosis.

Addiction to alcohol was a behaviour disorder closely related to other behaviour disorders of hysterical origin. In investigating cases of addiction one would expect to find a history of hysterical personality. Children who were over-indulged or who had been starved of affection and fearful of punishment might have a character structure in which the sense of personal helplessness was so deeply embedded that it lasted throughout life. Their reaction to difficulties was to retreat within themselves and build up a world of illusion, and alcohol helped them to do this. Patients who alternated between self-pity and an aggressive anxiety which made it difficult for them to establish contact with their fellows took alcohol to blunt their sensitivities—a significant difference in the use of alcohol.

Dr. Newton gave some case histories showing addicts to alcohol as normal people in abnormal circumstances. No evidence was found of any constitutional or hereditary factors, and all the information available suggested that these patients could have been successfully treated for their psychological disorders in childhood, adolescence, or early adult life.

Mr. STANLEY LEE, F.R.C.S., secretary of the Society, in presenting the annual report, said that Professor Golla of the Burden Neurological Institute had accepted the office of president for the ensuing year. Money had been made available for research into the causes of the craving for alcohol. To carry on the Society's work it had been necessary to dip deeply into its reserves, and an appeal was made for new members and increased support.

HEBERDEN SOCIETY

The Heberden Society held a "Case Conference" on April 8 at the West London Hospital. This was an endeavour to approach the problem of rheumatic disease from a clinico-social aspect, and the technique used was that developed by the School of Social Medicine at Oxford. Dr. ALICE STEWART, from this department, took the chair at the invitation of the president of the Society, Dr. W. S. C. COPEMAN. Dr. Copeman, in opening the meeting, drew attention to the effect of the concentration by the teaching hospitals on the pathology of disease and on good teaching material to the neglect of the social implications of illness.

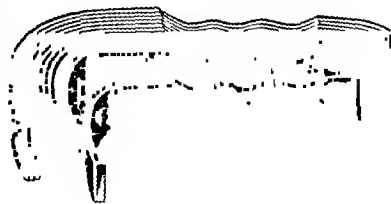
Two cases, one of rheumatoid arthritis and one of ankylosing spondylitis, were presented by Dr. R. M. MASON, and the social case work carried out was described by Miss M. W. EDMINSON, head almoner of the Arthur Stanley Institute, Middlesex Hospital, and Miss B. E. LEMAN, out-patient almoner of the West London Hospital. Dr. Alice Stewart questioned whether such cases would have occurred at all if social research work had been carried out as actively as had pathological. She thought that an epidemiological study of the rheumatic diseases in the community would be a valuable advance in the investigation of these conditions. She suggested that a committee of interested doctors and almoners should be set up to work out the main headings to be used in social case reports. These should include the family constitution, an assessment of major financial stresses, housing arrangements, relevant public services available, and follow-up arrangements. Finally, the results achieved by the various social services available, as distinct from the purely medical aspect, should be assessed at some time in each individual case.

Preparations and Appliances

SET OF NESTED RETRACTORS

Sir HENEAGE OGILVIE writes: In my Bradshaw lecture in 1947 I described a set of nested retractors. The ones I was then using were a home-made set made before the war by my chauffeur. Since the lecture I have been working out the design with Dr. Greville, of the Medical Supply Association, and have, I think, got as satisfactory a pattern as is possible within the limits of compactness. I and my colleagues at Guy's Hospital find these retractors very useful for all operations at the bottom of a deep cavity, such as abdomino-perineal resection of the rectum, nephrectomy, vagotomy, and all operations on the oesophagus and cardiac end of the stomach, and operations on the thoracic and lumbar sympathetic systems.

The set consists of twelve retractors of similar curve but varying length, held together by a folding bolt for sterilizing and until they are needed.



Correspondence

An Unfortunate Precedent

SIR,—To doubt the impartiality of Lord Moran in his capacity as chairman of the Committee for Distinction Awards to Specialists verges on the imbecile; but the letter (April 30, p. 774) published over the names of eight officers of the Royal College of Physicians does indicate a cause for apprehension. Thus (quoting your leading article of April 23, p. 717), they assert that it is insulting to suggest that in future Fellows of the Royal College of Physicians may hesitate to criticize the President lest they be passed over when distinction awards are made.

Of course, such a idea is ludicrous, but it has always been supposed that not Fellows but Members live in the shadow of dangers of such a type; and now their liberty is in even greater jeopardy, because, as the letter from the eight officers suggests, at least by implication, merit awards for physicians will go to Fellows.

Is there anyone so temerarious as to suggest that all Fellows have attained to their glory because of greater professional merit than any Member? I think the answer must be No. It is notorious that luck (perhaps, as many supposed, biased by prejudice) plays an even greater part in elections to the fellowship than in the examination for the membership. In the past this mattered little, except to the *amour-propre* of senior Members; but in the future it will involve financial loss.

Is it not time that the Fellowship of the Royal College of Physicians of London should be awarded for professional eminence, and that it should not be unreasonably withheld from those who have attained the necessary professional position? The present procedure by which a nomination can be held back by the Council and so never come before the Comitia reeks of totalitarianism.

All the Members with whom I have discussed the matter agree with me, but, being less senior than I, fear that the Fellowship will be for ever out of their reach if they become vocal.—I am, etc.,

London, W.1.

A. PINEY.

SIR,—It is surprising to read (April 30, p. 774) that no less than eight officials of the Royal College of Physicians missed the object of your leading article (April 23, p. 717) in which you expressed doubts as to the wisdom of the P.R.C.P. holding the chairmanship of the Distinction Awards Committee. I feel sure few would object to Lord Moran in a personal capacity serving on that Committee on an equal level with his colleagues, and the propriety of such membership was never questioned in your article. The difference between chairmanship and membership of that Committee seems to me to be of the greatest importance, because the holding of the chairmanship as well as the presidency of the College would place him in a commanding and probably an unenviable position. It is not clear whether the eight officials write on behalf of other Fellows and Members of the College or in a personal capacity, but, whether or not they regard the suggestions in your article about favouritism and fear of criticism as a personal insult, it is surely of greater importance that these dangers which many specialists fear are clearly foreseen, and you will no doubt be congratulated by many specialists who are Fellows and Members of this ancient College for pointing them out.

As a Member of the College, it appears to me that the possible dangers that might arise are twofold. First, that while no one, least of all the writer, wants to criticize Lord Moran's sincerity and integrity, which no doubt would be shown as chairman of the Committee, the possibility must be foreseen that the distinction awards may excite criticism and, rightly or wrongly, perhaps a sense of grievance among distinguished aspirants to awards. It does not require much imagination to foresee a condition of affairs arising when specialists become divided up into cliques and undesirable rivalries. Secondly, our position as Fellows and Members of the College is entirely changed directly we become dependent on our fountain-head, the President, for possible financial advancement. Some may

feel that the presidential chair should remain above the level of financial remuneration, and one shudders to imagine the views of our forefathers were they able to survey the situation arising.

Those who have served in the Forces are well aware of the dangers of any form of criticism of superior officers; this is so much realized that no criticism is ever contemplated. It is fear, either conscious or subconscious, which prevents any form of criticism or even undue initiative. On active service such conditions are regarded as a necessary evil. But where they pervade civilian life, and indeed are instituted by the profession itself, it is not surprising that specialists may view the situation with dismay and apprehension. Already by compulsion much of our financial remuneration is subject to the officialdom of the Ministry of Health, and no doubt there are some Fellows and Members who hope that their relationship to the College may not develop on a similar footing.—I am, etc.,

SPECIALIST AND M.R.C.P.

Treatment of Basal-cell Carcinoma

SIR,—The final sentence in the article by Sir Cecil Wakeley and Mr. Peter Childs on basal-cell carcinoma (April 30, p. 737) states that "surgical excision of all rodent ulcers is recommended." I feel bound to challenge so sweeping a statement.

Small basal-cell carcinomata can sometimes be eradicated by a wide variety of therapeutic procedures, but surgical excision and irradiation are the most consistently effective. Patients have no particular bias in favour of a treatment method, and ask only that their tumour shall be dealt with adequately from the first and that they shall be left with as little scarring as possible. The tragedies that still occur with this disease are nearly always due to incomplete excision or inadequate irradiation at the time that the first treatment is given. It is more important that the first treatment should be efficient than that either method should be preferred. Both surgery and irradiation have a useful part to play, but I did not think that anyone who had an extensive experience of the treatment of basal-cell carcinomata would to-day deny that radiotherapy was the more suitable method of treatment for the majority of these patients.

Sir Cecil Wakeley and Mr. Peter Childs give particulars of 27 cases of basal-cell carcinoma occurring at sites other than the face and the scalp, selecting for special mention the uncommon sites where these tumours are more suitable for surgical excision. They give the result in only three of these cases (recurrence-free at 9 years, 4 years, and 2 years) and in none of the other 210 cases referred to where the tumour was situated on the face or scalp. If categorical statements of the kind contained in this article, which contradict accepted practice in most centres where large numbers of these cases are seen, are to be made, they should be backed by a clear statement of fact and not merely by an expression of hope that "there should be no recurrence with adequate surgical excision."

It would require considerable space to take up each point quoted by them in favour of excision—in my opinion some of these are misleading and others are untrue. I agree that recurrence after failure of irradiation is an indication for surgery—unfortunately the recurrences that we see after surgery are not often suitable for radiotherapy. Important considerations of relative cosmetic effect and the occasional need for extensive plastic repair following excision are passed over lightly. Only one concession is made, when it is suggested that in some cases of multiple superficial lesions irradiation may have practical advantages over multiple excisions. Shortly afterwards the really dreadful sentence, "Only rarely need a patient be condemned to irradiation on account of poor health," occurs. What kind of radiotherapy can they have seen? To take only one common example, patients with basal-cell carcinomata of the eyelids have generally a better chance of cure and less deformity with irradiation than with surgery, quite apart from "less time lost from work, admission to hospital, and mental trauma," which, in these cases at least, are wrongly claimed as surgical advantages. "Mental trauma" is surely special pleading—at least I have never had to give "premedication" to my patients with rodent ulcers "to diminish their worry."

The following table is presented to show the results obtained with 474 patients treated by x rays up to the end of 1944, and to indicate what has been done with one method of radiotherapy.

The policy of treating the majority of these tumours by radiotherapy when they occur on the face, neck, or scalp, and of excising most of the solitary ones that occur elsewhere, as well as those few which fail to respond to irradiation, has resulted in the eradication of the disease in nearly all the previously untreated patients whom I have seen since 1935. I know of only one which persisted and contributed towards the patient's death, and this, treated by both surgery and irradiation, was extensively involving bone when the patient was first seen. This may, of course, have also happened in some others which were lost sight of during the war and which we are now

Results of Treatment by X Rays of New Cases of Basal-cell Carcinoma, 1935-44

	No. of Cases Treated	Lost Sight of	Died of Intercurrent Disease	Recurred	Recurrence-free	Percentage free from Recurrence
Patients treated more than 10 years ago, 1935-37	68	21	9	3	35	92
Patients treated more than 7 years ago, 1935-40	256	69	56	18	143	89
Patients treated more than 5 years ago, 1935-42	368	72	57	27	212	89
Patients treated more than 3 years ago, 1935-44	474	89	49	36	300	89

One old lady died of intercurrent disease with some residual tumour present, and one died with an active growth which hastened her death. All other patients whose tumours recurred were re-treated by surgery or irradiation and were disease-free when last seen.

trying to trace. The table needs to be brought up to date, but the available facts are there to be examined and interpreted; every known recurrence, however trivial, is included, even if dealt with successfully by further irradiation.

A number of other large series of patients with rodent ulcers treated by radiotherapy have been published in recent years. If surgical excision of every rodent ulcer is to be recommended, it is desirable that the facts on which this recommendation is based be presented for assessment and comparison.

Surgical excision and irradiation are both available for patients with rodent ulcers; a judicious selection of the method or combination of methods best suited to each individual patient produces not only freedom from recurrence but excellent cosmetic results as well. Surgeons and radiotherapists do better by working together than by claiming exclusiveness.—I am, etc.,

London, S.W.3

D. W. SMITHERS.

Resection of the Fallopian Tube

SIR,—Lately, after salpingostomy, instead of inserting catgut to keep the tube open I have been using a thin strip of oxycel. I have only done this in a limited number of cases, and they are too recent to be able to forecast about pregnancy, but the x-ray reports have been satisfactory with regard to patency.

I am not sure if this is an original procedure, but I have not seen a note of it elsewhere.—I am, etc.,

Dublin.

BETHEL SOLOMONS.

Statistics and Health Education

SIR,—Dr. F. Gray's letter (April 16, p. 680) brims over with ideas—some very good—but he has not subcultured and isolated the better ones for close and critical analysis. He appears to chafe unduly at the prevailing practice among public-health workers of collecting and examining morbidity statistics before taking preventive action in certain fields. Inquiry, sorting, and computation are as necessary preludes to the logical planning of prophylactic measures as diagnosis is to treatment. His suggestion that "the problems of real life" would be solved by subsidizing selected general practitioners to under-

take research into these problems can surely, if carried out, get us no further than to convert this *crème de la crème* of G.P.s into clinical specialists or social statisticians—very good in itself but not really what Dr. Gray and I are aiming at.

Let each cobbler stick to his most accustomed last. Let the Ministry of National Insurance (and any others who can and care to) collect and publish morbidity statistics; let G.P.s (and others) treat the sick and discover and make known the intimate social pathology influencing recognizable physical and mental disorders. Then Dr. Gray may leave the health educator to use this (and other) information and to ascertain where, among which sections of the community, and on what aspects of health and disease ignorance is most manifest. In this way health instruction to the laity can be most appropriately and effectively planned.

Dr. Gray asserts that "attempts at preventive medicine are being made in a sort of vacuum—hence their ill success." The disappearance from this country of leprosy, typhus, malaria, plague, and cholera; the considerable diminution in smallpox, typhoid, scurvy, rickets, tuberculosis, and diphtheria; together with the progressive decline in the mortality rates for all age groups, and especially among infants, are apparently among the forgotten achievements of applied preventive medicine. I suggest that any remaining "vacuum" can be filled by accurate social and medical statistics. Well-conducted sample surveys among most types of community will yield reliable data on the prevailing needs and will provide a measure of the effectiveness of health education measures. Health education of the individual is not quite the same matter as teaching health to community groups. They are related subjects but based on different criteria (statistics), and each calls for a separate technique.—I am, etc.,

London, S.W.1.

W. HARTSTON.

Food, Health, and Education

SIR,—It is now known that the streams of advice and information upon the choice and the cooking of food to which since 1940 the Ministry of Food has treated the housewives as to be strained into a melting-pot and left to simmer awhile. Some of the work will be taken over by those of the local education authorities who are sufficiently interested to find place for it; and the Ministry of Food will apparently be maintaining a small central staff and a dispersed body of voluntary "food leaders," whose real activities have never been precisely assessed. Presumably the Ministry will also continue to use the Press and radio.

So long as the conditions of supply and rationing were liable to abrupt changes it was natural that the task of instructing the public should fall to the Ministry of Food, for, after all, no other Ministry could have handled the shifting situation. But it is now pertinent to ask what part, the local health departments will be expected to play; and it is no less necessary to point out that the country is faced with some serious and interrelated problems in the nutritional field of public health. The time has come to take stock of what is in the melting-pot then we had better decide what kind of educational brew is needed.

The advice services initiated by the Ministry of Food were plainly intended to shepherd the housewife through the complexities of wartime rationing. But the quality of the problem has now changed; and this change in quality is best summarized under three propositions: (1) The published figures suggest that the average diet has been remarkably well balanced on a day-to-day basis; that is to say, while there has been certain element of monotony, the constituents of the diet have somehow combined to sustain a reasonable level of staminal and a good growth record. (2) But a shift in the proportions of supplies (e.g., more sugar and less meat) might have the effect of throwing the average diet out of balance, and it is difficult to see how this is to be prevented in a free community except through a process of education. (3) Even more important is for us to face the fact that what we believe to be our traditional pattern of diet may have passed away for ever. The typical British diet of 1970 may, in brief, have to be something very different from the typical middle-class diet of 1930 (which was presumably the standard most working-class families would have aimed to reach if their means had permitted).

ON GUARD in tinea territory



Activity is on the increase in swimming pools, baths and other centres of communal activity where the organisms responsible for mycotic infections find their hosts. Key measures to efficient control of such infection are prompt treatment of the developing case and planned protection among likely contacts . . . and in both roles Mersagel is equally effective. Mersagel contains the powerful fungicide, phenylmercuric acetate, in a special water-soluble jelly base. It acts directly against the infecting fungi and maintains intimate contact with the seat of infection. Colourless and therefore clean to use, Mersagel does not normally irritate the skin and is suitable for the patient's personal application.



In 1½ oz. tubes & 16 oz. jars

Phenylmercuric acetate (1:750) in a water-soluble jelly base

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX. BYRON 3434

For sustained control of gastric hyperacidity

NOVASORB

(Hydrated Magnesium Trisilicate)

Novasorb provides for sustained control over gastric hyperacidity without producing an alkaline condition in the stomach. It thus presents a desirable improvement over the older antacids, where control is limited to the immediate reaction and where continued administration of excess alkali may induce alkalosis.

High adsorptive properties

Will not give rise to alkalosis

With suitable doses, does not destroy peptic activity

A safe antacid for general use

The Novasorb brand of hydrated magnesium trisilicate was developed and introduced by Evans Fine Chemical Works and is based on original observations and clinical trials (*Brit. Med. J.*, 1936, 1, 143, 205 and 254)

Issued in Powder and Tablet form

Further details sent on request

Made in England by

EVANS

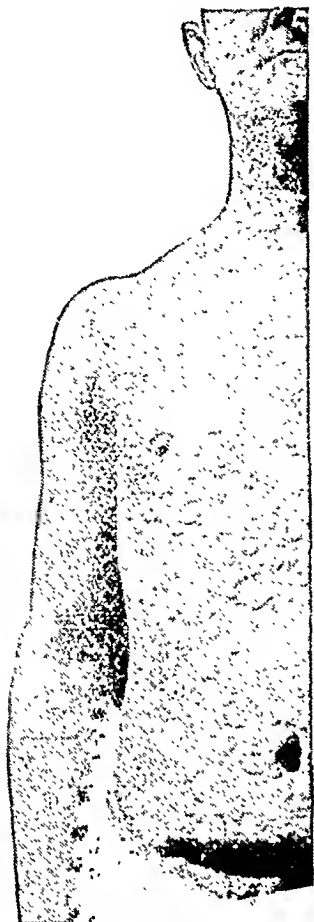
EVANS MEDICAL SUPPLIES LTD

Liverpool and London

OVERSEAS COMPANIES AND BRANCHES:

AUSTRALIA, BRAZIL, CHINA, EIRE, INDIA, MALAYA, PALESTINE, SOUTH AFRICA

An anti-histamine of wide application



HISTOSTAB is one of the most satisfactory antidotes for histamine now available.

In the treatment of a wide range of allergic conditions Histostab has few undesirable side-effects. It may be given orally, or by injection when rapid action is required. It will control allergic urticaria and eczema, and will relieve the itching in certain cases of pruritus. It has proved of value in cases of sensitivity to Insulin, Liver and Penicillin, suppressing the unpleasant effects and allowing treatment to be continued.

As Compound Solution of Histostab it is available for nasal and ocular instillation in vasomotor rhinitis and hay fever.

Histostab Tablets. Bottles of 25 x 0.1 G. tablets.

Injection of Histostab. Boxes of 6 ampoules of 2 ml. (0.1 G.).

Solution of Histostab Compound. Bottles of ½ fl. oz.

HISTOSTAB



Literature and further information gladly sent on request to the Medical Department
BOOTS PURE DRUG CO. LTD.
NOTTINGHAM, ENGLAND

K35

For better definition
and maximum contrast

Ensign

STANDARD
the film most recommended for all chest radiography. Noted for its fine definition, good contrast and freedom from fog.

RADOS
A non-screen film of great speed used extensively because of the very full gradation of its image in the examination of bone conditions in children.

X-RAY FILM

for maximum
diagnostic value

BARNET ENSIGN ROSS, LTD., WALTHAMSTOW, LONDON, E.

B.M.J. (1)

PRURITUS?

ONE OF THE **CPL** ANTIPRURITICS
is always indicated!

FOR
PRURITUS ANI HÆMOR-
RHOIDS ANAL ECZEMA,
etc. IN BOTH SEXES

POLYCREST
ANTIPRURITIC
CREAM

Local fungicidal and bactericidal therapy combined with powerful local anaesthesia.

Active Ingredients:

Phenylhydrazine, Nitras B.P. 0.1%
Amethocain-Hydrochlor. B.P. 0.5%
Benzocain. B.P. - - - 5.0%

In tubes containing appr. 20 gms. net.

FOR
PRURITIC CONDITIONS
DUE TO OESTROGEN
DEFICIENCY

MENOPAX
ANTIPRURITIC
CREAM

Local oestrogen therapy combined with powerful local anaesthesia.

Active Ingredients:

Stilboestr. B.P. - - - 0.1%
Amethocain-Hydrochlor. B.P. 0.5%
Benzocain. B.P. - - - 5.0%

Hospital sizes 4 oz. and 8 oz. jars

Literature and Clinical samples will be gladly sent on application to:

CLINICAL PRODUCTS LTD.
RICHMOND, SURREY

IMPORTANT

"C.P.L." Pharmaceutical Products have no official
B.P., B.P.C. or N.(W.)F. "equivalents."

CPL

It is no longer a matter of persuading a people to adjust itself to the vagaries of wartime rationing. The concept we need is that of a long-term process of formal and informal education in components of which are integrated into a continuous scheme. The problem has become less administrative or purely educational than medical. It concerns neither the worries of a Minister of Food nor the natural wish of a few people to attend classes on cooking and food management; it concerns the subtle and elusive question of the precise part played by a balanced diet in maintaining and improving health and working capacity. For this reason it is, in some measure at least, an affair of the Ministry of Health and of the local health authorities.

What are the elements in our present diet that have combined to give it balance? We can only surmise; but if we prefer to rest on the safe side we may mention the larger and far more even consumption of milk, the provision of welfare foods, the highly milled flour, the higher (though still inadequate) consumption of vegetables, the higher consumption of potatoes, the restricted consumption of sugar, and, finally, a trend towards the made-up or "mixed protein" type of dish in place of the everyday roast followed by a week of scraps, cereal products, and oddments. Physiologically it is the day-to-day fare that matters, not the total components of a dietary as estimated over the course of a week or month. Nutrition is a continuous process. And while an occasional feast day and an occasional period of austerity clearly make for most consumers very little difference, one may assume that the nutritional level is better maintained where the day-to-day or even the meal-to-meal diet is a soundly balanced one.

Partly by luck and partly by judgment the people of this country have been since 1939 manoeuvred closer and closer to a dietary that approximates to what we should approve. Can they be persuaded to stay there and to make further progress? Now, if the task of instructing the public on food matters is to be divided between the Ministries of Food and Education, there is a certain risk involved. The Ministry of Food may tend to view the task, so far as it retains its powers, as merely a continuation of its wartime activities and not to appreciate the change that has come over the quality of the problem. The Ministry of Education, on the other hand, may tend to concentrate on the provision of more or less formal classes under its scheme of adult education; and it is evident that such classes, indispensable as they are, do not reach more than a very limited section of the housewives of the country. Such classes were in any case normally provided before the war by a number of the education authorities, and we should merely have an extension of the same practice without due consideration of the urgent medical problems with which we are now faced.

It is surely desirable that someone or some committee should intervene. What we need is a careful and objective assessment of the real effect of the "advice" work of the Ministry of Food and the outlines of a broad scheme of formal and informal instruction and advice that will gradually leaven the thoughts of the consuming public over a term of years or even of generations. It should be the aim of any community to make each generation better nourished than was its predecessor, and that is partly a matter of food supplies and greatly a matter of education. But the leaven must begin its work in the schools and influence every age and condition of life. A scheme of this nature cannot necessarily be implemented without delay—patiently in present circumstances it could not—but that is no reason why it should not be foreshadowed in broad outline.

If the intervention comes, it should be medical; and preferably it should be extra-ministerial. Not that the Ministries are unfitted to look after their own affairs, but this is a case where the public interest would be best served by a frank, inclusive, and unhurried review of all the complex factors involved.—I am, etc.,

Oxford.

F. LE GROS CLARK.

Treatment of Rheumatoid Arthritis by Vasodilatation

SIR.—The results of treatment for rheumatoid arthritis have remained unsatisfactory. Recently a number of therapeutic measures have been tried, all attempting to produce increased blood supply to the diseased joints. Thus spinal pumping, blood and plasma infusions, and intravenous T.A.B. injections

have been given to promote vasodilatation. It is possible that the remissions caused by jaundice and by infusions of blood from pregnant women are also caused by improved blood supply to the diseased joints. The ordinary physiotherapeutic measures, such as radiant heat, wax baths, short-wave diathermy, etc., as a rule only given for short periods, also aid in increasing the circulation of blood in the joints. The usually short-lived benefit is probably based on this factor.

All these methods have only a temporary effect. We therefore sought for means of applying heat to the body which would be well tolerated by the patient and would produce sustained vasodilatation. The method we adopted is the application of a large electric blanket to the lower half of the body. The patient's feet, legs, and pelvis are well protected by sheets of cotton-wool bandaged on to the limbs and body. The electric blanket is then wrapped round the patient and kept in position by bandages. The blanket is left in position for prolonged periods—up to four weeks in some cases—and the patient only taken out of it for toilet purposes. The temperature between the cotton-wool and the blanket is between 108° and 110° F. (42.2° and 43.3° C.). This type of application of heat produces generalized vasodilatation with pronounced sweating. The resulting fluid and salt loss is made good by additional fluid and salt intake. A fluid intake and output chart is kept and a check made on the chloride excretion in the urine.

The patients tolerate this treatment well. We have treated eight patients so far, mostly cases suffering from advanced rheumatoid arthritis with severe joint deformities and marked limitation of movement. In every case the improvement was marked. The range of movement is increased, the swellings subside to a large extent, and the stiffness and pain also improve considerably. Three women, whose hands had been fixed for five years, after three weeks' treatment were able to knit again. Since the patients so far treated have all been advanced cases, a complete cure could hardly be expected. Although improvement appears to have been maintained it is impossible to say at this stage whether further relapses may occur, and it is therefore suggested that this method is tried out at a special centre on a number of patients who could be followed up carefully. We have no doubt that this treatment is more promising than other measures which are at present available. An additional advantage is that this treatment can be given to the patient in his home under the supervision of his own doctor.

We feel that the electric-blanket treatment should be given a wider trial and be used experimentally in conjunction with other methods at our disposal for increasing the blood supply to the diseased joints—for instance, plasma and blood transfusions, nicotinic acid infusions, the administration of tetraethylammonium bromide, sympathetic block by injecting the sympathetic ganglia, and gold or vaccine therapy.

We have approached the makers of the electric blanket to make us special trousers, which include the feet, out of the material, since such an appliance could more easily be kept in position and also allow for nursing purposes. The electric-blanket method of producing vasodilatation may be also useful in other conditions in which a constant increase in the blood flow to certain areas is beneficial.—We are, etc.,

ERIC FRANKEL.

D. LANG STEVENSON.

London, E 11.

Vaccine Treatment of Rheumatoid Arthritis

SIR.—My old chief, Sir James Kingston Fowler, used to say that every new remedy of value is recognized as such by the profession within six months of its introduction. One has only to think of antiphlogistic serum, salicylates for rheumatic fever, salvarsan, insulio, liver therapy, the sulphoamides, penicillin, radiotherapy, and E.C.T. to realize how very true this aphorism has proved itself to be.

But what about treatment with vaccines? This was first suggested, I think by Sir Almroth Wright, about forty years ago. It was used for diseases of infective origin—furunculosis, typhoid fever, *Bact. coli* infections of the urinary tract, and (as tuberculin) for tuberculosis. In each of these success should have been certain, for the vaccine was specific, but it had to be confessed that in each case the treatment was useless, if not indeed harmful.

In rheumatoid arthritis, however, most astonishingly, vaccines are still employed. Here is a disease, or group of diseases perhaps, of unknown aetiology which, upon a hypothesis unsupported by evidence, is being treated with complex chemical bodies whose action is not known and which have never been proved to be of more value than boiled tap water. After years of consistent failure and disappointment many hours of time and hundreds of pounds are still being wasted every year upon their preparation and administration. Perhaps even more significant is that the ideas underlying their use obstruct the introduction of new conceptions.—I am, etc.,

Beckenham, Kent.

W. MAXWELL PENNY.

Perforation of Gastric Carcinoma

SIR,—Mr. Louis A. Ives's edifying communication (April 30, p. 758) touched on an exciting topic, but may give a rather pessimistic impression to young surgeons.

On May 5, 1938, I operated on a man, aged 55, for perforation. It came "like a bolt from the blue" when he, a publican, was seized with agony while serving in the bar, and called his doctor, who rushed him to the nursing-home. To my surprise a mid-lesser-curve ulcer, obviously cancerous, was found with a large hole in it. Partial gastrectomy was undertaken forthwith. Smooth healing followed. Biopsy by Dr. A. D. Fraser confirmed carcinoma.

This may seem bold surgery, but the patient was seen on April 12, 1949, by his doctor and found perfectly well—11 years later. I am only sure of three other patients of mine with gastric cancers (non-perforated) surviving over 10 years after operation.—I am, etc.,

Bristol

A. WILFRID ADAMS.

SIR.—Perforation is not a common complication of carcinoma of the stomach. Mr. Louis A. Ives's case (April 30, p. 758) emphasizes the need to be on the look-out for the condition in apparently straightforward perforations.

A similar case was recently admitted to Lymington Hospital. The patient, a man aged 54, was admitted on April 26, 1947, with a typical story of a perforated peptic ulcer of four hours' duration. He gave a history of many years' dyspepsia, for which he sometimes took alkaline powders, but he ate a fairly full diet. He had never previously been in hospital. At operation a perforation $\frac{1}{2}$ in. (0.6 cm.) in diameter was found in the pyloric antrum. This was closed with a plug of omentum. The ulcer had a wide proliferating margin which could be felt through the stomach wall. It was considered to be malignant, but a gland removed for biopsy showed no malignant invasion. Convalescence was uneventful.

In view of the operation findings, gastrectomy was performed on May 20, 1947, and microscopy of the ulcer confirmed the diagnosis—extensive adeno-carcinoma and simplex carcinoma. He made a good recovery from the operation and was discharged from the hospital on June 14, 1947. When seen later in the year he was free from symptoms and back at work as a chauffeur, and he ultimately left the district. However, in April, 1948, I heard from his doctor in Northampton that he had had a recurrence and died shortly afterwards.

The interval of three weeks between the operations is convenient, as the patient has time to get over the shock of his perforation but the growth has not long to extend; nor is there time for the gastrectomy to be complicated by well-established adhesions.—I am, etc.,

Lymington, Hants

GEOFFREY ST. J. HALLETT.

The Treatment of Tetanus

SIR.—I would like to question the remarks of Drs. M. H. Armstrong Davison and A. B. Ward and Professor E. A. Pask (April 9, p. 616) concerning the value of penicillin in tetanus. It would seem logical that if the toxin elaborated by *Cl. tetani* can reach the blood stream, then penicillin can diffuse to the responsible bacilli. If the latter were completely shut off from the blood stream there should be no clinical problem. It would be sounder to argue that it is unlikely that further toxin, formed after the massive intravenous injection of antiserum, would reach the central nervous system unneutralized. While admitting this argument, I still believe that heavy dosage with penicillin is indicated as an adjunct to the other treatment in order to suppress the responsible organisms, not merely as a prophylactic against respiratory infection.

As far as treatment with curare is concerned, I too have encountered the same respiratory embarrassment, and it would seem that "myanesin" is the present drug of choice. In a case currently under treatment with curare (myanesin not available) the patient was much distressed initially by saliva and mucus in mouth and throat—so much so, in conjunction with the respiratory difficulties, that the question of tracheotomy was seriously considered. At that time I was giving *d*-tubocurarine by intermittent injection into the tubing of an intravenous drip, but in view of the mucus production it was thought wiser to restrict fluids. I have since been injecting the curare intermittently through a short lumbar-puncture needle, with stylet, left in the vein. This does not interfere with the patient's movements and requires little attention. While not an ideal aseptic procedure, it spares the patient from repeated needling and ensures the instant availability of a vein.—I am, etc.,

Victoria, British Columbia.

JAMES FIDDESS.

Physiology of the Orgasm

SIR,—I am obliged to Dr. P. D. Eeman for his letter (April 2, p. 593) drawing attention to my Reichian assessment of the physiology of the orgasm as published in my book *Clinical Psychology*, though I think it would have been more polite as well as more accurate to call my remarks "incomplete" rather than "incorrect."

Dr. Eeman's quotation is also naturally incomplete. In the following paragraph (p. 95) I say, "... It seems from this patient's experience that an anxiety discharge can actually produce relief of tension comparable to that of an orgasmic discharge. Perhaps this discovery is not so strange when we reflect that many a woman speaks of a 'good cry' as a relief for her pent-up emotions." Surely this is at least indicative that I consider that the orgasm may be regarded as "a brief period of acute sympatheticotonia occurring at the end of a period of parasympathetic predominance," and that my view is therefore not contrary to that of "Kuntz, White, and Smithwick."

Although my book is in no way devoted to the physiology of the orgasm I still think that it is impossible to give too much attention to the details of this much neglected psychophysical phenomenon. The stress laid on abreaction by every form of psychiatric treatment, mental and physical, should remind us that there is a perfectly normal form of abreaction provided by Nature for the maintenance of optimum intrapsychic tension.—I am, etc.,

London, W.1.

G. CHARLES BERG.

B.C.G.

SIR,—Dr. W. Norman Taylor in his letter about B.C.G. (April 30, p. 778) is rightly anxious for facts about the efficacy of vaccination; Professor W. H. Tytler's recent article¹ and the "Memorandum on B.C.G." produced by a joint committee of the Tuberculosis Association and the Joint Tuberculosis Council (1946, London) both give excellent summaries of the evidence. He is also afraid that we may "get carried away in our enthusiasm for spending large sums on B.C.G. vaccine." In a country that has adopted a waiting policy for 25 years there is little danger of this.

But it is less clear why he thinks that we are "playing with fire" until the efficacy of the vaccine has been proved, or that experiments to test its efficacy should be conducted "with full realization of the risks involved"; these are questions of safety, not efficacy. With the global figure of vaccinated standing at ten million (excluding the figures from Japan),² the safety of the vaccine is no longer in question.—I am, etc.,

Henley-on-Thames, Oxon

K. NEVILLE IRVINE.

REFERENCES

- ¹ *Medical Annual*, 1948, Bristol, p. 32.
- ² Rosenthal, S. R., *Amer. Practit., Phila.*, 1948, 2, 462.

SIR,—Dr. W. Norman Taylor (April 30, p. 778) asks what are the facts about B.C.G. Until we have some really convincing proofs, he says, let us remember that we are playing with fire. Dr. Taylor must be familiar with the investigation by Hyge, quoted by Wallgren,¹ of an epidemic of tuberculosis in a girls' school due to exposure to an infected teacher. Of

05 pupils tuberculin-positive before exposure, two fell ill; of 06 vaccinated with B.C.G., two fell ill; and of 94 tuberculin-negative, 41 fell ill—morbidity rates of 1.9%, 1.9%, and 43.6% respectively. Is this not proof?

He speaks of playing with fire. Malmros² states that, using Vallgren's method of vaccination, small abscesses occur in .8% of cases and large abscesses in 0.8%. Is this playing with fire?

There seems no reason why tuberculosis could not be wiped out in civilized countries, and it is good news that experiments with B.C.G. are to be carried out here, though it is difficult to understand the necessity for these. The time for experimentation was surely 20 years ago, and the grudging attitude adopted in this country towards B.C.G. can only be considered due to its having been discovered elsewhere, or to inability of the medical profession in this country to appreciate a conception that depends on prevention rather than on treatment.—am, etc.,

Tavistock, Devon.

JOHN SLEIGH.

REFERENCES

- ¹ *British Medical Journal*, 1948, 1, 1126.
- ² *Ibid.*, 1948, 1, 1129.

Treatment of Varicose Veins

SIR,—I must protest, with due respect to Mr. R. Rowden Foote (April 9, p. 635), that ulcer of leg cannot really be treated as one affliction harsh enough to warrant certain measures in treating varicose veins, for any relationship that may exist between ulcer and varicose vein has yet to be demonstrated. It is true the notion of varicose ulcer is of hoary antiquity (Mr. Foote may perhaps have looked into the temple papyrus, 200 B.C.); nevertheless it is but an easy-going repetition founded on no more than too hasty observation, and the notion dodges our incomplete knowledge of the aetiology of ulcers of the leg.

A proper follow-up after treatment and proper control comparisons of thus treated and thus untreated cases of leg ulcer accompanied by varicose vein, at all ages, will show that destruction of the varicose vein, by whatever method, has had no effect on the healing or extension of the ulcer nor on its recurrence. Of course, waiting—over some years perhaps—or this evidence, rendered reliable because cross-examined by time, follow-up, and controls, is tedious. But after all there are the immediate commonplace facts: that the great majority of patients with varicose veins, at all ages, have and have had no leg ulcers, while the great majority of patients with leg ulcer, at all ages, have and have had no varicose veins; that in its clinical features, under all conditions, there is no discernible difference between ulcer with, and ulcer without, varicose veins; that Providence affords us often enough the spectacle of one human of chronic recurrent ulcer in one leg, and the only varicose vein (long-standing and down to the malleolus) in the other, and otherwise healthy, leg; that the ulcer, for its part, has no effect on its companion varicose vein, however close the proximity. I note that Mr. Foote's tale of dreadful ulcers in the varicose clinic could not be enlivened by a story of thrombophlebitis of a varicose vein set up by its septic ulcer, or of a sloughing ulcer eroding into its varicose vein. Why not?

I recorded my observations on the danger of a chain-reaction-like necrosing, not sclerosing, thrombophlebitis. Mr. Foote would avoid this by diminishing his dose of sclerosant, while risking starting it by his proper prior scarification of the venous intima.—I am, etc.,

London, W.1.

H. M. HANSCHALL.

Pain in Childbirth

SIR,—While fully agreeing with what Dr. Grantly Dick Read says (April 16, p. 651) about fear underlying most of the discomforts of childbirth, I would like to point out how much needless pain is caused by our neglect of the mechanical factors involved in the process. It seems very strange that Newton and his apple and his deductions therefrom are disregarded in the obstetric world of to-day. The chief cause of unbearable pain connected with a normal birth depends so much on this neglect of his teaching—that bodies fall to the earth by their own weight.

If Newton had laid his tree on the ground how could his apple fall? The child's weight (7 lb. odd) accomplishes the delivery and numbs the parts as it is born by the uniform pressure it exerts on the nerve endings in the stretched and distended perineum, but is it allowed to do so? No. The mother is laid upon her side and now has to supply the seven pounds of propelling force from her own muscles. Furthermore, because she is laid on one side, the left, it is thus put out of action, is kept rigid, becomes congested, and easily torn. I think it will be found that nearly all tears whether of cervix or of perineum are on the left.

Like using a bedpan, the act of excretion becomes difficult when lying down. Normal childbirth became both difficult and dangerous when the lying-down position became general; it is so contrary to Nature. During the war, in using the natural position for childbirth—squatting and kneeling—the members of the antenatal class at Paddington were offered the choice of having an anaesthetic or of seeing their baby born. All chose to see the baby born—and did not regret it. Several of the mothers, all primigravidae (one over 40), volunteered the statement that as the foetal head was passing the vulva they felt no pain down there, but only suffered pain from the contractions in the abdomen.

When the child is being born with the mother kneeling or squatting the pelvis is delicately balanced upon the heads of the femora and can move backwards and forwards on the hip joints, thus keeping the plane through which the foetal head is passing parallel to the ground and ensuring equal pressure on all parts of the muscular opening. At the same time the sides of the pelvis lift (just as the ribs lift in inspiration), the pubic arch widens, and consequently the outlet of the pelvis broadens. Simultaneously the perineum is stretched transversely, and as the mother rounds her back for the expulsion it is relaxed antero-posteriorly as the tip of the coccyx comes forward. When all is thus ready, the weight of the child brings it through the birth canal quickly and with a minimum of suffering to the mother.

A class in which birth is prepared for by exercise and is looked upon as a test of nerve and courage never fails to find recruits who ask for no anaesthetic but long to see their baby born.—I am, etc.,

London, N.W.11.

KATHLEEN VAUGHAN.

Curare-modified E.C.T.

SIR,—The technique of curarization propounded by Drs. Peter D. W. Shepherd and David C. Watt (April 30, p. 752), must in the following particulars be called into serious question.

(1) Their recommended initial dosage of 2.5 mg. per stone (63.5 kg.) for females and 3 mg. per stone for males is dangerously high. They have never, they say, seen a case unduly sensitive to curare. If they had, their technique might well have led to consequences more severe than the prolonged apnoea of a number of their patients, as a fairly recent article in the *Journal* (April 24, 1948, p. 784) by Gray and Halton portends. These authors not only counsel a maximum initial dose of *d*-tubocurarine chloride of 15 mg., but advise also a trial dose of not more than 5 mg. followed by a watching period of two minutes. They cite a fatal case of respiratory arrest after the administration of 15 mg. of *d*-tubocurarine chloride and 0.5 g. of thiopentone, and a case showing apnoea with diminishing doses of *d*-tubocurarine chloride—indeed, with as little as 2 mg. at the third induction. Yet Drs. Shepherd and Watt would submit a man of 10 stones (63.5 kg.) to an initial curarization of 30 mg., and a 10-stone woman to one of 25 mg.

At the Warneford and Park Hospitals my technique at first curarization is to give 5 mg. of *d*-tubocurarine chloride at two-minute intervals until a total quantity has been administered sufficient to prevent any movement of the upper arms and forearms except forearm flexion. Adequate muscular relaxation without severe respiratory depression results. The full dose thus calculated can be rapidly administered at reintroductions without harm. Moreover, this technique has failed to demonstrate any exact correlation between the patient's weight and the needed dose of curare. Thus a male patient weighing 9½ stones (60.4 kg.) required a maximum dose of 15 mg. of *d*-tubocurarine chloride for excellent relaxation; another of 15 stones (95.15 kg.) never needed more than 25 mg. Drs. Shepherd and Watt would presumably have almost doubled these doses at the first induction. On the other hand, a frail man weighing 7½ stones (47.6 kg.) required 35–40 mg., and Case 43 in Drs. Shepherd and Watt's series showed an even greater tolerance.

It is therefore submitted that it is dangerous to calculate the initial dose of *d*-tubocurarine chloride by weight alone, particularly at so high a value as that employed by Drs. Shepherd and Watt. The above-described technique of small doses slowly administered obviates all danger of fatal drug sensitivity.

(2) I can see no rationale for the technique described by Drs. Shepherd and Watt of mixing *d*-tubocurarine chloride with thiopentone and atropine, if I have understood them correctly. In the first place it alters the amount of fluid in which each drug is dissolved, complicating calculation. Secondly, it prevents variation of one drug without a proportionate variation in the others. Yet it is as important to reach by calculation the correct end-point with thiopentone as it is with curare.

My technique with thiopentone is to give the drug at a steady rate of about 0.1 g. every five seconds, making the patient count rapidly, and to stop the injection as soon as the patient's voice starts to tail off. In this simple way unconsciousness with the minimal amount of thiopentone is achieved. To do this effectively it is essential for the thiopentone to be administered separately from the curare, although through a single venepuncture. For in-patient therapy it has been found most simple to give a standard dose of atropine, 1/75 gr. (0.9 mg.), subcutaneously 1½ hours before treatment, as is done pre-operatively.

(3) Drs. Shepherd and Watt have had little use for neostigmine, while, it appears, tolerating apnoea in their patients of up to 45 minutes. Patients begin to come round from the post-convulsive coma in 5-10 minutes. There can surely be no justification for submitting a patient to the distress of waking up weak and apnoeic, and one's staff to the needless imposition of continuing artificial respiration for up to 45 minutes, when a routine intravenous dose of "prostigmin" (1½-2 mg.), given immediately upon cessation of the convulsion, so rapidly and effectively abolishes the curare-effect that artificial respiration, in my experience, can invariably be discontinued directly after the injection, and no patient wakes conscious of having been curarized.

—I am, etc.

Oxford

S. J. G. SPENCER.

Transfusion Compatibility Tests

SIR,—The commonly employed direct compatibility test, using the patient's serum and a saline suspension of donor's cells, is unsatisfactory and dangerous. The transfusion reaction described by Drs. A. C. Buchan and John Wallace (April 16, p. 660) illustrates the danger attending its use, and emphasizes the absolute necessity of using a compatibility test that will detect incompatibilities due to Rh and other irregular agglutinins, both of the saline- and albumin-agglutinating types.

The application of the indirect Coombs test would probably provide the greatest safety, for it is apparently the only test that detects the rare cryptagglutinoids, but it seems too laborious for routine use and too involved for many who might have to perform urgent cross-matching. In this laboratory saline suspensions are never used, all compatibility tests being performed with albumin suspensions by the open-slide method of Diamond and Ableson. For the past six months we have simplified our arrangements for this test, so that it can be easily performed by anyone wishing to cross-match in the absence of laboratory staff. Our procedure is as follows:

Blood in the citrated pilot tubes, supplied attached to the bottle, is allowed to settle, and two drops of the sedimented cells are transferred aseptically to sterile plugged tubes (2 × ½ in.; 5 × 0.9 cm.) containing two drops of 30% bovine albumin; care is taken not to include any supernatant fluid. These small tubes are fixed to the pilot tubes with adhesive tape. All blood is treated in this way before being made available in the "bank."

Compatibility is tested for by mixing equal volumes of this albumin suspension and the patient's serum or plasma on a slide and reading after 15 minutes in a 37° C. incubator or over a lamp—precautions being taken against drying. Advantages are that the suspension is ready for immediate use and no additional reagents are needed.

Specific agglutinability is retained for at least 10 days; we have made no tests over a longer period. Owing to the optical properties of albumin the cells in the tubes may appear haemolysed although they are well preserved.

Dangerous reactions are likely only in the presence of pre-formed agglutinins. The use of a satisfactory compatibility test is therefore a more important safeguard against dangerous reactions than is routine Rh testing with a limited range of sera, for only in this way can the reactions due to the rarer Rh antibodies and other irregular agglutinins be avoided. A test on the above lines can provide a considerable measure of safety; it remains only to convince all those prescribing blood of the inescapable obligation of employing a compatibility test.—We are, etc.,

Pathological Department
North Staffs. Royal Infirmary, Stoke-on-Trent.

B. GODWIN.
A. J. McCALL.

Routine Medical Examinations

SIR,—A conference was recently held under the auspices of the British Council for Rehabilitation on "The Problem of the Cardiac Patient in Industry." One of the principal speakers inferred that the routine medical examination of individuals in industry had very little value except for the supervision of special cases under specialist direction. He spoke, perhaps unintentionally, with something of the disdain of a certain type of specialist for anyone not equipped with specialist training and a battery of scientific apparatus. The specialist has been described as one who knows more and more about less and less, and certainly many specialists know far too little about the indivisible problem of health as opposed to the specific classification of disease. The specialist too often is concerned primarily with cure and salvage, after neatly fixing a label.

The doctor in industry, as team-mate of the general practitioner, is concerned with very different problems—how to help people to keep out of range of the specialists by promoting health and preventing disease. The value of the routine medical examination is not primarily to detect disease. The good doctor has to develop a fine clinical sense in conjunction with knowledge of men and a sound training in examination and the taking of a full history. This enables him to select a certain proportion of cases for reference to their G.P., and a smaller number of these are sent for detailed investigation by the specialist. Often the cases are sent to him not so much for his advice as for the special investigation by apparatus which the ordinary doctor has not at his disposal. Such cases would otherwise come forward at a much later stage in their disease.

This is only a very small proportion of the cases seen by the industrial doctor. Primarily, I think, the value of routine examinations lies in reassurance, guidance, and general health education. In every consultation the doctor learns something of human nature, and may have an opportunity of using his knowledge for the aid of his patient.

We hear much to-day of the stress diseases which cause such vast national loss. The industrial doctor is in the front line in the study and prevention of these diseases, which owe so much to bad mental hygiene and disharmony of interpersonal relations. In this capacity he is a catalyst in industrial affairs. Beyond this, the routine examination gives great opportunities for the study of the natural history of disease and the practice of social medicine. If improvements are to be made much will depend upon the quality and the philosophy of those who guide the development of students into doctors. In this role, is it too much to say that the specialist has perhaps his greatest opportunity, for good or ill, as the teacher and ultimately the support of the front-line doctors?—I am, etc.,

Farnham Royal, Bucks.

M. E. M. HERFORD

POINTS FROM LETTERS

Diet in Disseminated Sclerosis

Dr. C. D. Ross (Stafford) writes: The study of the geographical distribution of disease has brought to light many important facts in its aetiology. It has been pointed out by Snapper (*Chinese Lessons to Western Medicine*, 1941, New York) that arteriosclerosis occurs rarely in Northern China, in spite of the fact that diabetes is common. He suggests the fundamental differences in dietaries to be the underlying cause of this phenomenon. It is known that the Chinese diet contains only small amounts of cholesterol but considerable quantities of unsaturated fatty acids, especially linoleic and linolenic acids. From the available literature it is found that disseminated sclerosis is rare or absent in China, where the staple diet is rice. It would appear that disseminated sclerosis, as well as arteriosclerosis, is connected in some way or other with diet and metabolism. Would it be wishful thinking to assume that in a case of disseminated sclerosis the substitution of an average Chinese diet would prevent the further ravages of the disease?

Diathermy Prong Forceps

Mr. A. WILFRID ADAMS (Bristol) writes: I am grateful to Mr. David Aiken (April 30, p. 780) for giving his further experience with diathermy devices for haemostasis. They will help in emergency, but do not allow me to dispense with a pattern specially designed and correspondingly efficient. The prong forceps never fails me, and is a well-warranted adjunct which is in incessant use when operating.

Obituary

G. SECCOMBE HETT, M.B., F.R.C.S.

Mr. Geoffrey Seccombe Hett died suddenly in London on May 3, at the age of 70. He received his medical education at University College Hospital, where he qualified in 1903. He graduated M.B. a year later and went on to take the F.R.C.S. in 1908. Before finally settling down to consulting practice as an ear, nose, and throat specialist, Hett undertook postgraduate study in this specialty in several European centres, including Vienna and Freiburg. He was appointed assistant surgeon for diseases of the ear, nose, and throat at University College Hospital in 1912 under the late Mr. Herbert Tilley. He was also at different times on the staff of the Throat Hospital, Golden Square, the Royal London Ophthalmic Hospital, Mount Vernon Hospital, the Cassell Hospital for Nervous Diseases, the Ear, Nose, and Throat Hospital at Eastbourne, and the Cottage Hospital, Cranleigh. During the first world war Hett served in the R.A.M.C. with the rank of major, and was at one time officer-in-charge of the Middleton Park Convalescent Hospital for Head Injuries. He became interested in the plastic repair of facial, and especially nasal, injuries, and was for some time attached to the facial injuries centre at Sidcup. Sir Harold Gillies, with whom he worked here, said that his work on nasal injuries was outstanding.

Hett soon achieved a large consulting practice, and attended members of the Royal Family on more than one occasion. He was a fine operator, a stimulating teacher, and contributed to the literature many valuable studies, the most outstanding of which were concerned with the comparative anatomy of the tonsils and with injuries and diseases of the nose and accessory sinuses. He had wide interests outside Medicine, being particularly devoted to exploration and natural history. He was a Fellow of the Royal Geographical Society and of the Zoological Society. He was recognized as an authority on bats, and had carried out an extensive investigation into the problem of basking sharks off the Scottish coast. Hett was also a keen fisherman and a practised shot. He was a kind and courteous chief, a good host, and an entertaining talker on almost any subject. All his patients had a great affection for him because of his charm of manner and gentleness, and there are many who have received kindnesses from him who will mourn his loss. He leaves a son and a daughter.—T.C.

LUDWIG HALBERSTAEDTER, M.D.

Dr. Ludwig Halberstaedter, one of the early pioneers in the field of experimental radiology, died in New York on April 20 at the age of 72. Halberstaedter was born in Beuthen, Silesia, in 1876, and he studied medicine at Breslau University. His research career began with an investigation of the action of x rays on the ovary, the results of which he published in 1905. Bergonnié and Trebondeau published their work on the effects of radiation on the reproductive system later in the same year. In 1907 Halberstaedter went on a research expedition to Batavia and with von Prowaczek published a description of the inclusion bodies in trachoma (Halberstaedter-Prowaczek bodies). On his return to Europe he specialized in dermatology, taking a particular interest in radiation as a therapeutic agent. After the first world war he became director of the radiotherapy section of the Berlin Cancer Institute, and in this capacity he attended as an official delegate the First International Congress of Radiology, which was held in London in 1925. At this time his work was mainly concerned with the treatment of malignant disease by thorium (as a substitute for radium and radon), and his work in this field was outstanding. He was also interested in the treatment of carcinoma of the larynx by a fenestration method which attracted some attention. His experimental work included studies on the radiation of small organisms such as algae and trypanosomes.

As early as 1932 Halberstaedter began preliminary work on the biological action of million-volt x rays, and he also used the cathode-ray tube as a source of radiation. He left Germany in 1933 and took charge of the radiotherapy department of

the Hadassah Hospital in Jerusalem, which developed into the largest radiotherapy centre in that part of the world. He continued his work at the cancer research laboratories of the Hebrew University and published many papers from this department. His interest now lay in irradiation of tissue cultures and other relatively simple biological materials, such as blood corpuscles.

His department was destroyed in 1948, shortly after his colleague and collaborator, Doljanski, lost his life, and these calamities affected his general health. Just when he was about to retire he died suddenly while on a visit to the United States. Altogether he published over a hundred papers in the period from 1903 to 1947. He was fond of teaching, and his students benefited from his wide experience. He found recreation in photography and music, and while he loved serious conversation he had a great sense of fun and a gift of quick repartee which was the delight of his circle of close friends. He is survived by his wife, a daughter, and two sons, one of whom is at St. Mary's Hospital, London.

Dr. FREDERICK GORDON CAWSTON died on March 19 at Durban, where he had practised for many years. He was one of the pioneer workers in Natal on the pathology, prevention, and treatment of bilharzia. There was hardly a river in Natal which he had not patiently and laboriously investigated. Cawston was born in Kent, and was a student at Caius College, Cambridge, and St. Thomas's Hospital. He graduated M.B., B.Ch. in 1910, proceeding M.D. in 1917. He settled in South Africa at the age of 26, and was a resident at Grey's Hospital, Pietermaritzburg, subsequently practising in Greytown, in Krugersdorp, where he was medical officer of health, and in Durban. During the first world war he was a captain in the S.A.M.C. Apart from his scientific work, on which he published many articles, Cawston was a fine organist and piano player, and a very devout Christian. For twenty years he assisted at the services at the Durban gaol, and he gave a great deal of his time to lecturing to various youth organizations and the Y.M.C.A. He was also a member of the Juvenile Affairs Board at Durban. When still a young man Cawston lost the sight of one eye following an accident, and he had badly impaired hearing, so that for the rest of his life he fought—and fought bravely and cheerfully—an uphill fight against these handicaps, which never checked his enthusiasm for research. He leaves a widow, who was founder, and is still president, of the Natal Bantu Blind Society.

Dr. DUNCAN MATHESON MACKAY died at Campheltown, Argyllshire, on April 12 at the age of 79. He was born in Hull, and graduated M.B., C.M. at Edinburgh University in 1895, proceeding M.D. in 1903. He had also studied at the Middlesex Hospital, and later in Vienna and Berlin. Returning to Hull, he specialized in diseases of the eye, ear, nose, and throat, but subsequently restricted his work to ophthalmology. He was on the honorary staff of Hull Royal Infirmary from 1909 to 1929, and in the absence of one of his colleagues he was recalled to full and arduous duty from 1939 to 1945. With his customary fortitude he went on with his work in the centre of the city of Hull undeterred by enemy air attack, and he had to endure the loss of his only son in the North African campaign and the complete destruction of his home, equipment, and personal property. Dr. Mackay went back to Scotland in 1945, and he continued until recently to practise ophthalmology for the benefit of those for whom the journey to Glasgow might be difficult or inconvenient. He was a devout Presbyterian, taking a deep and generous interest in the affairs of his church. His considerable influence among his colleagues in Hull derived from their respect for his loyalty and high principles. Dr. Mackay was elected chairman of the East Yorkshire Division of the B.M.A. in 1927-8, and was president of the East Yorkshire and North Lincolnshire Branch in 1931-2. Subsequently, until he left the district, he was elected as often as he was eligible to the Branch Council, where his sincerity and honesty were of special value in the consideration of ethical and other problems. Assiduous in his attendance at all medical meetings, Dr. Mackay took an active interest in the purchase of permanent premises by the Hull Medical Society to serve as a centre of medical life in the district and as a regular meeting-place for the discussion of professional matters. He represented the B.M.A. on the Council of Hull University College, and instituted the fund from which a B.M.A. prize is offered to medical students of that college. As local charities secretary of the Association and local secretary of other medical charities and benevolent associations he set a fine example. These engagements in addition to his busy professional life left little time for his literary.

historical, and antiquarian interests. His work for the B.M.A. is permanently commemorated by the gold and enamel badge of the Association which he presented and which is part of the official insignia of the president of the East Yorkshire Branch. Dr. Mackay regularly attended ophthalmic meetings and congresses, particularly those of the North of England Ophthalmological Society, of which he was president in 1933. If he had any ambition it was for a lifetime of service to humanity, and this he can truly be said to have achieved. He will be especially remembered for his modest demeanour, for the courtesy he extended to all, and for his encouragement of younger men. —D. S. S.

Dr. CHRISTOPHER THACKRAY PARSONS, of Havant, Hants, died suddenly as a result of an accident at Cheltenham at the age of 78 on April 22. As a student he won a scholarship at St. Mary's Hospital and qualified L.S.A. in 1892. After holding a number of resident appointments he graduated M.B. in 1894, with honours in physiology and materia medica, and proceeded M.D. in 1895. Early in 1898 Dr. Parsons served in Bombay on special plague duty and on his return took up general practice for a few months. Later in the same year, however, he was appointed medical superintendent of Fulham Infirmary, where he remained until his retirement in January, 1934. The infirmary had by then been taken over by the London County Council and renamed Fulham Hospital. Dr. Parsons was highly esteemed by all his staff, who came to regard him with real affection. During the 1914-18 war he served in the R.A.M.C. with the rank of lieutenant-colonel and was in command of the Fulham Military Hospital; later he commanded a field hospital in Mesopotamia and was awarded the O.B.E. He was honorary secretary of the Infirmary Medical Superintendents' Society in 1908 and 1909 and president in 1912 and 1913. He was examiner in medicine to the General Nursing Council from 1934 to 1945 and the author of several reports on Poor Law relief and on workhouses and similar institutions. Dr. Parsons became a freeman of the Worshipful Society of Apothecaries, by redemption, in 1907, and was Master for a year from August, 1946. He was very proud of this honour and took the greatest interest in the traditional ceremonies which take place in the historic hall of this medical guild. Parsons was a man of small but dignified stature, of original thought always fearlessly expressed, kindly, and with an almost puckish sense of humour. He was endowed with a philosophical mind and unquenchable optimism. Widely travelled, he had a working knowledge of more than one Continental language, was well versed in the classics, and was informed on archaeology and painting. In addition to these accomplishments he was a man of affairs and a most able chairman. He was perhaps at his best as an after-dinner speaker, when his colourful phraseology and apt quotations were listened to with careful attention by all who had the privilege to hear him. He will be missed by many, and the sympathy of his friends will go out to his widow.

A memorial service for the late Dr. A. E. Barclay has been arranged by the British Institute of Radiology at St. Peter's Church, Vere Street, London, W.1, on Friday, May 20, at 11 a.m. Members of the institute, of other radiological bodies, and all who desire to do so are invited to attend. It was Dr. Barclay's wish that mourning should not be worn.

Medico-Legal

NEGLIGENCE BY A SURGEON

Loss of a Little Finger

Mr. Justice Pritchard in the King's Bench Division on April 11 heard a case in which a 7-year-old girl, Jennifer Leggett, brought an action against Mr. Kenneth Aird Ross.

At the age of 18 months the child sustained a burn on the right little finger which left a scar on the proximal phalanx and part of the middle phalanx. It seemed likely to produce a contracture, and on Dec. 17, 1946, Mr. Ross operated at the Hospital for Sick Children, Great Ormond Street. At some time after that date the finger became gangrenous, and finally the distal phalanx and part of the middle phalanx had to be amputated on March 14, 1947. The child, through her father, took action to recover damages in respect of the loss of part of the finger.

Judgment

In his summing up Mr. Justice Pritchard said that negligence was alleged on six points: (1) that Mr. Ross failed to stop the bleeding before sewing up the operation wound; (2) that he sewed it up too tightly; and (3) that he failed to arrange for a sling to be worn by the infant after the operation. In his view there was no substance in these three allegations. He went on to consider the allegations (4) that after the operation Mr. Ross bandaged the finger too tightly; (5) that on Dec. 23 he saw the finger, which was then swollen and painful, and took no steps to remedy the excessive tightness of the bandage or of the stitches; and (6) that on that same day he sent the infant away until Dec. 31, when her condition was such that he should have examined her at frequent intervals during that week.

After reviewing the conflict of evidence on a number of points the judge found the following facts. The finger was bandaged too tightly; the strapping was applied not merely to keep the gauze dressing in place but tightly enough to act as a splint. On Dec. 23 the bandage was cut open to reveal the site of operation, but it was not cut right up to the top of the finger so as to allow examination of the proximal phalanx. On Dec. 31 the finger showed dry gangrene. Since the child had pain from Dec. 17 to Dec. 23, 1946, and had no pain thereafter, the gangrene must have set in between the date of operation, Dec. 17, and Dec. 23.

There was some dispute between Dr. Courtenay Bell and Mr. Ralph Marnham for the plaintiff and Mr. Denis Browne, Mr. Dickson Wright, and Mr. Joseph Fathi for the defendants. It was suggested by the defendants that the bandage could not have caused the dry gangrene and that it might have been due to an arterial spasm in one of the small arteries of the finger. The judge preferred the evidence of Mr. Marnham and Dr. Courtenay Bell, and held that the gangrene was caused by a tight bandage. In putting that bandage on as he did, Mr. Ross was negligent, and on Dec. 23 his examination of the girl was not thorough and was a negligent examination. Mr. Justice Pritchard went on to say:

"Nobody likes saying of a surgeon that he has been negligent. I am quite sure that this case has been a matter of great sorrow and great anxiety to Mr. Ross. I hope that he will find at any rate some comfort in this expression of my view, that there are very few professional men—and I do not exclude lawyers when I say that—who have not at some time or other during the course of the practice of their profession been negligent. It happens I am sure many, many times. It does not always happen that an act of negligence committed in the bustle of a busy day results in an unfortunate chain of circumstances such as occurred in this case. I hope that Mr. Ross will go away from this Court not feeling that he is an isolated person because I have found that he is negligent, and imagine that I think he is unlike other people, because he is not. I hope he will go away, on the contrary, realizing what I really do think, which is that his negligence on these two particular days was something which might have been done by any surgeon without the unfortunate results which did occur in this case, and he has been unfortunate because those unfortunate results did occur."

He assessed the damages at £175, and gave judgment also for £8 14s. 11d. for the father, whose damages were not disputed. Mr. Felix Denny, instructed by Messrs. Milles Day and Co., appeared on behalf of the plaintiffs. Mr. Cecil R. Havers, K.C., and Mr. E. Garth Moore, instructed by Messrs. Hempsons, appeared for the defendants on behalf of the Medical Defence Union.

The International Hospital Federation is holding a congress in Holland on May 30-June 4. The Minister of Health does not consider that the expenses of members and officers of boards and committees attending the congress should be met from Exchequer funds, but he would have no objection to appropriate officers being granted special leave with pay to attend. Any regional board or board of governors that wishes to join the International Hospital Federation may pay the subscription from their Exchequer funds. Any association of boards or of management committees which may be formed would also be able to join the Federation, but individual hospital management committees should not join or subscribe from Exchequer funds. Details of the activities of the Federation and of the congress can be obtained from Captain J. E. Stone, honorary secretary and treasurer, King Edward's Hospital Fund for London 10, Old Jewry, London, E.C.2.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

Dr. George Young, D.Sc., F.R.S., has been elected to the Sir William Dunn Professorship of Biochemistry in the University, from Oct. 1.

UNIVERSITY OF LONDON

Dr. J. W. P. Harkness, Medical Adviser to the Comptroller for Development and Health in the West Indies, has been appointed as Clark Lecturer for 1950.

Professor J. M. Mackintosh has been appointed representative of the University on the Council of Management of Slough Industrial Health Service, Ltd.

Professor S. Nevin has resigned the post of Professor of Pathology Mental Diseases at the Institute of Psychiatry, from Sept. 30.

The William Julius Mickle Fellowship for 1948-9 has been awarded

Dr. Francis Avery Jones, F.R.C.P. The Fellowship, which is the value of approximately £250, is offered annually to the man or woman who, being resident in London and a graduate of the University, has in the opinion of the Senate done most to advance medical art or science within the preceding five years and has therein shown conspicuous merit.

UNIVERSITY OF MANCHESTER

The following candidates have satisfied the examiners at the examination indicated:

[Faint, mostly illegible text listing candidates and examinations]

UNIVERSITY OF SHEFFIELD

The following candidates have been approved at the examination indicated:

FINAL M.B., Ch.B.—*Parts II and III*: R. G. Ball, A. A. Belton, J. D. Bird, P. Caley, P. Cauthery, Barbara J. Green, Mary A. Le C. Hills, J. D. Howard, Anni M. Hutchinson, J. C. Johnson, L. C. W. Kershaw, R. G. F. Lampart, P. Lee, Margaret B. Lees, S. C. L. Ramesar, K. E. Spittlehouse, Betty M. Wylie.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

At a meeting of the College held on May 3, with the President, Dr. J. D. D. Small, in the chair, the following were elected to the fellowship: G. Ormiston (Southampton), R. Y. Keers (Tor-na-Dee), R. Griffith (Caernarvon).

Diplomas of Membership were conferred on W. M. Harrowes (Leamhead), J. C. Hogarth (Dartford, Kent), A. R. Piracha (Lahore, Pakistan), R. M. Hayes (Alberta, Canada), J. Pepys (Capetown), L. De P. Carnegie (Jamaica, B.W.I.), Ethel E. Robertson (Edinburgh), E. G. McIntosh (Edinburgh), H. M. Brown (Edinburgh), J. H. Murray (Liverpool), J. M. Smith (Alexandria), J. Rabkin (Capetown), J. H. Haldane (Dumfries), F. Stern (Natal), I. R. Wilson (Glasgow), I. Gordon (Port Elizabeth), H. T. G. Strawbridge (Portobello), G. H. M. Thornton (Edinburgh), D. G. Illigworth (Edinburgh), R. D. T. Cape (West Linton), R. P. A. Cumming (Elie), W. Gibb (Lockerbie), R. C. Nimmo-Smith (Edinburgh), S. Rae (Edinburgh), R. M. Jhala (Baroda, India), R. D. Rowe (Dunedin, New Zealand), W. R. St. Clair (Swansea).

At a meeting of the Royal College of Surgeons of Edinburgh held on May 3, with Mr. Frank E. Jardine, President, in the chair, the following candidates, having passed the requisite examinations, were admitted Fellows: J. A. MacLeod, H. G. A. Almond, J. W. Bolland, C. Clark, M. E. A. El Kharadly, H. J. Fisher, H. H. Gilbert, I. A. Graham, H. Hazra, B. Joffe, L. A. Key, P. Kinnear, T. H. Lawton, J. C. Miller, I. P. Munro, A. S. Oscier, E. W. Parry, R. P. Schach, A. J. Sinclair, V. Tabor.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Royal Faculty of Physicians and Surgeons of Glasgow held on May 2, with Dr. W. R. Snodgrass, President, in the chair, J. F. Mair, M.B., and W. Roy, M.B., were admitted Fellows of Faculty *qua* Physician.

Medical Notes in Parliament

NURSES BILL

In the House of Lords on May 3 Lord SHEPHERD moved the second reading of the Nurses Bill. The Bill was summarized in our issue of April 23 (p. 723).

Recalling the reports of committees which had considered the recruitment of nurses between the two world wars, Lord Shepherd said that the Horder Committee of the Royal College of Nursing had suggested that there should be a student nurse status and regional and local committees for carrying out the work of training. The Bill sought to bring into operation regional training committees. The Whitley Councils had greatly increased the allowances to be paid to nurses in training; but, despite all that had been done, the country still needed another 46,000 trained nurses, and of the 127,000 full-time nurses only 45,000 were fully trained.

The Working Party under the chairmanship of Sir Robert Wood had reported in 1947. Most of their proposals needed legislation which would ultimately come before Parliament, but the Government had put into operation some of their proposals. It was experimenting in the selection of student nurses and in the further training of registered nurses for higher positions. The Nuffield Hospital Provincial Trust was carrying on research, as recommended by the Working Party, to decide the kind of jobs that had to be performed in hospital and the staff required. Other important recommendations of the Working Party, however, would have to be dealt with by legislation.

The first feature of the Bill was the decision to increase the status and strength of the General Nursing Council and to make it more widely representative. The Government accepted the view that under present arrangements the training of nurses tended to be subordinated to the staffing of the hospitals, and also accepted the conclusion that so far as practicable training should be dealt with independently of hospital administration. The Bill left open the question of how far a student nurse could be given full student status, but created the conditions in which the answer to this question could be evolved by trial and experiment. It provided regional committees, independent of the hospital authorities, whose main duties would be to co-ordinate training arrangements. Membership of these nurse-training committees would be defined by the Minister, and these committees would advise hospital management committees, boards of governors of teaching hospitals, and any other authorities on schemes of training. The General Nursing Council would control the conditions of admission to the register, conduct examinations, and prescribe the grounds for removal from the register. It would be the duty of the Council to lay down in rules to be approved by Parliament the kind of training which would operate in general, but the Council would have authority to sanction experimental training schemes. Power was given to the General Nursing Council to register nurses from abroad who had undergone the appropriate training. That part of the register which concerned male nurses would be closed shortly after the Bill became law, and male nurses would be transferred to the general register. The Council was to be relieved of the obligation to publish the register, but they would not be prevented from doing so, and the register would be maintained in the office of the Council.

Lord LLEWELLIN welcomed the Bill. He said that previously the register of nurses had been published annually at a cost to the General Nursing Council of about £6,000 a year. He suggested that it should be obligatory to publish this register every five years, a year before the election to the Council took place. He inquired whether the Minister intended to appoint any doctors to the General Nursing Council. It was important that the liaison between doctors and nurses should be complete and that doctors should be able to give advice to the Council and have a say in training. The Working Party put the wastage of student nurses who did not finish the course at 35% in the old voluntary hospitals and 43% in the old municipal hospitals. They would retain more of these student nurses if imagination were shown in their training in hospitals and there was less drudgery. He was glad that mental nurses were to be given their own statutory committee and a place on the General Nursing Council. He suggested that the replacement of out-of-date mental institutions should receive a better place in the Government's programme of capital expenditure. The Working Party estimated that, while the percentage of the population which was mad was now 2.1, it might well increase to 4.1 over the next fifty years.

The Services

Major E. L. O. Hood, and Captain G. D. Powell, R.A.M.C., have been mentioned in dispatches in recognition of gallant and distinguished services in Malaya during the period July 1, 1948, to Dec. 31, 1948.

Medical Views

Lord AMULREE also welcomed the Bill. He said it seemed that medical practitioners were not represented on the General Nursing Council. There was a provision that two teachers should be appointed by the Ministry of Health. These teachers might be doctors but need not be. It would greatly strengthen the Council if there were medical representation. There still was a deficit of 50,000 nurses, although there were now 51,000 student nurses compared with 42,000 before the war. He was not sure whether the country could afford to take a greater number of well-trained and well-educated young women to care for the sick. The Council might give attention to the position of young girls who had a vocation for taking care of the sick but were not good at passing examinations. It was not necessary for all the junior nurses to know as much as the doctors did. It might be useful if there was a linking of management committees and boards of governors on the question of training.

Lord MORAN said the crux of the Bill was in the clauses which for the first time separated funds for the training of nurses from the general hospital budget. The nurses were thereby given self-government so far as their training was concerned. In the past hospitals had too often treated the nurse as a pair of hands. What the nurse did was governed not by her training but by the need of the hospital for cheap labour. Every nurse and doctor thought that the Bill was a milestone in the history of the training of nurses. He congratulated the Minister of Health in doing what he himself had impatiently awaited for forty years. Almost equally important was the provision in the Bill for bringing the standard of efficiency of the smaller hospitals up to the level of the best. Everyone would welcome the bridge between the teaching hospitals and the smaller hospitals in the standing nurse-training committees which were not under the regional hospital boards. If the nurses were in a majority on these committees everyone would welcome their establishment and the financial powers given to them.

When they came to the other executive function, that of examining, the position was different. In 1919 a central State examination for nurses had been established which had done much to raise minimum standards everywhere. Under the Bill there would be no national minimum standard, and he feared there might be a lowering of the standard by regional committees under the pressure of local opinion. The more they were driven to shifts and expedients for meeting the shortage of nurses the more necessary it was to preserve somehow the standards they had known in the past. That was why he was concerned that the teaching hospitals were put into the regional machinery for the purpose of training nurses. This was the first departure from the principle Mr. Bevan had laid down in the Health Service Act that teaching hospitals should be kept outside the regions. The teaching hospitals in the past spent ten times more money in training nurses than did the other hospitals. In the teaching hospitals was the "growing edge" of nursing, and he looked with misgiving on the possibility that that edge would be blunted by putting these hospitals under the regions.

Lord CROOK feared that the experiments which the General Nursing Council would authorise might cause delay in making decisions on general principles. In the next few years the field of recruitment would be more restricted. The number of women available for all kinds of employment in this country would drop by 300,000 in the next four years. The House was bound to ask that decisions on the general staffing problems of the hospitals should come from the Government within the next twelve months. He was surprised that the Bill omitted any suggestion of an annual report from the General Nursing Council.

Independent Financing

Lord WEBB-JOHNSON said he had long pressed for the independent financing of the training of nurses, and he had urged that the status of the nurse in training should be equal to that of an undergraduate in a university. He had had the privilege of planning a nurses college given by Colonel John Astor, which provided in a London hospital a college equal to any in the older universities. He was disappointed that the Minister of Health had selected the General Nursing Council as the body for general control of the funds for bringing about this improvement. He thought that something comparable to the University Grants Committee would be more suitable. Clause 2 of the Bill made it inevitable that the nurse-training committees in each area would be largely under the control of the regional boards. He agreed with Lord Moran that if teaching hospitals were brought under the control of such a committee and of the regional board it would be a matter of great anxiety. He hoped that Clause 5 would provide for educa-

tional grants to hospitals not vested in the Minister. He trusted that the Government would consider accepting on Clause 1 an amendment empowering the General Nursing Council to recognize postgraduate courses and to register extra qualifications.

Lord SHEPHERD said that, although publication of the nursing register cost £6,000 a year, only 200 copies were published, of which only 140 were sold. The policy of the Government to relieve nurses of all work not requiring nursing skill had been announced in 1945 and in notes recently issued for the guidance of hospital management committees. Since June, 1947 domestic employees in hospital had increased from 117,000 to 123,000. The Government intended that grants should be made to the General Nursing Council and through that Council to the training committees to cover the cost of training. The expenditure of hospital management committees in relation to training within the hospitals would also be chargeable to the Government. A Bill for Scotland would be introduced later. In making appointments by the Minister to the General Nursing Council or to the standing nurses training committees there would be prior consultation with organizations representing the medical and other professions. In the past medical men had found their way on to these committees, and under the new dispensation there would be no change. The Minister had for many years included both medical representatives and hospital administrators among his nominees to the General Nursing Council. There was no reason to suppose that any change in this practice was likely. It would be open to regional hospital boards or boards of governors of teaching hospitals to include medical representatives among members appointed by them to the standing nurse-training committees. The constitution of nurse-training committees would be settled by Order.

There was no reason to think that disclaimed hospitals would be prejudiced, and Lord Moran need not fear that the standard of training would be lowered by regional examinations. In the National Health Service Act teaching hospitals were dealt with separately because of their unique position in the teaching of medicine. The same analogy could not be drawn with reference to the training of nurses, of whom only a small proportion were trained in teaching hospitals. The Bill did not provide that the General Nursing Council should publish a report to the Minister, but the matter was being considered, and something more might be said about it before the committee stage.

The Bill was then read a second time.

Fitness of German Generals

The Bishop of CHICHESTER on May 5 in the House of Lords called attention to the cases of Field-Marshal Von Rundstedt, General Strauss, and Field-Marshal Von Manstein. He asked whether these men were fit to stand trial. The Lord Chancellor, Lord JOWITT, said that since he had stated last November that the duty of the British Government was to put these three men on trial reports had reached him indicating that two were no fit to stand trial. Even these reports were not unanimous, and he got the doctors concerned to see him, along with the Attorney General and Professor Sir Henry Cohen. Having heard several of the doctors, they came to the conclusion that the health of Von Rundstedt and of Strauss was not such as to justify the ordeal of a trial which would last six to eight weeks. Everyone agreed that Von Manstein was perfectly fit to stand his trial. Von Manstein was accused of breaches of the usages of war, with the murder of vast numbers of people.

MILK BILL

On April 29 the Milk (Special Designations) Bill passed through the Report Stage in the House of Commons after minor amendments had been moved on the motion of Dr. SUMMERSKILL. The Third Reading debate followed immediately.

Dr. Summerskill said that the Bill would assure consumers of a safe milk supply and the producer would know that the milk would be guarded during all stages of distribution. The Bill was a charter to safeguard young lives from the effects of bovine tuberculosis and to safeguard the community from the risk of milk-borne disease.

Captain CROOKSHANK said the real remedy was to clean up the herds. Until that happy result could be obtained the Bill would certainly serve its purpose.

Mr. SOMERVILLE HASTINGS was astounded that the country had taken so little interest in the Bill. When the Bill came into operation, presumably on Oct. 1, it would become illegal for the accredited producer to mix milk from two or three herds before bottling. That would be a real advance. If milk from more than one herd was mixed the distribution of possible infection was widened and the difficulty of tracing that infection was increased. The term "accredited" would go in October, 1954, and in one area after another, as pasteurizing plants became

B.D.H. CONTRIBUTIONS TO VITAMIN RESEARCH

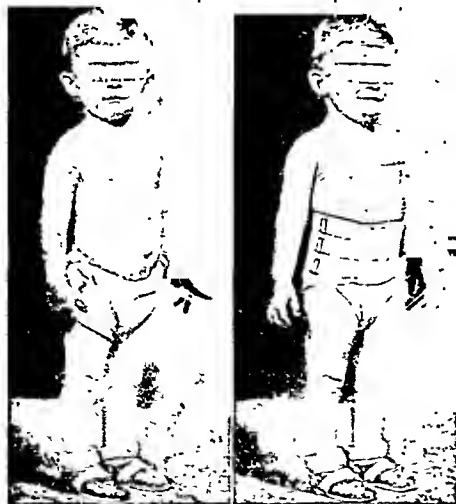
The British Drug Houses Ltd. have played a leading part in making vitamin products available for use in medical practice. Vitamin A manufacture was an early activity of the B.D.H. and the Carr-Price estimation was evolved in the B.D.H. Laboratories. Calciferol (vitamin D₂) was made available for the first time in Great Britain by the B.D.H. under the name of Radiostol. The vitamin products issued by the B.D.H. include all those of established value in prophylaxis and treatment.

Literature is available on all B.D.H. Vitamin Products and will be forwarded on request.

MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1

AVOLEUM (vitamin A)
NICOTINIC ACID B.D.H.
NICOTINAMIDE B.D.H.
PHYTOFEROL CAPSULES (Vitamin E Capsules B.D.H.)
PROKAYVIT (Menaphthone B.D.H.)
PROKAYVIT ORAL (Acetomenaphthone B.D.H.)
RADIOSTOL (vitamin D₂)
RADIOSTOLEUM (vitamin A and D₂)
RADIOSTOLEUM EMULSION with Vitamin C
RIBOFLAVINE B.D.H.
VITAMIN B, B.D.H.
VITAMIN C B.D.H.
RADIO-MALT (vitamins A B₁ B₂ and D₂)
MULTIVITE (vitamins A B₁ C and D₂)
'VIBELAN' (Vitamin B Compound B.D.H.)

VitPr/E/530



Preoperative Management of Umbilical Hernia

This male child, age 2½, was presented for treatment because of constipation and abdominal discomfort. Examination revealed an umbilical hernia. Surgery delayed for one year. The Spencer shown (right) was prescribed as adjunct to preoperative treatment to control the hernia and support abdominal organs in position to improve function.

In a Spencer, abdominal support is from below, upward and backward and is properly correlated with back support. Made of non-elastic material it will not yield or slip under strain. Because the Support was individually designed for this child, "it stays in place," is comfortable and safe. Thus patient co-operation is assured. Each Spencer Support is individually designed, cut and made for each patient.

Thousands of doctors prescribe individually designed Spencer Supports for back derangements; following spinal, abdominal or breast operations; displaced internal organs; movable kidney; maternity and following childbirth; certain hernia cases; and other disabilities.

SPENCER (BANBURY) LTD.

Consultant Manufacturers of

Surgical and Orthopaedic Supports

Spencer House • BANBURY • Oxfordshire

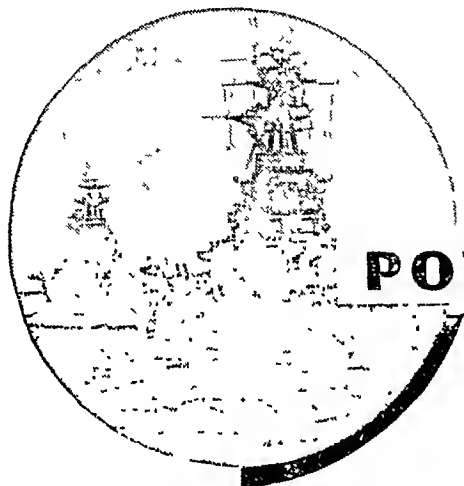
Spencer copyright designs are original and distinctive and for more than 20 years have been recognized by the Medical Profession as a symbol of effective control for abdomen, back and breasts

SUPPLIERS TO HOSPITALS UNDER THE NATIONAL HEALTH SERVICE ACTS OF 1946

Trained Fitters available throughout the Kingdom

Copyright: Reproduction in whole or in part is prohibited except with the written permission of S(B) Ltd.

E.M.J. 5/49



POWER IN ACTION

Where the urgent treatment of an anaemia calls for powerful action, the physician can rely on 'Folvite' (Folic Acid, Lederle) as a potent haematinic.

'Folvite' rapidly restores normal red cell development and maturation—a fundamental factor in the successful treatment of the macrocytic anaemias.

Issued as a parenteral solution of 15 mgm./cc., in tablets of 5 mgm. and as an elixir containing 5 mgm. in each teaspoonful (4 cc.).

'Folvite' Registered Trade Mark.



LEDERLE LABORATORIES DIVISION

Cyanamid Products Ltd

BRETENHAM HOUSE, LANCASTER PLACE, LONDON, W.C.2.

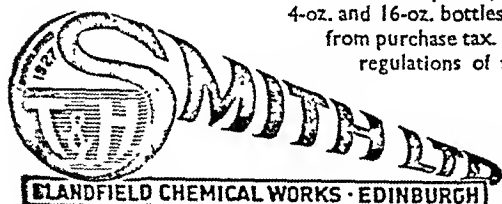
Introducing... ELIXIR METHADON

(preparation of dl-2-dimethylamino 4 :
4 diphenylheptane-5-one hydrochloride)

ELIXIR METHADON (SMITH) is a palatable preparation containing as its active ingredient 2.5 mgm. per fluid drachm of Methadon, the high potency synthetic analgesic. Methadon has proved effective in relieving a wide variety of painful conditions and administration as elixir has definite advantages.

DESCRIPTIVE LEAFLET ON REQUEST

Elixir Methadon (Smith) is available in 4-oz. and 16-oz. bottles and is exempt from purchase tax. It is within the regulations of the Dangerous Drugs Acts.



GLANDFIELD CHEMICAL WORKS · EDINBURGH

AND AT
LONDON &
GLASGOW

THE POTENT NATURAL OESTROGEN

'PROGYNON' B OLEOSUM

(OESTRADIOL MONOBENZOATE
FOR INJECTION)



'Progynon' B Oleosum, by intramuscular injection, provides complete oestrogen replacement therapy with absence of toxic effects. It exerts a beneficial psychological action which is not found in treatment with synthetic oestrogens. Presented in strengths of 1 mg. (10,000 International Benzoate Units), and 5 mg. (50,000 International Benzoate Units), 'Progynon' B Oleosum is indicated in all conditions associated with oestrogen deficiency, such as the menopause, hypomenorrhoea, amenorrhoea, certain forms of dysmenorrhoea, oligomenorrhoea, etc. For local therapy, in atrophic vaginitis, kraurosis vulvae, etc. 'Progynon' Ointment and Vaginal Suppositories are available.



BRITISH SCHERING
LIMITED

ORIGINAL PACKS

1 mg. (10,000 I.B.U. in 1 cc. ampoules) Boxes of 3 & 5; 5 mg. (50,000 I.B.U. in 1 cc. ampoules) Boxes of 1 & 5.

167/169 GREAT PORTLAND STREET, LONDON, W.1

available, an order would be issued that only designated milk might be sold. But even pasteurized milk was not safe if put into churns and transferred to another bottling plant. He regretted that for the time being this practice was permitted under the terms of the Bill. If it was shown that pasteurized milk could be a source of danger, the whole idea of pasteurization might be discredited. Dr. Summerskill had said during the Committee Stage that she proposed to issue a regulation that after 1954 all milk must be bottled on the spot immediately after being pasteurized. Mr. Hastings regretted that this was not stated in the Bill.

Dr. BROUGHTON felt sure the Bill would help to eradicate bovine tuberculosis. Dr. HADEN GUEST believed the Bill would prove a landmark in the health of the country and especially in the health of the children.

The Bill was then read a third time and passed. It had already passed the House of Lords.

Irish Qualifications

By the Ireland Bill, introduced by Mr. ATTLEE on May 3, it is proposed that, "notwithstanding that the Republic of Ireland is not part of His Majesty's dominions, the Republic of Ireland is not a foreign country for the purposes of any law in force in any part of the United Kingdom or in any colony, protectorate, or United Kingdom trust territory." This is interpreted in Whitehall as implying that Southern Irish medical qualifications will continue to be valid in the United Kingdom.

Alien Doctors

On May 5 Mr. WILLIAM WELLS asked how many applications had been made for registration under Section 3 of the Medical Practitioners and Pharmacists Act, 1947; how many such applications were pending; for how long they had been pending; and when they would be decided.

Mr. BEVAN replied that in all there had been 174 medical applications, of which 39, made at varying dates during the last year, were still pending. The decision on nine of these had been deferred for the time being in the applicants' own interest. These applicants, being abroad, could not be registered unless resident in the U.K. Further information was awaited from 10. An early decision was expected on 3. One application was received a few days ago. The remaining 16 involved legal questions of some difficulty which the G.M.C. was endeavouring to resolve as speedily as possible.

Mr. WELLS asserted that one application had been delayed for a year. Mr. BEVAN remarked that as he did not know this case he could not say that the delay was unreasonable.

Homeopathy

On May 5 Mr. SKINNARD asked whether Mr. Bevan would arrange that lists of homeopathic medical practitioners, similar to publicly exhibited lists of practitioners in other specialized fields of medical service, were provided for the information of persons desirous of homeopathic treatment.

Mr. BEVAN refused to do this. He said it would not be in the public interest to seek to distinguish different forms of therapy practised by doctors providing general medical services. Various forms of treatment often differed with the doctors who gave them. It was undesirable to distinguish between one form of treatment and another. Homeopathic treatment could be given by registered medical practitioners. There was no reason why it should be distinguished from other forms of treatment.

Colonel STODDARD-SCOTT asked Mr. Bevan to assure the House that he would add no names to the list except those of practitioners who had adequate medical education and appropriate medical qualifications.

Mr. BEVAN said no one was allowed to practise who was not on the *Medical Register*. It was assumed that those registered had an adequate medical education.

Dr. SEGAL said it was felt to be unethical for any doctor to advertise himself as a practitioner in a particular form of treatment.

Mr. SKINNARD said he did not ask that a doctor should advertise himself, but that information should be given to patients under the National Health Service.

Mr. BEVAN said the action suggested by Mr. Skinnard would tend to advertise certain forms of treatment.

Milk in Scotland.—Mr. WOODBURN stated on April 26 that there were 100 pasteurizing or heat-treatment plants in Scotland. The milk from these was tested fortnightly and the results generally were satisfactory. Of the milk sold off Scottish farms, some 70% was from tuberculin-tested herds. Milk as sold to the public comprised approximately 10% sold as "T.T." 70% pasteurized or heat treated, and 20% sold as ordinary non-pasteurized milk.

No. 16

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended April 23.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland. *Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for:* (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	34	3	23	—	—	43	5	17	1	2
Deaths	—	—	1	—	—	—	—	1	—	—
Diphtheria	95	8	33	3	1	179	13	42	17	4
Deaths	—	—	—	—	—	1	—	1	—	—
Dysentery	52	3	26	1	2	252	29	16	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	—	—	1	—	—	—	—	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	20	6	8	—	43	6	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	46	—	—	—	—	17	—	—
Deaths	23	2	9	4	1	33	3	6	7	—
Measles*	13,514	1699	265	323	187	9,092	1147	296	117	47
Deaths	—	—	—	1	1	—	—	1	—	—
Ophthalmia neonatorum	51	5	16	—	—	52	1	9	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	7	1	—	—	—	3	2(B)	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza, Deaths (from influenza)	759	47	13	16	11	593	31	1	6	3
Deaths	51	2	4	4	—	10	1	1	2	—
Pneumonia, primary	185	27	269	48	7	192	32	192	32	7
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-encephalitis, acute	1	—	—	—	—	2	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-myelitis, acute	8	1	—	2	1	16	2	5	1	—
Deaths	1	—	—	—	—	2	—	—	—	—
Puerperal fever	—	—	5	—	—	—	—	9	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia	94	14	5	—	—	131	14	11	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	953	65	174	95	30	1,535	113	257	41	33
Deaths	—	—	—	—	—	—	—	—	—	—
Smallpox	5	1	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	3	—	2	2	1	4	1	—	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,546	157	119	149	50	3,727	271	55	56	20
Deaths	4	1	1	2	—	13	—	—	1	—
Deaths (0-1 year)	301	44	44	20	5	317	36	42	23	10
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	4,718	678	643	205	134	4,581	725	621	195	121
Annual death rate (per 1,000 persons living)	—	—	12.9	12.8	—	—	12.5	12.2	—	—
Live births	8,671	1352	1080	395	268	8,701	1393	1115	361	272
Annual rate per 1,000 persons living	—	—	21.7	23.5	—	—	22.5	22.6	—	—
Stillbirths	242	28	17	—	—	219	26	33	—	—
Rate per 1,000 total births (including stillborn)	—	—	15	—	—	—	29	—	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

¶ Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Typhoid Fever at Crowthorne

Cases of typhoid fever associated with the outbreak at Crowthorne (May 7, p. 827) have been reported from Camberley, Didcot, and Ramsgate, and the total is now 38. Although the source and mode of infection have not yet been discovered, the evidence so far obtained suggests that the vehicle of infection was distributed only in Crowthorne and over a limited period of time, probably about April 16. The fears at first entertained of there being a very large number of cases may therefore prove to be unwarranted.

Smallpox

No further cases have been reported among passengers from the s.s. *Mooltan*. On May 7 an unvaccinated woman aged 20 was admitted to Liskeard Smallpox Hospital in Cornwall as a suspected case of smallpox. The diagnosis has since been confirmed by laboratory tests. It has not been possible to establish the connexion between this patient, who resided in a small village a few miles from Liskeard, and any of the patients previously reported among the passengers from the *Mooltan*.

Discussion of Table

In *England and Wales* there were increases in the notifications of measles 448 and whooping-cough 279, with a decrease of 86 in the notifications of scarlet fever.

Decreases in the notifications of measles were recorded in Essex 162, Middlesex 153, and Glamorganshire 112; there were increases in Surrey 131 and Kent 117. A small increase in the incidence of whooping-cough was recorded in most areas—for example, Essex 41 and Middlesex 34; the only noteworthy exception to the general trend was a decrease of 37 in London.

The notifications of scarlet fever showed very little change from the preceding week; the largest changes were decreases in Lancashire 33 and Essex 25. There was no variation of any size in the local returns of diphtheria.

No large outbreaks of dysentery were notified during the week. The chief centres of infection were Lancashire, Liverpool C.B. 8; Yorkshire West Riding, Huddersfield C.B. 8; Cumberland, Penrith R.D. 5; Essex, West Ham C.B. 5; and Norfolk, Norwich C.B. 5.

In *Scotland* infectious diseases were more prevalent during the week. There were increases in the notifications of acute primary pneumonia 67, measles 34, cerebrospinal fever 15, scarlet fever 12, and dysentery 10. There was a fall in the incidence of whooping-cough 31. These changes in the trends of infectious diseases were mainly contributed by Glasgow. The rises in the incidence of dysentery were in the cities of Glasgow 6 and Stirling 5. The chief feature of the notifications of diphtheria was an increase of 10 in Glasgow.

In *Eire* increases were recorded in the notifications of measles 20, whooping-cough 70, diarrhoea and enteritis 24, and scarlet fever 22. In Dublin C.B. there were increases in the incidence of measles 107, whooping-cough 62, scarlet fever 18, and diarrhoea and enteritis 17.

In *Northern Ireland* the notifications of measles rose by 15 and the notifications of whooping-cough fell by 23. The incidence of measles declined in Belfast C.B. 17 and County Armagh 17. The decrease in the incidence of whooping-cough was fairly general throughout the country.

Tuberculosis, Cancer, and Maternal Mortality

The provisional death rates per million population for England and Wales during 1948 were as follows:

	Males	Females	Persons
Respiratory tuberculosis	555	335	440
Other tuberculosis	72	62	67
Cancer	1,965	1,761	1,858

The maternal mortality per 1,000 total live and still births in England and Wales in 1948 was:

Post-abortion infection	0.11
Abortion without mention of septic conditions	0.05
Infection during childbirth and the puerperium	0.13
Other maternal causes	0.73
Total	1.02

Excluding abortion 685 mothers died in childbirth in 1948, and deaths due to abortion numbered 123.

Week Ending April 30

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 785, whooping-cough 2,905, diphtheria 98, measles 11,436, acute pneumonia 453, cerebrospinal fever 32, dysentery 38, acute poliomyelitis 14, paratyphoid 1, and typhoid 6. Deaths from influenza in the great towns numbered 39.

Medical News

Research into Home Analgesia

The Medical Research Council has set up a committee to carry out research into analgesia suitable for use by midwives on a recommendation in the Report of the Working Party on Midwives. The chairman is Sir William Gilliatt, P.R.C.O.G., and the secretary Mr. G. S. W. Organe, anaesthetist to Westminster Hospital, who is also secretary of the Council's Anaesthetics Committee. The other members are: Dr. Josephine Barnes, Dr. Albertine Winner, Professor R. R. Macintosh, Dr. E. A. Pask, Professor A. D. Macdonald, and Dr. F. H. K. Green. The committee's terms of reference will include the study, if thought desirable, of modified methods of administering existing analgesic agents as well as the initiation of further research for new agents. Investigations are likely to take a considerable time. Before a final decision can be reached on any new methods by which midwives could safely administer analgesics without medical supervision, extensive clinical trials will probably be necessary. These may have to be conducted at home confinements in charge of midwives. At present the Central Midwives Board—upon whom responsibility rests for approving drugs and apparatus for the administration of analgesics by midwives—has approved the gas-and-air method for midwives specially trained in its use. The Board has been advised by the Royal College of Obstetricians and Gynaecologists, and so far five different types of gas-and-air machines have been approved.

Award of Mickle Fellowship for Dr. Avery Jones

Dr. Francis Avery Jones has been awarded the William Jullie Mickle Fellowship by the University of London for 1948-9. It is of the value of approximately £250, and is offered annually to a man or woman resident in London and a graduate of the University who in the opinion of the Senate has done most to advance medical or science within the preceding five years and has therein shown conspicuous merit. Dr. Avery Jones is Physician and Deputy Medical Director at the Central Middlesex County Hospital. He graduated in 1934, taking the M.R.C.P. and proceeding M.D. two years later—he was elected F.R.C.P. in 1946. His Goulstonian Lectures on "Haematemesis and Melaena" were published in this *Journal* on Sept. 20 and 27, 1947.

American National Health Council

At the 29th Annual Meeting of the American National Health Council held recently Mr. Philip R. Mather was elected president, Dr. Ernest L. Stebbings vice-president, Dr. Haven Emerson treasurer, Dr. Franklin M. Foote assistant treasurer, and Dr. James E. Perkin secretary. Four additional organizations were elected to membership in the Council, which consists of leading national health agencies, voluntary and governmental. Those elected were: the American Medical Association and the National Infantile Paralysis Foundation, both elected to active membership; the American Physical Therapy Association and the National Multiple Sclerosis Society, associate members.

Index to National Formulary

The Northern Ireland General Health Services Board has issued to general practitioners in the Northern Ireland Health Service an index to the *National Formulary*. The drugs are listed under sub-headings as "Formulae Containing Penicillin," "Used in Treatment of Coughs," and "Analgesics, Anodynes, Hypnotics, and Sedatives."

Peckham Health Centre Bulletin

Peckham Health Centre has issued the first number of a monthly bulletin entitled *Peckham*. It is attractively produced and illustrated and includes short articles on the health centre's work and history. The subscription for twelve issues is 7s. 6d., post free. It may be obtained from the Editor, *Peckham*, 8F, Hyde Park Mansions, London, N.W.1.

Argentine Society of Pathology

Professor Humberto R. Rugiero has been elected President of the Argentine Society of Pathology.

Diamorphine Linctuses: Correction

The Home Office has drawn the attention of the Ministry of Health to an error in the information it has recently issued (*Journal* April 23, p. 733, and April 30, p. 787) about the dispensing of linct. diamorphinae *N.W.F.* The only prescriptions for Dangerous Drugs which may be ordered by title are those named in the *B.P.*, the *B.P.A.* or the *Drug Tariff*. All other prescriptions not written out in full cannot be dispensed but must be returned to the doctor for amplification. Since the *N.W.F.* is no longer a recognized formulary, a chemist would be acting illegally in dispensing linct. diamorph. *B.P.* when linct. diamorph. *N.W.F.*, which is no longer included in the *Drug Tariff*, is prescribed.

Czechoslovak Award

The President of the Czechoslovak Republic has conferred the decoration of Chevalier of the Order of the White Lion upon Dr Frederick Himmelweit in recognition of services rendered during the war.

COMING EVENTS

Bicentenary of the Birth of Edward Jenner

The Royal College of Physicians of London and the Royal College of Surgeons of England are commemorating the 200th anniversary of the birth of Edward Jenner on May 17. During the afternoon at the Royal College of Surgeons (Lincoln's Inn Fields, London, W.C.), Sir Edward Mellanby, F.R.S., will deliver a commemorative lecture entitled "Jenner and his Impact on Medical Science." In the evening there will be a reception at the Royal College of Physicians (Pall Mall East, London, S.W.). Admission to both these functions is by invitation only.

Medical Golf

The Annual Competition of the Manchester and District Medical Golfers' Association will be held on the course at Mere, Cheshire, on May 25. The Challenge Cup will be competed for by medal play under handicap. The Walter Gold Medal will be held for one year by the member returning the best gross score; the Walter Silver Medal will be held for one year by the member returning the best gross score from among those with handicaps of ten and upwards. Two prizes will also be presented (1) for the best net score for holes 1-9, and (2) for the best net score for holes 10-18. The annual subscription is 7s. 6d., and comprises the entrance fee of the Annual Competition. New members are required. Any medical man is eligible for membership provided he is a member of a recognized golf club within the area. Particulars may be obtained from the hon. secretaries, Manchester and District Medical Golfers' Association, c/o British Medical Association, 33, Cross Street, Manchester, 2.

Association of Surgeons of Great Britain and Ireland

The annual meeting of the Association of Surgeons of Great Britain and Ireland will be held at University College (Physics Theatre), Earlsfort Terrace, Dublin, on May 26, 27, and 28. The programme is as follows: May 26, 9.30 a.m., business meeting, 10 a.m., discussion on "Surgical Ritual," to be opened by Sir Hugh Cairns, Sir Reginald Watson-Jones, Mr Julian Taylor, Mr F. Gill, and Mr D. M. Douglas, 2.15 p.m., operating sessions or demonstration of cases at various Dublin hospitals, 4 p.m., at Trinity College, lecture by Professor Geoffrey Jefferson, F.R.S., "Descartes and the Localization of the Soul," 5 p.m. to 7 p.m., reception at Trinity College by invitation of the Provost, 7.45 p.m., annual dinner at Gresham Hotel. May 27, 9.30 a.m., discussion on "The Use and Abuse of Streptomycin (excluding Pulmonary and General Tuberculosis)," to be opened by Sir Alexander Fleming, F.R.S., Mr E. W. Riches and Mr A. Dickson Wright, 11.45 a.m., alternative meetings at (a) University College, discussion on "Resection and Reconstruction of the Trachea," to be opened by Mr C. G. Rob and Mr R. H. Beisey, and at (b) Royal College of Surgeons in Ireland, short paper by Mr Geoffrey L. Kevnes, "Tumours of the Thyroid Gland," 2.15 p.m., operating sessions or demonstrations of cases at various Dublin hospitals, 5 p.m. to 7 p.m., reception by the Minister of Health. May 28, 9.30 a.m., short paper by Professor J. Adams-Ray (Stockholm), "Hypertonus in Venous Capillaries," followed by discussion on "Treatment of Injuries to Peripheral Nerves," to be opened by Professor J. Z. Young, F.R.S. ("The Process of Nerve Repair"), Mr H. J. Seddon ("Indications for Exploration, Suture, and Grafting"), Sir James Learmonth ("Neurovascular Injuries"), Mr R. B. Zachary ("Results of Nerve Repair"), and Miss Ruth Bowden ("Certain Factors Influencing Recovery"). Full particulars of the meeting may be obtained from the honorary secretary of the association (Mr H. W. S. Wright, F.R.C.S.) at 45, Lincoln's Inn Fields, London W.C.2.

St Cyres Lecture

Professor K. D. Wilkinson will deliver the St Cyres Lecture on "Withering" at the Royal Society of Medicine (Barnes Hall), 1, Wimpole Street, London, W., and not at the Institute of Cardiology as announced in the *Journal* of April 30, (p. 784), on Wednesday, June 15, at 5 p.m.

Simpson-Smith Memorial Lecture

The second Alexander Simpson Smith Memorial Lecture will be delivered by Mr R. C. Brock at the Medical Society of London, 11, Chandos Street, W., on Wednesday, June 15, at 8.30 p.m., with Lieutenant-General Neil Canthe, Director-General, Army Medical Services, in the chair. His subject is "The Surgical Treatment of Congenital Pulmonary Stenosis." Admission is by ticket only. Early application should be made to the Dean, West London Hospital Medical School 1 and 3, Wolverton Gardens, Hammersmith W.6.

Lectures on Pituitary Hormones

Professor Minam E. Simpson, of Berkeley University, California, will give a series of lectures at the Hôpital Laennec, Paris, on June 27-July 9. The lectures will be in English. The fee for the course is 3,000 francs. Particulars may be obtained from Dr Loubble, 20, Rue Marbeau, Paris, 16. Registrations cannot be accepted after June 20.

Summer School in Austria

The British Social Hygiene Council will hold a summer school on "The Family and the Nation" at Pertisau, in the Austrian Tyrol, from Aug. 17 to Sept. 1. Subjects to be discussed include nutrition, human heredity, the welfare of old people, and juvenile delinquency. The school is intended primarily for magistrates, almoners, nurses and teachers. The inclusive cost is about £34. Information may be obtained from the B.S.H.C., Tavistock House North, Tavistock Square, London W.C.1.

SOCIETIES AND LECTURES

Monday

BIRMINGHAM UNIVERSITY—At Anatomy Theatre, Medical School Birmingham, May 16, 4 p.m., "The Excretion of Water by the Kidney, with Special Reference to its Neurohypophyseal Control," William Withering Lecture by Professor E. B. Verney, F.R.S.
EDINBURGH UNIVERSITY—At Physiology Lecture Theatre, University New Buildings, Teviot Place, Edinburgh, May 16, 5 p.m., "Maya and Luca Medicine" by Dr Douglas Guthrie.
LONDON UNIVERSITY—At King's College, Strand, W.C. May 16, 5.30 p.m., "Venous Return in Health and Disease," by Professor K. I. Gollwitzer-Meier (Hamburg).
LONDON UNIVERSITY COLLEGE—At Physiology Theatre, Gower Street, W.C., May 16, 4.45 p.m., "Selective Toxicity with Special Reference to Chemotherapy" by Professor Adrien Albert.

Tuesday

BIRMINGHAM UNIVERSITY—At Anatomy Theatre, Medical School Birmingham, May 17, 4 p.m., "The Excretion of Water by the Kidney, with Special Reference to its Neurohypophyseal Control," William Withering Lecture by Professor E. B. Verney, F.R.S.
EDINBURGH POSTGRADUATE BOARD FOR MEDICINE—At Anatomy Lecture Theatre, University New Buildings, May 17, 5 p.m., "Viruses and Acute Pulmonary Disease in Man," by Professor C. H. Stuart-Harris.
INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—May 17, 5 p.m., "Sex Hormones in Dermatology," by Dr D. I. Williams.
INSTITUTE OF UROLOGY—At St Paul's Hospital, Endell Street, London, W.C., May 17, 11 a.m., "Modern Interpretation of Serological Reactions," by Dr R. Thomson.
LONDON UNIVERSITY—At London School of Economics and Political Science, Houghton Street, Aldwych, W.C., May 17, 5 p.m., "The National Health Service," by Sir James S. Ross.
LONDON UNIVERSITY COLLEGE—At Physiology Theatre, Gower Street, W.C., May 17, 5.15 p.m., "Physiological Properties of Ethyl Alcohol," by Dr M. Grace Eggleston.
ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—May 17, 4 p.m., "Jenner and His Impact on Medical Science," by Sir Edward Mellanby, F.R.S. Lecture to commemorate the bicentenary of the birth of Edward Jenner.
WRIGHT FLEMING INSTITUTE OF MICROBIOLOGY, St Mary's Hospital Medical School, Paddington, W.—May 17, 5 p.m., "Bacterial Antigens," by Dr W. T. J. Morgan, F.R.S.

Wednesday

GLASGOW UNIVERSITY DEPARTMENT OF OPHTHALMOLOGY—May 18, 8 p.m., "The Structure of the Vitreous Humour," by Dr Antoinette Pine.
INSTITUTE OF UROLOGY—At St Paul's Hospital, Endell Street, London, W.C., May 18, 11 a.m., "Cerebrospinal Fluid Tests for Syphilis," by Dr R. Thomson.
LONDON UNIVERSITY—At King's College, Strand, W.C., May 18, 5.30 p.m., "Blood reaction and blood flow in Muscular Activity," by Professor K. I. Gollwitzer-Meier (Hamburg).
OXFORD UNIVERSITY—At Radcliffe Infirmary, Oxford, May 18, 5 p.m., "Neurological Problems of Childhood," by Dr Franc D. Inghram (Harvard).
ROYAL SOCIETY OF ARTS, John Adam Street, Adelphi, London, W.C.—May 18, 2.30 p.m., "Scientific Information Services," Aldred Lecture by Sir Alfred Eerton, F.R.S.
ROYAL MICROSCOPICAL SOCIETY—At B.M.A. House, Tavistock Square, London, W.C., May 18, 5.30 p.m., Discussion: "Mechanism of Cell Division," to be opened by Dr A. F. W. Hughes, F.R.M.S.
SOCIETY OF CHEMICAL INDUSTRY: FOOD GROUP—At London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C., May 18, meeting of Nutrition Panel (1) 6 p.m., annual general meeting, (2) 6.15 p.m., "Biscuits, Cakes, and other Flour Confectionery," as F. W. S. Butterworth (Introductory), Mr. Full Messrs D. M. Freeland and Bradl; ; Yudkin (Nutritive Value of Conf.

Thursday

BIRMINGHAM UNIVERSITY.—At Anatomy Theatre, Medical School, Birmingham, May 19, 4 p.m., "The Problems of Stress Incontinence of Urine in the Female," Ingleby Lecture by Mr. Charles D. Read.

BRITISH ASSOCIATION OF PHYSICAL MEDICINE.—At Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., May 19, 5 p.m., "The Mechanism of Pain," by Dr. Graham Weddell.

BRITISH INSTITUTE OF RADIOLOGY, 32, Welbeck Street, London, W.—May 19, 8.30 p.m., "Medical Radiology. Retrospect and Prospect," Presidential Address by Dr. Hugh Davies; followed by film: "Cineradiography of Joints," by Dr. A. E. Barclay and Mr. H. J. Seddon.

EDINBURGH UNIVERSITY.—At University New Buildings, Teviot Place, Edinburgh, May 19, 5 p.m., "Fat Absorption and Some of Its Problems," Sharpey Schafer Memorial Lecture by Professor H. S. Raper, F.R.S.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 19, 11 a.m., "Treatment of Syphilis," by Dr. W. N. Mascall.

MIDDLESEX COUNTY MEDICAL SOCIETY.—At Chase Farm Hospital, The Ridgeway, Enfield, May 19, 3 p.m., meeting.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—At 26, Portland Place, London, W., May 19, 7.30 p.m., "Tropical Diseases in Brazil," by Professor B. Malamos (Athens). Illustrated by lantern slides.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—May 19, 4.30 p.m., "Neurology," lecture-demonstration by Dr. A. Feiling.

Friday

FACULTY OF RADIOLOGISTS: THERAPY SECTION.—At Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., May 20, 2.15 p.m., "The Value of X-ray Examination in Bronchogenic Cancer," Skinner Lecture by Dr. P. F. Möller (Copenhagen).

APPOINTMENTS

POSTGRADUATE MEDICAL SCHOOL OF LONDON: DEPARTMENT OF ANAESTHETICS.—Senior Lecturer, H. Woodfield-Davies, L.M.S.S.A., D.A., F.F.A.R.C.S.; Lecturers, A. J. W. Beard, M.D., D.A., F. G. Wood-Smith, M.B., B.Chir., D.A.; Assistant Lecturers, Dorothy Spence-Sales, M.B., Ch.B., D.A., Hilda Roberts, M.R.C.S., L.R.C.P., D.A., J. A. Smith, M.B., B.Chir., D.A.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Rosewarne.—On April 12, 1949, at 26, Latchett Road, Woodford, London, E., to Barbara, wife of Dr D. D. Rosewarne, a daughter.
Walton.—On April 29, 1949, at the Queen Elizabeth Hospital, Birmingham, to Cynthia (née Mors), wife of Kenneth Walton, M.B., B.S., a daughter.
Wand.—On May 2, 1949, at Wellhouse Hospital, Barnet, to Betty (née Manders), wife of Dr L. G. R. Wand, a daughter—Penelope Jane.

MARRIAGES

Goldacre-Wight.—On March 20, 1949, at St. Luke's, West Norwood, James A. H. Goldacre, M.R.C.S., L.R.C.P., to Miss Barbara Wight, M.C.S.P., M.E.L.T.
O'Reilly-Gavin.—On April 30, 1949, at St. Edmunds, Bolton, P. O. O'Reilly, M.B., B.Ch., deputy R.S.O., Bury Infirmary, and 42, Bolton Street, Dublin, to Miss Margaret Gavin, Bolton Royal Infirmary.

DEATHS

Ig.—On April 23, 1949, at Royal Sussex County Hospital, Barry Alexander Craig, L.R.C.P.S.I. and L.M., Lieutenant-Colonel R.A.M.C., retired, of Beech Cottage, Burgess Hill, Sussex.
Devas.—On April 23, 1949, Horace Charlton Devas, M.R.C.S., L.R.C.P., Surgeon Captain R.N. retired.
Eccles.—On April 24, 1949, nt Driffild, Robert Burton Eccles, M.R.C.S., L.R.C.P.
Gemmell.—On April 20, 1949, Leonard Woodburn Gemmell, M.B., Ch.B., Surgeon Commander R.N., retired.
Hope.—On April 21, 1949, at 5, The Avenue, Knaresborough, Charles William Menelaus Hope O.B.E., F.R.C.S., aged 68.
Kay.—On April 24, 1949, at Leamington Spa, Winifred Julia Kay, M.B., B.S. McEntire.—On April 25, 1949, in London, following an operation, Samuel Drummond Greer McEntire, L.R.C.P.S.I. and L.M., of Great Baddow, Chelmsford, Essex.
McGregor.—On April 23, 1949, at a Glasgow hospital, George Charles McGregor, M.B., Ch.B., late of Kuala Lumpur, F.M.S.
MacKellar.—On April 21, 1949, at Ash Tree House, Savile Town, Dewsbury, John Donald Matheson MacKellar, M.B., Ch.B.
Nightingale.—On March 30, 1949, at Thurnby, 17, Devonshire Road, St. Annes-on-Sea, Wilfrid Nightingale, M.B., Ch.B.
Parsons.—On April 22, 1949, at Cheltenham, Christopher Thackray Parsons, O.B.E., M.D., of South Leigh Road, Havant, aged 78.
Pateron.—On April 20, 1949, at Liberton Hospital, Edinburgh, Thomas Clarkson Pateron, M.B., Ch.B., aged 69.
Phillips.—On April 25, 1949, at The Priory, Roehampton, Charles Morley Phillips, M.D., formerly of Bristol, aged 80.
Pollock.—On April 22, 1949, Edward Stoute Pollock, M.D., of Hilcot, Rydon Lane, Exeter.
Power.—On April 26, 1949, at 20, Hazelwood Lane, Palmers Green, London, N., Maurice Aloysius Power, M.C., M.B., B.Ch.
Saxby.—On April 19, 1949, at Berkhamsted, Ida B. Saxby, D.Sc., M.R.C.S., L.R.C.P.
Trewby.—On April 17, 1949, Henry William Trewby, M.R.C.S., L.R.C.P., L.D.S. of Huddersfield, Tarrant, Andover, Hants.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Inoculation against Typhoid and Tetanus

Q.—I have recently seen it advocated that children living on a farm should be inoculated against tetanus and typhoid. What dosage would you suggest for the following ages: 8, 6, 5, 4 years, and 6 months? Is it necessary to inoculate against typhoid when the water is pumped up from a specially sun-deep well?

A.—Inoculation against typhoid for children living on farm would seem advisable only if it is known that this disease is endemic in the area and if there is reason to suspect the water supply. A pumped water supply from a deep well should be satisfactory if precautions have been taken to prevent the risk of contamination with sewage. If there is some doubt about the purity of the water, arrangements should be made with the medical officer of health for samples to be tested bacteriologically. Children under 1 year need not be inoculated against typhoid. For all children up to 8 years one-third of the adult dose should be given.

Tetanus is a very rare infection in Britain, and the risk to country children must be small. If, however, protection is desired, it is preferable to give the children two doses of tetanus toxoid at an interval of six weeks or more rather than to give them a dose of tetanus antitoxin whenever they have any accidental wound which might be contaminated with soil containing tetanus spores. A primary course of immunization should be reinforced by a boosting dose one year later. The dose of tetanus toxoid for a child under 1 year should be a quarter of the adult dose—0.25 ml.—and for older children one-third to one-half of an adult dose—0.3 to 0.5 ml.

Thoracoplasty

Q.—Is thoracoplasty now being done in one stage and with the removal of two or three ribs only? What are the indications for this one-stage operation, and are the results as good as those of the more extensive procedure?

A.—The general trend in the technique of thoracoplasty for pulmonary tuberculosis has been towards more selective operations. The old paravertebral thoracoplasty of Sauerbruch and the more extensive operation of Brauer were usually complete in that parts of all the ribs, with the exception of the lowest two or three, were removed. The aim of the modern operation is to produce a selective collapse and relaxation of the affected part of the lung and to make this local collapse as complete as possible. For anatomical reasons truly selective collapse of this sort by plastic operations on the ribs is usually possible only for lesions involving the upper part of the lungs. For these an attempt is made to adapt the size of the operation to the degree of collapse thought to be required to deal effectively with the diseased area; the usual criterion of effectiveness is closure of cavities. The effectiveness of the collapse is often increased in suitable cases by combining the operation on the ribs with some form of apicolysis. Generally, however, the operation must be done in more than one stage, and it is very seldom that, even for high apical cavities, a procedure involving fewer than five ribs is satisfactory. The number of stages required will depend partly on the extent of collapse required to control the disease and partly on the patient's general condition; a severely ill patient will tolerate less at each stage than one in good condition. Since the extent of the procedure should be modified to suit the extent of the disease, one cannot usefully discuss the results of limited as opposed to extensive operations.

Blood-clot and Haemostasis

Q.—Could you explain why clot prevents haemostasis? Why is it that clearing clot out of a bleeding tonsillar fossa or a tooth socket will often stop the bleeding?

A.—To be haemostatically effective, a blood-clot must be firmly and completely attached, forming an impervious seal

that covers a damaged area and extends down to its severed vessels. Clot formation of this sort cannot occur if there is an uninterrupted flow of blood, and normally a period of temporary vasoconstriction following injury provides time for firm coagulation to occur. If, for any reason, this vascular response is incomplete—or, more rarely, if blood coagulation is defective—loose, inefficient clots are produced, from beneath which bleeding continues. Such clots should therefore be regarded as being usually the result rather than the cause of defective haemostasis. Nevertheless, their mechanical removal will often achieve haemostasis, probably by direct stimulation of the cut vessels, with consequent constriction and the formation of a new and firmly attached clot. Removal of loose clots also allows any dressings, styptics, or simple pressure that may be applied to come into direct, and therefore effective, contact with the bleeding vessels.

Subarachnoid Haemorrhage

Q.—Is it reasonable to expect a large quantity of blood in the spinal subarachnoid space and a very small quantity in the cerebral subarachnoid space in a person with subarachnoid haemorrhage who died five days after being found unconscious in the street?

A.—The question does not state the cause of death, or whether the case was one of head injury or of "spontaneous" subarachnoid haemorrhage. But it is a very common post-mortem finding that intracranial subarachnoid haemorrhage has occurred into or has gravitated into the large subarachnoid cisterns about the base of the brain. The admixture of cerebrospinal fluid retards clotting. As the individual survived for five days after being found unconscious, and as there is no information about his posture or condition during that time, the blood may well have drained from the intracranial subarachnoid cisterns, by means of the very adequate communications which exist, into the spinal subarachnoid space.

Absorption of Mercury

Q.—It has recently been reported that the use of teething powders containing mercury may be the cause of pink disease. Is there any likelihood of absorption of mercury by a woman using a contraceptive containing it?

A.—The evidence that pink disease is due to mercury poisoning is very incomplete, and amounts to little more than a suggestion that this may be so. If mercury is a cause, it acts in this way only in those children who have an idiosyncrasy to it. The possibility that mercury is absorbed from a mercury-containing contraceptive is another matter about which there is no certainty. Some consider that there is no danger of mercury absorption; others, that there is a real danger. It is certainly true that the body has a remarkable capacity for absorbing mercury in circumstances in which such absorption would seem unlikely. The risk of absorption would be increased in cases in which the remains of the contraceptive were not removed by douching.

North American Blastomycosis

Q.—I have a patient in whom, after any superficial injury, an ulcer with much scabbing has always formed in the scar. Last December she underwent herniotomy and the scar had almost healed, when a similar reaction took place; the presence of *Blastomyces dermatitidis* was demonstrated microscopically in the scab. I would welcome any information about treatment, particularly with regard to the newer antimicrobials.

A.—Potassium iodide is the sheet-anchor in the therapy of North American blastomycosis. It is administered in graduated dosage, increasing almost to the limit of tolerance and continued beyond the period of apparent clinical recovery. One method is to start with 15 minims (0.9 ml.) daily of a saturated aqueous solution of potassium iodide divided into three 5-minim (0.3-ml.) doses well diluted with water, and increasing by 1 minim (0.06 ml.) daily (not 1 minim per dose daily) until the dosage of 60 minims (3.6 ml.) daily is reached. At this point, or earlier if symptoms of iodism appear, the dosage reverts to the original 15 minims daily and the series is repeated. Treatment should be continued for several weeks or months, as determined by its effects. Sodium iodide intravenously and

ethyl iodide by inhalation may be given alternatively or in conjunction with the orally administered potassium iodide. Patients with blastomycosis frequently show a high degree of allergic sensitivity to the causative fungus, and, in such cases the administration of iodide may cause a severe and even dangerous reaction. It is advisable, therefore, to apply the blastomycin test of dermal sensitivity before instituting treatment and, if necessary, to desensitize the patient by graduated doses of *Blastomyces dermatitidis* vaccine. Iodide treatment should be combined with, or in fact preceded by, specific vaccine therapy, supplemented by surgical and radiotherapeutic measures when indicated, and by general supporting treatment with appropriate diet, vitamins, and rest. The systemic form of the disease requires hospital treatment. The questioner should consult *Clinical Mycology*, by Conant and others (Saunders, 1945), for a detailed account of the treatment.

Blastomycosis (Gilchrist's disease) is indigenous to North America, and reports of the infection from other parts of the world have usually been based on wrong diagnoses. The literature contains only two well-authenticated records of the infection having been contracted in the Old World—one in London in 1925 and the other in France in 1947; both the patients had been engaged in handling materials imported from the United States. Therefore, unless the microscopical diagnosis in the present case has been made by a competent mycologist, it should be confirmed by isolation of *Blastomyces dermatitidis* from the lesions or by serological tests.

Grading of Catheters

Q.—How do the various catheter scales compare, and are they all related to any basic measurement? Would it not be possible to standardize and unify these systems?

A.—The majority of urologists use French catheters. The Charrière scale expresses its measurement in multiples of one-third of a millimetre; thus No. 5 indicates a diameter of $1\frac{1}{3}$ mm. It is true that some of the French catheter-makers have recently adopted the Beniqué scale, in which a No. 10 represents No. 5 Charrière, but the majority of French catheters in this country are marked in the Charrière scale. The English scale is approximately one-half of the French, a No. 10 French being represented by a No. 5 English. It would, of course, be of advantage if English and American manufacturers would adopt the Charrière scale. The American scale is rarely used even by American instrument-makers. Its numbers correspond to two-thirds of the French numbers—that is to say, No. 20 American represents No. 30 French.

Angina of Effort

Q.—A retired doctor aged 74 has the classical symptoms of effort angina, for which the usual remedies, such as nitroglycerin and potassium iodide, have been tried. Any further advice on treatment and climate would be welcomed.

A.—On the whole, patients with angina pectoris are better in warm climates than in cold, but far less so than those with intermittent claudication; in fact, Lewis denied that cold weather had any demonstrable effect on angina, but this, however, is contrary to clinical experience. When conservative measures fail to the extent that the patient is incapacitated by angina, more drastic treatment is indicated. At the present time there are two methods that are perhaps most favoured: (1) administration of thiouracil, and (2) bilateral stellate and upper dorsal sympathectomy. It is doubtful, however, whether either method of treatment should be recommended without the advice of a specialist in cardiology.

(1) Methyl or propyl thiouracil may be given in doses of 0.2 g. thrice daily until improvement is noted, when the dose may be gradually reduced to the minimum that is effective (0.05 to 0.2 g. daily). If there is no improvement within six weeks treatment should be abandoned. Toxic reactions, particularly fever and rash, are rare with propyl thiouracil but less so with methyl thiouracil, and can not be well tolerated by those subject to angina. Agranulocytosis is very uncommon and there is no need for weekly white-cell counts, but the patient should be instructed to report at once in the event of a sore throat, when penicillin should be given immediately and a white-cell count.

withheld. The object of thiouracil treatment is not only to reduce the oxygen requirement and hence the work of the heart, but also to minimize the physiological response to adrenergic substances.

(2) If thiouracil fails, the pain pathways from the heart may be excised. The type of sympathectomy named above appears to reduce the risk of ventricular fibrillation and may improve the efficiency of the collateral coronary circulation as well as relieve pain; moreover, patients are not deprived of a warning signal when the coronary circulation is overtaxed, although the sensation experienced is rarely described as pain.

Inheritance of Werdnig-Hoffmann Paralysis

Q.—A couple whose first two children died in the first year of life as a result of progressive spinal muscular atrophy (Werdnig-Hoffmann paralysis) are naturally apprehensive about having another child. What advice should be given? Having regard to normal marital relations, is sterilization of the wife indicated?

A.—Inheritance of this disease is recessive, and the chance that any subsequent child will be affected is one in four. If the parents should feel—as they well may—that this is a risk that they dare not face, there is undoubtedly a case for sterilization. The writer believes that in Denmark, where enlightened eugenic laws have been in operation for some years, sterilization would be granted in this instance if the parents requested it. There is, however, no more reason for sterilizing the wife than the husband, for both are transmitting the gene. One point should be remembered, perhaps: should the sterilized partner chance to remarry, and hence the risk of the defect's appearing be reduced to negligible proportions, he or she might regret having taken such a step. It should also be understood that this is the medical answer to a medical question and does not pretend to deal with the legal and ethical considerations which obviously arise.

Testosterone in Gynaecomastia

Q.—Arising out of the question about adolescent gynaecomastia (Nov. 27, 1948, p. 968), what dosage of methyl testosterone, and what method of administration, would you recommend for a boy of 15 who is considerably embarrassed by enlargement of the breasts. He is already 6 ft. 1½ in. (1.84 metres) tall, and one hesitates to use a preparation which may stimulate growth still further. He is also well developed sexually, and one wishes to avoid excessive stimulation of the sex organs.

A.—The usual dosage of methyl testosterone is 5 mg. three times a day. This may result in some increase in size of the penis and some erections, but these effects are more likely to occur in hypogonadism than when sexual development is normal. The same is true of the accelerating effect of methyl testosterone on growth. If testosterone propionate is given in very large doses, however—for example, 50 mg. injected daily—it has a tendency to accelerate union of the epiphyses. In the particular case in question, local injection of testosterone ointment, 25 mg. per gramme, should be a safe procedure, limiting the total dosage to 100 mg. weekly. Testosterone therapy is based on the theory that the gynaecomastia is due to an actual or relative excess of oestrogens, the source of which may be the adrenal cortex. There is experimental evidence that, in some species at least, the breast is also stimulated by androgens, and by the anterior pituitary gland itself in the absence of the gonads, so that the problem is a complicated one.

Respiration in the Newborn

Q.—Could you explain exactly how the work of Sir Joseph Barcroft proved the value of convulsant drugs in asphyxia neonatorum?

A.—Sir Joseph Barcroft's book *Researches on Pre-natal Life* discusses in the last chapter the onset of respiratory movement in the newborn. There is no reference to the use of convulsant drugs, and the answer to the question therefore appears to be that Barcroft's work did not prove the value of such drugs in asphyxia neonatorum. The chapter describes the development of respiratory movements in the foetal sheep. By the 38th day the movements evoked by a tap on the face, between the eye

and the mouth, extend to the diaphragm, but only as an item in a generalized movement. After the 40th day the response of the foetus to a tap is not merely a spasm but a rhythm of successive spasms, increasing in number and rate as days go by; the intercostals then begin to contract. In the next stage, after the 45th day, the response to stimulation is an initial movement of the body followed by an after-discharge which resembles a respiratory rhythm. Thus the respiratory movements are separated in time from the body movements, but are still part of a response to a stimulus. Between the 50th and 60th days there is a change from a condition in which rhythmic movements of the chest come and go with little obvious cause to one in which the foetus has become inert. It can, however, be thrown into activity by occlusion of the umbilical cord. No further change takes place till birth. Only when this state of inhibition, which persists for the second half of gestation, has been reached does occlusion of the cord start respiratory movements. The inhibition is exerted from a level at least as high as the posterior corpora quadrigemina. From the time of onset of inhibition, Barcroft says that the issue "whether the foetus did or did not exhibit respiratory movements depended on whether stimulation or inhibition had the upper hand." When the foetus is delivered, a flow of sensory impulses beats upon the brain and must exert a profound effect in raising the general sensitivity of the central nervous system.

From the foregoing it could be argued that if the stimulation of birth is not enough to overcome the inhibitory impulses acting on respiration, then the injection of a convulsant drug might serve to tip the balance and start respiration.

NOTES AND COMMENTS

Water-pitressin Test in Epilepsy.—Lieutenant-Colonel M. CHANDRA (Jullundur City, India) writes: With reference to the question and answer regarding the water-pitressin test in epilepsy ("Any Questions?" Feb. 12, p. 291), I have notes on 24 cases on whom this test was carried out in the M.E.F. in 1945-6. Eighteen had epileptic fits during the test. In most the fits came on during the course of the first three or four injections of pitressin, provided a positive water balance had been established first, before injections were started. I found that if cases tested were close together in a group the hysterics—seeing the epileptics and determined not to be outdone—had sorts of fits as well. This vitiated the value of the test, especially if the description of the fits given by the nursing staff was vague. So the value of the test is enhanced if the suspects are tested singly and if they do not know what is coming to them. Some epileptics, after having a fit during the test, carried on afterwards having frequent fits. These were controlled by dehydration and sedatives.

Horse-riding for the Infirm.—Dr. W. J. HASTINGS SAYERS (Edinburgh) writes: I have become interested in the possibility of horse-riding for the infirm. I have noticed of late in various journals advertisements, both "For Sale" and "Wanted," of mounts suitable for the infirm rider. Whilst on war service I remember seeing an elderly gentleman, who was recovering from a heart attack, riding in the manège. The appearance of ease on the part of the rider whilst cantering has caused me to wonder if carefully regulated riding might not be made use of early in the convalescence of certain types of patients. I would like to see the cob becoming as indispensable to the lame as the dog has become to the blind—both can become more independent of their fortunate neighbours. Possibly if the infirm horsemen were less individualistic it would not be necessary to write this letter. I wonder if any of your contributors could help me, either from personal experience or observation. I am particularly interested in the possibility of riding for a patient with paralysis due to disseminated sclerosis, who wishes to visit in the country places where no invalid carriage or car will go.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: Alitology, Westcent, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: Britmedads, Westcent, London. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. TELEPHONE: EUSTON 2111. TELEGRAMS: Medisecra, Westcent, London.

B.M.A. SCOTTISH OFFICE. 7, Drumshugh Gardens, Edinburgh

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY MAY 14 1949

THE SECRETARY REPORTS

SENIOR HOSPITAL OFFICERS

It is perhaps one of the dangers of a comprehensive National Health Service that some of the main difficulties arise not from the wording of the Act or its more important regulations but from the twists and turns of the bureaucratic machine. It has been said of big administrations that, composed as they are of kindly and thoughtful men who would not harm a cat, let alone a fellow human being, once they go into action as an aggregation of kindly human beings they become, through the machine, capable of unfairness, harshness, and indeed cruelty of a kind which as individuals they would promptly disown. One recalls that the London County Council, having committed itself to the principle of adapting the remuneration of its district medical officers in any one year to the number of items of service undertaken in the previous year, discovered that in a year of unprecedented bombing certain D.M.O.s in Central London had put in a reduced number of items of service. Disregarding the fact that these D.M.O.s were required to continue to live at their peril in these dangerous areas, ignoring the fact that a night visit which counted as one on the record might involve dangerous hours in the black-out exposed to bombing, the council proceeded to reduce the remuneration of these D.M.O.s by applying the customary mathematical formula. Fortunately an inspector of the Ministry of Health was wiser, and the proposed reduction was ruled out.

Are we in for similar twists of the administrative screw? The senior hospital officer grade was put forward by the Ministry as a necessary one, bearing in mind that a proportion of the members of hospital staffs taken over on the appointed day would not be classified as specialists or as trainees. Thus a reasonable case for the grade was made out. But already there are signs of a move to make new appointments to this grade, practitioners of specialist rank being invited to apply for posts with this non-specialist grading and remuneration. An innocent proposal immediately becomes a dangerous one. If anything is done directly or by implication to create two types of specialist—the full specialist and the sub-specialist—the hospital service of the country will suffer. If the senior hospital officer grade is to serve its intended purpose without damaging future quality the grade must be a declining one, no new appointments being made to it, or, if such appointments are made, only appointments within a defined field, there being no circumstances in which those of specialist status are invited or appointed to posts in this grade. It may well be that the best of motives lie behind the current tendency to continue and expand the senior hospital officer grade. But good intentions have often led to warmer places. It is with these considerations in mind that a decision has been reached not to accept for publication in the *British Medical Journal* advertisements for hospital appointments involving specialist duties which state or suggest that the successful candidate may be placed in the senior hospital officer grade.

Public Health

There is nothing to report on the public health front. As yet the associations of local authorities have shown no sign of agreeing to the opening of negotiations for public health remuneration through Whitley machinery. We for our part continue to decline advertisements for whole-time public health posts which do not conform to our own recommendations. Some local authorities are seeking to circumvent their difficulties by inviting general practitioners to undertake public

health work on a part-time basis. No doubt any general practitioner so invited will appreciate the importance of taking no steps which would make more difficult the task of the Association in defending the interests of the Public Health Service. On this issue of Whitley machinery and arbitration all branches of the profession are concerned, and they must stand together.

Dispensing Practitioners

Our postbag reveals that there is a good deal of doubt about the circumstances in which a practitioner becomes a dispensing practitioner, and even more doubt about the choice which is presented to every dispensing practitioner between accepting the annual dispensing capitation fee and securing remuneration on the basis applied to the chemist.

There are two circumstances in which a practitioner may be called upon to supply drugs and appliances—that is, to become a dispensing practitioner—to a particular patient. First, the patient may satisfy the local executive council that, by reason of distance or inadequate means of communication, he would have serious difficulty in obtaining drugs and appliances from a chemist; secondly, that he is resident in an area regarded by the local executive council as rural, at a distance of more than a mile from the premises of a registered chemist.

If, in either of these circumstances, the patient applies and the doctor agrees, the doctor becomes a dispensing practitioner in relation to this patient. In the absence of the doctor's agreement the local executive council may require a practitioner to dispense for a patient covered by one or other circumstance, the practitioner being exempted from the requirement on satisfying the local executive council that he is not in the habit of supplying drugs to his patients or that, in a case in which distance is the criterion, the patient can with reasonable facility obtain drugs and appliances from a chemist. The practitioner has the right of appeal to the Minister.

Where a practitioner has arranged or is required to supply drugs and prescribed appliances, he may elect to be paid on the basis of the actual drugs supplied, plus a dispensing fee, or he may elect to receive a capitation fee in respect of each "dispensing patient" to cover the liability of supplying drugs and prescribed appliances (with additional payments for specially expensive items). The dispensing capitation fee is at the rate of 6s. 6d. per year in England and Wales and 5s. in Scotland. The capitation fee method of remuneration is perhaps more straightforward for those moderate mathematicians who have not studied the official Drug Tariff ("Provisions relating to the Calculation of Charges for Drugs, Preparations Containing Drugs, and Appliances Supplied to National Health Service Patients").

The other method, though perhaps more cumbersome for the dispensing doctor, has some features to commend it, and incidentally some curious anomalies. In Scotland, I am told, the dispensing practitioner who opts to be remunerated on the same basis as the chemist may receive 1s. 3d. for supplying 1 lb. of bicarbonate of soda in bulk, while for dispensing a single powder of 10 gr. of the same ingredient the fee is 2s. In both cases an additional fee of 2½d. is payable for the container. Similarly, one teething powder costs ½d., plus 2s. dispensing fee, plus 2½d. for the container—that small piece of paper which so often is blown away when a door or window is opened. For ointments and creams the dispensing fee is 1s. 3d., for tablets or pills 1s., for non-proprietary mixtures 1s. 6d., plus in each case the container fee of 2½d. For proprietary articles the dispensing fee is 1s. It is for the dispensing practitioner to select the method of remuneration which he prefers.

National Health Service

PROPOSED CUT IN DENTISTS' FEES

The Minister of Health has informed the dental associations that a reduction of 25% of the gross earnings of dentists in the Service would be justified. The dental associations have declined to meet the Minister to discuss the reduction pending the issue of a report by the working party which is investigating the timing of dental operations.

MATERNITY OUTFITS

A patient being confined at home and wanting a maternity outfit should be advised to call at the nearest welfare clinic, or, if this is not possible—e.g., in remote rural areas—to write to the local health authority.

BIRTH DATES ON MEDICAL CARDS

Following representations made by the General Medical Services Committee, the Minister of Health has asked local executive councils to enter the date of birth of each person on the medical record card before it is sent to the doctor.

CLASSIFICATION FOR MILEAGE PAYMENTS

The Ministry of Health has informed executive councils that a classification of practices for the purpose of mileage payments is contemplated. It will be similar to that under the N.H.I. Act—rural practices (A), semi-rural practices (B); and urban practices (C). To determine the classification of any practice the total number of persons on a doctor's list is divided by the total number of mileage units credited to him. If this calculation results in a figure less than 0.75 the practice should be classified (A); if between 0.75 and 2.5, (B); if over 2.5, (C).

OPHTHALMIC SERVICE INQUIRY

The Minister of Health has set up a working party to carry out an inquiry into the length of time taken for ophthalmological examination, and has appointed as chairman Mr. W. Penman, F.I.A., past-president of the Institute of Actuaries. The Association and the Faculty of Ophthalmologists have nominated the following as members of the working party: Mr. G. W. Black, Dr. J. J. Healy, Mr. O. Gayer Morgan, Dr. R. Gordon Simpson.

The fee for examination by an ophthalmologist under the Supplementary Ophthalmic Service was reduced by the Government from £1 11s. 6d. to £1 5s. a case in spite of the protest of the Association and before any inquiry had been made into the average length of time necessary for ophthalmological examination under the scheme.

The fee of £1 11s. 6d. was based on the assumption that two cases would be examined in one hour, the rate being £3 3s. an hour, thus implementing generally the Spens recommendations on specialists' remuneration.

By reducing the fee to £1 5s. the Ministry assumed that more than two cases could be examined in one hour—in other words, twenty-four minutes would be the average time for each case.

The working party has started the inquiry, and the Minister had promised to readjust the cut fees retrospectively if the inquiry shows that to be necessary.

The names of doctors who give information will be confidential to the working party, as will the details they supply.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-County Borough Councils.—Dartford, Wallsend.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huxton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

SCOTTISH CONSULTANTS AND SPECIALISTS COMMITTEE

Members of the Central Consultants and Specialists Committee (Scotland) at a meeting at B.M.A. House, Edinburgh, on April 25 considered the Government's proposed terms and conditions of service of hospital medical and dental staffs. The meeting had before them comments received from regional consultants and specialists committees. Various resolutions were passed for consideration by the Central Committee.

Betterment

In regard to specialists, it was decided that the betterment factor was unsatisfactory and should be accepted only without prejudice to future negotiations, and that the matter be left to the Joint Committee subject to this proviso.

The committee regretted the absence in the proposals of any recognition of the principle of responsibility payment and considered that this omission should be corrected, either by modification of the Distinction Award system or otherwise.

During the discussion on trainee specialist grades objection was taken to the use of the word "trainee," the view being expressed that it was inappropriate to have young persons entered as specialists in training when only about 25% would go on to specialist practice. The committee resolved to recommend that the class described as Grade 3 Trainee Specialists should be abolished and replaced by an additional category to be known as Senior House Officers, entitled to the same salary and conditions as defined for Grade 3 Trainee Specialists.

Senior Hospital Medical Officers

In connexion with the grade for senior hospital medical officers, the chairman, Dr. I. Simson Hall, said it had been made clear by the Department of Health for Scotland that this grade was expected to be a diminishing one, intended for those who were content to take senior posts not of specialist rank. There were certain transferred local-authority medical officers whose appointments could appropriately come within this grade. The committee felt that so far as possible no further appointments of this type should be made.

Medical Superintendents

In considering the proposals for medical superintendents and deputy medical superintendents the committee had before it the report of a special subcommittee. The view of the subcommittee was that the proposals as they stood could only lead in time to the elimination of the role of medical superintendent in the field of hospital administration. This would mean the end of the traditional system in Scottish hospitals, and in the view of the subcommittee would be contrary to the best interests of the hospital service. It was considered wrong in principle and unwise in practice to determine in this oblique fashion what should be determined directly and on merit—namely, the future of medical superintendents.

The report was accepted.

The committee endorsed the view expressed by the Western Regional Consultants and Specialists Committee that the fee for obstetric operations be 6 guineas for a minor and 10 guineas for a major operation.

Clinical Teachers

The committee felt that the position both of whole-time and of part-time clinical teachers was far from satisfactory. In particular, it was felt to be unacceptable that the determination of what was appropriate remuneration for the teaching duties of part-time clinical teachers should be left solely to the university or teaching school.

It was reported that at a meeting with representatives of the Department of Health Dr. Simson Hall had asked for an assurance that, after the permanent contracts had been presented to the individual specialists, a reasonable period would be allowed for them to consider the terms offered and, if dissatisfied, to discuss them with the regional hospital board concerned. Sir George Henderson, for the Department, hoped that by the time

the actual contracts were issued individual specialists would for the most part already have been made aware of the terms offered.

In connexion with the other items in the proposed terms, the representatives on the Central Committee were asked to support resolutions from the various regions in England which coincided with the views of the Scottish Central Consultants and Specialists Committee.

Questions Answered

Request for Proprietary Preparation

Q.—*The mother of an N.H.S. patient subject to chronic asthma brought a pamphlet from a chemist saying they could obtain a certain proprietary remedy or anything else by getting a prescription from their doctor. I did not consider it necessary. Am I in order in refusing?*

A.—A practitioner is required to render to his patients all proper and necessary treatment, but the actual treatment and drugs prescribed are entirely at the doctor's discretion. A practitioner is therefore quite in order in refusing to prescribe a proprietary remedy which he considers is not necessary for the proper treatment of his patient.

Employment of Doctor's Wife

Q.—*If a doctor pays his wife for services rendered in the conduct of his practice, must he stamp a card for her?*

A.—No, under the National Insurance Act employment of a wife by her husband, or vice versa, is not employment within the meaning of the Act, and no contributions (employer's or employee's) are payable.

HEARD AT HEADQUARTERS

Reception to Swedish Medical Society

On May 2 the President and Council gave a reception in honour of the Paediatric Section of the Swedish Medical Society, whose members were visiting London at the invitation of the British Paediatric Association. The guests were received in the Old Library by Sir Lionel and Lady Whithy. Films of paediatric interest were shown in the Hastings Hall, and there was a small exhibition of objects of interest in the Members' Common Room. These included a handsome volume presented by the Swedish Medical Society on the occasion of the opening of B.M.A. House in 1925; a gavel made from Charles Dickens's mulberry tree, which was cut down to make way for the South Wing; an unofficial *Medical Register* of 1783 containing the name of Edward Johnstone, M.D., of Birmingham, who in 1832 became first President of the Provincial Medical and Surgical Association (forerunner of the B.M.A.); and a historical exhibit tracing the development of the *Journal* from the *Transactions* of the Association, which were first published at its foundation. On the same evening Pandit Nehru was the guest of the India League at a reception in the Great Hall.

Do They Know?

The Association is making further efforts to dispel the public's ignorance of what everyone pays towards the cost of the Health Service and how much the doctor gets out of it. It is sending a leaflet to every general practitioner in the Service, who can obtain from the Association as many copies as he wants for distribution to his patients. It makes the point that the doctor gets just 44d. a week for looking after a patient for a year; out of that he must pay for his surgery, his equipment, his transport, and part of his pension. About 1d. comes from the employed worker's insurance contribution and 34d. from taxes. As the Gallup Poll showed recently (*Supplement*, April 16, p. 229), a large number of people still think that the whole insurance contribution goes to the doctor. This leaflet will help them to understand what happens to their money.

Correspondence

Specialists and the Health Service

SIR.—Your leading article (*Journal*, April 23, p. 717) on the dual obligation undertaken by the President of the Royal College of Physicians in acting also as the chairman of the Distinction Awards Committee concerns but one of the causes of uneasiness among specialists as to their present position. The high hopes aroused at the A.R.M. of last June by the constitution of the Central and Regional Consultants and Specialists Committee, that at last specialists, like the general practitioners, would have their affairs determined in a unified and democratic manner, have not been fully realized. For the Central Consultants and Specialists Committee at once became subordinated to a Joint Committee with the Royal Colleges and Scottish Corporations, with the democratically elected element in a small minority; and in consequence older representative associations of specialists, such as that of the staffs of the major non-teaching hospitals, recognized a breach of faith on the part of the B.M.A. and felt obliged to continue and to act independently. Moreover, there have been indications that eminent individuals have continued to advise the Minister without instruction from the profession, and that the College councils, true to their oligarchic constitutions, have been, as in the case of the distinction awards, willing to approve of a matter of great importance without waiting to learn the views of the specialists in general or even of their own Fellows.

There are a number of features in the proposed terms and conditions of service for specialists which may imperil their freedom and perhaps lower the status and income of many who are at present doing specialist work. It is hoped that negotiation will alter these features; but it seems likely now that the method of remuneration, including the distinction awards, as proposed in the Spens Report will be implemented. Specialists should realize what the application of this method will mean, for it may well be that widespread discouragement and discord will be a result. It should be noted that the method makes no additional allowance of salary for seniority over the age of 40 in a branch of the profession in which length of experience is particularly valuable and maturity in knowledge and skill are not usually reached before the age of 50. Nor is there allowance for the great difference between the specialties in length of training, degree of responsibility, arduousness of work, and age to which work can be carried on. Notwithstanding the wide differences in the past between incomes in the specialties, all specialists will in this method be paid on the same basis, and after the age of 40 all but those receiving distinction awards will be on the same income level.

The distinction awards of additional remuneration for one-third of specialists have been called an "imaginative" method of providing incentive and reward to those of extra ability. In fact, no more certain way of causing discouragement and disharmony among hospital staffs could have been conceived. Based on a false assumption that a specialist requires the incentive of extra pay to seek distinction in his work or that extra pay is a proper kind of reward for distinction in a scientific profession, and incurring the risk of a certain element of patronage, the method of awards may well prove to be not capable of application in the fair and even way idealistically envisaged by the Spens Committee. While it may be possible for the Awards Committee to select the few specialists for the top grade without difficulty, it is inconceivable that the committee, which, it may be noted, in its present composition contains at most one member connected with the non-teaching hospitals, could even with the aid of regional subcommittees select properly from among some thousands of specialists 50% who could be said to be better than their colleagues. The result of such selection among hospital staffs is not hard to imagine.

It has been said that if this method of remuneration does prove to be unpopular it can be changed. But it may not be easy to do so, for the awards are to be bound up with superannuation and apparently will be given not for a term but for the whole length of the contract. It would seem that to alter or withdraw the method would mean a breach of contract. It would be wise therefore for specialists to ask themselves

again whether this and other features of the terms of remuneration proposed for them will really provide them with incentive and contentment in their work and make for harmony with their colleagues. In my view also they should not enter into permanent contracts until the amending Act has been passed, for that Act should include provisions to secure the specialist from becoming a whole-time officer and that he will have a proper part in the administration and development of the Service; also to ensure that facilities will be continued for private practice, for on the preservation of that alternative his freedom must ultimately depend. If such points are not secured before the contracts are signed, it may be difficult to secure them later.—I am, etc.,

Bournemouth

N. ROSS-SMITH.

Provident Scheme for Medical Men

SIR,—It will, I believe, be of interest to your readers to learn that the British United Provident Association has recently extended its service by providing a special range of scales for medical practitioners. B.U.P.A. is a non-profit-making mutual-aid organization whose object is to relieve from financial worry all who in the event of serious illness would want private specialist and in-patient treatment. It has been represented by medical men from various parts of the country that their needs differ from those of the general public, in that the cover they require for themselves and their families is normally against maintenance charges only.

This is the position which the new scales are designed to meet. It is our hope that they will provide a solid sense of assurance to a section of the community which inevitably is especially aware of the anxieties attendant on serious illness.

Full particulars will be supplied on application to the Association's Registered Office, Provident House, 61, Bartholomew Close, London, E.C.1

London E.C.1

A. H. ROWELL,
Chairman

Delivery of Cars

SIR,—I enclose a cutting from one of to-day's papers advertising a post-war car for sale because the owner has just taken delivery of his new car. I would like to point out that I own a similar make of car which is now well into its eleventh year and has done over 80,000 miles. I am on the waiting-list for a new car (since July, 1947), and have recently been told by the makers with much rudeness that there is no chance of my obtaining delivery of a new car this year unless I can obtain a certificate that my present car is no longer roadworthy.

I have had to spend over £200 during the past two years to maintain my car in a roadworthy condition, and cannot afford to continue in this way. Is it not about time that the B.M.A. pressed for an inquiry to be held into the delivery of new cars by manufacturers? It would seem that being on the B.M.A. priority list means nothing at all.—I am, etc.,

Moor Park, Herts

R. S. NICHOLSON.

Association Notices

SCOTTISH COMMITTEE

1949-50 Session

Election of three representatives by the Group of eight Divisions comprising Orkney, Shetland, Caithness, Sutherland, Inverness, Outer Islands, Ross and Cromarty, and Argyllshire.

In accordance with the Standing Orders of the Scottish Committee nominations for these three vacancies shall be in writing and may be made (a) by a Division or (b) over the signatures of not less than three members in the grouped Divisions. Nomination under (a) does not invalidate nomination under (b) or vice versa. Nomination forms have been sent to the Honorary Secretaries of the Divisions in the Group, and can also be obtained on application to the Scottish Office. If more than three members are nominated the election shall be by voting papers sent by post from the Scottish Office to each member of every Division in the Group. Nominations should be sent to me at the Scottish Office, 7, Drumsheugh Gardens, Edinburgh, not later than Saturday, May 28, 1949.

E. R. C. WALKER,
Scottish Secretary.

PROPOSED DISSOLUTION OF LANCASHIRE AND CHESHIRE BRANCH AND THE FORMATION OF A "MERSEYSIDE" BRANCH AND A "MANCHESTER" OR "LANCASHIRE AND EAST CHESHIRE" BRANCH

Notice is hereby given by the Council to all concerned of a proposal made by the Council of the Lancashire and Cheshire Branch that that Branch should be dissolved; that two new Branches should be formed—namely, a "Merseyside" Branch, and a "Manchester" or "Lancashire and East Cheshire" Branch; and that the area of the proposed new Branches should be coterminous with that of the following Divisions of the Lancashire and Cheshire Branch:

"Merseyside" Branch: Birkenhead and Wirral, Cheshire, Liverpool, St. Helens, Southport, Wallasey, Warrington;

"Manchester" or "Lancashire and East Cheshire" Branch: Ashton-under-Lyne, Blackburn, Blackpool and Fylde, Bolton, Burnley, Bury, Crewe, Furness, Hyde, Lancaster, Leigh, Macclesfield and East Cheshire, Manchester, Mid Cheshire, Oldham, Preston, Rochdale, Salford, Stockport, Wigan.

Any Division or member affected by the proposed changes and objecting thereto should write to the Secretary of the Association by June 14, 1949, stating the objection and the ground therefor.

CHARLES HILL,
Secretary.

Diary of Central Meetings

MAY

- 24 Tues. Scholarships and Grants Subcommittee, 11 a.m.
- 24 Tues. British Pharmacopoeia Subcommittee, 2 p.m.
- 26 Thurs. Occupational Health Committee, 2 p.m.
- 27 Fri. Committee on the Postgraduate Education of General Practitioners, 2 p.m.
- 31 Tues. International Relations Committee, 2 p.m.

JUNE

- 10 Fri. Library Subcommittee, 12 noon.
- 10 Fri. Science Committee, 2 p.m.

Branch and Division Meetings to be Held

DARTFORD DIVISION.—At Nurses' Recreation Room, Livingstone Hospital, Thursday, May 19, 8.45 p.m., annual general meeting.

EAST YORKSHIRE BRANCH.—At the Trocadero Restaurant, Silver Street, Hull, Wednesday, May 18, 7.30 p.m., annual general meeting preceded by a Supper. Agenda: Instruction of Representatives to Annual Representative Meeting at Harrogate, etc.

HENDON DIVISION.—At Hendon Hall Hotel (Ballroom), Wednesday, May 18, 8.30 p.m., joint meeting of Division with Hendon and Edgware Branch of Pharmaceutical Society of Great Britain. Film: "Sulphonamide Therapy." Principal speaker, Dr. E. W. Tapley. Members are invited to bring guests.

MARYLEBONE DIVISION.—At Medical Society of London, Chandos Street, London, W., Tuesday, May 17, 8.30 p.m., general meeting. Agenda: To report on Special Representative Meetings on March 29 and 30; Consideration of motions and amendments for Annual Representative Meeting, etc.

METROPOLITAN COUNTIES BRANCH.—At B.M.A. House, Tavistock Square, London, W.C., Thursday, May 26, 8 p.m. for 8.30 p.m., Charities Ball. Tickets, including a buffet supper, 2 guineas each, obtainable on application to the Secretary, the Charities Ball Committee, Metropolitan Counties Branch, B.M.A. House.

METROPOLITAN COUNTIES BRANCH.—At B.M.A. House, Tavistock Square, London, W.C., Tuesday, June 7, 2.30 p.m., annual general meeting. Agenda: Induction of Dr. C. G. Martin as President of the Branch and President's Address, etc.

NORTHERN IRELAND BRANCH.—At New Nurses Homes, Royal Victoria Hospital, Belfast, Wednesday, May 18, annual meeting.

SOUTH-WEST ESSEX DIVISION.—At Clinic Hall, Thorpe Coombe Maternity Hospital, Forest Road, Walthamstow, E., Wednesday, May 18, 8.30 p.m., lecture by Professor A. Moncrieff: "Some Diseases of the Newborn."

Meetings of Branches and Divisions

SOUTH BEDFORDSHIRE DIVISION

At a meeting held by the South Bedfordshire Division on April 22 Mr. Peter Casson gave a talk on "Hypnotism," which was followed by a demonstration.

ANNUAL MEETING BANKING FACILITIES

The Westminster Bank will have a temporary office at the exhibition to be held at the Association's Annual Meeting at Harrogate this year.

BRITISH MEDICAL JOURNAL

LONDON SATURDAY MAY 21 1949

EDWARD JENNER: THE MAN AND HIS WORK

BY

E. ASHWORTH UNDERWOOD, M.A., B.Sc., M.D., D.P.H., F.L.S.

Director of the Wellcome Historical Medical Museum

The two-hundredth anniversary of the birth of Edward Jenner, "the discoverer of vaccination," was celebrated on Tuesday, May 17, and the time is opportune for a brief review of Jenner's life and the beginning of the new idea which he inaugurated, and which he was fortunate in seeing widely established in his lifetime. No man has suffered more from the excessive eulogy of well-meaning friends and later admirers, or from the invective of those who for some reason or other did not subscribe to his views.

Early Life

Edward Jenner was the son of the Rev. Stephen Jenner, rector of Rockhampton and vicar of Berkeley, in Gloucestershire. Born on May 17, 1749, he was educated at first at Wotton-under-Edge under a Mr. Clissold, and then went as a pupil of the Rev. Dr. Washbourn at Cirencester. When he was 5 his father died, and the boy was looked after by his elder brother, who was also in Holy Orders. It was decided that Edward was to practise medicine, and at the age of 13 he was apprenticed to Daniel Ludlow, a surgeon of Sodbury, near Bristol. In 1770 he became a student at St. George's Hospital, London, and was for two years a house pupil of John Hunter. During this period a warm friendship sprang up between master and pupil, and after Jenner left London he and Hunter corresponded regularly for 20 years—until Hunter's death in 1793. Jenner's letters to Hunter have all been lost or destroyed. But Jenner preserved carefully Hunter's letters to him. They are now in the Royal College of Surgeons, and were printed by Baron in his biography of Jenner. The correspondence was occasioned by the fact that Jenner was no longer in London. In 1772 Jenner left London and settled in his native town of Berkeley as a country practitioner.

It should be said that this translation appears to have been made because he wanted to be a country practitioner. He had many of the qualities which are essential to a successful physician or surgeon in town. He had had a long training in a practice which probably gave him plenty of experience, and he had been a favourite pupil of the great John Hunter. Statements are still being made that Jenner was not "a doctor." This is of course nonsense. If by "doctor" is meant a man who has qualified for a doctorate in medicine, then a considerable proportion of those who legally—and successfully—practise medicine to-day would not be entitled to this appellation. In Jenner's time this entry by apprenticeship was the normal course of training for all general practitioners—that is, "doctors." It is true that Jenner did become later on M.D. of St. Andrews University, and that he did not sit any examination or present any thesis for the degree. But this was also quite a usual practice, and many other famous men have obtained

their doctorate in the same way and at the same university. Jenner never became a Fellow of the Royal College of Physicians. He was asked to do so, but by the iron ruling of the statutes he could not be admitted without sitting an examination in Latin—and this trial he declined to undertake.

Jenner as a Country Practitioner

It was certainly his deep love of the country of his birth which induced Jenner, to return to it and—with brief exceptions—to spend the remainder of his days there. He was by birth and breeding a countryman. He soon settled down in practice, and took an interest in what we would now term "current medical literature." He joined a medical society at Alveston, near Bristol, and was largely instrumental in the founding of a similar society at Rodborough. To the meetings of this latter society he contributed papers—especially one on ophthalmia and another on angina pectoris. There is every reason to believe that Jenner was a conscientious and successful practitioner. He also took an interest in music, played the flute and violin, and was a good fellow at social gatherings.

Jenner as a Naturalist

Love of nature was instilled into Jenner from his earliest years. We do not hear about it during his apprentice years, but when he was a pupil of John Hunter an event occurred which might have altered the course of his life. Captain Cook returned from his first voyage to the Pacific in 1771. A "Mr. Joseph Banks"—later Sir Joseph Banks, president of the Royal Society for 41 years—and a Swedish naturalist, Dr. Solander, had accompanied Cook on the voyage and had brought back a very large collection of botanical and zoological specimens. Edward Jenner was offered the job—no doubt a part-time one—of arranging the botanical specimens, and he did it well. According to one account he was even offered the post of naturalist to Cook's next expedition—but this could hardly have been the case.

When Jenner returned to Berkeley he carried on with his natural history pursuits, and from Hunter he received not only encouragement but repeated and insistent demands for specimens. We read of requests for the nests of various birds, a nest with a cuckoo's egg in it, for hedgehogs, and for all the many other animals or objects which John Hunter required in the course of his experiments. He even asked for a bustard—then becoming a rare bird—and got it. Jenner also carried out experiments under Hunter's directions. It was in a letter replying to comments or suggestions which Jenner had made that Hunter gave him the famous advice: "But why think? Why not try the experiment?"

In 1783 Hunter suggested to Jenner that he "must pursue the cuckoo this summer," and asked for "a true and particular account" of that bird. Jenner carried out his



FIG. 1—The Old Vicarage at Berkeley, in which Jenner was born

observations over a few years, and these resulted in a paper which was published in the *Philosophical Transactions of the Royal Society* in 1788 and for which Jenner was elected a Fellow in 1789. This paper contains many original observations of importance—especially those in which he describes how the young cuckoo actually throws its foster-brothers, or the eggs of its foster-parent, out of the nest. He described the extreme sensitivity of the wing tips of the young cuckoo during the performance of this operation, and also the fact that it has a depression between its scapulae which appeared to him to be designed to assist the performance. When the young cuckoo was 12 days old this depression had entirely disappeared. Accepted rather sceptically after their publication, these observations of Jenner's were supposed during the middle of the nineteenth century to have been quite discredited. In the last thirty years the acuteness and accuracy of Jenner's work have been vindicated—largely by the aid of photography.

In his later years Jenner took up the question of the migration of birds. He gave instances of various birds having been seen far out at sea, and showed that the same

birds will return to the same place one summer after another. This paper was published in the *Philosophical Transactions* in the year after his death.

Smallpox and Inoculation

The incidence of smallpox in this country reached its peak in the eighteenth century. Although there were outbreaks all over the country, it was in London that the disease showed such a constant prevalence. In the 80 years between 1721 and 1800 the annual deaths from smallpox in the Metropolis were less than 1,000 in only five individual years. In 1772 it caused 3,992 deaths in London. But the poek-marked faces of so many dwellers in the great city bore striking witness to the prevalence of the disease—in contradistinction to its mortality.

The practice of inoculation for preventive purposes was well recognized during the second half of the eighteenth century. The "prevention" desired was of course that from

death, and not from the disease, which was transmitted during the operation to the individual to be inoculated. Inoculated smallpox was often fairly mild, and the theory was that it was better to obtain protection as a result of a mild attack at a convenient time than to risk a severe and possibly fatal attack when one wanted it least. Practised in the East from ancient times, inoculation was introduced into this country by Timoni (1714) and by Pylarim, and a renewed effort to popularize it was made by Lady Mary Wortley Montagu (1721), who had just returned from seeing it performed in Constantinople. After 1738 the practice increased, but nothing could get over the fact that the inoculated disease was often not mild and deaths were not infrequent. In 1840 the practice of inoculation became illegal.

The Beginnings of Vaccination

While he was an apprentice at Sodbury Jenner was struck by the fact that a young countrywoman had said that she could not take smallpox because she had had cowpox. He mentioned this curious statement to John Hunter, but the latter was apparently not interested. Years later Jenner began to collect examples of persons whom he could not inoculate successfully because they had had cowpox at some time during the course of their lives. Even at this early stage he seems to have been obsessed by the feeling that cowpox *ought* to give complete and permanent immunity to smallpox. This is indeed strange, since every practitioner knew that smallpox did not always give complete and permanent protection against itself. By this time John Hunter was dead, and there was no one of his experience and acuteness with whom Jenner could discuss the matter.

Jenner therefore set out to show that cowpox protected against smallpox, and also that cowpox could be transmitted from one human being to another just as smallpox could.

There should be no misconception of what was in Jenner's mind. Though his arguments and deductions are possibly not too well expressed, his line of thought clearly was constructive and of considerable originality. It was one thing to show that a person who had had a natural attack of cowpox was thereafter possessed of considerable immunity to smallpox.

FIG. 2—Chantry Cottage, Berkeley, in which Jenner lived most of his life and died



EDWARD JENNER (1749 - 1823)



This is a photograph of the original pastel portrait (now in the Wellcome Historical Museum) made by J. R. Smith in 1800 and exhibited in the Royal Academy in that year. It is now reproduced for the first time by the courtesy of the Museum.

Cowpox was a disease of cows, and only a fraction of the population ever has any direct contact with these animals. Furthermore, cowpox was present only in certain counties of England, and only at intervals. It was quite another thing to set out deliberately with the intention of showing that cowpox, naturally acquired, could be transmitted artificially from person to person so that there would result an increasing reservoir of persons who had been given the opportunity of becoming invulnerable—or "immune," as we would say—to smallpox. There is no doubt that this was what was in Jenner's mind. At a later date opponents of his views put forward counter-claims to priority. For example, there was the case of Benjamin Jesty, a farmer who twenty years before had inoculated his wife and children with cowpox to prevent them from contracting smallpox. But Jesty had no notion of perpetuating the cowpox from one individual to another. This was the cardinal factor in Jenner's doctrine, and it was an idea which had probably not occurred seriously to anyone before; at least, no one had ever attempted to put it into practice.

Once this point is clearly grasped certain interesting questions arise. To show the pitfalls in Jenner's path it is sufficient to take one example. Only a few months after the publication of his famous book Jenner sent to a friend in London some lymph from the cowpox vesicle on a child's arm. The lymph was dried and preserved in a quill. Before long people were discussing the methods of transmitting lymph to a distance—dried on lancets, and in other ways. If lymph from the human pock could be stored and transmitted in this way, why could not lymph from the pock on the cow? After all, this is essentially the method which we use to-day. The answer appears to be that Jenner was impressed early in his investigations by the fact that there are two types of cowpox in the cow—the true disease, and another form which he called "spurious cowpox." We now know that this view is wrong; but Jenner believed it, and he also believed that the spurious type does not give immunity to smallpox. On the other hand, true cowpox in the human bred true. He was therefore afraid that if the practice of using dried lymph from cows was widely adopted numerous failures might result. There was also the possibility that septic diseases might be transmitted or that the lymph might be taken at the wrong time. Difficulties of this type must have caused Jenner much reflection—and are ignored by many who are wise 150 years after the event.

The Inquiry

In May, 1796, Jenner found that the dairymaid Sarah Nelmes had a "typical" cowpox lesion on her finger, and on the 14th of the month he inoculated the boy James Phipps with matter from this lesion. The local result was similar to that following variolous inoculation. On July 1 Jenner inoculated the boy with matter from a case of smallpox. The inoculation was unsuccessful. Jenner drew up in 1797 a short treatise embodying his results, and it was presented unofficially to the President of the Royal Society (Sir Joseph Banks). Two manuscripts of this first draft are in existence—one in the Royal College of Surgeons and the other in the Wellcome Historical Museum. The paper was refused, and Jenner in the following spring added further material and published the work privately in July, 1798. The book bears the title: *An Inquiry into the Causes and Effects of the Variolae Vaccinae, a disease discovered in some of the Western Counties of England particularly Gloucestershire, and known by the name of the Cow Pox*. A second edition was published in 1800 and a third in 1801. The work was also translated into many languages.

After the publication of this work Jenner spent three months in London (1798) looking for volunteers for vaccination. In this he was quite unsuccessful. But he left in the hands of Henry Cline, the surgeon, the quill of dried lymph referred to above. Cline used it as a measure of counter-irritation in a case of hip disease, and found that the patient had become immune to inoculated smallpox. From this case the practice of vaccination began to spread. Very soon a difficulty arose, since Dr. Woodville had been distributing lymph derived from vaccinations carried out at the smallpox hospital, and not unnaturally it produced mild smallpox eruptions. Dr. Pearson, a fashionable physician, had taken up vaccination enthusiastically, and in 1800 he proposed to establish an institution for gratuitous vaccination. Jenner was offered the post of "Extra Consulting Physician." From this and other incidents it was apparent that Pearson was trying to filch from Jenner the credit for the discovery. But events such as these could not rob him of the many honours which soon came to him, and which he received modestly but with due appreciation. Jenner spent some time in London in 1800, and he was then requested to vaccinate the 85th regiment, which he did personally.

About the same time the practice spread to the United States, where Professor Benjamin Waterhouse was largely instrumental in obtaining results. France, Spain, and the Mediterranean countries soon followed.

Jenner's Later Life

Vaccination was now becoming an established practice throughout the world, and Jenner was kept busy with a very voluminous correspondence. There is no doubt that his practice and his affairs had suffered as a result of his devotion to the cause which he had made. His friends advised him to petition Parliament for a grant, and in 1802, after a thorough inquiry, he was voted a sum of £10,000. In the following year he presided at the annual meeting of the Royal Jennerian Society, but a few years later its affairs were found unsatisfactory, and it was replaced by the National Vaccine Establishment. For a brief period he took a house in London and carried on a London practice. In 1806 Parliament again considered his case, voting him a sum of £20,000. Between that date and 1815, when his wife died, he resided at Berkeley and at Cheltenham. He now settled finally at Chantry Cottage, Berkeley—in which so much of his work had been done—and there he died on Jan. 26, 1823.

Epilogue

Jenner was indisputably the "discoverer of vaccination"—the promoter of the deliberate practice which he had been the first to envisage and to carry out. It is true that his *Inquiry* is a record of a very small number of cases and even fewer deliberate experiments. But an investigation must be judged by its results. The *Inquiry* led almost immediately to far more experiments in many countries than a regiment of individual investigators could have undertaken. When once the practice had been launched Jenner helped it forward in every possible way. He personally vaccinated individuals almost daily; in the early stages he attended meetings, and helped by interviews with all those in authority who could further his end—the abolition of smallpox. From 1798 until his death he carried on an extensive correspondence with scientists and physicians in many lands.

It may be considered a tragedy that Jenner in his first book maintained that cowpoxing—if properly carried out

urine, with a delay of 15 minutes before adding the acetate solution.

(v) The addition of hydrochloric acid of analytical quality, 2.5 ml. of 22% aqueous solution to 2.5 ml. of urine. Hydrochloric acid of this standard of purity is subsequently referred to in the text as hydrochloric acid A.R.

(vi) The addition of hydrochloric acid, corresponding in quality to the standards laid down in the *British Pharmacopoeia*, in the same concentration and proportions as in test v. Hydrochloric acid of this standard of purity is subsequently referred to in the text as hydrochloric acid B.P.

(vii) The addition of hydrochloric acid of analytical quality as in test v, together with small amounts of an oxidizing agent, hydrogen peroxide.

All the aldehyde reagents used were made up with reagents of analytical quality. In tests v, vi, and vii large amounts of hydrochloric acid were used (actually equal to the amount in Watson's test), as it was thought that colour reactions due to substances other than urobilinogen would be more likely to appear at this high level of acidity. It is well known that the pigment produced by the urobilinogen-aldehyde reaction is soluble in chloroform. Accordingly, all the specimens were extracted with chloroform after submission to the tests described. A total of 5,600 tests were carried out on the 100 urines. The results are shown in Table IV.

A study of Table IV indicates the following points:

1. Out of the 100 urines tested 29 gave colour reactions of varying hues with Ehrlich's rosindole reagent; Savory and Moore's reagent, or Watson's test. A pink or red colour, however, was obtained in only 16 urines.
2. Colour reactions with all aldehyde reagents were more readily demonstrated at 35° C. than at room temperature.
3. Colour reactions with aldehyde reagents were more readily demonstrated in fresh than in old urines.
4. Delay in addition of acetate to specimens tested with Watson's reagent resulted in a considerable increase in the appearance of colouring substances insoluble in chloroform. This phenomenon was noted by Kelly *et al.* (1946). It was obviously due to colour reactions induced by the large amount of hydrochloric acid present in Watson's reagent which had not been neutralized until 15 minutes later.
5. Substances giving colour reactions with hydrochloric acid alone were more readily demonstrated in warm urines than in cold urines, and this applied both to fresh and to old specimens.
6. Of the 100 urines tested at room temperature with 22% hydrochloric acid A.R., 9 specimens gave a pink colour not extracted by chloroform, whereas when the same urines were tested under the same conditions with hydrochloric acid B.P. 69 gave a pink colour not extracted by chloroform. A similar high incidence of colour changes was noted when hydrochloric acid A.R. was added to the urines in the presence of a small quantity of hydrogen peroxide. From this it may be assumed that the principal impurity in hydrochloric acid B.P. leading to colour reactions is an oxidizing agent, and indicates the essential need for using hydrochloric acid A.R. in making up the Ehrlich aldehyde reagent. The substance which gives rise to a pink or red colour following the addition of impure hydrochloric acid to urine, and which is insoluble in chloroform, is believed to be an indole derivative, uroscopine (Meiklejohn, 1948—personal communication). The production of uroscopine depends both on the presence of an oxidizing agent and on the strength and quantity of hydrochloric acid used in the test. The high incidence of chloroform-insoluble pink substances observed when the addition of acetate was delayed in Watson's aldehyde test can possibly be explained on this basis.

In a previous investigation of the Ehrlich aldehyde test a different series of 45 urines had been tested with the rosindole reagent. Twenty positive colour reactions were recorded, and in six instances the colour observed, although macroscopically indistinguishable from that produced by urobilinogen, was not extracted by chloroform. Thus in

one-third of cases this reagent gave false positive results. On inquiry it was found that hydrochloric acid B.P. had been used in making up the reagent, as no instructions had been given to use analytical reagent. When the tests were repeated with rosindole reagent containing hydrochloric acid A.R. no colouring substances that were insoluble in chloroform were obtained.

Terwen (1925) and Watson (1931, 1936) have pointed out that the rapid conversion of hydrochloric acid to acetic acid by the addition of sodium acetate inhibits colour reactions due to indole. This procedure apparently also inhibits colour reactions due to indirubin. Thus when Watson's test is carried out the only important substances apart from porphobilinogen contributing to colour reactions are unidentified compounds having in general the same clinical significance as urobilinogen. The 15 urines which had given pink or red colour substances soluble in chloroform with rosindole reagent and Savory and Moore's reagent were accordingly submitted to the following procedure: 0.5 ml. of Savory and Moore's reagent was mixed with 5 ml. of urine followed immediately by 1 ml. of a saturated aqueous solution of sodium acetate. If a red or reddish-pink colour developed urobilinogen was considered present in an abnormal amount. In two of the 15 urines the colour reaction was inhibited and therefore the pink colour originally observed in these specimens was due to substances other than urobilinogen. In both instances the colour reactions had been only weakly positive, the colour change in one being perceptible only at 35° C., and in the other after several minutes at room temperature and at 35° C. This would suggest that weak delayed colour reactions with aldehyde reagents should be discarded as negative. The suggested lowest criterion of positivity is the development of a definite reddish-pink colour within five minutes at room temperature or within one minute at 35° C.

TABLE V.—A Comparison of Typical Colour Reactions Obtained from 100 Urines with the three Aldehyde Reagents Tested

Reagent	Temperature	Positive Results	Urobilinogen Proved Present	False Positive Results
Rosindole ..	14–18° C.	10	9	1
	35° C.	15	13	2
Savory and Moore's ..	14–18° C.	10	9	1
	35° C.	15	13	2
Watson's ..	14–18° C.	6	6	0
	35° C.	8	8	0

Table V gives results which enable the sensitivity of the three tests to be compared. It shows that tests with Ehrlich's rosindole reagent and Savory and Moore's reagent are more sensitive, although less specific, than Watson's test when read by the naked eye. The reduced sensitivity in Watson's test must be due in part to the threefold dilution of the urine with reagents.

The substances which are most likely to give rise to a reddish-pink colour when urine is tested with Ehrlich's aldehyde reagent are urobilinogen, indole, the precursors of two indole pigments—indirubin and uroscopine—and porphobilinogen. Uroscopine and porphobilinogen-aldehyde are insoluble in chloroform. The other pigments produced are soluble in chloroform. If the hydrochloric acid employed in the reagent is pure and free from oxidizing agents, and the reagent is used in small amounts, or if, as in Watson's test, the acid is immediately neutralized with sodium acetate, the reddish-pink colour developing in urine is unlikely to be due to any substance other than urobilinogen. Since, however, it is never possible to be certain that excessive amounts of hydrochloric acid or impure acid have not been used in making up the aldehyde reagent, and since the latter may become contaminated

oxidizing substances, it is essential that the red or pink colour developing in the test should invariably be submitted to chloroform extraction. By this means the most important single fallacy—namely, a pink colour to urochrome—can be excluded. If it is suspected that a substance giving rise to a pink colour soluble in chloroform is not urobilinogen (an exceptional finding if the reagents are properly prepared and if very weak delayed colour reactions are disregarded), then a saturated solution of sodium acetate should be added immediately after the aldehyde reagent to ensure the specificity of the test.

Conclusions

Ehrlich's aldehyde test is a simple and valuable clinical procedure for the detection of abnormal amounts of urobilinogen in the urine. The reaction is more sensitive if the urine is tested in the fresh and warm state.

The following precautions should be rigidly observed. The hydrochloric acid in the test reagent should be analytical standard and used in appropriate amount. The reagent should be put out for use in small droplets, and contamination with pipettes, etc., should be avoided. (3) The reaction should be considered negative unless a definite reddish-pink colour develops within five minutes at room temperature or within one minute at 37°C. (4) Chloroform extraction should be undertaken on every urine giving a red or reddish-pink colour subsequent to the addition of aldehyde reagent. (5) Sodium acetate solution should be added immediately after the addition of Watson's reagent if Watson's test is employed. Addition of sodium acetate is unnecessary if Savory's reagent is employed in the amount used in the experiments. (6) The reagent should not contain indole, as this is unnecessary and more likely to produce positive results with indole.

Further work is required to determine the optimal quantity of pyridimethylaminobenzaldehyde and hydrochloric acid to be included in reagents used for qualitative estimation of urobilinogen and the relative amounts of reagent in urine to be employed in the test. Having been determined, these quantities should be strictly adhered to, as by means the inhibition of specific urobilinogen colour reactions and the production of colour reactions due to indoles and other unknown substances will be reduced to a minimum.

REFERENCES

- Amberlain, E. N. (1947) *Symptoms and Signs in Clinical Medicine*. Bristol.
 Emerson, L. (1937) *J. Lab. clin. Med.*, 22, 1277.
 Nicholson, R., and Hunter, D. (1940) *Clinical Methods*. London.
 R. W. D., Lewis, J. H., and Davidson, C. S. (1946) *J. Lab. clin. Med.*, 31, 1045.
 Schumann, H. N. (1936) *Biochem. J.*, 30, 347.
 (1938) *J. Lab. clin. Med.*, 23, 1127.
 Wartz, S., Sborov, V., and Watson, C. J. (1944) *Amer. J. clin. Path.*, 14, 598.
 Rickman, R. (1939) *Arch. intern. Med.*, 63, 858.
 Owen, A. J. L. (1925) *Disch. Arch. klin. Med.*, 149, 72.
 Wallace, G. B., and Diamond, J. S. (1925) *Ibid.*, 35, 698.
 Watson, C. J. (1931) *Ibid.*, 47, 698.
 (1936) *Amer. J. clin. Path.*, 6, 458.
 (1937) *Arch. intern. Med.*, 59, 196.
 (1940) *Ibid.*, 68, 740.
 Schwartz, S., Sborov, V., and Bertie, E. (1944) *Amer. J. clin. Path.*, 14, 605.

The Ministry of Health has decided, after consultation with the Central National Health Service (Chemist-Contractors) Committee, that the use by contractors of envelopes or other paper containers for tablets, pills, capsules, pastilles, lozenges, and for bulk powders is desirable, and that they should not be used for this purpose after 1, 1949. The British Standards Institution is considering minimum standard requirements for cardboard or paperboard containers until the inclusion in the Drug Tariff of a reference to these requirements. Boxes used for a small number of tablets, pills, etc., must be large enough to bear a label on which the directions can be clearly shown.

RETENTION OF URINE*

By

E. W. RICHES, M.C., M.S., F.R.C.S.

Surgeon and Urologist to the Middlesex Hospital

Among the many possible causes of inability to pass urine prostatic obstruction is the most frequent in everyday practice. Paralytic or neurogenic causes occupy second place, and stricture nowadays comes third because its principal cause, gonorrhoea, is more effectively treated. Retention from prostatic obstruction can be taken as the example for description, but the same principles of treatment are applicable to other cases.

Retention implies a full bladder from which either nothing can be passed, as in acute retention, or only a dribbling overflow escapes, leaving a large amount of residual urine, as in chronic retention. It must be distinguished from the more serious condition of suppression of urine in which the bladder is empty. It is therefore necessary at the outset to be able to recognize a full bladder, and to do it without having to pass a catheter, the method recommended in some gynaecological textbooks. It is generally easy by ordinary clinical methods. There is a rounded or irregular swelling arising from the pelvis, fixed below, dull on percussion, cystic, either tense or soft, and sometimes translucent from side to side. In cases of doubt examination with the foot of the bed raised will occasionally make it more evident. Sometimes, however, there are difficulties, especially in a fat patient, and particularly where there are no urinary complaints and the condition is not suspected.

A man of 64 went to his doctor complaining of general ill-health, with loss of weight, morning vomiting, and loss of taste. He had no urinary symptoms and did not have to get up at night to micturate. He was sent for a complete barium-meal examination, and the radiologist discovered a pelvic tumour, outside the bowel but pushing it up. The tumour was an enlarged bladder. The prostate was moderately enlarged and the blood urea was 84 mg per 100 ml. The urine having a specific gravity of 1002. After the bladder had been gradually decompressed through a small suprapubic catheter his symptoms ceased, the blood urea fell to 30 mg per 100 ml, and after prostatectomy he recovered.

Clinical Types of Retention

Acute Retention.—There is often no sharp dividing-line between acute and chronic retention, and while the amount of residual urine is generally large in chronic retention this factor alone does not give a complete definition. Acute retention is of sudden onset and is painful. It follows congestion and is brought about by cold, wet, and alcoholic, dietary, or sexual excess. Brodie in 1822 said: "The exciting cause is sometimes cold. One gentleman will be affected after drinking punch, another after drinking more wine than usual. One gentleman I knew was seized after two or three days' costiveness. The cause is often too minute to be detected." Other potent causes of acute retention are enforced holding of urine when the call comes and confinement to bed for some intercurrent disease such as bronchitis, pneumonia, or heart failure. A painful acute retention may be superimposed on a degree of chronic retention. The clinical picture of acute retention is unmistakable: there is a constant urge to micturate, but inability to expel more than a few bloody drops, with severe pain in the penis and lower abdomen, restless changes

*Based on a lecture given to the Leeds Branch of the British Medical Association on Feb. 9.

of posture, sweating, and apprehension. The relief when the bladder is emptied is dramatic.

Chronic Retention.—By contrast chronic retention is relatively painless, although there is sometimes a history of loin pain, and the patient may have no idea that he has an abdominal swelling. The term "chronic" denotes that the condition has been present for a long time; the bladder has become gradually distended and is decompensated; it can be detected on clinical examination, and other symptoms such as have been mentioned will probably be present; loss of weight and alteration in the sense of taste are frequent signs of uraemia. Chronic retention is the more dangerous state of the two.

Treatment of Acute Retention

From the general practitioner's point of view the treatment of acute retention consists in relieving the pain of retention and sending the patient into hospital. The retention, and the consequent pain, can be relieved in more than one way.

A hot bath and a morphine suppository ($\frac{1}{2}$ gr.—32 mg.).—This is not always possible, and is seldom successful in prostatic cases. It is more likely to succeed in retention from stricture, where the congestive element plays a large part.

Catheter.—This is the time-honoured method, and it is still correct provided that gentleness and strict asepsis are maintained. A gum-elastic bicoudé catheter is more likely to pass easily than a soft rubber one; the silver prostatic catheter should not be used. A fairly stiff rubber catheter of the Tiemann type is effective, and it can be boiled.

Aspiration.—A serum or lumbar-puncture needle is inserted under local analgesia through the abdominal wall into the bladder and the urine withdrawn by a syringe. The needle

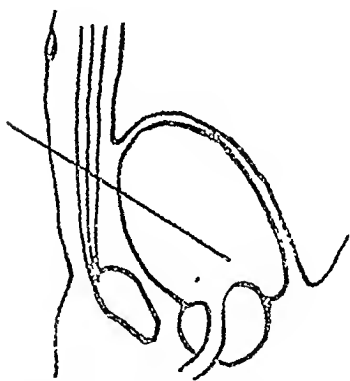


FIG 1.—In emptying a distended bladder by aspiration the needle is directed downwards and backwards

should be inserted well above the symphysis pubis and should be directed obliquely downwards and backwards (Fig. 1). This procedure can be repeated if absolutely necessary, but the needle should be inserted in a slightly different spot and the bladder should not be allowed to fill up as much as before. Aspiration is less likely to introduce infection than is the passage of a catheter. The danger lies in repeated catheterization, and even when sulphonamides are given, as they should be, catheterization under home conditions is almost certainly followed by infection if continued for more than two days. An indwelling catheter increases the certainty of infection, which in a closed bladder may cost the patient his life.

Carbachol is unlikely to relieve retention when there is mechanical obstruction.

After the relief of acute retention micturition approaching the normal may be re-established, but the patient should still be sent into hospital. One attack of acute retention is the precursor of others and is an indication for prostatectomy before the condition becomes chronic. If micturition is not re-established the condition is more urgent and the man who has had repeated catheterization becomes a bad subject for prostatectomy.

Treatment of Chronic Retention

It is of fundamental importance to realize that the bladder should not be emptied just because it is found to be full.

Although it may be done with impunity on many occasions, there is always the risk of producing renal haematuria and suppression of urine, even if infection is not introduced. The patient should be sent into hospital without undue delay; the condition has probably been present for some time, and a day or two more may make little difference, but the sooner treatment is instituted the better. Under proper surroundings the surgeon is faced with the decision of draining the bladder first or of doing an "immediate" prostatectomy after a minimum of time in assessing renal function and preparing the patient. The important principles to be followed in drainage are to avoid sudden decompression, to avoid urethral trauma, to prevent infection, especially ascending infection, and to plan ahead. I am a firm believer in preliminary drainage in chronic cases provided it is carried out in such a way as not to prejudice the subsequent prostatectomy.

There has recently been a tendency to make light of the dangers of sudden emptying of the bladder in chronic retention, but cases of suppression of urine from this cause still appear only too often. If there is hydronephrosis and hydroureter the release of pressure affects the upper urinary tract as well as the lower. The renal blood vessels have become adapted to an increase of pressure, and when it is suddenly released intrarenal haemorrhage may follow, leading to tubular blocking.

Preliminary decompression and drainage may be carried out by urethral catheter, by urethrostomy, by suprapubic cystostomy, or by suprapubic catheterization.

Urethral Catheter

This is the simplest method of drainage and allows of slow decompression. If it could be forecast with certainty that it would not be required for more than two days it would be relatively safe. A rapid estimation of renal function is necessary before it is used; the blood urea figure does not show minor degrees of renal impairment, but a high value—for example, over 80 mg. per 100 ml.—is an indication of renal damage and generally means that a longer period of drainage will be necessary before prostatectomy. A persistent specific gravity of the urine of about 1010 is also an index of severe renal insufficiency. These are the tests of most practical value when time is a factor. Even a short period of catheterization, however, is followed by urethritis, and this may lead to prostatitis, cystitis, and finally to pyelonephritis from ascending lymphatic infection.

Wilson Hey (1945), who has done so much to make urologists conscious of the dangers of infection, is opposed to any form of urethral instrumentation before prostatectomy. The added danger of urethral trauma is also present. If a urethral catheter is used it must be of good rubber and must be small enough to allow of free drainage around it; even a catheter of suitable size may produce a meatal stricture.

Urethrostomy

Sandr y (1949) has drawn attention to the value of drainage by a catheter inserted from the bulb of the urethra, and finds great advantages in the dependent drainage achieved over the uphill drainage of suprapubic cystostomy. In a series of 58 poor-risk cases there was a mortality of 8.6% and there were no deaths from urinary infection. The method has obvious advantages, but it still leaves one-third of the urethra exposed to the friction of a catheter. It is not so easy to keep the patient ambulant—an important feature during the period of drainage—and there is a leak lasting from four to five days after removal of the catheter. There are also possible nursing difficulties.

Suprapubic Cystostomy

While drainage is effective, the decompression by operation is not always gradual. The main disadvantages, however, are in the frequent leakage around the catheter and in scarring of the operation field for the prostatectomy; this especially so when the tube is placed low on the abdominal wall, as is so often the case. The low suprapubic tube, entering

just above the symphysis and passing horizontally into the bladder from the lower end of a long vertical incision, is something which should be banned from modern surgery. It leaks, it smells, and it makes a clean prostatectomy impossible (Fig. 2).



FIG. 2.—Low suprapubic cystostomy.

Suprapubic cystostomy as a first stage of prostatectomy has a high mortality. Rees (1947) reported 30 deaths in 106 cases so treated—a mortality of 28%, of which more than one-half were infective. He also recorded 18 deaths during gradual decompression by urethral catheter.

Suprapubic Catheterization

The method devised originally for cases of spinal injury with bladder paralysis (Riches, 1943) has now been used extensively for decompression and drainage of the bladder in chronic retention. A small rubber suprapubic catheter (16 F.) is inserted by a special trocar, the catheter itself acting as the cannula. It gives a watertight fit and can be advanced to the base of the bladder by an internally expanding advancer (Fig. 3). It is inserted obliquely downwards and backwards,

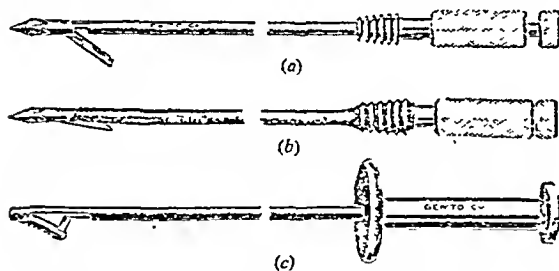


FIG. 3.—(a) The suprapubic catheter introducer. (b) The catheter stretched on the introducer. (c) The advancer.

starting from the highest point of bladder dullness or the mid-point between the umbilicus and the symphysis, whichever is the lower. If there is any doubt about the fullness of the bladder a small incision is made at the same point and the instrument and catheter are inserted under direct vision. The catheter is held in place by a loop stitch through the skin, the ends of which pass twice around the catheter (Fig. 4); a small rubber shield held on by a strapping corset serves to retain a dressing around it and prevent movement. Kidd's U-tube has been found the most effective method of decompression, which is completed in 12 hours, after which the patient can get up if other conditions permit. The danger of injury to the peritoneum is minimal if the bladder is distended, as is the case when the operation is needed, and as an added safeguard the foot of the bed or operating table is raised during the insertion. When the bladder contains $\frac{1}{2}$ pint (425 ml.) there is usually a bare area devoid of peritoneum for 3 in. (7.5 cm.) above the symphysis.

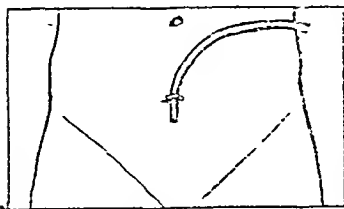


FIG. 4.—Suprapubic catheter in position

This method fulfils all the suggested principles of treatment: decompression is slow; there is no urethral instrumentation; ascending infection is avoided, as there is no direct lymphatic pathway from the track of the catheter to the kidney; and the field for the second operation is left intact. It can be done safely under a local anaesthetic however ill the patient, it is leak-proof, and it can be prolonged as long as necessary. If the drainage has to be maintained for more than two weeks the catheter is changed on the fourteenth day. The old one is removed, and an open-end rubber catheter of the same or a larger size is immediately passed along the track. There must be no delay about this, as the fistula closes rapidly owing to its obliquity; after prostatectomy it closes spontaneously in a few hours, and it is exceptional for it to leak. There has been no apparent disadvantage from the "uphill" drainage, and the bladder urine has often remained sterile for a fortnight. Where renal function can recover it will do so, and the improvement in appetite and general well-being is often remarkable. The blood chemistry gives an indication of the need and type of intravenous fluids.

During the five years 1943-8 I have used this method for the drainage of chronic retention in prestatic obstruction in 227 cases; there were 12 deaths—a mortality of 5.2%—and none were from urinary infection. If three cases in which the drainage was purely palliative—in patients dying from heart failure or advanced carcinoma—are excluded the mortality was 4%, and if those who had never been catheterized or cystoscoped could be excluded it would be 2.6%. There will always be a mortality in dealing with these patients by whatever method, and it is remarkable how they get along so well until they are subjected to surgical intervention.

Immediate Prostatectomy

There is no doubt that the benefits of preliminary drainage have in the past made surgeons too cautious about prostatectomy in one stage: there are still those who practise a two-stage operation in every case. Their results in terms of mortality are excellent, but in playing for safety they lose many advantages. The modern dry prostatectomy, by whatever route, is a vastly different procedure from the two-stage Freyer from which it has developed. There need be no suprapubic leak, the patient can be up on the second day, and the convalescence is smooth and relatively painless. The horrors and discomforts of the older operations are still vividly recalled, and have made the operation one which men dread and in consequence defer until something has to be done.

The work of Wilson Hey (1945) in stressing the importance of asepsis has done much to reduce the number of two-stage operations. He himself advises a one-stage operation, following his own technique in every case, whether retention is acute or chronic; his figures are instructive, showing a total mortality of 6% in all cases. Where the blood urea was below 80 mg. per 100 ml. it was only 3.4%; with a value between 80 and 200 mg. it rose to 16.1%, and over 200 mg. it was four out of six cases (66.6%). It is evident that whilst a one-stage aseptic operation is applicable to many cases there are also a number of bad-risk cases that will not survive it. Some of these cases with chronic retention and considerable renal damage can be saved by preliminary drainage.

In one patient with a blood urea of 420 mg. per 100 ml. suprapubic catheterization with slow decompression brought it down to 38 mg. after eight weeks' drainage, and he came safely through a Harris prostatectomy and made a good recovery: I do not think he would have survived a one-stage operation. His wound was dry on the day after the suprapubic catheter was removed and his convalescence was both comfortable and uneventful. By contrast a man with a blood urea of only 20 mg. per 100 ml. but with a chronic retention of 46 oz. (1.3 litres) died from uraemia

on the ninth day after a one-stage prostatectomy (retro-pubic), with a blood urea of 300 mg. I am therefore not a convert to a universal one-stage operation although I practise it whenever it seems safe to do so.

In an uncomplicated case the convalescence after a retro-pubic prostatectomy (Millin, 1945), or a Harris operation with closure, or a Wilson Hey prostatectomy can be as uneventful as that after an interval appendicectomy, and the mortality should not exceed 5%. When there is chronic retention of urine or much renal damage or gross infection preliminary drainage will give the patient a better chance of survival. Drainage by the small suprapubic catheter has proved a safe and satisfactory method, and it does not interfere with the full exposure required for any of the modern methods of prostatectomy.

If endoscopic resection is to be done the presence of the suprapubic catheter makes the operation much simpler, as continuous lavage can be employed to keep the field clear of blood. Where intercurrent cardiac, pulmonary, or other disease makes a long period of drainage necessary it gives the greatest chance of getting the patient fit for operation. In cases of bladder paralysis it allows for adequate drainage during the critical period and does nothing to prevent the return of voluntary micturition or the establishment of automatic micturition. Its main advantages lie in the high insertion of the catheter, the oblique track, and the absence of leakage.

REFERENCES

- Hey, Wilson H. (1945). *Brit. J. Surg.*, 33, 41.
Millin, T. (1945). *Lancet*, 2, 693.
Rees, W. Skyrme (1947). *Brit. J. Urol.*, 19, 83.
Riches, E. W. (1943). *Lancet*, 2, 128.
Sandrey, J. (1949). *Post-Grad. med. J.*, 25, 71.

OGILVIE'S SYNDROME OF FALSE COLONIC OBSTRUCTION

A CASE WITH POST-MORTEM FINDINGS

BY

J. A. DUNLOP, M.B., F.R.C.S.

(From Chase Farm Hospital, Enfield, Middlesex)

A syndrome of large-bowel colic thought to be due to sympathetic deprivation was recently described by Sir Heneage Ogilvie (1948), with a report of two cases, including laparotomy findings but without the possibility of full confirmation of the suggested anatomical diagnosis by post-mortem examination. The case now reported had been operated on before the first description of Ogilvie's syndrome, and its striking similarity to the original two cases (particularly to Case 2) was immediately apparent. When the disease had run its inevitable and very short course a full and careful post-mortem examination was performed. This third case may therefore be considered worth recording.

Case Report

The patient, a tall lean fitter aged 56, had long suffered from constipation, but had otherwise been in good health and free from pain until three months before his admission to hospital. Since that time he had noticed that his constipation was becoming more and more stubborn, and he suffered repeated attacks of colicky lower abdominal pain without diarrhoea or vomiting. These symptoms became increasingly severe and were attended by a progressive loss of weight, which he could ill afford, until, after four days' absolute constipation and a day's vomiting, on Sept. 8, 1948, he was sent into hospital as a case of chronic large-bowel obstruction due to carcinoma, becoming acute. Examination on admission showed a very thin, ill-looking man with an unhealthy muddy complexion, in obvious spas-

modic pain. The abdomen was not at all distended generally, and the wall relaxed normally. There was a tender fullness corresponding to a distended caecum and transverse colon, but no lumps could be made out through the abdominal or rectal walls. Peristaltic sounds were exaggerated. The only other significant positive finding was a small area of consolidation at the base of the left lung. The speech was slow, slurry, perhaps slightly dysarthric, but otherwise the nervous system seemed normal. This examination made it clear that any obstruction was not complete, and an enema produced a constipated result and flatus, with relief of pain. On the following days the symptoms recurred, and, although distension was never present and flatus was passed spontaneously, defaecation could be induced only by enemata.

Plain radiographs of the abdomen and chest showed some increase in normal colonic gas shadows not amounting to a picture of true obstruction, an area of collapse at the base of the left lung, and an enlarged lower mediastinal shadow, interpreted as being due to a primary or secondary neoplasm obstructing the left lower bronchus, with secondary mediastinal glands. After some days in hospital the patient complained of dysphagia, which he said had been present for a few weeks, but very mildly, and was now becoming more noticeable. A barium swallow and x-ray screening showed some hold-up in the lower thoracic oesophagus, again thought to be due to a mediastinal new growth.

Follow-up of this barium seemed to indicate a complete hold-up in the pelvic colon, with gross colonic distension proximally. However, on further screening the radiologist reported that he did not think there was an organic obstruction at this level, and suggested a barium enema. Meanwhile the general condition and the morale of the patient were deteriorating, the severe pains continued, the bowels remained immovable, and there were repeated requests for any operation which offered a chance of relieving his symptoms. It was felt that even with a negative barium enema laparotomy would eventually be forced by these facts, although, in view of the chest condition, at best a very temporary palliation was all that could be hoped for.

Laparotomy was performed on Sept. 21 through a midline incision. Below the level of the gastro-hepatic omentum the whole abdomen was normal. The colon showed neither distension nor spasm. The liver was studded with secondary growths, and an apparently carcinomatous mass was palpable in the pre-aortic region about the level of the coeliac axis. A small piece of liver secondary was excised for microscopy and the abdomen closed. After operation the patient became more and more cachectic, a terminal chest infection appeared, and he died on Oct. 21, one month after operation.

Post-mortem Examination.—The primary lesion was found to be an extensive carcinoma of the left lower bronchus, with secondary glands in the mediastinum invading the oesophagus, a large secondary in the right lobe of the thyroid, multiple secondaries in the liver, and some secondaries in the pre-aortic region. The apex of the left and base of the right lung showed an acute tuberculous process, which presumably had hastened the end. Microscopically the growth was highly anaplastic, and consisted of sheets and cords of spherical cells with round pyknotic nuclei and very little cytoplasm. The splanchnic nerves were very carefully dissected throughout, and were found to be entirely free from any involvement in growth in their pre-ganglionic course. On tracing down the connexions of the semi-lunar ganglion distally the mat of efferent nerve fibres leaving the left side of the ganglion passed direct into a carcinomatous mass, presumably deriving from an affected pre-aortic gland. After fixation this relation was even more striking and definite. The left vagus was probably involved by growth in the thorax, although visible as a normal nerve uninvolved by carcinoma below this level; the right was uninvolved throughout its course. The brain and meninges were normal.

Discussion

The similarity of this case to those in the original description needs no emphasis. After laparotomy in my case two explanations seemed possible: (1) colonic muscle imbalance caused by interruption of sympathetic pathways (stated thus vaguely, with none of Sir Heneage's precision), or (2) that

suggested by Cushing's demonstration of acute peptic ulcer due to spasmodic and incoordinated contractions of stomach muscle in the presence of vagal overaction and sympathetic paralysis caused by lesions in the hypothalamic region (Cushing, quoted by Bockus, 1944). In view of the suggestion of dysarthria, it was thought that cerebral secondaries might be present, one of which could be causing a similar disturbance of colonic innervation and function. This explanation disposes of the difficulty about sympathetic afferents mentioned by Ogilvie, and may be thought to remain a theoretical possibility. The lesion actually demonstrated bears out Ogilvie's speculations about causation very accurately, including his forecast of its post-ganglionic position, where the fibres are non-medullated and presumably more vulnerable. Clearly the syndrome can occur only where efferent sympathetics are affected and afferents spared. This fact perhaps accounts for its rarity, while malignant disease of coeliac and pre-aortic glands is all too common.

In the absence of post-mortem findings the original description suggested that the dysfunction lay in the left colon. The symptoms irresistibly suggest a lesion of the left colon by analogy with those of an obstructing cancer of that organ. But if the wasting, distension, colic, and constipation are not due to organic obstruction, they may as easily originate in the mid-gut as in the hind-gut. That in fact they do is suggested by the following points.

(1) The sympathetics demonstrably affected were the splanchnics; these supply the bowel nourished by the superior mesenteric artery. (2) A subdiaphragmatic lesion of the ganglionated sympathetic chain deservating the left colon should also denervate and cause vasodilatation in the left leg (Telford, 1948). This effect is not recorded in any of the extant cases. But none of the cases had any carcinoma sufficiently distal to interfere with the "lumbar splanchnics" or the inferior mesenteric plexus—i.e., the left colon's sympathetic supply after leaving the chain. Thus a sympathetic denervation of the left colon seems anatomically very unlikely. (3) In the present case a radiograph taken 48 hours after a barium swallow showed a colon dilated up to the splenic flexure (the lower limit of the mid-gut) and normal or spastic thereafter, and gross dilatation of a small-bowel loop in the position of the terminal ileum. The plain radiograph taken on admission shows substantially the same picture.

It seems certain, therefore, that in this case the dysfunction involved the lower ileum and proximal colon, and it is probable that this will be found to be a general rule.

If it is objected that sympathetic deprivation should cause spasm, not dilatation, it can be argued thus: (1) That, since all these cases were characterized by colic, spasm obviously occurs: the bowel is normally a rhythmic organ, and abnormal diastole may follow abnormal systole. (2) That the physiology of the human bowel's response to autonomic stimuli is still obscure, and its response to deprival of its sympathetic efferents while retaining sympathetic afferents much more so. (3) That, in this case, it is an experimental fact that a gross lesion of the sympathetic efferents to the mid-gut, in the presence of at least an intact right vagus, was followed by dilatation of the distal part of the mid-gut. (4) That more accurate study of further cases is needed before any final conclusion is possible.

Summary

A third case of Ogilvie's false large-bowel-obstruction syndrome is presented in which the primary lesion was a carcinoma of bronchus and there was post-mortem proof of carcinomatous infiltration of sympathetic post-ganglionic fibres below the semilunar ganglion. An alternative theory of causation of the syndrome is postulated, but it was proved incorrect

in this case. Evidence suggests that the lesion affects the mid-gut rather than the hind-gut.

My thanks are due to Mr. H. O. Blauvelt for permission to publish this case, to Dr. Doel for the radiological opinions, and to Dr. Prendiville for the post-mortem and pathological findings.

REFERENCES

- Bockus, H. L. (1944). *Gastro-enterology*, vol. 1, p. 334. Saunders, Philadelphia.
Ogilvie, H. (1948). *British Medical Journal*, 2, 671.
Telford (1948). Quoted in Harold Edwards's *Recent Advances in Surgery*, p. 330. Churchill, London.

CHRONIC ILEUS CAUSED BY MALIGNANT INVASION OF THE POSTERIOR ABDOMINAL WALL

BY

R. S. HANDLEY, M.B., F.R.C.S.

Assistant Surgeon, Middlesex Hospital; Surgeon, Bellingbroke Hospital

Sir Heneage Ogilvie (1948) has described, under the title "Large-intestine Colic due to Sympathetic Deprivation: A New Clinical Syndrome," two cases in which invasion of the crura of the diaphragm, coeliac axis, and semilunar ganglia by malignant growth produced a functional paralysis of the bowel which mimicked obstruction. The following case history reports invasion of the same area by what was probably a carcinoma of the pancreas, producing symptoms which suggested obstruction of the small intestine.

Case Report

The patient, a man aged 56, had suffered from mild dyspepsia all his life. His appendix was removed in 1936. A barium meal in 1943 had shown a scarred duodenal cap. Apart from occasional discomfort after food and a tendency to vomit if he was mentally disturbed, he had been healthy until two months before he visited me. He had then begun to suffer from attacks of colicky pain centred around the umbilicus, with tenderness in the right iliac fossa. The attacks came every few days, lasted a few hours, and left a sensation of abdominal distension. These attacks had become more frequent during the past fortnight and he had vomited every other day. A barium meal had shown a normal stomach and duodenum, and a barium enema a normal colon. He had lost half a stone (3.18 kg.) in weight. There had been no constipation except during the past week. His own doctor had thought he could feel a vague mass to the right of the umbilicus. While the history was being taken borborygmi were audible.

Examination showed a right paramedian appendicectomy scar, tender in the centre, and slight abdominal distension: borborygmi were well heard without a stethoscope, but there was no visible peristalsis or other abnormality. The remainder of the physical examination was negative. A provisional diagnosis of subacute intestinal obstruction due to adhesion of a segment of terminal ileum to the back of the paramedian scar was made, and operation was advised.

The patient was admitted to a nursing-home and a small barium meal requested with the object of locating the point of obstruction in the small intestine. Dr. T. V. Crichton reported on the screening examinations and films as follows: "At three hours there are some coils of dilated small gut in the left hypochondrium and left iliac fossa. The mucosa is swollen and the calibre of the gut enlarged. In the right iliac fossa there is one loop of gut which appears to be contracted. At five hours there is still some dilatation of the loop seen at three hours, but there is no adherent portion to be seen. At eight hours this loop is completely empty, but the terminal ileum in the region of the ileo-caecal valve and also in the region of the hepatic flexure shows a moderate degree of enlargement. There is a fair amount of delay in the passage of the barium through these loops. At twelve hours the barium is completely in the colon. *Conclusions.*—There is definite

evidence of enlargement of some of the coils of the small gut, probably involving only the ileum. The appearances are consistent with partial obstruction such as could be produced by adhesions. No definite filling defect was seen in the lumen of the small gut."

Operation (anaesthetist, Dr. O. Carden Sibley; gas, oxygen, ether).—At laparotomy the small intestine was seen to be moderately distended but no obstruction was found. Hard glands were palpable in the upper part of the mesentery of the small intestine and a growth was found in the body of the pancreas, spanning the aorta, fixed to the posterior abdominal wall and quite irremovable. The large intestine was of normal size. A gland was taken for section and the abdomen was closed.

The patient became progressively distended after the operation despite gastric suction and intravenous glucose and saline, partly burst his wound, and died on the fourth post-operative day. No necropsy was obtained, but the gland removed at operation showed replacement by masses of undifferentiated carcinoma.

Discussion

A somewhat cursory search of the literature shortly after the patient had died, and discussion with colleagues, failed to throw any light on the matter. Ogilvie, who likewise failed to find any reference to the subject in the literature, appears to be the first to publish a description of this unusual syndrome. The manner of its production is of great but academic interest, since the symptoms are produced only after inextricable invasion by carcinoma of a relatively inaccessible region of the body. Ogilvie considers three methods by which the symptoms might be produced: (1) by parasympathetic stimulation from invasion by the tumour; (2) by secretion of a cholinergic substance by the tumour cells; or (3) by sympathetic paresis from invasion by the tumour. He believes, despite some contrary points, that the last is the probable explanation.

A fourth explanation might be considered in my case—that interference with the blood supply by pressure of the tumour on the superior mesenteric vessels might have evoked the symptoms. Mesenteric thrombosis will cause colic, borborygmi, and distension, though the picture is more acute. Against this theory is the fact that my patient's intestine showed no cyanosis. In Ogilvie's first case there was evidence that the pelvic colon was greatly affected, though the tumour cannot have caused interference with the inferior mesenteric artery. It seems, therefore, that the vascular hypothesis must fall down.

A carefully detailed post-mortem examination of a similar case might clear up the mystery, and it is to be hoped that it will be forthcoming.

REFERENCE

Ogilvie, W. H. (1948). *British Medical Journal*, 2, 671.

A six-months training course for hospital records officers is being jointly run until about the end of July by the Association of Medical Records Officers, the King Edward's Hospital Fund for London, and the Board of Governors of the Middlesex Hospital. It is hoped that similar courses will be organized later. The Ministry of Health states that the Minister welcomes the growing interest of hospitals in the proper maintenance and organization of patients' records and the decision of many of them to overhaul their records systems and appoint designated records officers. If this development is not to go astray only adequately trained or experienced officers should be appointed; and boards and committees thinking of making such appointments should defer doing so, unless there are exceptional reasons for immediate action, until there are enough really suitable candidates. Some boards and committees may be considering buying more or less elaborate equipment, such as punched card machinery, for their records departments. The Minister appreciates the value of such equipment where the volume of work makes it an economic proposition, but he is advised that the circumstances of a single hospital, or even in many instances of a management committee group, do not normally justify its purchase. No steps of this kind should therefore be taken by management committees without consultation with the regional hospital board.

THIOURACIL IN THYROTOXICOSIS

BY

D. VÉREL, M.D., M.R.C.P.

(From the Department of Medicine, University of Aberdeen)

In this department 62 patients with thyrotoxicosis have been under treatment with thiouracil or methyl thiouracil for periods between 6 months and 4½ years. The series includes all cases of thyrotoxicosis admitted to the ward except a few so mild that phenobarbitone alone was used in treatment. The general results of treatment are here briefly recorded, and certain aspects of management in relation to auricular fibrillation, pregnancy, and granulopenia are discussed in the light of the experience gained.

Particulars of a Series of Cases

The distribution of cases by age, sex, and the presence or absence of exophthalmos is shown in Table I. Ten of the patients were males and 52 were females; their ages varied from 16 to 66 years. Exophthalmos was more common among the younger patients. No attempt was made to differentiate between primary and secondary thyrotoxicosis, and in only one case was there a definite history of an enlargement of the thyroid preceding the thyrotoxicosis by several years.

TABLE I

Age:	10-19		20-29		30-39		40-49		50-59		60-69	
	Sex:		M		M		M		M		M	
Eyes No.	E	O	E	O	E	O	E	O	E	O	E	O
	1	1	2	1	2	1	2	1	2	1	2	1

E = Exophthalmos present. O = No exophthalmos present.

All cases were admitted to the ward for treatment, and the effect of rest in bed and 1 gr. (65 mg.) of phenobarbitone three times a day was observed for one to three weeks. When the sleeping pulse had settled to a constant level for several nights, and the patient's symptoms showed no tendency to abate further on this treatment, the basal metabolic rate was estimated with the Benedict-Roth apparatus on two successive mornings, and treatment with thiouracil or methyl thiouracil was begun. The dose of thiouracil used at first was 0.6 g. daily, and this proved effective in all cases. Later 0.2 g. was tried, but, while this would control thyrotoxicosis of mild or moderate degree, it failed to do so in two severe cases. It was found, however, that 0.4 g. of thiouracil daily was as effective an initial dose as 0.6 g. Methyl thiouracil proved equally satisfactory in doses of 0.2 g. daily, and is now used for all cases. Each patient's progress was followed clinically and assessed every ten days, when the basal metabolic rate was estimated. After three weeks on thiouracil the patient was usually discharged on a maintenance dose of 0.2 g. of thiouracil or 0.1 g. of methyl thiouracil daily, and was seen thereafter at intervals of six weeks. White cell counts were done twice a week in hospital, and at each out-patient attendance, although it was realized that they were of no value as indicators of impending agranulocytosis. They served to remind the patients of the possible dangers of the treatment, which had been explained to them in the ward, and revealed several cases of granulopenia.

Most cases were adequately controlled by 0.1 g. of methyl thiouracil daily or less; some required 0.15 g. The dose was decided on a clinical estimate of the patients' condition when they reported to the follow-up clinic. No single observation was found to be completely trustworthy, but a reasonably accurate idea of the state of the patients was obtained by asking them how they felt, how much

work they could comfortably do, and whether they got any palpitations, also by noting the weight, resting pulse rate, state of the skin, and presence or absence of tremor. The size of the thyroid gland was also noted.

Thiouracil effectively controlled the thyrotoxicosis in all cases, and the majority were back in full employment within six weeks of starting treatment. All patients were old that they should regard themselves as restored completely to normal as a result of the treatment, and only two of the 59 cases given thiouracil alone have not returned to full activity. One is a woman with advanced spondylitis ankylopoietica who cannot do heavy housework, and the other a country postman who could not continue his bicycle deliveries. He is now working as a taxi driver. Most of the patients are housewives, and all except a few over 60 do their own housework, including scrubbing and polishing floors. Four are crofters' wives and had returned to full activity within six weeks of starting thiouracil, as had two men in very heavy employment—one a cyclist messenger, and one who does a full day's work shovelling granite into a crusher. A railway-track-layer was doing light work in four weeks and full work in eight weeks after starting thiouracil. The two patients still at school also lead normal lives without any restrictions.

TABLE II—*The Position in 1948*

Duration of Treatment (Months)	Group 1	Group 2	Group 3	Group 4	Total
6-12	2	7	0	0	9
13-18	9	3	0	0	12
19-24	5	3	1	0	9
25-30	4	7	0	0	11
31-36	2	1	0	0	3
37-42	2	2	0	0	4
43-48	3	0	0	1	4
49-54	2	0	1	0	3
55-60	2	0	0	0	2
Totals	33	23	2	1	59

Group 1 Off thiouracil for three months or more and satisfactory
 Group 2 On thiouracil and satisfactory
 Group 3 On thiouracil and unsatisfactory
 Group 4 Off thiouracil and unsatisfactory

The position of the cases in the series in June, 1948, is shown in Table II. Of 13 patients who have been under observation for three years or more, five have taken no thiouracil for 33 to 39 months and have not relapsed, three have taken none for 21 to 31 months, three relapsed off thiouracil, two of them again being controlled by thiouracil, and two have been taken off thiouracil within the last six months. Three patients are classified as unsatisfactory. (1) The patient off thiouracil is the only one in the series who developed a granulopenia with infection. She refused operation, and although living a normal life looking after her family, is moderately thyrotoxic. (2) This patient is adequately controlled by thiouracil, but has many symptoms caused by her life being spent in three rooms with her husband, two children, and her mother-in-law. (3) This patient feels well and does all her own housework, but has persistent tachycardia and appears to be slightly toxic. She states that visiting the hospital always makes her nervous.

Three cases are not included in Table II, and are accounted for as follows. One man aged 23 died of suppurative bronchiectasis. His thyrotoxicosis was under control at the time of death. Thyroidectomy has been performed on the other two patients. One of these was a man aged 30 who had previously been treated by deep x-ray therapy for polycythæmia rubra vera and developed persistent granulopenia on thiouracil. Before thyroidectomy, when taking thiouracil, he was fit and doing full outdoor work as a gas-meter inspector. Now, fifteen months after thyroidectomy, he feels fit, but can only do

clerical work indoors, and is easily made breathless by exertion. In addition, the fine tremor of the fingers has returned, the skin is silken and sweaty, and there is a slight increase in the pulse rate, which, however, was never reduced below 90 per minute by thiouracil. The basal metabolic rate is 95% of normal. In the other case thyroidectomy was performed because of the great increase in the size of the thyroid.

Size of Thyroid

The size of the thyroid was estimated at each visit by inspection and palpation. Four categories were made: slight enlargement, when there was no visible goitre; slight to moderate enlargement, when the enlargement was noticeable only when the patient swallowed; moderate enlargement, when an obvious goitre was present; and large. In most cases there was some increase in the size of the thyroid after treatment began, but usually this was only slight and regression occurred after six months to a year.

At present two patients have large goitres which cause no inconvenience. No thyroidectomy has been advised, as in both cases some decrease in size is expected. Two other patients had large goitres, but one of these has been removed surgically and the other has regressed to slight to moderate size, thiouracil administration having ceased. One patient with a moderate enlargement underwent thyroidectomy, and five patients at one time showed moderate enlargement, but in all these cases the thyroid is now small. Four patients have thyroids of slight to moderate size, and in eight the thyroid has shrunk from this size to only slight enlargement. In the remaining 40 cases the enlargement is slight.

Complications due to Thiouracil

In five cases skin rashes have occurred in the early weeks of thiouracil therapy. Unfortunately, as all the patients were at the time taking phenobarbitone it is impossible to be sure whether this drug or the thiouracil was responsible. In all cases the rashes faded in a few days after withdrawing phenobarbitone.

An unexplained fever occurred in four cases, but the temperature settled to normal in a few days without any alteration in treatment.

Granulopenia (less than 1,000 neutrophil polymorphs per cmm of blood) has been noted in eight cases. One patient reported because she had developed a sore throat. She had originally presented with thyrotoxicosis in July, 1944, and had been treated with thiouracil for 16 months, thiouracil then being stopped. She had remained in good health without thiouracil for 18 months when a mild relapse occurred. Thiouracil, 0.2 g daily, was given once more. On the sixth day after beginning thiouracil her granulocyte count was 2,100 per cmm. Three days later a sore throat developed, and the next day she was found to have 185 granulocytes per cmm of blood. Thiouracil therapy was stopped and penicillin was given. The cell count rose rapidly and on the third day after stopping thiouracil showed 2,600 granulocytes.

In the remaining seven cases of granulopenia there were no symptoms or signs of any infective process, the granulopenia being revealed by routine blood examination. The duration of treatment before the onset of granulopenia in these cases varied from four weeks to 16 months. In three cases the polymorph count was 384, 400, and 440 cells per cmm, but the patients felt in their usual state of health. In all seven cases the cell count rose rapidly when thiouracil was stopped, and none developed an infection or was given any antibiotic treatment.

The further management of patients who have had granulopenia has varied. As already mentioned, the one who developed an infection refused operation and is moderately toxic, and one with granulopenia and no infection has had a thyroidectomy. Four patients have resumed treatment with thiouracil or methyl thiouracil, and over periods varying from six to 18 months have shown no further granulopenia. One patient proved sensitive to both thiouracil and methyl thiouracil, but after a slight relapse off thiouracil his condition is satisfactory. In the last case the granulopenia occurred on the day that thiouracil was stopped for a period of observation, and so far no thyrotoxic symptoms have recurred. In cases given thiouracil after having had a granulopenia the white cell count has been observed three times weekly for the first month and thereafter every six weeks.

Other Complications

Myxoedema occurred in a woman aged 66 who was admitted with severe thyrotoxicosis complicated by an acute mania. She responded rapidly to thiouracil, and medication was stopped after seven months. Nineteen months after cessation of the thiouracil she was found to be severely myxoedematous, with a basal metabolic rate 71% of normal. The myxoedema in this case is not likely to be the result of thiouracil administration.

Diplopia occurred in two cases. In one it lasted for only a few weeks during the early months of treatment. In the other it was a troublesome symptom that persisted for about six months. The cause was probably exophthalmic ophthalmoplegia.

Pregnancy

There have been three pregnancies in women taking thiouracil. In the first case the mother was kept on thiouracil throughout pregnancy. The infant was born alive with an easily palpable, rather hard thyroid. This became impalpable after feeding for one month on pooled human milk, and the infant is now a normal child of 2½ years. In the second pregnancy thiouracil was not given for two months before delivery; Lugol's iodine, 10 minims (0.6 ml.) daily, was given instead. A normal infant was born. In the third pregnancy thiouracil was stopped four months before delivery and iodine was not given. A normal infant was born in this case also. Both pregnancies in which the thiouracil was stopped before delivery were followed by relapse of the thyrotoxicosis within three months of delivery.

Auricular Fibrillation

Ten cases of thyrotoxicosis complicated by auricular fibrillation have been treated. In four the fibrillation was continuous and was associated with congestive heart failure, but in all cases the history suggested that failure had been present for only a few weeks. In the first case regular rhythm was established after 15 days' treatment with thiouracil alone. In the second, auricular fibrillation persisted after nine weeks' treatment with thiouracil alone, although the thyrotoxicosis appeared to have been controlled. When regular rhythm was restored by quinidine after digitalization a transient motor aphasia occurred, presumably the result of a cerebral embolism. The third and fourth cases were treated successfully by quinidine on admission to restore regular rhythm, and then by thiouracil to control the thyrotoxicosis. In five patients paroxysmal fibrillation was shown by electrocardiography to be present. In four of these the fibrillation was controlled by thiouracil alone, but in the fifth the paroxysms of fibrillation were so frequent and the patient's condition so distressed by cardiac failure that digitalis was given, and regular rhythm

was restored by quinidine before thiouracil was used. In the tenth case fibrillation was known to have been present for three years and heart failure for two months. The patient had been receiving digitalis since the onset of the fibrillation. She was treated by complete rest in bed and injections of mersalyl, and methyl thiouracil, 0.2 g. daily, with steady improvement. After three weeks the digitalis was stopped and the improvement continued. The oedema had gone after six weeks.

In all ten cases, once the thyrotoxicosis was adequately controlled, the administration of digitalis and quinidine, if they had been given, was stopped, and treatment was continued with thiouracil alone. In the last case slow fibrillation continues without evidence of heart failure, but in the others no recurrence of fibrillation has been observed while on thiouracil. The periods of observation since restoration of regular rhythm vary from seven to 27 months.

Koilonychia

Koilonychia has been noted in seven of the 51 cases seen between October, 1945, and January, 1948 (Table III). All

TABLE III.—Showing the Haemoglobin Level in the Patients having Koilonychia

Case	Haemoglobin on Admission	Haemoglobin After 1 Year
1	86%	86%
2	85%	86%
3	68%	68%
4	78%	94%
5	94%	—
6	45%	—
7	86%	—

were in women, and a history of thyrotoxicosis lasting a year or more before reporting for treatment was usual. Only Case 6 was given iron. The haemoglobin level (Haldane) on admission is shown in the table. In four of the cases in which one year's follow-up has been possible the koilonychia has entirely disappeared and a normal strong nail has grown. None of these cases was given iron, and in three there was no rise in the haemoglobin level.

Discussion

In this series of cases thiouracil has proved satisfactory in the treatment of thyrotoxicosis, and only one patient of those given thiouracil alone has had to obtain lighter employment because of the disease. The disability in this case was probably less than that of the first patient who had a thyroidectomy and in whom symptoms returned after the operation despite a basal metabolic rate 95% of normal. The symptoms in this latter case are similar to those described by Martin (1948), and it is curious that they were not present when the basal metabolic rate was reduced to 100% by thiouracil.

The one serious complication encountered has been granulopenia, and only a high degree of co-operation on the part of the patients has avoided a catastrophe. Several have reported to the hospital or to their own doctors with sore throats, but only one was found to have a granulopenia. The position of those in whom a granulopenia was discovered by routine blood examination is not certain. Agranulocytosis usually occurs with great rapidity, as in the case in the present series, and in the only patient with granulopenia whom it was possible to keep in hospital for observation the neutrophil polymorph count remained low for 18 days while thiouracil was given, rose when thiouracil was withheld, and remained normal when methyl thiouracil was used. This suggests that granulopenia is not necessarily a prelude to agranulocytosis. Five patients who developed granulopenia were again given thiouracil or methyl thiouracil after an interval off the drug had allowed

recovery. Only one of these developed a further granulopenia, which appeared in the first few days after starting the drug.

The management in pregnancy is a matter requiring further observation. The enlargement of the infant thyroid that was found when thiouracil was given throughout pregnancy has been previously reported by Eaton (1945). It is probably best to stop thiouracil administration some months before delivery. As thiouracil is excreted in maternal milk no mother taking thiouracil should suckle her child (Williams *et al.*, 1944; Chesley, 1944).

Although thiouracil alone may restore regular rhythm in thyrotoxic auricular fibrillation it does not always do so, and sometimes, when the thyrotoxicosis is slow in responding, may take a long time, during which there is some danger of embolism. After the episode of embolism which occurred in the second case with auricular fibrillation it was thought safest to establish regular rhythm with quinidine at the earliest possible moment in all cases where the fibrillation was not of long duration. Accordingly such cases were admitted as emergencies to the ward, digitalized on admission, and then given quinidine. In many cases, however, like the one here reported, the fibrillation may be allowed to continue and the heart failure will respond to thiouracil alone (Cookson and Staines, 1947).

Koilonychia has been noted previously in thyrotoxicosis and its disappearance after treatment with thiouracil reported by Cooke and Luty (1944). It is evident from their records, and from the observations on the first three cases shown in Table III, that the koilonychia in thyrotoxicosis is unrelated to the haemoglobin level.

Summary

A series of 62 consecutive cases of thyrotoxicosis were treated with thiouracil or methyl thiouracil. All cases responded to the drug, and only one man treated with thiouracil alone had to obtain lighter employment. The time spent off work was usually less than six weeks from starting thiouracil therapy. In three cases the results were regarded as unsatisfactory.

Thyroidectomy was performed in two cases, the indications being persistent granulopenia and excessive thyroid enlargement respectively. One patient died from suppurative bronchiectasis.

Granulopenia occurred in eight cases. In one there was infection, which was controlled by penicillin; the others were found on routine blood examination. Four of these cases have resumed thiouracil therapy without further granulopenia.

One patient developed myxoedema after being off thiouracil for 19 months.

Two patients developed transient diplopia, probably due to exophthalmic ophthalmoplegia.

Three pregnancies occurred. Thyroid enlargement was noted in the child in the only case in which thiouracil was given throughout pregnancy.

The treatment adopted for continuous auricular fibrillation of short duration was to restore regular rhythm with quinidine as soon as possible, and to stop quinidine administration when the thyrotoxicosis was controlled. Paroxysmal fibrillation responded to thiouracil alone.

Koilonychia was noted in seven of 51 cases. In three of these normal nails were formed in about one year without any rise in haemoglobin.

I wish to thank Professor R. S. Aitken for giving me charge of these patients during my term as his assistant.

REFERENCES

- Chesley, L. C. (1944). *J. clin. Invest.*, **23**, 856.
Cooke, L., and Luty, S. M. (1944). *British Medical Journal*, **2**, 207.
Cookson, H., and Staines, F. H. (1947). *Ibid.*, **2**, 759.
Eaton, J. C. (1945). *Lancet*, **i**, 171.
Martin, L. (1948). *Ibid.*, **1**, 858.
Williams, R. H., Kay, G. A., and Jandorff, B. J. (1944). *J. clin. Invest.*, **23**, 613.

THYROTOXIC AURICULAR FIBRILLATION TREATED WITH THIOURACIL

BY

J. F. GOODWIN, M.D., M.R.C.P.

(Research Fellow and Tutor in Therapeutics, University of Sheffield; First Assistant, Royal Infirmary, Sheffield)

Thiouracil compounds have been shown to be effective in causing reversion to sinus rhythm in cases of thyrotoxic auricular fibrillation. Cookson (1945) secured reversion in three out of 10 cases treated with thiouracil alone, but noted that one of his failures had mitral stenosis. Out of Nussey's (1944) three patients sinus rhythm was restored by thiouracil in one. In a later paper Cookson and Staines (1947) claimed reversion to sinus rhythm with thiouracil alone in eight out of 16 patients after an average of 35 days' treatment, the longest period being 15 weeks and the shortest four days. Associated cardiac disabilities (mitral stenosis) are reported in only one of the patients with persistent fibrillation, McGavack and others (1945) reported reversion to sinus rhythm with thiouracil alone in 12 out of 18 patients, one of the 12 having bundle-branch block. Grainger's (1945) two patients with fibrillation both reverted spontaneously to sinus rhythm. Clarke (1948) achieved reversion to sinus rhythm in three out of six patients with thiouracil alone, while Wilson (1946) reported reversion to sinus rhythm in five out of six cases included in the present series.

The object of this communication is to present briefly the effect of treatment with thiouracil drugs on cases of auricular fibrillation due to thyrotoxicosis, and to determine the value of certain associated factors in assessing the likelihood of reversion to sinus rhythm without additional therapy. Out of 144 thyrotoxic patients attending the endocrine clinic 28 (19%) had auricular fibrillation. All had been treated with thiouracil compounds (thiouracil, methyl thiouracil, or propyl thiouracil) for not longer than two years, and were cases of secondary thyrotoxicosis. Their ages ranged from 32 to 68 years (average, 50). Thirteen patients reverted to sinus rhythm with thiouracil treatment; quinidine was deliberately omitted in order to investigate the long-term effects of thiouracil on auricular fibrillation. The average amount of thiouracil compound given was 50 mg. daily. Six of the patients received digitalis to control ventricular rate and congestive failure.

Apart from 11 patients who had a systolic blood pressure of 160 mm. Hg or greater, there was no clinical evidence of cardiovascular disease. Cardiomegaly was present in 18 cases. In no case was the systolic blood pressure greater than 190 mm. Hg. Two patients with persistent auricular fibrillation have been excluded from the analysis, as the thyrotoxicosis is not yet under control.

Group I: Patients in whom Auricular Fibrillation Persisted

In each of the 13 patients in this group the thyrotoxicosis was well controlled but the fibrillation persisted. The average age was 52 years, and the duration of symptoms before treatment varied from three months to 12 years, the average being 77 months. The duration of treatment up to the present has varied from one month to two years, the average being 11 months. Before treatment was started five patients had a systolic blood pressure of 160 mm. Hg or greater, while slight to moderate cardiomegaly was present in nine patients. The cases are summarized in Table I.

TABLE I.—Group I Cases

Case No.	Age	Duration of Disease Before Treatment	Duration of Treatment	B.P. Before Treatment	Heart Enlarged Before Treatment	Digitalis Given	E.C.G. Before Treatment
1	55	9 years	8 months	170/75	+	—	AF only
2	57	4 "	2 years	120/60	+	—	RBBB
3	68	3 "	6 months	170/?	+	D	AF only
4	52	3 months	8 "	140/70	+	—	CCI
5	60	Not known exactly	1 month	170/110	+	D	—
6	52	18 months	—	—	+	D	—
7	61	12 years	6 "	130/100	+	D	—
8	49	12 "	9 "	140/75	+	—	—
9	35	12 "	1 year	150/85	+	—	AF only
10	45	Not known exactly	18 months	130/70	+	D	CCI
11	53	3 months	8 "	170/110	—	—	AF only
12	57	9 years	9 "	170/70	+	—	CCI
13	38	3 "	1 year	150/85	+	—	AF only

D = Digitalis. CCI = Chronic coronary insufficiency. RBBB = Right bundle-branch block. AF = Auricular fibrillation.

Electrocardiographic Changes.—Electrocardiograms were recorded from nine patients before treatment. Apart from auricular fibrillation, four were abnormal: right bundle-branch block was found in one subject, while three others showed chronic coronary insufficiency. Of the four patients showing abnormal curves, only one had hypertension, and of the five patients with hypertension only one had electrocardiographic abnormalities other than auricular fibrillation.

Fig. 1 is an electrocardiogram of Case 12, representative of the more severe type of changes seen; Fig. 2 (Case 4) is representative of minor changes; and Fig. 3 is an electrocardiogram of Case 2, showing right bundle-branch block.

Group II: Patients in whom Auricular Fibrillation Reverted to Sinus Rhythm

The average age of the 13 patients in this group was 49 years. The duration of the disease (but not necessarily of the fibrillation) before treatment varied from four months to 10 years, the average being 50 months, while the duration of treatment before sinus rhythm was restored varied from one week to four months, the average being six weeks. Only one patient received digitalis. Six patients had a systolic blood pressure of 160 mm. Hg or greater before treatment. Case records are summarized in Table II.

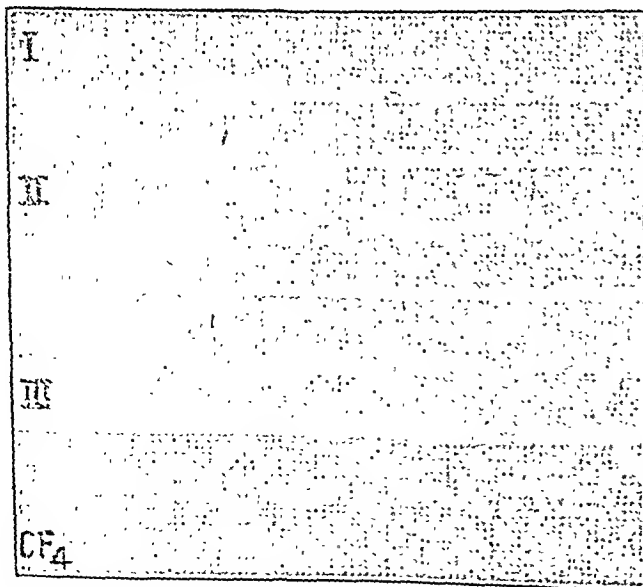


FIG. 1.—Case 12.—There is right axis deviation. Auricular fibrillation. The Q wave is present in Lead III (amplitude 2–2.5 mm.; duration less than 0.04 sec.). The S wave in Lead III is only slightly greater in amplitude than the Q wave (3–4 mm.). There is sharp inversion of the T waves in Leads II, III, and CF₄. (1 cm. = 1 mv.) The ST segment is depressed by 0.25 mm. in Lead I, 0.5–1 mm. in Lead II, and 1.5 mm. in Lead CF₄. (No digitalis.)

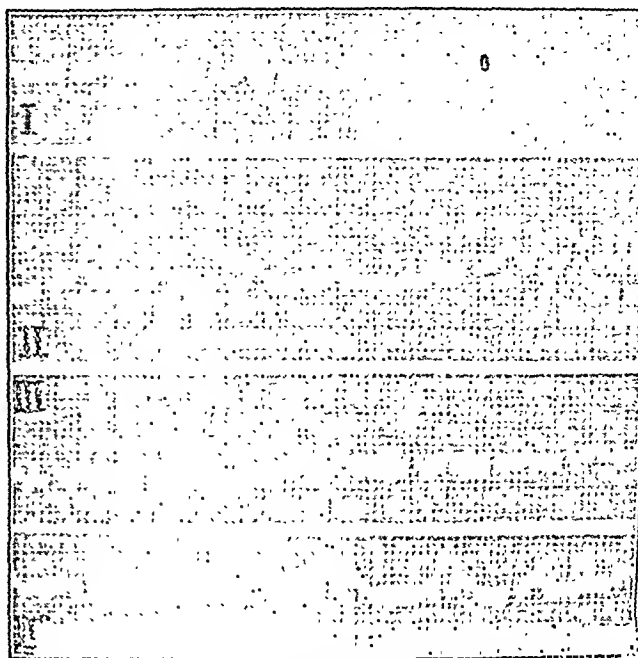


FIG. 2.—Case 4.—Auricular fibrillation. There is a small Q wave (1 mm. amplitude) in Lead II. There is 0.5 mm. elevation of the ST segment in Leads II and III and 1 mm. elevation in Lead CF₄. (1 cm. = 1 mv.) The I wave is inverted in Lead CF₄. One premature ventricular contraction in Lead II. (No digitalis.)

TABLE II.—Group II Cases

Case No.	Age	Duration of Disease Before Treatment	Duration of Treatment Before Reversion	B.P. Before Treatment	Heart Enlarged Before Treatment	Digitalis Given	E.C.G. Before Treatment
14	48	6 years	1 week	135/65	+	—	AF only
15	56	4 months	2 months	166/88	+	—	—
16	45	4 years	2 "	180/70	+	—	CCI
17	50	10 "	2 "	165/80	+	—	AF only
18	54	4 "	2 weeks	126/80	+	—	"
19	41	2 "	1 month	155/95	+	—	"
20	—	The only information available regarding this patient indicates that reversion occurred after thiouracil treatment					
21	32	3½ years	4 months	145/95	—	—	AF only
22	56	Not known exactly	2 "	156/100	+	—	"
23	60	6 months	6 weeks	160/110	+	D	"
24	59	9 years	1 month	140/80	—	—	"
25	39	5 "	1 week	150/95	—	—	"
26	45	6 months	3 weeks	190/90	+	—	AF only. (After reversion to SR 1st degree A-V block seen.)

D = Digitalis. SR = Sinus rhythm. CCI = Chronic coronary insufficiency. AF = Auricular fibrillation.

Electrocardiographic Changes.—Electrocardiograms were obtained in 11 patients before treatment. In two subjects (both with slight hypertension) changes indicating chronic coronary insufficiency in addition to auricular fibrillation were present, while in a third patient first-degree A-V block was seen after sinus rhythm had been restored.

It may be said, therefore, that six patients showed some evidence suggesting cardiovascular disease associated with but not due to thyrotoxicosis.

Discussion

These results indicate that reversion to sinus rhythm may be expected from thiouracil treatment alone in approximately 50% of cases, and show that thiouracil compound are at least as effective as surgery in this respect (Hurxthal 1930; Anderson, 1932). Reversion is not, as Cookso (1945) suggests, a satisfactory measure of the control of the disease, although no patient has been shown to revert to sinus rhythm unless the disease is fully controlled. Of the 28 cases, 26 were rendered clinically non-toxic by

thiouracil drugs, so that persistence of auricular fibrillation suggests that some other cardiac abnormality might be an important factor in the cases in the second group. Six patients in this group showed clinical or electrocardiographic stigmata suggesting associated cardiovascular disease, compared with seven patients in the first group. Systolic blood pressures of 160 mm. Hg or over occurred in five patients in Group I and six patients in Group II; but electrocardiographic abnormalities were present in four out of nine patients in Group I and two out of 11 patients in Group II.

The average period of treatment to obtain reversion in this series was six weeks, while the average duration of symptoms before treatment was greater in Group I than in Group II. It is unfortunate that the duration of fibrillation before treatment could not be ascertained. Digitalis was given to a larger number of patients in Group I than in Group II. No difference in the ability to abolish fibrillation was detected in any one of the three thiouracil compounds used. Finally, there was a higher incidence of electrocardiographic abnormalities in the patients with persistent fibrillation.

Conclusion

In view of these findings it seems reasonable to conclude that if sinus rhythm is not restored by thiouracil alone after a maximum period of four months auricular fibrillation may become permanent unless other measures are taken. In these circumstances it is suggested that quinidine should be given to restore sinus rhythm if the thyrotoxicosis is under control. If thyrotoxicosis has not been effectively controlled by thiouracil, alternative treatment should be considered. There appears to be no reliable method of gauging the prospect of stopping fibrillation with thiouracil alone in any given patient, but the presence of electrocardiographic abnormalities indicating associated cardiovascular disease lessens the chance of reversion. Sinus

rhythm is also less likely to return if the patient has a history of symptoms for more than 4½ years before treatment. It is possible that digitalis tends to establish the arrhythmia, and its use should be avoided except where there is associated congestive heart failure.

I wish to thank Professor E. J. Wayne for helpful criticism, and Dr. Andrew Wilson for his notes on the earlier cases in the series.

REFERENCES

- Anderson, J. P. (1932). *Amer. Heart J.*, 8, 128.
Clarke, W. E. (1948). *British Medical Journal*, 1, 597.
Cookson, H. (1945). *Lancet*, 2, 485.
— and Staines, F. H. (1947). *British Medical Journal*, 2, 729.
Grainger, A., Grogson, D. A., and Pemberton, H. S. (1945). *Br. Medical Journal*, 2, 345.
Hurst, L. M. (1930). *Amer. J. med. Sci.*, 179, 507.
McGavack, T. H., Gerl, A. J., Morton, J. H., Vogel, M., and Schwimmer, D. (1945). *J. clin. Endocrinol.*, 5, 259.
Nussey, A. M. (1944). *British Medical Journal*, 2, 745.
Wilson, A. (1946). *Lancet*, 1, 640.

PHENOLOGY OF BRITISH HAY-FEVER PLANTS AND ITS SIGNIFICANCE TO ALLERGISTS

BY

H. A. HYDE, M.A., F.L.S.

(From the National Museum of Wales Cardiff)

It is generally accepted that pollen can cause hay-fever only if it is actually present in the air and in significant quantity: in other words, that hay-fever is exclusively an inhalant allergy. Skin tests, it seems to be agreed, are very helpful in diagnosis but are by no means infallible. Even if a patient gives a positive reaction to a reliable pollen extract it is necessary before making the diagnosis to show that his symptoms coincide in time with the incidence of pollen of the type concerned; if they do not he should be presumed non-allergic to that type of pollen. It is therefore important that those interested in hay-fever and pollen asthma should know what pollens are likely to be present in the air at various times and in what relative quantities.

The study and recording of periodical phenomena of this kind is known as phenology.¹ During the past seven years the phenology of British hay-fever plants, and in particular of atmospheric pollen, has been studied closely by the method of pollen-trapping. The pollen caught on glass microslides, exposed day by day for a year or more at some fourteen stations in Great Britain—from South Wales and London to as far north as Aberdeen—has been analysed at Cardiff. Some of the results so far obtained² are summarized in the accompanying diagram.

The principal pollen types can be grouped under three headings—trees and shrubs, grasses, and other herbs. All the most important tree pollens are liberated in the spring. Grass pollens dominate in the months of June and July. Thereafter relatively little pollen is present in the air except locally.

The thick lines in the diagram indicate the periods during which the respective pollens are likely to be present in the air in lowland localities in the south of Great Britain. The thinner extensions of the thick lines indicate that the pollens are usually present in smaller quantities both before

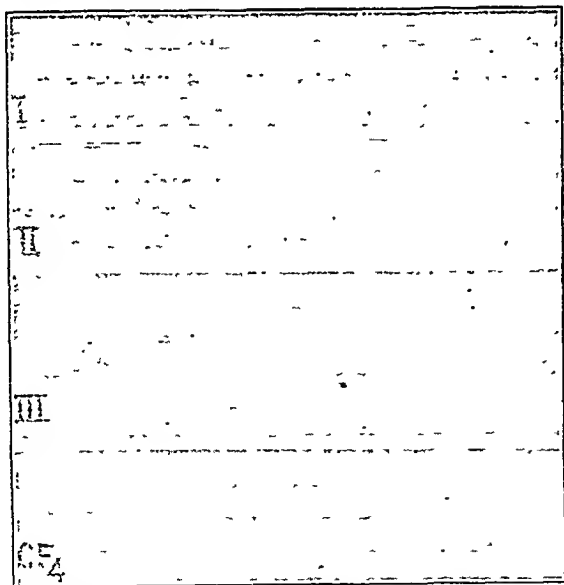


FIG. 3.—Case 2.—There is right axis deviation. Auricular fibrillation. The QRS duration is 0.12 sec. in Leads III and CF, and 0.1 sec. in Leads I and II. The T wave is biphasic in Lead III and is sharply inverted in Lead CF. There is a secondary R wave in Leads II, III, and CF. One premature ventricular contraction can be seen in Lead III. These changes are indicative of intraventricular block, probably right bundle-branch block. (No digitalis) (1 cm. = 1 mv.) It is of interest that further studies two years later, using augmented unipolar leads, showed complete right bundle-branch block.)

¹ Or phenomenology. Greek *phænomēnon*, an appearance; *logos*, a discourse.

² Hyde, H. A., and Williams, D. A. "Studies in Atmospheric Pollen," I-III. *New Phytologist*, 43-5, 1944-6. Hyde, H. A. "Studies in Atmospheric Pollen," IV-V. Unpublished.

filter through good-quality filter paper. The filtrate should be clear. Add 0.5 ml. of the filtrate to 5 ml. of Benedict's qualitative reagent and treat as before.

With a Duboscq colorimeter set the unknown at 10 and read the standard. Let the reading be R.

$$\frac{(40 - R) \times 5 \text{ (dilution)}}{2 \text{ (for using 0.5 instead of 0.25)}} = \frac{(40 - R) \times 5}{2} \text{ grammes per litre}$$

That is, we can read the amount direct as if we are using 0.1 ml. of urine (from the table and Fig. 1).

With the Lumetron 2 ml. of the supernatant fluid is mixed with 8 ml. of water (as usual). The transmission is read on the line of 0.1 ml. of urine. For the amount of sugar in milk divide by 10 to get grammes %. The result is multiplied finally by 67/50, the reduction factor for lactose.

REFERENCES

- Fine, J. (1934). *British Medical Journal*, 2, 167.
 — (1935). *Ibid.*, 1, 1169.
 Harrison, G. A. (1947). *Chemical Methods in Clinical Medicine*, 3rd ed., p. 128. Churchill, London.

Medical Memoranda

Surgical Treatment of Rabies

Cauterization of bites by rabid animals, as recommended by the Pasteur Institutes, might advantageously be combined with the modern surgical technique of excision of contaminated wounds. Complete destruction of the virus by cauterization alone is at best fortuitous, and unlikely in extensive, deep, and punctured wounds.

I have recently seen three fatal cases of rabies following dog-bites. One patient received no prophylactic treatment, but the other two (Anglo-Indian children aged 2 years 3 months and 2 years 5 months) had their wounds thoroughly cauterized shortly after infliction. They were also given a full course of anti-rabic vaccine (5 ml. subcutaneously every day for 14 days), although there was an unavoidable delay of two days in instituting vaccine treatment in one case, and of nine days in the other. The risk of rabies in these two patients was admittedly serious, as the bites were facial and of considerable severity.

I suggest the following procedure in the treatment of wounds inflicted by rabid or presumably rabid animals:

- (1) Thorough cauterization of the wound with concentrated nitric or pure carbolic acid. This is done immediately, and on no account delayed until preparations for operation have been completed.
- (2) The skin is carefully sterilized over a wide area with pure rectified spirit, and then with tincture of iodine.
- (3) The aim of surgical treatment is complete excision *en bloc* of all lacerated and potentially infected tissue. All dissection takes place in uncontaminated tissue-planes, with an ample margin of clean tissue to act as a barrier, a fresh knife being used for each wound. Scrupulous care is required to keep contaminated instruments separate (e.g., those used to put tension on the edges of the original wound), and at the earliest moment all contaminated instruments are treated with pure lysol, washed, and re-sterilized.
- (4) The surgical wound resulting from excision is then cauterized with the same agent that was used originally. After haemostasis has been secured the wound is left unsutured and dressed.

This technique is open to certain objections. Dr. N. Veeraraghavan, director of the Pasteur Institute, Coonoor (personal communication), observes in experimental animals that rabies is produced as quickly by inoculation of the sciatic nerve as of the subdural space. He raises the question of similar inoculation of nerve trunks during surgical excision of the wound, although it seems likely that this danger could be avoided by immediate cauterization of the surgical wound and careful technique to avoid contamination in the operative field by the surgeon and his instruments.

There seems ground for experimental work to establish the value or otherwise of the above procedure. If proved to be effective, the method would be indicated in cases with strong

presumptive evidence of infection with rabies; in cases where the wounds were amenable to radical excision; and in centres possessing adequate surgical facilities. In more remote areas the present method of treating wounds by cauterization alone would continue to be employed. In either case, a full course of anti-rabic vaccine would be necessary.

Kolar Gold Field, India. W. B. ROANTREE, M.D., F.R.C.S. Ed.

Hypnosis and Suggestion in Obstetrics

Below are given the histories of three cases in which use was made of the power of suggestion to the subconscious mind so that the activity of the normal conscious levels and the concomitant highly developed critical faculties were temporarily suspended.

CASE REPORTS

Case 1.—The patient, a primigravida aged 21, was admitted to hospital as an emergency with a diagnosis of obstructed labour, having been in the second stage of labour for six hours after a first stage of about twenty-four hours. On examination rather painful uterine contractions were still present, although they were much less severe than they had been, the vertex was engaged but a large caput had formed, and there was excessive moulding of the foetal head. The cause of the delay appeared to be a relative disproportion between the presenting part and the outlet, together with incomplete anterior rotation of the occiput. The head was fitting extremely tightly in the birth canal and seemed completely "stuck." A condition of light hypnosis was induced and the patient was instructed to relax, which she did sufficiently well to enable the occiput to be rotated more to the front and the forceps to be applied correctly. During delivery of the baby the mother was able to co-operate and use her own expulsive muscles while traction was being made. She later stated that she had had no actual pain but that she felt "like another person." Although the tissues of the perineum were very thick, only a very small episiotomy was required. The placenta was expelled naturally after 20 minutes, and the baby, which cried lustily, weighed just over 10 lb. (4.5 kg.).

Case 2.—A primigravida aged 32 with a twin pregnancy was admitted to hospital as a booked case, having regularly attended the antenatal clinic. Her membranes ruptured two hours after labour pains had started, and progress was very slow, as is often the case with multiple pregnancies, so that towards the end of the third day of labour she was much distressed and exhausted in spite of the administration at intervals of pethidine hydrochloride in doses of 100 mg. each and other sedatives such as chloral hydrate and potassium bromide. The cervix was then a little more than two-thirds dilated but was very oedematous, and the patient constantly reiterated her strong desire to bear down with each contraction. Doubtless this inability to relax properly during the first stage was partly responsible for the oedema and slow dilatation of the cervix. In spite of the presence of painful uterine contractions therapeutic suggestion was attempted, and after about fifteen minutes the patient began to respond and became much quieter and more relaxed. A few minutes later she was sleeping, although strong contractions were still occurring. The suggestion of "No pain" was continued at intervals for another ten minutes or so, and she remained asleep for some hours. When re-examined later, on awakening, her condition was much improved, the cervix being nearly fully dilated and the oedema having disappeared. She then stated that she felt much refreshed and that all she could remember was a feeling of drowsiness associated with a sensation of being "far away—as if I were floating in space." The rest of the labour progressed normally and satisfactorily and both babies were born in good condition.

Case 3.—A primigravida aged 24 was admitted to hospital owing to a prolonged first stage and an impending uterine inertia. She had been in labour for between two and three days and was becoming exhausted and depressed. On examination the cervix was nearly three-quarters dilated and the membranes were still intact. A light hypnotic sleep was then induced and the suggestion made that she would sleep until it was time to "push the baby out." She slept, although slightly restless now and then, for some hours, and soon after waking second-stage contractions began and labour then continued normally and uneventfully.

These three cases illustrate to some extent what can be achieved if the so-called "subconscious mind" can be utilized in aiding the removal of fear and tension and the promotion of relaxation both of mind and of body.

GEORGE NEWBOLD, M.R.C.S., D.R.C.O.G., M.M.S.A.

Reviews

CLINICAL ENDOCRINOLOGY

Clinical Endocrinology. By Laurence M.D. (Car), and Martin Hynes, M.C.P., and Sir Lionel Whitby, C.V.O., M.C., M.D., F.R.C.P., D.P.H. (Pp. 222; 8 plates and 22 text-figures. 15s.) London: J. and A. Churchill. 1948.

There have been many books on endocrinology in recent years, and a fresh one therefore needs to be considered critically. But this work fully justifies itself, and will be of great value to those who need an unbiased survey of the subject in compact form and at a very reasonable price.

This book is a model of conciseness without irrelevance. Within its 220 pages will be found a clear presentation of the present state of orthodox clinical experience in endocrinology. The authors rightly confine themselves to recognized sound knowledge, and speculation and hypothesis are reduced to a minimum. The book is divided into the traditional sections, and at the end of each is a well-chosen list of modern references, the value of which is increased by the inclusion of the full titles of all papers quoted. Perhaps the severest test of a work of this type lies in its handling of the complex disturbances referable to dysfunction of the sex glands. Nearly half the book is devoted directly or indirectly to such disturbances, and a clear account is given of this difficult subject. The uses, and equally the shortcomings, of the sex hormones in therapy are critically presented, and undue enthusiasms are avoided. The relations between Cushing's syndrome and the adrenogenital syndrome are well described. Pseudohermaphroditism is included in the latter section, and the relationship of this to adrenal hyperfunction is lucidly explained. In discussing the relative places of surgery and of thiouracil in the treatment of thyrotoxicosis, the author rightly stresses the importance of considering the social and domestic circumstances and the quality of available surgery.

There are few omissions of importance. The value of urinary calcium excretion in the diagnosis of hyperparathyroidism is not adequately stressed, and references to the recent work of Albright on this disease are not given. But elsewhere the treatment is up to date and well balanced. There is an excellent index, which adds to the value of a book which can be thoroughly recommended to all who need a straightforward guide to modern clinical endocrinology.

CUTHBERT COPE.

PRACTICE OF ENDOCRINOLOGY

The Practice of Endocrinology. Edited by Raymond Greene, M.A., D.M., M.R.C.P. The Practitioner Textbooks. (Pp. 366; 52 illustrations. £2 12s. 6d.) London: Eyre and Spottiswoode (Publishers), Ltd. 1948.

This is one of the *Practitioner* series. It is edited by Raymond Greene, with the collaboration of A. C. Crooke, Donald Hunter, R. D. Lawrence, J. M. Robson, F. F. Rundle, and P. H. Sandifer. As often the case in a work written by several people, authors of the different sections vary greatly in the way they handle their subjects.

Raymond Greene's contributions are scholarly and practical, and pleasantly seasoned with wit. His chapters on the thyroid gland and on adiposity are outstandingly good. The description of thyrotoxicosis is full, and enlivened by short but vivid descriptions of cases; and his account of treatment not only gives a very fair assessment of the relative merits of thiouracil and thyroidectomy but also affords due attention to preventive and psychological factors, including the patient's private worries and the dangers of disciplinary ward sisters. Little is said about the management of the ophthalmic form of Graves's disease (which can be a major clinical problem), and Ida Mann's views on treatment with thyroid or testosterone are not discussed.

The sections on the pituitary and the adrenal by A. C. Crooke are in an entirely different style. For one thing, they contain more references than are provided by all the other chapters put together. As the book is for general practitioners, to provide them with so much detail and so many references seems

rather like giving the complete sixteen-volume *Oxford Dictionary* to a foreign tourist. For example (radiological changes in the chiasmal syndrome, p. 31): "Kornblum and Osmond said that the anterior clinoid processes were elongated and eroded in 37.9% of their cases, and in 23% they were elongated, but otherwise normal. In 18.9% they were affected differently on the two sides. . . . [They] found erosion of the tuberculum in 58.2% of their cases." This standard of detail is kept up for pages on end, smothering the essentials in minutiae.

Among the other contributors, Lawrence writes on diabetes with his usual simplicity and brevity, and in one of the shortest articles of the book manages to include all the major facts and practical points the practitioner could wish for. Donald Hunter and P. H. Sandifer give equally succinct accounts of the parathyroids and the thymus respectively. There are more than fifty excellent plates in the book, and the coloured printing is beautifully done. The book sets a high standard and is a welcome addition to the literature of endocrinology.

RICHARD ASHER.

INTRODUCTION TO ENDOCRINOLOGY

General Endocrinology. By C. Donnell Turner, Ph.D. (Pp. 604; illustrated. £1 15s.) Philadelphia and London: W. B. Saunders Company. 1948.

The author is Associate Professor of Zoology at North Western University, and this determines the keynote of a biological approach. The book "is intended primarily for advanced investigators and practising physicians." The introduction contains a historical review, and the second chapter, on biology, ranges over many zoological species. The chapter on the thyroid is sound and comprehensive, though brief, and includes a consideration of the mechanism of thyrotropic hormone, radioactive iodine, and thiouracil. The renal theory of action of parathormone is well presented. The account of the physiology and biochemistry of the adrenal medulla is particularly good. The adrenocorticotrophic factor of the pituitary is not adequately dealt with, when account is taken of the experimental and clinical work of the past two years; the "alarm reaction" is given but a small paragraph. The section on the physiology of the ovary is one of the best contributions to this subject.

On the whole the book is an excellent and sound introduction to endocrinology, providing as it does all the advantages of a comparative morphological approach. Some 160 illustrations and diagrams augment its value and clarity.

S. LEONARD SIMPSON.

PSYCHOBIOLOGY

The Psychology of Behaviour Disorders. A Biosocial Interpretation. By Norman Cameron, M.D., Ph.D. (Pp. 622, 25s.) New York: Houghton Mifflin Company. London: H. K. Lewis and Co.

The psychobiological school of psychiatry, initiated by Adolf Meyer, attempted to interpret the behaviour of psychiatric patients as that of unitary individuals. No symptom could be referred to as solely the effect of, say, a lesion in the brain or the manifestation of an abnormal hereditary tendency; every phenomenon was the product of an interaction between an individual, a psychobiological unity, and the total environment. This teaching provided a valuable corrective tendency, but it has not proved very productive in research. Dr. Cameron's work stems from this school, but takes a more extreme position. Every phenomenon in human behaviour is related to the psychological aspects of social relations. This means a complete break with psycho-analysis, no less than with neurological psychiatry, genetics, constitutional medicine, and physiological pathology. There are no instincts, no conditioned reflexes. In an infant the act of sucking has no reflex basis, it is a manifestation of his attitude to his mother. The special abilities of the surgeon are solely the result of learning and have no basis in innate dexterity. There is no brain pathology for schizophrenia; it can be derived from normal behaviour on the basis of adaptive insufficiency and habit deterioration. Personality is the organization of interlocking behaviour systems that each of us develops through learning processes.

The author sees the world in shades of light and dark and without colour, though his analysis of the factors of strain, the processes of habituation, which arise from human relations

and play their part in psychiatric illness, is often acute and instructive. It is not in fact germane to his case to pretend that this is the whole of the picture, and his thesis would have been much stronger if he had left room for specific effects from specific agents. As it is, he is unable to explain how in indistinguishably different environments one patient becomes an obsessional, another schizophrenic.

ELIOT SLATER.

GYNAECOLOGICAL HISTOLOGY

Gynaecological Histology. By Josephine Barnes, M.A., D.M., M.R.C.P., F.R.C.S., F.R.C.O.G. (Pp. 242; 162 illustrations. £1 10s.) London: Harvey and Blythe.

This small volume contains 162 photomicrographs which are intended to illustrate the histology of gynaecology. The selection has been made with care and is fairly representative. In addition to short descriptions below each illustration Miss Barnes has given a brief résumé of the normal histology of the female pelvic organs, with a brief classification of gynaecological affections.

The best feature of the book is the quality of the majority of the photomicrographs, and students should have little difficulty in learning the peculiarities of the different types of histological material if the illustrations are studied carefully. Figures 22, 23, 24, 26, and 63, however, are flat and below standard.

The book is much too short, and is uninspiring. The classification and description of tumours of the ovary is far too elementary and unsound in many ways. The description of affections of the vulva is not up to date. The book reflects none of the erudition of a Robert Meyer, of an Oscar Frankl, or of an Emil Novak, and the price is perhaps too high for a work of this kind.

WILFRED SHAW.

HISTOLOGY FOR MEDICAL STUDENTS

Human Histology. A Guide for Medical Students. By E. R. A. Cooper, M.D. Second edition. With foreword by F. Wood Jones, F.R.S., F.R.C.S. (Pp. 432; 4 coloured plates and 257 in text. £1 7s. 6d.) London: H. K. Lewis and Co. 1948.

This book claims to be a guide; its subject is human histology; and it is written for medical students. Practically all the illustrations are from human material, and for the most part are photomicrographs at low magnification of the kind of preparation given to students in the average histology class. The style of the book is simple and direct. The text is enlivened by short appropriate physiological explanations, and some basic general pathology is included. Each chapter is followed by a short, concisely written practical section. In this, the second edition, the chapter on the blood, marrow, and haemopoiesis has been rewritten. The general character of the book is unaltered. It remains a reliable and companionable bench book of adequate size and compass for the medical student taking an ordinary pass examination.

GEOFFREY HADFIELD.

Dr. Windsor C. Cutting in his *Manual of Clinical Therapeutics* (second edition; pp. 712; illustrated; £1 5s. Philadelphia and London: W. B. Saunders Company, 1948) has tackled with some success the difficult task of presenting encyclopaedic information in a form small enough for the pocket. Without attempting to go into great detail he presents a rational system of therapy, and the book is refreshingly free from the recipes for complicated cough mixtures that are apt to form so prominent a part of similar manuals. The diseases are classified according to aetiology or the system involved; each disease is clearly and concisely described, some of the articles being masterpieces of condensation. Only minor criticisms can be made of the treatment and management recommended. A white cell count twice weekly during thiouracil therapy is now generally regarded as an excess of caution, and it is interesting to read that expense may be a limiting factor in testing the urine and blood during chrysotherapy. The use of D.D.T. in louse infestation is curiously omitted, though it is listed in the appendix of recommended drugs. There are useful sections on poisons and clinical procedures, but the value of those on diet and drugs is limited for the English reader, as the former refers to the American dietary and the latter to the U.S. Pharmacopoeia. Without attempting too much, the author has written a useful and readable guide to modern therapeutics.

BOOKS RECEIVED

(Review is not precluded by notice here of books recently received)

Current Therapy 1949. Edited by H. F. Conn, M.D. (Pp. 672 50s.) London: W. B. Saunders. 1949.

A symposium of the latest approved methods of treatment.

Pharmacopoeia of the University College Hospital, 1949. Edited by T. D. Whittet, Ph.C., D.B.A. (Pp. 147. 7s. 6d. Shrewsbury: Wilding. 1949.

Extensively revised.

Atomic Energy Year Book. Edited by J. Tutin, D.Sc. (Pp. 237 21s.) London: Temple Press. 1949.

Contains sections on the radioactive isotopes.

Cornell Conferences on Therapy. Edited by H. Gold, M.D. and others. Vol. 3. (Pp. 337. 17s. 6d.) London: Macmillan 1948.

Verbatim reports of fifteen conferences at the Cornell Medical College.

Symposium de Hematologia y Hemoterapia, 1948. By J. Guasí and others. (Pp. 522. No price.) Madrid: "Miguel Servet." 1948. The Spanish text is provided with summaries in English.

The Dentists Register, 1949. Issued by the Dental Board of the United Kingdom. (18s.) London: Constable. 1949.

Transactions of the Third American Congress on Obstetrics and Gynecology. Edited by G. W. Kosmak, M.D., and N. Ruetherford, M.D. (Pp. 412. \$9.00.) Oregon: The Western Journal of Surgery Publishing Company. 1949.

Full proceedings of the 1947 Congress.

Public and Personal Hygiene. By F. A. E. Crew, M.D., D.Sc., Ph.D., D.I.H., F.R.C.P.Ed., F.R.S. (Pp. 128. 2s. 5½d.) London: The St. John Ambulance Association. 1949.

Twelve lectures for laymen.

Hints on Prescribing Under the National Health Service Act. By J. B. Primmer, M.B., Ch.B., D.P.H., J.P. (Pp. 51. 3s. 6d.) London: Research Books. 1949.

A short book of prescriptions.

The Mentally Ill in America. By A. Deutsch. 2nd ed. (Pp. 555. 30s.) London: Geoffrey Cumberlege. 1949.

History of the care and treatment of mental patients since colonial times.

The Midwife's Text-book. By R. W. Johnstone, C.B.E., M.A., M.D., F.R.C.S.Ed., M.R.C.P.Ed., F.R.C.O.G., F.R.S.Ed. 4th ed. (Pp. 400. 20s.) London: Adam and Charles Black. 1949.

Further revision has been undertaken in this edition.

The Medical Register, 1949. Issued under the direction of the General Council of Medical Education and Registration of the United Kingdom. (43s.) London: Constable. 1949.

Now published in two volumes for convenient reference.

Evolution of the Forebrain. By G. W. H. Schepers, D.Sc., M.D. (Pp. 212. 50s.) London: John Clark. 1948.

From Johannesburg.

A Manual for Teaching Dietetics to Student Nurses. Prepared by a Joint Committee of the American Dietetic Association. (Pp. 487. 20s.) London: W. B. Saunders. 1949.

Elementary dietetics.

Early Recognition of Disease. Edited by Sir H. Ogilvie, K.B.E., D.M., M.Ch., F.R.C.S., and W. A. R. Thomson, M.D. (Pp. 134. 10s. 6d.) London: Eyre and Spottiswoode. 1949.

A new handbook in the Practitioner series.

Collateral Circulation. By D. P. Quiring, Ph.D. (Pp. 142. 25s.) London: Henry Kimpton. 1949.

An anatomical study

Gods and Men. By Sir R. Gregory, Bt., F.R.S. (Pp. 214. 12s. 6d.) London: Stuart and Richards. 1949.

A discussion on science and religion.

Searchlights on Delinquency. Edited by K. R. Eissler, M.D., Ph.D. (Pp. 456. 30s.) London: Imago. 1949.

Thirty-six papers on juvenile delinquency.

German-English Medical Dictionary. By F. S. Schoenewald, M.D. (Pp. 241. 27s. 6d.) London: H. K. Lewis. 1949.

A new work.

SURGEONS IN RESIDENCE

New Development at Lincoln's Inn Fields

The President and the Council of the Royal College of Surgeons have for some years now been following a policy of providing facilities and amenities for young surgeons, particularly those from the Commonwealth, the U.S.A., and other countries, who come to Britain for advanced study. The need for residential accommodation was obvious if graduates were to be able to make the fullest use of the library, museums, and laboratories of the College and at the same time have the advantages of collegiate life. The importance of providing a collegiate centre for postgraduate students has often been stressed by Lord Rebb-Johnson. A step towards the creation of such a centre was taken on May 2, when the first postgraduate students were installed in new residential quarters immediately adjoining the College.

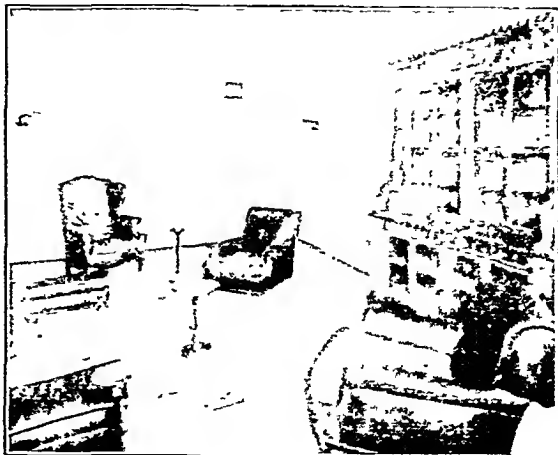
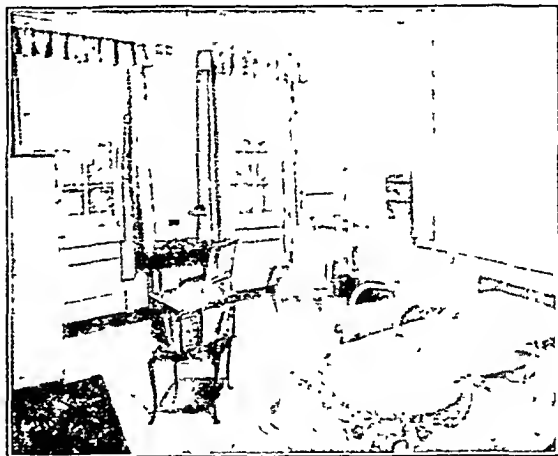
The two houses used for this purpose are Nos 44 and 45, Lincoln's Inn Fields. They are next to the main buildings of the College, the precinct of which has been extended to incorporate them. They provide accommodation for 12 students, with separate bedrooms, and include two common-rooms and a study room. The ground floor of No. 44 is occupied by a committee-room, the postgraduate education office, and other administrative offices. The rooms have been furnished with an eye to both taste and comfort, and offer accommodation far superior to that generally available to students. Indeed the difficulties encountered by postgraduate students in finding any kind of suitable accommodation in London nowadays are well known. Some fine paintings have been hung in the common-rooms, one of which also accommodates a handsome bookcase, formerly the property of Sir John Bland-Sutton. The three illustrations here reproduced are of his particular common-room, a typical bedroom, and a general view from Lincoln's Inn Fields, showing the relation of the two houses to the College itself.

Among the first to take up residence are students from Australia and New Zealand, Canada, South Africa, Ireland, and English provincial centres. The hostel will enable its residents to make informal contact with their teachers, whom they might otherwise meet only in the lecture theatre. The College club in the main building will now allow members and residents to lunch and dine together.

Architecturally the houses are interesting. No. 44, built originally in 1638 and rebuilt in 1700, has a fine oak staircase. During the process of redecoration before the opening of the residential quarters the contractors discovered (having previously been warned of its possible existence) a fine painting occupying the ceiling at the top of the staircase. This painting, by Sir James Thornhill (1675-1734) or one of his pupils, has been carefully restored. Thornhill, perhaps best remembered for his paintings at Greenwich Hospital, was the father-in-law of William Hogarth and a great-nephew of Thomas Sydenham. The latter was responsible for launching him on his artistic career, for when Thornhill was sent to London by his impoverished parents Sydenham apprenticed him to Thomas Highmore, sergeant-painter to William III and cousin of Nathaniel Highmore, remembered for his description of the maxillary antrum.

The residents of Nos 44 and 45 will for the most part be studying for the primary or final Fellowship, but accommodation is equally open to more senior students. The provision of this new accommodation sees the completion of the first stage in the larger scheme of which the Nuffield College of Surgical Sciences will be the ultimate development. The first warden to be appointed is Mr R J Last, lecturer in anatomy to the College.

It is hoped that those who have the privilege of living in the College will be imbued with something of the spirit of the collegiate life of the older universities, and that they will meet the leading teachers of Great Britain and distinguished visitors from other countries. Thus they will make contacts which will be valued throughout their lives.



BRITISH MEDICAL JOURNAL

LONDON

SATURDAY MAY 21 1949

THE AMENDING BILL

When the Negotiating Committee met the Minister of Health in November, 1947, one of the matters it drew his attention to was the obscurity of the Act in relation to partnership agreements. The wording of the relevant Section was so ambiguous that no one, not even Mr. Bevan himself, knew what it meant. But at that time he was intransigent and said that the interpretation of this Section would have to be made in the Courts. The Negotiating Committee presented the Minister with a detailed analysis of the consequences that might flow from the various interpretations of Section 35 of the N.H.S. Act of 1946, and the Minister finally had to acknowledge the justice of the Negotiating Committee's contention and appointed the Slade Committee to report on the position and make recommendations. The Amending Bill promised by the Minister a year ago and now laid before Parliament includes the recommendations of the Slade Committee and adds a Clause on agreements with medical assistants. Clause 12 of the Bill provides for arbitration in case of dispute about remuneration or conditions of service for those working in the National Health Service. Any difference or dispute will be regarded as a trade dispute within the meaning of the Industrial Courts Act of 1919 and under this the Minister of Labour and National Service has power to refer matters for settlement by arbitration.

In the early months of last year the B.M.A. conducted a campaign against the introduction of a whole-time salaried medical service, which under the present Act would have been possible through the issue of Regulations. It did not accept the assurance of the Minister that this was not the Government's intention, knowing that what one Minister said would not be binding on any other Minister. Mr. Bevan once more bowed before the storm and promised to introduce an Amending Act that would safeguard this position. His promise is now fulfilled in Clauses 10 and 11 of the Amending Bill. Subsequently the Minister agreed to include in the Amending Bill a provision that executive councils should have the right to elect their own chairmen, that the professional member of a tribunal should be one of a panel of persons with suitable experience, and that power should be given to the executive councils to cover the costs of local medical committees by the deduction from practitioners' remuneration of a small sum to meet this. These promises have also been met by appropriate Clauses in the Bill.

The medical profession will be relieved that at last a Bill has been introduced which gives statutory protection against the introduction of a whole-time salaried service and that the ambiguities of partnership agreements have been resolved. Partners who have not joined the Service may enter now and receive compensation for the loss of their right to sell the goodwill of their practices.

There were, however, many more matters which the B.M.A. wished to have included in the Amending Bill, and these were listed in the *Supplement* of April 2 this year. What is disturbing is not so much that nearly all these points have been omitted from the Bill as that the Minister has failed to fulfil his promise to discuss their inclusion with the medical profession: To begin with, the Minister said: "There has not yet been time to work out the actual wording of the new measure, and when he does so the Minister will welcome the help of the profession." In spite of his promise the B.M.A. did not know what were the contents of the Bill until it was published at the end of last week. On May 4 last year Sir William Douglas, Secretary to the Minister, wrote as follows to the Secretary of the B.M.A.: "You will remember that when the Minister saw representatives of the Association recently he said that he hoped that he would have the profession's help when he came to the task of settling the contents of the Amending Bill. . . . In addition, as you are aware, we are also most anxious to begin discussions as soon as possible on the other matters which are still outstanding." On May 25 last year representatives of the B.M.A. met the Minister and on the following day were informed by Sir William Douglas of some of the points which the Minister had agreed to include in the Amending Bill. Sir William Douglas stated that it was "inevitable that there will be found other matters on which adjustment is needed in a measure of this magnitude." He went on to say that it would be necessary to limit the Amending Bill so that it could be passed quickly in order to alleviate the anxiety of those in partnership. As there has been a delay of a year in producing the Bill there has clearly been ample time for the discussion of its contents, but no such discussion has been held since May, 1948. The Secretary of the B.M.A. in November last year asked the Ministry of Health when the Association might be given the opportunity of examining in draft the proposed clauses of the N.H.S. Amending Bill—asked Sir William Douglas, in other words, when it was proposed to fulfil the promises made by Mr. Bevan a year ago. Sir William Douglas replied that it was not usual for the actual drafts of clauses to be discussed except within the Government Departments concerned, and added, "But we hope very shortly to discuss with the B.M.A.—or rather with the Negotiating Committee, I suppose—the proper effect and content of any new legislation on this subject." Mr. Bevan, in reply to a question put by Sir Henry Morris-Jones last December, observed: "This matter of an Amending Bill has been under discussion with the representatives of the medical profession, and when full agreement has been reached—or when full agreement has not been reached—then the Bill will be presented to the House." As the medical profession has, since this statement was made, been given no opportunity to agree or disagree, Mr. Bevan's

observation was pointless. He has again committed a breach of trust with a profession that has loyally collaborated with the Government in operating a Service full of imperfections.

There is no need here to enumerate once more the many matters the B.M.A. had hoped to see included in the Amending Bill. From the point of view of the general practitioner one of the most important of these was the need for statutory confirmation of the Minister's written promise that in areas not closed automatic consent should be given to the practitioner's choice of his partner or assistant. Unless this statutory confirmation is given it will still be possible for the Medical Practices Committee to put a practitioner in the position of having to accept a partner chosen by it. Another matter of importance not only to practitioners, but to patients also, which the B.M.A. wished to have included in the Amending Bill was the right of private patients, who incidentally contribute much to the cost of the Health Service, to obtain drugs and appliances at the public expense. It is most regrettable that in the Amending Bill the Minister has refused to recognize representative specialist staff committees which would have analogous functions to those of the statutorily recognized local medical committees. It is regrettable, too, that boards of governors and hospital management committees are not to be trusted to elect their own chairmen, although this right has been given to local executive councils. The farce continues of allowing the foreign visitor to obtain free of charge medical services to the cost of which he contributes exactly nothing; the obvious course is that such a visitor should be treated as a private patient, and the Act specifically provides for private treatment by medical men in the Service.

The Minister of Health may, of course, argue that an Amending Bill at this stage should be free of controversial matters so that it may be passed quickly, or at least before the end of the life of the present Government. The medical profession, while approving in general of the present Bill, cannot fail to be disquieted by important omissions from it and will no doubt press for a further amending measure drawn up after proper and full consultation with representatives of the organized profession.

JENNER AND VACCINATION

The story which began with the birth of Jenner two hundred years ago is not yet complete. Dr. E. Ashworth Underwood recalls the early part in the opening pages of this issue. Since Jenner first put his theory to the test the facts accumulated about vaccination are voluminous, but the conclusions to be drawn from them are imprecise, for no controlled experiment has ever been carried out. Furthermore, as Professor Greenwood has written, "The use of this instrument (vaccination) has been one of the factors, but not the sole, perhaps not the most important, factor in modifying the epidemiological history of smallpox during the last hundred years."¹

Jenner published in 1798 the results of his early experiments. His ideas were quickly accepted both in this country and abroad. Even before the end of 1799 many hundreds of Londoners had been vaccinated, and by 1825 it is believed that nearly half the children born in the large towns were being vaccinated. The first Vaccination Act was passed in 1840, seventeen years after Jenner's death. This empowered Boards of Guardians to vaccinate persons free of charge. In 1853 vaccination was made compulsory. The first relaxation of compulsion was contained in the amending Act of 1898, and this was taken a stage further in the Act of 1907; both Acts allowed for conscientious objection. The Local Government Act of 1929 put an end to Boards of Guardians, and their vaccination duties were transferred to local health authorities, though many of these authorities delegated their powers to the public assistance committees, which inherited the Poor Law. The National Health Service Act, 1946, repealed the law requiring vaccination to be compulsory, but left local health authorities with the duty of carrying out vaccination and revaccination both as part of the ordinary child-welfare service and as an emergency public health service for the control of epidemics.

Between 1854 and 1905 the proportion of infants vaccinated was seldom below 70% of those born. By 1914 the figure had fallen below 50%, and for some years before the end of compulsory vaccination in 1948 only about one-third of the infants born in this country were being vaccinated. This decline was not due to the success of anti-vaccination campaigns, though the distaste which some have felt for everything connected with the idea of vaccination has been responsible for a controversy that has simmered for more than one hundred years and boiled over on several occasions. During this time the opposition to vaccination was far from being negligible in quality. For instance, Creighton, who called vaccination "a grotesque superstition," has been described as the most learned medical scholar of the nineteenth century. Bernard Shaw's remark about "an amazing empirical stunt" is the sort of half-truth which irritates more than it enlightens. Most probably the decline in vaccination was due to the freedom of this country after 1902 from epidemics of variola major and to the increasing awareness among the public that vaccination itself was not always a harmless procedure.

Though improved living conditions and advances in medical and sanitary science must have played an important part in reducing the incidence and mortality of smallpox, the discovery of vaccination will remain one of the great achievements in the history of preventive medicine. Professor Greenwood has stated that it can safely be inferred from the evidence that Jenner was directly or indirectly the means of saving many hundreds of thousands of lives.² In England and Wales the death rate per million from smallpox in 1856-60 was 180; in 1871-5 (there was a severe epidemic in 1872) the rate was 392; and in 1896-1900 it was 7. Only 28 persons died from smallpox between 1933-46, and among the fatal cases there was no infant under one year of age. Killick Millard³ has pointed out that in the same period there were 51 deaths of infants from the complications of vaccination.

¹ *J. R. statist. Soc.*, 1930, 93, 233.

² *Epidemics and Crowd Diseases*, 1935, London.

³ *British Medical Journal*, 1948, 2, 107.

⁴ *Ibid.*, *Suppl.*, 1935, 1, 282.

The effect of vaccination on the incidence of smallpox is difficult to assess. The B.M.A. Committee on Immunization, including Vaccination,⁴ which reported in 1935, considered that the relatively incomplete immunity which was a result of the vaccination of most of the infants born in this country up to the beginning of the present century was usually sufficient to limit the volume of outbreaks. It would certainly be foolish to suggest that we have seen the end of deadly smallpox in this country, but those who would accuse the Government of rashness in putting a stop to compulsory vaccination are probably in a minority. Eleven years before the National Health Service Act was passed Greenwood wrote, "Provided we keep our powder dry, that we have always available a completely sufficient supply of potent lymph, I think we may view the passing of even nominally compulsory vaccination with equanimity."²

The responsibility for persuading parents that vaccination of infants is still advisable rests with general practitioners and local health authorities. If there is danger of an epidemic the success of the steps taken by local authorities to limit its spread will depend very much on the way they approach the public. A population which is kept well informed will be much more amenable to advice than one which has been left in the dark. The public should be given more information about the importance of revaccination, for belief that vaccination in infancy protects throughout life is still quite common. Since Jenner's day opinion has changed about the duration of the immunity conferred by vaccination, and no dogmatic ruling can be given. It is usual now for members of the Forces to be revaccinated every two years when serving abroad. The methods which port health and local authorities use to control the spread of smallpox have been well illustrated during the last few weeks since the arrival in the Port of London of the s.s. *Mooltan* on the day after the death of a passenger from smallpox. The action taken seems to have been effective, though one case of smallpox notified in a rural area on May 7 may have some connexion (as yet unexplained) with the outbreak among the *Mooltan's* passengers.

Smallpox has been a dreaded disease for hundreds of years, and the greatest encouragement to vaccination has been fear. There is still no specific treatment for the disease, but it seems probable that some chemotherapeutic or antibiotic substance will be found which will attack the variola virus *in vivo*.

RADIOTHERAPY

It is just over twenty years since the National Radium Commission took charge of the radium which the National Radium Trust bought for the nation with part of the fund collected in thanksgiving for the recovery of George V from a serious illness. By the N.H.S. Act the Minister dissolved the National Radium Commission, and by the Amending Bill Section 3 of the Cancer Act, 1939, empowering the Minister to lend money to the Trust, will cease to have effect. To the Commission must be given the credit for the wise development of radiotherapeutic services throughout Britain. One of the results of its activities is that all patients requiring radiotherapeutic treatment for cancer are

within reach of a centre where radium and x-ray apparatus are under the control of a skilled radiotherapist and where adequate treatment and follow-up records are kept.

One of the last acts of the National Radium Commission was to approve publication of Dr. Margaret Tod's report¹ on "the extent to which cancer patients in Great Britain receive radiotherapy." The report is in three parts: the first is an attempt to assess the number of patients requiring radiotherapy, the second a statement on the number of patients treated in all hospitals which reported to the National Radium Commission, and the third a comparison of the two previous figures with the object of assessing how the needs of the population were met. In order to determine the number of patients requiring radiotherapy it is necessary first to estimate the incidence of cancer and, secondly, the proportion of patients requiring radiotherapy according to the site of the growth. Cancer registration figures from Liverpool, Oxford, and Connecticut show that the cancer incidence appears to be 2,000-2,350 per million. Dr. Tod also uses an indirect method of calculating the incidence of cancer from combined death rates and survival rates: she obtained the data for this from a table of deaths from cancer in 1944 supplied by Dr. Percy Stocks (the death rate being 1,748 per million); from the estimated rates of survival of patients in Manchester, New York, and Liverpool with cancer of accessible sites; and from Sholto Mackenzie's² figures of patients with untreated cancer of various types. The incidence is in this way assessed at 2,122 per million. This figure is lower than the registered rate for Oxford but similar to that for the Liverpool area. There is good reason to think that these registered rates are low, and some unpublished figures from Edinburgh suggest that the incidence may be about 2,500 per million. Accuracy of death registration by doctors is not as great as accuracy of cancer registration by those particularly interested.

The need of patients for radiotherapy depends largely on the site affected. Dr. Tod estimates the number of cases treatable by radiotherapy from the rates of incidence and from figures supplied by radiotherapists. The overall figure is 40%, but it varies from 85% for a group including lip, skin, mouth, and uterus, to 0% for the group including stomach, intestine, liver, etc. The total number of patients requiring radiotherapy per million of the population is 840; this is higher than the figure Paterson³ calculated in 1942, but, as he suggests, it is probably more accurate. The numbers of patients treated in various regions show that the proportion of treatable cases actually treated is about 77%—being 95% in London. The fact that the figure is 127% for one region and 11% for another suggests that the estimated incidence of cancer may be about 30% too low, but there seems no doubt that at least 40,000 new patients require radiotherapy each year and that about 9,000 of them do not get it. This takes no account of radiotherapy for non-malignant conditions and of the retreatment of certain cases; both these needs must be

¹ *An Inquiry into the Extent to which Cancer Patients in Great Britain Receive Radiotherapy*, 1949, Altrincham, price 3s. 6d. net.

² *An Inquiry into the Extent to which Cancer Patients Receive Treatment*, 1939. Reports on Public Health and Medical Subjects, No. 89. London: H.M.S.O.

³ *Publ. Hlth, Lond.*, 1936, 50.

considered in assessing the requirements in any region. Informative tables are included in Dr. Tod's report showing the facilities at present in existence in England, Wales, and Scotland, and of the cases treated in clinics in this country and in a few abroad. It is emphasized that centralization of treatment, avoiding the inefficient dispersal of facilities, should be the aim, and that no centre treating less than 800 new cases of cancer annually should be encouraged.

The estimate provided by this report of the radiotherapeutic needs of the country must provide a basis for arrangements to be made in the future. The distribution of both apparatus and beds is still very uneven. The less well equipped areas should be brought up to the standard of the better equipped. In this connexion it must be remembered that the safe use of radiotherapy apparatus is expensive, and it might be desirable for the Ministry to allot funds for radiotherapy direct. Budgeting for heavy expenditure by hospitals which already have difficulties in making ends meet may retard development of radiotherapy departments. There is no doubt that many patients alive now would be dead but for the fact that they have been treated by radiation, and no doubt that most cases of cancer die of their cancer in spite of all that can be done by surgery, radiation, and chemotherapy. At present only surgery and radiation can be considered curative: other methods do not cause complete disappearance of cancer. What, then, is to be done for the large groups of patients (with, for instance, cancer of the stomach and lungs) in whom cures are very few? Further development of radiotherapeutic methods and close liaison between radiotherapist, surgeon, and physician are essential if treatment is to be given to all the 40,000 new cases of cancer which need radiotherapy during the course of each year.

STREPTOMYCIN IN TUBERCULOSIS

Workers in Switzerland have made a notable contribution to the literature on the streptomycin treatment of tuberculosis in a massive and profusely illustrated volume¹ containing 20 papers by various authors, of which four are on the theoretical or experimental aspects of the subject and the remainder on the results of treatment in various forms of the disease. Two are on the treatment of meningitis: Löffler and Piotti treated 13 cases by conventional methods with only three ultimately successful results. Dolivo and Rossi, on the other hand, after failure in eight out of nine cases given the usual dosage, treated 13 further patients with much smaller doses in a prolonged but intermittent course combined in the later cases with a sulphone; in six of these patients the result was good. This modification evidently deserves close attention. The writers emphasize the necessity for early diagnosis, without which treatment is liable to fail—even though life is prolonged—owing to the development of cerebral lesions which were never seen when the disease was fatal in about three weeks. These, and in particular the arterial lesions and their consequences, are well described by Zollinger.

The volume reveals a general tendency to regard the indications for streptomycin in other forms of tuberculosis as rather more numerous than is generally agreed: the

editors in their introductory chapter give five absolute indications, which include all febrile infections in infants and certain categories of urogenital disease, nine relative indications, and four requiring further study. They mention only four conditions in which treatment is definitely not indicated. In advanced renal disease streptomycin is recognized as being to a large extent only palliative: nothing is clearer than that bacilli in massive caseous lesions, wherever situated, cannot successfully be attacked. There are three papers on the treatment of pulmonary disease, in one of which Tanner commends the instillation of streptomycin solutions into cavities undergoing Monaldi drainage. Russi also advocates local treatment for disease of the middle ear. The whole work is profusely illustrated by excellent photographs and a number of coloured plates.

Whether and when to use streptomycin in chronic pulmonary disease is likely to remain the most difficult question. Levine and his colleagues² are very emphatic that it should be used only as part of a concerted plan for the entire conduct of a case—as an adjunct, in fact, to other forms of treatment. Only one course is likely to be of benefit, and if this is given at too early a stage and the disease again becomes active later a valuable resource has been lost. They themselves have used it only in cases with extensive and spreading lesions, and with the sole object of arresting extension and so improving the general condition for the time being that appropriate surgical treatment became safe and feasible. The choice of such cases must always be difficult, but the principle that streptomycin should not be given alone, merely in the hope that it may perhaps do some good independently of other treatment, is clear enough and worthy of serious consideration.

NECROPSIES AND TUBERCULOUS INFECTION

The risk of contracting tuberculosis at post-mortem examinations, both for participants and onlookers, may have been underestimated. At Lund University, as elsewhere in Sweden, medical students attend a general pathology course, which includes necropsies on tuberculous cases, before they start their regular clinical work. Prior to wholesale B.C.G. vaccination many of the students were tuberculin-negative on entry, and the Students' Tuberculosis Bureau, by analysing figures of conversions from tuberculin-negative to positive and of tuberculosis morbidity, was able to show an association between these and attendance at the pathology course, quite apart from any association with the period of clinical training.^{1,2} Direct bacteriological examinations showed that many objects in the post-mortem room were contaminated 24 hours after examination of the body of a tuberculous patient, in spite of routine cleaning. Following the introduction of stringent precautions at such necropsies there was a decrease in the tuberculin-test conversion rate among the students attending the pathology course. Among these precautions were exclusion of students from actual participation in the post-mortem examinations of known tuberculosis cases, the fitting out of a special necropsy room with improved cleaning facilities, and injection of formalin into the pulmonary artery of the cadaver.

More recent evidence from the University of Rochester medical school in the U.S.A. amplifies the Swedish experience.³ At this medical school, where there was a high tuberculin-test conversion rate and a high tuberculous attack rate among the students, tuberculin-testing re-

¹ *Streptomycin und Tuberkulose*, 1948, edited by Franconi, G., and Löffler, W. Basle: Schwabe and Co.
² *J. Amer. med. Ass.*, 1948, 138, 808.

³ Hedvall, E.,
Lindau, A.,
Meade, G.,
Sixth Annual
London.
⁴ Montgomery,
Lancet, 1949,

Rev. Tuberc.
1941,

Medical Students

that most of their primary infections occurred during the second year, when a 20-weeks pathology course was taken, but before the practical clinical work was started. All these students had opportunities for coming into frequent contact with tuberculous material. At the end of the first year an average of 54% of the students were positive reactors, and the figure rose to 92% at the end of the second year. After exclusion of second-year students from participation in the necropsies of tuberculous cases and from the handling of tuberculous tissues it was found that on an average 36% of the students were positive reactors at the end of the first year, 39% at the end of the second, and 52% at the end of the fourth year.

In British medical schools the students usually do not attend post-mortem examinations regularly until their clinical course has begun, and it would be difficult to assess the separate danger of developing a tuberculous infection as a result of taking an active part at such examinations. However, bacterial spread around the cadaver and post-mortem table should be investigated in order to identify the most risky procedures. Meantime, though the Scandinavian and American results do not constitute proof, they provide grounds for revising the general opinion that the rapid conversion of medical students from tuberculin-negative to tuberculin-positive during their hospital studies, as well as their liability to contract tuberculosis, is solely the result of their contact with living patients. Tuberculous necropsy material must now be regarded as a source of infection, and all possible steps should be taken to reduce the risks to which medical students may be exposed. Few medical schools in this country can claim to conduct post-mortem examinations according to a rigorously strict hygienic routine. The adoption of operating-theatre processes (partially in reverse) should be considered: for the participants, masks (and, of course, gloves) and no smoking on the job; for the onlookers, a glass screen, care in the display of tuberculous viscera when removed from the body, and the application of disinfectants to supplement the customary hosing down with water afterwards. Such precautions should be supported by periodic x-ray examination of the students and by tuberculin-testing—procedures which still await full application in some medical schools.⁴

Quite recently a new danger arising from tuberculous tissues has been reported, this time involving a large section of the public. There is little meat for pets in household scraps, and uncooked beef from tuberculous carcasses unfit for human consumption is finding its way from knackers' yards to pet-food stores.⁵ The unsuspecting or uninformed purchaser may contaminate her kitchen and endanger the health of her family. Moreover, cats and dogs can contract tuberculosis from eating raw infected meat. The National Veterinary Medical Association has given warning of these risks and has suggested that all meat sold at pet-food stores should be sterilized by boiling before sale.⁶ In Birmingham the Corporation has obtained powers to enforce sterilization.

CONTROL OF PARADOXICAL RESPIRATION

The dangers of making a wide opening through the chest wall into the pleural cavity and the method of overcoming them by inflating the lungs through the trachea were known to Vesalius in 1555,¹ but until recent years—long after successful general surgery had become commonplace—surgery in the open thorax was a dangerous procedure attempted only by the venturesome. Brauer² ensured adequate filling of the collapsed lung by making the patient breathe gases under positive pressure—so-called "positive-

pressure breathing"—while Meltzer and Auer³ and later Elsberg⁴ solved the problem of paradoxical respiration by continuous intratracheal insufflation. This so reduced the alveolar carbon dioxide that spontaneous respiratory movements practically ceased. With the latter method the patient remains adequately oxygenated in spite of the apnoea, and in fact recent work^{5,6} shows that oxygen will diffuse through the length of the tracheobronchial tree and into the blood (thus maintaining life) provided the nitrogen is first removed from the upper respiratory tract.

Since the beginning of this century, when thoracic surgery was in its infancy, the methods of maintaining adequate respiratory exchange by . . . breathing and intratracheal insufflation . . . improved, and anaesthetic machines permitting a very accurate control of positive pressure were developed from Brauer's early pattern. With the introduction of cyclopropane and of the closed-circuit apparatus it was soon discovered how easily apnoea could be induced by a little hyperventilation. This made possible intermittent inflation of the lungs and provided an excellent method of avoiding paradoxical respiration and its evils. Tracheal insufflation soon gave way to this new technique, which became known as "controlled respiration" and is now the method of choice in this country for making an open pneumothorax safe. Filling the lung no longer depends on diaphragmatic movement; paradoxical respiration does not occur, and both lungs may be inflated equally. Positive-pressure breathing and controlled respiration both have their advocates,^{7,8} and the fact that both have remained in use for so many years shows that either method, in the hands of experts, will give good results. Recent reports from anaesthetists in this country^{9,10} confirm the efficacy and safety of controlled respiration, while good results are claimed for positive-pressure breathing, particularly in the U.S.A., in major operations such as lobectomy and pneumonectomy.⁷

Whichever method is used, there is much interference with the normal processes of respiration: in the case of controlled respiration ventilation is no longer dependent on the metabolism of the patient but on the judgment of the anaesthetist; and with pressure breathing the lungs cannot empty properly and the whole physical mechanism of respiration is upset. Neither method should be attempted except by skilled anaesthetists.

SPECIALISTS' CONTRACTS

During the past few weeks the Central Consultants and Specialists Committee has been considering the Ministry's proposals about terms of service for hospital medical staff in the light of the views received from the periphery through the Regional Consultants Committees. The committee has now submitted to the Joint Committee with the Royal Colleges a statement of the points on which it wishes representations to be made to the Ministry. A further announcement will be made as soon as the negotiations which are about to take place with the Ministry are completed. In the meantime consultants and specialists are again advised not to sign permanent contracts, if they are invited to do so, before the final terms have been published and approved by the profession.

¹ *De corporis humani fabrica*, liber septem; cited by Bradshaw, H. H., *J. thorac. Surg.*, 1939, 8, 293.

² *Mitt. Grenzgeb. Med. Chir.*, 1904, 13, 483.

³ *J. exp. Med.*, 1909, 11, 622.

⁴ *Med. Rec.*, N.Y., 1910, 77, 493.

⁵ Draper, W. B., and Whitehead, R. W., *Anesthesiology*, 1944, 5, 262.

⁶ Draper, W. B., et al., *ibid.*, 1947, 8, 524.

⁷ Livingstone, H., et al., *Arch. Surg., Chicago*, 1947, 55, 545.

⁸ Lenahan, N. E., *ibid.*, 1948, 56, 14.

⁹ Neworthy, M. D., *Proc. R. Soc. Med.*, 1941, 34, 479.

¹⁰ Rink, E. H., et al., *Guy's Hosp. Rep.*, 1948, 87, 48.



A mirror reflects the operative field into the CPS Emitron camera, which is remotely controlled

TELEVISED OPERATIONS

Demonstration at Guy's Hospital

What is said to be the first permanent installation of television equipment for medical teaching purposes was demonstrated at Guy's Hospital last week. At present four viewing sets are installed at the hospital—one in the surgeons' room, one in the library and exhibition room, and two in one of the lecture theatres. In groups round each receiver some 30 or 40 persons may view an operation from a vantage point "as good as that of the surgeon himself".

The apparatus has been designed by Electrical and Musical Industries, Ltd. of Hayes, Middlesex, in collaboration with the Department of Surgery at Guy's. The viewing sets are standard H.M.V. models, with a 15 in. (37.5 cm.) emicope tube, slightly modified to work on signals received by cable. The equipment delivers television signals of the standard wave form used by the London television service of the B.B.C., but a higher definition can be made available when required. There is provision for a demonstrator to supplement the surgeon's comments or alternatively to be responsible for the whole description of the operation. This demonstrator may be stationed in one of the viewing rooms, and he is able to select at will the most suitable size of field as the operation progresses.

It is intended to build up a repertoire of standard operations suitable for television and to invite surgeons from hospitals throughout the country to watch the televised operations and comment on the installation. Certain types of operation, such as cervical sympathectomy, are not considered suitable for television as yet, although an image can be obtained. The installation will be mainly for the benefit of postgraduate students and visiting surgeons.

When the camera is mounted above the table a picture is given looking directly down on the operation site, as opposed to the oblique view from the galleries. It is, of course, a disadvantage that transmission cannot take place in colour, but the technical problems of picking out in monochrome the different shades of tissue are being surmounted successfully. Subject to this reservation with regard to colour—which no doubt will be overcome in time—the picture obtained is very good and the definition is such that the procedures can be clearly followed. Special precautions have been taken to prevent interference from other electrical apparatus in the hospital.

For those interested in television a few other technical details may be added. Transmission is by cable, so that there is no question of an operation being watched by lay people or their home receivers. The camera is completely enclosed and is built in, together with a microphone for the surgeon's sound commentary, as an integral part of the shadowless light unit over the operating table. The whole assembly can be rotated through 60 degrees for operation on an inclined table or moved on an overhead track.

A surface reflecting mirror is mounted on the centre of the lamp and at 45 degrees to its axis, so that a view of the operation along the axis of the lamp is presented to the camera. The camera, which requires no special lighting, has a cable which, with the lighting, sound and control cables is taken through to a control point in a room alongside the theatre. The whole apparatus in the theatre has been designed so that it may easily be kept clean and sterile (Fig. 1). In the control room the unit is operated by a hospital technician, who by means of a monitor unit can watch the picture. In this room also the lens unit in the camera is operated, with a choice of three magnifications and the surgeon in the which, with the lighting, sound, and control room which picture he wishes shown whether an overall field of approximately 20×35 in. (50×87.5 cm.) an approximately life-size reproduction, or a magnified close up of an area of about 5×6 in. (12.5×15 cm.)

The televised operation has an advantage in spontaneity over the film, but the latter, of course, can be edited whereas the former cannot. The two methods therefore are complementary, and it is considered that television may become important and useful in medical teaching. Certainly the spectators can see more detail in greater comfort than is ever possible in a crowded theatre. The possibilities of television as an aid to medical instruction have long been a matter for conjecture. On a few special occasions in America television has been temporarily installed in an operating theatre to enable groups of surgeons to watch a particular operation, but the installation at Guy's is the first properly engineered permanent equipment, and this was the first occasion on which operations have ever been televised in Europe.

Students and nurses watch the operation on the television screen



Correspondence

An Unfortunate Precedent

SIR,—Since its foundation some four centuries ago the Royal College of Physicians, through its Comitia, has been consulted by all British Governments on all important problems of public health and medical teaching and practice. The appointment of its actual president to the Awards Committee is thus not an "unfortunate precedent" but a justified historical custom. To reproach Lord Moran because he has been entrusted with this duty and to call the officers of the College, distinguished scientists and upright men, "henchmen" of the President and "inner cabal" of the College is to attack the dignity of that great institution whose role in the history of medicine—not only of British medicine—has been preponderant. I am convinced that most Fellows will resent this attack, whether they have accepted the Health Service or whether, like myself, they wish to maintain the independence and the freedom of medicine. It is not a question of party.

I do not think Dr. C. B. Heald (May 7, p. 819) has accurately described the inner workings of the College, because on all important matters there are lively discussions in Comitia. The "recommendations of the Council" bear usually on secondary matters, and, if they are accepted mechanically, this is due to the fact that the Council has thoroughly studied these questions, whereas the majority of the Fellows come totally unprepared. If Dr. Heald had made his interesting suggestions in committee instead of resorting to the medical press he could be assured of the support of many of his colleagues, and the thanks of all, for rendering the meeting of the Fellows as lively as the dinner that follows it.

In the course of its long history the senior College has faced all medical problems, adapting its policy to changing conditions with an elasticity which is certainly not "archaic." In our days the problems are more acute because, as individual physicians, we have concentrated too much on our test-tubes and microscopes and have neglected social medicine. The task of the College is thus more difficult than it was in the days of Linacre, when it had simply to uphold the Hippocratic and Galenic doctrines against Arab scholasticism, or, as later, to struggle with the University of Oxford for the programme of medical teaching, to consider the seaworthiness of the physicians of the *Elizabethan fleet*, or to legislate on variolization or hypnotism.

However, the College has to take a stand and contribute to the adaptation of medical practice to our new highly industrialized and mechanized society. History shows that human groups that have not responded to the challenge of changing environment have died out, and the senior College, founded by the most brilliant intellects of the Renaissance and built up stone by stone in the course of five centuries by men of outstanding brain and heart, cannot die out. As in the course of centuries the College changes its mode of action, abandoning the academic ivory tower, it has to come more into the open social struggle. It may be difficult in these conditions to preserve its ancient dignity, but it is not a good thing, not only for British medicine but for world medicine, if in these disturbed times of political and economic passions the role of this solid bulwark of the highest medical standards is made more difficult. The laws of history, little known and even less heeded, warn us against any such action.—I am, etc.,

London, W 1

A. P. CAWADIAS.

Research in Renal Disease

SIR—While Sir Henry Cohen, as reported in the *Journal* of April 2 (p. 587), grudgingly admits that there is some justification for a man pursuing research in renal disease, it would be interesting to learn upon what grounds he so confidently asserts that there can be no justification for a man confining his practice of medicine to the kidneys. I do not know to what extent Sir Henry's personal experience of this kind of practice entitles

him to make this pronouncement, but I can assure him that it is in error.

Anyone who endeavours to achieve such proficiency in treating patients suffering from renal disease as current knowledge permits will find that his time is so fully taken up that he has no alternative but eventually to confine his practice to the branch of medicine. Unless he does it is unlikely that he will be able to handle sufficient material to acquire adequate experience; nor will he realize the unceasing attention to detail, even the nature of the detail itself, that is so often necessary if all that is possible is to be done for these patients. He will find it an additional handicap that there is probably no hospital in the country that is suitably organized, staffed, or equipped for obtaining the best results from modern methods of treatment. It must be remembered also that nephrology cannot be practised effectively without at the same time engaging in research for standardized methods of treatment are not successful in a minority of renal disorders.

It is singular that Sir Henry should have selected the kidneys and none of the established specialties for his strictures. The accusation so frequently levelled against the specialist that he is not sufficiently in contact with general medicine can hardly be maintained in respect of the kidneys, where the relationship with other vital organs and processes is too intimate and too obvious to be ignored. But the recognition of nephrology as one of the major medical specialties in no sense implies that we must lose the valuable contributions to the knowledge of renal disease that the general physician may confidently be expected to make in the future as in the past. There is more than enough room in medicine for all degrees of emphasis in the study of, and practice in, renal disorders.

It is common knowledge that patients suffering from renal disease often come under the care of those who have made no serious study of their problems and who, indeed, are not even interested in them. Patients are frequently "written off" on sight or after a more or less perfunctory investigation, and are hustled out of hospital without systematic provision for their future welfare. This attitude of defeatism is particularly dangerous in undergraduate teaching hospitals, for it is accepted by students and forms the basis of their outlook on renal disease.

What is needed is the provision of postgraduate university hospitals or institutes for renal disease, adequately federated in the general hospital services and based on departments of renal anatomy, physiology, pharmacology, and clinical and experimental nephrology. These hospitals should eventually staff and work in close liaison with subsidiary renal units in other postgraduate hospitals, in undergraduate teaching hospitals, and in some of the larger non-teaching general and appropriate special hospitals. The need, moreover, is urgent, for the training of the necessary medical, nursing, and technical staffs must inevitably take much time. A beginning, however, could be made at once with the establishment of one such centre.

The training of a nephrologist must necessarily be long and arduous. It should include at least six years' postgraduate study, practice, and research in general medicine, and special experience in biochemistry and clinical pathology. I do not believe that the full course could be accomplished in less than eight years after registration.

The problem of renal disease is one of national importance. It concerns the welfare and the lives of a large section of the population, including many young persons. Kidney disease, directly and indirectly, probably causes more deaths in this country every year than cancer, heart disease, or tuberculosis. The training of a sufficient number of competent nephrologists and the provision of adequate facilities for their work are among the most pressing needs in medicine to-day.

In my view Sir Henry has failed to appreciate the magnitude, gravity, and complexity of the problem of renal disease. There is, of course, every justification for those with inclination and aptitude to confine their practice of medicine eventually to the kidneys, and they should be given every encouragement to do so if they find, as most will, that they are thereby enabled to give better service.—I am, etc.,

London, W 1

A. A. OSMAN.

Thymoma Simulating Laryngeal Diphtheria

SIR.—Dr. Alwyn Griffith (April 30, p. 759) has described an instance of what he interprets as a "thymoma simulating laryngeal diphtheria" in a child aged 4½. His account of the patient suggests to me that this was almost certainly an example of acute myasthenia gravis, and that the child's death was not due to pressure caused by the presence of the tumour.

It is not generally known that an acute form of myasthenia gravis occurs in young children, the leading sign being failure of respiration with cyanosis. The condition described by Dr. Griffith would probably have responded dramatically to an injection of "prostigmin," as it did in two children, aged 4½ and 2, under the care of Dr. W. G. Wyllie at Great Ormond Street Hospital for Sick Children a few years ago. I operated on both these children for thymectomy, and the elder one has been well since; the younger one afterwards died in a relapse of myasthenia because I had failed to remove the whole of the gland.

Dr. Griffith's description does not convince me that the organ found in the mediastinum was really a tumour in the sense of being a neoplasm. It may have been simply a large thymus gland, which would normally be of considerable size at the age of 4. Thymic tumours usually become closely adherent to surrounding structures and show an obvious proliferation of epithelial or reticular cells.—I am, etc.,

London, W.1.

GEOFFREY KEYNES.

Endocrines and Fibro-Adenosis

SIR.—In his interesting paper on this subject (April 30, p. 750) Mr. H. J. B. Atkins ascribes to me opinions which I do not hold, and I would be grateful for the opportunity of correcting this misapprehension. I am quoted as having advocated androgen therapy for fibro-adenosis, "in the hope that this will prevent the onset of cancer" (*British Medical Journal*, 1938, 2, 319)—a view which I have never held, even in the most optimistic moments, much less propagated. What I actually recommended (and I think I was the first to do so) was the routine implantation of testosterone in the wound after a radical mastectomy in cases of breast cancer as a prophylactic against recurrence, and repeated implantations from time to time—a view substantiated by Adair at a meeting of the Section of Surgery, Royal Society of Medicine, on March 23 (reported in the *Journal* of April 9, p. 631), and others.

In spite of this disclaimer, however, I cannot agree with Atkins that testosterone can be actively cancerogenic in cases of fibro-adenosis. Both theoretical considerations and practical experience are to the contrary, and the one case quoted is most likely, in my opinion, coincidental. It is hoped that Atkins's condemnation will not have the effect of depriving patients of the advantage of a hopeful, if temporary, therapeutic agent.—I am, etc.,

London, W.1.

A. A. LOESER.

Diathermy Prong Forceps

SIR.—As the originator of the principle of diathermy haemostats, it is easy to settle the differences between Mr. A. Wilfrid Adams (April 9, p. 631) and Mr. David Aiken (April 30, p. 780). They are both right. In 1924, at the Christie Hospital, Manchester, I first used artery forceps connected by flex to diathermy to seal vessels. From 1932 onwards most of my patients have been connected to diathermy,¹ and two pennyworth of British electricity has done just as well as, and probably better than, four dollars' worth of American catgut. Minute vessels have been closed at a depth of even a foot in the lower abdomen, and a tiny piece of sterile carbon has replaced a ligature, which is always liable to go septic. Haemorrhage, time, and labour have been saved. Wounds have healed better because sepsis has been avoided.

Why the principle has not been more widely used I have never understood. In my long surgical experience, by the use of diathermy I have avoided the tedious tying of millions of ligatures; for example, in a cancer of the breast it is unnecessary to tie more than twelve ligatures, and in a subtotal thyroidectomy five. The technique is easily acquired—far more easily than to learn to drive a motor-car. The simple

harmonious use of one foot and one hand is all that is required. But a full knowledge of the dangers of diathermy and the protection of the patient are essential.

As the method advanced, I used one thin flex which could be attached to many instruments of varying depths and type. Mr. Adams has produced another instrument to his liking, and so will any surgeon who uses the principle. Mr. Aiken came as resident to the Christie Hospital during the war, when I could not have diathermy instruments made for special purposes and had therefore to return to flex attached to any instrument by adhesive or insulating tape. He did a great service by publishing² my principles in an immature form. He is still not aware that adhesive tape, although boiled, will still retain microbes in its depths, and naturally will occasionally become unstuck. That is why attachment by tape, as described in his letter, may become dangerous. And it is far safer, though possibly a little cumbersome, to use an attachment like that of Mr. Adams.—I am, etc.,

Manchester.

WILSON H. EY.

REFERENCES

- ¹ *British Medical Journal*, 1947, 1, 897.
- ² *Lancet*, 1944, 2, 212.

A Danger to Public Health

SIR.—The remarks of your correspondent, Dr. G. C. F. Ree (April 30, p. 776), on the spread of smallpox prompt me to draw attention to another point which would seem to require attention. Shortly before the importation of smallpox on s.s. *Mooltan* a certain person who in recent months became somewhat of a national character left this country in a mysterious manner. Despite the fact that his picture had been in every newspaper and periodical over a period of weeks, he was able to leave by an unknown route and without the knowledge of police, emigration officials, or customs. This occurred within a reasonably short interval of the disappearance of aircraft in some numbers and by unknown routes from this country without the knowledge of the authorities, and it is reasonable to suppose that the whole of this illegal traffic has not always been and will not always be in one direction.

In view of the fact that the farthest point in the world is now within the incubation period of the major infectious diseases, illegal entry into this country by air creates a grave risk to the public health. It is suggested, therefore, that everyone should co-operate in preventing a continuation of such traffic in the future, and that offences, when detected, will be met by such penalties as to deter people from committing what may appear an adventurous crime but which may have grave and far-reaching consequences.—I am, etc.,

Brit. Bucks

V. O. S. GARTSIDE.

Treatment of Basal-cell Carcinoma

SIR.—I would like to record my appreciation of the excellent paper on the surgical treatment of rodent ulcer by Sir Cecil Wakeley and Mr. Peter Childs (April 30, p. 737). The authors state that there should be no recurrence with adequate surgical excision and recommend that treatment for all rodent ulcers. I think the authors are to be congratulated on the uniform success of their treatment, which is a tribute to the combination of their good judgment and technical skill.

I have no criticism of their recommendation as it applies to lesions on the neck, trunk, and limbs, where wide excision is relatively uncomplicated, and would merely add that many of the superficial rodent ulcers in these sites run a very slow benign course, and elderly, timid patients may be safely treated by irradiation or, if the lesions are very superficial, by freezing with CO₂ snow for two or three minutes.

Apparently rodent ulcers occurring on the face, especially about the temples, the eyes, and the naso-labial folds, are not so readily treated by simple excision as the authors suggest, and many cases of recurrence after surgery have attended dermatological departments and radiotherapy centres. I have seen a considerable number, some of which had relapsed after two excisions and one after three excisions by a competent surgeon. I do not agree with the authors that the extent of excision necessary is readily gauged, and I believe that the extent of some rodent ulcers, with the presence of neighbouring microscopic

nodules, cannot be discerned with the naked eye. It would also appear that the surgical disturbance of tissue balance has a markedly activating effect upon any residual malignant cells, and relapses after incomplete excision usually run a more rapid course.

It should be remembered that towards the end of the nineteenth century the surgical treatment of rodent ulcers of the face had fallen into considerable disrepute, and the expression "noli-me-tangere" had been applied to rodent ulcers and considerable thought had been given to other measures of treatment. Burning-irons of various shapes were used by the surgeons of the London Hospital instead of excision, and the introduction of radium and x-ray treatment was welcomed by the surgeons. In fact Dr. Sequeira was invited to an International Congress of Surgery at Stockholm in 1905 to read a paper on his technique with radium in the treatment of malignant diseases, especially of the skin.

Since that time by far the greater number of rodent ulcers have been treated by dermatologists or radiotherapists. Treatment with the unscreened radium plate, or with x-ray therapy alone or after preliminary curettage, is not tedious, nor as a rule is the reaction at all severe, and the resulting scar is relatively inconspicuous. Many elderly patients are much less bothered by non-operative treatment, and in the sites most suitable for wide excision the results of such treatment are almost uniformly satisfactory. It is admitted that, in any large series of rodent ulcers treated by irradiation, recurrence may account for 5 to 10%. The small squamous-celled lesions are not usually more radio-resistant than the true rodent ulcer.

No doubt some further comment will come from radiotherapists with considerable experience in the treatment of these lesions, but as a dermatologist I think the above remarks are fair comment.—I am, etc.,

London, W.1.

R. T. BRAIN.

Smallpox Contacts

SIR,—I think that the majority of doctors will agree with Dr. G. C. F. Roe's suggestion (April 30, p. 776) that protective vaccination of travellers before leaving any country infected with smallpox would be the surest safeguard against the introduction of variola major to this country.

I was interested in his treatment of contacts by voluntary isolation in the isolation hospital. With a considerable number of contacts arriving from abroad over the past few years, and depending upon the safeguard of timely vaccination, I have relied upon an immediate home visit, with advice and instructions to report immediately any symptoms or signs, however trivial—a complete examination being made only in exceptional cases. I have not interfered with the liberty of the person to pursue his ordinary avocations, believing that smallpox is not infectious unless or until a rash appears. People from affected countries abroad are well aware of the risks of smallpox, and all are anxious to co-operate in every way.

It may be that stricter measures are desirable in congested towns than in rural areas. I feel that the views of other medical officers would be useful.—I am, etc.,

Guildford, Surrey.

J. E. HAINE.

SIR,—From the statement by the Port of London Authority appearing in *The Times* of May 10 about the outbreak of smallpox in the s.s. *Mooltan* and the measures taken by this authority, it would appear that the ship was released from quarantine on Sunday, April 3, and the passengers allowed to disperse after full particulars of all destinations had been given and all relevant local authorities had been informed.

Quarantine, as you will agree, is the limitation of the free movement of contacts until it is certain that they have not acquired the disease to which they have been exposed. As it was not until March 31 that it was strongly suspected that this ship was likely to be a case of smallpox, I think that the purpose of quarantine the operative date should be April 1, in which case the ship should not have been released from quarantine until April 16 at the earliest.

I cannot agree with the practice of allowing contacts of a suspected case of Asiatic smallpox to mix freely with the general population, no matter how close the supervision is. It is common knowledge that a very large section of our population

is unvaccinated, and, now that vaccination is no longer compulsory, this unvaccinated population will grow larger. While such a state of affairs exists in this country it is only fair to the public to insist that quarantine be adequate and complete. I feel sure that much of the present anxiety and alarm in the country to-day would not have occurred if the *Mooltan* passengers had been kept on board until April 16.—I am, etc.,

Launceston, Cornwall.

L. RICH.

Ankylosing Spondylitis

SIR,—In his letter (April 2, p. 591) under this heading Dr. F. Hernaman-Johnson asks, "Is their sole resort to be the orthopaedic surgeon, who, after all, deals with the results of the disease rather than the disease itself?" I am sure Dr. Hernaman-Johnson did not intend this sentence to be as disparaging as it sounds.

Fortunate is the patient with ankylosing spondylitis who comes under the care of an orthopaedic surgeon at an early stage in his disease. The latter clearly enjoys an advantage over certain of his colleagues in knowing that he is unable to cure the patient. He also knows that the end-result of the disease is a "poker back," and that there is a grave risk of costo-vertebral ankylosis and a consequent lowering of resistance to respiratory infection. He knows too that in most cases radiotherapy is effective in relieving the patient's pain. He therefore takes steps to ensure that the spine ankyloses straight and to maintain the respiratory excursion of the chest by appropriate exercises until the disease has "burnt out." He will also, in all humility, refer the patient to the radiotherapist. By such means the tragedy of the patient with a "question-mark" spine, unable to see more than five yards in front of his feet, can be avoided.

Of patients treated in the orthopaedic department of the Sheffield Royal Infirmary, I quote two examples. One served in the London Fire Service throughout the "blitz," being treated without avail by a variety of medical methods. Happily his spine flexion was controlled in time by a brace, and, now ankylosed, he works actively in an important position. The other is still serving as first mate on an oil-tanker. Although his spine is rigid from sacrum to skull, he stands straight.—I am, etc.,

Sheffield.

F. GODSALVE WARD.

Adoption of Children

SIR,—In a court case reported in the newspapers recently a childless couple were bound over for neglecting an adopted child aged 6½ years. The child, adopted at the age of 14 months through an adoption society, proved to be educationally subnormal. Medical examination of children for adoption should at least ensure that mentally subnormal children are not passed as fit for adoption.

At present the examination of such children may be carried out by any medical practitioner, who may or may not be familiar with the norms of mental development in children. I would like to make a plea that examination of children for adoption is only carried out by doctors who have a specialized knowledge of the developmental assessment of children. Only in such a way can the repetition of a disaster as described in the newspaper reports be avoided.—I am, etc.,

London, S.E.13.

G. G. JONES.

Dosage of Heroin

SIR,—Dr. J. H. Crawford and Dr. James Ross (April 30, p. 776) are right in emphasizing that in the two alarming cases reported by me (April 9, p. 619) the doses of heroin administered were excessive. The administrator had been led towards excess by three circumstances. (1) The opinion, which certainly has been current, that heroin is a safer and milder drug than morphine. (2) His possession of tubes of heroin tablets of 1/6 gr. (11 mg.) issued by a long-established and reliable firm of chemists. (3) His previous experience that this dose had produced little obvious effect. Dr. James Ross's shrewd reasoning that this experience may have related to patients with vigorous metabolism is correct—they were pregnant and parturient women.

I venture to suggest these conclusions. Patients differ considerably in their resistance to the depressing effects of heroin, chiefly according to their metabolic vigour. The margin of safety, never too wide for care, may become narrow enough for anxiety in a patient with lowered metabolism. A large dose of heroin in a much debilitated patient may cause dangerous symptoms. Heroin should not be administered to such a patient without special consideration, and only in reduced doses. Tablets and other unitary preparations of drugs should not be issued containing doses in excess of the official maximum.—I am, etc.,

Birmingham.

CRANSTON WALKER.

Approach to the Frontal Lobes

SIR,—The restatement of his views by Dr. P. Glees (April 30, p. 780) seems to leave us less ground for disagreement. However, I am not convinced he has established his main point, that abolition of transorbital lobotomy would accelerate our understanding of other lobotomy processes—or, as he puts it, that "any new blind approach will delay the understanding of the underlying mechanism of mental recovery after lobotomy." No one suggests that the transorbital technique should be used in 100% of cases, and it is difficult to believe that its occasional employment will seriously retard the advance of knowledge. Electro-convulsive therapy is also a treatment where the rationale is not clear, but its empirical use did not stultify research nor delay the present refinements of technique. This is to my mind a more fair analogy than Dr. Glees's comparison of transorbital lobotomy with a blind abdominal operation for the relief of constipation.

It seems better to me to give help where we can rather than withhold it on perfectionist grounds. There is a section of patients which one judges might benefit from psychosurgery and from nothing else, yet at the present level of medical services, and for a long time to come, they cannot be given the staffing and organization demanded by elaborate operative research. Since we have reasonable grounds for believing that the simple and relatively safe procedure of transorbital lobotomy might assist them and that at the worst it is unlikely to do harm, as a temporary expedient, pending the development of more definitive techniques, I see no very good argument against giving it at least a more extended clinical trial—I am, etc.,

Ilkley, Yorks.

MAX VALENTINE.

Shoulder-harness

SIR,—Fortunately it was the need for improvisation and not personal injury and discomfort, as in the case of Sir H. J. Manockjee Cursetjee (April 30, p. 779), which suggested to me an appliance for fractured clavicle or clavicles which would obviate the discomfort caused by the usual methods.

When such accidents have occurred during the last ten years I have invariably made use of two rubber "deck tennis" rings. An arm is inserted in each, and the shoulders are braced by a strap or webbing band connecting them across the shoulders. They are soft, pliable, and easily washed, and the comparative comfort is endorsed by a patient who had previously fractured one clavicle once and the other twice.—I am, etc.,

Cardiff.

J. P. H. DAVIES.

POINTS FROM LETTERS

Hereditary Cheiropompholyx

Dr. S. H. CURRY (Surbiton) writes: I have recently seen a case of hereditary cheiropompholyx which I feel must be very unusual. The case was a male child of 6 months, and on examination he showed a vesicular eruption of the right hand. Some of the vesicles were secondarily infected. I ensured that there was no fungus infection by microscopic examination. I treated the patient with a coal-tar ointment applied to the affected parts, and penicillin injections. The following day I saw the father of the child, and he complained of a similar eruption on the hands from time to time. He said it first occurred in hot weather and was diagnosed in India as cheiropompholyx. Again the base of the vesicles showed no evidence of fungus, and I was thoroughly satisfied that this was a case of cheiropompholyx. He responded well to the same treatment as his child, and both were discharged on the same day, after three weeks' treatment.

Obituary

Sir FREDERICK MENZIES, K.B.E., M.D., F.R.C.P.

Former Medical Officer of Health and School Medical Officer, London County Council

Sir Frederick Menzies, formerly medical officer of health and school medical officer of the London County Council, died suddenly on May 14 at his home in London at the age of 73.

Frederick Norton Kay Menzies was born in 1875, the son of a civil engineer at Caernarvon, North Wales. He graduated M.B., Ch.B. at Edinburgh University in 1899, proceeding M.D. with distinction in 1903. He took the M.R.C.P.Ed. in the same year, and the fellowship four years later. He had postgraduate experience in the universities of Vienna, Berlin, and Paris, and held resident posts at the Royal Infirmary, Edinburgh; the Brompton Hospital; the Children's Hospital, Great Ormond Street; and at the Western Fever Hospital, Fulham. For five years he was demonstrator and lecturer in the public health laboratory at University College, London. After taking his D.P.H. in 1905 Menzies became in 1907 deputy medical officer of health for the borough of Stoke Newington. He held also part-time appointments as examiner in public health and hygiene to the Board of Education, the City and Guilds Institute, and the Royal Sanitary Institute.



[Lafayette]

Menzies began his long service with the London County Council in 1909 as a part-time school medical officer. Two years later he was appointed a whole-time assistant medical officer on the Council's staff. By 1914 he had become principal assistant medical officer, and in 1926 he succeeded his chief, the late Sir William Hamer, as medical officer of health and school medical officer. His main task in 1911 was to organize the first of the five areas—east and north-east London—into which the county was divided for the purpose of the school medical service. A year later he drew up the scheme for the diagnosis and treatment of tuberculosis, and during the war of 1914-18 the scheme for the provision of facilities for the diagnosis and treatment of venereal diseases. Menzies was also responsible in those early years for all the work in connexion with maternity and child welfare, infant life protection, and the midwifery service. Just before his appointment as chief medical officer there came a short period of broken service under the L.C.C. In 1924 Menzies resigned his position as a principal assistant medical officer and was appointed to the temporary post of consultant to the Council in connexion with its tuberculosis and venereal diseases schemes. During the ensuing 21 months he undertook a great deal of work on behalf of the Voluntary Hospitals Commission, the joint Council of the British Red Cross Society and the Order of St. John, and the United Services Fund. These three organizations at that time were either distributing or had recently distributed large grants of money, arising from war funds, to voluntary hospitals throughout England and Wales. His visits of inspection took him to all kinds of straits and convalescent homes in different parts of the country and was a valuable, though an unintended, preparation for the new duties that awaited him in London within the next few years. His return to the full-time work of the Council was without owing to representations which were made by prominent members of that body who realized that great hospital improvements were impending. They felt that the enlarged responsibility which would fall to the Council called for an officer in the public health department who had had experience of large-scale hospital administration and organization. Mr. Neville Chamberlain, then Minister of

Health, had brought forward just at this time his provisional proposals for the reform of the Poor Law. These proposals were eventually embodied in the Local Government Act, 1929. Menzies agreed therefore to rejoin the Council's service at the end of 1925, when Sir William Hamer retired.

Menzies undertook then the preparatory work needed in view of the approaching legislation. Under the Act of 1929 the whole of the general and special hospitals and medical services of the metropolitan boards of guardians and the Metropolitan Asylums Board were taken over by the L.C.C. A new hospital authority came into existence overnight on April 1, 1930, and with such smoothness was the transfer accomplished that hardly any of the 20,000 staff or the 42,000 patients realized that anything unusual had occurred. About 80 hospitals and other institutions came under Menzies's direction and control. But that was only the beginning, and as the hospital service went on developing, its efficiency increasing year by year, it became the largest service under unified control in the world.

The work of building up an efficient department both for the public health and for the hospital services of London continued steadily. An important step forward was taken with the establishment of the British Postgraduate School and its attachment to the Hammersmith L.C.C. Hospital, and in this development Menzies played his part. Then in 1939 the war brought about a disruption which Menzies felt deeply. Perhaps he took a too sombre view when he saw what had almost been his life-work frustrated. In a private letter at the time he spoke of the service as being "completely smashed up as a unit organization," and of "a tragic end to a long career in the service of London." He had suffered under a handicap of physical infirmity for some years, and on several occasions he had described himself as a very tired man and had expressed his desire to be released. He therefore, after nearly fourteen years at the head of the L.C.C. public health department, tendered his resignation, which took effect on his sixty-fourth birthday, Nov. 2, 1939. The Emergency Committee of the Council, which owing to the war was then in charge of all the Council's business, in accepting the resignation, reported that "it was in no small degree due to the preliminary work and foresight of Sir Frederick Menzies that the transfer of the hospitals was effected so smoothly." The report added: "His retirement will deprive the Council of the services of an officer in whom it has justifiably placed the highest confidence. The strength and graciousness of his character and personality have won the respect and esteem of the members of the Council and of the members of his staff both at the central office and at the hospitals." The Council added five years to his period of pensionable service as a mark of its special regard, and when he bade it farewell high tribute was paid to him by the leader of the Council, Mr. Herbert Morrison, who declared him to have been one of the greatest chief officers the L.C.C. ever had.

Among the many offices which Sir Frederick Menzies held at one time or another outside his Council work were the chairmanship of the Central Council for Maternity and Child Welfare, membership of the Council of the National Association for the Prevention of Tuberculosis, and chairmanship of the committee of management of its Burrow Hill Colony. He was a member of the board of governors of the London Hospital and of Queen Mary's Hospital, Roehampton. He represented Great Britain at the international congresses of Red Cross Societies. The Government committees upon which he served included the Trevelthick Committee of inquiry into venereal diseases, the Ministry of Health Committee on the training and employment of midwives, the Home Office Advisory Committee on the scientific investigation of crime, and the Interdepartmental Committee on nursing services. He was a member of the Voluntary Hospitals Commission from 1923 to 1928, and a member of the Committee of Reference of the Royal Colleges dealing with the recruitment and allocation of consultant staff for war service in 1939. For years he served the Central Midwives Board and the General Nursing Council. Many honours and decorations came his way. He was knighted in 1932, and in 1937 was one of the several recipients of the King's appointment from members of the Order of the Order of St. John of Jerusalem in 1934. In 1932 he was elected F.R.C.P. under the by-law which admits to the fellowship a certain number of persons, not members

of the College, who have distinguished themselves in any branch of the science or practice of medicine. In 1941 the College awarded him its Bisset-Hawkins gold medal for his work in the public health field. He was a Fellow of the Royal Society of Edinburgh, and in 1934 he received from the Royal College of Physicians of Edinburgh the Cullen Prize awarded every four years "for the greatest benefit done to practical medicine." In the previous year he received the honorary LL.D. of his old university on the occasion of the 350th anniversary of its foundation, when only one nomination was allotted to each of the various faculties, and he was chosen as representative of medicine, the Public Orator describing him as "one of the foremost exponents of preventive medicine in this country."

In his social as well as in his public life Sir Frederick Menzies was a forceful and decisive but very likeable personality. At his country home in Norfolk he revealed himself as something other than the dominant high official of County Hall; here he was a gentleman farmer, finding his recreations in gardening, farming, estate management, and country sport.

Sir Allen Daley writes: Sir Frederick Menzies was probably the greatest hospital administrator which this country, or indeed any other, has ever known. He set himself the task of welding the hospitals of the Metropolitan Asylums Board and those of the 25 Metropolitan boards of guardians into a comprehensive hospital service for London which would be the finest as well as the largest under local government administration in the world. Many of the hospitals were almost obsolete, and the standards of staffing varied greatly; the economic crisis of 1931 added to his difficulties. Nevertheless, by the time that he retired in 1939 he had made substantial progress towards the implementation of his plans, and had it not been for the war his ambitions would by now have been fully attained. He had had long experience in the best voluntary hospitals and remained actively associated with many of them. He was active in the affairs of the King Edward Fund and the Nuffield Provincial Hospitals Trust. This close association with the voluntary hospital world helped substantially his organization of the municipal hospitals and his efforts to reach a working arrangement with them. Menzies had no patience with recent changes in the hospital world, and enlivened discussion by many caustic comments upon them. He had enormous influence and prestige at County Hall. He was not dependent financially on his official position, and this enabled him to take a strong line whenever he felt that this was necessary. He was a genial but exacting chief. He left a great deal to his staff, but always supported them when they ran into difficulty. His knowledge of when to press forward with a scheme and when to defer it until a more propitious moment was uncanny. At heart Menzies was a countryman. He was an expert in estate management, and nothing gave him greater pleasure than a day in the open air with a gun and a dog. This form of recreation, however, had been curtailed since 1934, when he had a serious illness as a result of which he could not walk more than a quarter of a mile without resting. Since he sold his Norfolk estate he had lived in London except for the war years, when he returned to his native Caernarvonshire. For the past few years he had lived quietly in Kensington. In March he went to Port Said to see there the British Hospital, of the committee of which he was chairman. He developed pneumonia on the way back, and never completely regained his strength. His former colleagues mourn the loss of a great-hearted friend and a truly great man. He left a mark on the public health and hospital services of London which can never be effaced. Our deepest sympathy goes to his widow and to his son and daughter. His elder son, a regular soldier, was killed soon after the landing in Normandy in 1944.

W. N. WEST-WATSON, M.D.

Dr. William Norman West-Watson died at his home in Bradford on March 20. He was born at Birkenhead, and graduated M.B., Ch.B. at Glasgow University in 1903, proceeding M.D. in 1908. He was house-surgeon to Sir Hector Cameron, and later R.M.O. to the Jaffray Hospital, Birmingham. As a medical student he served in the South African War with a Scottish hospital unit, and was awarded the Queen's Medal with clasps. Before starting in general practice he was ship surgeon

to the Union Castle Line in 1908. On the outbreak of war West-Watson joined the R.A.M.C. and went to France in 1915. In this year he was appointed honorary assistant physician to the Bradford Royal Infirmary, becoming later physician and consultant. He joined the St. John Ambulance Brigade as corps surgeon, and was later assistant commissioner for the Midland Area (West Riding). He was made a commander of the Order of St. John of Jerusalem in 1946.

West-Watson will be best remembered for his work in connexion with the British Medical Association. He was a tower of strength to the Bradford Division, of which he was secretary from 1920 to 1932. He kept alive locally interest in the work of the Association. Many will recall the annual meetings held in Bradford in 1924, which owed much of its success to West-Watson's administrative ability and genius for organization. He was honoured the following year at Bath by being made vice-president of the Section of Medicine. A member of several central committees from 1921 onwards, and a member of Council from 1930 to 1943, he attended fourteen representative meetings between 1921 and 1938. He was chairman of the Bradford Division in 1933-4, and president of the Yorkshire Branch at the time of his death. At the meeting of Council last week Dr. Dain paid tribute to the work West-Watson had done for the Association, locally and centrally, for over twenty years.

When his full and active life ended, West-Watson was deputy-chairman of the Bradford Executive Council. He never spared himself, and even his holidays were few and short, and mostly devoted to golf. He played a good game, and up to recently had a handicap of ten. No record of his life would be complete without mention of his work for St. Luke's Church, Bradford. He was a regular attender, a warden, and gave characteristically devoted service. West-Watson suffered a cerebral haemorrhage in January last, made a study of his disability, and won through to attend meetings of the Executive Council and of the Division. Only a fortnight before his death he spoke at one meeting with his customary force and lucidity. Truly he died in harness. West-Watson never shirked responsibility, and when in the process of time he handed over his duties to others he continued to give freely of his ripe experience and wisdom. He owed much to his wife, who was always a gracious hostess on the many occasions when they dispensed hospitality. He is survived by her, three sons, and a daughter. All three sons served in the recent war.—G. P.

OWEN W. RICHARDS, C.M.G., D.S.O., D.M., M.Ch., F.R.C.S.

Mr. Owen William Richards, one of the distinguished surgeons of the 1914-18 war and later director of the Egyptian Government School of Medicine in Cairo, died at his home in Bideford on April 18 after a long and distressing illness. Owen Richards was the son of the Rev. H. W. P. Richards, Prebendary of St. Paul's. He was born at Isleworth vicarage on Sept. 30, 1873, and there he passed his early boyhood until he went to Eton as a King's Scholar. At New College, Oxford, he obtained first-class honours in physiology and became Wykeham Prize Fellow. He was then a student of Guy's Hospital, where he graduated in 1902, proceeding M.D. in 1905 and taking the F.R.C.S. in the same year. His studies were interrupted for a time by the South African War, when he served as a dresser and gained the Queen's Medal with three clasps. In 1905 Richards was appointed professor of clinical surgery at the School of Medicine in Cairo, and there he was responsible for some outstanding work. He was accustomed to ride out to the military hospital of the Egyptian Army at Abbassia, and he employed his leisure hours in practising operations on the intestines of a cow in order to perfect his technique. He did yeoman service in Cairo for the next nine years, and then on the outbreak of war in 1914 he retired from the Egyptian Service and took a commission in the R.A.M.C. He was posted to Versailles as a subaltern, and there he was found by Sir Arthur Sloggett and promoted to captain. His surgical skill soon became apparent, and by 1917 Richards was a colonel and finally a consultant surgeon and a member of the advisory council of the D.G.M.S. in France. He won the D.S.O., was appointed C.M.G., and was three times mentioned in despatches. He did splendid work at No. 6 C.C.S. at Merville and also in Béthune and Arras. He told Sir Cuthbert

Wallace and Sir Anthony Bowlby that if only he were given some extra equipment and placed nearer the front he thought he might do good work on abdominal cases close to the line without giving them the trying journey back to a clearing station before operation. His request was granted, though he was told, of course, that no sisters could be risked so far in advance; but the extra equipment and some additional orderlies made the arrangement he suggested possible, and in these circumstances some of his best work was done. After the war Richards returned to Egypt as director of the medical school and hospital at Kasr-el-Aini, being decorated later with the Order of the Nile (Second Class) for his services to medical education. He left the service of the Egyptian Government in 1924 under the arrangements made when Egypt became independent. In 1927 he settled at Downes, near Bideford, where he could indulge not only in his favourite sport of yachting but in the art of forestry. He planted many trees and supervised their growth; so much so that a forestry inspector once said that among small estates Downes was "one of the show places so far as forestry was concerned." The sympathy of many friends and colleagues will be extended to Mrs. Richards and her daughter.—S. L. C.

The Services

INDIAN MEDICAL SERVICE DINNER

The annual dinner of the Indian Medical Service will be held at the Connaught Rooms, Great Queen Street, Kingsway, London, W.C., on Wednesday, June 15, at 7 p.m. for 7.30 p.m., when the chair will be taken by Major-General Sir Gordon Covell. The cost of a ticket to subscribing members of the dinner club is 16s. 6d. and to others £2 2s. These charges cover drinks before and during the dinner, cigarettes, and gratuities to waiters. If possible full evening dress, with decorations, should be worn, the alternative being dinner-jacket, with which miniatures may be worn, or Service dress. Applications, with remittance, should be sent to Mr. A. W. Brown, of Grindlays Bank, Ltd., 54, Parliament Street, London, S.W.1, as early as possible.

Medical Notes in Parliament

Special Rations for Invalids

Answering Mr. DRIBERG on May 11, Dr. SUMMERSKILL announced that the Food Rationing (Special Diets) Advisory Committee had reviewed the present meat ration in relation to the needs of invalids and had recommended that no extra meat rations additional to those already allowed need be granted for diabetics or for cases of spontaneous hypoglycaemia. They were satisfied that the protein available in the present allowances of meat and cheese was quite adequate to construct any kind of diabetic diet. The Committee had also recommended that one further extra ration of meat should be allowed in cases of nephritis with gross oedema and gross albuminuria, for both types of hepatitis, and in cases of steatorrhoea.

Eyes and Ears.—It is estimated that up to March 31 about 5,620,000 sight tests had been made under the National Health Act. It is not known how many of these were examinations for the first time. About 19,000 patients in England and Wales have been supplied with Medresco hearing-aids since July 5, 1948. The number needing such aids is not known, but is not likely to be less than 150,000.

Leprosy.—Replying to Mr. HUBBARD on May 13 Mr. BEVAN said he was considering making leprosy notifiable. It was not notifiable at present, and reliable information about the number of cases was not available. There was one leper hospital in England, run by a voluntary body, which could accommodate 13 cases and had 12 there now. Arrangements were being made to supplement this by another provided as part of the National Health Service.

The two Sides of the Ancillary Staffs Council of the Whitley Councils for the Health Services have agreed that domestic staffs directly engaged in the care of smallpox and typhus patients, and who therefore have to be isolated and to undergo other inconveniences which the work involves, shall receive a 50% increase in wages while so engaged.

No. 17

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended April 30.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included) (b) London (administrative county). (c) Scotland (d) Eire. (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	32	1	18	3	2	57	5	18	5	1
Deaths ..	—	—	—	—	—	—	—	—	—	—
Diphtheria	98	20	20	6	8	134	16	49	8	7
Deaths	1	—	—	—	—	2	—	—	—	—
Dysentery	38	4	35	1	15	119	26	57	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute ..	—	—	1	—	—	—	—	1	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	21	7	4	—	—	27	13	4
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years ..	26	3	3	37	2	30	4	9	32	—
Deaths	—	—	—	—	—	—	—	—	—	—
Measles*	11,436	1541	513	255	171	10,169	1101	228	113	62
Deaths†	—	—	1	1	—	—	—	—	—	—
Ophthalmia neonatorum ..	44	2	6	—	1	62	4	15	2	2
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	1	—	1(8)	—	—	3	1	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza Deaths (from influenza)‡	453	21	13	9	15	546	33	3	13	7
Deaths	39	2	2	1	—	7	—	—	2	—
Pneumonia, primary ..	176	22	162	33	10	155	23	201	39	5
Deaths	—	—	9	—	—	—	—	8	—	—
Poliomyelitis, acute ..	1	—	—	—	—	—	—	—	—	—
Deaths	14	1	—	2	—	13	1	1	—	—
Poliomyelitis, acute ..	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	—	10	—	—	—	1	10	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia††	80	7	8	1	—	112	7	11	—	2
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	0	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	785	66	145	60	29	1,538	104	259	37	41
Deaths†	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	6	1	—	2	—	12	—	1	—	—
Deaths	1	—	—	—	—	1	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	2,905	167	249	153	88	3,684	253	37	55	15
Deaths	9	—	1	2	—	4	—	—	1	—
Deaths (0-1 year) ..	261	33	32	30	18	295	47	54	21	13
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding still-births)	4,657	670	541	214	125	4,150	671	562	174	112
Annual death rate (per 1,000 persons living)	—	—	10.9	13.3	—	—	11.3	10.9	—	—
Live births	8,200	1394	1039	458	250	8,049	1291	1001	413	275
Annual rate per 1,000 persons living ..	—	—	20.8	30.2	—	—	20.2	25.8	—	—
Rate per 1,000 total births (including still-births) ..	212	32	37	—	—	200	25	28	—	—
Rate per 1,000 total births (excluding still-births) ..	—	—	34	—	—	—	—	27	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are those for an approximating only.

† Deaths from diphtheria and scarlet fever for England and Wales, London and Northern Ireland, and for Scotland are published.

†† Deaths from puerperal fever for England and Wales, London (administrative county) and Northern Ireland.

‡ Deaths from pneumonia for England and Wales, London (administrative county) and Northern Ireland.

§ Deaths from poliomyelitis and poliomyelitis for England and Wales, London (administrative county) and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Typhoid Fever at Crowthorne

Further cases of typhoid fever associated with the Crowthorne, Berkshire, outbreak have been found at Ottershaw and Didcot. The total of confirmed cases is now 39, and two of these may prove to be secondary infections.

The foodstuff suspected of carrying the infection was on sale in the village on April 15, 16, and 19, and was all consumed in that period. The outbreak was self-limiting. The source is still under investigation.

A controlled trial of chloromycetin (chloramphenicol, Parke Davis) is in progress on patients in infectious diseases hospitals at Winchester and Mogden, Middlesex. The reports will not be published for some weeks, but there is every reason to believe that the encouraging results obtained by Woodward and his colleagues¹ will be confirmed by the present investigations. There were no undesirable side-effects from the use of the drug.

At Maidenhead 7 patients in hospital have received "therapeutic anti-typhoid (Vi+O) serum (Felix)," which appears to have influenced the third week of the disease.

Smallpox

The unvaccinated woman admitted to the Liskeard Smallpox Hospital on May 7 developed a semiconfluent rash and is severely ill. Three close contacts, all unvaccinated until five days after first contact, agreed to precautionary isolation in the Liskeard Smallpox Hospital. It was reported, on May 16 that all three are sickening, and smallpox is expected to develop in two of them. In the third case vaccination after contact may have influenced the course and resulted in an infection without eruption.

A suspected case was admitted to the Ashey Smallpox Hospital, near Ryde, Isle of Wight, on the evening of May 14. This was on the third day of a severe illness, and the patient showed a confluent macular rash with the characteristic distribution of smallpox, except for a striking "butterfly" rash on the face. There was early vesiculation of some of the macules. On the fourth day there was extensive pustulation, and a diagnosis of acute disseminated lupus erythematosus was made. A negative complement-fixation test for variola-vaccinia was reported from the Central Public Health Laboratory on May 16. Confirmation of this negative result by egg culture is awaited.

Although several suspected cases have been seen elsewhere in England and Wales the only confirmed focus of infection is at Liskeard, Cornwall. The circumstances are in no way disturbing, but there is still a remote possibility of further cases of smallpox appearing, and special vigilance is necessary.

Discussion of Table

In England and Wales a decrease was reported in the notifications of measles 2,078, acute pneumonia 306, scarlet fever 168, and dysentery 14. There was an increase in the incidence of whooping-cough 359.

The largest falls in the notifications of measles were Yorkshire West Riding 236, Surrey 226, Southampton 171, Middlesex 160, London 158, Sussex 153, Kent 132, Derbyshire 121, and Oxfordshire 114. The only notable change in the incidence of scarlet fever was a fall of 47 in Lancashire.

The largest increases in the notifications of whooping-cough were Derbyshire 73, Kent 52, and Warwickshire 41.

An outbreak of dysentery affecting 8 persons was notified in Buckinghamshire, Aylesbury R.D. In Lancashire 10 cases were notified.

In Scotland large increases were reported in the notifications of measles 248 and whooping-cough 130, while decreases were recorded for acute primary pneumonia 107, scarlet fever 29, and diphtheria 13. Notifications of diphtheria were down to the record low level of 20; in Glasgow there were 14 fewer cases notified than in the preceding week. The increase in the incidence of dysentery was contributed by Glasgow, where the notifications rose from 11 to 23.

In Eire decreases in the notifications of measles 68 and scarlet fever 35 resulted from a decreased incidence in Dublin C.B.

In Northern Ireland an increase of 38 in the notifications of whooping-cough was the only large change in the trends of infectious diseases. This increase was confined to Belfast C.B. and Co. Antrim.

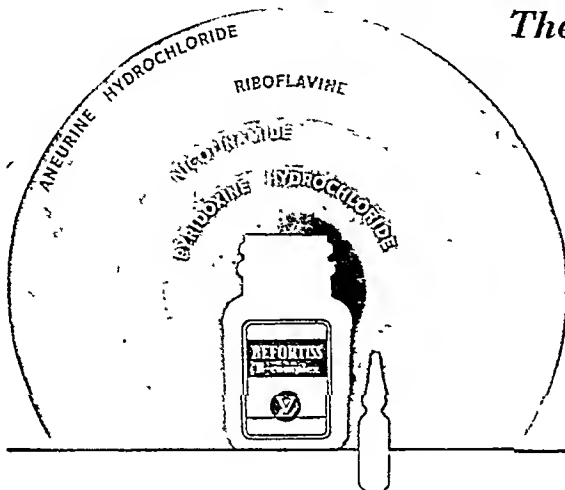
Quarterly Returns for Northern Ireland

Births during the December quarter were equivalent to a rate of 20.2 per 1,000, which was 0.3 below the rate for the preceding December quarter and 1.5 below the average for

¹Woodward, T. E., Smadel, J. E., Lee, H. L., Green, R., and Makchar, D. S. (1948). *Ann. intern. Med.*, 29, 131.

BEFORTISS B-complex

The 4-factor preparation



	capsules
aneurine hydrochloride	1.0 mg.
riboflavine - - -	1.0 mg.
nicotinamide - - -	15.0 mg.
pyridoxine hydrochloride	0.5 mg.

	1 c.c.	2 c.c.
aneurine hydrochloride	10 mg.	50 mg.
riboflavine - - -	1 mg.	4 mg.
nicotinamide - - -	40 mg.	200 mg.
pyridoxine hydrochloride -	1 mg.	5 mg.

"Vitamin Therapy—its uses and limitations," 42 pp., with therapeutic index, may be obtained on application to Medical Dept., 44A



Vitamins Limited

Upper Mall, London, W.6.

Stimulant action in emergency

Anacardone (Injection of Nikethamide B.D.H.) should be at hand in the surgery and in the doctor's bag ready for immediate use.

Nikethamide B.D.H. exerts a rapid stimulatory effect on the respiratory and vasomotor centres thus raising the depth and rate of respiration and improving the blood supply to the heart in acute collapse.

Anacardone is available in ampoules as Injection of Nikethamide B.P. and as a 25 per cent. solution, flavoured, for oral administration.

ANACARDONE

Trade Mark
(INJECTION OF NIKETHAMIDE B.D.H.)

Details of dosage and other relevant information on request
MEDICAL DEPARTMENT

THE BRITISH DRUG HOUSES LTD. LONDON N 1
Phone: Clerkenwell 3000 Grams: Tetradome Telex London

And E 25

Introducing

NEW FORMULA

'Roche' B-Complex for oral and parenteral use

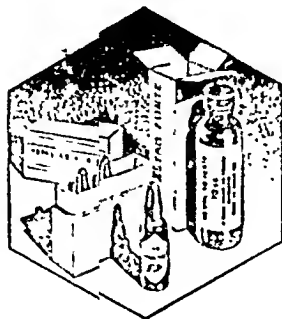
'Becosym' presents five important factors of the Vitamin B-Complex in two forms: Tablets and Twin-Ampoules.

EACH TABLET CONTAINS:	B-COMPLEX FACTORS	TWIN-AMPOULES CONTAIN:
5 mg.	vitamin B ₁ (aneurine, thiamin)	10 mg.
2 mg.	vitamin B ₂ (riboflavine)	4 mg.
20 mg.	nicotinamide (P.P. factor)	40 mg.
2 mg.	vitamin B ₆ (pyridoxine)	4 mg.
3 mg.	pantothenic acid	6 mg.

'BECOSYM'

Tablets are sugar-coated and issued in bottles of 25, 100 and 500. 'Becosym' for injection (intramuscular or intravenous) is stable and well-tolerated and is issued in boxes of 6 and 50 twin-ampoules.

ROCHE PRODUCTS LIMITED



HEPASTAB FORTE

HEPASTAB FORTE is a highly concentrated extract of liver which has been prepared in our Nottingham laboratories as the result of research conducted by our own chemists in co-operation with clinicians in this country and abroad. It contains all the known anti-anæmic factors of liver, is highly refined, painless on

injection, and highly concentrated. Each 1 c.c. of Hepastab Forte is obtained from 100 G. of liver and is therapeutically equivalent to 4,000-5,000 G. of fresh liver by mouth.

Ampoules of 1 c.c.: single ampoules, boxes of 3, 6 and 12 ampoules. Rubber-capped vials of 10 c.c.



Literature and further information gladly sent on request to Medical Department,
BOOTS PURE DRUG COMPANY LIMITED, NOTTINGHAM, ENGLAND.

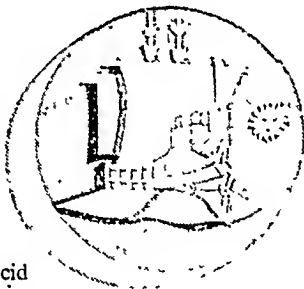
B.1.

CESSANTE CAUSA, CESSAT EFFECTUS (COKE)

*By neutralizing the cause
you neutralize the effect.*

Neutralization of the excess acid in the stomach without impairment of the normal digestive processes is the key to the satisfactory treatment of hyperacidity and peptic ulcer.

'ALUDROX,' a suspension of 5.6% colloidal aluminium hydroxide in gel form, rapidly controls this free acid without interfering with combined acid. A peptic ulcer quickly heals and pain is promptly relieved. The aluminium hydroxide is excreted later unchanged, thus avoiding all risk of alkalosis.



ALUDROX

Aluminium hydroxide gel

JOHN WYETH & BROTHER LIMITED
Clifton House, Euston Road, London, N.W.1
BEPLEX - ENDRINE - PETROLAGAR - PLASTULES

Wyeth



terms of TONIC VALUE

First and foremost, Minadex is a *children's* tonic. It takes the short cut to a child's favour with its delightful orange tang . . . ensures 'patient co-operation' right from the start. Yet Minadex is a tonic in the truest sense of the word. It contains the protective vitamins A and D not just in nominal amounts but in therapeutic doses; it provides iron to aid formation of healthy blood; and, in addition, the glycerophosphates of calcium, potassium, sodium and manganese, together with copper sulphate. N.H.S. prescriptions are revealing more and more preference for Minadex . . . and are showing that doctors realise how the same qualities that commend Minadex for the youthful patient are just as valuable to grown-ups!

GLAXO

Syrup MINADEX

in 6 oz. and
12 oz. bottles

Each fluid ounce contains: Vitamin A 18,000 I.U., Vitamin D 3,000 I.U., Iron and ammonium citrate 13½ grains. Calcium glycerophosphate 2 grains, potassium, sodium, and manganese glycerophosphates; copper sulphate.

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX BY Ron 3434

the fourth quarters of the five years 1943-7. Infant mortality was 44 per 1,000 registered births and was 18 below the average of the fourth quarters of the five preceding years. Maternal mortality was 1.6 per 1,000 births and was 0.8 below the five years' average. The general death rate at 10.9 per 1,000 was 1.2 below the five years' average. The death rate from tuberculosis, 61 per 100,000, was the lowest ever recorded, except for the December quarter of 1947, and was 12 below the five years' average.

For the whole of 1948 the birth rate was 21.9 per 1,000, a decrease of 1.4 on 1947 and 1.2 below the average of the five preceding years. The death rate, 11.3 per 1,000, was the lowest ever recorded in Northern Ireland. The infant mortality, 46 per 1,000 live births, was also the lowest ever recorded, being 7 below the rate for 1947, the previous lowest level.

Week Ending May 7

Notifications of infectious diseases in England and Wales during the week included: scarlet fever 898, whooping-cough 8,053, diphtheria 87, measles 9,217, acute pneumonia 494, cerebrospinal fever 21, acute poliomyelitis 13, dysentery 59, paratyphoid 3, and typhoid 37.

Medical News

The Centenary of the Brompton Hospital

It is hoped to hold a dinner in November of this year to celebrate the centenary of the Brompton Hospital. All those who have been on the medical staff or residents of the hospital who would like to be present at the dinner are asked to send their names and addresses to the House Governor, who will in due course give them further details of this notable occasion.

Honorary Fellow

Professor Grey Turner has been elected an Honorary Fellow of the American Surgical Association.

Irish Medical Graduates

A general meeting of the Irish Medical Schools and Graduates Association was held in the South Kensington Hotel, London, on April 21. This association of Irish medical men was inaugurated in 1878 and is the oldest Irish medical society in England. It has in its gift the presentation of the Arnott Memorial Medal, and among its recipients have been many famous Irishmen. An Arnott Memorial Medal was presented by Colonel George Moore to the president of the association, Mr. Johnston Abraham. It was unanimously agreed at the meeting that the association, which has held no functions since 1938, should resume its activities. Those qualified to become members and wishing to join are asked to write to the secretaries, Dr. J. Bodkin Adams, 6, Seaside Road, Eastbourne, or Mr. W. McKim H. McCullagh, 149, Harley Street, London, W.1.

Committee on Radioactive Substances

Sir Henry Dale, O.M., F.R.S., has been appointed chairman of the Radioactive Substances Advisory Committee, which will advise on protective measures against radioactivity. The committee has been appointed by four Ministers—the Minister of Health, the Secretary of State for Scotland, the Minister of Supply, and the Minister of Health and Local Government for Northern Ireland—to advise the Ministers on measures to safeguard workpeople and the public generally against the danger of exposure to radiation from radioactive substances and certain irradiating apparatus. The appointments made under Section 6 of the Radioactive Substances Act, 1948, are for three years. The other members are: Mr. J. P. Baxter, Ph.D.; Mr. W. Binks, M.Sc.; Sir Ernest Rock Carling; Mr. D. G. Catcheside, M.A.; Lord Cherwell, F.R.S.; Sir John Cockcroft, F.R.S.; Professor N. Feather, F.R.S.; Mr. L. H. Gray, Ph.D.; Captain Mark Hewitson, M.P.; Dr. J. F. Loutit; Professor W. V. Mayneord; Professor R. McWhirter; Dr. E. R. A. Mereweather; Dr. Ralston Paterson; Mr. H. S. Souttar; Sir George Thomson, F.R.S.; Professor B. W. Windeyer.

Honours Conferred by the Society of Apothecaries

Two eminent scientists were honoured by the Society of Apothecaries in London on May 11 in the presence of a distinguished company, including the French Ambassador. In presenting the Gold Medal in Therapeutics to Professor Jacques Tréfouël, Director of the Institut Pasteur, the Master of the Apothecaries, Professor E. C. Dodds, referred to Professor Tréfouël's clarification of the fundamental rules of chemotherapy. His work on the sulphanilamide preparations, in which his wife collaborated, led to the development of the sulphonamide group of drugs, and was the keystone on which all later research on these drugs was built. Professor Tréfouël's reply in English was brief, modest, and to the point. The Honorary Freedom of the Society was then conferred on Sir Charles Harington,

Director of the National Institute for Medical Research. The Master of the Society said that all the work on thyrotoxicosis being done to-day would have been impossible without an understanding of the way in which the thyroid gland works; that understanding was owed to Sir Charles Harington, who first succeeded in characterizing thyroxine and later in synthesizing it. His chemical studies on immunity were also of the greatest importance in medical research. Sir Charles Harington expressed his gratitude for the honour conferred on him. He pointed out that the position of biochemistry as an independent branch had not been achieved without great efforts. Now the work of biochemists was recognized and appreciated, and they could look back with pride along their line of descent from the apothecary.

Chelsea Clinical Society

The annual dinner of the Chelsea Clinical Society was held on May 10, the president, Mr. Nils Eckhoff, being in the chair. In proposing the health of the society, Mr. H. G. Strauss, K.C., M.P., said that the law had every reason to be grateful to the expert witness. Continuing his crusade against the misuse of English, he said he understood that the word "hospitalized" did not mean being converted into a hospital but being sent to one. He gave the society this definition of an intellectual—a man educated beyond his intelligence. In reply, the president referred to the activities of the society during the past year, mentioning the discussions that had taken place on empiricism, films, radioactive isotopes, Graves's disease, and prefrontal leucotomy. He paid tribute to the work of the secretaries of the society for making it a flourishing concern. The health of the guests was proposed in the wittiest speech of the evening by Mr. Frank Cook, and responded to by Air Marshal Sir Richard Peck. The evening concluded with the inauguration of the president for the coming year, Dr. Maurice Bewley.

Hospitals May Close

As a result of the 10% cut in hospital expenditure ordered by the Minister of Health, a number of hospital boards and management committees have announced that they can economize only by closing hospitals or beds. According to Press reports the Manchester Regional Hospital Board has announced that the Stretford Memorial Hospital and the Eccles and Patricroft Hospital may have to close. Others in that region that may be closed are the Victoria Hospital, Accrington; Coplow View, Clitheroe; Parkside, Lancaster; and St. Anne's-on-Sea Memorial Hospital. The Arundel Hospital, in the Worthing Group, may have to close, and the Salisbury Group Hospital Management Committee thinks that it may have to close a small hospital, and that it would be unable to open a new extension ward in a tuberculosis sanatorium for which staff is available. The Windsor Group Management Committee considers that it must close 158 beds if it is to economize further. The North-West Regional Hospital Board is reported to be asking the Minister how it can make the economies required without closing 500 beds.

Streptomycin Royalties for Rutgers University

Dr. S. Waksman, who discovered streptomycin, has presented the money which patent rights on the drug bring him to Rutgers University, New Brunswick. The university will use the money to establish an Institute of Microbiology, with Dr. Waksman as its first director. A new million-dollar building will be erected and the balance will be used to cover operating expenses. Dr. Waksman has handed his patents to the Rutgers Research and Endowment Foundation, on the understanding that any further income will be used to promote research, particularly in microbiology. Royalties on the drug, computed at 2½% of the sale price, totalled between £175,000 and £200,000 last year, according to the B.U.P. report which gives these figures. Dr. Waksman, who was born in Russia, came to the United States in 1910 and has been on the staff of Rutgers University for twenty-five years.

Postgraduate Medical Education

Sir John Anderson is the chairman of a Joint Board which has been set up by the three Royal Colleges and the British Postgraduate Federation. The Joint Board is "to consider the existing provisions for the postgraduate education and training of specialists, and invite the attention of medical schools and institutes, hospital authorities, and other bodies providing postgraduate medical education, to such modifications as may from time to time appear desirable." The members of the Joint Board are: Lord Moran and Dr. H. E. A. Boldero; Lord Webb-Johnson and Mr. Julian Taylor; Sir William Gilliatt and Mr. G. F. Gibberd; and Professor Sir Francis Fraser and Mr. J. B. Hunter.

Attending Congress in Turkey

Sir Howard Florey, Professor of Pathology in the University of Oxford, left Oxford on May 10 for Istanbul to attend the Fifth International Congress of Comparative Pathology as a delegate of the Royal Society. He will visit Greece between May 21 and 28 under the auspices of the British Council to lecture to the University of Athens medical faculty on "Antibiotics in the Treatment of Tuberculosis" and "Recent Progress in the Investigation of Antibiotics."

Association for the Paralyzed

The British Council for Rehabilitation has recently set up the National Association for the Paralyzed, which will be concerned with the care, treatment, and rehabilitation of the paralyzed. The National Association would be helped in compiling a register of all who are in touch with paralyzed persons would ask them to send their names and addresses, with a statement of the type of paralysis from which they suffer, to the Registrar, the National Association for the Paralyzed, British Council for Rehabilitation, 32, Shaftesbury Avenue, London, W.1.

Wills

Professor Arthur Robinson, formerly professor of anatomy at Edinburgh University, at King's College, London, and at Birmingham University, left £23,453. Dr. Henry Morrison, of North Walsham, Norfolk, left £26,409; Dr. David Carlyle Sutton, late of Chester, £46,430; and Dr. Richard Burges, of Stoke Bishop, Bristol, £20,005.

COMING EVENTS

Medical Art Society

The annual exhibition of the Medical Art Society will be held at Walker's Galleries, 118, New Bond Street, London, W., from Friday, May 20, to Thursday, June 2. All inquiries should be addressed to the honorary secretary of the society, Dr. Henry Wilson, 142, Harley Street, London, W.1.

Charities Ball

A Charities Ball organized by the Metropolitan Counties Branch of the B.M.A. will be held at B.M.A. House, Tavistock Square, London, W.C.1, on Thursday, May 26, at 8 p.m. for 8.30 p.m. The proceeds will be devoted to medical charities in urgent need of support. Patrons include the President of the Association and the Presidents of the three Royal Colleges. There will also be a cabaret and facilities for bridge. The cost of tickets including a buffet supper is two guineas each. Applications should be sent to the Secretary, the Charities Ball Committee, Metropolitan Counties Branch, B.M.A. House. Contributions to charities from those unable to attend the ball would also be most welcome and should be sent to the same address.

SOCIETIES AND LECTURES

Monday

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., May 23, 4.45 p.m., "Selective Toxicity with Special Reference to Chemotherapy," by Professor Adrien Albert.

Tuesday

EUGENICS SOCIETY.—At Royal Society, Burlington House, Piccadilly, London, W., May 24, 5.30 p.m., "Some Biological Considerations in Social Evolution," by Professor H. J. Fleure, F.R.S.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C., May 24, 5 p.m., "Choice of Vehicles for Topical Application," by Dr. W. H. Goldsmith.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 24, (1) 11 a.m., "Prognosis of Syphilis (Treated and Untreated)," by Dr. V. E. Lloyd; (2) 5 p.m., "Infections of the Urinary Tract other than Tuberculosis, I," by Mr. A. Clifford Morson.

LONDON UNIVERSITY.—At London School of Economics and Political Science, Houghton Street, Aldwych, W.C., May 24, 5 p.m., "The National Health Service," by Sir James S. Ross.

LONDON UNIVERSITY.—At Westminster Medical School, Horseferry Road, S.W., May 24, 5.30 p.m., "Applications of Polarography to Medicine," by Dr. Rudolph Brdicka (Prague).

WRIGHT-FLEMING INSTITUTE OF MICROBIOLOGY, St. Mary's Hospital Medical School, Paddington, W.—May 24, 5 p.m., "Bacterial Nutrition," by Dr. M. R. Pollock.

Wednesday

GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—May 25, 8 p.m., "Bleeding and Clotting within the Eye," by Dr. W. O. G. Taylor.

HARVEIAN SOCIETY OF LONDON.—At Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., May 25, 5 p.m., "The War Collection," Harveian Lecture by Sir Gordon Gordon-Taylor.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 25, (1) 11 a.m., "Toxic Manifestations due to Treatment of Syphilis," by Dr. W. N. Maseall; (2) 5 p.m., "Calculous Disease of the Kidney and Ureter, II," by Mr. H. P. Winsbury-White.

ROYAL MICROSCOPICAL SOCIETY.—At B.M.A. House, Tavistock Square, London, W.C., May 25, 6 p.m., Combined meeting of Biological and Industrial Sections. "The Theory and Practice of Section Cutting," by Mr. G. W. Moore.

SOCIETY OF CHEMICAL INDUSTRY: LEAD GROUP.—At Anthony Cinema, Gloucester Place, Brighton, May 25, 10 p.m., joint meeting with the Royal Sanitary Institute. General subject of discussion: "The Care and Preservation of Fish as Food." Opening Address by Dr. E. B. Huxley, followed by four papers: (1) "General Introduction to the Biological Problems of the Fish Industry," by G. A. Reay, M.A., Ph.D., F.R.C.S.; (2) "Some Physiological Aspects of Handling Processes and Distribution of Fish," by J. M. Sheehan, Ph.D., F.R.C.S.; (3) "Trends and Developments in Fish Technology," by C. I. Cutting, Ph.D.; (4) "Food Hygiene as Applied in the Marketing and Distribution of Fish," by Dr. J. A. Kerr. Time allowed for discussion.

Thursday

HERMINGHAM UNIVERSITY.—At Anstons Theatre Medical School, Birmingham, May 26, 4 p.m., "The Problems of Street Drainage: One of Urban Life," Ingleby Lecture by Mr. Charles D. Read.

EDINBURGH UNIVERSITY.—At Anstons Theatre, University New Buildings, Teviot Place, May 26, 5 p.m., "The Outlook for the Diabetic," Hovman-Gillette Lecture by Dr. J. Holliday Crocker.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 26, (1) 11 a.m., "Toxic Manifestations due to Treatment of Syphilis," by Dr. W. N. Maseall; (2) 5 p.m., "Infections of the Urinary Tract other than Tuberculosis, II," by Mr. A. Clifford Morson.

LONDON UNIVERSITY.—At Westminster Medical School, Horseferry Road, S.W., May 26, 5.30 p.m., "Applications of Polarography to Medicine," by Dr. Rudolph Brdicka (Prague).

MEDICOLEGAL SOCIETY.—At 26, Portland Place, London, W., May 26, 8.15 p.m., "The Medical Services in Ravensbrück Concentration Camp," by Major A. K. Mart.

SOCIETY OF PUBLIC ANALYSTS: BIOLOGICAL METHODS GROUP.—At No. 3 Room, Gas Industry House, 1, Grosvenor Place, London, S.W., May 26, 6.30 p.m., "Use of a Rotating Drum in Assessing the Activities of Parachlorophenol, and Anesthetic Drugs," by Messrs H. O. J. Collier, E. C. Lieller, and R. A. Hall; "The Microbiology of Growth Factors after Paper Chromatography," by Mr. J. S. Harrison; "A Method for Determining the Potency of Hormone," by Mr. R. F. Long.

St. George's Hospital Medical School, Hyde Park Corner, London, S.W.—May 26, 4.30 p.m., "Psychiatry," lecture-demonstration by Dr. D. Curran.

Friday

EDINBURGH UNIVERSITY.—At Physiology Lecture Theatre, University New Buildings, Teviot Place, Edinburgh, May 27, 5 p.m., "Greek and Roman Medicine," by Dr. Douglas Guthrie.

KENT AND CANTERBURY HOSPITAL, Canterbury.—May 27, 5 p.m. to 7 p.m., clinical meeting.

APPOINTMENTS

BROWN, JOHN KERR, M.B., Ch.B., D.P.H., Medical Officer of Health, Metropolitan Borough of Greenwich.

CATTINER, J. F., M.B., Ch.B., D.P.H., Medical Officer of Health, Borough of Batley, and Divisional Medical Officer, West Riding County Council.

LEAKEY, BARBARA M., M.B., B.S., Assistant County Medical Officer, West Riding of Yorkshire.

RILEY, JAMES F., M.D., F.R.C.S. Ed., D.M.R.T., Assistant Radiotherapist, Royal Infirmary, Dundee.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Collins.—On May 2, 1949, at Moorlands Nursing Home, Kentworth, to Violet, wife of Dr. W. Collins, a son.

Evans.—On May 11, 1949, at Nuffield House, Guy's Hospital, London, S.E., to Winifred (née Groom) wife of Dr. M. L. Hudson Evans, Lewisham, a sister for Timothy—Sara.

Hopkinson.—On April 22, 1949, at Preston Infirmary, to Sylvia, wife of Dr. J. J. Hopkinson, a daughter—Susan.

DEATHS

Dale.—On April 28, 1949, at "Arley," Selbourne Road West, Worcester, Arthur James Dale, M.D., aged 79.

Forrest.—On April 30, 1949, James Forrest, M.B., Ch.B., of 1, Duke Street, London, W., aged 72.

Hett.—On May 3, 1949, in London, Geoffrey Seecombe Hett, F.R.C.S., aged 70.

Hume.—On May 2, 1949, at 27, Fitzroy Square, London, W., John Gordon Hume, M.R.C.S., L.R.C.P., aged 78.

Jones.—On April 30, 1949, at a nursing-home, Joseph Jones, M.D., of Howarth Cross, Leigh, Lancs.

Nelson.—On May 3, 1949, in London, Michael Louis Nelson, L.R.C.P.S. Ed., L.R.F.P.S. Glas., of Sydney, Australia, and late of Assouan, Egypt.

O'Dowd.—On April 27, 1949, at Jersey, C.I., Francis John O'Dowd, D.S.O., M.R.C.S., L.R.C.P., late J.M.S., aged 38.

Riddell.—On May 4, 1949, at Langbank, Bonness-on-Windermere, David Riddell, M.D., aged 71.

Snook.—On April 29, 1949, at Salisbury, Wilts, Samuel Penny Snook, M.R.C.S., L.R.C.P., of Weymouth, Dorset.

Strachan.—On Feb. 20, 1949, at Johannesburg, South Africa, Archibald Sutherland Strachan, M.D.

Whitnam.—On April 22, 1949, at Paignton, Leonard Sykes Whitnam, M.B., Ch.B., Surgeon-Commander R.N., retired, aged 74.

Wilson.—On April 26, 1949, at Gwynfryn, Denbigh, Robert Scott Wilson, L.R.C.P.S. Ed., L.R.F.P.S. Glas.

Wood.—On April 17, 1949, Charles Cruden Wood, M.B., Ch.B., of 15, Trevor Street, London, W.7.

Woodwright.—On May 2, 1949, at 13, Collingham Road, London, S.W., Charles Sherman Woodwright, C.B.E., L.R.C.P.S. Ed., & L.M., Surgeon-Registrar R.N., retired.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Penicillin Inhalations

Q.—Is inhalation of penicillin by means of an electric pneumostat recognized as part of the successful treatment of bronchiectasis? If so, can you tell me the strength of the penicillin solution employed, the period of daily treatment, and the average time required to produce improvement? What other diseases benefit from this method?

A.—Inhalations of penicillin with the help of various types of apparatus have been usefully employed in the treatment of many respiratory infections. In bronchiectasis they will diminish the quantity of sputum and produce general symptomatic improvement; these benefits are transient, and within a few days of stopping the inhalations the patient will have returned to his previous condition. Their main value is as a pre-operative measure to diminish the risks of lobectomy. Many different methods of inhalation have been used; in most about 30,000 units in a volume of some 10 ml. is vaporized and inhaled twice a day.

Apnoea on Tracheal Intubation

Q.—What is the cause of prolonged apnoea on passing an intratracheal tube orally? The anaesthetic sequence was cocaine, thiopentone, cyclopropane, and ether given by a closed-circuit machine. An attempt was made to establish respiration by forcing a little ether vapour into the lungs. What is the danger of the condition and how can it be prevented or treated?

A.—The passage of an endotracheal tube through the larynx is commonly followed by a period of apnoea. This is reflex in origin and, as might be expected, is usually encountered when intubation is performed under light anaesthesia. As a rule the apnoea is of short duration and spontaneous respiration soon starts. Should the apnoea persist or cyanosis develop, one or two gentle inflations of the lungs with oxygen will usually restore the patient's colour and be followed by spontaneous respiration. An attempt to force ether vapour into the lungs in light anaesthesia may result in generalized bronchoconstriction as well as a persistence of the apnoea. The occurrence of this reflex may be prevented by effective surface analgesia of the larynx or deeper general anaesthesia before intubation is attempted. Certain risks are attached to the passage of endotracheal tubes under light anaesthesia. In addition to the apnoea associated with the apnoea described above, cardiac arrhythmias are frequently seen, while sudden death has been reported as occurring in these circumstances.

Iridocyclitis

Q.—What is the treatment for recurrent attacks of iridocyclitis with conjunctival oedema? In one of my patients the condition starts in the right eye and slowly clears up with "albicid" drops, but before it is entirely cured the left eye becomes affected. "Benadryl" has been tried, also a mercury and atropine ointment. The condition now recurs every fortnight.

A.—There is no clear answer to this question. Iridocyclitis is an inflammatory affection, and, as with other inflammatory diseases of the eye and elsewhere in the body, little is known of the pathology. A parallel to iridocyclitis is rheumatoid arthritis. Both conditions are distressingly common, and in both a mass of hypothetical causes, mainly of an infective character, have been postulated. Evidence in support of these views is scanty, and therapeutic measures have proved disappointing. Treatment must therefore be symptomatic. Albucid drops are useless, as there is no ocular infection in these cases. Benadryl has likewise no rational application, as there is nothing to suggest that iridocyclitis is allergic in

character. Atropine must be the standby to prevent complications consequent on iris adhesions and the formation of exudate. Iridocyclitis is sometimes found in association with low-grade pulmonary tuberculosis, and also with rheumatoid arthritis and ankylosing spondylitis. The patient should be examined for the possible presence of these conditions. As empirical measures, heat in the form of short-wave diathermy in the acute phase, and x-ray treatment possibly in the quiescent phase, may have to be considered.

Inoculation in Pregnancy

Q.—A woman three months pregnant is joining her husband in Malta. Is vaccination or T.A.B. inoculation likely to have any adverse effect on mother or foetus?

A.—The theoretical risk is that in the event of a very severe reaction the hyperpyrexia might kill the foetus. In practice, however, no harm usually results, and the general view is that vaccination or T.A.B. inoculation is not contraindicated at any stage of pregnancy. J. A. Urner (*Amer. J. Obstet. Gynec.*, 1927, 13, 70) vaccinated 129 pregnant women, and there were no cases of abortion or premature labour. A. Villarma and J. S. Galang (*J. Philipp. Is. med. Ass.*, 1930, 10, 311) found no ill effects to either mother or foetus following immunization of pregnant women during a typhoid epidemic. In neither case, however, does the procedure convey immunity to the child, which has to be protected independently after birth.

Bilateral Pulmonary Cysts

Q.—A patient has bilateral pulmonary cysts, and it has been suggested that a phrenic nerve avulsion would lead to healing of these cysts. He has a poor chest expansion and also some muco-purulent sputum at times. Have you any information about the end-results of this operation in such a case?

A.—The use of phrenic paralysis in cystic conditions of the lung must be regarded at present as a method which may be tried in a very few special types of case, but not as an established therapeutic procedure. Some types of pulmonary cyst, congenital and acquired, enlarge by becoming inflated by air as a consequence of valvular mechanisms in their bronchial communications. This applies especially to those which arise peripherally in the broncho-pulmonary tree and approximate to bullous emphysema. In certain cases of this type where symptoms are produced by inspiratory inflation of a localized cyst or cysts, especially at the base of the lung, some benefit has been claimed from phrenic paralysis. This, by diminishing the force of inspiration, and possibly also by altering the position of the cyst in relation to the hilum of the lung and hence the conformation of its bronchial communication, may interfere with the mechanism by which the cyst becomes inflated, and thereby relieve those symptoms which arise from over-inflation of the cyst. If the condition is accurately described as a cyst, there can be no question of its "healing," since there is an epithelial lining which effectively prevents obliteration. The factors concerned in these cases are so difficult to evaluate that the brief account of the case given in the question is not enough to permit a dogmatic opinion on the likelihood of benefit resulting from phrenic paralysis, though the following observations can be made. With bilateral cysts it seems unlikely that phrenic paralysis will be beneficial, unless symptoms are being produced by recurrent or persistent inflation of the cyst or cysts on one side only. In the unlikely event of this being the case, a temporary paralysis of the phrenic nerve by crushing might be tried on the side on which the over-inflation occurs; permanent paralysis without a preliminary trial of temporary paralysis would be very unwise.

It will be clear from the foregoing account that phrenic paralysis can be expected to relieve only symptoms due to inflation of the cyst, such as paroxysmal increase in dyspnoea; it could do nothing for constant dyspnoea on exertion or for such symptoms as cough and expectoration. The account of the case given suggests that there may be a considerable degree of generalized emphysema, or widespread cystic change which would preclude radical surgical treatment. If this is not so, and the parts of the lungs not occupied by the cysts are normal, resection of the pulmonary segments containing cysts might be considered, even though this might involve operations on both sides of the chest.

Pediculosis Pubis

Q.—What is the most effective treatment of pediculosis pubis?

A.—If the hair is shaved off, only soap and water are necessary. If the hair is not removed, 2% D.D.T. in an emulsion is effective.

Non-specific Urethritis

Q.—(a) What treatment is most likely to cure non-specific urethritis of virus origin in a male? (b) What percentage of success is claimed for neoarsphenamine? (c) What is the likelihood of relapse after alcohol or exercise? (d) What is the corresponding condition in the female? An unmarried man aged 29 has non-specific urethritis. As his reactions to the Wassermann, Kahn, and gonococcal complement-fixation tests, and a prostatic smear, are all negative, the condition was presumed to be of virus origin. It cleared up after treatment with sulphadiazine, abstinence from alcohol and exercise, mist, sod. cit. et hyoseyam., and large quantities of fluids, but relapsed. For the last two months there has been only slight discharge at the end of micturition, usually aggravated by alcohol.

A.—(a) Streptomycin appears to be the most effective anti-viral agent, so that it should be well worth trying, if available. (b) From time to time reports of successful treatment of non-gonococcal urethritis with neoarsphenamine have appeared, but the writer knows of no series of cases so treated, so that it is impossible to give a percentage figure. (c) Either alcohol or exercise might cause a recurrence, the former because it is an irritant to the urethra, and the latter because inflamed tissues generally do better when placed at rest. (d) Presumably leucorrhoea in the female is the counterpart of non-gonococcal urethritis in the male; neither is a medical entity, and both are probably due to a variety of causes.

As regards the patient whose condition is described, it would be as well to carry out further investigations before resuming treatment. The urethral discharge and prostatic fluid should be examined microscopically and culturally; it may be that the condition is essentially a prostatorrhoea. If not, a urethroscopy should be done; if this shows a "sago-grain" urethritis, dilatation with a Kollmann's dilator should be carried out, followed by irrigation with mercury oxycyanide 1 in 6,000, once a week for several weeks or until the condition clears up. If a stricture is discovered, appropriate measures should be taken. If the above examinations are negative, no further treatment is indicated, since overactive treatment often tends to perpetuate signs and symptoms.

Oesophageal Stricture

Q.—A woman of 51 has had increasing oesophageal obstruction with frequent spasmodic complete blockage for the past eleven years. This was recently demonstrated radiologically as a tight stricture, with no ballooning above it, probably due to cicatrization of a peptic ulcer with no x-ray evidence of activity, though there is slight bleeding during oesophagoscopy and dilatation. The obstruction is $\frac{1}{2}$ inch (1.25 cm.) above the diaphragmatic aperture; there has never been actual pain, so that it is difficult to accept the peptic ulcer theory. Instrumental dilatation under general anaesthesia has given relief for only a day or two. Passage of bougies did not prevent complete closure by spasm at the following attempted meals. What further treatment is advised?

A.—The significant points in this case would appear to be: (a) The absence of any appreciable dilatation of the oesophagus as shown by a barium swallow; therefore cardiospasm is unlikely. (b) The generally good condition of the patient after eleven years' history, practically ruling out neoplasm. (c) The presence of a stricture in the last inch of the oesophagus, which is resistant to dilatation—suggesting an organic aetiology, which, in the absence of other history, points to a peptic ulcer. Such ulcers can exist without appreciable pain, but after such a long history anything other than excision is unlikely to yield results. Fibrosis and peri-oesophagitis occur just as with other peptic ulcers. For this reason cauterization of the stricture seems definitely contraindicated. In view of the facts (1) that all other methods have received a more than fair trial, (2) that the patient's general condition makes her a good operative risk,

(3) that the lesion is situated in the optimal position for comfortable surgical technique, and (4) that surgery for oesophageal lesions (with suitable anaesthetic methods) has in latter years become a reasonably safe procedure, excision of the stricture and oesophago-gastrostomy would seem to be strongly indicated.

Sacral Oedema

Q.—(1) What level of thrombosis in the inferior vena cava will produce sacral oedema? (2) What is the commonest cause of sacral oedema?

A.—(1) Thrombosis of the inferior vena cava would not cause sacral oedema alone, but only as part of a general oedema below the umbilicus.

(2) The common cause of sacral oedema is prolonged sitting-decubitus necessitated by illness. Any illness for which a patient has to be kept in bed for a long period may lead to the development of sacral oedema.

NOTES AND COMMENTS

Oestrogen Therapy of Menorrhagia.—Dr. G. I. M. SWAYNE (London, W.C.1) writes: In reply to a question regarding oestrogen therapy for prolonged and heavy uterine bleeding ("Any Questions?" April 21, p. 736), the statement is made that "... it is emergency treatment in that it controls the bleeding by raising the oestrogen level above the bleeding threshold. There is still the problem of preventing or controlling oestrogen withdrawal haemorrhage, which is likely to occur when treatment is suspended." These remarks are unjustified, and show little grasp of the true place of oestrogens in the treatment as well as the control of so-called functional uterine bleeding. Indeed, the initial control is merely the commencement of treatment, the essence of which consists in the production of regular withdrawal bleedings (which are not "haemorrhages" in the sense of uncontrolled floodings). In the climacteric phase the judicious continuation of this treatment with gradual reduction in dosage is frequently sufficient to produce a calm and satisfactory menopause. In the reproductive years, however, treatment cannot claim to have produced a cure without having re-established ovulation, and there is no doubt that with the proper dosage of oestrogens and, later, of oestrogens and progestogens, ovulation can be induced in an encouraging number of patients treated in this way. It is on these grounds that I would regard treatment with oestrogens as being something more than merely palliative or "emergency"; in many cases it is truly curative.

Granuloma Annulare.—Dr. F. PIERS (Nairobi) writes: In "Any Questions?" (March 12, p. 464) a correspondent asks about the modern treatment of granuloma annulare. For some obscure reason this condition is not uncommon here. I have found that infiltration of the lesions with a 2% solution of procaine (without adrenaline) in most cases results in a complete disappearance of the plaques. The amount of fluid one has to inject varies according to the size of the lesions, and some force is usually required to get the fluid in, and under, the hard plaques. But the method is easy to apply and entirely innocent. The rationale of this treatment is perhaps that lymphatic drainage is facilitated, and the quick and complete disappearance of the disk-like infiltrations supports this view.

Convulsions.—Dr. ERNST GUTHANER (Gatton, Queensland) writes: The answer given to the inquirer on convulsions ("Any Questions?" March 12, p. 463) mentions the traditional hot bath, though apparently irrelevant, as useful in occupying the mother until the arrival of the doctor or the spontaneous end of the convulsions. This hot bath, often reinforced by mustard, is absurd when the convulsions are brought on by pyrexia as the forerunner of infection, and can be decidedly harmful. The writer has seen one case where after a hot mustard bath the child was brought to the surgery with a hyperpyrexia of 105° F. (40.6° C.). It was limp, comatose, and died after a few hours in hospital. It is more rational to bring the temperature down in these cases by lukewarm sponges or antipyretics. On no account should they be given a hot bath, as it is against the dictum of *nil nocere*.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atiology*. *Westcent*, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads*, *Westcent*, London. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, EUSTON 2111. TELEGRAMS: *Medisera*, *Westcent*, London. B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY MAY 21 1949

THE SECRETARY REPORTS

THE AMENDING BILL

Just before the Special Representative Meeting held in May, 1948, the Minister promised that he would include in the Amending Bill the following provisions:

(1) Whatever clarification of the position of partnerships may be found necessary in the light of the report of the Legal Committee which is now examining that question; so far as is at all practicable, this clarification will be made to operate retrospectively to July 5.

(2) Provision to make clear that a whole-time salaried general medical service cannot be introduced by regulations—i.e., would need a further Act of Parliament. This would include provision precluding the imposition by regulation of any universal full-time consultant service.

(3) Provision for executive councils to have the right to select their own chairmen, after the term of office of the present chairmen expires in March next.

(4) Provision to enable the professional member of the tribunal to be one of a panel of available members and not a fixed individual—so that the member may in each case be suitable in experience and otherwise to the particular issue before the tribunal.

(5) Power to the executive councils, where the local practitioners agree, to cover the costs of the local medical committee (by the necessary deduction from the practitioners' remuneration).

The Amending Bill which has just been presented to Parliament gives effect to the recommendations of the Legal Committee on Partnerships; prohibits a full-time salaried general practitioner service (with an exception for "special circumstances"); precludes the imposition by regulation of any universal whole-time specialist service; gives executive councils the right to select their own chairman and to determine his term of office; provides for the professional member of the tribunal to be selected from a panel of available members, and empowers executive councils, on the request of the local medical, dental, or pharmaceutical committee, to make deductions from the remuneration of doctors, dentists, or chemists to defray the administrative expenses of those local professional committees.

In addition to these amendments which had been promised by the Minister the Bill contains certain other proposals, including:

1. Clarification of the position obtaining under agreements between principals and assistants. The Legal Committee on Partnerships made no recommendation on this point, but expressed the view that the relationship between principal and assistant seemed to be analogous to that of partners, adding that "it would seem that the Act may cause considerable hardship to such assistants if no protection is afforded."

2. Under Section 12 of the Amending Bill any difference or dispute arising in respect of remuneration or conditions of service of those employed or engaged in the new Service is deemed to be a trade dispute within the meaning of the Industrial Courts Act, 1919, and to be a difference or dispute to which the Conciliation Act, 1896, applies. In effect this means that, where a dispute exists or is apprehended, either party may report it to the Minister of Labour and National Service and he may refer it, if both parties consent, to an Industrial Court for settlement. On the other hand, if both parties do not consent, he may refer it to the Industrial Court for advice. The composi-

tion of the Industrial Court is prescribed by the 1919 Act. The Minister of Labour and National Service appoints an independent president or chairman and also appoints a panel of other persons, some independent and others representing employers and workers respectively, to be members of the Court. The members to sit as the Court on any particular occasion are selected from this panel by the president.

This proposal deserves careful scrutiny. At first sight it seems to me that only where the Minister agrees can arbitration take place, and where he does not so agree all that can happen is that an outside body, set up for the purpose, gives advice. This proposal appears to fall short of the original Whitley proposal that in the event of disagreement being registered recourse could be had to arbitration whether the other side agreed or not.

3. The omission in the original Acts of any provision for the removal from the lists of executive councils of doctors, dentists, or chemists who have ceased to provide services in the areas concerned is rectified.

4. The extension from two months to three months of the period within which doctors called in by midwives under the Midwives Act, 1918, are required to submit their account to the local supervising authority for payment. For many years the profession has been seeking an extension of the two-month time limit.

With the exception of these last two items (3 and 4) none of the additional points which have been pressed upon the Ministry by the General Medical Services Committee and by the Joint Committee for Consultants and Specialists are included in the Bill.

Review of Hospital Staff—Right of Appeal

During the past few months professional review committees have been assessing the status of members of existing hospital medical staffs with a view to advising Boards which practitioners should be offered permanent contracts as specialists. The work of these review committees is now nearing completion and in some regions the result has already been notified to individual practitioners.

The issue is one of vital importance to all those who are adversely affected by the decision of a review committee, yet there is no right of appeal from the assessment except to the body which made it. The principle which the Central Consultants and Specialists Committee seeks to establish is that aggrieved practitioners should be given a right of appeal to an independent body. The committee—through the Joint Committee—has consistently pressed the Ministry to establish a professional appeal committee for this purpose. This right of appeal is regarded by the committee as of fundamental importance.

Practitioners who claim specialist status and who are aggrieved at their assessment should at once appeal to the Regional Hospital Board or Board of Governors concerned. They are also invited to inform the secretary of the Central Consultants and Specialists Committee (B.M.A. House, Tavistock Square, W.C.1), so that the committee may be in a position to assess the size of the problem. Clearly the Central Consultants and Specialists Committee could not be expected to judge the merits of individual cases, nor could such an expression of opinion be of any practical value to the practitioner.

NATIONAL HEALTH SERVICE (AMENDMENT) BILL

FINANCIAL MEMORANDUM

Part I of the Bill clarifies the position of general medical practitioners practising in partnership.

Clause 1 (5) provides that, as between partners who are taking part in the new Service and whose partnership agreement provides for options or obligations to purchase shares in the goodwill of the practice from one another, such shares shall be transferred in accordance with the terms of the agreement, except as to the payment of the purchase price, and as soon as possible after the completion of the transfer the appropriate amount of compensation shall be paid in full discharge of the purchase price.

This provision will not impose any additional charge on the Exchequer, but, as the compensation is normally payable only on the death or retirement of the practitioner concerned, it has the effect of accelerating payment in these cases.

Clause 1 (7) and (8). Clause 1 (8) provides that a doctor who joined the Service on the appointed day, and who is later required or exercises an option under the terms of a partnership agreement to purchase the share of a doctor who had not entered the service on that day, shall be entitled to compensation in respect of that share. This compensation will be paid out of moneys provided by Parliament but will be additional to the £66 million provided under Section 36 of the National Health Service Act, 1946. Under Clause 1 (7), however, compensation is not payable in respect of the share in a practice owned by a doctor in the Service which is purchased by a partner not in the Service, and the sum of £66 million will be diminished accordingly.

The amount of compensation which will not be payable by reason of the provision of Clause 1 (7) will be a set-off against the additional money which may become payable under Clause 1 (8), but it is not possible to say whether there will be a balance. It is estimated that about 50 practices are involved and that the number of doctors concerned is nearly 150.

Clause 6 deals with the position of assistants to doctors who joined the Service by the appointed day, and provides for payment of compensation to a principal in lieu of the purchase price in a case where an assistant who is providing general medical services under the Act of 1946 or the National Health Service (Scotland) Act, 1947, is required or exercises an option under his agreement with the principal to purchase the goodwill or part of the goodwill of the practice (Clause 6 (3)). No additional expenditure will be incurred, but the payment of compensation will be accelerated.

Clause 6 (5) provides that where an assistant who is not providing general medical services in pursuance of an option purchases the whole or part of the goodwill of his principal compensation shall not be payable in respect of that goodwill or the part thereof which is purchased. Here again the global sum of £66 million will be diminished, but it is not possible to say by how much.

Clause 7 provides that every partnership agreement or agreement between principal and assistant shall be deemed to contain a provision enabling any person who was a party to the agreement immediately before the appointed day and who claims that he has suffered or will suffer hardship as a result of the operation of the Act of 1946 or of the Act of 1947, or of this Bill, or of the regulations governing the calculation of compensation under Section 36 of the Act of 1946 or Section 37 of the Act of 1947, to refer the matter to the arbitration of an arbitration committee consisting of an arbitrator appointed by the Lord Chancellor or by the President of the Court of Session, a medical practitioner appointed by the President of the British Medical Association, and a qualified accountant appointed by the Minister or by the Secretary of State. The expenses of the Committee, including the remuneration and allowances payable to the member, will be met out of moneys provided by Parliament. The number of cases referred to the Committee is likely to be very small and the expenditure insignificant.

Clause 17 provides for payments by local health authorities of remuneration and expenses to medical practitioners who examine persons for the purposes of Sections 11 and 16 of the Lunacy Act, 1890, of the Mental Deficiency Act, 1913, or of Section 1 (2) or 5 of the Mental Treatment Act, 1930.

Provision is made in the Schedule to the Bill for payments to medical practitioners for the notification to local health authorities of certain diseases.

Most local health authorities are already making payments for the examinations referred to in Clause 17 and for the notification of infectious diseases, and the additional expenditure to be incurred will be very small. Under the provisions of section fifty-three of the Act of 1946 as amended by section seven of the Local Government Act, 1948, and the provisions of section fifty-three of the Act of 1947 as amended by section twenty-three of the Local Government Act, 1948, 50% of the cost will be borne by the Exchequer.

Clause 19 empowers the Minister and the Secretary of State to recover costs of maintenance from inmates of hospitals who are absent during the day from hospitals in which they are resident for the purpose of engaging in employment for which remuneration is received. It is not possible to estimate the amount which may be recovered.

The Schedule also amends the provisions of the Act of 1946 and of the Act of 1947 relating to the payment of travelling and subsistence allowances and for the loss of remunerative time to members of the several statutory bodies set up under the Act of 1946 and the Act of 1947, bringing those provisions into line with those relating to members of local authorities under the Local Government Act, 1948. The additional expenditure is likely to be very small.

Provision is also made in the Schedule for payments by Regional Hospital Boards, Boards of Governors of Teaching Hospitals, Hospital Management Committees, and Boards of Management of subscriptions to any association whose objects are approved by the Minister or the Secretary of State. The expenditure involved will be very small.

PART I

MEDICAL PARTNERSHIPS

1.—(1) This section applies to any partnership agreement in force on and immediately before the appointed day between medical practitioners one at least of whose names was entered on that day on a list of medical practitioners undertaking to provide general medical services.

(2) In this section:

the expression "listed partner" means a partner whose name was entered on the appointed day on a list of medical practitioners undertaking to provide general medical services;

the expression "new listed partner" means a partner whose name was not entered on such a list as aforesaid on the appointed day but has been so entered before the relevant date;

the expression "outside partner" means a partner whose name was not entered on any such list as aforesaid on the appointed day and has not been so entered before the relevant date;

and each of the said expressions shall, in the case of a deceased person who immediately before his death was a listed partner, a new listed partner, or an outside partner, be construed, where the context so requires, as referring to the personal representative of that person.

For the purpose of the aforesaid definitions the relevant date shall, in relation to any obligation imposed or option conferred on any such partner by the partnership agreement, be deemed to be the date on which the obligation is required to be performed or would but for this section be required to be performed, or, as the case may be, the date on which the option is first exercisable.

(3) Section thirty-five of the National Health Service Act, 1946 (hereafter in this Act referred to as "the Act of 1946"), which prohibits the sale of medical practices, shall not affect, and shall be deemed never to have affected, the exercise or performance under any partnership agreement to which this section applies of any right or obligation of a partner to sell to, or purchase from, another partner any share in the goodwill of the partnership practice, but any such agreement shall have effect subject to the following provisions of this section.

(4) Notwithstanding anything in section thirty-six of the Act of 1946 or in the last preceding subsection:

(a) there shall be determined in accordance with regulations made under the said section thirty-six the compensation payable in respect

of any share of the goodwill of the partnership practice earned on under any agreement to which this section applies, in all respects as if the said section thirty-five of the Act of 1946 prohibited the sale of any such share, whether under the agreement or otherwise; and

(b) the payment of the compensation so determined and of interest thereon shall be subject to the following provisions of this section.

(5) Where any agreement to which this section applies imposes an obligation or confers an option on a listed or new listed partner to purchase the share of another partner being a listed partner in the goodwill of the partnership practice, and, in the case of an option, the option has been exercised, that share shall be transferred at the time and on the terms (except as to the payment of the purchase price) provided in the agreement, and there shall be paid to the partner from whom the share is transferred, on or as soon as possible after the completion of the transfer, in complete satisfaction of the purchase price, the compensation determined as aforesaid in respect of that share.

(6) Where any agreement to which this section applies :

(a) imposes an obligation on an outside partner to purchase the share of a listed partner or a new listed partner in the goodwill of the partnership practice; or

(b) imposes an obligation on a new listed partner to purchase the share of another new listed partner in the goodwill of the partnership practice;

the obligation shall be deemed to be an option exercisable by notice in writing to purchase that share not later than three months after the time at which, and otherwise on the same terms as those on which, the obligation would have had to be performed.

(7) Where the share of a listed partner in the goodwill of the partnership practice carried on under any agreement to which this section applies has been purchased by an outside partner in pursuance of an option conferred by the last preceding subsection or by the agreement, the compensation determined as aforesaid in respect of that share shall not be paid and the interest thereon shall cease to be payable as from the date when the option was exercised :

Provided that the amount of compensation payable in respect of any other medical practice or share thereof under section thirty-six of the Act of 1946 shall not be increased in consequence of the said compensation not being paid.

(8) *Where the share of an outside partner or new listed partner in the goodwill of the partnership practice carried on under any agreement to which this section applies has been purchased by a listed partner in pursuance of an obligation imposed or option conferred by the agreement, there shall be paid to the listed partner out of moneys provided by Parliament (but not as part of the compensation payable under section thirty-six of the Act of 1946) compensation of an amount bearing to the compensation determined under subsection (4) of this section in respect of the share of the listed partner in such goodwill the same proportion as the share of the outside partner or, as the case may be, new listed partner in such goodwill bears to the said share of the listed partner :*

Provided that :

(a) if the compensation payable under this subsection exceeds the purchase price, the compensation shall be reduced by the amount of the excess ;

(b) if the share purchased is that of a new listed partner, and the purchase price exceeds the amount of the compensation payable to the listed partner under this subsection, the amount of that excess shall be deducted from the purchase price and, if already paid, shall be repaid ;

(c) this subsection shall not apply in a case where at the time of the purchase or, if the listed partner has died before the time of the purchase, at the time of his death, the name of the listed partner is or was no longer entered on such a list as aforesaid.

(9) The compensation payable under the last preceding subsection shall be payable at or as soon as possible after the time when the purchase price for the said share is paid :

Provided that, if the purchase price is payable by instalments, the said compensation shall be payable at such times and in such manner as may be prescribed.

(10) Where an agreement to which this section applies provides for the purchase of a part of any partner's share in the goodwill of the partnership practice by another partner, the preceding provisions of this section shall have effect, in relation

to that purchase and to any right or obligation in respect thereof, as if references to a share of such goodwill were construed as references to a part of such a share and as if references to the compensation determined in respect of such a share were construed as references to a proportionate part of that compensation.

(11) Where an agreement to which this section applies provides for the purchase of a share or part of a share in the goodwill of the partnership practice by two or more partners, the agreement shall have effect for the purposes of this section as if it provided for the separate purchase by each of those partners of such part of that share as will, in accordance with the agreement, be added to the existing share of that partner after the purchase, and the preceding provisions of this section shall apply accordingly.

(12) Where any agreement to which this section applies contains provisions which take effect on the purchase of any share or part of a share of the goodwill of the partnership practice, those provisions shall take effect in like manner on the transfer of that share or part in accordance with this section, notwithstanding that the transfer does not constitute a purchase.

(13) For the purposes of this section and the following provisions of this Act relating to medical partnerships, a member of a medical partnership shall, if the partnership agreement defines his share in the goodwill of the partnership practice and distinguishes that share from his share in the profits of the partnership, be deemed to have the share in the goodwill so defined, and in any other case his share in that goodwill shall be deemed to be the same as his share in the profits of the partnership :

Provided that, if the partnership agreement contains a provision which was in force immediately before the appointed day and divides into shares the aggregate compensation payable in respect of the goodwill of the partnership practice or, as the case may be, payable in respect of the shares in that goodwill of the persons entitled to such compensation, that provision shall be deemed to effect a corresponding division of the goodwill of the partnership practice or, as the case may be, the aggregate of those shares therein.

2. Where any partnership agreement to which the last preceding section applies is subsequently modified or is replaced by a subsequent agreement, the agreement as so modified or, as the case may be, the new agreement shall, so long as at least two of the partners to whom the agreement relates were partners under the original agreement on and immediately before the appointed day, be deemed for the purposes of the last preceding section to be the original agreement, and any subsequent modification or replacement shall be treated in like manner so long as the condition aforesaid remains satisfied :

Provided that the last preceding section shall only apply in relation to the purchase, and rights and obligations in respect of the purchase, of a share in the goodwill of a medical partnership carried on under any such agreement, if the persons who are or would be parties to the purchase were members of the partnership on and immediately before the appointed day and the provisions of the agreement relating to the purchase are substantially the same as they were immediately before the appointed day.

3.—(1) Where any medical practitioner was practising in partnership on and immediately before the appointed day but did not make an application before the appointed day for inclusion in a list of medical practitioners undertaking to provide general medical services, he shall, if he has made or makes on or at any time after the appointed day and before the expiration of the period of two months beginning with the date of the passing of this Act an application in the prescribed manner to the Executive Council for any area in which he was practising on the appointed day, be entitled to be included in the list of medical practitioners undertaking to provide general medical services for persons in that area, and section thirty-four of the Act of 1946 shall not apply to any such application and, if any such application made before the passing of this Act has been refused, the refusal shall not have effect and the application shall forthwith be granted.

(2) For the purposes of section thirty-six of the Act of 1946 (which provides for the payment of compensation for the loss of rights to sell medical practices), any medical practitioner who was practising in partnership on the appointed day and

whose name was subsequently, but before the expiration of the period aforesaid, entered on any such list as aforesaid (whether by virtue of the preceding subsection or otherwise) shall be treated in like manner as if his name had been so entered on the appointed day, and compensation shall be determined in respect of his share of the goodwill of the partnership practice as at the appointed day.

(3) This Part of this Act shall apply, and shall be deemed always to have applied, to any such medical practitioner, and to the partnership agreement under which he carried on his practice on and immediately before the appointed day, in like manner as if his name had been entered as aforesaid on the appointed day, and he shall be deemed, for the purposes of section one of this Act, to be a listed partner and not to be a new listed partner.

4.—(1) Section one of this Act shall apply in relation to rights and obligations which were exercised or performed, or were required to be exercised or performed, on or after the appointed day and before the passing of this Act, under an agreement to which that section applies, subject to the following modifications:

(a) for subsection (5) there shall be substituted the following subsection:

"(5) Where, under an agreement to which this section applies, the share of a listed partner in the goodwill of the partnership practice has been purchased (whether before or after the passing of this Act) by another listed partner, the compensation determined under subsection (4) of this section in respect of that share shall be paid as soon as possible after the completion of the transfer of the share or the passing of this Act (whichever is the later), to the partner by whom it was purchased:

Provided that if the amount of the compensation exceeds the purchase price the excess shall be paid to the partner whose share was purchased";

(b) subsection (6) shall not apply;

(c) in subsection (7), the reference to an option conferred by the agreement shall include a reference to an obligation imposed by the agreement, and the reference to the rate when the option was exercised shall be construed as a reference to the passing of this Act;

(d) the reference in subsection (9) to the time when the purchase price is paid shall be construed as a reference to that time or the passing of this Act, whichever is the latter; and

(e) for subsection (11) the following subsection shall be substituted:

"(11) Where an agreement to which this section applies provides for the purchase of a share or part of a share in the goodwill of the partnership practice by two or more partners, any purchase made in pursuance of such a provision shall be treated for the purposes of this section as if it were two separate purchases by the two respective partners of such parts of that share as will, in accordance with the agreement, be added to the existing shares of those partners after the purchase, and the preceding provisions of this section shall apply accordingly."

(2) The preceding subsection shall, in relation to any agreement which, by virtue of subsection (3) of the last preceding section becomes, at any time after the passing of this Act and before the expiration of the period of two months beginning with the date of the passing of this Act, an agreement to which section one of this Act applies, have effect as if the references to the passing of this Act were references to the date on which the agreement becomes an agreement to which that section applies.

5.—(1) Where, in the case of a medical partnership carried on under an agreement in force on and immediately before the appointed day, the name of none of the partners has, before the expiration of the period of two months beginning with the date of the passing of this Act, been entered on a list of medical practitioners providing general medical services, but the name or names of one or more of the partners has or have subsequently been entered on such a list, section thirty-five of the Act of 1946 shall not affect, and shall be deemed never to have affected, the exercise or performance under the agreement of any right or obligation of a partner to sell to, or purchase from, another partner any share in the goodwill of the partnership practice, but any such agreement shall have effect subject to the next following subsection.

(2) Where any such agreement imposes an obligation on a partner whose name has not, at the time when the obligation would have had to be performed, been entered on any such list as aforesaid, to purchase the share or any part of the share

of any such partner whose name has been so entered in the goodwill of the partnership practice, the obligation shall be deemed to be an option exercisable by notice in writing to purchase that share not later than three months after the time at which, and otherwise on the same terms as those on which, the obligation would have had to be performed.

6.—(1) Where an agreement in force on and immediately before the appointed day provides for the performance of services by a medical practitioner thereafter in this section referred to as "the assistant") as an assistant to another medical practitioner (hereafter in this section referred to as "the employer"), and the name of the employer was on the appointed day, or has subsequently been, entered on a list of medical practitioners providing general medical services, section thirty-five of the Act of 1946 shall not affect, and shall be deemed never to have affected, the exercise or performance of any right or obligation conferred or imposed by the agreement on the assistant to purchase the goodwill or any part of the goodwill of the practice of the employer, or any right or obligation conferred or imposed by the agreement on the employer or his personal representative to sell the goodwill of his practice or any part thereof to the assistant, but any such agreement shall have effect subject to the following provisions of this section.

(2) Where, in the case of any such agreement, the name of the employer was entered on the appointed day on a list of medical practitioners undertaking to provide general medical services, then, notwithstanding anything in section thirty-six of the Act of 1946 or in the preceding subsection:

(a) there shall be determined in accordance with regulations made under the said section thirty-six the compensation payable in respect of the goodwill of the practice of the employer, in all respects as if the said section thirty-five of the Act of 1946 prohibited the sale of that practice, whether under the agreement or otherwise; and

(b) the payment of the compensation so determined and of interest thereon shall be subject to the following provisions of this section.

(3) Where any agreement to which the last preceding subsection applies imposes an obligation or confers an option on the assistant to purchase the goodwill of the practice of the employer or any part thereof and, in the case of an option, the option is exercised, that goodwill or part shall, if the name of the assistant has, before the time when the obligation is required to be performed or the option is first exercisable, been entered on a list of medical practitioners undertaking to provide general medical services, be transferred to him at the time and on the terms (except as to the payment of purchase price) provided in the agreement, and there shall be paid to the employer or his personal representative, on or as soon as possible after the completion of the transfer, in complete satisfaction of the purchase price, the compensation determined as aforesaid in respect of the goodwill of his practice or, in the case of the transfer of a part of that goodwill a proportionate part of that compensation.

(4) Where any agreement to which subsection (2) of this section applies imposes an obligation on the assistant to purchase the goodwill of the practice of the employer or any part thereof and the name of the assistant has not, before the time when the obligation would have had to be performed, been entered on such a list as aforesaid, the obligation shall be deemed to be an option exercisable by notice in writing to purchase the goodwill or part not later than three months after the time at which, and otherwise on the same terms as those on which, the obligation would have had to be performed.

(5) Where the goodwill of the practice of the employer or any part thereof has been purchased by the assistant in pursuance of an option conferred by the last preceding subsection or in pursuance of an option conferred by the agreement and exercised at a time when the assistant was not entered on such a list as aforesaid, the compensation determined under subsection (2) of this section in respect of that goodwill, or as the case may be, a proportionate part of that compensation, shall not be paid and, in so far as it has been paid, shall be repaid to the Minister, and the interest on the compensation shall cease to be payable as from the date when the option was exercised:

Provided that the amount of compensation payable in respect of any other medical practice or share thereof under section thirty-six of the Act of 1946 shall not be increased in consequence of the said compensation not being paid.

SAFE Persomnia OR BARBITURATES?

The frequently reported losses of barbiturates announced by the B.B.C. are considered to be, more often than not, attempts by addicts to obtain additional supplies of the drug. The medical profession is therefore rightly reluctant to prescribe this drug frequently or for long periods.

The best means to stop such undesirable practice is to restrict prescriptions of barbiturates to cases which are not likely to respond to other sedatives or hypnotics.

Persomnia, a combination of two open-chain ureides*—bromisovalerylurea and carbromal—has been proved by long clinical practice to be as effective as barbiturates in practically all cases in which a sedative or mild hypnotic is indicated. The preparation discloses a marked synergistic enhancement of effect as compared with the therapeutic value of the two component drugs individually employed.

*Barbiturates are closed-chain ureides

Some of the advantages of PERSOMNIA over barbiturates are the following:

- Safety in use, even in doses largely in excess of therapeutic requirements
- Not habit-forming
- No after-effects
- No effect on the normal circulation
- Minimal risk of bromism
- No cumulative action
- Well tolerated
- Rapid absorption and excretion
- Induces quiet sleep without preliminary excitement

NOTE:—Persomnia has no official B.P., B.P.C., or N.(W.)F. equivalent.

Free clinical samples and literature will be gladly sent on request.

CLINICAL PRODUCTS LTD.
RICHMOND, SURREY, ENGLAND



Child Nutrition

It is now recognized that diet plays an important role in the health and development of children, and that good nutrition is particularly vital during the early years of life. Among the nutrients known to be essential for the maintenance of health are the vitamins of the B₂ complex.

One of the most useful, natural dietary sources of the B₂ vitamins is to be found in Marmite, which is a concentrated yeast extract. It has been shown that the systematic inclusion of Marmite in the diet is especially beneficial for expectant and nursing mothers, and for babies. Marmite is also ordered extensively for children of all ages.

MARMITE yeast extract

contains

Riboflavin (vitamin B₂) 1.5 mg. per oz.
Niacin (nicotinic acid) 16.5 mg. per oz.

Jars: 1-oz. Bd., 2-oz. 1/1, 4-oz. 2/-, 8-oz. 3/3, 16-oz. 5/9

Obtainable from Chemists and Grocers

Special terms for packs for hospitals, welfare centres and schools

Literature on request

THE MARMITE FOOD EXTRACT CO., LTD.
35, Seething Lane, London, E.C.3

296

VASANO

for the prevention and treatment of



'Vasano' consists of

a mixture of hyoscine, hyoscyamine and camphoric acid in balanced combination which affords optimal central and peripheral action. Hyoscine, acknowledged as one of the most effective single agents for the prevention of travel sickness, exerts a sedative influence on the higher centres and is a parasympathetic depressant, while hyoscyamine acts peripherally upon the vagus.

'VASANO'

is a proven remedy for all forms of travel sickness, by land, sea or air, and is also widely prescribed for the treatment of Meniere's Disease.


BRITISH SCHERING
LIMITED

ORIGINAL PACKINGS

TABLETS: 10 & 100

SUPPOSITORIES: 10

167/169 · GREAT PORTLAND STREET · LONDON · W.1

237H

12.—(1) Any difference or dispute arising with respect to the remuneration or conditions of service of persons employed or engaged in the provision of services under either the Act of 1946 or the Act of 1947 shall be deemed to be:

(a) a difference or dispute to which the Conciliation Act, 1896, applies; and

(b) a trade dispute within the meaning of the Industrial Courts Act, 1919.

(2) The power of the Minister of Labour and National Service under paragraphs (b) and (c) of subsection (2) of section two of the said Industrial Courts Act, 1919, to refer matters for settlement to the arbitration of one or more persons appointed by him or to a board of arbitration constituted in the manner specified in the said paragraph (c) shall be deemed, in the case of any such difference or dispute as aforesaid, to include power to refer the matter for advice to one or more persons appointed by him or to such a board of arbitration, and subsection (3) of section three of the said Act (which excludes the Arbitration Act, 1889, in relation to the references therein mentioned) shall extend to any reference made by virtue of this subsection.

13.—(1) Subsection (2) of section thirty-three of the Act of 1946 and subsection (2) of section thirty-four of the Act of 1947 (which enable regulations to be made with respect to the provision of general medical services) shall be amended by the addition at the end of each of those subsections of the following paragraph:

"(c) for the removal from the list of medical practitioners undertaking to provide general medical services for persons in any area of the name of a medical practitioner in whose case it has been determined in such manner as may be prescribed that he has never provided or has ceased to provide general medical services for persons in that area."

(2) Subsection (2) of section thirty-eight of the Act of 1946 and subsection (2) of section forty of the Act of 1947 (which enable regulations to be made with respect to the provision of pharmaceutical services) shall be amended by the addition at the end of each of those subsections of the words "and

(c) for the removal from the list of persons undertaking to provide pharmaceutical services for persons in any area of the name of any person in whose case it has been determined in such manner as may be prescribed that he has never provided or has ceased to provide such services for persons in that area."

(3) Subsection (2) of section forty of the Act of 1946 and subsection (2) of section thirty-nine of the Act of 1947 (which enable regulations to be made with respect to the provision of general dental services) shall be amended by the addition at the end of each of those subsections of the following paragraph:

"(f) for the removal from the list of dental practitioners undertaking to provide general dental services for persons in any area of the name of a dental practitioner in whose case it has been determined in such manner as may be prescribed that he has never provided or has ceased to provide general dental services for persons in that area."

(4) Subsection (3) of section forty-one of the Act of 1946 and subsection (3) of section forty-two of the Act of 1947 (which enable regulations to be made with respect to the provision of supplementary ophthalmic services) shall be amended by the addition at the end of each of those subsections of the following paragraph:

"(d) for the removal from the list of medical practitioners, ophthalmic opticians or dispensing opticians undertaking to provide supplementary ophthalmic services for persons in any area of the name of a medical practitioner, ophthalmic optician, or dispensing optician, as the case may be, in whose case it has been determined in such manner as may be prescribed that he has never provided or has ceased to provide supplementary ophthalmic services for persons in that area."

14.—(1) The Seventh Schedule to the Act of 1946 (which relates to the constitution of the Tribunal established for the purpose of inquiring into cases that may involve the removal of any person from a list prepared under Part IV of the Act) shall have effect with the substitution for paragraphs 4 and 5 of that Schedule of the following paragraphs:

"4. The remaining member (hereinafter referred to as 'the practitioner member') shall be appointed by the Minister from such

one of the panels appointed as hereinafter provided as the Minister considers appropriate having regard to the profession or calling of the person whose case is being investigated.

For the purposes of this paragraph, the Minister shall, after consultation with such organizations as the Minister may recognize as representative of the several professions or callings concerned appoint the following panels, none of which shall exceed six persons:—that is to say: (a) a panel of medical practitioners; (b) a panel of dental practitioners; (c) a panel of registered pharmacists; (d) a panel of medical practitioners having the qualifications prescribed under section forty-one of this Act; (e) a panel of ophthalmic opticians; and (f) a panel of dispensing opticians.

5. If any of the members of the Tribunal is unable to act in any case, a deputy may be appointed by the Lord Chancellor or the Minister as in the case of the appointment of the member in question and, if the member is the chairman, the deputy shall possess the professional qualifications required for the office of chairman, and if the member is the practitioner member, the deputy shall be appointed from the same panel."

(2) Nothing in this section shall affect the constitution of the said Tribunal for the purpose of inquiring into any case the inquiry into which has commenced before the passing of this Act.

(3) This section shall apply to Scotland with the substitution for references to section forty-one of and to the Seventh Schedule to the Act of 1946 of references to section forty-two of and to the Eighth Schedule to the Act of 1947 and for the expressions "Lord Chancellor" and "Minister," wherever they occur, of the expressions "Lord President of the Court of Session" and "Secretary of State" respectively.

15.—(1) It is hereby declared for the removal of doubts that any power conferred by the Act of 1946 to prescribe the qualifications to be possessed by any medical practitioner or ophthalmic or dispensing optician includes a power to prescribe a requirement that the practitioner or optician shall show, to the satisfaction of a committee recognized by the Minister for the purpose or to the satisfaction of the Minister acting on the advice of such a committee, that he possesses such qualifications including qualifications as to experience, as may be mentioned in the regulations.

(2) In the application of this section to Scotland for reference to the Act of 1946 and to the Minister there shall be respectively substituted references to the Act of 1947 and to the Secretary of State.

16. Notwithstanding anything contained in the constitution or rules of any voluntary organization formed for the purpose of providing a service of nurses for attendance on the sick in their own homes or of midwives, or in any trust deed or other instrument relating to any such organization or service, any property vested in the organization or held by any persons on trust for the organization or service or for any specific purposes connected with the organization or service may be transferred to: local health authority, on such terms as may be agreed between the authority and the organization or trustees, with a view to the property being used by the authority for purposes similar to the purposes for which it was previously used.

17.—(1) Where a medical practitioner:

(a) carries out a medical examination of any person with a view to an urgency order being made under section eleven of the Lunacy Act, 1890;

(b) is called in by a justice of the peace under section sixteen of the said Act and carries out a medical examination of any person brought before the justice under that section;

(c) carries out a medical examination of any person with a view to his being placed in or sent to an institution within the meaning of the Mental Deficiency Act, 1913; or

(d) carries out a medical examination of any person with a view to his treatment as a voluntary patient under subsection (2) of section one of the Mental Treatment Act, 1930, or his treatment as a temporary patient under section five of that Act;

the local health authority for the area where the person examined resides shall pay to that medical practitioner reasonable remuneration in respect of the said examination and in respect of any certificate or recommendation given by him with regard to the person examined and the amount of any expense reasonably incurred by him in connexion with the examination or the giving of any such certificate or recommendation:

Provided that:

(a) no payment shall be made under this subsection to a medical practitioner in respect of an examination carried out as part of his duty to provide general medical services for the person examined;

(b) this subsection shall only apply in a case where it is intended, when the medical examination is carried out, that, if an urgency order or a summary reception order is made or the person examined is placed in or sent to such an institution as aforesaid or is treated as a voluntary or temporary patient as aforesaid, the whole cost of his maintenance and treatment will be defrayed out of moneys provided by Parliament under the Act of 1946.

(2) Section two hundred and eighty-five of the Lunacy Act, 1890 (which provides for the payment of remuneration and expenses to medical practitioners called in under the said section sixteen, if the justice of the peace so orders), shall cease to have effect.

18.—(1) Where the Board of Control have, before the commencement of this Act, purported to make an order under subsection (2) of section eleven of the Mental Deficiency Act, 1913, providing for the continuance of any detention order, but the Board have failed to make the order within the time limited by the said section eleven, then, unless it is shown that the order purported to have been made under the said subsection (2) was not made in good faith, the detention order purported to have been continued shall be deemed not to have expired and to have been duly continued as if the order purporting to continue it had been made within the required time and otherwise in conformity with the provisions of the said section eleven.

(2) In this section the expression "detention order" means an order made under the Mental Deficiency Act, 1913, that a defective be sent to an institution for defectives, and the expression "institution for defectives" has the meaning assigned to it by that Act as amended by the Act of 1946.

19. Notwithstanding the provisions of subsection (2) of section one of the Act of 1946, or subsection (2) of section one of the Act of 1947, it shall be lawful, in the case of any person for whom the Minister or, as the case may be, the Secretary of State is providing hospital and specialist services as an in-patient and who is absent during the day from the hospital where he is a patient for the purpose of engaging in employment for which he is remunerated, for the Minister or Secretary of State to require that person to pay such part of the cost of his maintenance in the hospital and any costs incidental thereto, as may seem to the Minister or Secretary of State reasonable having regard to the amount of the remuneration, and the Minister or Secretary of State may recover the payment so required.

20.—(1) The amendments specified in Part I and Part II of the Schedule to this Act, being amendments of a minor character, shall be made in the Act of 1946 and the Act of 1947, respectively:

Provided that the amendments of the Fifth Schedule to the Act of 1946 and the Sixth Schedule to the Act of 1947 relating to the Chairman of an Executive Council shall, except in a case where the office of such a chairman is vacant at the passing of this Act, only take effect, in relation to each Executive Council, when the appointment of the person holding office as chairman at the date of the passing of this Act comes to an end.

(2) Subsection (2) of section fourteen of the Midwives Act, 1918, as amended by subsection (2) of section two of the Midwives and Maternity Homes Act, 1926 (which requires a medical practitioner called in to assist a midwife in case of emergency to submit within two months his claim for the payment of a fee by the local health authority), shall be amended by the substitution for the words "two months" of the words "three months."

(3) Section three of the Cancer Act, 1939 (which empowers the Minister to lend money to the National Radium Trust), shall cease to have effect.

(4) In the application of subsection (2) of this section to Scotland, for the references to subsection (2) of section fourteen of the Midwives Act, 1918, and to subsection (2) of section two of the Midwives and Maternity Homes Act, 1926, there shall be respectively substituted references to subsection (2) of section twenty-two of the Midwives (Scotland) Act, 1915, and to subsection (2) of section four of the Midwives (Scotland) Act, 1927.

21. (1) There shall be defrayed out of moneys provided by Parliament any increase attributable to the passing of this Act in any grants or sums payable under any other enactment out of moneys so provided.

(2) All sums received by the Minister or Secretary of State under this Act shall be paid into the Exchequer.

22. (1) In this Act:

the expressions "the Act of 1946" and "the Act of 1947" have the meanings assigned to them by section one and section nine of this Act respectively;

the expression "the appointed day" means the day appointed for the purposes of sections thirty-three to thirty-seven of the Act of 1946 and sections thirty-four to thirty-eight of the Act of 1947.

(2) Other expressions used in this Act shall, in the application of this Act to England and Wales, have the same meanings as in the Act of 1946 and, in the application of this Act to Scotland, have the same meanings as in the Act of 1947.

(3) Any reference in this Act to any other enactment shall be construed as a reference to that enactment as amended by any subsequent enactment including this Act.

23. (1) This Act may be cited as the National Health Service (Amendment) Act, 1949, and this Act, so far as it applies to England and Wales, and the Act of 1946 may be cited together as the National Health Service Acts, 1946 and 1949, and this Act, so far as it applies to Scotland, and the Act of 1947 may be cited together as the National Health Service (Scotland) Acts, 1947 and 1949.

(2) This Act shall not extend to Northern Ireland.

(3) Subsection (3) of section eighty of the Act of 1946 (which provides for the extension of that Act to the Isles of Scilly) shall have effect as if the references to that Act includes references to this Act.

SCHEDULE: MINOR AMENDMENTS OF THE ACTS OF 1946 AND 1947

PART I: MINOR AMENDMENTS OF THE ACT OF 1946

In subsection (2) of section five (which provides for the treatment, at hospitals providing hospital and specialist services, of the patients of medical practitioners on the staff of such hospitals), after the words "medical practitioner," wherever they occur, the words "or dental practitioner" shall be inserted.

In subsection (2) of section twenty-two (which empowers a local health authority to recover from persons availing themselves of maternity and child welfare services charges in respect of articles provided by the authority) for the words "any articles" there shall be substituted the words "residential accommodation, food, or articles."

In subsection (4) of section thirty-one (which empowers the Minister to establish a joint committee for the areas of two or more Executive Councils and to provide, in relation to that committee, for any of the matters for which, in relation to an Executive Council, regulations made under the Fifth Schedule to the Act may provide), for the words "matters for which, in relation to an Executive Council, regulations made under the Fifth Schedule to this Act may provide" there shall be substituted the words "matters for which, in relation to an Executive Council, provision is or may be made by or under the supplementary provisions of the Fifth Schedule to this Act."

At the end of section thirty-two (which relates to local representative committees) there shall be added the following subsections:

"(3) The Executive Council may, on the request of the Local Medical Committee or the Local Pharmaceutical Committee or the Local Dental Committee for their area, allot to that Committee out of the moneys available to the Council for the remuneration of persons of whom that Committee is representative and who provide general medical services, pharmaceutical services or, as the case may be, general dental services under this Part of this Act, such sums for defraying the administrative expenses of the Committee, including travelling and subsistence allowances payable to members of the Committee, as may be determined by the Executive Council with the approval of the Minister and the amount of any such sums shall be deducted in such manner as may be so determined with such approval, from the remuneration of the persons aforesaid.

(4) Any such Committee as aforesaid may, with the approval of the Minister, delegate any of their functions, with or without restrictions or conditions, to subcommittees composed of members of the Committee."

In subsection (5) of section fifty-four (which provides for defraying out of moneys provided by Parliament any payments

made in respect of loss of remunerative time or travelling or subsistence expenses to members of any body constituted under the Act) or the words "any loss of remunerative time or any travelling or subsistence expenses" there shall be substituted the words "any loss of earnings or additional expenses (including travelling and subsistence expenses)."

At the end of paragraph (b) of subsection (1) of section sixty-seven (which relates to the superannuation of, among others, officers of voluntary organizations providing services under certain enactments) there shall be added the words "or under Part III of the National Assistance Act, 1948."

In paragraph 2 of the First Schedule (which enables the Minister to make regulations for the making of payments to members of the Central Council and of standing advisory committees constituted under the Act and of committees and sub-committees set up under that Schedule in respect of loss of remunerative time and travelling and subsistence expenses) for the words "any loss of remunerative time or any travelling or subsistence expenses" there shall be substituted the words "any loss of earnings they would otherwise have made or any additional expenses (including travelling and subsistence expenses) to which they would not otherwise have been subject, being loss or expenses necessarily suffered or incurred by them for the purpose of enabling them to perform duties as members of the Central Council or standing advisory committee, or committee or subcommittee set up as aforesaid."

For sub-paragraph (c) of paragraph 2 of Part IV of the Third Schedule (which enables the Minister to make regulations for the making of payments to members of Regional Hospital Boards, Boards of Governors of teaching hospitals, and Hospital Management Committees in respect of loss of remunerative time or, if special circumstances justify it, in respect of travelling or subsistence expenses) there shall be substituted the following sub-paragraph:

"(c) for the making of such payments as may be prescribed to members of those bodies or committees in respect of

(i) any loss of earnings they would otherwise have made or any additional expenses (other than expenses on account of travelling or subsistence) to which they would not otherwise have been subject, being loss or expenses necessarily suffered or incurred by them for the purpose of enabling them to perform any approved duty; or

(ii) any travelling or subsistence expenses necessarily incurred by them for the purpose of enabling them to perform any approved duty required to be performed at a distance of more than three miles from their usual place of residence"

At the end of the said paragraph 2 there shall be added the following sub-paragraph:

"(e) for the payment by a Regional Hospital Board, Board of Governors of a teaching hospital or a Hospital Management Committee of such sums as may be approved by the Minister, as subscriptions to the funds of any association whose objects are approved by the Minister for the purpose of this sub-paragraph."

At the end of the said Part IV of the Third Schedule the following paragraph shall be added:

"(5) In this Schedule, the expression 'approved duty,' in relation to a member of a body corporate constituted under the foregoing provisions of this Schedule or any committee of that body, means any of the following duties—that is to say:

(a) attendance at a meeting of the body or any committee thereof;

(b) the doing of any other thing approved by the body for the purpose of, or in connexion with, the discharge of the functions of the body or any committee thereof;

(c) in the case of a member of the body, attendance as a representative of the body at a conference or meeting convened by one or more such bodies or by any association of such bodies."

Paragraph 1 of the Fifth Schedule (which relates to the constitution of Executive Councils) shall be amended as follows:

(a) for the words "a chairman appointed by the Minister and twenty-four other members" there shall be substituted the words "twenty-five members";

(b) in sub-paragraph (b), for the word "four" there shall be substituted the word "five";

(c) at the end of the paragraph, the following words shall be added: "The members of an Executive Council shall from time to time, in accordance with such procedure as may be prescribed, appoint one of their members to be chairman of the Council."

After paragraph 2 of the said Fifth Schedule there shall be inserted the following new paragraph:

"2A. The term of office of the chairman of an Executive Council shall be such as the Council, when making the appointment, determine:

Provided that if the chairman ceases to be a member of the Council he shall also cease to be chairman."

For sub-paragraph (c) of paragraph 3 of the said Fifth Schedule (which enables the Minister to make regulations for the making of payments to members of Executive Councils or committees thereof in respect of loss of remunerative time, or, if special circumstances justify it, in respect of travelling or subsistence expenses), there shall be substituted the following sub-paragraph:

"(c) for the making of such payments as may be prescribed to members of the Council or any such committee in respect of any loss of earnings they would otherwise have made or any additional expense (including travelling and subsistence expenses) to which they would not otherwise have been subject, being loss or expenses necessarily suffered or incurred by them for the purpose of enabling them to perform any approved duty."

In sub-paragraph (e) of the said paragraph 3 the words "and for the payment at the prescribed rates of any expenses reasonably incurred by representatives in attending meetings of any such association" shall be omitted.

At the end of the said paragraph 3 the following proviso shall be added:

"Provided that:

(i) a member of an Executive Council for the area of a local health authority who are the council of a county borough or a member of a committee appointed by such an Executive Council shall not be entitled to any payments under sub-paragraph (c) of this paragraph in respect of travelling and subsistence expenses in respect of a duty performed within the area of the Executive Council; and

(ii) a member of an Executive Council for the area of a local health authority who are the council of a county or for the area of two or more local health authorities or a member of a committee appointed by such an Executive Council shall not be entitled to any payments under the said sub-paragraph (c) in respect of travelling or subsistence expenses in respect of a duty performed within the area of the Executive Council except in respect of duties performed at a distance of more than three miles from his usual place of residence"

At the end of the said Fifth Schedule the following paragraph shall be added:

"7. In this schedule, the expression 'approved duty,' in relation to a member of an Executive Council or any committee thereof, means any of the following duties—that is to say:

(a) attendance at a meeting of the Council or of any committee thereof;

(b) the doing of any other thing approved by the Council for the purpose of, or in connexion with, the discharge of the functions of the Council or any committee thereof;

(c) attendance as a representative of the Council at a conference or meeting convened by one or more Executive Councils or by any association of Executive Councils whose objects are approved by the Minister."

The provision of the Tenth Schedule, which imposes a duty on medical officers of health who receive certificates or notices under certain sections of the Public Health Act, 1936, relating to infectious diseases, to send copies thereof within twelve hours after receipt to the local health authority, shall be amended as follows:

(a) after the words "a certificate or notice under section one hundred and forty-four, section one hundred and forty-six, or section two hundred and forty-two of the said Act" there shall be inserted the words "or in respect of a disease notifiable in accordance with regulations made under section one hundred and forty-three of the said Act";

(b) for the words "within twelve hours" there shall be substituted the words "within twelve hours, if possible, and in any case within forty-eight hours."

PART II: MINOR AMENDMENTS OF THE ACT OF 1947

In subsection (2) of section five (which provides for the treatment, at hospitals providing hospital and specialist services, of the patients of medical practitioners on the staff of such hospitals), after the words "medical practitioner," wherever they occur, the words "or dental practitioner" shall be inserted.

In subsection (2) of section twenty-two (which empowers a local health authority to recover from persons availing themselves of maternity and child welfare services charges in respect of articles provided by the authority) for the words from 'the aforesaid' to 'prescribed' there shall be substituted the words "under the aforesaid arrangements there is provided anything that may be prescribed including residential accommodation, food or any other thing" for the words so supplied there shall be substituted the words for whom such provision is made", and for the words of supply" there shall be substituted the words "of such provision".

In subsection (4) of section thirty-two (which empowers the Secretary of State to establish a joint committee for the areas of two or more Executive Councils and to provide, in relation to that committee, for any of the matters for which, in relation to an Executive Council, regulations made under the Sixth Schedule to the Act may provide) for the words "matters for which in relation to an Executive Council regulations made under the Sixth Schedule to this Act may provide" there shall be substituted the words "matters for which, in relation to an Executive Council, provision is or may be made by or under the supplementary provisions of the Sixth Schedule to this Act".

At the end of section thirty-three (which relates to local representative committees) there shall be added the following subsections.

"(3) The Executive Council may, on the request of the Local Medical Committee or the Local Dental Committee or the Local Pharmaceutical Committee for their area allot to that Committee out of the moneys available to the Council for the remuneration of persons of whom that Committee is representative and who provide general medical services, general dental services or, as the case may be, pharmaceutical services under this Part of this Act, such sums for defraying the administrative expenses of the Committee, including travelling and subsistence allowances payable to members of the Committee, as may be determined by the Executive Council with the approval of the Secretary of State, and the amount of any such sums shall be deducted, in such manner as may be so determined with such approval, from the remuneration of the persons aforesaid.

(4) Any such Committee as aforesaid may, with the approval of the Secretary of State, delegate any of their functions, with or without restrictions or conditions, to subcommittees composed of members of the Committee."

In subsection (3) of section fifty-four (which provides for defraying out of moneys provided by Parliament payments made in respect of loss of remunerative time or travelling or subsistence expenses to members of any body constituted under the Act) for the words "any loss of remunerative time or any travelling or subsistence expenses" there shall be substituted the words "any loss of earnings or additional expenses (including travelling and subsistence expenses)".

At the end of paragraph (b) of subsection (1) of section sixty-six (which relates to the superannuation of, among others, officers of voluntary organizations providing services under certain enactments) there shall be added the words "or under Part III of the National Assistance Act, 1948".

In paragraph 2 of the First Schedule (which enables the Secretary of State to make regulations for the making of payments to members of the Health Services Council and of standing advisory committees constituted under the Act and of committees and subcommittees set up under that Schedule in respect of loss of remunerative time and travelling and subsistence expenses) for the words "any loss of remunerative time or any travelling or subsistence expenses" there shall be substituted the words "any loss of earnings they would otherwise have made or any additional expenses (including travelling and subsistence expenses) to which they would not otherwise have been subject, being loss or expenses necessarily suffered or incurred by them for the purpose of enabling them to perform duties as members of the Health Services Council or standing advisory committee, or committee or subcommittee set up as aforesaid".

For sub-paragraph (c) of paragraph 2 of Part IV of the Fourth Schedule (which enables the Secretary of State to make regulations for the making of payments to members of Regional Hospital Boards, Medical Education Committees, and Boards of Management in respect of loss of remunerative time or, if special circumstances justify it, in respect of travelling or subsistence expenses) there shall be substituted the following sub-paragraph:

"(c) for the making of payments to members of those bodies or committees in respect of

(i) any loss of earnings they would otherwise have made or any additional expenses (other than expenses on account of travelling or subsistence) to which they would not otherwise have been subject, being loss or expenses necessarily suffered or incurred for the purpose of enabling them to perform any approved duty, or

(ii) any travelling or subsistence expenses necessarily incurred for the purpose of enabling them to perform any approved duty required to be performed at a distance of more than three miles from their usual place of residence."

At the end of the said paragraph 2 there shall be added the following sub-paragraph

"(e) for the payment by a Regional Hospital Board or Board of Management of such sums as may be approved by the Secretary of State, as subscriptions to the fund of any association whose objects are approved by the Secretary of State for the purpose of this sub-paragraph."

At the end of the said Part IV of the Fourth Schedule the following paragraph shall be added

"5 In this Schedule, the expression 'approved duty,' in relation to a member of a body corporate constituted under the foregoing provisions of this Schedule or any committee of that body, means any of the following duties—that is to say

(a) attendance at a meeting of the body or any committee thereof,

(b) the doing of any other thing approved by the body for the purpose of, or in connexion with, the discharge of the functions of the body or any committee thereof,

(c) in the case of a member of the body, attendance as a representative of the body at a conference or meeting convened by one or more such bodies or by any association of such bodies."

Paragraph 1 of the Sixth Schedule (which relates to the constitution of Executive Councils) shall be amended as follows

(a) for the words "a chairman appointed by the Secretary of State and twenty-four other members" there shall be substituted the words "twenty-five members",

(b) in sub-paragraph (b), for the word "four" there shall be substituted the word "five",

(c) at the end of the paragraph, the following words shall be added "The members of an Executive Council shall from time to time, in accordance with such procedure as may be prescribed, appoint one of their members to be chairman of the Council."

After paragraph 3 of the said Sixth Schedule there shall be inserted the following new paragraph

"3A The term of office of the chairman of an Executive Council shall be such as the Council, when making the appointment, determine

Provided that if the chairman ceases to be a member of the Council he shall also cease to be chairman."

For sub-paragraph (c) of paragraph 4 of the said Sixth Schedule (which enables the Secretary of State to make regulations for the making of payments to members of Executive Councils or committees thereof in respect of loss of remunerative time, or, if special circumstances justify it in respect of travelling or subsistence expenses), there shall be substituted the following sub-paragraph

"(c) for the making of payments to members of the Council or any such committee in respect of any loss of earnings they would otherwise have made or any additional expenses (including travelling and subsistence expenses) to which they would not otherwise have been subject, being loss or expenses necessarily suffered or incurred for the purpose of enabling them to perform any approved duty."

In sub-paragraph (e) of the said paragraph 4 the words "and for the payment at the prescribed rates of any expenses reasonably incurred by representatives in attending meetings of any such association" shall be omitted

At the end of the said paragraph 4 the following proviso shall be added

"Provided that

(i) a member of an Executive Council for the area of a local health authority who are the town council of a large borough or a member of a committee appointed by such an Executive Council shall not be entitled to any payments under sub-paragraph (c) of this paragraph in respect of travelling or subsistence expenses in respect of a duty performed within the area of the Executive Council, and

(ii) a member of an Executive Council for any area other than as aforesaid, or a member of a committee appointed by such an Executive Council, shall not be entitled to any payments under the said sub-paragraph (c) in respect of travelling or subsistence expenses in respect of a duty performed within the area of the Executive Council except in respect of duties performed at a distance of more than three miles from his usual place of residence."

At the end of the said Sixth Schedule the following paragraph shall be added:

"8. In this Schedule, the expression 'approved duty,' in relation to a member of an Executive Council or any committee thereof, means any of the following duties—that is to say:

(a) attendance at a meeting of the Council or any committee thereof;

(b) the doing of any other thing approved by the Council for the purpose of, or in connexion with, the discharge of the functions of the Council or any committee thereof;

(c) attendance as a representative of the Council at a conference or meeting convened by one or more Executive Councils or by any association of Executive Councils whose objects are approved by the Secretary of State."

British Medical Association

PROCEEDINGS OF COUNCIL

Wednesday, May 11, 1949

A meeting of the Council was held on May 11. Dr. H. Guy Dain presided, supported by the President (Sir Lionel Whitby), the Chairman of the Representative Body (Dr. E. A. Gregg), and the Treasurer (Mr. A. M. A. Moore).

Obituary

The Chairman referred to the deaths of Dr. J. W. Bone, the late Treasurer, and Dr. W. N. West-Watson, a former member of Council. He recalled the various offices which Dr. Bone had held in the Association, especially his nine years as Treasurer, and the many years over which he had guided the work of the Medico-Political Committee.

It was agreed that the Gold Medal of the Association and the illuminated address which it had been intended to present to Dr. Bone should be presented posthumously to a son, a member of the medical profession, at the Annual Meeting.

Appointment of Delegates

Dr. O. C. Carter was appointed as the delegate of the Association at the forthcoming centenary celebrations of the Netherlands Medical Association, and Mr. R. L. Newell at the centenary celebrations of the Medical Society of the Hospitals of Paris, to be held later in the year.

The Chairman of Council and Dr. J. A. Pridham were appointed delegates to the General Assembly of the World Medical Association, which is to be held in London in October. The Chairman of the Representative Body and Dr. S. Wand were appointed alternate delegates.

Empire Medical Advisory Bureau

Sir Hugh Lett presented the report of the first year's work of the Empire Medical Advisory Bureau. It had been, he said, a year of very satisfactory progress. Contact had been made with very many bodies interested in overseas affairs. The Medical Director (Dr. H. A. Sandiford) had been most assiduous in this respect and had convinced all concerned that the purpose of the Bureau was not to supplant but to supplement the work of other bodies. Especially were they indebted to the British Postgraduate Federation and the Fellowship of Postgraduate Medicine. Some eight or nine "At Homes" had been held in the course of the year, each attended by about 100 overseas visitors and some 50 other people in this country. The Council had been extremely generous to the Bureau, both in the matter of finance and of accommodation, and as a result the prestige of the Association overseas had been distinctly raised.

The President endorsed what Sir Hugh Lett had said. This Empire organization was one of the best things the Council had created.

Popular Health Journal

The Chairman of the Journal Committee (Dr. Carter) brought forward a proposal that the Association should in due time undertake the publication of a monthly popular health journal. A journal of this sort, he said, would be practical public relations of the first order. It would give the profession an opportunity to put over to the public advice on healthy living in a way the individual doctor might have difficulty in doing. He gave certain particulars relating to the technique and costs of production, and acknowledged indebtedness for advice given by experts in the printing and publishing business. It was not expected that the first number would appear until some time in 1950, the date to be determined by the Council at its meeting in March, 1950, in the light of the financial position at that time.

The Council approved the proposal, which is to go to the Representative Meeting. The Council also agreed that the Association should undertake the publication of a monthly periodical for the speedy announcement of research work under the title "Current Research in the Medical Sciences," provided the Publishing Subcommittee, to which the matter was referred, was satisfied that the project was feasible.

Before the Journal report was completed Dr. Pridham expressed the Council's appreciation of the high standard of the *Journal* in recent months as a means of serving the general practitioner. In his view it stood comparison with any other medical journal in the world.

British Medical Guild

Dr. Dain presented to the Council a statement on the local organization of the British Medical Guild—the functions, areas, and constitution of local committees—and the raising of funds. He said that the trustees of the National Insurance Defence Trust had made a grant to form the nucleus of the fund of the Guild. If the proposals set out in the statement were approved for transmission to the Board of Trustees of the Guild the members of Council acting as trustees would be invited to sign the trust deed that day.

Dr. J. B. W. Rowe, referring to a passage in the statement concerning contributions from practitioners outside the three main sections of the profession engaged in the work of the National Health Service, such as non-specialist hospital residents, whole-time industrial medical officers, and general practitioners undertaking only private practice, said that the Guild would function largely as a protection for those in the National Health Service, and he could not see the justification for bringing in practitioners from outside.

Dr. Dain said that the Guild would protect practitioners of all types.

Dr. J. C. Arthur commented on what he called the amorphous relationship of the National Insurance Defence Trust to the Guild. He thought they were still in a position to continue the voluntary levy, but was the levy to be paid to the Guild or to the N.I.D.T.?

Dr. Dain replied that this matter had been discussed with the trustees of the N.I.D.T., and the question of the title was under consideration as well as the question of transfer. Contributions from general practitioners in the Service would continue to be made to the N.I.D.T., under whatever name it might function.

Dr. S. Wand said he was quite satisfied that if there was any confusion at the periphery with regard to the Guild and its purposes it was not due to the statement which had gone out. The role of the Guild was perfectly clear.

The resolution, "That the proposals relating to the British Medical Guild contained in the memorandum be approved for transmission to the Board of Trustees of the Guild," was carried *nem. con.*, two not voting. The trust deed was then signed by members of the Council present, except two, and at a later stage the first meeting of the trustees was held.

Remuneration of General Practitioners

Dr. S. Wand, chairman of the General Medical Services Committee, made a statement on the discussions with the Ministry on general practitioners' remuneration. The discussions, he said, had been unsatisfactory. The Ministry stated that it was not known how many doctors (principals) there were in the Service—this nearly 10 months after the Service started. The

inquiry form which the Ministry had circulated to executive councils was a formidable document, and the Ministry now stated that the figures would not be available within a month, as it had at first predicted. The refusal to give an assurance that any improvement in remuneration would have retrospective effect and the statement that the profession must not rely for a certainty on arbitration in the event of dispute were most disquieting. The refusal of arbitration meant that the profession would be forced into the taking of direct action should negotiations break down. Those who took part in the discussions before July 5, 1948, had no doubt whatever about the understanding that conciliation machinery would be set up, including arbitration, which the profession could invoke if it was dissatisfied.

It had been consistently held out to the profession as one of the advantages of the new arrangement that the issue of remuneration would without doubt come within the field open to arbitration. Those who participated in the earlier discussions had no shadow of doubt on that point, that a permanent conciliation machinery, with arbitration in the background, would be set up.

The report of the Public Health Committee, introduced by Dr. James Fenton, included a recommendation that the Council should take the strongest exception to the Ministry's statement on this point. The whole matter was crystallized in the following resolution, which was carried unanimously:

That the Council deplores the recent statement of the Secretary of the Ministry of Health on the subject of Whitley machinery and arbitration, regarding it as a breach of faith on the Ministry's part because it involves a withdrawal of official assurances and undertakings, repeatedly given to the profession, that the conciliation machinery for the new Service should provide, in the event of disagreement between the parties, for arbitration on questions of remuneration.

In a further resolution the Ministry was reminded of the promise that representatives of the profession would be consulted on the contents of the Amending Bill, and was asked for an early fulfilment of the promise given.

Grading of Specialists

Mr. R. L. Newell, chairman of the Central Consultants and Specialists Committee, said that the committee had held two fully attended meetings, and was to hold another the following day, to discuss the proposed terms and conditions of service. A question of considerable importance concerned the Ministry's proposal for a grade of senior hospital medical officer for senior officers performing general clinical duties, but who were not of specialist status and were not trainees. He thought the Ministry had now been convinced that this grade should be a diminishing one and should be used only as a temporary expedient.

Dr. Wand said it was rumoured that under the Government drive for economy in hospitals certain hospital appointments had been down-graded. Was there any evidence that this had been done on a wholesale scale? Mr. Newell said that there was no such evidence. Grading committees decided entirely on the basis of a man's qualifications.

Mr. Lawrence Abel said that his information was exactly the opposite. Men who had considered themselves consultants or specialists had been down-graded in a large number of cases. In two regions, out of about 100 men who had been doing general surgery, only five had been designated specialists. On the board which decided the grading there was a Ministry representative, whose attitude might well be, "Keep the numbers down as much as possible."

Mr. Dickson Wright said that while there had been no instruction to down-grade there had been an intimation that the hospitals must save £9 million. The Ministry might agree to the profession's terms but keep up its sleeve the number of specialists. Dr. Pridham, Dr. Carter, and Mr. Weldon Watts spoke of disquiet in their areas.

The President said that the unevenness of the grading appeared to constitute the main problem. The discussion would strengthen the hands of the Joint Committee, of which he was chairman, in pressing for a proper means of appeal for the man who thought he had been badly treated. What his committee wanted to know was whether, to the man who had been graded a specialist, the terms and conditions were satis-

factory. The man who had been down-graded would not, of course, find the terms acceptable, but the other point was of extreme importance.

Some discussion took place on the question of filling vacancies on regional boards and the desirability of consultation with the local medical committee when it was a question of replacement of general-practitioner members of the boards, and it was promised that this matter would be looked into at Headquarters.

Occupational Health Service

Dr. J. A. L. Vaughan Jones, chairman of the Occupational Health Committee, presented a report embodying the views of the Association on the question of a comprehensive occupational health service. The report will be published in the Supplementary Report of Council.

The need for an occupational health service, said Dr. Vaughan Jones, had long been recognized by the Association and by other informed opinion. Various Government Departments had developed such services, as bad mines, railways, and other industrial undertakings. Many large firms had developed satisfactory services, but such services were most lacking in the smaller factories. The committee was not acting rashly in this matter: the question had been under consideration for the past five years. General practitioners, suitably trained, and acting in a part-time capacity, must be the basis of this service in the future. The bulk of the work would inevitably be done by general practitioners.

No effort was made in the report now placed before the Council to enter upon detailed plans, but it was felt that the central authority responsible for the planning of the occupational health service should be the Ministry of Health, and that a survey of the whole country should be made in relation to need. Such a survey would involve considerable outlay, and various suggestions had been made—one that the Nuffield Foundation might assist. But it was fundamental, before going any further in relation to such a service, that a survey be made in which due regard would be paid to the question of available medical man-power and to the extent of the demand in different areas for such a service.

Dr. Frank Gray said he entirely agreed with the conclusion stated in the memorandum that the Ministry of Health was the appropriate central authority to plan and supervise a national occupational health service, but the most important argument for this proposal seemed to have been omitted. Occupational health was, after all, a sort of fiction. Health services dealt with people; it was not possible to separate the man at work from the man at home, and whatever affected his health would affect him both when he was at work and when he was at home. He wanted to see that argument accepted and stated. Also, in para. 12 of the document, he thought the words should be "the Government Department" (as the supervising body)—not "a Government Department."

The Council unanimously agreed to recommend the report to the Representative Body.

The chairman of the Occupational Health Committee explained that recent discussions with the National Dock Labour Board had removed certain misunderstandings that had arisen as to the work which the Board had authorized its medical officers to carry out at Avonmouth Docks. The committee, while still opposed in principle to work of this kind being performed by public-health medical officers in receipt of full-time salaries, was now satisfied that no exception could be taken to the policy of the Board in regard to the scope of the duties undertaken by its medical officers. In these circumstances the Council, on the recommendation of the committee, decided that advertisements of medical appointments under the Board should be accepted if offered for publication in the *British Medical Journal*.

Loan to Medical Association of Eire

The Treasurer stated that an application had been received for a loan to assist the Medical Association of Eire to establish an Association House in Dublin. The house which the association was endeavouring to obtain was in the neighbourhood of Merrion Square, and was of a design which lent itself for easy conversion into offices. The Finance Committee, said Mr. Moore, recognized that as a corporate body analogous to

an organized Branch of the Association the Medical Association of Eire should be given all possible help to obtain accommodation in keeping with the dignity of the profession and of the two Associations, and accordingly recommended that a loan of £10,000 for the purchase of the house on a long-term lease should be made without interest. The redemption of the loan within a stated period would be guaranteed by a sinking-fund policy.

The Finance Committee's recommendation was agreed to unanimously.

Medical Ethics

Dr. J. G. Thwaites, for the Central Ethical Committee, brought forward a memorandum on "Ethics and Members of the Medical Profession," with a suggestion that it be distributed to those who had qualified within the last ten years.

Dr. Pridham suggested that the "Declaration of Geneva," which the World Medical Association wanted every doctor to accept on qualification, should be incorporated in the document. The World Medical Association had elaborated a code of ethics for acceptance by all national medical associations.

The document was unanimously approved.

Organization

For the Organization Committee Dr. Pridham presented a report on the conduct of business at Representative Meetings. It contained suggestions for possible methods of dealing with the problem of congested agenda, but no recommendations. He said that the report would be presented to the Representative Body, which would decide for itself on the method to be adopted. It was agreed to include in the report a note on the manner in which other large public assemblies dealt with the same problem.

The Council set up a special committee to consider and report upon the constitutional position of Branches of the Association overseas, other than corporate Branches, with special reference to the question of affiliation of the Association with the Indian Medical Association.

Dr. Pridham called attention to a memorandum on the role of Divisions in the medico-political work of the Association, which he hoped would be published in the *Journal*. He reported that the Association membership was now at its highest peak—60,441.

The Council authorized its Chairman to forward a suitable letter to 13 honorary secretaries of Divisions and Branches who have recently relinquished office.

Association of General Practitioners with Hospital Work

A report was made by the Joint Committee on Association of General Practitioners with Hospital Work. One of its recommendations was that certain hospital wards in or attached to general hospitals, to be used in association with the specialist staff of a hospital, should be made available to general practitioners. Dr. G. MacFeat considered this to be a very "milk-and-water" recommendation and urged, on the lines of an earlier proposal, that a general-practitioner hospital or wards in a general hospital should be provided in suitable areas at the request of the local practitioners where all doctors in the area might treat their in-patients. He considered that there was now an opportunity of doing something of real value in connexion with general-practitioner hospitals.

Dr. Wand, a member of the Joint Committee, said that the recommendation now brought forward was likely to be the first of a number, and as there was no special urgency he was willing to take it back to the committee, together with the more definite proposals put forward by Dr. MacFeat. The same procedure was followed in connexion with another recommendation concerning general-practitioner specialists.

Other Committee Reports

On the report of the Scottish Committee Dr. MacFeat said that the committee was collecting by means of a questionnaire sent to all practitioners in Scotland in receipt of mileage payments particulars of actual mileage travelled, special mileage, car expenditure, and other details, and the replies would be considered by a special subcommittee.

Recommendations by the Armed Forces Committee protesting against the existing discrimination against National Service

officers in the armed Forces in matters of marriage allowance and leave entitlement (which it was said reacted particularly harshly upon medical officers, many of whom, owing to the late age of call-up, were married before entry to the Forces) were agreed to by the Council.

Dr. Mary Esslement said that the Committee on Nursing had examined the Nurses Bill and would endeavour to arrange for certain amendments in accordance with views previously approved by the Council.

Certain paragraphs dealing with health centres in rural areas were approved for inclusion in the Council's final report on health centres.

The terms of reference of the International Relations Committee—"to foster international friendship in the sphere of medicine and to make recommendations to that end"—were agreed; also that the committee should report to the Council in April of each year proposals for international receptions.

For the Colonies and Dependencies Committee it was reported that the memorandum already approved on the remuneration of officers in the Colonial Medical Service had been submitted to the Colonial Office, which had agreed to open negotiations as soon as certain preliminary investigations had been completed.

Reports dealing with routine and domestic matters were submitted by the Staffing, Office, Public Relations, and Building Committees and were approved.

Annual Meeting, 1950

An invitation from the Executive Committee of the Liverpool Division to hold the Annual Meeting of the Association in 1950 in Liverpool was received. It was stated that the Southport Division desired to be associated with the invitation, which should be regarded as a combined one from both Divisions. The Council gratefully accepted the invitation and endorsed the Liverpool nomination for President of Professor T. P. McMurray, of the University of Liverpool, for recommendation to the Representative Body.

The British Medical Guild

Dr. H. Guy Dain was appointed Chairman of the Trustees, and Dr. Frank Gray Treasurer. A committee of 12—members of the Trust—was set up with power to act, within the framework of the document just approved, to initiate peripheral machinery and undertake other detailed work.

Association Notices

Diary of Central Meetings

MAY		
24	Tues.	Scholarships and Grants Subcommittee, 11 a.m.
24	Tues.	British Pharmacopocia Subcommittee, 2 p.m.
24	Tues.	Joint Committee of the Royal Colleges, the Royal Scottish Corporations, and the Central Consultants and Specialists Committee, 10.30 a.m. (at Ministry of Health, Whitehall, S.W.).
25	Wed.	Committee on the Postgraduate Education of General Practitioners, 10.30 a.m. (<i>change of date</i>).
26	Thurs.	Joint Committee of B.M.A. and Pharmaceutical Society, 11 a.m.
26	Thurs.	Occupational Health Committee, 2 p.m.
27	Fri.	Committee on the Postgraduate Education of General Practitioners, 2 p.m.
31	Tues.	International Relations Committee, 2 p.m.

Branch and Division Meetings to be Held

BLACKPOOL AND FYLDE DIVISION.—At Royal Lytham and St. Annes Golf Club, Tuesday, May 24, Treasurer's Cup Golf Competition.

EAST SUFFOLK DIVISION.—Friday, May 27, 8.15 p.m., lecture by Mr. Lionel Cosin: "Geriatric Care."

MONMOUTHSHIRE DIVISION.—At Newport Golf Club, Rogerstone, Sunday, May 22, Spring meeting of Newport and Monmouthshire Medical Golfing Association.

NORWICH DIVISION.—At Museum, Norfolk and Norwich Hospital, Friday, May 27, 8.30 p.m., annual meeting. Instruction of Representatives to Annual Representative Meeting, etc.

OXFORD DIVISION.—At Lecture Room, Radcliffe Infirmary Maternity Home, Wednesday, May 25, 8.15 p.m. Mr. N. S. Barron, Ph.D.: "Some Diseases of Animals Communicable to Man."

SCARBOROUGH DIVISION.—At Scarborough Hospital, Thursday, May 26, 8.30 p.m., clinical meeting. Dr. Hugh Garland: "The Intervertebral Disk."

SHEFFIELD DIVISION.—At Royal Victoria Station Hotel, Friday, May 27, 8.30 p.m., annual general meeting.

JENNER AND HIS IMPACT ON MEDICAL SCIENCE

BY

Sir EDWARD MELLANBY, G.B.E., K.C.B., F.R.C.P., F.R.S.

We are assembled here to-day to celebrate the life and work of Edward Jenner, who was born in Gloucester 200 years ago on May 17, 1749. We come to pay tribute to a man who discovered that vaccination protected against smallpox, and thereby placed in the hands of any community which cared to make proper use of it the means of eliminating from their midst a deadly and disfiguring disease. The method was effective as Jenner presented it, and all the new knowledge and technical skill that have been added in the last 150 years have not changed its fundamental basis or added much to its efficiency.

Apart from the value of vaccination in controlling or even eliminating smallpox, this discovery of Jenner's has much wider significance. It was one of the earliest instances of preventive medicine and of the public control of disease. Its value on the scientific side of medicine is just as imposing, for Jennerian vaccination can be regarded as the parent of modern work on viruses and virus diseases and even of modern immunology. Indeed, it would be difficult to mention any discovery that has had a greater impact both on public health and on medical science, and it is but right that we should pay tribute to the man who was responsible for this important advance in knowledge.

So much emphasis is nowadays placed on technique and statistical approval of investigations that it is well for us to take this opportunity of reminding ourselves that the first object of research is discovery, and that such discoveries may come not only from systematic and prolonged investigation, involving the use of standard methods with elaborate apparatus, but equally well from methods of observation and experiment of the simplest kind. Jenner himself was no professional research worker but a man with exceptional powers of observation and perception, who had also the outstanding quality, remarkable for this period and apparently innately developed, of appreciating the value of the experimental method.

There is a vast amount of information about Jenner's life. Indeed, it would be difficult to find anybody of that period whose actions, experiences, and thoughts were better documented, and it would have been easier to centre this lecture round his history. I do not propose to do this, however, because I am anxious to paint a broader picture of his work and its influence on medical science. It would, however, be wrong to eliminate all such references, because, clearly, a proper appraisal of his work must depend in part on the state of knowledge at that time and on the conditions under which he was brought up and laboured. There has been a tendency to write about and discuss Jenner as if he had the knowledge, outlook, and facilities of later days. I wish therefore to refer briefly to some of his experiences, specially during the formative years of his life, in order to convey an idea of his training, his equipment, and the circumstances in which he made his observations.

A Brief History

Edward Jenner was the son of a country parson living in Gloucestershire, and at the age of 13 was apprenticed to a doctor with the intention of becoming an apothecary. Under Ludlow, a surgeon at Sodbury, near Bristol, he studied pharmacy and surgery. In 1769, at the age of 20, he had the good fortune to become an apprentice to John Hunter, then a surgeon at St. George's Hospital and the owner of a menagerie at Brompton, where he made his world-famous studies on the structure and habits of animals. Hunter was then 41. Hunter and Jenner dated their intimate friendship from this time and began a correspondence which only ended with Hunter's death in 1793. Hunter expected much from his assistants, but he was equally good in giving them help and opportunities for advancement. Thus, in 1771, when Captain Cook returned from his voyage to the great southern continent with a large cargo of natural history specimens, mostly collected at Botany Bay, it fell to Jenner's lot, through the influence of Hunter and of Sir Joseph Banks, then President of the Royal Society, to prepare and arrange these specimens. This he did with such skill that he was offered the appointment of naturalist to Captain Cook's next expedition, which sailed in 1772.

Other evidence of Jenner's capability is seen in the fact that Hunter also suggested that he might become his partner and give additional lectures on comparative anatomy and surgery. Both these invitations were rejected, however, and Jenner preferred to return to his native village to become a country doctor in the vales of Berkeley and Gloucester.

Throughout his life one of Jenner's main interests was natural history, and it was in 1787 that he sent his manuscript on the behaviour of young cuckoos through Hunter to the Royal Society. In this publication, it will be remembered, he showed that fledgling cuckoos heaved out of the unnatural nest in which they were born other fledglings and eggs, a murderous instinct they lost by the twelfth day after hatching. It was not only Fellows of the Royal Society who found difficulty in believing this observation, and its complete acceptance had indeed to await the arrival of the cinematograph. However, a year later, in 1788, the work was published by the Royal Society in its *Philosophical Transactions*, and Jenner was elected to the Fellowship of the Society.

While a medical student at Sodbury, Jenner heard the local traditional rumour that milkmaids who had suffered from cowpox never took smallpox. There is much evidence that he was not only intensely interested in this statement but that he brooded on it and studied the matter closely during the next twenty years. In 1796 he made the first vaccination—that of a boy—with lymph made from the vesicle on the hand of a milkmaid infected with cowpox. In 1797, when he was 47, he sent to the Royal Society for publication a record of his observations on the natural history of cowpox, and this was rejected. It is said that the refusal to publish this work was accompanied

*Lecture given at the bicentenary meeting held at the Royal College of Surgeons of England on May 17.

by an admonition that "as he had gained some reputation by his former papers to the Royal Society, it was not advisable to publish this one, which would injure his established reputation." The paper, revised and extended, was published by Jenner in 1798 as a private pamphlet with the title *An Inquiry into the Causes and Effects of the Variolae Vaccinae, a Disease discovered in some of the western counties of England, particularly Gloucestershire, and known by the name of the Cow Pox.*

Jenner lived in Gloucestershire as a busy country practitioner all his life, except for a short period in 1802, when he was tempted by the importunity and promises of his friends to become a specialist in London. This was a failure, financial and otherwise, and caused a return to his own countryside after three months. It must be added that Jenner did not retain the status of an apothecary, but in 1792 took the M.D. degree of St. Andrews University and did some consulting work in Cheltenham. From the time he published his paper on smallpox in 1798 Jenner, although living a secluded life in the country, was a notorious public figure, much applauded and much criticized. He spent most of the rest of his life vaccinating people and promoting vaccination as a preventive of smallpox. He died at the age of 74.

His Association with Hunter

This, then, is a brief outline of his career. It would be wrong, however, to pass without further discussion Jenner's interest in natural history and especially his relationship to Hunter. There might appear at first sight to be nothing exceptional about Jenner's interest in nature at that time, for, as is well known, there was a tremendous outburst of activity in this field dating from the middle of the eighteenth century and probably stimulated largely by the systematization of animals and plants by Linnaeus. The literature of that period is full of works, often of a very high standard, on natural history. Most of this, however, was of an observational type, and investigations were largely directed to the classification and description of the natural life of the country, including the birds, butterflies, and flowers. But Jenner's interest in natural history was due neither to the fashion of the times nor to Hunter, for at the age of 9 he had made a collection of dormouse nests and one of fossils from the oblite.

In the long correspondence with Hunter, of which only Hunter's letters are extant, it is possible to see not only the close personal relation between these two men but also how they reacted on one another and constantly stimulated each other to further action. Most of Hunter's letters are full of requests for animals and birds of one sort or another. He asks Jenner to send him young blackbirds of different ages, crows' and magpies' nests, an old cuckoo and a nest with a cuckoo's egg in it, a live heron or bittern ("see how they make the noise!"), a porpoise, white hares (a buck and a doe) from Jenner's friends in Newfoundland, bats from the old castle at Berkeley, and fossils, more hedgehogs—"a colony of them"—and even a bustard. Besides asking for these things, he was constantly telling Jenner to do things, to send him "a true and particular account of the cuckoo and, as far as possible, under your own eye," to take temperatures of hibernating animals; and, above all, as is well known, it was in this correspondence that he told Jenner not to think but to try the experiment.

Hunter's letter of June 7, 1773 or 1774

"I thank you for your experiment on the hedgehog; but why do you ask a question by the way of solving it? I think so just; but why think? Why not try the animal's moments upon a hedgehog as it and Nat give you the solution hole."

There were, however, some more human touches about these letters of Hunter's: for instance, when Jenner announced that he had had a severe disappointment in marriage Hunter wrote to him: "I own I was glad when I heard that you was married to a woman of fortune but let her go; never mind. I shall employ you with hedgehogs, for I do not know how far I may trust mine."

On another occasion Jenner asked Hunter to be godfather to his child. Hunter replied, accepting the office as follows: "I wish you joy; it never rains but it pours. Sooner than the brat should not be a Christian I will stand Godfather for I should be unhappy if the poor little thing should go to the Devil because I would not stand Godfather. I hope Mrs. Jenner is well and that you begin to look grave now you are a father." On the whole, however, these letters are very much to the point and concerned almost entirely with either ordering or acknowledging the receipt of natural history specimens or criticizing Jenner's experiments.

One of Jenner's great characteristics was that he seemed to make use of every opportunity that was offered to him. For instance when he met Hunter in Bath on one occasion he saw at once that Hunter was suffering from angina pectoris, which was the ultimate cause of his death. The ordinary man would have been greatly perturbed at seeing this condition in a friend but would have done nothing about it. Jenner, however, did not take this line, but wrote to Heberden, who was in medical charge of Hunter, about his diagnosis, and, moreover, began to take an interest in the condition of the heart which was associated with this disease.

The result was that he made the first observation on the thickening and calcification of the coronary arteries in this disease, and, although out of a natural reticence he did not pass on this information to Hunter, he told Home, Hunter's brother-in-law, of the fact. After the post-mortem examination on Hunter, Home wrote to Jenner in the following words: "It is singular that the circumstance you mentioned to me and were always afraid to touch upon with Mr. Hunter should have been a particular part of his complaint, as the coronary arteries of the heart were considerably ossified." When we remember the long period of time that elapsed before it was generally accepted that the pathological basis of angina pectoris was coronary disease, it is remarkable that this observation should have been made by Jenner at that time.

Although the records of Jenner's observations on natural history which he wrote in his notebook between 1787 and 1806 are meagre, from them it can be seen at once that he was no mere collector or casual observer of nature but a man who observed accurately and persistently and had the faculty of picking out the essential from the dross. His post-mortem records of the egg-forming organs of birds and of the abnormalities to be observed in dogs which had died of distemper show these qualities. Nor did he hesitate to put his ideas to the test, as, for instance, when he exchanged eggs and fledglings from one nest to another or when he marked birds before migration and observed the results. Where Jenner made simple observations or experiments his recorded results can be regarded as correct. When he had preconceived ideas on subjects about which there was little or no knowledge, he made mistakes in deduction, as, for instance, when he decided that tubercles in the lungs were derived from hydatids.

The general impression to be derived from these notes is that Jenner had the mental outlook and qualities of a genuine discoverer, and that it is no mere chance that he did in fact make discoveries.

Discovery of Vaccination

Probably one of the simplest ways of focusing attention on Jenner's great discovery of vaccination against smallpox, and especially upon its basis, would be to recall the criticism that has often been brought against him for having given the name *variola vaccinae* to cowpox. Even the fact that he put this into Latin has caused criticism. The further charge was that, by giving such a name, he insinuated into the minds of medical men that cowpox was smallpox. He was accused of having introduced "an unblushing invention of a misleading name," that he was "wanting in the rudiments of common candour," that this was an action of sheer trickery, and that the profession were thereby mystified and hoodwinked about the true nature of cowpox. Had it turned out that the facts upon which Jenner had given this name were incorrect, these critical scholars would certainly have had some cause for rejoicing, but, as we all now know, Jenner was right on almost every practical and scientific point.

Let us first see what he himself thought on this matter when he introduced the words *variola vaccinae*. He wrote: "There are certainly more forms than one (without considering the common variation between the confluent and distinct) in which the smallpox appears in what is called the natural way. It will be inquired (if the foregoing reason be *a priori* correct) in what way can the action of cowpox (or the equine pock) in preventing subsequent smallpox be reconciled with the established laws of the animal economy? My reply is, for the reasons which I have stated on the basis of fact, that they were not *bona fide* dissimilar in their nature but, on the contrary, identical. On this ground I gave my first book the title of 'An Inquiry into Causes and Effects of the Variolae Vaccinae,' a circumstance which has since been regarded by many as the happy foresight of a connexion which was destined by future evidence to become warranted."

Let us now see what modern scientific evidence has proved and what posterity has had to say about this claim of Jenner's, which in reality was the essential basis of his discovery of vaccination for smallpox. In 1902 Copeman inoculated a monkey with smallpox virus, vaccinated a calf from the monkey, and produced typical cowpox. Later Blaxall found that both *alastrim* (*variola minor*) and *variola major* viruses from human subjects produced a papulovesicular lesion on the skin of a monkey but not on the skins of calves or rabbits. Either of these two *variola* viruses protected the monkey against *vaccinia* and, conversely, *vaccinia* protected it against both of them. He then succeeded in increasing the virulence of both forms of *variola* virus for the calf, so that in the space of three successive passages the calf developed the typical lesions of cowpox.

Thus it was demonstrated that the biological difference which specimens of *alastrim* and *variola* viruses exhibited when removed from man disappeared when they were passed through the calf. As a control virus Blaxall used material from *varicella* (chicken-pox), which he found, as previous observers had done, to be without effect on the skin of the monkey or other animals. Similarly, by employing the specific test of allergy introduced by von Pirquet, he showed that the viruses of *vaccinia*, *variola*, and *alastrim* behaved alike but were sharply differentiated from the virus of *varicella*.

Later Gordon showed that *vaccinia* protected the monkey against other strains of mild and severe types of smallpox better than these strains of *variola* protected the animal against *vaccinia*. He further showed that the *variola* virus from five outbreaks, including three of the mild and two of the severe types of smallpox, reacted positively

with *antivaccinia* serum in the complement-fixation and agglutination tests.

The Father of Modern Virus Studies

In a lecture of this kind it is possible to refer to only a trivial amount of evidence on this question, but Jenner would indeed derive much fun and satisfaction from the mass of investigation on *vaccinia* and *variola* viruses if he could visit us to-day. He would see the unassailable evidence of the truth of his observations on man in 1798 that *vaccinia* protected against *variola*. He would find that we now know more about the morphology and the biological properties of *vaccinia* virus than of any other virus. He would greatly appreciate modern methods of altering the type of lesions produced by *vaccinia* virus and of selecting different strains of virus which, although antigenically and immunologically indistinguishable, can cause under appropriate conditions cutaneous lesions, meningo-encephalitis, orchitis, pneumonia, or keratitis—i.e., degrees of difference in biological action of one virus greater than those of the smallpox and cowpox virus with which he was familiar.

He would be greatly interested to learn that, in spite of all these different biological properties that can be induced in *vaccinia* virus and in spite of the remarkable cross-immunization properties and the closely related antigenic and immunological actions of *variola* and *vaccinia*, it is widely believed that *variola* and *vaccinia* viruses are different entities, and that the evidence that one is ever completely transformed to the other is insecure.

At this stage of my reading about pox viruses I also began to feel insecure, and decided to call in an expert bacteriologist for the latest stop-press views about the interrelation. He provided me with the following statement: "It has been generally assumed, since the days of Jenner, that *vaccinia* is *variola* modified by passage through the calf. For this there is good evidence, supported by modern experimental work. The further assumption, however, that *vaccinia* is the same disease as naturally occurring cowpox virus is more doubtful, since Downie has shown that *vaccinia* and cowpox viruses differ in their heat-labile antigens and give rise to different lesions in animals. Both viruses can, of course, protect against *variola*. Thus *vaccinia* virus is almost certainly a derivation of human smallpox virus, but cowpox virus is a naturally occurring and rather different virus belonging to a much larger group of animal pox viruses."

Jenner would be amazed to learn of the present enormous field of knowledge of other virus diseases and of the information that has been accumulated about the properties of these viruses. He might just be a little uneasy about some of the new knowledge. For instance, he might think that, from the scientific angle, it was fortunate his particular problem concerned smallpox and cowpox and not the influenza viruses A and B, which, while producing similar morbid effects in man, do not protect against each other. He would realize that he probably would not have made much headway in preventing distemper in dogs—a disease which did interest him intensely—on learning that when the virus of this disease is transmitted to ferrets the infected material from the ferret will not protect against distemper in the dog nearly so well as the dog's virus itself, in spite of the fact that the infective agent is the same in each case.

However, Jenner in fact did choose smallpox as his objective, and, in spite of the complexity of virus problems which now face the scientific world, some due to their innate properties and some to the various species of animals and the different tissues in which their biological reactions have been studied, he would have the supreme satisfaction of realizing that he started all this work, that his views on

the relationship of smallpox and vaccinia have been generally confirmed, and that indeed he can well be regarded as the father of modern virus studies and of the biological and pathological reactions they produce.

Official Approval

So far as the subsequent history of vaccination is concerned, I shall simply recall that Jenner's triumph was great when the National Vaccine Board, consisting of the President and four Censors of the Royal College of Physicians and the Master and two Governors of the Royal College of Surgeons, was set up in 1808 by the Government. The immediate stimulus to this action was the report of the Royal College of Physicians, published in 1807, which concluded with the following words:

"The College of Physicians feel it their duty to strongly recommend the practice of vaccination. They have been led to this conclusion by no preconceived opinion, but by the most unbiased judgment, formed from an irresistible weight of evidence which has been laid before them. For when the number, the respectability, the disinterestedness and the extensive experience of its advocates are compared with the feeble and imperfect testimonies of its few opposers; and when it is considered that many, who were once adverse to vaccination have been convinced by further trials, and are now to be ranked among its warmest supporters, the truth seems to be established as firmly as the nature of such a question admits; so that the College of Physicians conceive that the public may reasonably look forward with some degree of hope to the time when all opposition shall cease, and the general concurrence of mankind shall at length be able to put an end to the ravages at least, if not to the existence, of the smallpox."

In the light of this edict it is strange that variolation—namely, the inoculation of smallpox material as a prophylactic against the disease—which had been practised in the East from time immemorial and introduced into England largely owing to the influence of Lady Mary Wortley Montagu about 1722, continued to be practised in England until it was made a penal offence by the Vaccination Act of 1840. The long continuation of inoculation for smallpox for a period of over 30 years after the official acceptance of vaccination is an example of official inertia, especially in view of the truth and force of Jenner's arguments that it was a more dangerous procedure to the individual than vaccination, and that it allowed the continuation of smallpox itself throughout the community. However, in most ways vaccination had a rapid and world-wide acceptance.

Influence of Jenner's Discoveries

When we turn to the wider question of the influence of Jenner's discoveries on epidemiological and scientific advance of knowledge we find a different and more depressing picture which, because of its ultimate great triumph, makes us realize more fully how long before its time, from a scientific angle, Jenner's discovery was made. For 80 years, apart from smallpox itself, Jenner's work was without influence in the wider field of protection against infective and infectious disease. In 1877, however, the scene was changed, for it was in that year that Pasteur, whose reputation was already very high because of his work on fermentation and infection of plant life, turned his attention to human and animal disease.

There is no doubt that when he began to investigate anthrax and other diseases he studied closely the literature of immunity to smallpox following variolation and Jenner vaccination, and that it was Jenner's work which primarily caused him to think that a similar state of affairs might hold for other diseases; the first malady he studied from this angle was chicken cholera. It will be remembered that in 1881 he gave an address in London at the International Medical Congress on vaccination in relation to chicken cholera and splenic fever. It

was on this occasion that he explained his adoption of the words "vaccine" and "vaccination" to denote the process of prophylactic inoculation in general and expressed his indebtedness to Jenner's work in the following words:

"I cannot complete this address, however, without testifying the great pleasure I feel that it is as a member of an international medical congress meeting in England that I finally communicate to you the vaccination of a disease probably more terrible for domestic animals than smallpox for man. I have given to the term vaccination an extension which science, I hope, will consecrate as a homage to the merit of and to the immense services rendered by one of the greatest of Englishmen, your Jenner. I am indeed happy to be able to praise this immortal name in the noble and hospitable city of London."

It may not be without interest to mention that the president of this congress, the late Sir James Paget, in thanking Pasteur for his address, pointed out that what Jenner had done for the good of the human race Pasteur had done for the good of animals, but, whereas Jenner had had to fight his battle for the benefit of men's lives against a vehement opposition, Pasteur had met with no such opposition in his work for the benefit of cattle. We still meet with this kind of relative reaction—an indication that human nature has not changed very much in the last 150 years.

Pasteur follows Jenner

In developing a treatment for fowl cholera Pasteur followed Jenner in first producing enfeeblement of the virus, which he called attenuation. As in the case of smallpox he noticed that if fowls recovered from the effects of inoculation of the virus the disease was not likely to recur, and that if relapses did occur they were in inverse ratio to the severity of the first attack. If the virus was transplanted from medium to medium at intervals varying from days to a month or two, no change was observed in the virulence for fowls. If, however, the interval was prolonged to three, four, or five months the cultures became less and less virulent and the fowls, even if they fell ill, recovered and if they were now injected with a virulent cholera culture they survived the injection. By this means he discovered prophylaxis of fowl cholera by attenuated virus, a principle which he also established for anthrax, swine erysipelas, and rabies.

In the case of anthrax he noticed that domestic animals occasionally recovered from the disease, which suggested that they developed natural immunity. He observed that the anthrax bacillus did not grow at 45° C. but grew well at 42-43° C. At the latter temperature, however, the culture became asporogenous and died out altogether in a month. When a virulent anthrax culture was kept at a temperature of 42-43° C. for eight days it was found to have lost much of its potency and was innocuous when injected into guinea-pigs, rabbits, and sheep.

Pasteur then proceeded to give a public demonstration of this work on 24 sheep, 6 cows, and 1 goat. On May 5, 1881, these animals were each inoculated with a living attenuated culture of anthrax bacilli. On May 17 the animals were reinoculated with a less-attenuated culture. On May 31 all 31 animals received a highly virulent anthrax culture, which was also inoculated into 24 sheep, 1 goat, and 4 cows not previously inoculated and serving as controls. On June 2 all the vaccinated animals were well, 21 of the control sheep and the goat were dead from anthrax, 2 of the control sheep dying in the presence of the spectators, which included a correspondent of *The Times*. The result of this test created an enormous sensation, and from this time immunology may be regarded as having been established. Pasteur himself said of this work that it was "un progrès sensible sur le vaccin Jennerien."

In this final phase of his work Pasteur, although a cripple, following a cerebral haemorrhage, but mentally as alert

ever, turned his attention to rabies. Making use of the fact discovered by Galtier in 1881 that rabies was transmissible to rabbits, he first showed with Chamberland and thus that the virus of rabies entered the central nervous system. His next key observation was that spontaneous recovery very occasionally happened in dogs, and in five such dogs he found that subsequent intracerebral inoculations were without effect. Here again he had a disease with an immunity factor and with a virus transmissible to animals and therefore with a basic similarity to smallpox and anthrax. Clearly the principle of attenuation of the virus was presented.

As is well known, he proceeded on the one hand to exalt the activity of the virus by passage through rabbits, and on the other hand to attenuate its activity by suspending infected spinal cords in dry, sterile, and still air. After inoculation of emulsions of the attenuated cord he found it possible to inject emulsions of less-attenuated cord, and finally emulsions of the most powerfully active virus, with impunity. In 1885 he extended these observations to human beings, when he treated a boy aged 9 who was brought to him suffering from extensive bites inflicted by a dog with rabies. The boy was first injected with attenuated rabbit spinal cord which had been kept for 14 days. In a further series of 12 injections he received virus that was stronger and stronger until he was injected with the most virulent spinal cord, which had been taken from the rabbit after one day only. This boy remained well. That was the beginning of the modern method of treating this disease.

I have given this brief summary of Pasteur's work on the production of immunity on the basis of attenuation of virus because it seems to me that Pasteur's public recognition of Jenner's influence on his great work should be widely recognized. The same basic principles underlying Pasteur's remarkable discoveries are obviously present in Jenner's work on vaccination and smallpox. In all the diseases studied by Pasteur, as in Jenner's discovery, there was evidence of the invasion of the animal body by a virus (using the word in its older sense), and of the animal's power to build up a natural resistance to the disease, and the problem in each case was to find or produce a virus in an attenuated form which on injection promoted immunity to the fully virulent agent. The subsequent development of the whole subject of immunology since Pasteur's day has of course been enormous, not only in what are now known as virus diseases but also in diseases due to other types of pathogenic micro-organisms. Should we therefore be far wrong if we extended the suggestion previously made that Jenner was the father of modern work on virus disease to the proposition that he might also well be regarded as the father of the whole domain of immunology?

Unjust Criticism

So far I have refrained from discussing the personal qualities of Jenner, except to say that his mental characteristics were clearly those of a potential discoverer; I have been content to deal with his experiences, his work and its results, and allowed them to speak for themselves. It is impossible, however, to read the extensive literature about Jenner without finding that he has been subject to more than his share of criticism and even of defamation, in regard to both his work and his character. This criticism has come not only from ignorant people with strong views about vaccination but also from some who would be regarded as scholars of medicine. In other words, into this literature scholasticism has entered.

We have been fortunate in medical science in having had only a minimum of the kind of writing which was such a prominent feature in theological studies of the Middle

Ages. One of Jenner's critics who has been described by Greenwood as "an exact scholar and a highly educated man" and by W. Bullock as "a scholar and philosopher—the most learned man I ever knew," in the course of what has been described as an exposure of Jenner wrote about him as follows: "They would probably have found Jenner to be the vain, imaginative, loose-thinking person that he certainly was by nature, and they might have so acted as to prevent him from becoming the impostor and shuffler that the course of events made him."

If this accusation stood alone it might well be disregarded, but I find that my friend Greenwood fully accepts the statement as regards Jenner being "vain, imaginative, and loose-thinking," though he suggests that the words "impostor and shuffler" in the second part of the sentence might be replaced by the description "fact-blinded enthusiast." In my view these judgments are not only unbalanced but wrong, and could have been made only by those who have little knowledge of and make but little allowance for human nature. We all know instances of writers of this type, and I want to take this opportunity of saying that it will be a sad day for medical science if such writing becomes a prominent feature, for there is but little room in scientific work for this sort of scholasticism. "Killing Kruger with your mouth" is at any time a poor game and in scientific work has no place. This was well recognized by the Royal Society when they adopted the motto "Nullius in Verba."

If a man thinks that the facts described by an investigator are wrong, then it is no good simply writing about them. The critic must go into the hospital or laboratory and make better observations or better experiments in order to prove his contention. The test of the acceptability of a discovery depends upon whether it is true and not whether it seems sensible or even whether it can be verified by the statistician. Most of Jenner's deductions from his work proved to be true. A few of his observations, such as, for instance, that a condition called "grease," a disease of the heels of horses, is the initial source of cowpox, have, I believe, proved to be untrue (although he was right in believing that there is a pox disease of horses), and occasionally his deductions, especially those concerning the infallibility of the protecting influence of vaccination against smallpox, were exaggerated, but this kind of defect will be found in the works of most scientific investigators, and the more fundamental their discoveries in medicine and biology the more likely are they to make mistakes at some time or other.

Speaking on the basis of my own experience in medical research, it seems to me that most facts published by scientific men are true but that they are apt to make two types of error, especially in the early accounts of their work. The first is that they sometimes forget that their results are true only for the conditions under which they are working, and the second is that they are apt to make unwarranted deductions regarding the implications of their results. In the latter case these often prove to be wrong. As regards the first source of error, it is clearly the object of the critic, if he once finds that the first man's results no longer hold, to search out the conditions which may have modified the earlier results. This is the normal method of procedure in research, and nearly always leads to new knowledge.

If, on the other hand, a man is to be condemned and denigrated because the implications of some discovery prove to be unsound, then I can only say that very few scientific men, even of the finest type, will have a shred of reputation left when they have been handsomely dealt with by our scholars. No part of a man's work in biological and medical science is more difficult than that of foreseeing the implications of a new fact which opens up a new

branch of knowledge, for, unlike research in the physical sciences, it is often impossible to realize the complexity of the conditions or to prejudge the relative importance of the factors concerned.

When the critic goes further and extends his criticism from the man's experimental work to his character and to his motives the position becomes intolerable, and it is this feature of the criticisms of Jenner which induced me to make this protest. I have read a good deal about the life and the work of Jenner in the last few days, and I find that the judgments of the above-mentioned scholars on this man are just incredible. My views about Jenner as an investigator can be seen from what I have said, and I think I should add that my judgment about his character is that he was a fine type of man. The whole of his life's history seems to me to point to this: his desire to avoid the scurry and publicity of life, his kindness to his family and relations, the time and trouble he took over his patients, his readiness to participate in the local life of his village community, his interest and participation in the arts, including poetry and music, his social relations with his fellow doctors, as judged by the local medical societies he formed—all indicate a man who both appreciated the best things in life and wished to help to the utmost his fellow-man. Independently of any of his discoveries and their results, he could be regarded as the best type of country doctor.

Outstanding and Successful Pioneer

It is, however, the man in relation to his discoveries whom we celebrate to-day, and I have tried to picture one who was bound to make discoveries wherever he was placed and who deliberately chose the circumstances where in fact he made the greatest of discoveries. This not only gave direct control of one of the most devastating of diseases but it also formed the basis of all modern work on immunology and of the fruitful field of virus disease.

Apart from Jenner's distinction, may I add how proper it seems to me that the Royal College of Surgeons and the Royal College of Physicians should participate in this celebration to-day, even if it serves only as a counterblast to the constant reiteration of public men in Parliament, in the Press, and on the radio that scientific research has as its main object the discovery of weapons and machinery for the destruction of man. All public attention seems to be given nowadays to this point of view, and it is useful to take the opportunity, such as is afforded to-day, of reminding the world that there is at least one branch of science which is wholly directed to the good of man, to the cure and elimination of disease and the prevention of untimely death. Up to the present, even if war is taken as a criterion, medical science in its work for the protection of man against disease and for his defence against injury has nothing to fear from comparison with that prostitution of the physical sciences which has been concerned with the production of methods of destruction.

In this beneficial work we proudly proclaim Jenner as an outstanding and successful pioneer.

BIBLIOGRAPHY

- For purposes of this lecture, besides consulting the ordinary standard books on Jenner, I have made free use of William Bullock's article "The History of Bacteriology" in *A System of Bacteriology*, Vol. 1.
- Greenwood, Major (1935). *Epidemics and Crowd Diseases*.
Gordon, M. H. *Studies of the Viruses of Vaccinia and Variola*.
Sp. Rep. Ser. med. Res. Coun., Lond. No. 98.
- Burgess, W. J., Craigie, J., and Tulloch, W. J. *Diagnostic Value of the "Variola Variola" Flocculation Test*. Sp. Rep. Ser. med. Res. Coun., Lond. No. 143.
- Paget, Stephen. *John Hunter*. T. Fisher Unwin, London.
- Hutchinson, J. R. A Historical Note on the Prevention of Smallpox in England and the Foundation of the Government Lymph Establishment. Appendix A of the Report of the Ministry of Health for the year ending March 31, 1946. H.M.S.O. Cmd. 7119.

TUBERCULOSIS IN INDUSTRY: AN EPIDEMIOLOGICAL STUDY*

PRELIMINARY REPORT

BY

ALICE STEWART, M.D., F.R.C.P.

AND

J. P. W. HUGHES, M.D., D.P.H.†

With the assistance of

W. E. C. Brooksbank† and Daphne Coulthard†

(From the Institute of Social Medicine, Oxford)

During the last 100 years information about death rates in various industries has steadily accumulated, and it is now clear that certain trades are constantly associated with a high tuberculosis mortality. In some cases the exceptional findings are due to a specific industrial hazard, such as silicosis, but in others no causal factors have yet been isolated. A typical example of the latter is the shoe trade, and, although the disease incidence is even higher in other occupations (Registrar-General's Decennial Supplements, 1890-1932), this has been selected for the first of a series of investigations into tuberculosis in industry.

So far working arrangements have been studied only in boot and shoe factories, but there are several reasons for believing that similar conditions prevail elsewhere, and that a systematic examination of other occupational groups will eventually reveal results very much like those which have been discovered during the course of this investigation. Meanwhile a brief account of the findings up to date may serve as a general introduction to the subject.¹

Present Investigation

The first indication that pulmonary tuberculosis was unduly prevalent in the shoemaking industry of this country was given in 1892, when the Registrar-General showed that the death rate among boot and shoe workers was nearly twice as great as the average for all occupied and retired males. Again, in 1902 and 1912 the Occupational Mortality returns for England and Wales showed a similar excess, and one of the first actions of the newly formed Medical Research Committee (forerunner of the present Medical Research Council) was to appoint a group of workers to investigate the industry.

In the M.R.C. report (1915) the investigators gave a detailed account of the manufacturing processes and described the general working arrangements in factories. They were satisfied that there was more pulmonary tuberculosis among boot and shoe factory operatives than in the rest of the population, and came to the conclusion that "the individual worker is predisposed to infection by the sedentary nature of his employment and possibly by the attitude he adopts at work." It was also suggested that "infection might be favoured by want of light, the presence of infected dust, and inadequate ventilation in the workrooms," but no attempt was made to produce any experimental or statistical evidence in support of these contentions.

Subsequently, despite the fact that the Registrar-General continued to report a high mortality, no further interest seems to have been taken in the subject until 1946, when

*Interim Report of an investigation initiated by representatives of the boot and shoe industry and public health authorities in Northamptonshire. The investigation, which is being financed by the Medical Research Council, is still incomplete.

†With a grant from the Medical Research Council.

the finding of the first Miniature Mass Radiography Survey in Northamptonshire once again drew attention to the prevalence of the disease among men and women employed in boot and shoe factories (Smith, 1947). On this occasion it was possible to make a direct comparison between shoemakers and other factory workers in the county, and it was found that, "compared with all other occupations, there was a statistically significant excess of newly discovered cases of active pulmonary tuberculosis in the boot and shoe industry."

The present investigation was a direct outcome of this survey and was undertaken at the request of the industry in order to discover whether the high rate of infection among boot and shoe operatives could be traced to working conditions or whether it is due to factors outside the control of the industry. Most of the work has been done in Northamptonshire, where shoemaking has long been the staple industry and where at present over one-third of the factory population is employed in this industry; but the section on general physique includes men from the neighbouring county of Leicestershire. The first part of the paper deals with recruitment into the boot and shoe industry, and shows how shoemakers as a whole compare with other workers in respect of their general physique and home environment. The second part relates to findings within the shoe trade, and shows how infection is transmitted from carriers to other workers.

I. Selective Recruitment into the Boot and Shoe Industry

It has often been argued that, because shoemaking provides a light occupation for men and, like old-established industries, is essentially a family trade, a vicious circle has been established which is alone sufficient to account for the high incidence of pulmonary tuberculosis amongst its working population. The argument runs as follows: in the first place, the nature of the work attracts men of poor physique, some of whom are suffering from chronic phthisis; these carriers, by propagating the disease in their homes, pass it on to their wives and children, many of whom, by reason of strong family tradition, become shoemakers and thus replenish the pool of infection.

Before the present investigation was begun no one had attempted to confirm or refute this theory, and even the suggestion that shoemaking was more of a family occupation than other trades was based largely on conjecture. Therefore, before embarking on a detailed study of factory conditions, an attempt was made to discover, first, whether an unusually high proportion of men with tuberculosis and/or low physique are recruited into the industry; secondly, how strong is the family tradition in the trade; and, thirdly, to what extent these factors are responsible for the high incidence of pulmonary tuberculosis among boot and shoe factory operatives.

Fitness for Military Service.—During the war years the Ministry of Labour and National Service instituted a scheme for examining men called up under the National Service Acts in order that they might be classified according to their fitness or otherwise for military service. The actual examinations were carried out by regional medical boards, who were responsible for placing men in four medical grades—namely, Grade I—fit for all forms of active service. Grade II—fit for active service but not for duties involving heavy strain. Grade III—unfit for active service: possible reservists. Grade IV—unfit for active service: rejected outright. Realizing that these records might contain valuable data relating to general physique of shoemakers, two batches of case sheets were inspected. The first referred to 22,620 men examined by one medical board in Northamptonshire, and the second to 33,350 men examined by two similar boards in Leicestershire. Both sets of records had been filed in chronological order, and a convenient sample from each batch was obtained by taking consecutive case

sheets of men employed in boot and shoe factories and pairing them with alternate records for men from other trades. The first sample comprised 2,785 Northamptonshire shoemakers and an equal number of controls, and the second comprised 1,635 Leicestershire shoemakers and 1,635 other men. When these records were inspected it was discovered that in each sample there was a slight but statistically significant difference between the medical grading of the two groups, the controls being more robust than the shoemakers (see Table I).

TABLE I.—General Physique of Men called up for National Service during 1942-3. Comparison of Boot and Shoe Operatives with Other Workers

Region	Occupation	Medical Grade				No. Examined
		I	II	III	IV	
Northamptonshire	Boot and shoe	66	18	8	8	2,785
	Other	74	14	6	6	2,785
Leicestershire	Boot and shoe	58	21	10	11	1,635
	Other	70	14	6	10	1,635
Both counties	Boot and shoe	63	19	9	9	4,420
	Other	73	14	6	7	4,420

Northamptonshire Miniature Mass Radiography Survey (1945-6).—Most of the men examined by the regional medical boards of the Ministry of Labour and National Service were under 40 years of age. In order, therefore, to obtain a more representative sample of shoemakers to compare with other workers the records of men examined by the Northamptonshire Mass Radiography Unit during 1945-6 were inspected. Apart from the high incidence of active pulmonary tuberculosis already reported by Smith (1947), there was nothing in these records to suggest that either heart disease or lung disease other than tuberculosis is more frequent among shoemakers than among other factory workers, and there was no evidence from the x-ray findings to suggest that leather dust causes pulmonary fibrosis. On the other hand, besides the "newly discovered cases of active pulmonary tuberculosis" mentioned in Smith's report there were several men who had already been notified, most of whom were found to be working in boot and shoe factories.

Family History of Shoemakers.—In order to discover to what extent shoemaking is a family trade, a sample of the Northamptonshire boot and shoe factory population and a control group of workers in other factories were asked about the occupation of their immediate relatives. The sample of boot and shoe workers comprised 1,233 persons from factories in various parts of the country, and the control group consisted of 1,027 workers from other factories in the same towns and villages. Each worker was also asked to state whether he or she knew of any near relative having had tuberculosis. In the boot and shoe sample over 90% of the workers who were interviewed stated that they had a near relative in the same trade, whilst in the sample taken from other industries over half had no family association with the trade in which they were employed. There were also a few more home contacts with tuberculosis among the shoemakers than among the other workers, so it is possible that the disease incidence in the shoe trade has been slightly augmented by passage of the disease through successive generations of workers.

Summary.—From the foregoing account it is evident that there are rather more tuberculosis carriers and men of sub-normal physique in the shoe industry than in most occupations. There also seems to be some indication that shoemakers in Northamptonshire, being more often interrelated than other factory workers in this area, are more frequently exposed to infection in their homes. Since shoemaking in other parts of the country also tends to be an old-established industry the family tradition so clearly demonstrated in Northamptonshire probably exists elsewhere.

II. Spread of Infection in Boot and Shoe Factories

Early in the present investigation it was decided that if infection was *not* being transmitted during working hours it should be possible to demonstrate a disease pattern in the boot and shoe working population which was dependent

solely on home conditions. On the other hand, if carriers of the disease were infecting fellow workers the disease incidence should be related to factory conditions.

Smith had already shown that, according to the results of the first survey of the Northamptonshire Mass Radiography Unit, the rate of infection in certain occupational groups was higher than in others. Since this finding suggested the possibility that working conditions might be contributing to spread of the disease, it was decided in the first instance to make a more detailed study of the mass radiography findings.

Between March, 1945, and Jan. 1, 1947, the Northamptonshire Mass Radiography Unit visited 162 boot and shoe factories and examined 15,911 skilled factory operatives, or 70% of the working population.* They also discovered 101 new cases of pulmonary tuberculosis, which represents an overall rate of 0.6% of the workers who were examined.

The number of newly infected persons in any one factory ranged from 0 to 14.3%, but since most of the factories employed fewer than 100 workers it was impossible to draw

TABLE II.—Incidence of Pulmonary Tuberculosis in Large and Small Boot and Shoe Factories (Mass Radiography)

Group	Size of Factory (Working Population)	No Examined (Mass Radiography)	Cases of Tuberculosis	Pulmonary Tuberculosis Rate per 1,000
1	1-100	2,934	9	3.1
2	101-200	3,811	20	5.2
3	201-350	3,522	22	6.2
4	351-600	2,580	19	7.4
5	Over 600	3,064	31	10.1
Total		15,911	101	6.3

any conclusion from the experience of individual firms. When, however, factories of different sizes were compared it was found that the overall rate of infection was considerably higher in large factories than in small ones. This is clearly shown in Table II, in which the factories have been classified according to the number of persons employed.

According to this arbitrary arrangement the overall incidence of pulmonary tuberculosis in factories employing more than 600 workers (group 5) was over three times as great as in factories with fewer than 100 employees (group 1), factories of intermediate size showing a steady gradation between these two extremes.

Before deciding that this remarkable relationship was due to any fault in the working arrangements of large factories the following alternative possibilities were considered.

Age and Sex of Workers.—According to the records of the Mass Radiography Unit the age and sex constitution of each factory group shown in Table II was remarkably constant. Hence the greater incidence of pulmonary tuberculosis in large factories (which was found to apply to both sexes) was unlikely to be due to more "susceptible" persons in these factories.

Occupation.—Since boot and shoe factories are equipped with a uniform type of machinery and tend to relegate the same proportion of workers to each process, it was unlikely that the uneven distribution of infection was due to certain factories having unusual working arrangements. Such an explanation became quite untenable when it was found that the difference between large and small factories applied to every shoemaking occupation.

Regional Distribution of Large and Small Factories.—There were no factories with more than 600 employees in country

districts, so that it was possible that the higher rate of infection in larger factories was due to differences between urban and rural populations. There was, however, a sufficiently large number of small and medium-sized factories in both regions to show that, whether the factories were in towns or villages, the rate of infection was largely determined by the number of workers.

Factory Conditions.—The next discovery was that the disease incidence bore no relation to at least one estimate of working conditions in the factories. This particular estimate was made by regional representatives of H.M. Inspector of Factories, who visited 114 boot and shoe factories in Northamptonshire during 1945 and compiled a detailed set of records for the Working Party which had been appointed by the Board of Trade to report on the industry. The work was done by trained inspectors, who made systematic notes about the lighting, ventilation, method of dust extraction, sanitation, spacing of workers, cleanliness, and general working arrangements in each factory. On the basis of these notes the working conditions in each factory were graded as "good," "average," or "unsatisfactory." According to this assessment 24% of the factories with fewer than 200 operatives were thought to provide unsatisfactory working conditions, whilst in all the factories with more than 600 operatives the working conditions were well above the average. In these same factories the incidence of pulmonary tuberculosis, as discovered by the Mass Radiography Unit, was over four times as great in the large factories with "good" conditions of work as in the small factories, where the general layout was so much less "satisfactory." There remained one obvious difference between large and small factories which might account for the higher rate of infection in larger factories—namely, the greater number of persons in any one workshop. At first sight the more spacious rooms in large boot and shoe factories look more attractive and seem to offer better working conditions than rooms in small factories, which by comparison often seem dark and dingy. On the other hand, since infectious diseases usually spread more rapidly in large than in small communities, it was decided to explore the relation between number of workers per room and the incidence of pulmonary tuberculosis.

Size of Working Units in Large and Small Factories.—When the factories were arranged according to the average number of operatives per room a close correspondence between the overall working population and the size of the working units within the factories was found to exist. Thus, over 80% of the factories with fewer than 100 workers had fewer than 20 operatives per room, and all the factories with more than 600 workers had more than 60 operatives per room. It follows, therefore, that there is a close association between the incidence of pulmonary tuberculosis and the size of working units.* (See Table III.)

TABLE III.—Incidence of Pulmonary Tuberculosis in Boot and Shoe Factories with Large and Small Workshops

Workshops		Mass Radiography Survey		Pulmonary Tuberculosis Rate per 1,000
Workers per Room	Floor Area per Worker (sq. ft.)	No. Examined	Cases of Pulmonary Tuberculosis	
1-20	115 (10.7 m. ²)	3,474	10	2.9
21-30	91 (8.5 m. ²)	2,278	11	4.8
31-40	84 (7.8 m. ²)	2,763	14	5.1
41-60	82 (7.6 m. ²)	3,266	24	7.3
61-80	101 (9.4 m. ²)	2,205	21	9.5
Over 80	95 (8.8 m. ²)	1,925	21	10.4
Total	96 (8.9 m. ²)	15,911	101	6.3

More statistical work will have to be done before we can be sure that this is the fundamental cause of the high rate of infection in large factories. But the findings suggest that, under conditions which prevail in boot and shoe factories,

*In very small factories the space allotted to individual workers is usually greater than in larger factories, but where there are more than 20 persons per room the floor space per worker remains fairly constant. A more detailed study of the relation between floor area and workers per room is at present under consideration, and results will be published later.

*The published report of the medical officer of health for Northamptonshire, already referred to in the first part of this paper, covered the period March 1, 1945, to June 30, 1946, by which time 153 boot and shoe factories and 17 subsidiary factories (heel-making, closing, etc.) had been visited. In the following account all workers in subsidiary factories as well as the office staff of boot and shoe factories have been excluded, and the findings refer only to skilled operatives in boot and shoe factories.

operatives often become infected during working hours, and that in factories with large workshops carriers have actually caused local epidemics of tuberculosis.

Since there also seems to be some relation between rate of infection and factory size in the clothing industry (see Table IV) it is likely that the high death rate from pulmonary

TABLE IV.—Incidence of Pulmonary Tuberculosis in Large and Small Clothing Factories

Factory Size (Working Population)	No. Examined (Mass Radiography)		Pulmonary Tuberculosis (Rate per 1,000)	
	Males	Females	Males	Females
1-100	103	636	—	4.7
101-500	60	810	—	6.2
Over 500	166	1,312	—	9.2
Total	329	2,758	—	7.3

tuberculosis in other occupational groups (Registrar-General's Decennial Supplements, 1890-1932) is also due to spread of infection from carriers to fellow workers, and that there is nothing fundamentally different between the working arrangements in boot and shoe factories and those in other industrial communities. There can also be no doubt that mass radiography statistics contain valuable material for studying disease incidence in various occupational groups and that there is an urgent need for a more detailed study of these records.

Summary

An investigation has been made in Northamptonshire in which mass radiography records and other statistics have been explored. The investigation is still incomplete, but the findings to date suggest that the death rate from pulmonary tuberculosis in the shoe industry, which is high compared with all occupied and retired males but not much higher than other industrial communities, is due partly to selective recruitment and partly to working conditions.

There seem to be three aspects to selective recruitment: first, boot and shoe factories employ more men with chronic pulmonary tuberculosis than most other trades; secondly, the physique of the men is slightly subnormal; and, thirdly, there is a strong family tradition in the shoe trade, so that the workers are often interrelated.

There is no evidence of a specific industrial hazard in boot and shoe factories, and the death rate for diseases other than tuberculosis is below average.

Although workers with poor physique and chronic tuberculosis are found throughout the shoe industry, the incidence of active tuberculosis is not uniformly distributed, men and women employed in factories with large workshops contracting the disease more often than those who work in factories with small workshops.

In the clothing industry there is also more pulmonary tuberculosis in large factories than in small ones, so that it may yet be shown that size of working unit is an important factor in determining disease incidence in any occupation.

We are deeply indebted to Dr. Smith, medical officer of health for Northamptonshire, who was chiefly responsible for initiating the investigation and who allowed us free access to the records of the Northampton Mass Radiography Unit; also to the Incorporated Federated Associations of Boot and Shoe Manufacturers, the National Union of Boot and Shoe Operatives, the British Boot and Shoe and Allied Trades Research Association, H.M. Inspector of Factories, and owners of individual boot and shoe factories, who have provided us with invaluable assistance at every stage of the investigation.

REFERENCES

- Medical Research Committee (1915). First Report of the Special Committee upon the Incidence of Phthisis in Relation to Occupations. Boot and Shoe Industry.
Registrar-General's Decennial Supplements, England and Wales. Occupational Mortality, 1890-1932.
Smith, C. M. (1947). *Med. Offr.*, 77, 109.

SOME ASPECTS OF PARTIAL GASTRECTOMY

BY

JOHN HOSFORD, M.S., F.R.C.S.

Surgeon, St. Bartholomew's Hospital

Although a number of series containing several hundred cases of partial gastrectomy have been reported in detail from time to time in this country there are still some points which worry the occasional gastrectomist and about which gastric experts differ—points that have only been lightly touched upon. In the hope of understanding certain things more fully I have reviewed my own cases again recently, but the truth is very elusive.

The material under review is the first 200 consecutive cases of my own upon which a partial gastrectomy has been performed for a peptic ulcer at St. Bartholomew's or Hill End Hospitals. The first was in 1936 and the last at the end of 1947. The number is not large, but the cases have been carefully considered. They were not treated and operated on in any special wards or gastric clinic, but were simply included in the ordinary run of cases in a general surgical ward of a teaching hospital. The sex incidence is shown in Table I.

TABLE I.—Sex Incidence

	Males	Females	Total
Duodenal ulcer ..	99	8	107
Gastric ulcer ..	55	28	83
Anastomotic ulcer ..	9	1	10
Total	163	37	200

The proportion of duodenal to gastric ulcers is not nearly so high as in some reported series, probably owing to the fact that the former were not so readily accepted for operation, and certainly not until medical treatment had been given a very fair trial. The average age of the patients at the time of operation is shown in Table II. The youngest was a girl of 16 with a very tough adherent duodenal ulcer of seven years' standing which had resisted several courses of strict medical treatment. The oldest was a man of 69 with a duodenal ulcer.

TABLE II.—Average Age of Patients

	Males	Females
Duodenal ulcer	44 years	36 years
Gastric ulcer	48 "	49 "
Anastomotic ulcer	45 "	25 "

* One case only.

Twenty years ago the position of partial gastrectomy as a treatment for gastric ulcer was not fully recognized; ten years ago the same applied to duodenal ulcer. The operation is now fully acknowledged by physicians as well as surgeons, but it is still uncertain whether it will be replaced, at any rate for duodenal ulcer, by vagotomy before the true and whole cause of peptic ulceration is revealed and operations finally give way to a certain and easy cure by some balm, wave, atom, or other undreamed-of agent.

In an endeavour to obtain the best results from a procedure such as partial gastrectomy attention must primarily be given to the causes of post-operative mortality, and, secondly, to planning of the operation so that the type of gastrectomy chosen is that which will give the best results after weeks, months, and years. This paper is devoted to these two aspects of partial gastrectomy.

Cause of Death

In 1935 an investigation of post-mortem findings after partial gastrectomy (Payne, 1936) showed that the commonest causes of death in order of frequency were: general peritonitis, including infection around the duodenal stump; pulmonary infection; shock; and haemorrhage.

It is interesting to note that the causes of death after partial gastrectomy are still very similar. In three series of gastrectomies for peptic ulcer published in this country in 1948, giving details of 1,068 cases in which the operations had been done within the last ten years, the causes of death in order of frequency were: pulmonary infections; peritonitis from leakage; uraemia; embolus; and haemorrhage. It is worth while analysing each of these causes of death in turn and the steps taken to guard against them. In my present series, in which there was only one death (mortality 0.5%), every effort was made to guard against a fatality.

Pulmonary Infections

This was the commonest and most serious complication in the series. At least 20% of the cases had some degree of atelectasis after the operation and there was usually some superadded infection. In the earlier cases the diagnosis of atelectasis was rarely made, but I feel sure that this was because the condition was not so well appreciated or so carefully looked for. This applies to many conditions in medicine which appear to be occurring more commonly but are really only being recognized more frequently.

The treatment of atelectasis with infection can be divided into prophylaxis and treatment of the established condition. Under the former heading may be mentioned careful training in correct breathing, abstention from smoking, and treatment of any cough or bronchitis. The treatment of an atelectasis is to remove the plug of mucus which is obstructing the bronchus. Deep breathing, whether produced by inhalation of carbon dioxide or done by the patient's own efforts, is not nearly so good, either theoretically or in practice, as coughing. It tends to suck the mucus further in rather than push it out. With a high abdominal incision a patient does not readily cough; but a good nurse or physiotherapist can assist enormously by persuading and helping him to cough up a quantity of thick mucus which, if the patient was left to himself, would otherwise remain for days, acting as a bung. If one is fortunate enough to have the services of a physiotherapist skilled in pummelling the chest, so much the better, for this is a most valuable procedure in loosening the mucus plug before coughing it up. These simple procedures are often overlooked.

If the patient cannot or will not cough he can be made to do so most violently by the injection of 4 ml. of nikethamide intravenously: this should be combined with a few millilitres of thiopentone—enough to make him drowsy so that coughing will not hurt him too much. We have carried this out in only two cases in the present series, with satisfactory results so far as the lungs were concerned, but in the second case the great violence of the coughing produced a hernia through the midline incision, which was repaired at a later date. Aspiration of the mucus plug can be carried out through a bronchoscope; but this is not often called for, and was done only three times in this series.

The infection which so often follows atelectasis is dealt with by sulphonamides and penicillin. Seven years ago during the whole of one winter I used sulphonamides prophylactically in every case, but it was difficult to assess with certainty the value of this step, and now I use them only prophylactically in poor-risk cases.

Peritonitis from Leakage

There are two places from which a leak may occur in a Polya type gastrectomy—the duodenal stump and the gastro-jejunal anastomosis. It occurs more commonly from the former.

There is probably more variation in the technique of closing the duodenum than of any other step in the operation, and undoubtedly a great many of the methods are equally good and safe. There should be no difficulty in the duodenal closure in the case of a gastric ulcer where the duodenum is healthy and of average length and mobility, but in the case of a chronic duodenal ulcer this step is usually the most exacting in the operation and fraught with more danger afterwards than any other. However, by not sacrificing time and patience to speed, or improvisation to standard technique, a reasonably satisfactory closure can be made even in difficult cases. Nevertheless, a leak at the duodenal stump is an accident that continues to occur from time to time, and it still ranks high as a cause of death after partial gastrectomy, as it may lead either to general peritonitis or to a subphrenic abscess.

A simple manoeuvre which I believe greatly lessens the danger of a leaking duodenal stump is the putting of a rubber drain into the abdomen. In no single instance in the present series of 200 cases have I failed to do this. Most surgeons look upon it as entirely unnecessary, and probably in 95% of cases it is; but it is a harmless procedure, and as, I believe, it saves a few lives and helps to reduce the mortality of the operation to nearer zero it is well worth doing. A drain must not be put in haphazard but must be most carefully placed (this applies equally to all parts of the abdomen). A "stab" incision is made on the right of the abdomen over the duodenum by cutting down on to the thimble finger, and a long thin corrugated rubber drain is introduced; it is placed so that it lies immediately inferior to and against the liver—it lies directly over the duodenal stump and then runs across the abdomen upwards and to the left to the site of the anastomosis. It is removed after four days if the abdomen seems quite satisfactory.

If a duodenal leak occurs the fluid is likely to track along the drain to the surface and a fistula to form: continuous suction is then applied to a rubber tube with several holes in it which is inserted just into the opening of the fistula; this prevents the fluid running all over the skin, with the consequent extreme soreness. The fistula then gradually closes. In four cases in this series there was a leak at the duodenal stump; but in none was it necessary to open the abdomen, and all recovered after a fistula had formed along the line of drainage.

Many surgeons dislike putting a rubber drain into the abdomen, the two chief objections being that it causes adhesions which may later lead to small-intestine obstruction, and, secondly, that it is as likely to do harm by letting infection in as it is to do good by letting infection (or other things) out. I do not for one moment believe that the second reason holds good, provided asepsis is observed. So far as adhesions are concerned they may cause obstruction later if a drain is placed near the centre of the abdomen and particularly suprapubically, but never when placed against the liver as described above.

Increased pressure from accumulation of fluid in the stomach or duodenum after operation is another possible cause of leakage occurring at the anastomosis or at the duodenal stump. This is obviated by leaving a Ryle's or similar tube in the stomach and using suction for 24 to 48 hours.

Uraemia, Embolus, and Haemorrhage

Uraemia.—In every case an estimation of the amount of urea in the blood is made, and if this is found to be raised or if for any other reason it is suspected that there is an alkalosis or acidosis, the alkali reserve and the blood chlorides are also estimated. In a number of cases (some of them quite unsuspected) the blood urea is raised, sometimes strikingly so. In Case 192 at one stage before operation it was as high as 530 mg. per 100 ml. (believed to be accurate). It is often due to a long-standing dehydration or to excessive use of alkalis or to vomiting. With rest, time, adequate fluids, and control of alkalis most cases will improve greatly and the blood chemistry return to normal; but there should be no hurry to operate provided there is no stenosis at the pylorus.

Embolus.—It has been most fortunate that in this series there has been no fatal pulmonary embolus. In one woman an embolus that must have been large very nearly caused death, but she gradually improved after papaverine. There seems little evidence for the old teaching that emboli commonly arise in the abdominal wall. It is far more probable that the most frequent site of formation is in the veins of the calf and foot; and certainly since the calves of all patients have been under careful observation one has been surprised at the number which have shown the characteristic pain or tenderness of thrombophlebitis. In some doubtful cases this has been confirmed by phlebograms. Active exercises and early ambulation are employed in the hope of preventing thrombosis. Heparin and/or dicoumarol are used as a routine when thrombosis is detected, but not as prophylactics.

Haemorrhage.—Haemorrhage at the suture line of the anastomosis is always a possibility, though it should not occur if care is taken. In every case the clamps which are used are not only loosened but are taken off after the posterior row of sutures has been completed. All bleeding points can then be clearly seen and ligated, especial care being paid to the lesser curve of the stomach, even though the left gastric artery has been well and truly tied. Taking off the clamps makes the operation look less neat, but it is without doubt a safer procedure and the anastomosis is easier to complete. There has been no trouble or alarm at all about post-operative haemorrhage in this series except in Case 47, in which about a pint of fresh blood was vomited an hour after the operation, in addition to some blood which had already been aspirated from the stomach by the Ryle's tube. The patient, a woman of 47, with a duodenal ulcer, then made an uninterrupted recovery after a transfusion of blood.

Best Type of Operation

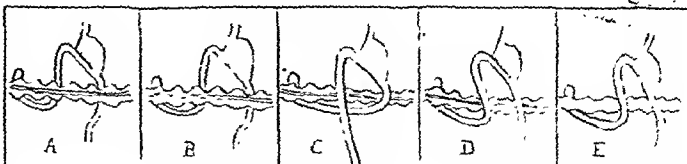
In an endeavour to determine the type of partial gastrectomy which will be found most satisfactory it is obviously necessary to determine and compare the results of operations done by a variety of methods. In assessing and classifying the results of any operation so many factors have to be taken into consideration that nearly always some difficulty arises. A surgeon who grades the results of his own operations may be too optimistic owing to his surgical enthusiasm, while another may be too modest to claim the wonderful results of the enthusiast.

In all of the 200 cases a similar type of partial gastrectomy has been performed, in that the open end of the duodenum has been invaginated and a blind end formed. But at the anastomosis there has been a variation of method, for, although an end-to-side union between the remains of

the stomach and jejunum has been made in each case, the arrangement and details of this step have varied. It has been carried out in the five different ways shown in Table III and in the diagrams.

TABLE III.—Types of Anastomosis Used

A. Retrocolic anastomosis with valve	18
B. Retrocolic anastomosis without valve	77
C. Antecolic anastomosis with the afferent loop to the greater curvature without valve	6
D. Antecolic anastomosis with the afferent loop to the lesser curvature with valve	23
E. Antecolic anastomosis with the afferent loop to the lesser curvature without valve	76



Most surgeons seem to keep to one type of anastomosis, are usually quite satisfied with it, and believe it to be the best. Lake (1948) almost invariably does a retrocolic anastomosis with a valve, and indeed was one of the earliest to do this, so that the operation is often, and rightly, known by his name. Ogilvie (1947), who does a similar operation, admits that an antecolic anastomosis is a satisfactory operation when a moderate amount only of the stomach has been resected, but says that, "when the gastrectomy is not merely radical but also valvular, an anterior anastomosis is incompatible with proper routing of the afferent jejunal loop." On the other hand, Wells and Brewer (1948), who do a very radical gastrectomy with excellent results, prefer an antecolic anastomosis with a valve; and Visick (1948), who has reported in much detail his series of over 500 cases, always does an antecolic anastomosis without a valve: he leaves very little of the stomach, and the functional results of his cases are also excellent.

The obvious conclusions to be drawn from these facts are that good results are being obtained with either an antecolic or a retrocolic anastomosis and with or without a valve.

Results

Of the 199 patients in this series who survived the operation the results after a period of between one year and eleven years are available in 177.

To make an exact classification of results after partial gastrectomy is very difficult. They can be divided quite simply into good and bad, but there are so many degrees of goodness and badness that this is inadequate. It is easy to subdivide them into a greater number of grades, taking into consideration such things as age, work, social conditions, psychological outlook of the patient, as well as the position, size, and chronicity of the ulcer, etc.; and this is possibly wise when the purpose is purely to give an account of the results of partial gastrectomy. Here, however, I am largely absolved from many of these difficulties, because I am not so much endeavouring to say how good or how bad the results of partial gastrectomy are as striving to compare the results of one type of gastrectomy with another.

I have divided the results arbitrarily into three groups: (1) excellent, where the patient is free from all trouble and well in every way; (2) satisfactory, where there are some residual symptoms of a greater or less degree but where the patient is able to continue at his work and is definitely improved as a result of the operation; and (3) bad, where the patient is worse or no better than before operation. As years go by a patient is more likely to improve than to

deteriorate, and some who could previously have been in group 3 are now rightly placed in group 2, and similarly some have moved from group 2 to group 1. A continuous follow-up of all patients has unfortunately not been carried out, and the number of patients in whom a result is not known (8%) is somewhat high; but there have been great difficulties in the London area with evacuation and population movements, and returned letters marked "house destroyed" have not been rarities.

For the purpose of simplicity the results from one to eleven years have all been put together. The results for all types of gastrectomy for gastric, duodenal, and anastomotic ulcer according to the above grouping are shown in Table IV.

TABLE IV

Result	Cases	Percentage of Cases Followed up
Excellent	128	72
Satisfactory	45	25
Bad	5	3
Died in hospital (operative mortality)	1 (0.5%)	—
Died of intercurrent disease a year or more later	5 (2.5%)	—
Not traced	16 (8%)	—
Total	200	

Table V gives the results of the antecolic and retrocolic anastomoses grouped together and of those cases with a valve (erroneously called Hofmeister) and without a valve grouped together. The results in these several groups are

TABLE V

	Result		
	Excellent	Satisfactory	Bad
Retrocolic anastomosis	59 (74%)	16 (21%)	4 (5%)
Antecolic anastomosis	69 (70%)	29 (29%)	1 (1%)
With a valve	24 (69%)	10 (28%)	1 (3%)
Without a valve	104 (73%)	35 (24%)	4 (3%)

so similar as to suggest that no one type of anastomosis has any appreciable advantage over another, and that the addition of a valve does not make any significant difference. We have to consider the results not only months and years afterwards but also in the first few days after the operation, while the patient is still in hospital. At this time there is not, so far as I can detect, the slightest difference in the comfort of the patients or the smoothness of their convalescence whatever the kind of anastomosis, so long as it has been properly done.

Many objections to one or other type of anastomosis are theoretical and are not based on a careful study of symptomatic results. The importance of peristalsis seems sometimes to be forgotten and intestinal contents to be thought to move along by the same mechanism as the water in a garden hose.

The feeling of fullness with or without nausea after meals can be shown by radiographs to occur either with a slow emptying or with a rapid emptying of the stomach into the jejunum, though it is commoner with rapid emptying. It is often said that the feeling of fullness is due to part of a meal entering the afferent loop and distending the duodenum; but against this are the facts that in some people screening of a barium meal after partial gastrectomy will show some barium entering the duodenum without the patient being aware of it, while in others the patient experiences the feeling of fullness without any barium being observed to enter the duodenum at all. The clinical result is more important than the radiological. These remarks appear to apply equally to a retrocolic or an antecolic anastomosis.

A number of advantages are attributed to a "Hofmeister" valve: (a) It obviates the feeling of fullness by preventing food entering the duodenum; but the fallacy of this has just been mentioned. (b) It delays the emptying of the stomach because the exit is smaller; but this is fallacious, because the size of the exit is really the width of the jejunum at the entrance to the efferent loop. (c) It prevents, or at least diminishes, the regurgitation of bile into the mouth. From the results of my cases in which a valve has and has not been used there does seem to be slight statistical evidence for the belief that the last-mentioned is true. When food passes quickly out of the stomach the latter may be empty when the bile reaches it from the duodenum, and, should the patient be one whose stomach is intolerant to bile, regurgitation is likely to occur. If, however, a valve has been made, the flow of bile along the jejunum is so directed that it may pass the opening into the stomach without entering the latter at all.

Summary

A series of 200 cases of partial gastrectomy for peptic ulcer is reviewed with special reference to the causes of post-operative mortality, and to the comparative merits of an antecolic and a retrocolic anastomosis.

The commonest (so believed) causes of death after partial gastrectomy in this country are reviewed and means for preventing them discussed.

Emphasis is laid on the value and importance of draining the peritoneal cavity after partial gastrectomy.

It is unsound and apt to lead to error to compare the results of one type of operation performed by one surgeon with a different operation performed by another surgeon.

Figures are shown comparing the symptomatic results of antecolic and retrocolic anastomoses in this series. It is believed that the results are equally good.

There is little practical evidence that a valve at the anastomosis makes much difference to the symptomatic result, except possibly by decreasing the liability to bile regurgitation.

I am much indebted to a series of house-surgeons and chief assistants for their painstaking work in looking after these patients; but I owe an even greater debt of gratitude to the nurses for their endless skill and care, without whom many patients would have perished. They are far too numerous to name, but I make special mention of Miss E. M. Constable, sister of my male ward for almost the whole period.

REFERENCES

- Lake, N. C. (1948). *British Medical Journal*, 1, 285.
Ogilvie, Sir H. (1947). *Lancet*, 2, 377.
Payne, R. T. (1936). *St Bart's Hosp. Rep.*, 69, 191.
Visick, A. H. (1948). *Lancet*, 1, 505, 551.
Wells, C., and Brewer, A. C. (1948). *Brit. J. Surg.*, 35, 364.

The National Council for the Unmarried Mother and her Child has published a *Directory of Homes and Hostels* in which those organizations and institutions existing primarily for the care of unmarried mothers and illegitimate children are listed, together with information on their scope, limitations, and methods of admission. The list includes all the Homes and Hostels which the N.C.U.M.C. has been able to trace, whether affiliated to it or not. Homes which are primarily shelters have been omitted even though they may occasionally take a case of this type. The *Directory* is in three parts. First is the main list of Homes and Hostels, with particulars, arranged under counties, with London at the end. Then comes a classified list showing Maternity Homes (confinements take place in the Home), Before- and After-care Homes (confinements take place in hospital), and After-care Homes. Finally there is a general index. Although the denomination of the Homes is given where applicable, in nearly every case Homes will take cases of denominations other than their own. The *Directory* is not intended to facilitate the direct approach of outside agencies to Homes without prior reference to social workers. This would not be in the interest of either patients or institutions. Rather is it intended to facilitate the work of all in this field. The National Council would be grateful to hear about inaccuracies and omissions, and to receive criticisms and suggestions on how the list could be improved. The list may be obtained for 2s. 6d. from the N.C.U.M.C. at 21, Coram Street, London, W.C.1.

PERFORATION OF THE RECTUM

BY

J. D. T. JONES, M.S., F.R.C.S., F.R.C.S.Ed.

*Assistant Surgeon, Royal Victoria Infirmary,
Newcastle-upon-Tyne*

Traumatic perforation of the rectum in civilian practice is not a common injury. The literature on the subject is scanty, especially in this country, and consists largely of single case reports. This is not surprising, for very few surgeons see more than one case. In the ten-year period 1938 to 1947 four cases of perforation of the rectum have been treated in the surgical wards of the Royal Victoria Infirmary; the total number of surgical admissions during this period was 74,000.

Of these four cases three have come directly under my care; one was the result of perforation by an enema tip, one occurred during sigmoidoscopy, and one followed impalement on a broom-handle. The fourth case was also an enema injury.

Anatomical Details

Whatever the wounding agents may be, the resultant perforations are either extraperitoneal or intraperitoneal, and their management presents many problems which are peculiar to this region. Anatomically, the rectum is for the most part unprotected by peritoneum, it traverses a tissue which is highly vulnerable to infection, and it is difficult of surgical access. The pelvic floor, through which the rectum passes, is shaped rather like a trough, the sides of which are formed by the levator ani and coccygei originating from the internal surfaces of the pelvis on each side and joining in a median raphe below. The triangular anterior wall is formed by the urogenital triangle, while the triangular posterior wall is formed by the sacrum and coccyx. Over these structures the pelvic peritoneum is loosely draped as a cover. The potential space which exists between the pelvic floor and the pelvic peritoneum is known as the infraperitoneal space; should this space become distended with pus or blood rigid fascial planes will prevent its expansion in any direction except superiorly.

Laterally, the fascial planes are formed by the medial investment of the levators; these layers join inferiorly over the raphe and become continuous at the rectal and urogenital outlet with a similar layer of fascia loosely investing these viscera, the endopelvic fascia. By common usage the term fascia propria is applied to the rectal sheath of the endopelvic fascia. Anteriorly, the levator fasciae fuse with the deep layer of the urogenital triangle and posteriorly with the sacrococcygeal fascia.

Expansion of the infraperitoneal space is therefore limited inferiorly, laterally, anteriorly, and posteriorly by fascial planes, but is unrestricted superiorly. Even the pelvic peritoneum, however, is rather firmly adherent laterally along the line of origin of the levators at the so-called "white line," where levator fascia fuses with obturator fascia: it is most loosely attached over the sacral promontory on each side of the rectum, and it is here that the infraperitoneal space readily communicates with the retroperitoneal space, and infection arising in one may easily spread to involve the other.

Surgical Treatment

These anatomical details vitally affect the surgical treatment of extraperitoneal perforations. Free drainage of the perirectal cellular tissues is essential if spreading infection is to be avoided; adequate exposure of these tissues can be obtained by an incision parallel to the side of the sacrum and coccyx, dividing the fibres of the gluteus maximus near

its origin. Removal of the coccyx is not necessary in most cases, and indeed coccygectomy may be followed by unpleasant sequelae, such as intractable pain in the scar. Some maintain that adequate drainage can be obtained by a transverse curved incision inferior to the tip of the coccyx and incision of the fascia propria by blunt dissection. Having exposed and divided the fascia, it will be possible in some cases to demonstrate the perforation in the bowel wall; if it is readily found and is large it should be sutured, but if it is small and cannot be easily seen it need not be sutured, because contraction of the muscle fibres will bring its edges together and allow healing.

Opinions differ considerably about the value of a temporary colostomy as a part of the treatment. My feeling is that in any but the most trivial injuries it confers an additional safeguard which should never be omitted whether the perforation be extraperitoneal or intraperitoneal; its purpose is to divert the faecal current and place the rectum at rest by preventing any newly formed faeces being packed into it and distending its walls. In addition, the rectum should be drained from below by stretching the external sphincter and stitching in a large soft rubber tube: this should reach up for an inch or so beyond the level of the perforation.

Perforation by Enema Tips

Twenty cases of perforation of the rectal wall by enema tips have been reported in the literature. They fall into two groups: (1) pregnant women at term, and (2) persons from the sixth decade on.

Perforation of the normal bowel of the conscious patient can take place without the patient feeling much pain and without the use of much force; this is especially true of the older age groups, and of these 20 cases more than half were 55 or over. Twelve of the 20 cases were extraperitoneal, with five deaths (mortality 41.7%), and eight were intraperitoneal, with three deaths (mortality 37.5%).

While these cases are rare, it is impossible to guess at the real number that have occurred, because they form a group of cases that are only reluctantly spoken of and rarely reported. The perforations that do occur are generally complicated by the admission of the highly irritating enema solution into either the pelvic cellular tissues or the peritoneal cavity. In the absence of adequate treatment the result is either a fulminating pelvic cellulitis or a chemical peritonitis which turns very quickly into a purulent peritonitis from faecal contamination. Occasionally the solution has been injected beneath the mucosa or muscularis, and this has caused widespread sloughing of the rectal walls, with subsequent cellulitis and later stricture formation.

Case 1

A previously healthy man aged 74 was admitted with acute appendicitis of 48 hours' duration. An acutely inflamed non-perforated retrocaecal appendix was removed and he made a good immediate recovery. On the evening of the fourth day after operation a nurse gave him a soap-and-water enema by means of a Higginson syringe with a bone nozzle. About 6 oz. (170 ml.) of enema solution was injected. A few minutes later he felt a violent pain in his perineum and left groin; this persisted, became more severe, and radiated to his left loin and lower abdomen. He felt ill and nauseated. I was asked to see him six hours later. Examination at that time showed that he was very ill. The appendix scar was healthy, but the skin in the perianal region, perineum, left groin, left iliac fossa, and flank was dusky red, oedematous, and extremely tender, and there was well-marked left-sided abdominal guarding.

Immediate operation was advised: proctoscopy, performed under the anaesthetic, showed a relaxed external sphincter with copious mucoid discharge from the bowel. On the left wall of the anal canal, $\frac{1}{2}$ in. (1.9 cm.) from the anal a circular clean-cut perforation $\frac{1}{4}$ in. (0.85 cm.) the nozzle of the Higginson syringe fitted

perforation. The perforation extended through all coats of the bowel, and a vertical track passed upwards from its outer extremity in the perirectal tissues alongside the rectal wall for approximately 2 in. (5 cm.). The rectal mucosa was acutely inflamed, oedematous, and crepitating; the upper limit of these changes was not ascertained.

An incision was made alongside the coccyx on the left side and extending down through the left ischio-rectal fossa to the posterior anal margin; the posterior fibres of the levator ani were divided, the fascia propria incised, and the perirectal cellular tissues widely exposed. The perforation was identified, but owing to the sodden and friable condition of the bowel wall no attempt was made to suture it. The cellular tissues contained enema solution, and there were, in addition, acute inflammatory changes with already, in several places, greenish slough formation; the whole area was irrigated with hydrogen peroxide, dusted with sulphathiazole powder, and lightly packed with gauze.

A muscle-cutting incision was then made in the left iliac fossa; the extraperitoneal tissues contained thin turbid crepitant fluid, and similar fluid was present in the peritoneal cavity; there were several patches of green slough on the back of the anterior abdominal wall in the suprapubic region; the rectum and lower 2 in. of sigmoid colon were acutely inflamed, oedematous, and covered with large fibrin flakes. A large rubber tube was placed down to the pelvis and brought out through a separate small midline incision; a left iliac spur-type colostomy was then performed and opened immediately. The patient's condition at the end of the operation was critical; in the next few hours the cellulitis spread to involve almost the whole of the abdominal wall and lower part of the chest wall. Intensive administration of anti-gas-gangrene serum and soluble sulphathiazole intravenously appeared to have no effect whatsoever, and death took place eighteen hours later from overwhelming toxæmia.

Case 2

This case report is taken from the hospital records, which are unfortunately incomplete. This patient, a man aged 65, had been confined to bed at home for some days because of anginal attacks. He became constipated and was given a soap-and-water enema by the district nurse. This was administered by means of a Higginson syringe with a bonè nozzle. During the administration he felt a sudden violent pain across the lower abdomen and in the left iliac fossa; this was accompanied by severe nausea and vomiting. He was admitted to hospital twelve hours later and was then very ill and collapsed; the exact cause of his condition was apparently not appreciated before operation. This was performed two hours after admission. It was then seen that the pelvic peritoneum was raised up by a large collection of greenish frothy fluid in the pelvic cellular tissues; this fluid was obviously enema solution. A left iliac Mikulicz-type colostomy was performed and opened immediately; the pelvic cellular tissues were not drained. Death occurred eight hours later.

These cases emphasize once again the dangers involved in the use of a Higginson syringe with a hard nozzle of any kind; they also emphasize the extreme gravity of this type of injury. Adequate surgical treatment in Case 1 had no apparent effect on the course of the infection, and, moreover, it would seem that a successful outcome can only be expected if the catastrophe is recognized and treated immediately. A delay of even seven hours would appear to make a fatal result almost inevitable.

Perforation during Sigmoidoscopy

Perforation of the rectum during diagnostic or therapeutic procedures is probably very rare and little has been written about it. While perforation is more likely to occur in cases presenting weakening of the bowel wall by disease, many cases have been reported without any discoverable lesion in the bowel. Thus, in a series of 46 cases reported by Andresen (1947), 21 showed no rectal lesion, 13 showed carcinoma, five diverticula, three ulcerative colitis, two polyps, and one each lymphopathia venereum and haemorrhoids. In this series 19 died and 27 recovered, giving a

mortality of 41.7%. The mortality rate is closely related to the time interval between perforation and operative repair. In Crohn and Rosenak's (1936) series the mortality was 47% if operation was done within seven hours of perforation; delay beyond this period results in a generalized septic peritonitis, with a mortality approaching very nearly 100%.

Diagnosis.—In most cases diagnosis is made at the time of perforation; the rent may actually be seen or a loop of small bowel or other organ may come into view when the end of the sigmoidoscope has passed completely through the rent. In a few cases there has been no suspicion of perforation at the time of the examination. Furthermore, there may be a delay of several hours in the onset of symptoms suggestive of perforation: an immediate onset of acute pain occurs only in about half the cases, even though subsequent operation shows that there has been a complete rent in the bowel wall. Once perforation is suspected ancillary methods of diagnosis may prove helpful. A flat x-ray film of the abdomen may show gas under the diaphragm; the sigmoidoscopy may be repeated and the rent seen. Air inflation during this procedure should be avoided if possible, as it may increase the risk of spreading infection.

Case 3

This patient was a previously healthy man aged 64, with a history of recent onset of ill-defined left-sided abdominal pain accompanied by diarrhoea and the passage of mucus but no blood per rectum. No abnormality was discovered on clinical examination, but a routine barium enema and sigmoidoscopy were advised.

Sigmoidoscopy was performed a few days later by a surgical resident. There was no abnormality, apart from some congestion of the mucosa in the recto-sigmoid region: a punch biopsy of this was taken from the anterior rectal wall, approximately 12 cm. from the anal margin. No suspicion of perforation of the rectal wall arose during this manipulation, which was of course performed without an anaesthetic.

Approximately four hours later the patient was seized with intense pain across the lower abdomen, accompanied by extreme rectal tenesmus, nausea, and vomiting. During an attack of straining he developed a prolapse of the rectum 4 in. (10 cm.) long; this was reduced by the house-surgeon, who, however, failed to notice whether the prolapsed portion showed any evidence of perforation. Reduction of the prolapse did not relieve his symptoms, and I was therefore asked to see him, eight hours after the sigmoidoscopy.

He was now obviously a very ill man and in severe pain; the abdomen was completely immobile and there was diffuse tenderness and board-like rigidity. The perineum was normal: there was no bleeding from the rectum, but a profuse discharge of clear mucus. No tear could be felt within the reach of the examining finger. It was also noticed that extensive surgical emphysema affected the neck and upper part of the anterior chest wall. In view of its distribution it was felt that this was probably due to the rupture of an emphysematous bulla during straining at stool. A pre-operative diagnosis of intraperitoneal rupture of the rectum during sigmoidoscopy was made.

Operation was performed ten hours after the original sigmoidoscopy. A left paramedian incision was made: there was a large collection of thin yellowish sero-purulent fluid in the pelvis and in both flanks; a circular perforation $\frac{1}{2}$ in. (0.85 cm.) in diameter with clear-cut margins was found on the right antero-lateral surface of the pelvi-rectal junction, approximately 3 cm. above the peritoneal reflection. There was no other lesion of the large bowel to account for the patient's original symptoms, and these were presumably due to a mucous colitis. The perforation was closed with a purse-string suture of catgut and the pelvis drained with a wide sheet of corrugated rubber. A left iliac spur-type colostomy was performed and opened immediately. Apart from a moderately severe wound infection, the patient made an uneventful recovery; the colostomy was closed after two months, and

nine months later he was known to be well and with normal bowel action. Biopsy of the specimen removed at sigmoidoscopy showed a portion of normal rectal mucosa.

Comment.—This case emphasizes again the dangers inherent in the use of a sigmoidoscope. These dangers can be lessened, if not eliminated, by a thorough training in the use of the instrument, a sound knowledge of the anatomy of the area, gentle handling without force, and, above all, good lighting to visualize the direction of the intestinal canal. If good visualization is impossible owing to persistent angulation of the bowel, or to faeces, blood, new growth, or other objects obscuring the lumen, the examination should be discontinued.

Treatment.—If operation is decided upon it should be performed as soon as the patient has sufficiently recovered from the shock of perforation. Treatment consists essentially in suturing the perforation, draining the pelvis, and performing a proximal colostomy. In a very few cases it may be considered wiser to treat the patient conservatively: these will mainly be cases in which perforation has not been recognized for twenty-four hours or so, and in which localization of the infection already appears to be occurring.

Perforation by Impalement

These bizarre wounds are of interest because of their comparative rarity and possible sequelae. The methods by which they are sustained are as numerous as the instruments which cause them, but it is curious to note that the majority of reported cases resulted from a fall from a hay-loft on to the handle of a pitchfork. Men are affected in 75% of cases, and according to Habegger (1912) approximately half of them are farm-workers.

There is an anatomical reason for the occurrence of this type of injury; the thigh surfaces, the ischial tuberosities, and the soft parts surrounding the anus tend to form a funnel-like contour which directs penetrating objects, especially those that are blunt, through the anus into the rectum. Because of the oblique relation of the rectal wall to the pelvic outlet the anterior wall of the rectum is the most frequent site of perforation, and the reported cases fall roughly into one of five categories: (1) The impaling object merely enters the lumen of the rectum and causes an abrasion or tear of the mucous membrane only. (2) Penetration of the rectal wall occurs at a low level and the urethra in the male or the vagina may be lacerated. (3) At a higher level, penetration of rectum and bladder occurs without, however, entering the peritoneal cavity. (4) If the force is greater the bladder may be completely traversed and the impaling object enters the peritoneal cavity through the dome of the bladder. (5) High rectal or even sigmoid penetration occurs, missing the bladder altogether and reaching the peritoneal cavity direct.

The immediate effects are often surprisingly slight; there may be very little pain, bleeding, or shock, and this may be most misleading. The seriousness of these injuries depends largely on whether the peritoneal cavity has been penetrated or not: Habegger reported a mortality of 26.8% in 179 cases, but with peritoneal involvement the figure reached 78.5%.

Case 4

A youth aged 17 was admitted with a history that five hours previously he was walking downstairs in his dressing-gown when he slipped and slid downwards feet first: at the bottom of the stairs a broom had been left lying, and the handle of this went in between his legs and into his rectum. He immediately withdrew it, and as he did so felt an acute pain across the lower abdomen. Very free bleeding occurred from the bowel and severe rectal tenesmus developed.

On admission he looked and felt ill. The lower half of the abdomen was tender and rigid; the perineum appeared normal

and there was no bruising round the anal margin; the external sphincter was undamaged. There was still considerable bleeding and also a copious mucoid discharge. A diagnosis of intra-peritoneal rupture of the rectum was made. Sigmoidoscopy was not performed.

At operation, two hours after admission, the bladder was catheterized and 8 oz. (230 ml.) of clear urine withdrawn. On opening the abdomen free seropurulent fluid was found in the pelvis and there was a tear 1 in. (2.5 cm.) in diameter in the peritoneum of the recto-vesical pouch in the midline. This opening was enlarged laterally on each side, and a circular tear 1 in. in diameter was seen in the anterior rectal wall, 1 in. below the peritoneal reflection. The bladder was intact, but there were early inflammatory changes in the pelvic cellular tissues.

Owing to the position of the perforation deep in the pelvis, adequate suture proved impossible, a large sheet of corrugated rubber was therefore laid against the side of the bowel and brought out through the abdominal incision; the peritoneum of the pelvic floor was left unsutured. A soft rubber tube was inserted through the anus, and its proximal end was guided up to above the level of the perforation. A left iliac spur-type colostomy was then performed and opened immediately.

The patient made an uneventful recovery; the colostomy was closed after three months, and he was known to be well and with normal bowel function two years later.

Discussion

Important points in the management of these cases are to determine immediately whether the rectum has been perforated and whether there are injuries to other viscera, especially the bladder or urethra. If no gross blood is present in the urine serious bladder injury is unlikely, but if there is doubt cystoscopy should be performed.

The rectal laceration when found should be sutured if possible, adequate drainage provided, and a temporary colostomy performed. If the bladder is involved the rent should be sutured and suprapubic or transurethral drainage instituted, depending on the degree of injury.

BIBLIOGRAPHY

- Andresen, A. F. R. (1947) *Gastroenterology*, 9, 32.
Claggett, O. T. (1939). *Proc Mayo Clin.*, 14, 639.
Crohn, B. B., and Rosenak, D. B. (1936). *Amer J digest. Dis.*, 2, 678.
Drummond, H. (1919). *Proc. roy Soc Med (Sect. Surg.)*, 13, 24.
Habegger, C. J. (1912) *Wis med J.*, 10, 449, 500.
Kaufman, L. R., et al. (1945) *Surgery*, 17, 337.
Pratt, J. H., and Jackman, R. J. (1945) *Proc Mayo Clin.* 20, 277.

TREATMENT OF PERFORATIONS OF THE OESOPHAGUS

REPORT OF THREE CASES

BY

LESLIE J. TEMPLE, F.R.C.S.

Assistant Surgeon, Liverpool Thoracic Surgical Unit

Perforation of the oesophagus, particularly of its thoracic portion, was until recently regarded as a condition associated with a very high mortality rate. Perhaps for this reason there has been little eagerness to diagnose the lesion in its early stages. Barrett (1946) stressed the possibility of early recognition and radical treatment for spontaneous perforation. Goligher (1948) proved that early suture of perforation of the pharyngo-oesophageal wall due to crushing between the gastroscope and the cervical vertebrae is feasible. Fish (1946) recorded the successful suture of a gunshot wound of the oesophagus.

Tearing by foreign bodies, including oesophagoscopes, still remains the commonest cause of perforation. Mosher (1935) reported 19 deaths in 938 oesophagoscopies, two of these deaths occurring among the 285 cases examined

for foreign body. Occasionally patients with perforations produced in this way survive, with the formation of empyemata or mediastinal abscesses, which have been successfully drained (Churchill, 1935; White, 1941; Adams, 1946; Dorsey, 1948). However, the majority of patients with such perforations have died. Case 1 below illustrates the fact that perforation of the thoracic oesophagus—even multiple perforation—can be dealt with successfully by primary suture.

Case 1

The patient, a man aged 39, was a criminal in the "escape" category serving a sentence of three years' penal servitude. He reported to the prison medical officer on Aug. 23, 1948, that he had swallowed three safety-razor blades five days previously, and complained of dysphagia and precordial pain. On other occasions in prison he had swallowed pieces of glass and half a spoon, which he had passed without difficulty.

He was admitted to hospital, and a radiograph showed one razor blade in the oesophagus and at least two in the abdomen. The same morning oesophagoscopy was undertaken and an attempt made to remove the blade. The endoscopist reported that a grip was obtained on the blade, but it broke on attempting to move it and only several fragments were recovered. Haemorrhage put an end to any further intra-oesophageal manipulations.

When seen on the afternoon of the 24th he was shocked and there were signs of a right hydropneumothorax, which was confirmed by x-ray examination. He was transferred to this unit and operation was undertaken immediately.

Anaesthesia was induced with thiopentone and curare, and the lungs were then distended by using a facepiece and bag before passing an endotracheal tube. A right tension pneumothorax developed, respiration ceased, and the pulse almost disappeared. On inserting a large-bore needle in the right chest air hissed out and the patient rapidly recovered. An endotracheal tube was then passed and anaesthesia maintained.

The right sixth rib was resected and a large quantity of fluid containing pus and altered food was aspirated from the chest. The right lower lobe appeared to be consolidated. The mediastinal tissues were inflamed, and the pleura overlying the mediastinum and oesophagus showed jagged tears in a number of places. On incising the mediastinal pleura the oesophagus was seen to be cut open from 2 in. (5 cm.) above the azygos vein to 4 in. (10 cm.) below it. The vein itself was intact, and to facilitate exposure it was doubly ligated and divided.

The oesophagus was then opened up by joining the main 6-in. (15-cm.) tear to several small ones above and below it. At the upper part of the slit area there was a large abrasion on the right side of the oesophageal wall, with some necrosis. On the left side of the oesophagus there were four deep slashes penetrating the mucosa and musculature into the mediastinal tissues but not opening into the left pleural cavity. A further abrasion was present on the posterior wall towards the lower end of the oesophagus. At this point a broken half of a razor blade was found and removed. The cuts on the left side of the oesophagus were sutured from inside that organ, using a single layer of interrupted silk and turning the edges of the mucosa into the lumen. A good repair was apparently obtained.

The incision on the right was then sutured, leaving the knots of the silk sutures within the lumen of the oesophagus so far as was possible. The necrotic-looking area was excluded by stitches and left outside the oesophageal lumen. The mediastinal tissues were widely opened up by forceps dissection into the right pleural cavity, and a closed water-seal drain was inserted up to the oesophagus with side holes for draining the pleural cavity. Sulphonamide and penicillin powder was dusted in and the chest wall was closed.

The patient was maintained on intravenous and later on rectal fluids. He was given penicillin, and his general condition improved greatly.

On Aug. 28, four days after operation, a small amount of fluid was given by mouth and it immediately appeared through

the tube draining his chest. He returned to parenteral fluids, and on Aug. 30 a laparotomy was performed. Three halves of razor blades were removed from various portions of his intestine, and a Kader-Senn gastrostomy was carried out. He was subsequently fed through his gastrostomy opening, but the lower lobe of his right lung failed to expand and he remained pyrexial.

On Sept. 6 bronchoscopy was performed, and a large amount of pus was sucked out of the right lower-lobe bronchus, following which pyrexia subsided and the lung re-expanded. In spite of this, on testing the healing of his oesophagus by giving him a small amount of water coloured with indigo-carmin the dye immediately appeared through his tube.

Since healing was unsatisfactory, oesophagoscopy was carried out on Sept. 21. The oesophagoscope was passed between two rows of sutures, which were clearly seen, but no fistula was apparent and there was no tendency to stricture formation. The oesophagus contained fragments of half-chewed apple, and on subsequent search of his room quantities of food and cigarettes were found concealed—this in spite of the fact that a warder was in constant attendance. Security measures were tightened up and his oesophagus now very rapidly healed, as shown by the dye test, and on Oct. 4 the gastrostomy tube was removed.

There was still a small sinus into his chest, but this was rapidly healing and there was good aeration of his right lung.

Accordingly he was returned to prison on Oct. 7, where he made good progress. He subsequently developed a small localized empyema in the anterior part of his right chest, presumably a residual pocket left by the expanding lung. It was found possible to deal with this without removing him from the surveillance that seemed to be so necessary for his welfare. Oesophagoscopy on Dec. 20 showed good healing and no stricture, although the sutures were still present.

Recovery in this case is somewhat surprising in view of the extent of the damage, the long delay that took place between perforation and repair, and the considerable degree of infection that had already occurred, as well as the uncooperative attitude of the patient, who was anxious to prolong his stay in hospital indefinitely.

Comment on Case 1

The treatment of this case can be epitomized as drainage of the mediastinum and repair and defunctionalization of the oesophagus. Drainage of the mediastinal tissues should always be into the pleural cavity, opening the mediastinal pleura from top to bottom. The posterior extrapleural route—unless it is to resemble a Sauerbruch thoracoplasty—cannot effectively drain the mediastinum. In an early sutured tear of the cervical oesophagus with only slight upper mediastinal involvement mediastinotomy might be considered justified, but as soon as the mediastinitis extends so that the drainage is no longer dependent thoracotomy would be necessary. In view of this and of the difficulty in appreciating the extent of the infection, it is probably wiser in all cases to open the thorax at the outset.

The ideal time for exploration seems to be either before complications can develop or as soon as measures have been taken to deal with such urgent complications as tension pneumothorax. The surgeon who believes he has perforated the oesophagus during an endoscopy should, if facilities are available, have the anaesthesia continued, turn the patient over, and open his thorax. In such a case it should be possible to proceed with a gastrostomy immediately. If the patient is not fit to stand a gastrostomy, rectal or intravenous feeding should be continued for a few days and then the gastrostomy performed. Even if primary suture is carried out disappointments are only too common, and are likely to remain so until the diagnosis is made before serious infection has intervened. Case 2 illustrates a tragedy of this type.

Case 2

A woman aged 54 was admitted to hospital complaining that she had swallowed a chicken bone on Sept. 21, 1948, and that it was sticking in her chest.

Oesophagoscopy was carried out the next day under a general anaesthetic. No foreign body was found, but an abrasion of the mucosa was seen low down in the oesophagus. She was returned to the ward and shortly afterwards, at 4 p.m., suddenly complained of difficulty with breathing and of pain in the left side and back. She was reported as being obviously shocked, and oxygen and nikethamide were administered. Her condition did not improve very greatly, respirations became increasingly difficult, and diminished air entry was noted on the left side.

On Sept. 23 she was somewhat easier. When seen later that day she was pyrexial, and obviously her oesophagus was perforated into the left pleural cavity. X-ray examination showed hydropneumothorax and mediastinal emphysema. There were many moist sounds throughout the right lung and no breath sounds on the left. The heart and trachea were displaced somewhat to the right. She was not fit to be transferred to the chest unit and was treated in the hospital of admission. A needle was inserted into the left chest immediately and attached to an under-water drain. Air bubbled up under pressure and there was a considerable improvement in her condition.

Operation was then undertaken. The seventh left rib was resected. The pleural cavity appeared to be grossly infected and large quantities of thin pus and fibrin clot were present. A hole was noted in the pleura just in front of the aorta, and through this area the mediastinum was laid widely open. Thin pus gushed from the interstices of the mediastinal tissues. On retracting the aorta a tear 1 in. (2.5 cm.) in length was seen in the posterior aspect of the oesophagus just above the diaphragm. This was sutured with five interrupted silk sutures, and a rubber tube leading to the mediastinal perforation, with side holes to drain the pleura, was inserted and attached to a water-seal. Penicillin powder was dusted in and the chest closed. Large doses of penicillin and a rectal drip were administered. Morphine and its derivatives were avoided owing to the considerable degree of lung oedema, and coughing was encouraged for the same reason.

When seen next day her condition had greatly improved. The left lung was aerating well, and fluid still escaped from the drainage tube. Rectal fluids were being returned, and owing to the condition of her lungs intravenous therapy was contraindicated. For the same reason I was not anxious to subject her to another operation, so a soft Ryle's tube was passed into the stomach and feeding was continued by that means.

She remained well until 10.45 p.m., when she suddenly collapsed while talking to somebody in the ward and died within a few minutes.

At necropsy the torn area in the oesophagus was found to be adequately sutured and watertight, but both lungs were very oedematous and the left lung was partly consolidated. There was of course mediastinitis and inflammation of the left pleural cavity. I believe that death in this case was due to the lung oedema of acute heart failure resulting from the effect of her severe infection and from toxic absorption. It was difficult to see what other measures could have been taken to prevent a catastrophe, but it is some encouragement to know that the suture itself was effective.

Conservative Treatment

Whilst it has been stressed that a perforation or a suspected perforation of the thoracic oesophagus should be explored without awaiting the development of signs of that condition, suspected perforation of the cervical oesophagus is possibly in a different category. Here the part concerned is under more direct observation and there may in some cases be a place for conservative treatment. No criteria can be laid down for this, and at the very first indication of infection or extravasation outside the oesophageal wall the surgeon must be prepared to explore the

oesophagus and suture the tear. Case 3 illustrates successful conservative treatment.

Case 3

A woman aged 20 reported at hospital on Nov. 6, complaining that whilst eating stew the previous evening a bone had stuck in her throat and had remained there ever since.

Under a local anaesthetic she was examined with a laryngoscope, but it was not possible to pass the upper oesophageal sphincter and no foreign body was found. She was kept in bed and developed a pyrexia up to 100.4° F. (38° C.); there was some fullness in the tissues of her neck. She was put on penicillin the same day. On Nov. 8 a radiograph showed the swallowed bone just above the sternum on the right, but there were no signs of surgical emphysema either on the radiograph or clinically. Under a general anaesthetic an oesophagoscope was passed with ease. Just below the sphincter on the right side there was an area of oedema and redness. On pressing the folds apart a piece of bone was seen lying on the surface of the oesophageal wall. This was gripped with forceps and a long spike 1½ by ¾ in. (3.2 by 1.9 cm.) was withdrawn from its position transfixing the wall of the oesophagus. A small piece of bone was also found lying loose; this was removed. After removal the small perforation made by the spike of bone could be clearly seen.

The patient was given 1,000,000 units of penicillin daily and, after twenty-four hours, sterile water by mouth. Her temperature subsided immediately after oesophagoscopy and remained down. At no time was there any x-ray evidence of surgical emphysema, and her clinical condition gave no cause for alarm. After ten days she was allowed a full diet and was discharged from hospital.

In this case there were very considerable doubts whether further surgery should be undertaken when such an obvious perforation of the oesophagus was seen, but the site was so accessible that had any infection arisen it would at once have been apparent and could have been dealt with. The conservative policy adopted was justified by the end-result.

Summary

The importance of early diagnosis and primary suture of instrumental or foreign-body tear of the thoracic oesophagus is discussed. Lines of treatment are suggested, and two cases are described, one of which had suffered multiple oesophageal perforations from a razor blade and had recovered after primary suture.

Conservative treatment for suspected damage to the cervical oesophagus is suggested, and is illustrated by a successful case.

My thanks are due to members of the Liverpool Chest Unit, in particular to Mr. F. Ronald Edwards for his assistance and advice with these cases, and to Mr. Horace Mather for his advice in the preparation of this paper.

REFERENCES

- Adams, R. (1946). *J. thorac. Surg.*, 15, 336.
- Barrett, N. R. (1946). *Thorax*, 1, 48.
- Churchill, E. D. (1935). *Surg. Gynec. Obstet.*, 60, 417.
- Dorsey, J. M. (1948). *Arch. Surg., Chicago*, 56, 24.
- Fish, J. E. (1946). *Ibid.*, 52, 172.
- Goligher, J. C. (1948). *Lancet*, 1, 985.
- Mosher, H. P. (1935). *Surg. Gynec. Obstet.*, 60, 403.
- White, J. D. (1941). *Brit. J. Radiol.*, 14, 364.

The Government has issued a pleasantly illustrated pamphlet entitled *The Budget and Your Pocket* (H.M.S.O., 3d.) describing what money is collected from the taxpayer and how it is spent. It says that the tax money spent on health services is 7s. 9d. a family a week. The hospital service accounts for about 5s. a week of this, over half being the pay of doctors, nurses, orderlies, and other staff; rather over 1s. a week goes to general practitioners, and 9d. to the dentists; the remaining 1s. covers medicines, appliances, spectacles, eye testing, and so on. "It may seem strange," concludes the pamphlet, "to keep some prices high by taxation so as to raise money which is partly for a budget surplus to keep prices down. But that is exactly what must be done. . . . The final remedy will come when we are producing more, and producing it more efficiently so as to keep our prices down—earning more money, and getting more for it."

SIMULATED AMNESIA FOR IDENTITY TREATED BY ELECTRICALLY INDUCED EPILEPSY

BY

R. E. HEMPHILL, M.D., D.P.M.

*Medical Superintendent, Bristol Mental Hospitals; Lecturer in
Psychiatry, Bristol University*

AND

J. R. STUART, M.B., Ch.B., D.P.M.

Senior Assistant Psychiatric Physician, Bristol Mental Hospitals

Inability to recollect identity is commonly complained of in hysterical fugue states, and sometimes by borderline hysterics and malingers. It is occasionally seen after an epileptic fit or with serious organic brain damage or wasting.

Clouding of consciousness (as in epilepsy and concussion) or intellectual impairment (as in senility) is characteristic of the organic type. As an organic phenomenon inability to remember one's identity implies such a profound disturbance of brain function that memory, judgment, and even simple intellectual processes are bound to be impaired.

Inability to identify oneself, with clear sensorium and intact intellect, cannot be attributed to a local brain defect. Thus a patient who persists that he does not know who he is and has no recollection of his life's history up to the time of the examination, but is otherwise intellectually clear, is either feigning or suffering from a true hysterical amnesia. In the latter case it should be possible to restore memory easily by hypnosis or other usual psychotherapeutic procedures within a few days, especially if full use is made of the associations of everyday life, such as press news, sporting events, and the like.

Almost certainly, all continuously resistant subjects are malingers. It is very doubtful if a genuine psychological amnesia persisting for years has ever occurred, although this idea has proved a plot for various successful novels and screen plays. A good account of amnesic states is given by Parfitt (1944).

Malingering

We have never seen a case of "primary malingering"—that is, deliberate denial of knowledge of identity without some previous hysterical state. We believe that it is very rare and that it is likely to be used only in situations where an individual wishes to escape recognition and is unable to establish another identity or think of a better excuse. For this form of amnesia is bound to bring the individual immediately to hospital—where his movements will be restricted and he will be under the notice of the police—and to stir up interest and stimulate research into his past. Thus it will not be used by a criminal with a previous police record who wishes to escape detection for a recent crime; the fingerprint service and the B.B.C. would make it useless. Nor will a malingerer simulate loss of identity near his home, where he can be recognized by others or confronted with his parents. The lie has purpose only if a patient wishes to make use of a hospital or plead a psychiatric excuse for conduct. Thus we find it used by hysterics who wander from home unable to face some situation, by ex-gaolbirds seeking temporary lodging, or by deserters from the Forces.

The pretence is difficult to keep up and can succeed only if the patient has had experience of being treated for hysterical amnesia and knows the kind of investigation that will be made and the questions he will be asked.

In our experience the simulation is always secondary, and is either the continuation of a hysterical episode—the patient keeping up the pretence after his memory has been restored because he finds it convenient to do so or because he cannot face the results of exposure—or is used by hysterics who have had previous attacks of genuine hysterical amnesia.

Hysterical behaviour is facilitated by previous attacks, and the pattern of each is usually the same. This is as true for psychic as for motor manifestations. Thus amnesic or wandering states are rarely isolated episodes in the history of the hysteric, and, after having occurred a few times, a very trivial stimulus may suffice to produce an attack. This probably accounts for the ease with which professional mediums pass into trances, for states of dissociation are easily induced by frequent repetition.

Hysterics feigning amnesia may even come to doubt their own reality and so develop a perplexed cloudy state. Our patient, for example, would repeat his name over and over again to himself, and told us subsequently that at one time he used to write down his real name on a small piece of paper and pin it to his pyjamas at night, lest he should forget it.

Simulated loss of identity is therefore a lie that comes easily only to the hysteric, and it may be a pattern of conscious behaviour in a certain situation established by a previous unconsciously motivated habit.

These cases are most difficult to treat. They handle hypnosis and narco-analysis in the most guarded way, and usually reveal false clues. They become more expert with every subsequent session. If the intravenous narcotic or ether is pushed they may feign sleep so that the drug will be withdrawn. They attempt to learn about contemporary life from the papers, the radio, and other patients, and are ready to point out that they have learned about past and current world affairs since entering hospital. This remarkable ability to learn and remember effectively rules out organic brain damage as a factor.

The man whose case is described below kept up his act for many weeks and in three different hospitals. He behaved true to type, improving in co-operation with every session, supplying more and more useless information. He was bold enough to describe real episodes of his life, withholding essential details. He spoke of his experiences in the R.A.F., of accidents and illnesses, described hospitals where he had been treated, and even suggested that he had been a male nurse. All these statements were true, but were given without dates or names of hospitals, so none of his clues could be followed up.

He suggested a name for himself which was false, but it was by this false name that he agreed to be known when he was admitted to hospital.

Case Report

The patient, a man aged 24, was admitted as a voluntary patient to Barrow Hospital, Barrow Gurney, near Bristol. His medical history as known to us at the time of his first examination there was as follows. On the night of June 22, 1948, he reported to the police in Bath, saying that he had a headache with loss of memory. He was taken to a hospital, and stated that he did not know who he was or where he came from, nor could he recollect any facts of his life before reporting to the police. He had some money, but was without identity card or ration book; there was no name or mark on his garments except a name—afterwards found to be incorrect—on his tie. He was dressed in flannel trousers, sports coat, shirt and tie shoes, socks, and underclothes. He had no hat. Narco-analysis was attempted on several occasions at this hospital, and he was afterwards transferred to another hospital, where he underwent ether abreaction and other psychotherapeutic procedures. H

informed us that he was still unable to recollect anything relevant in spite of all attempts

Examination on his admission to our hospital revealed no organic disease or change in the central nervous system, and the electroencephalogram was within normal range. He had a well-healed operation scar of the left forearm, and his nose had been broken.

He gave a clear account of all events subsequent to being brought in by the police about six weeks before. He related episodes of his past life, which he said had been told him by doctors after sessions of ether abreaction and narco analysis. He stated that he had been an orderly in the R A F, and had had an injury to his left arm, for which he was treated. He was discharged from the R A F on psychiatric grounds, and later was a male nurse at a hospital "somewhere in the country." He gave the name and number of the ward in which he worked but not the name of the hospital. He gave the Christian names of many relatives, but not their surnames.

He persisted that he was most anxious to ascertain who he was and stated that his desire was to be made well so that he could return to work. While in hospital he read industriously. He showed no obvious concern about being in hospital, and his indifference to the seriousness of his condition was in marked contrast to the concern that he stated he felt.

Obviously further psychotherapeutic sessions were contraindicated, and we were able to prove that the patient was lying. He probably did not have an important criminal record, for he willingly allowed fingerprints to be taken and a description circulated in the *Police Gazette*. Proof of feigning was supplied in the following conversation:

Q—What would you do if I discharged you from hospital to-day with ten shillings?

A—I suppose go back to the doctor to Bath.

Q—But if I warned you that no hospital would accept you, how would you make a start in the world?

A—I suppose I would have to go to the police.

Q—How would you get about getting an identity card?

A—I suppose from the police.

Q—How would you get food?

A—I do not know.

Q—You must know. Please think. What would you do about paying for food as soon as you left hospital?

A—I do not know. I cannot remember. I suppose I would get help.

Q—Would you get a ration book, and if so where?

A—I would have to ask the police where to get it.

Q—What is rationing?

A—A system for the fair distribution of food.

Q—Then what is a ration book?

A—You forget that since I came to hospital I have read a lot to find out what I am and what I should do. I have studied *Picture Post* and other papers since 1939.

Q—Why 1939? What has that got to do with it?

A—I do not know. I cannot remember.

In this way he was caught. He probably knew about identity cards and certainly knew about rationing and the outbreak of war, although pretending that he did not.

He gave his consent to any measure being employed that could restore his memory, including electric convulsion therapy. We are not aware that induced epilepsy has been applied in this way before.

The rationale for induced epilepsy was as follows. During the post-convulsive phase of an epileptic fit neural function is re-established according to Jacksonian rules. Thus, after breathing has returned and while unconsciousness is still deep, spontaneous movements and motor restlessness appear. Speech functions return with a period of aphasia, knowledge of parts of the body is restored before that of external objects (Hemphill and Walter, 1941). The patient becomes aware of himself and therefore is able to establish his identity before he can be aware of his surroundings or has any other recollection of antecedent events. Thereafter there is an increasing awareness of external reality, with diminishing amnesia, finally, the amnesia contracts until it covers little more than the period from the onset of the fit until cerebral function has been fully restored.

Having regard to the order in which psychic functions return, it was fairly certain that our patient would recollect his name and address and probably something of his family affairs,

before brain function was sufficiently restored to enable him to remember that he must lie, in other words to apprehend the situation which demanded the lie and the implications of restored identity requires a much higher degree of cerebral integration and activity than merely to recollect name and address.

It was therefore probable that if the patient disclosed his identity in the post-epileptic state he would be unable to recollect that he had done so—for with cerebral function still low he would be unable to form clear memories, as is seen in alcoholism and in concussion—and that he would persist in his lie as soon as he had sufficiently recovered from the epileptic state. This is in fact what occurred.

Treatment

A major epileptic fit was induced electrically. As soon as breathing was re-established and he was responsive to external stimuli questions about his identity were repeated until finally he gave his name. As brain function improved he was able to give his home address, his brother's name, and his father's occupation. He then slept. He was interviewed 14 hours later, when he was completely free from the effects of the epileptic fit. He then said he could not remember anything about the treatment except that the electrodes had been applied to his head. When the name and address he had given were told to him he stared blankly and said they meant nothing to him. The interview then terminated. Check-up proved that he had disclosed his correct name and address. He was informed of this and told that in his own interests he must remain in a closed ward in case there should be a further fugue state. He still denied that the remembered name was correct. The following day he sought an interview, stating that he realized "the game was up," and he then gave a detailed account of his early life. Briefly this was as follows:

The Patient's Previous History

He had been employed in a large electrical firm in the Midlands. A few days before leaving home he had been offered promotion to a responsible post. He felt inadequate to take the post, but as his colleagues knew of the offer he felt that he could not refuse without loss of prestige. Further, he lived in constant dread of his father, whom he could not face. He decided to get away from his place of work and his home. There appears to have been a genuine fugue state similar to what had occurred on previous occasions. He stated that there had been a period of amnesia following mental stress in 1945, when the amnesia was cured by narco-analysis. There were other incidents of a similar nature. Early in 1948 he left home after a quarrel with his father, and was apprehended by the police in another town, where he was standing alone on a river bank. He appears to have feigned loss of memory, and was subsequently admitted to the county mental hospital, where he said he had difficulty in convincing the authorities of his correct name. He admitted that he had once been in the bands of the police as a juvenile for some minor civil offence.

From our assessment and his history, which was confirmed by his parents, he was above the average in intelligence, but always self-centred and prone to hysterical reactions. His home was comfortable. It appeared that the father had always expected much of the son. On the whole the patient enjoyed being in the R A F, and it is probably true that there was no amnesic episode until his arm had been injured.

Points of clinical importance in his history are: (1) The patient's basic personality was hysterical and immature, but in spite of poor adjustment at home there was no history of an amnesic episode until he actually came under medical treatment in the R A F. (2) The first attacks seem to have been true hysterical dissociation, with true loss of memory, and these were cured quickly by narco-analysis. (3) The patient improved on his medical knowledge by serving as a male nurse even after he had had hysterical fugue states. (4) His apparent loss of memory for identity appeared only after a wandering state had brought him well away from home. (5) It was easy for him to simulate loss of memory for identity, because he had had previous true hysterical episodes with hospital treatment. (6) His carefully conducted defence became stronger as he became more adroit at evading the issues with every attempt at psychotherapy.

Discussion

Induced epilepsy is likely to be of value only in the case of simulated inability to remember identity. The usual procedures should be employed in true conditions of psychogenic amnesia. Induced epilepsy is valueless in restoring truth in any other kind of lie (except perhaps hysterical mutism, deafness, or blindness) because it uses a neural phenomenon which makes the patient able to identify himself correctly before he is capable of remembering external events and sorting them out.

Summary

A case is described in which induced epilepsy was employed to establish identity in a patient who feigned amnesia for his name and the total previous period of his life. This type of amnesia and the neuro-physiological rationale of the treatment are discussed.

REFERENCES

- Hemphill, R. E., and Walter, W. Grey (1941). *J. ment. Sci.*, 87, 256.
Parfitt, D. N. (1944) *Ibid.*, 90, 511.

AN UNUSUAL CASE OF CHRONIC MYELOID LEUKAEMIA

BY

R. A. RUSSELL TAYLOR, F.R.C.S.

Medical Superintendent and Surgeon, Pinderfields General Hospital, Wakefield

The interesting feature of the following case is the response to treatment devised for a mixture of cirrhosis of the liver and myeloid leukaemia.

Case History

The patient, a man aged 61, was admitted to this hospital on March 13, 1946, with chronic myeloid leukaemia, marked splenomegaly, and ascites. A careful history revealed that he had been treated for pernicious anaemia since 1931, but the report of a blood count taken on Dec. 8, 1931, failed to substantiate this diagnosis. It was as follows: haemoglobin, 76%; red cells, 3,820,000; colour index, 1; white cells, 9,600 (polymorphs 75%, lymphocytes 15%, eosinophils 1%, basophils 2%, large hyaline cells 2%, transitional cells 5%).

The next report to which we had access was dated March 11, 1941, and the blood count was as follows: haemoglobin, 98%; red cells, 4,300,000, colour index, 1.14; mean diameter of red cells, 7 μ ; nucleated red cells, 1,000 per c.mm.; poikilocytes and polychromatic cells; white cells, 26,000 (polymorphs 56%, eosinophils 1%, basophils 2%, lymphocytes 9%, monocytes

6%, neutrophil myelocytes 20%, eosinophil myelocytes 1%, basophil myelocytes 3%, myeloblasts 2%). The report stated: "The white cell picture tends towards that of chronic myelogenous leukaemia."

On June 14, 1941, the white blood count had increased to 36,000, but the differential percentages remained constant.

No further reports were available until Nov. 3, 1944, when the blood picture was: haemoglobin, 69%; red cells, 3,420,000; colour index, 0.99; nucleated red cells, 1,270; reticulocytes, 2.2%; white cells, 35,700 (polymorphs 44%, eosinophils 1%, lymphocytes 25%, monocytes 12%, myeloblasts 4%, neutrophil myelocytes 11%, eosinophil myelocytes 1%, basophil myelocytes 2%). Blood counts were then taken at fairly regular intervals; these are recorded in Chart 1. In the differential counts the percentage of myelocytes varied between 6 and 30%, while that of the myeloblasts varied between 1 and 23%.

The most characteristic blood count was that taken on Aug. 24, 1948, and is therefore given in detail: red cells, 3,100,000; haemoglobin, 61%; colour index, 0.99; white cells, 17,130. Differential count was as follows: neutrophil polymorphs, 9,350 (55%); basophils, 510 (3%); neutrophil "stuffs," 850 (5%); neutrophil metamyelocytes, 1,800 (10.5%); neutrophil myelocytes, 3,150 (18.5%); myeloblasts, 950 (5%); lymphocytes, 340 (2%); monocytes, 0; normoblasts, 90 (0.5%); erythroblasts, 90 (0.5%).

On March 14, 1946, paracentesis abdominis was performed and 12 pints (6.8 litres) of ascitic fluid were removed. The very marked and extensive oedema of both lower limbs was not affected in any way even after massage. On March 15 a blood transfusion of 2 pints (1.14 litres) of blood was given, and this was repeated on March 29, April 4, and May 24. The patient also received massive doses of iron daily.

Paracentesis abdominis was repeated on April 16, and 14 pints (7.95 litres) of ascitic fluid were removed. This process was repeated at rapidly diminishing intervals during the next three months, until as much as 24 pints (13.6 litres) were being removed every five days. The exact dates and amounts are

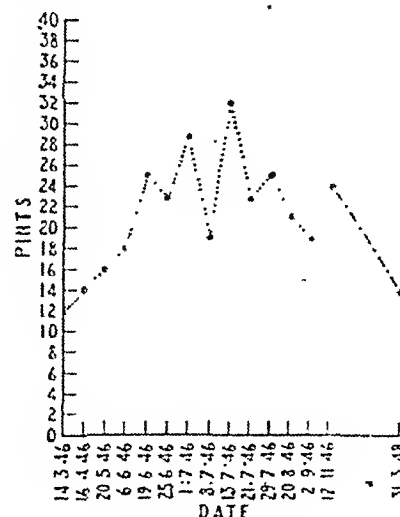


CHART 2.—Amounts of ascitic fluid withdrawn.

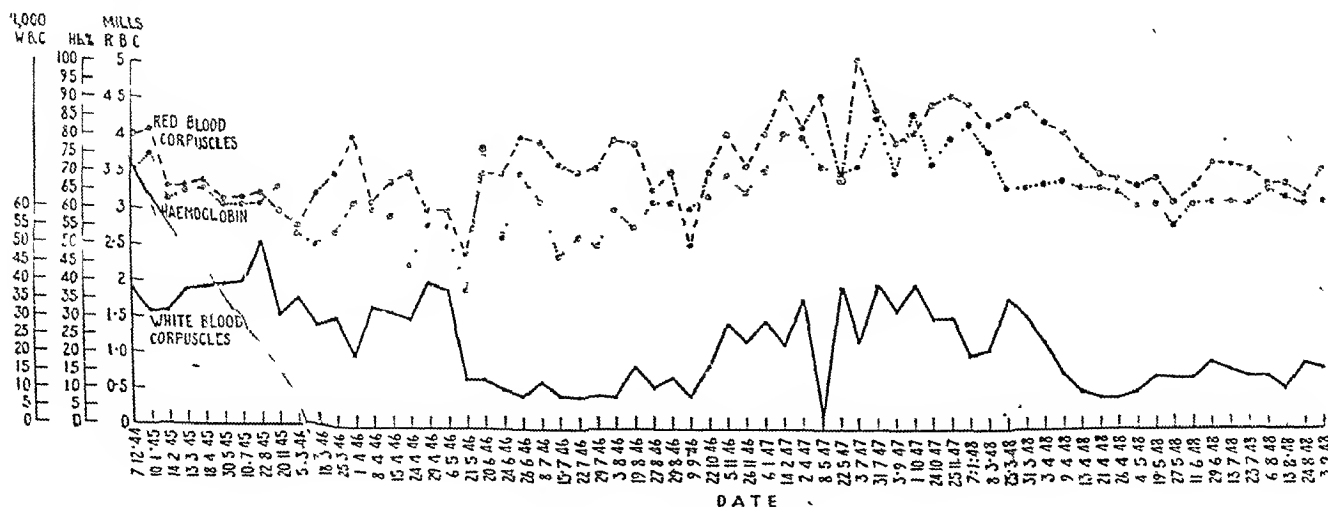


CHART 1.—The blood count.

given in Chart 2. The protein content of the ascitic fluid varied between 2 and 2.5 g. %.

By this time the patient was markedly emaciated and the abdomen was grossly distended by ascitic fluid and a large spleen, which reached right down into the pelvis. His liver, however, was only slightly enlarged.

On July 2 an estimation of the plasma protein gave a reading of 5.1 g. %, and a hippuric-acid test showed that the amount of hippuric acid passed in the four-hour period was only 2.7922 g., with the maximum excretion in the second hour. It was therefore decided to give 1 g. of choline chloride and 1 g. of cystine twice daily. This was done on the assumption that choline and cystine can help to prevent hepatic cirrhosis due to a very low protein intake.

The hippuric-acid tests were repeated, with the following results:

Date	Amount of Hippuric Acid Passed in 4-hourly Period	Maximum Excretion
12/7/46	2.7504 g.	3rd hour
19/7/46	3.1794 g.	3rd "
30/7/46	3.0220 g.	2nd "
6/8/46	3.0458 g.	2nd "
20/8/46	3.3454 g.	2nd "
29/8/46	3.5882 g.	2nd "

It was therefore concluded that there had been a great improvement in the liver function during this period.

Attempts were also made to raise the low plasma protein level by repeated plasma transfusions, high protein diet, and the addition of "casydrol" by mouth. Plasma protein estimations were as follows: July 2, 1946, 5.1 g. %; July 12, 5.6 g. %; July 15, 5.4 g. %; July 19, 5.5 g. %; July 29, 6.2 g. %; Aug. 6, 6.2 g. %; Aug. 20, 6.8 g. %; Sept. 2, 6.85 g. %; Oct. 1, 1947, 7.8 g. %; Jan. 1, 1948, 8.8 g. %—i.e., 5.2 g. of albumin per 100 ml. of serum and 3.6 g. of globulin per 100 ml. of serum (albumin-globulin ratio = 1:1.5); March 9, 1948, 6.25 g. %—i.e., 4.5 g. of albumin per 100 ml. of serum and 1.75 g. of globulin per 100 ml. of serum—albumin-globulin ratio = 2.6:1. It was, however, noticed that although the plasma protein level was 6.8 g. by Aug. 20, 1946, the ascites persisted.

The patient felt very much better, and it was then decided to try to keep the white blood cells within reasonable limits by the administration of urethane by mouth. He was given 1 g. daily for four weeks and the white blood count was recorded daily. After that he was placed on a maintenance dose of 1 g. thrice weekly and weekly blood counts were recorded.

The remarkable fact was that the ascites after tapping took much longer to recur, and when he was tapped on Nov. 12, 1946, 24 pints (13.6 litres) of ascitic fluid were removed. Since that date he has been receiving two "fersolate" tablets three times daily, 1 g. of choline chloride daily, 1 g. of cystine daily, and 1 g. of urethane thrice weekly, with occasional rest periods as determined by blood counts.

He was seen again on March 31, 1948, when he was admitted to hospital for another paracentesis—i.e., after an interval of 16 months. Fourteen pints (7.95 litres) were removed on this occasion, and he remained free from signs and symptoms of ascites until Sept. 4, when he was last seen. His liver was just palpable at the costal margin, whilst his spleen extended only a hand's breadth below the left costal margin. His weight has remained fairly stationary in spite of his excellent appetite, and he feels very fit though his haemoglobin is low.

Since May, 1948, I have administered, in addition to the other medicines, 4 ml. of "anahaemin" intramuscularly at weekly intervals in an attempt to raise the haemoglobin and red blood cells, but so far without success. It has also been necessary to administer the urethane in doses of 1 g. daily to keep the white blood count within reasonable limits.

Discussion

This case is most interesting because when the patient was first seen in April, 1946, it was thought that he would live only a few weeks. The remarkable change which took place in his general condition after the administration of the

cystine and choline chloride was astonishing. His plasma protein rose fairly rapidly, the ascites became less pronounced and required less frequent tapping, his liver became normal in size, and he rapidly put on weight. After the addition of urethane his white blood count was kept within reasonable limits and his spleen rapidly diminished in size.

It is impossible to draw any conclusions from only one case, but I consider that there is a very fruitful field for the treatment of such cases with cystine and choline chloride in combination with urethane.

As pointed out by Cheney (1934), the presence of ascites in cases of chronic myeloid leukaemia seems to be rare, and very few cases have been recorded in the literature. He gives a detailed description of two such cases, and mentions the close resemblance of this condition to Banti's disease. The importance of making a correct diagnosis is stressed, as also is the institution of the appropriate treatment. He considers that the only probable causes of the ascites in these cases are portal thrombosis and low colloidal osmotic pressure of the blood plasma.

I would like to express my deep appreciation to Dr. F. Young for her invaluable help in the pathological investigations in connexion with this case.

REFERENCE

Cheney, G. (1934). *Acta med. scand.*, 81, 14.

RUPTURE OF THE LIVER ASSOCIATED WITH PARTURITION

BY

JEAN R. C. BURTON-BROWN, M.D., M.R.C.O.G.
F.R.C.S.

Assistant, Nuffield Department of Obstetrics and Gynaecology,
Oxford

AND

JOHN A. SHEPHERD, M.D., F.R.C.S.Ed.

Lecturer in Surgery and First Assistant, Department of Surgery,
University of Liverpool

A case is described in which an unusual complication developed during or after labour, giving rise to an acute abdominal condition. A rupture of the liver associated with haemoperitoneum was found at operation.

Case History

The patient, a 6-para aged 32, was admitted on Sept. 11, 1948, 17 hours after parturition, with severe upper abdominal pain. The onset was sudden, occurring one hour after expulsion of the placenta and after the midwife had left the house. The patient became collapsed and vomited several times. She described the pain as sharp, radiating to the back and right shoulder, and increasing in severity on movement and respiration. All six previous pregnancies and labours were normal. During the last month of the present pregnancy she had suffered from a persistent epigastric pain.

On examination the patient was pallid and weak and was prevented by the pain from moving in bed or sitting up. The temperature was 97° F. (36.1° C.), pulse 112, and blood pressure 110/85. There was generalized abdominal tenderness and guarding, and shifting dullness was detected. The liver was palpable and tender, projecting 1½ in. (3.75 cm.) below the right costal margin. Peristaltic sounds were active. The pelvic organs were normal, although considerable peritoneal tenderness was elicited by palpation of the lateral fornices. The haemoglobin was 51%. A catheter specimen of urine contained 100 mg. of protein per 100 ml.

Since the precise diagnosis was undetermined, it was decided to transfuse the patient with 4 pints (2.27 litres) of blood and keep her under close observation. Heroin in small doses was given periodically.

During the subsequent eight hours the pulse rate rose slowly to 120 and the blood pressure to 150/100. No further vomiting occurred, but as peristaltic sounds had almost ceased and the abdomen had become distended it was decided to perform a laparotomy. An intraperitoneal haemorrhage, with a large effusion of blood below the right diaphragm, was suspected.

Operation.—A right paramedian incision extending well above and below the umbilicus was made. The peritoneal cavity was full of fresh blood. The spleen and uterus were normal and the gut was distended. A large clot was found obscuring the surface of the liver; when this was removed a subcapsular haematoma was observed to extend over the superior surface of the right lobe. The left lobe was normal. The peritoneal coat had been stripped up, and there was a rent in it through which blood was oozing. The clots and free blood from the peritoneal cavity were removed, and "oxycel" gauze controlled the haemorrhage from the raw area of the liver. A biopsy of the liver was taken at the margin of the haemorrhagic area. The liver area was drained and the abdominal wall closed in three layers. A Ryle's tube which had been introduced before operation was kept *in situ*.

Progress.—The condition of the patient improved perceptibly; within 24 hours the pulse rate dropped to 100 and abdominal distension disappeared with the recurrence of peristalsis and the passing of flatus. Gastric aspiration was continued for 36 hours, after which the patient was able to take a light diet. Penicillin, 100,000 units at first, decreasing to 40,000 units, was given three-hourly for 15 days. The patient remained pyrexial for 25 days.

On the 24th day there was clinical evidence of right basal pulmonary collapse with pleural effusion. On the 34th day she developed a sharp attack of pleural pain associated with a swinging temperature of 102–98° F. (38.9–36.7° C.). A further course of parenteral penicillin was given, 60,000 units three-hourly and, later, 200,000 units twice daily, with penicillin inhalations for 18 days. Temperature and pulse rate became normal on the 43rd day. A pleural aspiration was carried out on the 39th day: the fluid so obtained was sterile.

On Nov. 11 (64th day) the patient was discharged from hospital. The blood pressure was 130/90. There was no albuminuria. Evidence of pleural effusion was still present, but her general condition appeared satisfactory.

Investigations.—The Wassermann reaction and Kahn test were negative; haemoglobin was 51%; and white blood cells numbered 22,000. A catheter specimen of urine contained 100 mg. of protein per 100 ml. The blood pressure was 114/85 to 155/100. The blood urea amounted to 124 mg. per 100 ml., the plasma bilirubin to 2 mg. per 100 ml.; and total proteins to 5.3 g. per 100 ml. (albumin, 3.1 g.; globulin, 2.01 g.; fibrinogen, 0.69 g.). A high vaginal swab produced no pathogenic organisms. An x-ray film of the chest showed the right diaphragm raised, with collapse of the base of the right lung and effusion, and, several days later, collapse of the middle lobe with effusion. Liver biopsy showed zonal necrosis with some cellular infiltration—an appearance compatible with that found in toxæmia.

On discharge the haemoglobin was 84%, and the white blood cells numbered 8,000. A catheter specimen of urine contained 100 mg. of protein. The blood pressure was 130/90. An x-ray film of the chest showed some improvement in the extent of effusion and pulmonary collapse. The E.S.R. was 33 mm. per hour (Westergren).

Discussion

Rupture of the liver has been described either as traumatic or as "spontaneous" rupture. The first is a well-recognized condition due to direct injury, and discussion of it is irrelevant in this article. The second—the "spontaneous" rupture—is the type to which the present case belongs. In this type the trauma is either slight or has passed unrecognized by the patient. This use of the term "spontaneous" is unfortunate, and may be misleading when applied to liver rupture, as it certainly is when used to describe a splenic rupture attributed to minimal or unrecorded traumata.

Under the heading "ruptures spontanées" Devic and Bércl (1906) have discussed liver rupture and made particular reference to the pathological condition of the organ at the time of its rupture and to the possible association with syphilis. Of the 21 cases reviewed by them only one—Abercrombie's case, to which further reference will be made—was associated with pregnancy.

Devic and Bércl suggested that when definite trauma could be excluded the term "apoplexie hépatique" might be used. They expressed a clear opinion that in traumatic rupture it is the rupture which causes the haemorrhage, but that in spontaneous rupture the haemorrhage is the cause. The sequence of events leading to spontaneous rupture is, they suggest, as follows. Rupture of a blood vessel leads to intrahepatic haemorrhage; this in turn causes local laceration of liver tissue and the formation of a subcapsular haematoma; finally, the capsule of the liver may rupture and blood escape into the peritoneal cavity.

Such intrahepatic haemorrhage, they suggest, may be caused by a variety of conditions—for example, vascular disease, necrosis of the liver associated with septicaemia, or hepatic malignancy. In some cases minimal trauma may cause haemorrhage in diseased liver comparable with the haemorrhage that is known to occur in the diseased spleen.

Abercrombie's (1843–4) case, to which reference has already been made, was associated with pregnancy. He gives a vivid account of a woman aged 35 who suffered from epigastric pain, abdominal distension, and belching at the eighth month of pregnancy. He says of the patient: "Having had frequent attacks of gastrodynia on former occasions, she, of her own accord, had immediate recourse to pressure for relief; and placing a silk handkerchief round her body she desired one of her servants to pull it as tight as she possibly could. The wish was complied with, but to an extent that made me fear some injury under existing circumstances. I therefore begged it might be removed. I then prescribed for her a draught composed of Calceined Magnesia, Liquor Opii Sedativus, Spt. Ether, Sulph., and Aq. Cinnamonomi, to be taken immediately, and ordered hot fomentations to the epigastrium. By these means the pain gradually abated." A few hours later labour began and was soon followed by the successful breech delivery of the foetus. An hour after the expulsion of the placenta the patient collapsed. Haemorrhage was suspected, but there was no evidence of its coming from the birth canal. Two days later the patient died, and a post-mortem examination revealed a large unruptured subcapsular haematoma on the superior and anterior surfaces of the liver.

Abercrombie was of the opinion that the damage to the liver might have been caused by the tight bandaging, but that haemorrhage did not occur until the pressure of the gravid uterus on the upper abdomen had been removed. He also put forward an alternative suggestion that haemorrhage took place in a liver that was already so diseased that it was readily injured by the muscular compressions of labour.

Alessandri (quoted by Rademaker, 1943), writing on this subject, agrees that rupture of the liver may occur as the result of violent muscular activity during parturition or during epileptic seizures, but he gives no case report or reference to support his views.

Rademaker (1943) describes the case of a woman aged 32 admitted to hospital in the eighth month of pregnancy with a blood pressure of 260/160 and albuminuria. After a severe bout of vomiting she became collapsed and the diagnosis of a ruptured uterus was made. At operation a rupture of the liver (the exact site is not specified), with blood in the peritoneal cavity, was found. The haemor-

rhage was controlled by a pack, and after a stormy convalescence the patient recovered. In this case hypertension was thought to be the cause.

Rademaker submits the interesting suggestion that sudden death during eclampsia may sometimes be due to a ruptured liver. We doubt, however, whether this speculation can be sustained, for, although scattered areas of necrosis and small subcapsular haemorrhages are not infrequently found in eclampsia, severe haemorrhages of the liver are not a feature of this disease.

Links (1946) describes a case of rupture of the liver during the fourth month of pregnancy. The patient developed acute abdominal pain with signs of blood in the peritoneal cavity. At operation the blood was found to be coming from the foramen of Winslow. On exploring the lesser sac a laceration of the caudate lobe of the liver was seen; the liver tissue itself appeared to be normal. Haemostasis was effected by covering the site of bleeding with muscle tissue. The patient made a good recovery. The cause of the liver damage was obscure, but Links suggests that it may have been due to a transient hypertension.

Conclusion

We have been able to trace three cases of ruptured liver associated with pregnancy, two of which survived as the result of operative intervention. To these three cases we have added a fourth, in which also the patient recovered after surgical treatment.

We believe that in our case the injury was the result of trauma produced by violent contraction of the diaphragm and abdominal muscles during labour. But it is interesting to note that there was also an element of toxæmia, evidenced by the raised blood pressure (found after the initial shock had been overcome) and by the presence of albuminuria. It is probable that this toxæmia produced changes in the liver, making it particularly liable to injury. (The complaint of epigastric pain for one month before parturition and the report on the liver biopsy obtained at the time of operation strengthened this suggestion.) There was, in our case, no evidence of syphilis or other constitutional disease.

Regarding operative treatment, we believe that the application of "oxycel" gauze, fibrin foam, or muscle tissue is preferable to suture. It is also obvious that blood transfusion is an indispensable part of the treatment. Our patient's satisfactory recovery bears out the statement of Rademaker that in cases of liver rupture operation affords a good chance, and probably the only chance, of survival.

Summary

A case is reported of rupture of the liver, with hæmoperitoneum, occurring in association with parturition. Only one comparable case has been found in the literature.

The immediate cause of the rupture was probably the muscular compression that occurs with the expulsive efforts of labour. A predisposing factor may have been the presence of liver damage brought about by pregnancy toxæmia.

The use of the term "spontaneous" rupture is deplored. Liver ruptures may be divided into two main groups: traumatic rupture and hepatic apoplexy—the first usually affecting a healthy liver and the second occurring because of haemorrhage in a pathological liver. A subgroup may be added in which minimal trauma causes rupture of a pathological organ. The case reported may be regarded as an example of this subgroup. This classification of liver rupture might usefully be applied to ruptures of the spleen.

REFERENCES

- Abercrombie, J. (1843-4). *Lond. med. Gaz.* 2, 792.
 Davis, E., and Briél, L. (1906). *Ann. Derm. Syph., Paris*, 7, 642.
 Links, H. (1946). *British Medical Journal*, 1, 275.
 Rademaker, L. (1943). *Ann. Surg.*, 118, 396.

Medical Memorandum

Treatment of a Chronic Typhoid Carrier with Chloromycetin

Good clinical reports upon the use of chloromycetin in the treatment of typhoid fever have naturally aroused interest in the possibility of dealing with the chronic typhoid carrier by similar means. Unfortunately there is no literature available on the efficacy of this form of treatment; nevertheless as a suitable case had recently come under our care it was decided to try the effect of the substance in doses which had been successful in dealing with the acute disease.

CASE REPORT

A child aged 9 years, son of a flight sergeant in the Royal Air Force, contracted typhoid fever in Egypt in June, 1948, from which he made a good clinical recovery, though he was left a chronic faecal carrier. He came under our care in the spring of this year. He was a well-nourished healthy-looking boy. His stools consistently yielded a heavy growth of *Salmonella typhi*, though over 40 specimens of urine were sterile. *In vitro* sensitivity tests with the isolated organism showed it to be very susceptible to traces of chloromycetin: dilutions in excess of 2.5 µg. per ml. inhibited bacterial growth. It was decided to follow a therapeutic course which had been successful in treatment of the acute disease in the adult, using 19.1 g. of chloromycetin in 8.1 days. As the child weighed 4 st. 7 lb. (28.5 kg.) it seemed appropriate to give half the adult dose, which was administered orally in 0.25-g. capsules four-hourly day and night for seven days—a total of 10.5 g. Stools were cultured on alternate days while undergoing treatment, and we were disappointed to find the organism present in all of them: failure was evident before treatment was completed. In view of this finding, a second course, using three times the dose, was instituted—viz., 0.75 g. for seven days (total, 5.25 g.). Stools became negative almost immediately after starting treatment and remained negative until two days after withdrawing treatment, after which he continued to excrete the organism daily in his stools.

While undergoing the course of treatment his blood serum inhibited growth of the isolated organism in dilutions rising from 1 in 2 on the first day to 1 in 32 by the third day. This inhibition of growth disappeared 16 hours after the last dose of chloromycetin was given.

COMMENT

Chloromycetin in doses of 30 mg. per kg. of body weight for seven days has failed to eliminate the organism in a chronic faecal typhoid carrier. This dose is about three times that which has been successful in treatment of the acute disease. The cause of the failure is not clear, especially in view of the marked sensitivity of the organism to chloromycetin *in vitro*. It is possible that much heavier doses for longer periods are advisable. Further clinical trials are necessary before any conclusions can be drawn regarding the efficacy of the substance in treating the chronic faecal carrier.

C. A. RUMBALL, O.B.E., M.R.C.P., D.T.M.&H., K.H.P.,
Group Captain, R.A.F.

L. G. MOORE, M.B., B.Ch., B.A.O.,
Squadron Leader, R.A.F.

R.A.F. Hospital, Halton, Bucks.

In a referendum the Swiss electorate has rejected by a proportionate majority of three to one a controversial law to make x-ray examinations and tuberculosis treatment compulsory. The draft law (according to a B.U.P. report) provided for the periodic examination of the population for tuberculous infection, for the compulsory insurance of the poorer classes against the economic effects of tuberculosis, and for removal to an isolation hospital of sufferers who might endanger others. The law would have been costly: besides its insurance provisions, of which part of the cost would have been borne by the Government and employers, the law required the cantons to contribute to the support of poor families when the wage-earner was suffering from tuberculosis and to pay the costs of x rays when the family concerned had too low an income to afford them. There would also have been the difficulty that many Swiss peasants have never been, and do not want to be, treated by a doctor. A number of Swiss doctors also criticized the draft law, pointing out that people can hardly be compelled to undergo examination and treatment when there is no acknowledged method of either.

Reviews

PROTOZOAN DISEASES

Laboratory Diagnosis of Protozoan Diseases. By Charles Franklin Craig, M.D., F.A.C.S., F.A.C.P. Second edition. (Pp. 384; 56 illustrations and 7 coloured plates. £1 7s. 6d.) London: Henry Kimpton. 1948.

There are few, if any, workers in the United States who have contributed more to the study of amoebiasis than Colonel Craig, and his chapters devoted to this subject constitute one of the best expositions on the laboratory (and certain clinical) aspects of the condition that can be found in the literature. Over one-third of his book is devoted to this subject, which is considered in seven chapters.

The author gives descriptions of over a dozen methods of cultivating amoebae, but very wisely warns the reader that he should concentrate on one technique, and without dogmatism gives an indication of the methods he prefers.

Not long ago an ex-Service contributor of an article on amoebiasis in the *Journal* mentioned that he believed there was a complement-fixation test for amoebiasis. If he reads this book he will see how right he was. Colonel Craig first published the results of his observations on this subject in 1927, and he gives 16 references to other workers up to 1946. Nevertheless, although the test has come of age, it has not, in the reviewer's opinion, reached stabilized maturity. It would be hard to say that it has yet earned a place in the diagnosis of amoebiasis, though Colonel Craig considers that it has. Anyone who proposes to take up work in this line—and there is obviously still room for it—must certainly study this chapter very carefully. The only criticism is that the wartime work at the National Institute of Health has not been given the prominence that it deserves.

There can be no question that a reliable standardized complement-fixation test would be of very great value in this country to-day. During the war hundreds of thousands of our troops were infected with amoebiasis in the India-Burma area; liver abscess is a not uncommon late sequel to this infection; and when this condition is suspected a stool examination is of little value one way or the other. In over 60% of cases amoebae are not found, and when they are found their presence may be incidental. Colonel Craig emphasizes this reason and gives many others—to all of which the reviewer cannot subscribe—for the wider employment of this test.

The other subjects covered are: the leishmaniasis, the trypanosomiasis, malaria, coccidiosis, and balantidiasis. The author's close contact with South America and South American workers has given him opportunities of which he has taken full advantage in the sections on Chagas's disease, and there is much more information on this subject than is found in most other textbooks on protozoal diseases. The other chapters are useful but not distinguished. It is a useful laboratory textbook for reference purposes.

L. E. N.

DICTIONARY OF GENETICS

Dictionary of Genetics. Including Terms used in Cytology, Animal Breeding and Evolution. Compiled by R. L. Knight, D.Sc. Ph.D., A.I.C.T.A. (Pp. 183. \$4.50.) Wallingham, Mass., U.S.A.: Chronica Botanica Company. London: William Dawson and Sons 1948.

Genetics in its earlier years was a highly specialized branch of biology and to a large extent remains so to-day. Its students made up their technical vocabulary as they went along. Sometimes the result was reasonably felicitous, though by no means always: "non-disjunction" stands for a hallowed landmark in the development of the subject, but remains a horrid word. But whether the results were happy or unhappy, the new terms have always been a stumbling-block to those outside the field of genetics, and even geneticists have to pause at times in order to make sure of precise meanings. Different terms have sometimes been coined to describe the same thing, and occasionally a word has been used with different meanings. In short, there is probably no specialty in biology which has

so urgently demanded a dictionary. That dictionary has now been produced, and an admirable volume it is. It is complete—few genetic terms indeed can have escaped definition; the definitions are brief and lucid; there is ample use of cross references. Dr. Knight has produced a volume which, with slight revision in subsequent editions, should remain a standard work for many years to come. It should be included in every biological library.

Dr. Knight has, probably wisely, not felt that it is any part of his task to be critical. He accepts the words in use, or which were previously in use, and defines them all. One hopes however, that in the second edition, perhaps after studying the reactions of geneticists to the first, Dr. Knight may be able to guide his readers to the better use of words. He may indicate for example, that certain alternatives are to be preferred to others, or that certain terms are unnecessary and should not be employed. I have detected only one downright mistake. It is a pity that Dr. Knight gives the sanction of his dictionary to the word "expressivity." The correct word is "expressiveness"—the only form given in the *Oxford Dictionary*. Similarly, the *Oxford Dictionary* gives "recessiveness" and not "recessivity," though Dr. Knight, less than complete for once, does not give either.

There are a few brief appendices. One, on the international rules for symbolizing genes and chromosome aberrations, is particularly useful. A number of statistical formulae are also included. It is perhaps helpful to have the more purely genetical of these in this volume, but one questions the necessity of including such familiar formulae as those for the correlation coefficient or the standard deviation, given, at that, in a form inconvenient for practical computation. This is a trivial point however, and this book can be recommended very warmly indeed.

J. A. FRASER ROBERTS.

NEUROPATHOLOGY FOR STUDENTS

Atlas of Neuropathology. By Wm. Blackwood, M.B., F.R.C.S.Ed., T. C. Dodds, F.I.M.L.T., F.I.B.P., F.R.P.S., and J. C. Sommerville, A.I.M.L.T. With foreword by Professor A. Murray Drennan, M.D., F.R.C.P.Ed., F.R.S.Ed. (Pp. 199; 262 illustrations. 35s.) Edinburgh: E. and S. Livingstone. 1949.

Expositions of pathology in atlas form appear popular to-day. In no branch is such presentation better justified than in the student's point of view than in neuropathology, because fixation of the brain in bulk is usually essential for a satisfactory demonstration of most lesions. But the brain thus becomes divorced from the rest of the necropsy findings, to the detriment of teaching. The atlas carries the additional advantage of being a method for bringing microscopical demonstration into conjunction with the naked-eye appearances. In the present work Dr. Blackwood has enjoyed the expert technical help of Mr. Sommerville and the photographic skill of M. Dodds. The result is a satisfying display of most of the commoner pathological conditions in the nervous system. Many of the most successful illustrations are in colour, as of these the examples of meningitis are specially commendable as life-like representations. In addition to photographs a considerable number of explanatory diagrams have been included.

The general arrangement of the subject matter follows that of Professor J. H. Biggart's *Pathology of the Nervous System*, which, as one of the shorter treatises on this subject is unsurpassed. The student is recommended to use this one of the fuller texts in conjunction with the atlas, since Dr. Blackwood's supplementary notes are in most instances brief. This advice is given in the preface.

DOROTHY S. RUSSELL.

PATHOLOGY FOR STUDENTS

Essentials of Pathology. By Lawrence W. Smith, M.D., F.C.A.P., and Edwin S. Gault, M.D., F.C.A.P. With foreword by the late James Ewing, M.D. Third edition. (Pp. 764; 740 illustrations. \$12.00.) Philadelphia and Toronto: The Blakiston Company, 1012 Walnut Street, Philadelphia. 1948.

The first edition of this book was to a large extent an experiment. To quote the foreword, written by James Ewing, it was a serious attempt "to take the teaching of pathology out

the realm of abstract philosophy and make it an effective force in the professional equipment of the medical student." The method employed was to illustrate the basic text, which was that of a standard textbook, with carefully selected case-histories, complete with histological, clinical and x-ray photographs. Almost every illustration in the book was therefore related not only to the text but to a clinical account of an actual case. The business of correlating the academic pathology of the textbook with clinical observation is for the most part left to the student himself, and this book was the first serious attempt to help him materially in this most difficult task.

The second edition was considerably expanded to deal fully with the principles of general pathology. This greatly added to the value of the book. The number of case reports was reduced by omitting those in which most of the clinical detail was irrelevant to the pathological condition under discussion.

In this, the third edition, the case-history method of teaching has been preserved and the book has lost none of its individuality. Many illustrations have been replaced and sixty-one new ones added, and wherever feasible the case-histories have been condensed. There has been some judicious pruning, and the page size, weight, and number of pages have been reduced. This book will be read with interest and profit by both junior and senior students.

GEOFFREY HADFIELD.

ESSAYS ON ANAESTHESIA

Anaesthesia for the Poor Risk, and Other Essays. By William W. Mushin, M.A., M.B., B.S., F.F.A.R.C.S., D.A. Being included as No. 49 in the American Lecture Series. (Pp. 65. 7s. 6d.) Oxford: Blackwell Scientific Publications. 1949.

In these days of hurry and bustle it is refreshing to note that someone has had time to write a book of essays on a medical subject. The author is to be congratulated on having had the time and ability to sit back and survey the field on anaesthesia from a detached and objective viewpoint. Nowadays it is all too easy for the busy anaesthetist to be so preoccupied with the details of complicated techniques which may be essential to cope with the demands of difficult operations that he loses his sense of proportion and cannot see the wood for the trees. It is salutary to escape for a time from the cramping effects of individual problems and to gaze on the wider aspects of modern anaesthetic practice and teaching.

Dr. Mushin does this in twenty-eight short essays which can be read through at one sitting. The title of the book refers only to the first essay and is thus somewhat misleading. Actually, an immense range of subjects is discussed, and while some readers may not always agree with the author's views on certain controversial matters they will enjoy his method of "debunking" many popular fallacies held not only by some anaesthetists but also by not a few of the less progressive physicians and surgeons.

C. LANGTON HEWER.

Professor E. F. Du Bois in his *Fever and the Regulation of Body Temperature* (pp. 68; 10s. 6d.; Springfield, Illinois: Charles C. Thomas: Oxford: Blackwell Scientific Publications, 1948) gives an excellent survey of the field while sparing the reader the confusion and detail which abound in the voluminous literature relating to thermal regulation. As a professor of physiology, a notable experimenter, and an authority on the topic, Du Bois is well fitted to present this American lecture in physiology. It should be equally appreciated by the student freshly introduced to this subject and the graduate interested in the question of body temperature. The author presents the difficulty of comprehending a "normal" body temperature, with its extensive gradients and fluctuations. The relation between heat production and heat loss with varying environmental temperatures is analysed to show the relative parts played by radiation, convection, and vaporization. The normal balance is compared with that in exercise and in disease, with special reference to the skin, clothing, chills, and tissue metabolism. As one would expect, clinical aspects are not stressed; but clinical details are used for illustration and mention in connexion with fever, fever therapy, cold therapy, and the management of febrile patients. The lecture is short and easy to read, with helpful diagrams and adequate references to original works of significance. "There is much to be learned about fever," but this is an interesting and stimulating précis of what is known.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Sir William Gowers. By Macdonald Critchley. (Pp. 118. 17s. 6d.) London: Heinemann. 1949.

The first biography of the pioneer neurologist.

A Companion in Surgical Studies. By I. Aird, Ch.M., F.R.C.S. (Pp. 1,060. 63s.) Edinburgh: E. and S. Livingstone. 1949.

For the trainee specialist in surgery.

Psychological Aspects of Clinical Medicine. By S. Barton Hall, M.D., D.P.M. (Pp. 416. 21s.) London: H. K. Lewis. 1949.

For medical students

Science for Peace and Socialism. By J. D. Bernal and M. Cornforth. (Pp. 26. 2s. 6d.) London: Birch Books, Ltd.

Describes, among other topics, adverse effects of capitalism on science.

Official History of the War Organisation of the British Red Cross Society and the Order of St. John of Jerusalem. Compiled by P. G. Cambray and G. G. B. Briggs. (Pp. 723. No price.) London: The Red Cross Society and Order of St. John of Jerusalem. 1949.

An account of the extensive and varied wartime work of these two organizations.

Modern Treatment Yearbook, 1949. Edited by Sir C. Wakeley, K.B.E., C.B., D.Sc., F.R.C.S., F.R.S.Ed., F.A.C.S., F.R.A.C.S. (Pp. 338. 15s.) London: The Medical Press. 1949.

Contains 41 articles on present-day treatment.

The Hadamar Trial. Edited by E. W. Kintner. (Pp. 250. 18s.) War Crimes Trials Series. London: William Hodge. 1949.

The trial concerned the deaths of some 400 persons by hypnotic drugs.

The Science and Art of Joint Manipulation. By J. Mennell, M.A., M.D., B.C. Vol. 1. 2nd ed. (Pp. 215. 24s.) London: J. and A. Churchill. 1949.

The first new edition since 1939.

The Story of Scabies. By R. Friedman, M.D. Vol. 1 (Pp. 468. 57.50.) New York: Froben Press. 1947

The first of four volumes of an exhaustive work on scabies.

Thorpe's Dictionary of Applied Chemistry. Edited by M. A. Whiteley, O.B.E., D.Sc., F.R.I.C. 4th ed. Vol. 9. (Pp. 671. 80s.) London: Longmans, Green. 1949

Comprises the sections Oils-Pituitary.

Diseases of the Adrenals. By L. J. Soffer, M.D. 2nd ed. (Pp. 320. 32s. 6d.) London: Henry Kimpton. 1948.

The comparatively recent first edition has been brought up to date.

Duodenal Ulcer. By J. Ruesch, M.D. (Pp. 118. 22s. 6d.) London: Geoffrey Cumberlege. 1948.

Results of an investigation among civilians and naval personnel.

Bailey's Textbook of Histology. By P. E. Smith, Ph.D., and W. M. Copenhaver, Ph.D. 12th ed. (Pp. 781. 38s. 6d.) London: Baillière, Tindall and Cox. 1948.

For first-year medical and dental students.

Estudos sobre la Inmunidade Cruzada. By P. de Góes. (Pp. 352. No price.) Rio de Janeiro: Rodrigues. 1947.

Studies in cross immunity.

Les Acquisitions Médicales Récentes. By R. Debré and others. (Pp. 296. 1,100 francs.) Paris: Flammarion. 1948.

A collection of twenty papers.

Childhood Mortality from Rheumatic Fever and Heart Diseases. By G. Wolff, M.D. (Pp. 63. 2s. 6d.) Washington: U.S. Government Printing Office. 1948.

A short statistical survey covering a three-year period in the United States.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY MAY 28 1949

TUBERCULOSIS IN INDUSTRY

Many of the theories put forward to explain the prevalence of tuberculosis in certain industries are accepted as facts on insufficient evidence. For instance, it is commonly believed that the tuberculous person must be provided with open-air employment, but the experience gained at Papworth Settlement and the British Legion Village at Preston Hall has shown that such conditions of employment are not only unnecessary but are often harmful owing to the strenuous nature of the work and poor working conditions, including exposure to all kinds of weather. Certain trades, too, have been condemned as being unsuitable for the tuberculous on the grounds that there is a high mortality from tuberculosis among the workers. The few studies made on this problem have shown that an increased incidence of tuberculosis among employees often has little connexion with the manufacturing process but is mainly due to domiciliary and industrial environment. A good example of such a trade is that of printing, which when carried out under proper conditions, as found in the workshops of industrial settlements, is one of the most suitable occupations a tuberculous person can follow.

The high death rate from tuberculosis among workers in the boot and shoe industry has been known for over 50 years. The Medical Research Committee (forerunner of the Medical Research Council) published a report¹ on the subject in 1915, but beyond confirming that there was more pulmonary tuberculosis among workers in this industry than in the general population they were able to put forward only conjectures about the cause. In 1947 Smith² published the findings of the mass-radiography survey in Northamptonshire, and again the statistical evidence showed that there was a higher proportion of workers with active tuberculosis in the boot and shoe industry than in other industries in the county. The report by Drs. Alice Stewart and J. P. W. Hughes which appears elsewhere in this issue is a direct outcome of the mass-radiography survey—the work having been undertaken at the request of the industry.

Drs. Stewart and Hughes first turned their attention to proving or disproving two of the commonly accepted opinions about the workers in the boot and shoe industry—that many men of poor physique are employed, and that there is a strong family tradition in the industry, with the result that two or more members of a family are often

employed in the same factory. These terms indeed can be brief and lucid. Dr. Knight has produced in subsequent editions, and that there was some indication that makers are more often interrelated than workers in the area and are more frequently found in tuberculous infection in their homes.

The next step in the investigation was to find out, Dr. Knight infection was spread in the factories, and, if so, how it spread. The incidence of tuberculosis in those factories of different sizes was studied, and it was found that the overall rate of infection was considerably higher in large factories than in small ones. Having satisfied themselves that the difference was not due to the factories employing workers whose age and sex constitution differed from those in small factories, Drs. Stewart and Hughes then compared the working conditions in the large and small factories from reports supplied by factory inspectors. The information obtained was valuable. In 24% of the factories with fewer than 200 operatives the working conditions were not altogether satisfactory, whereas in all the factories with more than 600 operatives the working conditions were well above the average standard. But the study of the results obtained in the mass-radiography survey showed that the incidence of tuberculosis was over four times as great in the large factories with "good" conditions of work as in the small factories where the conditions were not so good.

In a large community more people are at risk than in small community, and Drs. Stewart and Hughes's investigation of the factories according to the number of operatives per room suggests a probable explanation for the difference in the incidence of tuberculosis in large and small factories. All the large factories had more than 60 operatives per room, and 80% of the small factories had fewer than 20 per room. Drs. Stewart and Hughes are careful to state that further work will have to be done before they can be certain that the size of the working unit is the core of the problem. It is clear, however, that workers with active tuberculosis could cause much harm among the young employees from rural areas who are non-infected when they take up work, especially if resistance to infection is lowered by unsatisfactory nutrition, over-fatigue from long journeys to and from work, and poor living conditions. In fact, infectious persons working in a room with 60 or more employees may be the cause of local epidemics of tuberculosis. Such an epidemic in a school in Copenhagen was reported by Hyge³ in 1947 and referred to in an annotation in the *Journal*⁴ some months ago.

The boot and shoe industry is to be congratulated on its admirable collaboration in this important pioneer research. The report now published is a preliminary one and is concerned with conditions in only part of one industry; from the evidence so far collected it would be unreasonable to deduce that in the shoe industry the incidence of tuberculosis is greatly different from that in many other industries. For all we know, similar working conditions in other industries are as likely to favour the spread of tuberculosis among the workers. Surveys carried out at Uxbridge,⁵ Oxford,⁶ and Hull⁷ have shown that considerable numbers

¹ First Report of the Special Committee upon the Incidence of Phthisis in Relation to Occupations, 1915, London.

² *Med. Offr.*, 1947, 77, 109.

³ *Acta tuberc. scand.*, 1947, 31, 1.

⁴ *British Medical Journal*, 1948, 2, 346.

⁵ *Tubercle*, 1946, 27, 114.

⁶ England, N. J., *ibid.*, 1946, 27, 207.

⁷ Hardy, R., *ibid.*, 1948, 29, 8.

the realm of abstract philosophy. The method employed was that of a standard giving every assistance, and by encouraging histories, complete wie findings, has set an example to industry graphs. Almost furthermore, by submitting their problem to related not only they have made the best progress possible actual case. The they have made the best progress possible logy of the eventual solution. part left to serious atte ask.

THE SE VOLUNTARY ACTION IN WAR

With the British Red Cross Society and Order of St. John of the Salem are to be congratulated on the prompt appearance of the official history of their Joint War Organization.¹

It is a document of more than passing interest, for it illustrates on a gigantic scale the nature of the problems which arise in the integration of voluntary and governmental activities in conditions of emergency. The initial aim of the "Red Cross movement"—embodied in the first Convention of 1864—was to ameliorate the conditions of the wounded and sick in armies in the field. Other objects, added later and without weakening the primary purpose, have included the care of prisoners in time of war, the improvement of health, the prevention of disease, and the mitigation of suffering. The Red Cross and St. John organizations in this country became the national representatives of a movement which in its ideals is supranational and in privileges international—with the notable exception of Japan in the last war.

Inevitably the first impression gained from this record is the size of what was done. The Joint War Organization began the war with a fund of £2,000, contributed equally by its parent bodies. It ended with an expenditure of £64 millions—the largest charitable fund ever collected in Great Britain. Of this enormous sum, over £20 millions came from penny-a-week collections, which from January, 1944, onwards were yielding £500,000 or more per month. On the disbursement side, £51 millions was spent on current war services during the lifetime of the organization, and the balance of £12½ millions was handed over to the parent bodies for expenditure over a longer period for purposes permitted by the War Organization. A rough indication of the scope of the different services provided can be obtained from the outlay on them. Services for the wounded and sick of British and Empire Forces absorbed £17 millions; for British and Empire prisoners of war, £14 millions; for Allied Forces, £5 millions; and for civilian relief overseas, £13 millions.

The record neither conceals nor over-emphasizes the difficulties which arose. It was a general and logical policy that, whereas it was for the Service and civilian departments to provide for basic needs, it was the business of the War Organization to supplement. In addition to comforts, this included on the hospital side "additional stores . . . ambulances, x-ray apparatus, and the like . . . convalescent hospitals for officers, and convalescent homes and auxiliary hospitals for other ranks." From the nature of this specification it can be judged that there was often considerable uncertainty about the extent of the task confronting

the War Organization. For example, by March, 1940, the War Organization had 20 ambulances in France—the intention being that Army ambulances should be relieved for work in the forward areas. By the middle of May the D.M.S. was pressing the Commission in France for further ambulances; but when the existing vehicles were abandoned and their personnel evacuated in the following months the negotiations with the War Office, which were begun in the preceding November, were still not concluded. In June of the same year—the time of Dunkirk—an offer of 100 ambulances was made and accepted for service with the Home Forces, and by December, 1941, the total was 239. In the evidently delicate matter of supplies to Service hospitals it took some months before "the happy medium" was reached. This was an arrangement by which a D.D.M.S. might forward indents directly to the War Organization and which officially encouraged liaison with "Red Cross" officers in Commands. It was at first thought that motor x-ray units would not be required: later a request was made for 20.

In the provision of additional hospital and convalescent facilities there was a precedent from the 1914–18 war, when "an extensive system of auxiliary hospitals . . . for officers and other ranks" was established. It was at first suggested that convalescent homes for officers would be all that was needed, and that six with about 100 beds each would be sufficient. In March, 1940, it was stated on behalf of the Ministry of Health that the War Organization would probably not be asked to establish auxiliary hospitals. Later the War Organization was asked to "obtain, adapt, and equip suitable buildings as convalescent homes for other ranks," with a target first of 10,000 beds, then 20,000. Later still it appeared that "as between auxiliary hospitals and convalescent homes there would be little or no difference of staffing and equipment"—due, in part, to great emphasis on rehabilitation. The directory of convalescent homes and auxiliary hospitals, as finally established, runs to six closely written pages in an appendix to this volume. The number of beds equipped reached 14,000, that of beds occupied just over 8,000—a by no means insignificant addition to total hospital services.

The failure of the Japanese Government to abide by its undertaking to observe the provisions of the Prisoners of War Convention—which, however, it had never ratified—was the outstanding and tragic feature of the prisoner-of-war services. In the "occupied territories" the Japanese High Command was "the sole unquestionable authority." This explanation cannot, however, be invoked in the case of Japan itself. Notification of camps was not made to the delegates of the International Red Cross Committee: and, where only forty-two prisoner-of-war camps had been known, there were found after the surrender to be more than one hundred. Similarly, "information about the receipt of relief came almost wholly from prisoners themselves after their liberation": there were no camps where more than irregular, and even solitary, issues had been made, but when concealment was no longer possible "quantities of relief supplies were brought to light."

Other services can be mentioned only briefly. Those for British civilians raised a number of problems without precedent. In this category were members of the Forces

¹ *The Official Record of the Humanitarian Services of the War Organization of the British Red Cross Society and Order of St. John*, compiled by P. G. Cambrey and G. G. B. Briggs. Methuen. London: Red Cross and St. John, 1945.

dissimilar contemporaries." On the other side Professor R. B. Onians⁶ pointed out that fees provide a very small part, and endowments and public funds a very large part, of the capital value and running costs of a university, and "justice and the national interest demand that university education be given to those who bring to the university not mere fees but gifts of mind and personality most worthy of development." Professor J. D. Bernal⁷ gave it as his opinion that the policy of providing university education for all students who can profit by it will not lead to a lowering of the standard of entrance, and he stated that even with the post-war expansion barely one child in 40 in this country has a chance of university education. "This," he writes, "is one of the lowest proportions in Europe, and a quarter of what it is in the U.S.A."

One method of easing the pressure on the universities was mentioned in the *Journal* recently by Professor L. J. Witts⁸ in a review of a book entitled *The Problem Facing British Universities*. The need for more scientists might be met by a more ruthless separation of university and technical education and the creation of more technical colleges. So far as medical students are concerned he suggests that the Oxford and Cambridge practice of preclinical education within the university followed by clinical work in autonomous teaching hospitals may become the pattern for medical education in Britain.

ACUTE INFECTIVE POLYNEURITIS

The cause of acute infective polyneuritis is still unknown, but the signs on which to make a diagnosis are reasonably clear. A mild upper respiratory infection often precedes the onset of the neurological disease. There is a fairly rapid development of symmetrical flaccid paresis, usually starting in the legs and ascending to the trunk and arms, and often accompanied by considerable muscle pain and paraesthesiae. In some cases the paralysis affects the proximal more than the distal muscles of the limbs. Sense of position and stereognosis are frequently more severely disturbed than is cutaneous sensation, though some diminution of sensation over the glove-and-stocking areas can usually be demonstrated. Bilateral facial weakness occurs in a number of cases, but involvement of other cranial nerves, causing palatal and pharyngeal weakness and external ophthalmoplegia, is much rarer. In the majority of cases neurological disability reaches its maximum in two to three weeks or less, and gradual improvement then takes place, with eventual complete recovery.

One of the problems connected with this disease is its nomenclature: a recent review¹ mentions 30 different names which have been given to it. In France and to some extent in the United States the eponym Guillain-Barré syndrome is used, since these authors² in 1916 described two cases, stressed the good prognosis, and drew attention to the finding of a high protein content in the cerebrospinal fluid without any increase of cells. Clinical descriptions had been published previously,^{3,4,5} but the cerebrospinal fluid findings were not reported. Detailed case histories appeared in British journals in 1917⁶ and 1918.⁷ The stress which some authors have laid on the

albumino-cytological dissociation in the cerebrospinal fluid as a diagnostic point is not justified; in Bradford's⁷ cases, which were clinically similar to those of Guillain and Barré, the protein content was normal, while in such conditions as diabetic and diphtheritic neuritis the C.S.F. protein may be raised.^{8,9,10} It is possible, though not yet proved, that the raised protein indicates involvement of spinal roots; it is certainly not indicative of any particular reason for such involvement.

Histological investigations have revealed changes in the anterior horn cells¹¹ in addition to degeneration in spinal roots and peripheral nerves, and for this reason the term "neuronitis" has been used to describe the disease. No infective agent has yet been demonstrated. Guillain and Barré's views on the invariably good prognosis have not been confirmed, since a proportion of patients die of respiratory paralysis in the acute stage, while in a small number the disease becomes chronic, with long-standing muscle-wasting and weakness. Children are occasionally affected,¹² and in them the prognosis is said to be more favourable than in adults. Acute infective polyneuritis is the commonest cause of the syndrome to which the name Landry's ascending paralysis is sometimes given, though there is some reason¹³ to believe that Landry's original patient was suffering from the polyneuritis of acute beriberi, and other pathological conditions such as poliomyelitis and porphyria may cause the same symptoms.

CHLORAMPHENICOL (CHLOROMYCETIN) AND CHOLERA

Evidence is accumulating that chloramphenicol is of value in the treatment of typhoid. Woodward and his colleagues¹ have reported on its use in the Tropics, and Murgatroyd² has recently recorded in this *Journal* a case successfully treated with the new antibiotic in this country. Bradley³ also has given an encouraging preliminary account of its employment under controlled conditions in the epidemic at Crowthorne, in Berkshire. Elsewhere in this issue Rumball and Moore report their lack of success in the treatment with chloramphenicol of a chronic typhoid carrier. Gauld and his collaborators⁴ now bring forward evidence to show that chloramphenicol is active against cholera vibrios. Mice injected with cholera vibrios and given chloramphenicol by mouth within two hours of infection were practically all saved—only 3 died of the 120 mice so treated—whereas 25 of 60 mice treated with sulphadiazine succumbed, and 22 of 30 controls given no treatment at all. In the application of these findings to human cholera it must be recalled that it is not possible to reproduce the human disease in laboratory animals. Intraperitoneal injection of large doses of vibrios in mice causes peritonitis and septicaemia, but the vomiting, diarrhoea, and extreme dehydration characteristic of cholera in man are lacking. In human cholera the vomiting might make the administration of the drug by mouth impracticable and it might be necessary to give it parenterally. Indeed, it is probable that if chloramphenicol proves of use in the human disease its principal value may be as a prophylactic during epidemics. In the next outbreak of cholera chloramphenicol should certainly be given to exposed contacts in order to appraise its value for this purpose.

Professor Geoffrey Jefferson, F.R.S., will deliver the Lister Oration on "The Mind of Mechanical Man." before the Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., on Thursday, June 9, at 5 p.m.

¹ Dempsey, W. S., Karnosh, L. J., and Gardner, W. J., *Dis. nerv. Syst.*, 1948, 9, 67.
² Bull. *mém. Soc. méd. Hôp., Paris*, 1916, 40, 1462.
³ Osler, W., *The Principles and Practice of Medicine*, 1892, New York.
⁴ Buzzard, F., *Brain*, 1907, 30, 1.
⁵ Laurana, A., *Gaz. méd. Nantes*, 1908, 26, 730.
⁶ Holmes, G., *British Medical Journal*, 1917, 2, 37.
⁷ Bradford, J. R., Bashford, E. F., and Wilson, J. A., *Quart. J. Med.*, 1918, 12, 88.
⁸ Perkins, R. F., and Laufer, M. W., *J. nerv. ment. Dis.*, 1946, 104, 59.
⁹ Leigh, A. D., *Lancet*, 1948, 1, 277.
¹⁰ Rundles, R. W., *Medicine, Baltimore*, 1945, 24, 111.
¹¹ Roseman, E., and Aring, C. D., *ibid.*, 1941, 20, 463.
¹² Howard, J. E., and Friedman, V., *Canad. med. Ass. J.*, 1948, 58, 577.
¹³ Brown, M. R., *Arch. Neurol. Psychiat.*, 1938, 40, 800.

¹ *Ann. intern. Med.*, 1948, 29, 131.
² *British Medical Journal*, 1949, 1, 851.
³ *Lancet*, 1949, 1, 869.
⁴ *J. Bact.*, 1949, 57, 349.

RESEARCH ON VITAMIN E. INTERNATIONAL CONFERENCE

An International Conference on Vitamin E, organized by Professor K. E. Mason, was held recently at the New York Academy of Sciences. About 60 papers were contributed on the morphological lesions in vitamin-E deficiency, the part played by the vitamin in enzyme systems, its protective action under conditions of metabolic stress, its significance in practical nutrition, and its possible value in clinical medicine. While many interesting additions to our knowledge of the mode of action of the vitamin in experimental animals were presented, the conference remained undecided on the efficacy of vitamin-E therapy.

Enzyme Systems

It has long been known that when the muscles of vitamin-E deficient animals are incubated *in vitro* they respire more rapidly than tissues from normal animals. Hickman and others have held therefore that vitamin E has a general role as a "mentor" preventing oxidation in the tissues from proceeding through normal channels. Observations that α -tocopherol phosphate inhibits several enzyme systems might seem to support this view, but Ames and Risley have commented that the phosphate radical and not tocopherol may be responsible for the inhibition, while the detergent action of the compound introduces another complication. According to Miller and his colleagues, however, the acetate of tocopherol has the same effect as the phosphate in inhibiting hyaluronidase, while Zierler *et al.* found that tocopherol in the uncombined form inhibits trypsin. These workers noticed that rats given large doses of α -tocopherol phosphate became drowsy within a few hours; when they were killed in this condition the rates of oxidation of the tissues *in vitro* were abnormally slow. Boyer agrees with the conclusion that the inhibitory action of α -tocopherol phosphate on the succinic dehydrogenase system of heart and liver is due to its detergent power, and has observed similar inhibition with dodecyl sulphate, a detergent bearing no chemical relation to vitamin E.

Experimental Animals

In middle-aged female rats Kaunitz and his colleagues found that the tendency of the oestrous cycle to lengthen from 4 days to as much as 17 days could often be corrected by giving tocopherol in amounts ten to twenty times greater than those required for young rats. The same treatment also improved the fertility rate, which decreased progressively with age in animals receiving normal amounts of the vitamin. On the other hand Telford found that deprivation of vitamin E decreased the incidence of artificially induced lung tumours. Evans confirmed that the muscular dystrophy caused by vitamin-E deficiency was accompanied by neural lesions, with demyelination of the spinal cord. In reaching the same conclusion Mason found that oxidized lard, although highly toxic to rats, was less toxic than fresh lard in causing neural lesions. Lecoq and Idor found changes in the haematopoietic organs of deficient rats which may indicate a defence mechanism against anaemia. In studying the significance of protein in vitamin-E deficiency Moore found that an adequate casein allowance ensured rapid growth in young rats even when abnormalities in the incisor teeth plainly indicated deficiency of vitamin E. The administration of tocopherol ensured normal teeth even in rats stunted by severe protein deficiency. Interaction between protein and vitamin E was shown by a slight improvement in growth when rats moderately deficient in protein were dosed with tocopherol, and also by a clear superiority in the teeth of rats deprived of vitamin E but given adequate protein as compared with those of animals deprived of both nutrients. Animals revived for long periods on a diet extremely low in protein when tocopherol was administered, but died with massive cirrhosis of the liver, as described by previous workers, when vitamin E was given. No liver abnormalities were found in vitamin-E deficiency when the protein intake was adequate; deficiency of protein with the administration of tocopherol used severe fatty infiltration in the liver in spite of the good general health of the animals. Hove reported that rats deficient in both protein and vitamin E developed zonal necrosis of the liver and fatal lung haemorrhages within two months, and that

these lesions occurred after only three to four weeks if the animals were dosed with carbon tetrachloride, benzene, or alloxan. The injuries were prevented by tocopherol or by an adequate protein allowance, but casein oxidized by treatment with hydrogen peroxide was ineffective, as also were cystine, methionine, and tryptophan.

Schwarz claimed that three fundamentally different types of fatal liver injury may be produced in rats (1) by giving a diet containing casein treated with alkali, (2) by feeding large amounts of cod-liver oil, or (3) by using dried yeast, which is deficient in sulphur-containing amino-acids, as the source of protein. When cod-liver oil was given in conjunction with yeast protein, death occurred from severe degeneration of the heart and acute oedema of the lungs before the liver changes had time to develop. Lesions caused by restriction to yeast protein could be prevented by cystine or methionine, while tocopherol prevented all the lesions mentioned. György and Rose found that the red blood corpuscles of rats kept on diets deficient in vitamin E, even for short periods, were rapidly haemolysed either on injecting the animals with alloxan or its reduction products or on treatment of the corpuscles *in vitro* with dialuric acid. While tocopherol prevented the tendency to haemolysis, it did not prevent the development of diabetes.

Farm Animals

Experiments on farm live stock have suggested that deficiency of vitamin E in the pregnant female does not cause resorption of the foetuses or abortion, although the vitamin is important in maintaining the health of both young and adult animals. In bovines kept on a deficient diet, consisting mainly of rice straw, Gullikson noticed no failure in spermatogenesis, nor in the size or vigour of calves which were carried to term. A high proportion of the heifers, however, died suddenly, usually during or shortly after pregnancy; one bull also succumbed. Electrocardiograms taken at frequent intervals suggested that the deaths were due to heart failure. Carpenter and Lundberg observed that the incidence of "baby pig disease," which is probably a virus disease of the influenza type, was significantly reduced by supplementing the sows' diet, which was of good quality, with additional allowances of tocopherol. Loosli found that the lambs of ewes kept on a diet of alfalfa hay and beans developed a muscular dystrophy which could be cured or prevented by tocopherol. Although the diet was not deficient in vitamin E, the levels of tocopherol in the blood plasma of untreated animals were abnormally low.

Loosli also confirmed the effect of tocopherol in improving the storage qualities of the body fat; in cows' milk the tendency to the development during storage of an objectionable flavour due to oxidative changes was checked. These observations may be correlated with the investigations of Dam, in which peroxidized fats have been detected in the adipose tissues of rats and chicks given diets deficient in vitamin E and containing large amounts of cod-liver oil.

Human Investigations

Quaife, Swanson, and Harris, in a study of the distribution of tocopherol in cases of accidental death, showed that most of the human body's stores of tocopherol, amounting to 3.5-8 g., were in the fat deposits. They estimate the daily intake of vitamin E in America at 10-25 mg., which is in substantial agreement with Engel's estimate of 15 mg. for the population of Holland. These data imply that vitamin E is quantitatively important as a constituent of the unsaponifiable fraction of human fat, approaching cholesterol in amount. Darby and his colleagues have found that the level of tocopherol in the blood plasma is influenced by disease, being lowered in conditions associated with an impaired absorption of fat and raised in metabolic disturbances characterized by hypercholesterolaemia. Normal values were found in women who had recently aborted, but Scrimshaw, Greer, and Goodland observed low levels in women who aborted between the seventeenth and twenty-fourth weeks of pregnancy as compared with those of pregnant women who did not abort during this period.

Claims that vitamin E is effective in the treatment of heart disease, of thrombophlebitis, arteriosclerosis and thromboangiitis obliterans, and of burns were put forward by E. V. and W. A. Shute. No controlled investigations were undertaken

by these workers, and critics suggested that the frequent occurrence of spontaneous remissions or cures could not be overlooked. The same criticism may perhaps be applied to several other investigations. Thus Ant and di Cyan formed the impression that in 100 cases of rheumatic diseases treatment with vitamin E mitigated pain, improved the mobility of the joints, and caused the regression of nodules and the reduction of swellings. Steinberg noticed improvement in 37 out of 40 cases of Dupuytren's contracture of the fingers after treatment with tocopherol, although he had no success in treating disseminated lupus erythematosus, diffuse scleroderma, or dermatomyositis. Scott and Scardino found that about 40% of their cases of Peyronie's disease, with painful erections and abnormal curvature of the penis, were improved. Pennock thought that vitamin E was possibly of value in treating six cases of thromboangiitis obliterans. Scardino and Hudson considered that some benefit was obtained in about half the cases of urethral stricture which they treated with vitamin E. Stritzler reported improvement in 14 cases of stasis dermatitis and in 11 out of 13 cases of stasis ulceration. Investigations by Dowd deserve attention on account of his impressive claims and his caution in using a control group of patients. After treatment with vitamin E all members of a group of 18 children with chorea, aged 6-17 years, were cured of choreiform motions, and their sleep and appetite were improved; out of 17 untreated subjects only two showed similar improvement.

The claims that tocopherol is valuable in the treatment of heart disease were contested by Travers and her colleagues, who found no differences in the serial electrocardiograms, exercise tolerance tests, or blood-pressure readings in groups of patients with heart disease treated or not treated with tocopherol. Donegan, too, had equally negative results in the treatment of cardiovascular diseases. Baer, Heine, and Gelfond examined patients with angina pectoris, hypertensive heart disease, and cardiac failure by physical examination and by electrocardiograms and ortho-diagrams over periods of three to six months. Treatment with α -tocopherol was invariably ineffective in causing improvement in the electrocardiograms or in decreasing the size of the heart. In the few patients in whom angina pectoris appeared to be improved equally favourable results were later obtained by the administration of a placebo.

Vogelsang claimed that when adult diabetic patients were given vitamin E their insulin requirements were decreased, and that after treatment for a year insulin was often no longer necessary. In contrast to a claim by Butturini, tocopherol did not decrease the blood sugar in normal subjects. In juvenile diabetic patients Guest observed no improvement after treatment with tocopherol.

POSTGRADUATE MEDICAL EDUCATION NEW JOINT BOARD

A Joint Board has been established by the Royal College of Physicians, the Royal College of Surgeons, the Royal College of Obstetricians and Gynaecologists, and the British Postgraduate Medical Federation. As announced briefly last week (1917), the Board, under the chairmanship of Sir John Anderson, has been set up in order to effect co-operation between the three Colleges and the Federation in providing postgraduate education in the medical and dental specialties. The Joint Board is to consider existing provisions for the postgraduate education and training of specialists, and to invite the attention of medical schools and institutes, hospital authorities, and other bodies providing postgraduate medical education to such modifications as may from time to time appear desirable.

Since its establishment the Joint Board has paid particular attention to the procedure for giving postgraduate students advice on suitable hospital appointments and programmes of study. For this purpose the services of the staff of the central office of the Federation are available, and each Royal College has arranged to provide expert advice and guidance for suitable candidates for its higher qualifications and for other graduates visiting this country for the purpose of further study. In addition a small central advisory committee has been formed to assist the central office of the Federation to deal with other postgraduate students and to consider problems of common

interest. The Board is concerned especially to establish co-operation with medical schools, boards of governors of teaching hospitals, regional boards, and hospital management committees in order that potential specialists may obtain suitable hospital appointments. It is hoped that the new arrangements may prove of value not only to graduates of the United Kingdom but also to those from universities overseas.

LEPROSY IN THE BRITISH EMPIRE LONDON EXHIBITION

The "Belra" (British Empire Leprosy Relief Association) Exhibition at the Academy Hall, Oxford Street, London, was opened by the Prime Minister on May 13. The exhibition, which is designed to bring home to the public the incidence of leprosy throughout the world, and especially in the British Empire, is far more than a collection of pictures. An African hut, made of real Nigerian mud, with palm-mat roofing, shows the type of home normally shared by a family of nine or ten people. The incidence of leprosy in different parts of the world is shown by relief maps. The history of the disease is also traced from the earliest records of its incidence in the Nile delta. A large-scale replica of the famous Itu colony, started by Dr. McDonald and his wife in Southern Nigeria twenty years ago, is another interesting exhibit; it shows a doctor, a nurse, and two assistants, who were responsible for treating over 5,000 in-patients. Stress is laid on the increasing number of cases of leprosy in Great Britain. The medical secretary of the association, Dr. Gordon Ryrie, stated at a press conference that he knew of over 50 detected cases, and that there are almost certainly as many more unknown to his association. This increase is due to the return of Servicemen and prisoners-of-war from abroad, to the arrival of both British and Eurasians from India and Pakistan, and to the presence in this country of a much larger number of foreigners than before the war. Dr. Ryrie pleaded for a section of a modern hospital in London where these patients could receive treatment under a whole-time leprosy expert. All the facilities of modern laboratories would then be available for the study of the newer drugs, and postgraduate courses could be arranged for doctors and nurses.

THE MEDICAL ART SOCIETY EXHIBITION [FROM OUR ART CRITIC]

Judging from the Medical Art Society exhibition, which is on view at Walker's Galleries, 118, New Bond Street, London, W.1 until June 2, doctors are apt to pack their paint-boxes in their holiday suitcases and appear to find landscapes a pleasant retreat from surgeries full of their fellow creatures. Some are technically expert, some less so; but evidently they have all enjoyed themselves.

Perhaps the biggest difficulty for an amateur painter is to decide just what he really wants to make of a picture. Pictures after all, can be so many things: a sketch to remind you of a pleasant holiday, an accurate representation carefully carried out or something quite new and of its own, the result of looking at familiar objects as if for the first time. The majority of the doctors showing their work in this exhibition set out to record a scene, but a few here and there seem to have attempted the far more absorbing and fruitful task of seeing. Mr. Frank Forty, for instance, in his two canvases "Pont de la Concorde" (35) and "Sheephaven, Co. Donegal" (29) has created scenes consistent within themselves. His "Thames at Richmond" (21) was a more difficult subject, and here he has not been so successful in bringing the various parts into harmony. Dr. Edith R. Magill's "On the River Test near Houghton Village" (1) is an extremely sensitive picture which has caught the subtle play of tones between water, trees, and sky. Dr. L. Woodhouse Price's "A Surrey Barn" (13) has also a harmonious composition. Dr. Norman Patterson enjoys the texture of paint, and in "Pyrus Floribundus" (43) has used it to good effect. His "Glass Ball and Oranges" (67) is an interesting but rather less successful effort. Among the water colours, Dr. E. Goodwin Rawlinson's "Near Watford" (99) has an almost Chinese

restraint, and Dr. Henry Wilson's "Rainy Evening, Islington" (100) has exactly the glistening shimmer of a wet London night that can often make magic of the dreariest streets.

There are other exhibitors who have tried to create something but seem to have had difficulty in deciding just what was important in their compositions. For instance, Dr. Francis Roles has two paintings of the Thames (36, 55) which look restless because there are no predominating lines or colours. This fault may have come from too much preoccupation with technique, so that simplicity has been lost. Another artist who appears to have become too preoccupied with technique is Dr. Lorna King, whose exhibits last year were more spontaneous than her present Kentish landscapes (4, 9).

Among some traditional and extremely competent paintings are Mr. T. Holmes Sellors's "Winter, 1949" (75), Dr. R. Foster Moore's "Laksfors, Norway" (93), Dr. Reginald Morshead's "In Holmwood Park" (106), Dr. Hugh S. Stannus's "The Coast Path, Jersey" (109), Dr. C. Branwell's "Harvesting in Cornwall" (32), Dr. R. A. Beaver's "Porte de Halles, Brussels" (50). Sir Henry Bashford as usual has produced three very individual compositions which are not so intricate as at first sight they appear. His "Autumn Evening, Wiltshire" (122), for example, is almost as simple a composition as Dr. J. D. W. Pearce's delightfully naive "Early Morning in Tessin" (17).

On the whole the doctors seem to have cast their vote for Munnings against the moderns; the few who have not done so do little credit to modern art. Dr. W. J. Benzimra in "Still Nature" (53) has produced an attractive painting with colours derived from Gauguin, but those who show signs of being influenced by anyone of a later period than the impressionists seem to have reached the facile conclusion that anything dragged up from their subconscious minds is worthy to be put on record!

As the titles of the pictures show, landscapes predominate in this exhibition. It is remarkable that hardly anyone has thought of painting familiar objects in homes and surgeries. Dr. Cecil M. Ruben in "Daily Event" (16) has attempted a difficult domestic scene not unsuccessfully; but there must be many unexplored possibilities in medicine bottles, "old crocks" in waiting-rooms, laboratory benches, or—an obvious subject which has been almost entirely neglected—the human form.

ROYAL MEDICAL FOUNDATION OF EPSOM COLLEGE

PENSIONS, SCHOLARSHIPS, GRANTS

The Council of Epsom College invites applications for a "Hadlow" pension of £70 per annum for a medical practitioner or the widow of a medical man fully 60 years of age, and one or two St. Anne's Scholarships for girls attending Church of England schools. Candidates must be fully 9 years of age and the orphan daughters of medical men who have been in independent practice in England or Wales for not less than five years. The value of each scholarship is dependent upon the means of the applicant and the locality and fees of the school selected.

There are also available: (a) pensions for necessitous medical men fully 55 years of age, provided they have been registered for five years, for the widows of medical practitioners fully 60 years of age, and for the spinster daughters of medical practitioners of 55 years and upwards. Awards are made as vacancies occur. (b) Scholarships and grants for children of either sex, not necessarily orphans. Candidates must be of public-school age and in need of such help. (c) Grants from the Eastes Trust for the relief of registered members of the profession of any age, their widows and orphans, and for the educational assistance of their daughters or sons.

Full information and forms of application are available, on request, from the secretary, Epsom College, Surrey.

The Ministry of Health has appealed to hospital boards and management committees to start National Savings groups and to increase the activities of those in existence. Information can be obtained from the local Assistant Commissioner for National Savings, whose district office address can be obtained from the telephone directory under "National Savings Movement."

Preparations and Appliances

"PERSPEX" OXYGEN TENTS

Dr. G. M. KOMROWER, visiting paediatrician, Royal Manchester Children's Hospital, writes: Considerable effort has been made in recent years to improve oxygen therapy, but not many efficient and cheap appliances that can be used for neonates and infants have been produced. With the assistance of Peak Plastics, of Manchester, I have evolved two types of perspex oxygen tents. The first (Fig. 1), which is a total cover,

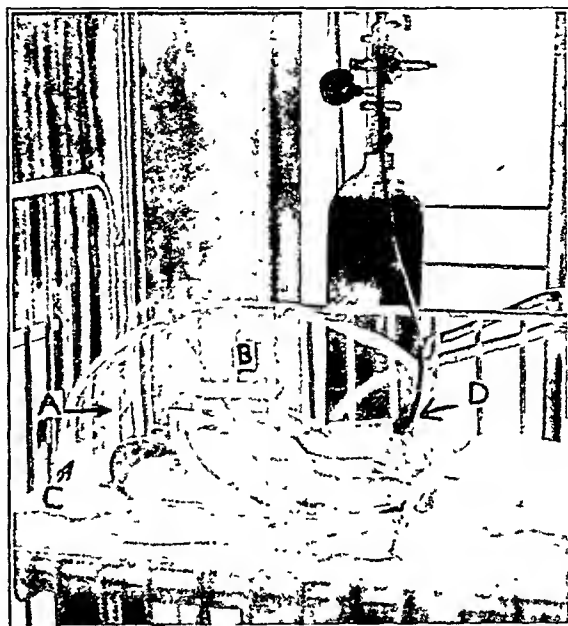


FIG. 1.—"Total cover" type of oxygen tent.

measures 26 by 14½ by 11½ in. (66 by 36.8 by 28.5 cm.) and has been found most useful for premature and newborn infants. The second type (Fig. 2) covers the head and shoulders and has a skirt attached around the opening (E) to minimize oxygen loss. This type is made in two sizes, the larger measuring



FIG. 2.—Bell-tent type.

24 in. (61 cm.) in diameter by 12½ in. (31.5 cm.) in height, and the smaller 18½ in. (47 cm.) in diameter by 11 in. (27.5 cm.) in height. The tents are blown; this eliminates any riveting, and consequently they are inexpensive, unbreakable, and easy to wash and keep clean.

We find that an oxygen concentration of 40% can be achieved by running at 4 litres a minute for 30 minutes and then reducing to 2 litres (oxygen inlet D).

As perspex is a poor conductor of heat, the cot should first be heated by an electric pad or hot bottles and the temperature then maintained by the latter if necessary. In this way it should be possible to avoid the simultaneous use of oxygen and an electrical appliance, and thus the danger of explosion should be averted. The oxygen can be used direct from a cylinder or passed through coils which are surrounded by ice, and if a high humidity is required it could be bubbled through a water-bottle. Excess humidity can be dealt with in one of two ways: (1) opening outlet A and blowing oxygen through quickly for 10 minutes, or (2) the use of soda lime in container B. This will deal also with any possible increase in concentration of carbon dioxide.

The great advantages of the tents are: (1) the excellent view one obtains of the infant; (2) they are easy to handle, and can be disinfected with "dettol" solution, weak potassium permanganate, or mercuric iodide solutions; (3) they are very durable and cannot be damaged easily; and (4) they are very light and can be removed without any effort by the handles (C). It is suggested that the "total cover" tents be mainly reserved for premature and neonate infants, the smaller bell-tent for infants up to 10 lb. (22 kg.), and the larger for infants up to 16-17 lb. (35-37 kg.).

Nova et Vetera

THE MEDICINE OF MACROBIUS

The number of authors who attain immortality at second hand because their names have been mentioned by better writers is large. One of these unread immortals is Ambrosius Theodosius Macrobius. It is certainly a good mouth-filling name, but that would not have saved him. Macrobius, *tout court*, is read every year by thousands because it occurs twice in Boswell's *Life of Johnson* (see Powell's revision of Hill's edition, Oxford, 1934, vol. 1, p. 59; vol. 3, p. 25). Johnson surprised his teachers when he came up to Oxford as a lad by quoting Macrobius, and Boswell many years later quoted Macrobius to the doctor. We are not told what passage Johnson quoted to the Oxford dons, but may be sure it was not the one Boswell quoted, which the chaste editors of Boswell left in the obscurity of a learned language. Macrobius was edited by a learned German in the middle of last century (*Macrobii Ambrosii Theodosii, Opera quae supersunt*, ed. Ludovicus Janus. 2 vols. Quedlingburg d Leipzig, 1852), and embedded in much dullness one finds nothing of medical or at least physiological interest.

Historians of literature have not much to say of Macrobius. He was apparently a contemporary of the great Augustine of Hippo, and he may have been a very important person—a man of the same imposing name certainly was—but the case is made doubtful by the fact that to be a high imperial officer at that time it would have been necessary to be a professing Christian, and nothing in Macrobius's writings suggests that he was a Christian. It is probable that Macrobius, like Augustine, was a North African, and certain that, unlike Augustine, he was a good Greek scholar. The first volume of von Jan's edition may be left to philologists.

The second volume, containing the *Saturnalia*, is much better reading for an amateur. The plan is that a party of friends shall pass the Saturnalian public holidays as what the British Broadcasting Corporation would call a Brains Trust, discussing questions of general interest. Since Plato's day it was a favourite scheme, and, although schoolmasters would not think much of Macrobius's latinity, he carries out the plan with a good deal more vivacity than Cicero showed. He gets on good terms with

the reader quite early. When the friends are assembled a visitor is announced who is not pleased to find a party and says rather cattishly that he hopes he is not intruding on some secret meeting. Thereon one of the party remarks that certainly there are no secrets and, indeed, that he follows the rule *Sic loquendum est cum hominibus, tanquam dii audiant; sic loquendum cum diis, tanquam homines audiant*. This may be borrowed, but the learned editor does not say so; anyhow, it is a good phrase. The party then settles down to an account of the origin of the Saturnalia and other archaeological and philological matters, and next (after dinner, by the way) to the goodness or badness of jokes. Some of the jokes do not seem very funny, but the learned editor does now and then introduce a note of unconscious humour. One of the jokes is the story of Augustus, who, seeing a young man in Rome much like him said: "Was your mother ever in Rome?" and received the reply, "No, Caesar, but my father often was." The editor has a footnote pointing out that this was an aspersion on the legitimacy of the emperor. Eventually the brains trust settles down to medical or physiological questions; it is this part—from chapter 4 of the seventh book to the end—which has medical interest. The radio doctor is Disarius, a Greek who is treated with that mixture of respect and faint mockery which is in the Roman tradition.

The first question proposed is whether a simple or a complex diet is the more hygienic. The doctor leads off with a plea for simplicity; he remarks that cattle fed on simple diet are much healthier than human beings, but those fattened on mash (*offa compositae*) do suffer from diseases. Then no doctor would give a patient in a fever anything but a simple diet. Again everybody knows that mixing drinks is unsound.

These are matters of observation, but scientific reasoning leads to the same conclusion. There are four stages of digestion (we should say assimilation)—the coction in the stomach, the change into blood by the liver, changes in and transport by the blood vessels to the tissues, and, finally, assimilation by the tissues. But if the stomach has to deal with a great variety of foodstuffs, some needing more, some less coction, there is likely to be more trouble than when the diet is simple: the wrong ingredients may reach the tissues and the result may be humoral changes which produce gout and rheumatism.

This exposition (of course it is much longer than this abstract is well received, but another member of the brains trust Eustathius, is urged to try his hand as a critic. He scores bull's-eye with his first shot by reminding Disarius that 1 so-hygienic sheep and cattle live shorter lives than men, a that according to Homer some pestilences which destroy men began in cattle. (The authority of Homer or Virgil was as formidable a weapon in such debates as a quotation from Marx or Lenin in modern communist circles.) Also, is 1 diet of herbivora so very simple? Are not the pastures different fields very different?

Warning to his work, Eustathius points out that man is highly complex animal and surely needs a complex diet, 1 eating the food one enjoys favours coction. Gluttony is always wrong, but a glutton can stuff himself with olives alone cabbage alone. If variety is bad, what about medical prescriptions? Eustathius evidently has the majority with him, 2 Disarius tactfully congratulates him on his knowledge of medical dialectic and adds: "Whoever wishes to choose right path let him learn from practice; what will be good health, experience will decide (*Qui vult eligere sequenda us consulat, et quid sit utilius sanitati experientia docebit*)."

The brains trust dealt with many dietetic problems, some which are mysterious. Thus Disarius is invited to explain why minced meat is difficult to digest. He does not dispute the fact but attributes it to the propensity of finely divided food to pass into the semi-fluid contents of the stomach and so to escape contact with the wall of the stomach, the heat of which promotes digestion. The explanation is not satisfying, but one remembers minced chicken as a diet for invalids might dispute the fact the doctor attempted to explain. However, Disarius has been right; in these days of austerity in England many meat dishes with pleasant names are—mince. But the meat through the mincing machine is hardly of the quality of meat minced for invalids in nursing-homes of long ago.

MAJOR GREENWOOD

Correspondence

Treatment of Basal-cell Carcinoma

SIR,—I must quarrel with Sir Cecil Wakeley and Mr. Peter Childs' treatment (April 30, p. 737) of basal-cell carcinoma. Their assertion that "there should be no recurrence with adequate surgical excision" is fair enough, and, indeed, providing sufficient emphasis is made on the word adequate, it is true in the case of malignant disease anywhere, no matter how advanced. Having gone so far, I am surprised they go on to say, "In almost all cases rodent ulcers may be treated in the out-patient department under local analgesia." This, of course, is not adequate treatment of a basal-cell lesion, and if this advice were faithfully followed the recurrence rate would shoot up from 5% (following radiotherapy) to something well over 50%.

The majority of rodent ulcers occur on the skin of the face—the inner canthus, eyelids, ear, and nose being particularly common sites. The "adequate" surgical excision of such lesions is very often mutilating, and most surgeons, quite naturally, tend to preserve as much normal tissue as possible for cosmetic reasons. Inevitably a few cells will be left behind in quite a fair percentage of cases, and the lesion recurs or, more accurately, residual cells continue to grow and divide.

Sir Cecil Wakeley and Mr. Childs state, "Only rarely need a patient be condemned to irradiation on account of poor health." In actual fact radiotherapy is a first-class treatment for practically all basal-cell carcinomata, and the only exceptions are those lesions which occur in sites which are particularly sensitive to irradiation, such as the foot, and also those lesions which recur after irradiation. The great majority of the lesions can be treated by a simple, single 15-minute exposure of x-irradiation. Seldom does depth of penetration of the lesion interfere with effective radiotherapy, and cure is not uncommon even in those quite inoperable lesions, now happily rare, of very many years' duration which have extensively destroyed normal tissues. The cosmetic results following radiotherapy are excellent on the whole, and in many cases it is not easy to detect the treated skin. Gross skin damage due to irradiation is uncommon except in the case of those extensive recurrences, previously irradiated and beyond surgery, which inevitably have to be re-irradiated.

Finally, I think it is true to say that from the treatment point of view there has in the past twenty years been a steady and impressive improvement in the malignant situation in several sites, and I think this is more due to improvements in radiotherapy techniques than anything else. It is a fact that only 5% of basal-cell carcinomata recur following good radiotherapy, and I maintain that this is a real achievement. To return to the days of excision under local analgesia in out-patient departments would be a step backwards.—I am, etc.,

Ruft.

KENNETH W. BEETHAM.

Cow's Milk and Tuberculosis

SIR,—*Agriculture*, the journal of the Ministry of Agriculture, in its number for May, 1949, gives the following corroborative evidence of the danger of infection from cow's milk. Under the heading, "Farming Affairs—Whey-fed Pigs," it says:

"The incidence of tuberculosis in pigs fed on whey is high, and in such pigs the disease is often acute. Consequently, the carcasses of pigs fed on whey are more frequently condemned on account of tuberculous infection than those of other pigs. To guard against this danger, all whey should be boiled before it is fed to pigs."

—I am, etc.,

Winchester.

W. E. C. LUNN-ROCKCLIFFE.

An Unfortunate Precedent

SIR,—The profession, for good or for ill, has chosen the path of socialization and planning. Instead of a natural spontaneous growth, with extension here or recession there in conformity with the strains and stresses of supply and demand—cause and effect—there has been substituted a central control

to take over these functions. This central control has to try to foresee and to provide for every professional activity and contingency, small and large, imminent or remote.

Previously a professional man's reputation depended upon ability, industry, personality, opportunity, and luck. Now it will depend not inconsiderably upon the organized plans and dictates of authority. However omniscient, omnipotent, and benevolent the central authority may be, it remains the central authority; and so long as its decisions and opinions rule and organize medicine the profession will have lost its freedom.

These are the reasons basically for the present variously expressed reactions against the Committee for Distinction Awards. But the profession has, by and large, voted for this regime or regimen, and it must swallow the dose and like it. It has substituted political expediency for scientific principles, and will learn only by long and bitter experience that the change is scientifically and professionally for the worse.—I am, etc.,

London, W.1.

GEOFFREY BOURNE.

SIR,—The letter from the eight distinguished physicians who are Censors or other officials of the Royal College of Physicians would not deceive a politically immature rabbit, and should not bamboozle a single licentiate of the College. It is really a defence of presidential infallibility. Lord Moran's personal integrity has not been attacked, but the idea of the Awards Committee as such, and of his chairmanship, is open to examination in the light of history and of common sense. I will certainly defend the President's personal integrity, industry, or administrative ability, but I will not defend his views on the Health Service, his relation to the Government, or the relation of the College to the Government.

The centralized grading of the medical profession is nonsense. The language and methods of the cattle market or of Cruft's have no place in a liberal profession, whatever the integrity, intelligence, or ability of the graders, or their capacity to weigh evidence. How is it possible to equate the claims of the teacher, the research worker, the writer, the originator, the thinker, the administrator, the clinician, and the artist? Are we to breed for beef or for brain, for quietness in harness or for originality? It would take the wisdom of Solomon to arrive at anything more than the roughest and readiest of answers. The Censors' comment on this grading is that it is a "novel idea," though the phraseology suggests the lucky dip or the Christmas cracker. But at least the "novel idea" was sponsored by Lord Moran, and Lord Moran becomes the first chairman of the Awards Committee at a salary of three thousand guineas for the first year.

The history of the Royal College of Physicians is largely a history of medical monopoly and patronage. As long as these things are safe, the rest can go bang. Under the Health Act the monopoly instinct of the College is fused with the monopoly-loving instinct of a political philosophy. The infallibility of the President is, however, now subject to the still greater infallibility of the Minister. The College has proved a great convenience to the nationalizers of medicine, but it has taken good care to establish control over consultants through the State monopoly of the hospitals. Sir Henry Halford was, as you point out, the longest in office as President, with 25 years to his credit. George IV was certainly a man who knew his way about town, and this is how he wrote to Sir Henry:

"The King sends his kind regards to Sir Henry Halford and acquaints him that it is the King's intention to take an opportunity of appointing Dr. Southey, one of his physicians-in-ordinary, in the room of Sir William Knighton, who has desired, from the heavy pressure of his other situation, to retire from the responsibility of this."

"The King would have been glad if Dr. Southey had been a graduate of either of the English universities, and the King wishes that Sir Henry would supply this deficiency by making him a fellow of the College. The King mentions this as a continuation of the same feeling, which induced him on a former occasion to state to Sir Henry that the President of the College of Physicians should in future, for the time being, always be a physician-in-ordinary to the King."

"The King desires to express how sensibly he feels Sir Henry's constant attention, and the benefit which the King at all time derives from his great judgment and skill in his profession."

Dr. Southey received a Fellowship a few weeks later and shortly afterwards became physician-in-ordinary to George IV. The Royal Family soon got tired of having Presidents as hereditary physicians-in-ordinary, and the arrangement was cancelled.

The clue to the Censors' letter is contained in the statement that Lord Moran would be the first to admit how much he owed "to the sympathetic attitude of the Minister of Health." This statement suggests that the Minister is already a likely candidate for canonization by the College. Supposing the College had been asked to work out a design for patronage under the Health Act, how better could it have achieved this than by making the President the chairman of a Distinction Awards Committee? It is ridiculous to expect that the College will suddenly abandon its pretension to medical monopoly or to the exercise of its patronage. It is ridiculous to expect that Presidents will not be biased in favour of their own Fellows. It is ridiculous to expect that candidates for honours will not refrain from criticism of Presidents if it is likely to diminish their chances.

These criticisms are criticisms of the whole conception of the Awards Committee and the relations that now exist between the profession, the College, and the State. But they are not criticisms of Lord Moran's personal integrity. The College is now an organ of Government, and its proper place is inside the Ministry of Health, which is already the home of the Awards Committee. The College has abandoned all pretence of moral leadership, and again, behind the plea of unity, it asks for support for the Awards Committee in exchange for College support in getting more favourable terms for general practitioners. Perhaps we are not as green as the Censors think. At any moment I expect to get Captain Nye's "noon wire" recommending Plastic Lad, Sycophant, and College Boy for the Summer Meeting, with Sheer Merit as an outsider. But I shall keep my money till times are better.—I am, etc.,

London, W 1

REGINALD T. PAYNE.

Statistics and Health Education

SIR,—I must have expressed myself very badly, for Dr. W. Hartston (May 14, p. 866) has completely missed the point of my letter (April 16, p. 680). Of course all our schemes must be based on a knowledge of the facts—the wider the better—but what I am concerned with is the *usefulness* of the facts. Small boys collect numbers—of motor-cars or railway engines—and Government departments collect numbers—of everything they can think of. (In fairness to small boys it should be added that they only waste their own time and do not pretend that the results are of national importance.) The real question is, Are the most useful facts being collected?

Suppose the Ministry of National Insurance were concerned with the prevention of road accidents. According to their present method they would begin by collecting statistics as to the causes of death—fractured skull, crushed thorax, shock, etc.—and then proceed to devise means of preventing each individual injury. We might then see each bus passenger compelled to don a crash helmet and, indeed, a complete suit of armour when the steel situation permitted. Meanwhile there would have been no traffic lights, no warning signs, no cambered roads, and no attention to brakes. Fortunately, Sir, the prevention of road accidents has been tackled by intelligent, if somewhat ineffective, lay people, or the position would be much worse than it is.

Now, Sir, why should not the same method that is used to prevent road accidents be applied, but with much more vigour, to prevent illness? I am far from belittling the results which preventive medicine has achieved, though I do sometimes regret the complacency with which they are put forward. How much better off are we if people get influenza instead of malaria? Or if there is a marked decrease in scurvy and a marked increase in cancer of the lung? We aim at keeping people free from road accidents, whatever the pathological condition produced. Why not aim at keeping them free from disease, whatever form it takes?

Now this involves a knowledge of why people get ill at all, as opposed to what particular illness they get. Have we that knowledge at present? Every general practitioner could tell Dr. Hartston of cases where the strains and stresses which a patient has endured before he became ill have been a major

factor in producing that illness, but, as I said before, general practitioners are not given enough time to think. If a few of them were given time for research they could produce enough evidence to revolutionize our approach to preventive medicine. But would it? Dr. Hartston suggests that it would "get us no further than to convert this *crème de la crème* of G.P.s into clinical specialists or social statisticians"—in other words that whatever evidence they produced nobody would take any notice of it. Critical as I sometimes am of my colleagues in the public health field, I cannot but believe that on this occasion Dr. Hartston is doing them an injustice.

On another aspect of health education Dr. Hartston has completely—and perhaps wisely—evaded my question about the "lumbagos," but in his original suggestion he has raised an issue which cannot be evaded. If he starts "calling all lumbagos" from Luxembourg—or any similar propaganda to the sick—what about the G.M.C.? Now that body, which exists for the protection of the public, is displaying horse sense when it objects to treatment *in absentia*, for every patient is different from every other, and the doctor who has not seen the patient cannot treat him properly. Many of us must have wondered how some of our public health confrères have got away with it so far. One can only assume that the G.M.C. has hitherto regarded them as well meaning and relatively harmless people, but if they are to start radio propaganda in this way, can the blind eye be turned on them much longer?—I am, etc.,

East Hoathly, Sussex.

F. GRAY.

Malaria Prophylaxis with Proguanil

SIR,—The recent correspondence in the *Journal* regarding the occurrence of malaria in persons on prophylactic proguanil makes the case reported here one of some interest.

Both Dr. E. S. Walls (July 24, 1948, p. 225) and Dr. A. M. Best (Feb. 19, p. 324) report attacks of falciparum malaria in persons taking more than 0.1 g. of proguanil every other day, and both advise 0.1 g. daily as a prophylactic. The Colonial Medical Research Committee implements this advice in their recommendations (*Journal*, April 2, p. 585). The following case records a break-through of falciparum malaria in an expatriate taking 0.1 g. daily of proguanil as a prophylactic in an area in which falciparum malaria is endemic.

A European nursing sister had had several mild attacks of a fever of short duration. The fever was accompanied by headache, backache, and nausea, and characterized by a leucopenia, urobilinogenuria, and the presence of Türk cells in the thin films. No malaria parasites were found in thick blood films taken during the attacks, and in the absence of a definite parasitaemia the dengue group of fevers was considered as a probable cause of the pyrexia. Subsequent to the last pyrexial attack she had increased her dose of proguanil to 0.2 g. daily and had continued this for eight days, reverting to 0.1 g. daily thereafter. Thirty days after this attack she had an evening temperature of 101° F. (38.3° C.), and a thick blood film taken at this stage showed from 2–20 parasites in every microscopical field. All the parasites were young ring forms (trophozoites). The thin film showed some red cells containing two and three parasites per cell, parasites with double chromatin dots, and accolé forms. The film was typical of an acute falciparum infection commonly seen in children in this area. The white blood count was 3,800 per c.mm., and the urine gave a strongly positive test for urobilinogen. Treatment with increased proguanil and mepacrine aborted the attack, and the temperature became normal the following day, and has remained normal up to the time of writing. Gametocytes appeared in the blood on the fourteenth day after the commencement of the attack.

Since her arrival in the country nine months ago the sister had been taking 0.1 g. of proguanil regularly daily. She admits to having missed an occasional tablet, but states that at the maximum this did not amount to more than one a week, and usually was much less than this. It would appear in this case that a daily dose of 0.1 g. of proguanil was not sufficient to prevent the break-through of falciparum malaria.

We are indebted to the D.M.S., Nigeria, for permission to publish this account.

—We are, etc.,

FRANK DAVEY.
MICHAEL SMITH.

Uzuakoli, S.E. Nigeria.

Princess Tsahni Memorial Hospital

SIR.—May I beg the hospitality of your valuable columns to announce a reception at the Cora Hotel, Upper Woburn Place, W.C.1, on June 16, from 3 to 5 p.m., to welcome Lord Winstler, the chairman of the Memorial Hospital council, on his return from Cyprus, and General Cottam, who has just concluded seven years' magnificent service as head of the British military mission to Ethiopia? His Excellency, Ato Abeba Retta, the Ethiopian Minister in London, has kindly consented to be present. Brigadier G. S. Parkinson will preside, and Dame Irene Vanbrugh, Lord Amulree, and Mr. Hermon Ould will speak.

I should be pleased to send invitations to the reception on application by your readers, so far as accommodation permits. More than half the equipment for the Memorial Hospital (built in Addis Ababa by British subscriptions as a tribute of friendship to a gallant ally) has now been shipped from this country, and other goods will shortly sail. But the full target has not yet been reached; further purchases to make possible the opening of the hospital must still be made. Donations should be drawn in favour of the Princess Tsahni Memorial Hospital Fund and addressed to the honorary treasurers, Lord Horder and Lord Amulree, c/o Messrs. Gould & Prideaux, 88, Bishopsgate, London, E.C.2.—I am, etc.,

E. SYLVIA PANKHURST,
Honorary Secretary,
Princess Tsahni Memorial Hospital.

3, Charteris Road,
Woodford, Essex.

Curare-modified E.C.T.

SIR.—Drs. P. D. W. Shepherd and D. C. Watt (April 30, p. 752) give an excellent account of their technique for curare-modified E.C.T. I have had very little experience of E.C.T. in any form, but as an anaesthetist I feel that some comment is required on their method of induction and recovery.

The rapid intravenous injection, all in one syringe, of atropine, curare, and thiopentone is not to be recommended and sooner or later will lead to complications. They should be given in separate syringes: this gives a little more time for the atropine to develop its maximum effect (drying of secretions, etc.), and also enables a small test dose of curare (3–5 mg.) to be given without its effect, if any, being blurred by the accompanying thiopentone. After a pause of 1–2 minutes the remainder of the curare is given and immediately followed by the thiopentone—as recommended by Gray (*Ann. roy. Coll. Surg. Engl.*, 1947, 1, 191).

The use of an artificial airway should rarely be necessary. In most cases, and with a little practice, the airway of a curarized patient can be adequately maintained by holding the jaw forward, combined with gentle insufflation of oxygen: the slightly increased pressure of oxygen does, of itself, tend to push past a drooping tongue. The insertion of an artificial airway into a curarized patient who has had very little anaesthetic drug (e.g., 0.2 g. of thiopentone) can lead to regurgitation of stomach contents, or partial laryngeal spasm—rare occurrences, but not to be forgotten.

Finally, I should like to suggest more frequent resort to neostigmine: 2.5 mg. and 1/100 gr. (0.65 mg.) of atropine given as soon as the fit is completed neutralize the major portion of the curare in two minutes. To the best of our knowledge neostigmine has no toxic effects given in this way, and the early restoration of the patient's reflexes reduces the amount of supervision required per patient.—I am, etc.,

Liverpool

E. H. WINTERBOTTOM.

SIR.—We have read with great interest the article on curare-modified electric convulsion therapy by Drs. Peter D. W. Shepherd and David C. Watt (April 30, p. 752). After considerable experience of the method we are convinced of its value, but would like to join issue with Drs. Shepherd and Watt on several points in their article.

Like them, we originally based our technique on that described by Hobson and Prescott, but, unlike them, we have found it advantageous to use doses of curare somewhat smaller rather than larger than those advocated by them. The object of the curare is to soften rather than to abolish the convulsion, and only in very rare cases is any advantage gained by the complete abolition of muscular activity. It seems to us that the larger dosage renders the treatment unnecessarily time-

consuming and hazardous, and in unskilled hands may bring a valuable method into disrepute.

We have found the majority of cases could be adequately controlled by doses of 12 to 20 mg. of *d*-tubocurarine, and only in the case of very muscular individuals, active tuberculosis, or recent fracture did we consider it necessary to use larger doses. It has not been our experience that patients treated with these small doses are prone to develop troublesome laryngeal spasm.

With such doses of curare spontaneous respiration returns rapidly, and the patients can be left in charge of a trained nurse after a very short period of time. In this connexion we would also suggest that neostigmine or some similar preparation should be administered if there is any delay in the return of spontaneous respiration. The authors appear to have had it available but not to have used it.

It has been our practice to give doses of atropine intramuscularly from three-quarters to one hour before treatment is given. We have formed the opinion that the drying effect of the atropine is much more pronounced if it is given in this way than when combined with the curare and thiopentone injections.

In conclusion we should like to join with Drs. Shepherd and Watt in emphasizing the absolute necessity of having some suitable oxygen resuscitation apparatus available before the treatment is undertaken. This apparatus may be of the very simplest type, consisting of a face-piece and reservoir bag connected to the oxygen cylinder by a simple length of pressure tubing.—We are, etc.,

V. O. McCORMICK,
J. N. P. MOORE.

Dublin

Living Anatomy

SIR.—I apologize to my professorial colleague at Aberdeen for my temporary amnesia (*v.* letter in the *Journal* of April 30, p. 778). I can only plead the recent acquirement of my first pair of bifocal spectacles—which I paid for. Would that I had waited six months for the free N.H.S. pair. *Mea culpa*.—I am, etc.,

Cambridge.

H. A. HARRIS.

Spermatolysis

SIR.—The article by Dr. Cafer Yildiran on spermatolysis (April 2, p. 575) raises several questions before one can accept the author's statement that this phenomenon alone was the cause of the sterility. There is no indication in the article that the wife was investigated, or that a Sim's post-coital test had been undertaken.

If his theory is correct, then lysis should take place in the vagina. Has this been investigated? Otherwise (since in the clinical notes the semen is reported as normal at the beginning of the investigation) clearly there is a possibility that such normal spermatozoa can escape into the uterus away from the lysis and so escape disintegration.

It would be interesting to know what the invasion qualities of such sperm were when tested by the Harvey method against known normal cervical mucus. It is rather dangerous to suggest that this factor (admittedly a new and interesting factor) may be the cause of sterility in the absence of any evidence that the wife was at fault. In any case, even on the evidence presented, it seems difficult to accept this theory altogether, since, after all, it is the spermatozoa and not the surrounding seminal fluid which enters the uterus, and there is no evidence to suggest that the sperm could not do this immediately after being passed. Much more evidence would be required before spermatolysis could be accepted as the sole cause of sterility in these cases.—I am, etc.,

Manchester.

BERNARD SANDLER.

Idiosyncrasy to Amethocaine Hydrochloride

SIR.—The recent correspondence on anaesthesia for bronchoscopy left the impression that there was little danger from amethocaine hydrochloride, provided the dosage was reasonable. This was not in agreement with my experience in four cases showing toxic signs, as the dosage in these cases had been normal. And this week it was driven home to me forcibly that idiosyncrasy, not overdosage, is the danger.

A young woman sucked a 1-mg. "nupercaine" lozenge before laryngeal examination. As she was uncooperative, this

was supplemented by two puffs from a fine de Velbis spray containing 2% amethocaine hydrochloride. Five minutes later she had a convulsion, and two minutes later a further convulsion was checked by intravenous thiopentone. Her condition remained alarming for a further 20 minutes.

The total dosage of amethocaine or its equivalent in this case was less than 10 mg.—i.e., less than 0.5 ml. of a 2% solution. The standard "decicain" lozenge contains 70 mg. of amethocaine hydrochloride, the equivalent of 3.5 ml. of 2% solution.

I think it is worth reiterating that any time amethocaine is used, whatever the dosage, a syringe and thiopentone should be ready for immediate use.—I am, etc.,

Market Drayton, Salop.

A. CLARK PENMAN.

Pressure Cooking

SIR,—In reading Dr. A. Orley's letter (May 7, p. 822) on the subject of pressure cooking, there appears to be an error of judgment. The supposed evils (post-prandial leucocytosis) of pressure cooking are surely applicable to all cooking. Dr. Orley states that "food has to be heated above 83°–87° C., according to the kind of food." These temperatures are approximately those of simmering in normal cooking. The boiling and baking of foods, for which much higher temperatures (up to 260° C.) are used, must on his reasoning result in a perpetual state of post-prandial leucocytosis for the majority of the population. Few people consume raw food with all their meals.—I am, etc.,

G. H. DONALD.

H11 in Malignant Disease

SIR,—The appearance in the *Intelligence Digest* of April 1 of an account of the H11 treatment of cancer has brought to a head a doubt that has been chronically festering in my mind since the publication (*Journal*, Oct. 16, 1948, p. 701) of the report on this subject by the Medical Research Council—shortly followed by further data from the Hosa Laboratories which could not be answered on the basis of the Medical Research Council's conclusions.

What angers me is not any conflict between the views of the M.R.C. and any personal views of myself, for I have none; it is that the Council, in what should have been one of the most important investigations it has undertaken, should so signally have failed to perform that one function which is the *sine qua non* of such a report—namely, the resolution of doubt. It is both ludicrous and outrageous that a body, performing only the function for which it was created, should be guilty of such a defection that neither the inquiring practitioner nor the fervently hopeful relative can feel that his mind has been put at ease by a final and lasting opinion.

It requires but one proved cure of a proved case of cancer by H11 to necessitate an exhaustive clinical and biochemical investigation of its properties, and I have met no one who shares with the investigator appointed by the M.R.C. her confidence in the felicity of conclusions drawn from a superficial examination of a small and random selection of cases.

The decision must be made one way or the other; it must be shown beyond further question which of the parties is right. The present situation is intolerable.—I am, etc.,

BAOR

THOMAS BARRIE,
Capt., R.A.M.C.

Pain in Childbirth

SIR,—I have been very interested in the numerous letters published in recent weeks about analgesia in labour. Like Dr. Mary Herford (April 9, p. 634), I am a woman doctor with two small children, and I too gave much thought to muscle control and relaxation during the process of labour.

My first confinement proved very painful after the first few hours, because there was scarcely any pause between painful contractions. I was more than grateful for the application of the Young-Simpson inhaler, which gave me complete relief. I was able to continue for a further five hours with no operative assistance other than double episiotomy, in spite of the fact that the baby weighed 9½ lb. (4.3 kg.) and was persistent occipito-posterior.

The second confinement was naturally much more easy. I was able to relax during the contractions up to a point, but

again found I needed some relief. Crushing chloroform capsules gave some relief, but usually too late—their full effect coming on after the contraction had ceased. The Young-Simpson inhaler then proved perfect. The minute the pain becomes severe enough to cause deep breathing, the anaesthetic of choice (chloroform in my case) comes over, but as breathing becomes normal the inhalation of anaesthetic ceases and pure air is drawn in. The degree of pain controls the amount of anaesthetic. The result is perfect analgesia with rapid return to normality afterwards. If for any reason anaesthesia is required, all that is needed is adjustment of the valve by the professional attendant. On both occasions the Young-Simpson inhaler afforded me complete relief with no subsequent ill effects on myself or the infant.

From observation of patients in the labour ward and from my own experience and that of my friends I believe labour can be very painful in a great proportion of women. Understanding of the mechanism of labour, muscle control, and relaxation reduce the pain considerably, but when analgesia is desired, as is so often the case, I can think of nothing more simple for the attendant and more effective for the mother than this inhaler. Like Dr. Caiger Smith (April 9, p. 637), I cannot think why it is not in more general use. I am sure every mother who has used it would agree with me.—I am, etc.,

Cardiff.

DOREEN H. ANNEAR.

Continuous Irrigation in Prostatectomy

SIR,—The account by Mr. A. Wilfrid Adams of "a third ureter" in prostatectomy (May 7, p. 809) leads me to describe the use of a double catheter for continuous bladder irrigation following any method of "closed prostatectomy." The reasons which led to the use of this method are those described by Mr. Adams; and, as a registrar, these post-operative troubles of bleeding and catheter blockage have concerned me rather closely. I am aware that the method is not a new one.

It consists of using a Foley catheter (for want of any other two-way drain), which is passed through the penis and then has the bag cut so that fluid can pass through the smaller tube into the bladder and out via the large passage. The end of the catheter is cut off obliquely towards the two small holes, and two lateral holes are also cut toward the end, so that one or other will not be blocked by lying on mucosa. The catheter can be re-used by "railroading" it through the penis attached to an ordinary catheter.

At the end of the operation the usual precautions are taken to see that the tube is draining well, citrate is left in the bladder, and as soon as the patient is returned to the ward the small tube is connected to an ordinary transfusion set, using sodium citrate, and a continuous drip begun. The outlet tube is connected to a bedside bottle with a "dripper" attached, so that the nurses can see at a glance that all is well.

The advantages of this method are that clotting does not take place in the bladder and there is no longer the ever-present anxiety of a blocked catheter; the bladder is closed; and the irrigation is really sterile—being a closed system requiring only the changing of the citrate bottle, as in any intravenous therapy. The nursing staff, too, appreciate the saving of work and worry.

There has been no difficulty in estimating the urinary output. Although the lumen of the large section of the Foley catheter is smaller than that of a similar single-bore catheter of equal outside diameter, it is more than compensated for by the fact that any blood present is kept liquid and is diluted by citrate and urine. The results have been, so far, most satisfactory.

I would like to thank Mr. D. A. Abernethy for his permission to use this method and write this letter.

—I am, etc.,

Oxford.

H. D. MOORE.

Natural Childbirth and Sympatheticotonia

SIR,—In the leading article entitled "Natural Childbirth" (April 16, p. 669) you refer to the contention made by Dr. Grantly Dick Read (p. 651 of the same issue) that rigidity of the cervix is a consequence of sympatheticotonia, and you point out that "not everyone will agree that this argument is correct on anatomical and physiological grounds."

In this connexion the experiments reported last year by the Swiss obstetrician Sauter¹ are of considerable interest. He found that atropine administered to women in labour never

produced a relaxation of the cervix, but in 14 out of 16 cases increased the rigidity. Conversely, "prostinmin" caused relaxation in 12 out of 14 cases and no effect in the other two. Yohimbine likewise effected a relaxation. These findings undoubtedly strengthen Dr. Read's argument.

Sauter found, however, that atropine simultaneously raised the tone of the corpus uteri, while prostigmin and yohimbine lowered it, and he concludes that the entire uterus is innervated both by sympathetic and by parasympathetic fibres and that both segments respond similarly to changes in vegetative tone. He also objects, on anatomical and physiological grounds, to the comparison between the cervix of the uterus and the sphincters of the bladder and rectum.

In "another paper" Sauter reports the effect of dihydroergotamine (a sympatholytic agent devoid of the uterotonc action of ergotamine) in 43 cases of cervical spasm. Relaxation of the cervix occurred in all cases, and the basal tone of the uterus was generally lowered, with a corresponding increase in amplitude. The response to oxytocic preparations remained unimpaired.

There thus seem to be good experimental grounds for Dr. Read's contention that cervical rigidity, and hence much of the pain of childbirth, are the result of high sympathetic tone. Perhaps the sympatholytic drugs will turn out to be valuable not only for relieving true cervical spasm but also, in selected cases, for promoting "natural childbirth."—I am, etc.,

Basle, Switzerland.

A. M. WOOLMAN.

REFERENCES

- ¹ *Schweiz. med. Wschr.*, 1948, 78, 512.
- ² *Ibid.*, 1948, 78, 475.

Medical Journals for German Doctors

SIR.—Grateful acknowledgment is made to those doctors whose names I have not had, but from whom journals, like sands of Pactolus, have descended on me.

Letters and other parcels are being individually acknowledged. All parcels leave this month of May for medical schools of Germany and Austria, in the libraries of which they will be generally available. But all the schools—Freiburg, Göttingen, Berlin, Leipzig, etc.—are in need. The vacuum, in fact, is such that, should any doctor be in doubt as to where he may direct his aid, he may rest assured that, addressed to any of these university schools, journals would have much ado to stray.

If, in sending gifts to Germany, doctors here will provide a clue to the donor they will confer upon brethren across the Rhine an added grace in enabling them to express their thanks.—I am, etc.,

London, S.W.1

J. P. S. DUNN.

POINTS FROM LETTERS

Vertigo and Influenza

Dr. H. S. GASKELL (Stowmarket, Suffolk) writes: I am surprised that Dr. Peter A. Walford (May 7, p. 821) should find anything unusual in vertigo as a symptom of influenza. Although I find it mentioned in few, if any, books, influenza is by far the most common cause of giddiness. In a paper published in 1935 (*Practitioner*, 134, 646) I mentioned that it was not recognizable in 1932-3 but was "a constant feature" in 1934-5. It has been a constant feature ever since. If a patient walks into the consulting-room holding on to the furniture and complaining of a pain in the back of his neck there is no need for the G.P. to spend much time on the diagnosis. A few years ago, when I had a mild attack, I was afraid that I should be had up by the police, as I could not walk straight from the patients' houses to my car.

Vaccine Lymph

Mr. JOHN C. BRAYBROOK-NORMAN writes from the Pioneer Health Centre, Peckham: We have overcome the difficulty of expelling lymph from capillary tubes with an apparatus consisting of a small rubber bung the larger diameter of which is about $\frac{1}{4}$ in. (1.25 cm.). Starting at the wider end, a hole is burned for three-quarters of the length of the bung. Having chosen a piece of glass tubing to fit an available test, one end is reduced to fit this hole. The glass tubing is cut off sufficiently long to allow for the test to be affixed (total length about 1 in.). A slit is pierced with a Hagedorn needle through the remaining solid end of the bung to meet the larger hole. In use, one end is snapped off the lymph capillary tube and the open end is pushed through the slit to meet the larger-bore hole. The slightest pressure on the test is sufficient to expel the lymph, which is under control for the whole while. The adaptor may be sterilized complete or the parts treated separately.

Obituary

D. LLEWELYN WILLIAMS, C.B.E., M.C.,
LL.D., F.R.C.S.Ed., D.P.H.

Dr. Llewelyn Williams died at Liverpool on May 12 in his eightieth year. From 1920 until his retirement in 1935 he was a member of the Welsh Board of Health and the senior medical officer of the Ministry of Health in Wales. He will be remembered as an administrator. The smooth running of the old National Health Insurance scheme in Wales was due in no small measure to his administrative skill, his tactful diplomacy, and his unfailing good humour. He knew nearly every general practitioner in Wales, and he travelled the length and breadth of the country, especially in the early years, and did much to smooth out the difficulties of the hard-pressed practitioner confronted with a mass of new regulations.

David Llewelyn Williams was born in 1870, the youngest son of a Welsh Presbyterian minister. He was at school at Llandudno, and after some years as a pharmacist he entered Surgeons' Hall, Edinburgh, in 1895. A brilliant student, he took every medal and prize in each class he attended, and qualified in 1900. He was a house-physician at the Edinburgh Royal Infirmary, and he took the F.R.C.S.Ed. in 1904 and the D.P.H. in 1905. After a period at Leith General and Fever Hospitals he was appointed medical officer of health for the borough of Wrexham in 1905, and in the following year married Miss M. Price, of Rhyl. It was a happy marriage, and over forty years of comradeship ended only last year, when Mrs. Williams died. In 1907 Llewelyn Williams was appointed medical officer of health for the County of Denbigh, and was thus the first county medical officer in Wales. He did a great deal of pioneer public-health work in Denbighshire, and when the National Insurance Commission for Wales was formed in 1912 he was invited to join it as deputy medical officer. In August, 1914, he raised the Hygiene Section of the 38th (Welsh) Division, serving in the R.A.M.C. with the rank of captain. For his gallantry at Mametz Wood he was awarded the M.C., and the President of the French Republic honoured him for his work for French civilians behind the lines by awarding him the Médaille des Epidémies and the Médaille de la Reconnaissance Française. Dr. Williams was a member of the University Court of the University of Wales for many years, and was vice-chairman of the Council of the Welsh National School of Medicine from its creation in 1930. The University conferred the honorary degree of LL.D. on him in 1947. He had also been associated with the Welsh National Memorial for the Prevention and Treatment of Tuberculosis from its inauguration in 1912, serving on the council and on many committees.

A deeply religious man, Llewelyn Williams did a great deal of work for the Church in the mission field. He was an elder of his church, and spoke up and down the land on temperance and purity to enthusiastic gatherings of young people. On his retirement in 1935 he was appointed a member of the commission sent out by the Presbyterian Church of Wales to investigate their mission fields in India. When the second world war came in 1939 Llewelyn Williams, although 70 years of age, worked unceasingly on medical boards, making the difficult journey to Wrexham on six days a week from his pleasant home at Old Colwyn. To the end his interest in the University and the medical school continued. He will be greatly missed in Wales. He leaves two sons and a daughter.

Professor R. M. F. Picken writes: Public health and medical education in Wales have lost a staunch supporter by the recent death of Dr. David Llewelyn Williams. For many years he held a unique position in Wales. He was its first county medical officer when he was appointed to that post in Denbighshire, and, early recognizing the importance of public education in health, he travelled widely in North Wales in order to address meetings on the subject in the Welsh language. It would be impossible to overestimate the value of his influence in this direction. It was enhanced by the fact that he was not only deeply religious and had access to the congregations of the chapels throughout Wales, but was also a man of great physical

and moral courage, as his record in the first world war showed. His addresses were supplemented by pamphlets on healthy living, written in the Welsh language. When he became medical member of the Welsh Board of Health at its inception, he was responsible for the medical work of National Health Insurance as well as the supervision, inspection, and scrutiny of the public health work of the local authorities. He was the most approachable of men, and his advice was readily available to medical officers of health on the many difficult problems facing them during a period of rapid expansion of the service. Dr. Llewelyn Williams took a keen interest in medical education in Wales and supported from the time of the Royal Commission's Report in 1918 the proposal that there should be a Welsh National School of Medicine within the University of Wales. When it was ultimately established he became one of the first members of its council and subsequently its vice-chairman, an office which he filled with distinction and retained till his death. It was a matter of great satisfaction to the school that his services to the University were recognized by the award of the honorary degree of doctor of laws.

OWEN W. RICHARDS, C.M.G., D.S.O., D.M., M.Ch.,
F.R.C.S.

Sir Gordon Gordon-Taylor writes: Your obituary notice (May 21, p. 915) of Owen W. Richards prompts the following additional note. We had in the former War Collection at the Royal College of Surgeons of England several of his early specimens of successful resections of bowel, one of which (W.O. Coll. R.C.S. 865) was described in the following words: "Portion of small intestine showing twenty wounds produced by a fragment of shell. The piece of bowel which is 6 feet in length was successfully excised by Owen Richards, March 18, 1915. This was the first successful case of bowel injury dealt with on the British Front. Patient walked back with his intestines outside his abdomen, because he 'wanted to die in his own lines.'" The War Collection was completely destroyed by aerial bombs in May, 1941, and this historic specimen perished, but an illustration fortunately survives. Richards and the other "casualty clearing surgeons" were well acquainted with ileus, but their work was done in days before continuous gastric suction had even been dreamed of, and in the early war surgery of 1915 Owen Richards thought he had found an answer to the problem in extensive intestinal resection, carried wide especially on the proximal side of the damaged bowel, this procedure being based on Barker's teaching in cases of strangulated hernia where intestinal ablation was necessary. Greater experience, however, led Richards subsequently to discard this opinion and practice. To me his name is specially associated with Barlin and 6 C.C.S. in the First Army area, where for more than two years he had associated with him another fine surgeon, Tudor Edwards, who always considered himself most fortunate in this particular surgical environment. What a scintillating constellation of brilliant surgeons revolved round Cuthbert Wallace in the old First Army! There was none to match it for wealth of surgical talent. One of Richards's aphorisms relating to abdominal cases swayed the decisions of forward surgeons when overwhelmed with multitudinous and urgent cases: "It will be wisest to set aside those with abdominal wounds that are too late, too bad, or too high up." Owen Richards and Cuthbert Wallace—wartime abdominal surgeons owe much to the vision and practice of the former and the inspiration and leadership of the latter. *Ne obliviscaris*.

Dr. DONALD SARGENSON TWIGG died suddenly on Jan. 23. Dr. Twigg received his medical education at the University of Sheffield and took the conjoint diploma in 1914. He served as house-surgeon and house-physician at the Royal Hospital, Sheffield, and on the outbreak of the first world war joined the 3rd W.R. field ambulance. He served in France until the end of the war and then was sent out to Russia. After his demobilization in 1919 he started in practice at Hartington, and from then to the time of his death gave devoted service to the patients in his extensive practice in Derbyshire and North Staffordshire. During the second world war he was M.O. to the 10th Derbyshire Battalion of the Home Guard. He was hard at work up to the day of his death, which came as a great shock to his friends and patients. He leaves a widow, to whom the sympathy of all his colleagues will be extended.—J. H. C.

Medico-Legal

CUMULATIVE ACCIDENTS

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

The Workmen's Compensation Acts allow compensation for personal injury by accident arising out of and in the course of the employment. From early in their history the courts, desiring to give injured workmen every possible benefit of the Acts, have tended to widen the concept of "accident" to include a number of mislapses which, resulting from cumulative processes, could not even by a great stretch of imagination have been called accidents by an ordinary person. These "accidents" have included infective diseases. In 1905 a workman who contracted anthrax was held to have suffered an injury by accident, the accident being constituted by the entry of the bacillus. Hernia and Raynaud's disease following the continual impact of pneumatic tools have both recently been called accidents. The latest development in construing infections as "accidents" was that in which the Court of Appeal, by two to one, granted compensation to a nurse who had contracted tuberculosis while nursing tuberculous patients.¹

Lords Justices Cohen and Denning agreed with the finding of the county court judge that every time the nurse inhaled bacilli an accident was constituted. Though it might not be possible to fix the exact dates when the accidents occurred, they all took place in the course of her employment, and the effect was due to one or more of them. Lord Justice Bucknill dissented, holding that the disease was the result of a gradual process of breathing air containing noxious bacilli, and that there was no evidence to put it into the category of accidents. Leave was given to the corporation to appeal to the House of Lords. One must not presume to anticipate their Lordships' decision, but it is not many months since they refused compensation to a workman who had contracted silicosis at work.²

¹ *Pyrah v. Doncaster Corporation*; *Yorkshire Post*, March 18, 1949.

² *Roberts v. Dorsethe Slate Quarries*; *British Medical Journal*, 1948, 2, 664.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on April 28 the following degrees were conferred:

B.M.—A. C. M. Mann, M. J. Davies, K. B. Taylor, *M. W. Glossop.
* In absence.

UNIVERSITY OF CAMBRIDGE

The following medical degrees were conferred in Congregation on May 7:

M.D.—V. N. Fenton, R. J. F. H. Painsent.
M.CHIR.—H. W. A. Baron.
M.B., B.CHIR.—*B. K. Madden, G. B. Barker.
* By proxy.

UNIVERSITY OF GLASGOW

The following degrees were conferred on April 30:

M.D.—Catherine I. Blyth, ¹T. McLardy, D. McPhee, ¹R. A. Shanks, ²G. T. Stewart, ³D. Struthers, ²C. Harris (Montreal), ²Jane H. Short (née Merry) (South China), ²W. Laurie (Tanganyika).
CH.M.—³T. L. Chapman.
¹ With honours. ² With high commendation. ³ With commendation.
* In absentia.

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

POSTGRADUATE DIPLOMA IN PSYCHOLOGICAL ¹Disease (Psychiatry) in Part B: W. W. Black, W. A. ¹A. D. Forrest, P. M. Jeavons, J. D. Lucy, Betty E. A. ¹Merry P. Pinkerton, H. H. Robinson, J. Todd, L. P. Varma, J. M. Waine. ¹Part A only J. A. Ardis, A. A. Aziz, E. Brenman, W. Calder, K. C. S. Edwards, H. V. W. Elwell, J. A. Ewing, J. Hönig, D. Irwin, S. Jacobson, Elisabeth Kramer, J. D. Morrissey, B. A. Pomryn, A. D. Weatherhead, C. H. A. Wedeles, E. Wolf L. Wolman.

UNIVERSITY OF BRISTOL

The following candidates have been approved at the examination indicated:

DIPLOMA IN MEDICAL RADIODIAGNOSIS.—Part I: A. C. E. Cole, J. B. Fox Part II: J. H. E. Bergin, W. R. Cole.

Nearly £2,250,000 worth of streptomycin was supplied to European countries under Marshall Aid in the first year of E.R.P. operations, according to a British United Press report. France alone received £1,500,000 worth and Italy some £500,000 worth. Smaller quantities went to Holland, Austria, and Greece. In addition, France is to receive more than £125,000 worth of U.S. equipment needed for the reconstruction of two French factories to produce penicillin. These factories, both near Paris, will produce enough to supply France's minimum needs and at the same time to earn valuable Marshall Aid dollars. Cultures for the penicillin-producing fungus must continue to be supplied by the United States for these factories, however, until French penicillin cultures are established.

Medical Notes in Parliament

NURSES BILL

The Nurses Bill was considered by the House of Lords in committee on May 17.

Lord LLEWELLIN moved an amendment to Clause 2 which would put the boards of governors of teaching hospitals into the same category as other authorities. His amendment provided that the standing nurse-training committee for the hospital area should advise and assist boards of governors of teaching hospitals if those boards made a request to the committee. He said it was no use for a committee to approach Guy's or Bart's Hospital and proffer advice to people who were not prepared to receive it. If it was thought that because they held the purse strings the standing nurse-training committees were to dictate to the great teaching hospitals the Bill would not succeed.

Lord SHEPHERD replied that the teaching hospitals were specially designated as future members of the committee and were therefore in a special category. These committees, when established, would probably consist very largely of persons engaged in hospital work. If the regional hospital boards and the boards of governors got together and discussed the interests of their region, there need be no fear of victimization of one side or the other. The Government wanted the relationship of teaching hospitals to the nurse-training committees to be exactly the same as that of the hospital boards. They were anxious to benefit from the experience, influence, and leadership of the teaching hospitals.

Lord Shepherd mentioned that in the North-Western Metropolitan Hospital Board area there were in training 3,179 student nurses and 676 mental nurses. If the hospital services in that area were to be kept going with an efficient nursing service there must be an intake every year of 1,200 on the general nursing side and 450 on the mental nursing side. He feared that if the amendment was accepted a number of hospitals which needed help and assistance might take the opportunity to remain outside.

Lord WEBB-JOHNSON said Lord Shepherd had not indicated the precise composition of a standing nurse-training committee. Rumour had it that the representation of the teaching hospitals would be meagre. He believed that the committee would be practically a committee of the regional board, and the regional board was to be responsible for providing its officers and servants.

Lord LLEWELLIN said that under the Act of 1946 the teaching hospitals went direct to the Ministry and not through the regional boards. Now Parliament was to set up standing nurse-training committees to which teaching hospitals must go if they required any sort of grant. These hospitals feared they would have to go cap in hand to a committee on which they might have perhaps one representative. Lord Llewellyn thereupon withdrew his amendment.

On Clause 3 Lord SHEPHERD moved amendments, which were accepted. One of these was drafted, he explained, to ensure that nurses who went through training under an experimental scheme should be given opportunities of becoming really efficient and that the approved schemes should give that guarantee of efficiency.

Proposed Hospital Grants Committee

Lord LUKE then moved to omit Clause 4 and to substitute:

"The Minister may, by order, constitute in accordance with the Schedule of this Act (Constitution of Hospital Grants Committee) a Committee (in this Act referred to as a Hospital Grants Committee) for the purpose of approving expenditure by a Hospital Management Committee appointed by the Regional Hospital Board for the area or by the Board of Governors of a teaching hospital situated in the area, being expenditure:

(a) wholly or mainly for the purposes of, or in connexion with, the training of nurses; and

(b) of such description as the Minister may specify for the purposes of this subsection."

Lord LUKE said it seemed illogical to depart from the principle established by the National Health Service Act of placing teaching hospitals in a separate category and of giving them a certain independence. This Bill sought to give those hospitals money at second hand instead of direct from the Minister. Under the National Health Service Act had there not been co-operation between teaching hospitals and the rest? Why was Parliament now departing from the principle laid down in that Act? The amendment he proposed sought to set up a hospital grants

committee to administer the funds required by each institution for the training of nurses. This would leave the standing nurse training committee and the General Nursing Council entirely free to concentrate on nursing standards, but there would be full consultation between the hospital grants committee and the standing committees.

Lord SHEPHERD said there was a desire that the training of nurses, instead of being provided entirely by the hospitals should be carried out by a body representative of the nurse and of other bodies but acting independently. To give that independence the expenditure to cover the training of nurses would come from the Government through the General Nursing Council to the training committees. It would not be right to compare the payment of these moneys with the method adopted by the Government in the case of the universities. When the Government decided to place moneys at the disposal of the universities no national organization existed for that purpose and therefore a body had to be created to carry out the allocation. This was not the case with nurse-training, because the General Nursing Council could well undertake the business of superintending the allocation of Government aid.

There were 600 training schools in this country, and a series of standing nurse-training committees was to be established. These committees would be agents of the General Nursing Council. These training committees would not rule the roost and the teaching hospitals would not have to go cap in hand to them.

Lord WEBB-JOHNSON said that the University Grants Committee had been conspicuously successful, and its grants enormously benefited medical schools and the medical faculties. The medical profession would have been sorry to see placed in the hands of the General Medical Council the distribution of funds for the benefit of medical education.

Lord MORAN said the original decision to keep teaching hospitals outside the regions was made so that they might continue to give a lead in medical education. Every argument used on the Government side in favour of that course was applicable to the issue now before the House. His friends were concerned to see that the teaching hospitals, which in the past were mainly responsible for progress in the training of nurses did not lose their opportunities to advance the art of nursing. The analogy between medical education and training of nurses was extremely close.

Lord LLEWELLIN suggested that Lord Luke's amendment should be accepted and that thereafter between the committee and the report stages they should discuss who would be the right people to form the new body.

Lord ADDISON said he had much to do with the creation of the University Grants Committee, and during that period he met a committee of deans of the London teaching hospitals who with one accord exhorted him not to go on with "the dreadful thing." To-day they had the same kind of apprehension. The thirty-six teaching hospitals were not the only hospitals that taught nursing. There were 600 institutions which did that. Why should the people who had been pioneers wish to be isolated from the rest? The only object of the amendment was to put the teaching hospitals in a separate class. But the Government desired the benefit of their guidance and experience in the whole scheme. The Government was willing to have further discussions on the subject, but it must not be understood that it would change its view that its own proposal was the right one.

On a division Clause 4 in its original form was retained by 48 to 19.

Amendments were made in Clause 5, and on Clause 8 the House agreed to an amendment dealing with persons who had not fulfilled all the standards of training.

Lord WEBB-JOHNSON moved to insert after Clause 9 a new clause as follows:

"(1) The Council may if they think fit make rules prescribing or approving courses of training and prescribing or approving and for conducting or regulating the conduct of examinations to be undergone and passed by registered nurses desirous of specializing in particular branches of nursing, and may insert in the entry in the register relating to any registered nurse who has undergone the course of training and passed the examination prescribed or approved as aforesaid with respect to any particular branch of nursing such special signification as the Council may determine.

"(2) The provisions of subsections (1) and (2) of section sixteen of the Act of 1943 shall extend and apply to any rules made under this section."

He said anxiety was felt lest nurses sent to fever hospitals or mental hospitals or those nursing children for short periods during their training should thereafter be regarded as experts.

Lord ADDISON said what the Government desired was a good standard qualification. If in the course of time these extras were found to be necessary they could be provided. It would

A NON-MERCURIAL FUNGICIDE FOR TINEA PEDIS

The summer season brings an increase in the number of cases of epidermophytoses of the feet (athlete's foot) and similar mycotic infections of the axillæ and perineal regions.

MYCIL is a non-mercurial fungicide, evolved in the laboratories of The British Drug Houses Ltd., which is strongly inhibitive to the growth of the causative organisms of tinea pedis.

MYCIL is issued both as an ointment and as a powder. Clinical results confirm the effectiveness of the combined application.

MYCIL Dusting Powder is particularly useful as a preventive against re-infection when clinical cure has been obtained.

MYCIL

TRADE MARK

ointment
Containers of 1½ oz.

DUSTING POWDER
Sprinkler drums

Literature will be forwarded on application

MEDICAL DEPARTMENT

THE BRITISH DRUG HOUSES LTD. LONDON N.1

TELEPHONE: CLERKENWELL 3000

TELEGRAMS: TETRADOME TELEX LONDON

MYC E 9

48155

...Now available
a synthetic curarising agent—

trade mark **'FLAXEDIL'** brand

Tri-(β-diethylaminoethoxy)-benzene triethiodide

In producing complete muscular relaxation during surgical operations the action of 'Flaxedil' is qualitatively indistinguishable from that of d-tubocurarine chloride. Pharmacological evidence suggests that it may prove to possess some slight clinical advantages including a greater sparing action on respiration, more rapid recovery and fewer side-effects.

'Flaxedil' can be administered by any anaesthetist who has had previous experience with d-tubocurarine chloride and its use requires no additional equipment or adjuvant drugs. Solutions of 'Flaxedil' are compatible with solutions of thiopentone sodium.

The synthetic preparation is equally suitable for moderating the convulsions of shock therapy and for controlling muscle spasm due to various causes.

Our Medical Information Division will be pleased to supply a copy of the medical booklet 'Flaxedil' on request.

manufactured by



Boxes of 10 x 2 c.c. ampoules.
4 per cent solution

MAY & BAKER LTD

distributors PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD. DAGENHAM



DEFINITION FOR DIAGNOSIS

For a wide variety of radiographic procedures, a suitable contrast medium can be found in the Glaxo range. Individual diagnostic requirements can thus govern the choice of preparation . . . an all important factor in achieving dense, well-defined shadows. And testimony to the success of Glaxo radiological products is their growing use all over the world.



Further information available
from the local representative.

PYELOSIL Brand solution of Diodone 35% & 50% solutions for excretion pyelography. 70% solution, for cardio-angiography. In 20 cc. ampoules. **VISCO-PYELOSIL** Brand Viscous solution of Diodone For hystero salpingography, especially in the investigation of sterility. In 10 cc. ampoules. **PYELECTAN** Brand injection of Iodoxyl For excretion pyelography. In 20 cc. ampoules. Also Pyelectan (Retrograde) for ascending pyelography, 10 cc. ampoules. **PHENIODOL** Glaxo For radiography of the gall-bladder. Granules, 6 gram tube (1 dose) Tablets, tube of 6 (1 dose). **MYODIL** Brand Ethyl iodophenylundecylate For myelography. In boxes of 3 x 3 cc. ampoules.

Research Laboratories : Manufacturers of Medical Products and Foods • Represented by Agents in almost every country in the world

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX, ENGLAND

Introducing

'SYNCURINE'

A NEW MUSCLE RELAXANT

'Syncurine' brand Injection of Decamethonium Iodide (bistrimethyl-ammonium decane diiodide) presents a new synthetic compound (also known as C. 10) with a curare-like action. A single intravenous injection produces full muscular relaxation lasting from 15 to 25 minutes; repeated doses may be given as required.

Preliminary clinical investigations suggest that 'Syncurine' is a safe and highly satisfactory muscle-relaxing agent both for major surgery and for the control of electrically-induced convulsions in psychiatry. It is free from histamine-like activity and has no significant effect on the cardiovascular system. 'Syncurine' is issued in boxes of 6 and 25 ampoules, each containing 5 mgm. in 2.5 c.c. Further information available on request.

ANTIDOTE. An effective antidote, 'Wellcome' brand Injection of C. 5, containing 40 mgm. of Pentamethonium Bromide in 2 c.c., is available in boxes of 6 and 25 ampoules.



BURROUGHS WELLCOME & CO., LONDON
(The Wellcome Foundation Ltd.)

not be wise at present to incorporate in the Bill the words proposed by Lord Webb-Johnson.

Lord LLEWELIN said that in some cases additional certificates were thought to be essential. Would it not be possible for a special certificate to be given for the nursing of infants?

Lord AMULREE said the Hospital for Sick Children in Great Ormond Street and the similar ones in Manchester and Liverpool were at present recognized as full training schools for children's nurses. They should receive an assurance that there was no proposal to change that status.

Lord ADDISON said he had a strong prejudice against the multiplication of trimmings. They should view with misgiving people who collected large numbers of letters after their names. He was willing to discuss the problem again before the report stage. He said he could give Lord Amulree the assurance for which he asked.

Lord WEBB-JOHNSON then withdrew his amendment.

Clause 10 was approved with drafting amendments.

Lord SHEPHERD moved an amendment on Clause 11 to empower the General Nursing Council to charge a fee to organizations which asked for inspection and consideration, even though they were not finally given recognition by the Council. The amendment was agreed to.

Lord WEBB-JOHNSON moved an amendment to ensure that the complete cost of operations by the General Nursing Council under this clause should be borne by the Minister. Lord SHEPHERD said the Government could not accept the amendment, and it was withdrawn. Clause 12 and Clause 13 were approved.

On Clause 14 Lord LLEWELIN moved an amendment to ensure that the register of nurses should be published once every five years and the Council should not be relieved of their duty to keep an up-to-date list of alterations to the registry. He said that unless there was a register it would be very difficult to run an election for the General Nursing Council. Lord SHEPHERD said that if this amendment and the following one in the name of Lord Wolverton were withdrawn the Government would immediately appoint a working party representing the organizations involved, and he hoped this working party would report in time to permit an amendment being made to the Bill when it reached the House of Commons.

Lord WOLVERTON said his amendment proposed that amending lists should be printed as well as the present register. Lord SHEPHERD said a copy of the existing register could be obtained so long as copies remained. Lists of new registrations and lists of names removed from the register would be published three times a year, after the four-monthly examinations had been held. The amendment was withdrawn and Clauses 14, 15, and 16 were agreed to.

On Clause 17 Lord SHEPHERD explained that the Minister would be prepared to meet expenses incurred by the General Nursing Council in training nurses. Purely professional expenses should be borne by the General Nursing Council out of its own funds. If the Government gave way on this matter it would open the way for demands on the Exchequer from other sources. The clause was agreed to, as was Clause 18, with minor amendments.

A new clause was inserted in the Bill on the motion of Lord SHEPHERD to provide that the Council should annually make a report of their functions in connexion with training nurses during the preceding year, and that the Minister should lay this report before Parliament.

On the second schedule of the Bill Lord LLEWELIN moved that the majority of each committee should be registered nurses. He said that the British Medical Association, so far as he knew, was entirely composed of qualified doctors. Lord SHEPHERD said the Government accepted the amendment in principle, and suggested a discussion about its wording before the report stage. The amendment was withdrawn and the second schedule was approved.

Lord LUKE moved to insert a new schedule as follows:

"Constitution of the Hospital Grants Committee

"A Hospital Grants Committee shall consist of such number of persons appointed by the Minister of each of the following classes, as may be specified in the order constituting the Committee, that is to say:

- (a) Persons selected from lists submitted by the Royal College of Nurses,
- (b) Persons selected from lists submitted by the Central Midwives Board,
- (c) Persons appointed after consultation with the Minister of Education, and
- (d) Persons appointed after consultation with such Universities as the Minister thinks fit.

and the said order may contain provisions with respect to the qualifications of members of the Committee."

The amendment was accepted, though Lord SHEPHERD remarked that the Government agreed to it but did not approve of it.

On the third schedule Lord SHEPHERD moved an amendment to ensure that a mental-hospital matron appointed to the Mental Nurses Committee should be the matron of an approved training institution. The amendment was accepted. A second amendment to secure that the chief male nurse appointed to the same committee was a chief male nurse in a mental hospital which was an approved training institution was also accepted. The third schedule and the remaining schedule were approved and the committee stage ended.

Revised Estimates

Answering Mr. SHARP on May 11 Mr. BEVAN stated that regional hospital boards were revising their estimates, subject to a general directive that the welfare of the patients must not be affected. Detailed reports on the effect of the revisions proposed by the Ministry of Health had not yet been made by all boards. In the light of information so far received the Ministry was considering how far the proposed revisions should be carried out. Data were not yet sufficient for comparison of one regional hospital board with another. At least one year's full working was needed before such comparisons could be made.

Parkinson's Disease

Asked by Dr. SEGAL on May 12 whether the claims of Dr. Klemme in America to have cured cases of Parkinson's disease by operative treatment had been substantiated, Mr. BEVAN said the methods were well known but present experience did not justify their general adoption.

Dr. SEGAL asked whether, in view of exaggerated hopes raised by statements in certain sections of the Press, Mr. Bevan would appoint a commission of inquiry into this method of treatment. Mr. BEVAN replied that if he appointed a commission of inquiry each time a newspaper made exaggerated claims for some particular form of therapy he would have a number of commissions running all the time.

Mr. FRANCIS NOEL-BAKER asked whether Mr. Bevan knew that Dr. Voeller, in Germany, had had similar claims made about him. He asked Mr. Bevan to have the claims investigated, and if they were substantiated to make representations to the Treasury to give facilities for people to go to Germany to take this treatment.

Mr. BEVAN replied that that claim was of a different kind entirely. He had previously said that he was having it investigated.

Health Services in Northern Ireland

The number of persons registered with doctors under the Northern Ireland Health Scheme exceeded 1,200,000 and represented about 95% of the population, according to a statement made by the Minister of Health and Local Government in the Northern Ireland Parliament. During the first nine months of the Health Scheme about 230,000 people received dental attention, which was equivalent to more than 20% of the people in a full year. In the same period pharmacists dealt with 2,800,000 prescription forms containing nearly 4,000,000 prescriptions.

If the Hospital Authority's hopes were realized, plans for the construction of new hospitals and the extension of existing establishments would result in the provision of about 300 additional beds this year and about 1,250 during the next five years. At the moment there were 7,840 general beds available, as against 7,590 when the Authority took over control of hospitals. The total number of beds available for cases of tuberculosis was 1,380, or 275 more than when the Authority assumed control. The Authority estimated that about 700 additional beds were required, and it was anticipated that existing plans would provide some 250 to 300 of these within the next year.

Remuneration of General Practitioners

On May 19 Major TUFTON BEAMISH asked whether Mr. Bevan knew that the East Sussex Local Medical Committee, representing about 360 general practitioners in the National Health Service in East Sussex as well as others not in the Service, agreed with the General Medical Services Committee regarding their views following his recent meeting with them to discuss the case for increased remuneration of general-practitioners, and what action he proposed to resolve the deadlock.

Mr. BEVAN answered that there was no question of deadlock. He was in the midst of negotiations with the General Medical Services Committee on the remuneration of general practitioners. He preferred to defer his statement till the conclusion of these negotiations.

No. 18

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended May 7.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland, (d) Eire, (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county), (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire, (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	21	2	20	2	1	46	4	13	3	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Diphtheria ..	87	5	31	1	13	143	15	44	6	8
Deaths ..	3	—	—	—	—	1	1	—	—	—
Dysentery ..	59	10	41	—	—	108	28	49	2	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute ..	2	—	1	—	—	—	—	—	—	—
Deaths ..	—	1	—	—	—	—	—	—	—	—
Erysipelas ..	—	—	18	5	5	—	—	15	8	2
Deaths ..	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years ..	21	—	5	58	2	30	1	3	23	1
Deaths ..	—	—	—	4	—	—	—	—	—	—
Measles* ..	9,217	11,700	460	227	169	10,156	936	204	116	90
Deaths† ..	—	—	—	3	—	—	—	1	—	—
Ophthalmia neonatorum ..	47	2	9	—	2	59	5	12	1	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	3	—	2(B)	—	1	5	—	2(B)	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal ..	494	24	8	12	7	509	27	1	4	—
Deaths (from influenza)‡ ..	25	—	2	2	—	4	—	—	—	—
Pneumonia, primary ..	153	22	159	33	5	172	24	191	31	9
Deaths ..	—	—	—	7	—	—	—	—	3	—
Polio-encephalitis, acute ..	1	—	—	—	—	3	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute ..	13	2	4	1	—	9	1	2	1	—
Deaths§ ..	1	—	—	—	—	1	—	—	—	—
Puerperal fever ..	—	—	10	—	—	—	2	11	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| ..	91	8	3	—	—	99	9	12	2	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Relapsing fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Scarlet fever ..	898	63	126	67	34	1,578	93	249	46	34
Deaths† ..	—	—	—	—	—	—	—	1	—	—
Smallpox ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Typhoid fever ..	37	—	2	—	—	8	1	—	3	—
Deaths ..	1	—	—	—	—	—	—	—	—	—
Typhus fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	3,053	196	229	123	76	3,110	221	34	50	15
Deaths ..	3	1	1	5	—	16	—	—	1	1
Deaths (0-1 year) ..	259	32	39	25	17	274	21	51	16	14
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths) ..	4,537	699	599	181	124	4,290	639	629	175	137
Annual death rate (per 1,000 persons living) ..	—	—	12.0	11.2	—	—	—	12.7	10.2	—
Live births ..	8,188	12,641	10,177	484	274	8,307	12,922	10,555	467	254
Annual rate per 1,000 persons living ..	—	—	20.4	30.0	—	—	—	21.3	29.2	—
Stillbirths ..	218	26	33	—	—	237	29	27	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	31	—	—	—	—	25	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Smallpox

Four cases of smallpox have now been notified in Liskeard: the original case admitted on May 7 and the three close family contacts who had been isolated in hospital as a precautionary measure. None of the other contacts showed any sign of the disease on the sixteenth day of surveillance.

A case of suspected smallpox has been reported on board the s.s. *Mooltan*, at present outward, bound to Australia. The liner left this country on April 28, and this patient was taken ill on May 18.

Discussion of Table

In *England and Wales* there was an increase in the notifications of whooping-cough 148, scarlet fever 113, acute pneumonia 41, typhoid fever 31, and dysentery 21. There was a decrease of 2,219 in the notifications of measles.

The largest declines in the incidence of measles were London 371, Essex 225, Middlesex 185, Lancashire 162, Yorkshire West Riding 139, Cheshire 127, and Sussex 102.

The rise in the notifications of whooping-cough was most marked in the southern section of the country; in the south-western counties 70 more cases were notified than in the preceding week. A small rise in the incidence of scarlet fever was reported from most areas.

Notifications of diphtheria fell to the record low level of 87, which was 5 below the previous lowest total recorded in January of this year.

An outbreak of dysentery affecting 14 persons was notified in Warwickshire, Warwick R.D. The only other large centre of dysentery was London, where 10 cases were notified from eight boroughs. The rise in the notifications of typhoid fever was due to the outbreak in Berkshire (Easthampstead R.D. 15 and Wokingham R.D. 16).

In *Scotland* decreases were recorded in the incidence of measles 53, whooping-cough 20, and scarlet fever 19. There was an increase of 11 in the notifications of diphtheria. The increase in the incidence of diphtheria was contributed by Lanark county and the city of Glasgow. Notifications of dysentery were practically confined to three cities: Glasgow 14, Edinburgh 11, and Dumfries 11.

In *Eire* there were decreases in the incidence of measles 28 and whooping-cough 30. Notifications of diarrhoea and enteritis increased by 21, and the total was the largest in recent months.

In *Northern Ireland* only small variations were reported in the trends of infectious diseases.

Week Ending May 14

Notifications of infectious diseases in England and Wales during the week included: scarlet fever 993, whooping-cough 2,906, diphtheria 90, measles 8,363, acute pneumonia 406, cerebrospinal fever 44, acute poliomyelitis 11, dysentery 77, paratyphoid 10, and typhoid 7.

Medical News

Royal Society of Edinburgh

The following members of the medical profession were elected Fellows of the Royal Society of Edinburgh on March 7: Dr. D. P. Cuthbertson, Dr. A. MacA. Gillespie, O.B.E., Dr. Harold Sington, and Dr. R. H. A. Swain.

New Journal of Medical Records

The Association of Medical Records Officers has started a new quarterly journal called the *Medical Record*, which is issued free to members. It is edited by Mr. D. G. Davies, F.S.S., Records Officer of the United Leeds Hospitals. The journal will give news of the association's activities and provide an opportunity for the exchange of views for those working in medical records departments in hospitals and other medical establishments. Dr. Percy Stocks, Chief Medical Statistician of the General Register Office, contributes an article on "Records and Research," and emphasizes the importance of accurate initial records if statistical treatment of them is to be of use. The journal appropriately includes a crossword puzzle.

To Visit East Africa

Professor R. C. Browne, of the Nuffield Department of Industrial Health, University of Durham, will visit East Africa during June and July under the joint auspices of the Nuffield Foundation and the Colonial Office. He will represent social medicine among a panel of specialists visiting doctors in the Colonial Medical Service.

West London Medico-Chirurgical Society

The annual dinner of the West London Medico Chirurgical Society was held at the Royal College of Surgeons, Lincoln's Inn Fields, on May 18. Dr W. S. C. Copeman, the President, and Mrs Copeman received the guests, who included Lord Moran, Lord Burleigh, Sir William Gilliatt, Sir Cecil Wakeley, Sir Norman Birkett, Mr Somerville Hastings, M.P., the presidents of various kindred societies, and the editors of the *Lancet* and the *British Medical Journal*. The health of the society was proposed by Lord Burleigh, who took occasion to acknowledge the help given by members of the medical profession in connexion with the recent Olympic Games. He referred in particular to the work of Mr Arthur Porritt, a member of the society, who was chairman of the medical committee. Dr Copeman, in response, spoke of the liaison between the society and the British Postgraduate Medical School, as a result of which the society had had a considerable accession of new members, and the dean of the school was present at the dinner that evening not as a guest but in his own right. Lord Moran then presented the triennial gold medal of the society to Professor McCance for his work in the field of nutritional studies. He reminded the company that in the early part of the war Professor McCance had conducted experiments upon himself, living on a starvation diet in order to discover what was the minimum diet compatible with health. In a world menaced by food shortage the work of Professor McCance was of extraordinary value. Professor McCance, in acknowledgment, briefly discussed the special problems of experimentalists in medicine. He laid it down that any experiments made on patients not only must be undertaken with the object of curing the patient but also must proceed in consultation with the patient, who must be regarded not only as a subject but as an ally. He spoke feelingly of the searchings of conscience which this field of medicine demanded—embarrassments from which the ordinary practising physician or surgeon was free. Dr Doxey Bell proposed the health of the guests. Mr Justice Birkett, in response, told some excellent after-dinner stories, and also referred to his appearance this year as the society's Cavendish Lecturer. Mr Somerville Hastings also responded as a member of the governing body of the group of hospitals of which the West London Hospital was one. He said that so far as he had any influence the traditions of the West London Hospital would be maintained in the new regime.

More Rehabilitation

The Minister of Health is encouraging hospitals in the Service to increase facilities for rehabilitation. He has sent a memorandum to hospital boards and management committees saying, "The Hospital Service is responsible for the medical aspect of the problem in respect of the prevention or limitation of disablement by efficient medical rehabilitation concurrently with medical or surgical treatment. It is for the Health Service to prevent the large number of patients whose prolonged and ill-directed convalescence, after relatively minor disorders, causes so much absenteeism and often sows the seeds of a permanent disability neurosis." He emphasizes that practitioners should see patients through to the point where they can either resume their former employment or be passed to the Ministry of Labour's Displacement Resettlement Officers for placing in some suitable alternative occupation. The memorandum makes the following suggestions: (1) Appointment by each regional hospital board of a small committee to advise on development of facilities for medical rehabilitation; (2) nomination of responsible member of the medical staff at all larger hospitals to supervise the rehabilitation services; (3) extension of arrangements for long stay patients to undertake productive industrial work; (4) holding short courses for doctors to demonstrate modern methods of rehabilitation and resettlement.

Book on Health Service

A new book entitled *The National Health Service*, by Dr Charles Hill, secretary of the British Medical Association, and Mr John Woodcock, will be published at 16s by Christopher Johnson, Ltd., at the end of June. The authors expound in simple terms the National Health Service Act and its subordinate legislation, with reference to the Scottish Act where its provisions differ from those of the English Act.

The Osler Club

At the 83rd meeting of the club on May 13 Dr D. Evan Bedford gave an illustrated address entitled "The Ancient Art of Feeling the Pulse." He reviewed the history of pulse taking from the time of the Chinese physicians, who wrote on the subject 2,000 years B.C., to Sir James Mackenzie's work, published at the beginning of this century. He also showed books on this subject from his own library. Mr Geraint Griffith gave a biographical sketch of Sir James Mackenzie, and Mr Peter Thomas spoke on "Inventors of the Sphygmograph." Lord Amulree spoke briefly of Mackenzie, and concluded a most interesting evening by demonstrating his uncle's original together with some of his tracings and notebooks.

Nurses' Pay Increased

Salaries for hospital nurses have been increased with retrospective effect from Feb. 1 as shown in the following tables.

WOMEN

	Previous Annual Rates	New Annual Rates
Ward sister	Cash salary Emoluments £180-260 £120	£375 rising by 7 annual increments of £15 and 1 increment of £20 to £500
Staff nurse	Cash salary Emoluments £140-200 £100	£315 rising by 8 annual increments of £12 10s to £415
Enrolled assistant nurse	Cash salary Emoluments £120-170 £100	£285 rising by 8 annual increments of £12 10s to £385

MEN

	Previous Annual Rates on Non resident Basis	New Annual Rates
Charge nurse	£312-380	£385 rising by 7 annual increments of £15 and 1 increment of £10 to £500
Staff nurse	£260-312	£325 rising by 8 annual increments of £12 10s to £425
Enrolled assistant nurse	£239-291	£300 rising by 8 annual increments of £12 10s to £400

Ward sisters and charge nurses will pay £130 a year (other £120) for board and lodging and other services provided by the hospital. Non resident nurses will pay £20 a year for meals on duty, and the use and laundry of uniform.

The Association of the British Pharmaceutical Industry

At the annual dinner of the Association of the British Pharmaceutical Industry, which was held at the Savoy Hotel on April 27, several speakers referred to the need for co-operation between the medical and pharmaceutical professions. In proposing the toast of the Pharmaceutical Services the chairman of the association, Mr C. A. O. Rideal, spoke of the great need for standardization in the pharmaceutical industry. One of the problems was a complicated system of weights and measures, including some peculiarly named containers. The doctors' liking for writing their scripts in Latin was an added difficulty. In reply Dr H. Davis, chief pharmacist to the Ministry of Health, paid tribute to all who had helped to provide the pharmaceutical services of the N.H.S. so successfully up to date. Mr J. C. Hanbury proposed the health of the guests, and said that in facing the problems of the day in the N.H.S. the medical and pharmaceutical professions shared much common ground. Sir Harry Jepcott, in reply, said that the pharmaceutical industry was making every endeavour to co-operate in the steps being taken towards social and industrial progress. Dr D. P. Stevenson, Deputy Secretary of the B.M.A., proposed the toast of the Association of the British Pharmaceutical Industry. Both associations, he said, were quietly performing the task of looking after the interests of the public. This did not stop them from being regarded as Aunt Sallies at times, but nevertheless they had the satisfaction of knowing that in the field of humanity their work was of great importance. The pharmaceutical industry had never failed the medical profession yet. One of the rights which the doctor would always claim for himself was his absolute freedom to prescribe any drug in any form which he felt was needed by his patient. In his reply Mr I. V. L. Ferguson said that for some of the services provided under the N.H.S. the patient had to wait days, weeks, or months, but from the individual doctor and chemist he could always expect to obtain immediate help.

Pharmaceutical School

The Pharmaceutical Society of Great Britain has authorized its council to sell to the University of London for £258,000 the new building going up in Brunswick Square, begun before the war to house the society's college, a school of the University of London, and its other activities. The school, now an independent institution, will occupy the building when completed and the question of the society's own headquarters is under consideration.

Markle Foundation

Thirteen young scientists have been appointed as the second group of scholars in medical science, under the plan begun in 1948 by the John and Mary R. Markle Foundation (14, Wall Street, New York, 5) to assist qualified men and women wishing to remain in academic medicine. The scholars were selected from candidates nominated by accredited medical schools in the United States and Canada. The sum of \$325,000 has been allocated for their support, to be in grants of \$5,000 a year, to cultivate appointments to the British Medical

Register—namely, Dr. John Davis Green, whose interest is in anatomy and physiology, and Dr. Donald Richards Wilson, internal medicine and endocrinology. The grant for Dr. Green has been allotted to the Wayne University College of Medicine, Detroit, and that for Dr. Wilson to the University of Alberta Faculty of Medicine, Edmonton.

Wills

Sir William Hale-White, for many years physician at Guy's Hospital, left £62,920. Dr. John Richard Tarrant Conner, formerly editor of the *Clinical Journal*, left £1,082; Major-General John Weir West, formerly professor of military surgery at the Royal Army Medical School, £4,920; and Dr. Arthur Graham Foljambe Forster, of Cheltenham, £28,036.

COMING EVENTS

Consultants' Meeting at Birmingham

There will be a general meeting of consultants in the Birmingham Region No. 12, at Nuffield House, Queen Elizabeth's Hospital, Birmingham, on Saturday, June 11, at 2.30 p.m., to discuss the proposed terms of service.

Cambridge Graduates' Medical Club

The Cambridge Graduates' Medical Club, which was founded in 1883, will hold its annual dinner at Cambridge in July. The council of the club believes that many Cambridge men who graduated in the war years are unaware of the club's existence, the objects of which are to further the interests of the medical and natural science schools of the University and to promote good fellowship among its graduates. Medically qualified male graduates are eligible for election, the fee for life membership being £1 ls. Those interested should get in touch with their hospital representative or with one of the honorary secretaries, Dr. R. A. Hickling, 99, Harley Street, London, W.1, or Dr. A. Willcox, 66, Harley Street, London, W.1.

SOCIETIES AND LECTURES

Monday

EDINBURGH UNIVERSITY.—At Physiology Lecture Theatre, University New Buildings, Teviot Place, Edinburgh, May 30, 5 p.m., "*Salerno: The First Medical School*," by Dr. Douglas Guthrie.
LONDON UNIVERSITY.—At Institute of Neurology, National Hospital, Queen Square, London, W.C., May 30, 5 p.m., "*Arteriovenous Aneurysms of the Brain*," by Professor H. Olivecrona (Stockholm).
LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., May 30, 4.45 p.m., "*Selective Toxicity with Special Reference to Chemotherapy*," by Professor Adrien Albert.

Tuesday

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Anatomy Lecture Theatre, University New Buildings, May 31, 5 p.m., "*Some Observations on Paroxysmal Tachycardia*," by Dr. I. G. W. Hill.
INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—May 31, 5 p.m., "*Lupus Erythematosus*," by Dr. H. J. Wallace.
INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 31, (1) 11 a.m., "*Aetiology and Diagnosis of Gonorrhoea*," by Dr. W. N. MacCall; (2) 5 p.m., "*Penicillin and Sulphonamide Therapy in Infections of the Urinary Tract*," by Dr. A. H. Harkness.
LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., May 31, 5.15 p.m., "*Muscular Contraction*," by Professor A. V. Hill.
MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.—At Royal Society of Medicine, 1, Wimpole Street, London, W., May 31, 5.10 p.m., joint meeting of Society with Section of Experimental Medicine of Royal Society of Medicine. "*Recent Advances in the Study of Venereal Diseases*," by Dr. J. Earle Moore (Baltimore).
WESTMINSTER HOSPITAL SCHOOL OF MEDICINE. Meyerstein Lecture Theatre, Horseferry Road, London, S.W.—May 31, 5.30 p.m., clinic-pathological meeting. Discussion: "*Appendicitis*," by Mr. G. T. Mullaly.
WRIGHT-FLEMING INSTITUTE OF MICROBIOLOGY, St. Mary's Hospital Medical School, Paddington, W.—May 31, 5 p.m., "*The Nature of Plant Viruses*," by Dr. F. C. Bawden, F.R.S.

Wednesday

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., June 1, (1) 11 a.m., "*Signs, Symptoms, and Asymptomatic Carrier State of Gonorrhoea*," by Dr. A. H. Harkness; (2) 5 p.m., "*Congenital Malformations of the Bladder and Urethra*," by Mr. J. E. Sempie.

Thursday

CLINICAL SOCIETY OF THE ROYAL FREE HOSPITAL, Gray's Inn Road, London, W.C.—June 2, 5.15 p.m., "*Mammoplasty*," by Dr. Ernesto F. Malbec (Director of Plastic Surgery at Hospital of Ramos Mejia, Buenos Aires). Visitors welcomed.
EDINBURGH UNIVERSITY.—At Anatomy Theatre, University New Buildings, Teviot Place, June 2, 5 p.m., "*Chemotherapy in Reticulosis*," Honynman Gillespie Lecture by Dr. James Innes.

FACULTY OF HOMOEOPATHY.—At Royal London Homoeopathic Hospital, Great Ormond Street, London, W.C., June 2, 5 p.m., "*The Problem of Mental Illness*," by Dr. T. H. B. Gladstone.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., June 2, (1) 11 a.m., "*Pathology of Gonorrhoea*," by Dr. A. H. Harkness; (2) 5 p.m., "*Diseases of the Female Urethra*," by Mr. H. G. Hanley.

LONDON COUNTY MEDICAL SOCIETY.—At Southern Hospital, Dartford, Kent, June 2, 3 p.m., clinical meeting.

LONDON UNIVERSITY.—At Institute of Neurology, National Hospital, Queen Square, London, W.C., June 2, 5 p.m., "*Intermittent Claudication*," by Professor A. M. Boyd.

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., June 2, 4.45 p.m., "*Some Aspects of Nitrogen Metabolism in the Mammal*," by Dr. J. S. Bach.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—June 2, 4.30 p.m., "*Neurology*," lecture-demonstration by Dr. D. J. Williams.

Friday

WHIPPS CROSS HOSPITAL MEDICAL SOCIETY.—June 3, 8.30 p.m., "*Modern Diagnostic Radiology*," by Dr. G. White Phillips.

APPOINTMENTS

LEWIS, CECIL W. D., M.B., B.Ch., F.R.C.S., Junior Assistant, Surgical Unit, Royal Infirmary, Cardiff.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, London, W.C.—*House-surgeon:* Miss J. F. Cambell, M.B., Ch.B. *House-physician:* D. Q. Trounce, M.B., B.S., M.R.C.P., D.C.H. *Registrar to Department of Plastic Surgery:* M. H. Kinmonth, M.B., F.R.C.S.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Brinton.—On May 15, 1949, in London, to the wife of Dr. W. D. Brinton, a daughter.
Fraser.—On May 3, 1949, at Aberdeen, to Dr. Mary E. Fraser (née Chalmers), wife of R. J. A. Fraser, F.R.C.S.Ed., a daughter.
Friedlander.—On May 15, 1949, at Lorna Lodge, 133, Barlow Moor Road, Manchester, 20, to Jean L. Broughton, M.R.C.S., L.R.C.P., wife of H. A. Friedlander, M.R.C.S., L.R.C.P., a daughter.
Lloyd-Owen.—On May 9, 1949, at the Lindo Wing, St. Mary's Hospital, to Helen, wife of Dr. Morus Lloyd-Owen, a daughter.
Macrae.—On April 8, 1949, to Dr. and Mrs. J. O. F. Macrae, Church of Scotland Mission, Ichang, Hupeh, China, a daughter—Gillian Kirsteen.
MacVinc.—On April 29, 1949, at the Central Middlesex Hospital, London, N.W., to Daphne (née Vieusseux), wife of J. Sinclair MacVinc, F.R.C.S.Ed., a second daughter—Virginia Anne.
Schorstein.—On May 8, 1949, to Mr. and Mrs. J. Schorstein, of Dumgoyne Cottage, Dumgoyne, Stirlingshire, a son.
Smallpeice.—On May 17, 1949, to Olive L. Smallpeice, L.D.S., R.C.S.Eng. (née James), wife of Dr. John Smallpeice, a son.

DEATHS

Atkinson.—On May 7, 1949, Hugh Norman Crowley Atkinson, M.R.C.S., L.R.C.P., of Queniborough, Leicestershire.
Babonau.—On May 9, 1949, at "Ruapuna," Songhor, Kenya, Alexander Frederick Babonau, C.I.E., O.B.E., M.B., Ch.B., Colonel, I.M.S.(ret.).
Bates.—On April 7, 1949, at King George V Hospital, Durban, Robert Fosbrooke Bates, M.B., aged 31.
Brashter.—On May 11, 1949, at St. Leonards, Charles William James Brashter, M.D., aged 83.
Clark.—On May 10, 1949, at Crossways, Brimstage Road, Spital, Bromborough, Cheshire, George Clark, M.B., Ch.B., D.T.M., D.T.H., D.P.H.
Cookson.—On May 15, 1949, at Toronto, Canada, Henry Anstey Cookson, C.B.E., F.R.C.S.Ed., F.R.C.P.Ed., F.R.S.Ed.
Copeman.—On May 6, 1949, at Salisbury Lodge, Hove, Alfred Heathcote Copeman, M.D., aged 80.
Court.—On May 3, 1949, at Raigmore Hospital, Inverness, Edward Percy Court, M.R.C.S., L.R.C.P.
Dalzell.—On May 18, 1949, Philip Dalzell, M.B., B.S., of 1, Raymond Road, Wimbledon, London, S.W., aged 43.
Davidson.—On May 7, 1949, at Woodville, Shettleston Road, Glasgow, E.2, William Tennent Gairdner Davidson, M.D., D.P.H.
Edleston.—On May 8, 1949, at The Mount, Hatherton, Nantwich, Richard Shafto Chambers Edleston, M.R.C.S., L.R.C.P.
Goss.—On May 12, 1949, at R.N. Hospital, Plymouth, Leslie Stewart Goss, O.B.E., L.M.S.S.A., Surgeon-Captain R.N. Ret.
Hoffman.—On May 17, 1949, at Axminster Cottage Hospital, Harry Drummond Hoffman, M.B., aged 72.
Leicester.—On May 19, 1949, at Clare Cottage, Cold Ash, Newbury, Berks, John Cyril Holdich Leicester, M.D., F.R.C.P., F.R.C.S., Lieutenant-Colonel, I.M.S.(ret.), aged 77.
Mackay.—On May 8, 1949, at 9, Belford Avenue, Edinburgh, George Mackay, M.D., F.R.C.S.Ed.
McKee.—On May 7, 1949, at St. Mary's Bay, Kent, William Cowan McKee, M.B., B.Ch., Lieutenant-Colonel I.M.S. retired.
Mackie.—On May 8, 1949, at a nursing home, Edinburgh, Elspeth MacLeod, M.B., Ch.B., wife of F. J. B. Mackie, I. McLaren Road, Edinburgh.
MacLagan.—On May 8, 1949, at Kello Hospital, Biggar, Lanarkshire, Patrick Alexander MacLagan, M.B., Ch.B.Ed.
Macnaughton-Jones.—On May 15, 1949, at Amersham, Henry Macnaughton-Jones, M.B., B.Ch., aged 80.
Martin.—On May 22, 1949, at 10, York Gate, London, N.W.1, Ernest William Martin, M.B., Ch.B., aged 72.
Martland.—On May 16, 1949, at a nursing-home near Darlington, William Lionel Martland, M.B., Ch.B., aged 50.
Menzies.—On May 14, 1949, at 41, Melbury Court, London, W., Sir Frederick Norton Kay Menzies, K.B.E., M.D., F.R.C.P., aged 73.
Phipps.—On May 14, 1949, Forder, Cawsand, H. H. Phipps, M.R.C.S., L.R.C.P., aged 85.
Rogers.—On May 14, 1949, at Namouna, West Cliff Road, Bournemouth, Kenneth Rogers, O.B.E., M.D.
Williams.—On May 12, 1949, at Liverpool, David Llewelyn Williams, C.B.E., M.C., LL.D., F.R.C.S.Ed., aged 79.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Treatment of Osteoarthritis

Q.—What is the usual modern treatment for osteoarthritis of the knee-joint?

A.—The treatment of osteoarthritis of the knee-joint may be non-surgical or surgical.

Non-surgical Treatment.—It should be appreciated that the joint changes of osteoarthritis are permanent, and treatment can be only palliative. The following measures are available, and each has its indications: (1) Rest.—This will always lead to improvement in the symptoms. In some cases avoidance of prolonged standing or walking is all that is required. In the occasional case, particularly after recent injury or when there is some degree of fixed flexion deformity, temporary immobilization in plaster—if necessary after gentle straightening of the knee—is of value. (2) Physiotherapy.—The most effective form of physiotherapy is a combination of short-wave diathermy with intensive active exercises designed to improve the muscle control of the knee. In cases of moderate severity this often gives satisfactory relief, and it is probably the most widely applicable method of conservative treatment. (3) Acid Injections.—10 to 20 ml. of acid potassium phosphate or other appropriate acid solution—often combined with procaine—is injected into the joint. A course of treatment commonly consists of six to twelve injections at weekly intervals. The method is still on trial; while improvement has been claimed by a number of workers, there is probably a majority of orthopaedic surgeons who feel that its value is very doubtful. (4) X-ray Therapy.—Improvement has been obtained, but not constantly. This treatment should be tried only when other measures have failed to secure adequate relief.

Surgical Treatment.—Operative measures are not often required, though in the occasional case with severe disablement the result may be eminently satisfactory to the patient. (1) Excision of the patella is indicated in certain cases where the arthritic process is confined to the patello-femoral compartment—particularly after malunited fractures of the patella with distortion of its articular surface; but it is unlikely to be of benefit when the arthritis has reached an advanced stage. (2) Arthrodesis is advised only when pain or deformity is causing such a severe degree of crippling that a stiff knee becomes acceptable to the patient. In cases of this severe type—where degenerative arthritis is often secondary to a previously existing infective arthritis—the results of arthrodesis are often very satisfactory, sometimes even in bilateral cases. (3) Arthroplasty gives such inconsistent results that it is indicated only exceptionally, if at all. It is possible that in the future improved methods of performing the operation may increase its usefulness.

Post-gastrectomy Diet

Q.—What diet and what medicine should be prescribed for a patient who has just had a partial gastrectomy?

A.—It is assumed that the question does not refer to the immediate post-operative period but to the time, 14 to 21 days after operation, when the patient is beginning to lead an active life again. At this stage the usual type of "post-Lehnhart" diet is suitable; meals should be frequent, regularly spaced, and small in bulk. Gradually the volume of individual meals may be increased and the interval between them lengthened until only four are taken daily. Their composition should be bland at first, but over two or three months more dishes can be added until a virtually normal diet is being taken. Most patients who have undergone partial gastrectomy are eating normally two or three months after operation. There is no general indication for medicines, but in some instances a vitamin concentrate and iron may be advisable.

Threadworms

Q.—Would you please tell me the dose and the method of administration of carbon tetrachloride followed by saline purgation for a child of 7 and her mother? Is this treatment for threadworms always successful, and, if not, how soon can it be repeated?

A.—Carbon tetrachloride is highly toxic and possesses few advantages over the less toxic and almost as effective anthelmintic tetrachlorethylene, but it is doubtful if either treatment should be given unless the patient is in hospital. The oral dose advised for tetrachlorethylene is 3 ml. (in three 1-ml. soft gelatin capsules) for an adult, and 3 minims (0.18 ml.) per year of age for a child. Alcohol and all fats, including milk, should be withheld for two days previous to giving the drug, which should be administered before food is taken on the morning after a saline purge has been given. The patient should remain in bed throughout the treatment. In cases of failure treatment should not be repeated until three weeks have elapsed.

An alternative treatment is with hexylresorcinol orally combined with enemas. The dose is 1 g. for adults and for children over 10 years; below 10, for each year of age 0.1 g. The drug should be administered in hard gelatin capsules. If the oral dose is taken in the morning, a soap-sud enema should be given the same evening, to be followed by another enema of a 0.1% solution of hexylresorcinol crystals in water, which should be retained for fifteen minutes. The treatment of threadworms, particularly in children, has been fully investigated by Wright and his colleagues in America, and the results of their investigations have been published in a series of articles. After trying many lines of treatment they consider that the one yielding the best results with the minimum of risk is the administration of gentian violet. The method of administration and the preparation of the patient are fully described in a paper which appeared in the *Journal of the American Medical Association* (1940, 114, 861). No known form of treatment is always successful.

Effect of Mandelic Acid

Q.—Are any ill effects likely to result from taking mandelic acid over long periods?

A.—No ill effects are to be expected from taking mandelic acid over long periods. Mandelic acid is a fatty acid which is excreted unchanged. However, when it is taken, it is usually given as ammonium mandelate or calcium mandelate, and in this form it produces an acid urine, which is necessary if it is to be effective bactericidally. The maintenance of an acid urine for long periods may be harmful in persons suffering from some degree of renal damage; this may be further aggravated by restriction of the fluid intake. To maintain full treatment with fluid restricted to 2 pints (1,136.5 ml.) and a urine of acidity pH 5.5 is often very depressing for the patient.

Green Staining of Hair

Q.—It has been suggested that an impregnating varnish consisting of an oil-modified phenolic resin dissolved in white spirit might be the cause of the green staining of the hair which occurs in men with white hair who come into contact with it in a factory. As the discoloration is confined to the front of the hair, it is probably connected with perspiration. Could you give any information, with references, on pigmentation of the hair which would help in tracing the source of the trouble?

A.—The inquirer does not give sufficient data to enable fair comment to be made. It would be helpful to have been told if copper is actually handled by the affected workers or is present in the shops as dust; if the staining washes out with soap and water; and the colour of the varnish. It seems unlikely that the varnish, unless it is actually green in colour and is carelessly handled by the workers, is the cause of the green pigmentation of the hair.

Copper has been known to cause green staining of the hair and perspiration. Flinn and Inouye (*J. biol. Chem.*, 1929, 84, 107) refer to the statement in the literature that "copper dust, or alloys rich in copper, generally produce in workers green-stained hair, greenish deposits on the teeth, and a green tint to the perspiration which may persist even after a thorough bath, while the skin may be actually bronzed." Mallory (*Arch. intern. Med.*, 1926, 37, 336) states that continued exposure to

copper, such as is experienced by workers in copper foundries, will cause haematochromatosis. I. J. Cunningham (*Biochem. J.*, 1931, 25, 1273) remarks on the catalytic effect of copper on the oxidation of "dopa" (3:4-dihydroxyphenylalanine), which is the precursor of melanin, the pigment in hair. Copper and its effect on health is discussed in *Industrial Medicine*, 1947, 16, 368. A detailed discussion on hair-colour change can be found in *J. Amer. med. Ass.*, 1943, 121, 161.

Malignant Deposit in Pelvis

Q.—For the last year a woman of 51 who had a carcinoma of the breast removed three years ago has been having back-ache, never localized, but most frequently in the lumbar region. X-ray examination reveals an osteoarthritis of the spine; there is also a "spot" in the pelvis which may indicate the presence of malignant deposits. A blood examination shows her alkaline phosphatase level to be 5 units per 100 ml.—this, I am told, does not support a diagnosis of malignancy. Would you please give your view?

A.—Osseous metastases during the early phase of their development give rise to indefinite signs on radiological examination, and in such cases repeated radiography at monthly intervals is of value. Estimations of the alkaline phosphatase concentration in the blood are of limited value. It is true that in some cases of osseous metastases the figure is raised, but it may be normal, and conditions other than this may cause changes in the alkaline phosphatase level. This patient should be kept under careful observation and further radiological examinations of the pelvis carried out at intervals.

Blood Transfusion in CO Poisoning

Q.—Has replacement blood transfusion ever been tried in cases of coal-gas poisoning? Six to eight pints (3.4 to 4.5 litres) would seem to be enough if the patient is in real danger.

A.—Blood transfusion has been used in the treatment of carbon-monoxide poisoning. Special care must be exercised to ensure that the circulation is not overloaded, because such overloading would have serious, and very possibly fatal, effects on a heart already dilated and weakened by anoxia. The method adopted must therefore be one of replacement, as the question suggests, but the quantities mentioned are excessive. Blood transfusion should not be regarded as a routine requirement in cases of coal-gas poisoning. Most of the patients reaching hospital alive will have eliminated a considerable proportion of the carbon monoxide, and other lines of treatment, such as the administration of oxygen with carbon dioxide, will give satisfactory results in the majority of cases.

Allergy to Animal Fat

Q.—Is it possible to desensitize a patient who is allergic to animal fats? He is unable to eat an average amount of animal fat without developing small pustules on his chin; this also occurs after shaving with soap containing such fat. He is not allergic to vegetable fats.

A.—Desensitization to a food is of doubtful value and is rarely advisable. The best treatment is its complete avoidance, when the hypersensitivity is frequently outgrown. It is most unusual for a person to be allergic to all animal fats, nor are pustules a common manifestation of spontaneous allergy. More usually the sensitivity is to the products of individual species of animal.

Penile Herpes or Verrucae

Q.—A young man aged 24, with no history or signs of specific venereal infection, has developed a chain of papilla-like processes about the size of a pin's head in the coronal sulcus. These bodies do not resemble venereal warts; there is no phimosis and no other evidence of balanitis. Applications of glacial acetic acid caused temporary "whitening" of these papillae, but they have not disappeared. What alternative treatment would you suggest? Is the condition progressive, and are any serious sequelae likely in the patient or his wife?

A.—From the information given, the lesions appear to be either herpes or verrucae—probably the former. Unless they are giving rise to unpleasant symptoms, no treatment is indicated; should treatment be deemed advisable, keeping the parts dry and powdering with talcum are recommended. Such

methods as circumcision, excision of the affected epithelium, or destruction with the electrocautery are unnecessarily drastic and are contraindicated. For warts such as are commonly seen in connexion with a chronic urethritis, podophyllin resin B.P. 25% or less in liquid paraffin is remarkably successful; the surrounding parts should be protected with a film of petroleum jelly and the podophyllin applied with a swab and allowed to dry; if necessary, a second application may be made after a few days.

The condition described is not likely to be progressive, though it may take a considerable time to clear up; nor is it likely to cause any serious sequelae in either the patient or his wife.

Transient Giddiness

Q.—What are the causes and treatment of momentary transient vertigo? I have many patients—non-smokers, non-drinkers, with normal blood pressures, and aged 40 to 60—who complain of momentary giddiness after stooping, on looking up to the sky, or on rotating the head.

A.—Probably some of these are not cases of true vertigo. Thus, momentary dizziness after stooping is often caused by a temporary cerebral anaemia due to poor vascular tone, and the subject should derive benefit from physical exercises, particularly for the abdominal muscles. The other cases are probably due to abnormal proprioceptive or ocular impulses. Thus rheumatic affections of the cervical joints and muscles may be a factor. In the ocular cases, or in those with true postural vertigo, phenobarbitone or other sedatives should help.

NOTES AND COMMENTS

Keloid.—Dr. F. PIERS (Nairobi) writes: A correspondent asked which was the best treatment for keloids ("Any Questions?" Feb. 26, p. 377). Your expert, in his reply, advised x-ray treatment and excision of the scar. With great respect I beg to disagree with him, especially as regards excision. Keloids invariably recur and assume a more unpleasant character after surgical interference. I have recently seen a young Greek woman from Abyssinia who had originally, a small keloid over the sternal region. This was twice excised by competent Italian surgeons, and each time the result had been a more extensive and unsightly recurrence of the keloid. The method of choice is, in my opinion, radium treatment: repeated surface applications with heavy filters (to exclude all but the hardest beta radiation). A report of two cases in which this method gave excellent results was published by W. Lutz (*Dermatologica*, 1947 94, 315). The pictures accompanying the article supply convincing evidence of the value of this method.

Corrections

In the leading article on "Diphtheria Prophylactics," which was published in the *Journal* of April 23, p. 715, it was stated that the number of notified cases of diphtheria in 1947 was 3,941 and 0 deaths 198. These figures, however, relate to children under 14 only. The figures for the whole population, obtained from the quarterly returns (corrected notifications) issued by the Registrar General, are 5,609 cases of diphtheria notified in 1947 and 244 deaths.

Dr. D. DAVIES writes: In my paper on "Acute Porphyria and Associated Electrolyte Changes" (May 14, p. 846) in the fourth paragraph "chronic porphyria" should have read "congenita porphyria."

Dr. JAMES OVERTON writes: In my recent article on the topic use of "vioform" in dermatology (May 14, p. 840), an error has been brought to my notice. In the first paragraph on p. 841, dealing with the pharmacology, "In vitro it inhibits *Staph. aureus* and *Bact. coli* in a dilution of 0.025%," should have read "0.025% 'vioform' in bouillon." This is another method of stating 0.02 parts per thousand.

All communications with regard to editorial business should be addressed to TY EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atitolog*, *Westcent*, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Authors desiring REPRINTS should communicate with the Publishing Manager B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad. ADVERTISEMENTS should be addressed to the Advertisement Manager B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads*, *Westcent*, London. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra*, *Westcent*, London. B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY MAY 28 1949

THE SECRETARY REPORTS

CHANGES IN SUPERANNUATION

Superannuation is a somewhat dusty and complicated topic. But to those who see daylight—as well as eventide—in the superannuation provisions a note on some contemplated changes may be of interest. There has been published a draft of amending regulations which the Minister proposes to make, and the amendments include a number of points of interest to the profession. It will be recalled that general practitioners who entered the list of an executive council on or before July 5, 1948, and who had already made provision for retirement by endowment or deferred annuity policies were given the option to remain outside the Government superannuation scheme and to receive from the Ministry an amount equivalent to the employer's contribution (8% of net remuneration) towards the payment of their policy premiums. This option was limited to medical and dental practitioners (and their assistants) on executive council lists.

In the proposed amending regulations the option is extended to "persons rendering specialist services pursuant to Section 3 of the Act." This means that a specialist in contract with a regional hospital board or board of governors will be entitled to apply to the Minister to be excluded from the superannuation scheme and to receive the equivalent of the Government's contribution towards the continuance of a private insurance policy. Specialist services are not defined in the Act, but it seems that the extension of the option will be limited to those who are appointed as specialists, as distinct from those holding on-specialist posts.

The conditions governing the option under the original regulations were as follows:

(a) The policies must be endowment assurances or deferred annuity policies.

(b) The policies must not mature at an earlier age than 60. Where a policy would under its original terms have matured before age 60, it can be recognized if its terms are modified so that it matures at or after age 60.

(c) (i) The premiums (or total premiums) must not be less than £150 per annum.

(c) (ii) Alternatively, if the total annual premiums on existing policies are less than £150 per annum but not less than £50 per annum, these policies will be recognized on condition that the practitioner takes out forthwith a further policy which will bring the total premiums to at least £150 per annum on policies satisfying the conditions set out in (a) and (b) above.

(d) The policies must not be assigned to any other person, or surrendered before maturity.

(e) Payment by the Minister of an amount equal to 8% of the practitioner's remuneration will continue only so long as he premiums on the policies continue to be payable.

(f) The policies must be produced for inspection on a request made to the practitioner by the Minister or by the executive council on his behalf. Alternatively, a statement from the insurance company as to the nature of the policies may be submitted.

(g) Premium receipts must be submitted to the Minister or to the executive council for examination within one month after the date on which each payment of premium falls due.

It is probable that similar conditions will apply to specialists, with the substitution of "regional hospital board or board of governors" for "executive council" in paragraphs (f) and (g).

Another important provision concerns specialists who continue to work after the normal retiring age of 65. Representations were made to the Ministry that in such cases the specialist should be able to continue to pay contributions and to build up further pension. The Ministry proposes to vary the original regulation to enable practitioners to earn another five years' pension reckoning above the normal maximum of 40 years. For this purpose "pensionable age" is increased by five years and the maximum amount of a pension is increased from 40/80ths to 45/80ths in the case of practitioners on a whole-time salaried basis, and, in the cases of general practitioners—and part-time specialists—on the 1½% basis, the period reckonable is increased from 40 years to 45 years. In other words, instead of the G.P. pension being based on 1½% of the total net remuneration received throughout 40 years of service, it will be based on 1½% of the total net remuneration received throughout 45 years of service.

Theoretically, the right to reckon 45 years' service is a valuable extension of the 40-year maximum which has been a prominent feature of previous superannuation codes. But in the case of medical practitioners who, by reason of the long years spent in qualifying, are unable to enter the Service until 25 or more years of age, few will be able to attain the maximum pension. The new provision, however, will enable those who do carry on until aged 70 to count those later years for an increase in pensions.

Town and Country Planning Act, 1947

This Act imposes a development charge, which will be assessed by and be payable to the Central Land Board, wherever development improves the value of land. "Development" includes a material change of use of the land or of any buildings on it. The State has set aside a sum of £300 million for the compensation of those owning or leasing property on July 1, 1948, the value of which is substantially reduced by the Act. The underlying principle of the Act is that all land in future, when bought or sold, should pass at a price equal to its value for existing use. Broadly, the development charge will be the difference between the value for the existing use and the value when the permitted development has taken place. Claims for the loss of development value in consequence of the Act must be in the hands of the Board by June 30, 1949. A further note on the implications of the Act, with special reference to the position of members of the profession, will appear in these columns next week.

The Grading of Hospital Staffs

A good number of letters are reaching this office from practitioners who object to the grading proposed for them on the recommendation of Review Committees. The bulk of the letters come from members of hospital staffs who find themselves graded, not as specialists, but as senior hospital officers. In many cases hospital staffs who have regarded themselves as equals for many years now find that they are being graded unequally. The Joint Committee is continuing to press for a proper appeal machinery, and in the meantime any practitioner who objects to his grading should communicate at once with the regional hospital board or board of governors concerned.

National Health Service

HEARD AT HEADQUARTERS

CHANGES OF HOSPITAL STAFF

MINISTER'S OBLIGATION

The Ministry of Health has informed hospital boards that the Minister has a moral obligation for seeing that displaced members of staffs are given, so far as is practicable, the opportunity of undertaking similar duties elsewhere. This move follows representations made by the Joint Committee of Consultants and Specialists.

Displacement or serious disturbance may occur where the board proposes to change the use of particular premises or to carry out the work with fewer staff. The Minister considers that regional hospital boards should be able in almost every case to arrange for the displaced specialists to be offered duties of similar scope and extent in some other hospital. It is more difficult for boards of governors to do this, because their administrative control is over a much narrower field, but they should seek the co-operation of neighbouring regional hospital boards, and he asks the regional boards to do all they can to help.

The Minister's obligation was affirmed in one of the replies that he gave in April, 1948, to the B.M.A. Questionary (*Journal*, April 17, 1948, p. 742): After the appointed day "it will be the duty of the boards to review the specialist services of their regions, and they will offer new appointments to their staffs either in their existing or other hospitals, which they will be free to accept or refuse as they will."

DENTISTS' FEES

20 % CUT PROPOSED

The Minister of Health proposes to cut the gross fees of dentists by about 20% from June 1. He has prepared a new scale in detail of reduced fees for dental examinations and operations. The Ministry has analysed the earnings of 5,078 dentists from October, 1948, to March, 1949. The figures in the following table show the annual rate of payment based on this analysis, and do not take account of the cut of 50% in dental earnings over a rate of £400 monthly which was imposed in February, and do not make allowance for superannuation.

No. of Dentists	Range of Gross Earnings	Range of Net Earnings (Assuming 52% Practice Expenses)
209	£ 0-1,200	£ 0-576
712	1,201-2,400	577-1,152
1,128	2,401-3,600	1,153-1,728
1,122	3,601-4,800	1,729-2,304
841	4,801-6,000	2,305-2,880
479	6,001-7,200	2,881-3,456
254	7,201-8,400	3,457-4,032
333	Over 8,400	Over 4,032

The original fees for dentists were devised to fulfil the Spens Committee's recommendations on the basis of 33 chairside hours a week being worked. In February the Minister considered that some dentists were earning excessive fees, and he therefore halved the amount that could be earned over the maximum of £4,800 a year. It seems questionable whether the present reductions, which will affect the earnings of all dentists, will enable the Spens recommendations to be implemented, since one of those recommendations was that the optimum chairside hours that a dentist should work was 33 a week. It would appear that dentists may now have to work more hours if their incomes are to conform with the other Spens recommendations.

Meanwhile a working party set up by the Minister is investigating the timing of dental operations. The British Dental Association announces that such arbitrary reductions "demonstrate the essential unsoundness of the dental scheme." The association would prefer grants to be paid towards the fees, the latter being agreed between the patient and the dentist.

Mr. Bevan with the Midwives

The midwives did not "boo" Mr. Bevan, as some of the newspapers said, when he addressed them the other day. Their exclamations were rather directed against the doctor Mr. Bevan, who, by the way, was careful throughout to speak of "general-practitioner obstetricians," not "general practitioners," said that the woman who had made an arrangement with the general-practitioner obstetrician would look to him for his share of antenatal and post-natal care and for attendance at confinement if, and only if, he thought this necessary. This statement called forth a derisive chorus of "He! The woman, Mr. Bevan said, would still require the service of a midwife, who would carry out her share of maternity work and normally conduct the confinement, calling in the general-practitioner obstetrician in case of need. His statement that the midwives suffered no loss of professional status was greeted with loud expressions of scepticism, and Mr. Bevan went on, "I hope the doctors are listening to this. The doctor who will be called in in case of need will be one already acquainted with the patient and may well be her own family doctor." He repeated that it was never the intention of the Government that any development of the National Health Service Act should denigrate—his own word—the status of the midwife. The development of the general-practitioner obstetrician scheme, in which he himself had taken a keen personal interest, was never intended to do more than provide by the side of the midwife a local pool of skilled obstetrical knowledge available to her when she wanted it. "But they are all in the pool," cried the midwife. Mr. Bevan said that if that was so it was an abuse of the scheme.

Literary Doctors

A departure was made this year in the Cavendish Lecture delivered before the West London Medico-Chirurgical Society in that, for the first time in its long history, it had nothing to do with medicine. Mr. Justice Birkett was the lecturer, and addressed the company on the contribution of lawyers to literature. Henry Cavendish, whose name the lecture bears, had no particular interest in either law or literature, but for that matter he had no particular interest in medicine either, being a chemist and a philosopher. The proposer of the vote of thanks to Mr. Justice Birkett took occasion to remark that the medical as well as the legal profession had made great contributions to literature, and he mentioned a string of names—Sir Thomas Browne, Oliver Goldsmith, John Keats, Oliver Wendell Holmes, Robert Bridges, Conan Doyle, A. J. Cronin, Brett Young, Somerset Maugham. Sir Norman Birkett, in reply, said that he was astonished that from this list the greatest name of all had been omitted—St. Luke, the beloved physician. "Your profession is more beloved than mine," he went on. "The word 'beloved physician' have a most appropriate ring, but it would come as a great shock to me to hear in common use the word 'beloved lawyer.'"

International Relations

The international affiliations of the Association are increasing. The Council is to give a dinner in the Great Hall to the delegates to the General Assembly of the World Medical Association in October. In the earlier years of occupancy in Tavistock Square several dinners were given in the Great Hall, and was generally felt that there was some special advantage in the Association entertaining its guests in its own home. In addition there will be an afternoon reception at B.M.A. House in July for the Commonwealth and Empire Health and Tuberculosis Conference. The International Relations Committee is to consider at the beginning of each year the occasions on which receptions may be given to visiting congresses. An advisory bureau for foreign medical visitors on the lines of the Empire Medical Advisory Bureau is also projected.

Relief

CROOKES IODINE OIL retains the full therapeutic activity and does not exhibit the disagreeable side-effects of the familiar pharmaceutical iodine products.

Marked relief of symptoms has followed its use in cases of fibrositis and muscular rheumatism. Beneficial results have been reported in the treatment of fungoid infections including ringworm and perionychia

As a local application Crookes Iodine Oil is particularly effective in restoring to normal sprained joints and muscles weak from disuse following the treatment of fractures and other causes.

Crookes IODINE OIL

THE CROOKES LABORATORIES LIMITED · PARK ROYAL · LONDON · N.W.10

for the treatment of
HAYFEVER



'Benadryl'

It has been found possible to control the symptoms of hayfever in many patients by the oral administration of 'Benadryl'. This potent histamine antagonist is also invaluable for those who have not had time to acquire complete tolerance to grass pollen after desensitizing courses with pollen extract.

One 50 mgm. capsule of 'Benadryl' taken when hayfever symptoms first appear often gives relief for from three to five hours. Subsequent dosage depends on the response of the patient and on the prevailing atmospheric conditions. For infants and children, Elixir 'Benadryl' or 25 mgm. capsules are available.

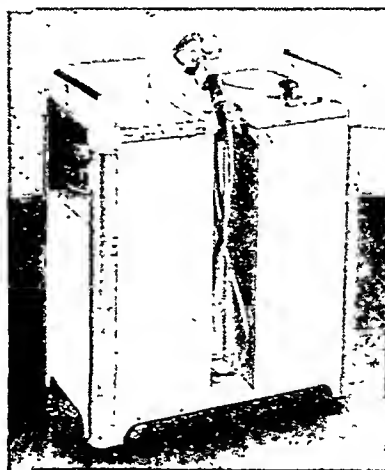
Capsules: (25 and 50 mgm.) in bottles of 50 and 500.
Elixir: In bottles of 4 and 16 fluid ounces.

Parke, Davis & Co., Hounslow, Middx.

Inc. U.S.A., Liability Ltd.

Telephone: Hounslow 2361 (11 lines)

A new self-contained KROMAYER LAMP



for focal
U.V.
irradiation

The robust hygienic trolley fitted with applicator tray and dressing drum holder carries improved electrical and water-cooling circuits in one unified assembly. A new and valuable weapon for hospitals, specialists, and practitioners.

THE KROMAYER LAMP MODEL IV

HANOVIA LTD., SLOUGH

The specialists in actinotherapy equipment.

London Office: 3, Victoria Street, S.W.1



Os hebes est . . .
(OVID)



Failing
appetite . . .

OFTEN of nervous or irritable disposition the patient who is unable to define his symptoms clearly may speak of poor appetite, lack of energy, or loss of weight. These symptoms frequently portray the early stages of sub-clinical vitamin B deficiency.

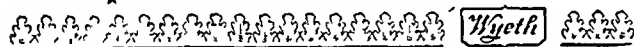
It has been shown that where the deficiency of one factor exists there is a need for the total B complex. 'Beplex' Elixir, an extract of rice bran with added thiamine and riboflavin, contains all the known factors of the B complex and enables adequate amounts to be given in a small dose.

'Beplex' is also available in capsule form.

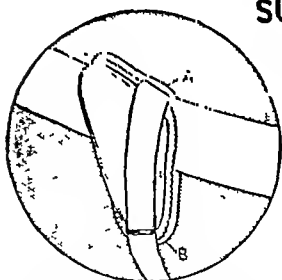
BEPLEX Elixir

Each 10 c.c. of Elixir contains: Thiamin Hydrochloride 125 mg. Riboflavin 250 mg. Niacin 1 250 mg. Pyridoxine Hydrochloride 125 mg. d pantothenic acid 625 mg. and other B complex factors

JOHN WYETH & BROTHER LIMITED
Clifton House, Euston Road, London, N.W.1
ALUDROX - ENDRINE - PETROLAGAR - PLASTULES



The HECSO^N SUPER ELASTIC TRUSS for the Treatment of Hernia



Strap is fixed to Pad at A. Therefore greater pressure is exerted at B, when the strap is pulled tightly.

Where treatment of Hernia by surgical methods is undesirable for any reasons, the HECSON super elastic truss can be confidently recommended. The Special Feature of the HECSON Truss is that the perineal or under strap is attached to the top of the pad instead of the lower margin as in the ordinary elastic or old spring truss. Thus it becomes part of the leverage mechanism for increasing the pressure of the pad at its base.

Price : Single £2 12s. 6d.
Double £3 13s. 6d.

Further particulars on request from the manufacturers

The CURTIS Service

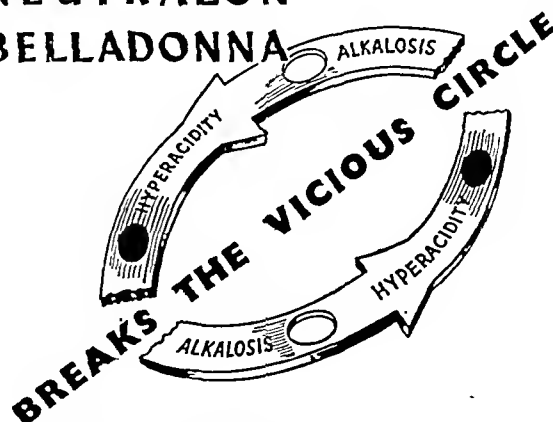
We regret that owing to shortage of labour we are frequently prevented from making such prompt deliveries as has been our custom in the past. We do, however, assure you that every possible effort is being made to maintain our usual high standard of workmanship and prompt delivery.

H. E. CURTIS & SON, LTD.

4, Mandeville Place, London, W.1

Telephone: WELbeck 2921/2922

'NEUTRALON' BELLADONNA



'Neutralon' Belladonna, sodium aluminium silicate with belladonna, provides effective neutralisation of the gastric juices without causing "acid rebound." Its analgesic and protective action renders 'Neutralon' Belladonna a most valuable agent in treating peptic ulcer, hypersecretion and hyperacidity.


BRITISH SCHERING
LIMITED

'Neutralon' and 'Neutralon' Belladonna are supplied in containers of approximately 3½ oz. (100 grammes).

167-169 GREAT PORTLAND STREET, LONDON, W.1

303/H

write for samples of MAGSORBENT with ATROPINE

which combines in Tablet form the Magsorbent brand of Magnesium Trisilicate and Atropine, uniting the antacid and adsorptive properties of the former with the spasm- and pain-relieving properties of the latter.

Formula: Magsorbent (Magnesium Trisilicate) grains 7
Atropine Sulphate grain 1/500. Excipient q.s.



KAYLENE, LTD.

Sole Distributors: ADSORBENTS LTD.,
WATERLOO ROAD, LONDON, N.W.2

British Medical Association

SUPPLEMENTARY ANNUAL REPORT OF COUNCIL, 1948-9

Every member is asked to keep this Supplement, with the earlier one of April 2, until the subjects have been discussed by his Division.

CONTENTS

	Page		Page
Preliminary	287	Science	293
National Health Service	287	Armed Forces	293
General Medical Services	288	Scotland	294
Consultants and Specialists	289	Health Centres	294
Private Practice	289	Overseas	295
Occupational Health	290	International Relations	295
Nursing	290	Medical Benevolence	295
Public Health	291		
British Medical Journal	291		
Organization	291		

Appendix

VII. A Comprehensive Occupational Health Service ...	296
--	-----

PRELIMINARY

Annual Meeting, 1950

172. The Council has gratefully accepted an invitation from the Liverpool and Southport Divisions to the Association to hold the Annual Meeting in 1950 at Liverpool and Southport. The meeting will be held from July 21-29.

The Council recommends:

Recommendation: That Professor T. P. McMurray, C.B.E., M.Ch., F.R.C.S.Ed., be elected as President of the Association, 1950-1.

Representation of Medical Branch, Royal Navy, on the Council

173. The Council recommends:

Recommendation: That Surgeon Rear-Admiral C. H. M. Gimlette, R.N.Ret., be elected as the representative of the Medical Branch, Royal Navy, on the Council for the period 1949-52.

Centenary Celebrations of Netherlands Medical Association

174. The Netherlands Medical Association celebrates its centenary at Amsterdam in July, and the Association was invited to appoint a delegate to attend. The Council appointed Dr. O. C. Carter to act in this capacity.

Medical Society of the Hospitals of Paris

175. Mr. R. L. Newell has been appointed by the Council to attend the centenary celebrations of the Medical Society of the Hospitals of Paris in October.

Portrait of Dr. H. Guy Dain

176. The Council is making arrangements for the painting of a portrait of the Chairman of Council.

NATIONAL HEALTH SERVICE

The Amending Bill

177. The National Health Service (Amendment) Bill was presented to the House of Commons on May 11, 1949. The content of the Bill was not discussed before publication of the Bill with representatives of the profession, as was promised, and a strong protest has been made to the Ministry. Discussions with the Ministry have begun and all possible steps will be taken to extend the scope of the Amending Bill to include a number of points put forward by the profession.

The Bill, which was published in the *Journal (Supplement, May 21, p. 274)*, gives effect to the recommendations of the

Legal Committee on Partnerships; prohibits a full-time salaried general-practitioner service (with an exception for "special circumstances"); precludes the imposition by regulations of any universal whole-time specialist service; gives executive councils the right to select their own chairman and to determine his term of office; provides for the professional member of the tribunal to be selected from a panel of available members, and empowers executive councils, on the request of the local medical, dental, or pharmaceutical committee, to make deductions from the remuneration of doctors, dentists, or chemists to defray the administrative expenses of those local professional committees.

In addition to these points, provision for which had been promised by the Minister, the Bill contains certain other proposals, among which may be mentioned:

(1) Clarification of the position obtaining under agreements between principals and assistants. The Legal Committee on Partnerships made no recommendation on this point, but expressed the view that the relationship between principal and assistant seemed to be analogous to that of partners, adding that "it would seem that the Act may cause considerable hardship to such assistants if no protection is afforded."

(2) Under Section 12 of the Amending Bill any difference or dispute arising in respect of remuneration or conditions of service of those employed or engaged in the new Service is deemed to be a trade dispute within the meaning of the Industrial Courts Act, 1919, and to be a difference or dispute to which the Conciliation Act, 1896, applies. In effect this means that, where a dispute exists or is apprehended, either party may report it to the Minister of Labour and National Service and he may refer it, if both parties consent, to an industrial court for settlement. On the other hand, if both parties do not consent, he may refer it to the industrial court for advice. The composition of the industrial court is prescribed by the 1919 Act. The Minister of Labour and National Service appoints an independent president or chairman and also appoints a panel of other persons, some independent and others representing employers and workers respectively, to be members of the court. The members to sit as the court on any particular occasion are selected from this panel by the president.

This proposal deserves careful scrutiny. At first sight it seems that only where the Minister agrees can arbitration take place, and where he does not so agree all that can happen is that an outside body, set up for the purpose, gives advice. This appears to fall short of the original Whitley proposal that in the event of disagreement being registered recourse could be had to arbitration whether the other side agreed or not.

(3) The omission in the original Acts of any provision for the removal from the lists of executive councils of doctors, dentists, or chemists who have ceased to provide services in the areas concerned is rectified.

(4) The extension from two months to three months of the period within which doctors called in by midwives under the Midwives Act, 1918, are required to submit their account to the local supervising authority for payment. For many years the profession has been seeking an extension of the two-months time limit.

With the exception of these last two items (3 and 4) none of the additional points which have been pressed upon the Ministry by the General Medical Services Committee and by the Joint Committee for Consultants and Specialists were included in the Bill.

General-practitioner Remuneration

Reference is made in the General Medical Services Committee's section of this Report to the delay in dealing with the General Medical Services Committee's representations for an increase in the Central Practitioners Fund in the light of the report of expert economists on the betterment factor which should be applied to the Spens recommendations to convert them to present-day values.

The General Medical Services Committee has asked for an interview with the Minister himself with a view to expediting a settlement of the Committee's claim.

The Joint Committee for Consultants

The Joint Committee of the Royal Colleges, the Scottish Royal Corporations, and the Central Consultants and Specialists Committee submitted to the Ministry early in May a statement of the considered views of its constituent bodies on the proposed terms and conditions of service for hospital medical and dental staff. During the last week in May discussions opened between the Joint Committee and representatives of the Ministry, and a report of developments in the light of these discussions will be submitted to the constituent bodies in due course.

GENERAL MEDICAL SERVICES

Remuneration

178. The memorandum (*B.M.J. Supplement*, Feb. 19) approved by the Special Conference and Special Representative Meeting in March was sent to the Ministry of Health on March 4. At an interview with officers of the Ministry on April 14 it was learned that the Ministry had decided that insufficient information was available on which to assess how far the Spens recommendations were being implemented. The main factors were the number of doctors in the Service and the total amount each doctor was receiving from N.H.S. funds. Neither of these factors was known to the Ministry with any degree of precision, and a national inquiry had been instituted, from the result of which it was anticipated definite conclusions could be drawn. The Ministry hoped the result of its inquiry would be available within a month, when its representatives would be in a better position to discuss the profession's claim for an increase in the Central Pool.

Two disturbing features of the interview referred to above were, first, an indication by the Ministry's representatives that there could be no assurance that any improvement in the remuneration of general practitioners which might emerge from negotiations would be applied retrospectively to July 5, 1948. Secondly, when asked what the position would be if, having raised the question of general-practitioner remuneration through Whitley machinery and, in the event of disagreement, the profession's representatives sought arbitration, the reply given was: "It must not be assumed without further discussion that participation in the Whitley machinery necessarily involves, in the event of disagreement, the right to resort compulsorily to arbitration on all subjects."

The Ministry's representatives were informed that the statements on these two points were very unsatisfactory. It was regarded as unreasonable to inform the profession that it might not receive any increase in the "pool" retrospectively to July, 1948. The Ministry received ample notice of the profession's intention to raise the question of "betterment," and the profession was entitled to arrears of payment on this issue and on any increase in the number of general practitioners in the Service over and above the number (17,900) which was a factor in calculating the Central Pool before the appointed day.

On the question of arbitration it was pointed out that the Ministry's statement was in conflict with repeated assurance given by Ministers, both in Parliament and personally, representatives of the profession.

It has been decided that no positive action can usefully be taken until the result of the inquiry undertaken by the Ministry is available. It was felt, however, to be necessary to place on record the profession's dissatisfaction with certain statements made to its representatives, and the following resolutions of the General Medical Services Committee of the Association were sent to the Ministry:

"That the committee records its dissatisfaction with the Ministry's inability to state, nine months after the appointed day, the number of principals taking part in the Service, and with the statement that in so far as the Central Pool may prove to have been inadequate for the first nine months of the Service, any increase may not be adjusted retrospectively to the appointed day.

"That, in view of the statements made by responsible Ministers prior to the appointed day, the committee is of opinion that the Ministry's view that disputes concerning remuneration referred through Whitley machinery do not carry the right to arbitration on either side is a gross breach of faith."

(See also paragraph 177 of this report.)

Volume of Work Done by General Practitioners

179. A statistical inquiry into the volume of work done by general practitioners, covering a period of one year, is to be undertaken in the near future.

Mileage

180. The resolutions of the Special Representative Meeting in March on the adequacy of the present mileage grant have been considered, and as a first step an inquiry has been instituted for the purpose of showing, by comparison with the position which existed under the N.H.I. Act, the increase in the total number of patients in respect of whom mileage was claimed, the number of doctors claiming mileage, and the total number of mileage units claimed. Proposals for dealing with claims for special difficulties, such as footpaths under winter conditions, are also under consideration.

The existing mileage grant covers mileage for attendance on maternity cases, and it is proposed that a practitioner practising in an area where a mileage scheme normally operates, whether or not he is on the Obstetric List, shall be entitled to a single payment for each maternity case booked at the rate of 3s. per mile (outward) over two miles from the practitioner's residence to the patient's address.

Training of Assistants

181. The scheme for providing grants for training assistant has been examined with the object of suggesting improvement. The general conclusion reached is that the scheme as at present designed is primarily for the benefit of the trainee and should be regarded as such. Any financial benefit which the principal may hope to derive from the help given by assistants (as suggested in the Spens report) could and should be met in other ways, such as an adequate capitation fee. The scheme will be reviewed in the light of experience within a year of its inception.

Miscarriages and Obstetric Emergencies

182. The Ministry has now agreed that treatment for a miscarriage is outside the range of a general practitioner's term of service, and that a doctor may claim a Part I fee for attending a miscarriage after the eighth week of the commencement of pregnancy.

As in the case of miscarriages, the Ministry has agreed that emergency confinements will qualify for Part II payments provided the patient is not booked with any other doctor and the doctor is not called in by a Local Health Authority midwife.

Medicines and Appliances for Doctors' Surgeries

183. The Ministry is investigating the possibility of allowing a doctor to order on an official prescription form stocks of medicines for use in surgeries. Details of the arrangements in force in Scotland have been sent to the Ministry.

Specialization of General Practitioners

184. Discussions are continuing with the Ministry in furtherance of the policy that some degree of specialization in general practice should be encouraged.

Frivolous or Unjustified Emergency Calls

185. Representations have been made in favour of the reintroduction of rules for the conduct of patients, with disciplinary machinery to be applied in the event of non-observance. The revision of the medical card has been suggested as a first step.

Treatment of H.M. Forces on Leave

186. The War Office has been informed that its proposal to treat as temporary residents members of the Forces who are obliged to seek treatment by civilian doctors whilst on leave is not acceptable.

CONSULTANTS AND SPECIALISTS

Proposed Terms and Conditions of Service of Hospital Medical Staff

(Continuation of para. 60 of Annual Report)

187. The Central Committee has received no fewer than 400 comments and recommendations from Regional Consultants Committees and Special Groups of the Association upon the proposed terms and conditions of service issued by the Ministry and published in the *Supplement* of March 19. Many of the comments and suggested amendments were in similar terms and revealed a considerable measure of agreement throughout the country. The committee, having examined the recommendations in detail, has submitted to the Joint Committee a statement of the points upon which it desires representations to be made to the Ministry.

The Joint Committee, after considering the views of the Central Committee together with those of its other constituent bodies, will enter into immediate negotiations with the Ministry, and it is hoped that the Ministry's reply will be available for publication early in June. Pending the outcome of these negotiations and the final approval of the terms of service by the profession, individual consultants and specialists have been advised not to accept permanent contracts if invited to do so.

Security of Tenure

(Continuation of para. 61 of Annual Report)

188. The Ministry proposes that no fixed period of tenure shall be specified in the contract of service of a specialist, but that where he felt his appointment was being unfairly terminated he should be entitled to send a statement of the facts to the Minister, who would obtain the views of the Board and seek the advice of a professional committee consisting of representatives of the Ministry and of the profession under the chairmanship of the Chief Medical Officer.

The committee has reaffirmed its view that there should be security of tenure until retiring age, except for professional misconduct or incapacity, and has asked the Joint Committee to make further representations to the Ministry to this effect.

A problem associated with security of tenure is the avoidance of appreciable variations in the amount of work rendered by specialists in contract for part-time services. The committee is recommending that where for any reason, such as a change of hospital user, the number of sessions performed by a specialist at any one hospital is curtailed, the responsibility of finding alternative sessions shall be with the Regional Board, or alternatively with the Ministry. The Minister has reminded the Boards of his moral obligation to ensure that specialists displaced as a result of hospital reorganization are given alternative duties.

Betterment

189. The proposed basic salary scale for specialists represents a betterment of approximately 20% on the scale recommended by the Spens Committee, with no betterment added to the special distinction awards. This the committee considers grossly inadequate, and it is wholeheartedly supported by the

Regional Committees in continuing to press for a betterment factor consistent with the rise in the cost of living since 1939. Failing agreement by the Ministry for an increased betterment factor the committee proposes that the issue shall be raised through the Whitley Council machinery at the appropriate time. The committee is also urging that the betterment should be applied to the merit awards as intended by the Spens Committee.

Selection of Specialists

Senior Hospital Medical Officers

(Continuation of para. 62 of Annual Report)

190. The Ministry's proposals include a senior hospital medical officer grade (£1,300-£1,750) for senior officers performing general clinical duties but who are not of specialist status and who are not trainees.

The committee feels that the creation of this grade, necessary as it may be for the appropriate classification of certain transferred officers, is fraught with danger in that it might lead to the establishment of two grades of specialist, involving a process of dilution which would be most undesirable.

It is therefore insisted that the grade shall not be applied to practitioners of specialist status, and has recommended to the Joint Committee that the grade should be used only as a temporary expedient, and that no future appointments should be made in this grade. For the time being advertisements for appointments involving specialist duties in this grade will not be accepted for the *Journal*. The committee has also proposed that machinery should be set up whereby the status of practitioners graded as senior hospital medical officers may be reviewed from time to time, with a view to their up-grading to the rank of specialist in appropriate cases.

The assessment of status of members of hospital medical staffs undertaken by professional review committees is nearing completion, and in some regions practitioners, hitherto practising as specialists and holding interim contracts as such, have already been informed by their boards that they are to be placed in the senior hospital medical officer grade.

The committee is strongly of the opinion that there has been an absence of uniformity as between the regions in assessing the status of hospital staff. It believes also that the grade of senior hospital medical officer has not been clearly defined, and that review committees have regarded it as a junior or associate specialist grade.

At the moment there is no right of appeal from the arbitrary decision of a review committee, except to that body. The Ministry has been strongly urged to establish an independent appeal machinery in the form of a central professional committee, or alternatively three or four area committees to investigate the claims to specialist status of practitioners who are aggrieved at the decision of a review committee.

Pay-beds

(Continuation of para. 59 of Annual Report)

191. A number of cases have been reported where patients, having agreed to receive hospital treatment privately, have subsequently appealed to the board to be relieved from the necessity of paying the specialist's fee and to be regarded as public patients. In some instances the specialist has been handicapped in pressing his fee by the absence of any written undertaking by the patient to pay him professional charges. The committee has drawn up a model form of undertaking which it proposes to make available to the Regions.

PRIVATE PRACTICE

Examination of Candidates for the Women's Land Army

192. After representations from the Council the Ministry of Agriculture and Fisheries has increased the sessional rates for the examination of volunteers to the Women's Land Army from £2 2s. for a session covering five to eight examinations, and a special fee of £2 12s. 6d. where ten cases were examined, to £2 12s. 6d. for a session of six to eight cases, with a further increase of 10s. 6d. for each additional examination after the eighth, up to a maximum of £5 5s. for a session of 14 to 16 examinations.

Independent Referees of the Ministry of Labour*(Continuation of para. 81 of Annual Report)*

193. Following arrangements made by the Ministry of Labour for the payment of a fee of 12s. 6d. in both disputed and undisputed cases where persons are referred for medical examination to determine their fitness for a particular employment, the Council has now accepted a proposal of the Ministry that with effect from April 1, 1949, payment for these examinations where they are undertaken on a sessional basis be increased from £2 2s. to £2 12s. 6d. for a two-hour session involving the examination of five to eight persons.

Forms of Examination for Transport Personnel

194. At the Annual Representative Meeting, 1948, a proposal by South-east Essex Division was referred to the Council, suggesting that forms for the examination of transport personnel, bus drivers and conductors, etc., should be uniform, that the amount of the fee should be clearly stated, and that the company or transport authority should be responsible for payment thereof. The Council has considered a statement from the Ministry of Transport that the forms of report for the medical examination of an applicant for a licence to drive a public service vehicle and an applicant for a licence to act as conductor of a motor omnibus or a motor coach, which were agreed between the Ministry and the Association in 1931, are still in use and that no major amendments to these forms are proposed. The Ministry also stated that it is aware of certain instances where individual transport undertakings are using different forms of report for the re-examination of drivers and conductors. The Ministry added, however, that it would not be possible to consider the standardization of these reports for some considerable time, until the nationalization of public transport undertakings has been completed. The Council has had regard to the fact that the initial medical report is required to support an application to the licensing authority by a private individual and not by a company or transport authority, and that in some instances the applicant may not become an employee of a company or transport authority until he has obtained the required licence. The Council proposes to take no action to press the transport authorities to accept responsibility for the payment of an agreed fee where an application is made for a licence to drive a public service vehicle or to act as a conductor of a motor omnibus or motor coach, or to press for the introduction of standard forms and agreed fees for the re-examination of transport personnel until the nationalization of transport undertakings has been completed.

OCCUPATIONAL HEALTH**A Comprehensive Occupational Health Service**

195. The Council now submits, in Appendix VII, a report on a comprehensive occupational health service. It thinks that an attempt to plan the detailed structure of a comprehensive service would be premature at the present time. Its report therefore contains recommendations of a general character only, the chief of which are (1) that the central authority responsible for the planning and supervision of a national occupational health service should be the Ministry of Health, and (2) that, before the existing occupational health service is expanded, surveys should be arranged by the Ministry of Health to ascertain the needs of different areas. The Council recommends:

Recommendation: That the Report on a Comprehensive Occupational Health Service (Appendix VII) be approved.

The National Dock Labour Board*(Continuation of para. 98 of Annual Report)*

196. Recent discussions with the National Dock Labour Board have removed certain misunderstandings that had arisen as to the work which the Board had authorized its medical officers to carry out at Avonmouth Docks. The Council, while still opposed in principle to work of this kind being performed by public health medical officers in receipt of full-time salaries, is now satisfied that no exception can be taken to the policy of the Board in regard to the scope of the duties undertaken by its medical officers. In these circumstances the Council has

decided that advertisements of medical appointments under the Board will be accepted if offered for publication in the *British Medical Journal*.

NURSING*(Continuation of para. 104 of Annual Report)*

197. The Nurses Bill has now been presented in the House of Lords. Its main object is to improve the training of nurses.

(a) by reconstituting the General Nursing Council, providing for a stronger educational element and for the representation of nurses on a territorial basis;

(b) by setting up Standing Nurse-Training Committees for regional hospital areas with the duties of promoting improvements in the methods of nurse-training and advising and assisting the training institutions and the General Nursing Council in matters connected with such training;

(c) by empowering the General Nursing Council to adopt by resolution approved experimental schemes of training differing from the training prescribed by their Rules;

(d) by providing funds for nurse-training, for expenditure of such descriptions as the Minister may specify, through the General Nursing Council and the Nurse-Training Committees instead of through the administrative budgets of the Regional Hospital Boards and Boards of Governors.

The Bill, which does not extend to Scotland or Northern Ireland, has been described by a Government spokesman as a "finely balanced" document designed to meet, so far as possible, the views expressed by various interested bodies when the draft legislative proposals were under discussion. Although differing in important ways from the draft proposals it does not fully meet the criticisms which were made by the Council.

In the first place the Council thought it inappropriate that the administration of the special funds to be provided for nurse-training should be included among the duties of the reconstituted General Nursing Council. It recommended that a new body, comparable with the University Grants Committee, should be set up to perform this function. This recommendation has not been accepted.

Secondly, the Council, while agreeing that, so far as is practicable, nurse-training should be freed from the limitations that have been imposed on it in the past by the staffing requirements of the hospitals, considers that training cannot be divorced entirely from staffing. It has therefore been anxious that the new regional training committees should be essentially advisory and should not have wide executive powers such as would enable them to impose their requirements on the statutory authorities responsible for the provision of hospital services. The Bill seems to meet the Council's views on this matter by making it the duty of the nurse-training committees to "advise and assist" the Hospital Management Committees and Boards of Governors of teaching hospitals.

Thirdly, the Council, although it welcomes the proposal to provide separate funds for nurse-training, thinks that it is inadvisable to include in the training budget the whole of the expenditure incurred in the payment of training allowances to student nurses. The student nurse is in part an apprentice or employee, and the Council considers that part of her "training allowance" should be received from the hospital authority as salary for services rendered to the hospital. The Hospital Management Committee or Board of Governors is liable for acts of negligence by its student nurses, and unless its status as employer is clearly established it will be unable to exercise the control over the student nurse which its legal responsibility for her actions renders desirable. The intention of the Bill in this matter is not clear, but the Council will endeavour to secure any necessary amendment at the Committee stage in the House of Lords.

The Council will seek also an amendment to ensure that experimental schemes of nurse-training will be instituted only in agreement with the Hospital Management Committees or Boards of Governors concerned, and certain amendments of the First and Second Schedules to the Bill, which set out the proposed constitution of the General Nursing Council and the nurse-training committees. Its objects here are to ensure that certain classes of persons—and, in particular, medical practitioners—will be represented on these bodies and that the General Nursing Council will have the power (granted by the Bill to the nurse-training committees) of appointing its own chairman.

PUBLIC HEALTH

Salaries in the Public Health Service

(Continuation of para. 105 of Annual Report)

198. Certain local authorities have requested their medical officers who are due to retire in the near future to remain in office for the time being. This action may have been taken as a result of the policy of the Association, which includes the refusal by the medical press to publish advertisements of appointments in the public health field which do not comply with the Association's recommended new scales.

The Council has given consideration to this matter and has decided to take no exception to arrangements made prior to Feb. 28, 1949, for a medical officer to remain in office after the date on which he is due to retire, provided the salary conforms to the modification of the Interim Revision of the Askwith Agreement. Similarly, the Council would take no exception to arrangements made after Feb. 28, 1949, provided the medical officer is remunerated at the appropriate step in the new scales recommended by the Association. No other arrangement is, however, regarded as acceptable.

Fees Payable by Local Authorities for Part-time Work

(Continuation of para. 106 of Annual Report)

199. Negotiations on fees for part-time work undertaken by medical practitioners for local authorities will take place on May 31.

Midwives Acts—Fees for Attendances and Post-natal Examinations

(Continuation of para. 108 of Annual Report)

200. The National Health Service (Amendment) Bill makes provision in Clause 20 (2) for the extension to three months of the period during which claims may be submitted by practitioners called in to assist a midwife. The Council is pleased to note that the Ministry has acted upon its representations in this matter.

Joint Committee on Equal Pay

201. The Association is represented on the Joint Committee on Equal Pay established in 1946 to consider the question of equal pay in all its aspects. In addition to the Association, the following bodies are also represented on the Joint Committee: Medical Women's Federation, Civil Service National Whitley Council (Staff Side), Educational Institute of Scotland, National Association of Local Government Officers, National Federation of Professional Workers, and National Union of Teachers.

Information has been received that the Joint Committee is considering an approach to the Government and to the political parties on the policy of equal pay in the professional field, and the Council has decided to give its full support to the Joint Committee on the understanding that any approach should be to all political parties and should be strictly non-political in character.

The Council is also recommending the inclusion in the Joint Committee of representatives of the nursing profession, medical auxiliaries, and certain important teaching organizations.

Lunacy Act

202. The Ministry was recently approached on the question of the responsibility of local health authorities for the payment of fees to medical practitioners carrying out examinations or issuing certificates or recommendations under the Lunacy, Mental Deficiency, and Mental Treatment Acts. The Council is glad to note that provision has been made in Clause 17 of the National Health Service (Amendment) Bill for the payment of such fees by local health authorities.

Local Government (Compensation) (Amendment) Regulations

203. Amending regulations have been made to enable a period of war service or national service to count in the eight-year period necessary to qualify for compensation on loss of employment or diminution of emoluments under the Local Government (Compensation) Regulations, 1948. This omission from the original regulations was brought to the attention of the Ministry by the Association.

"BRITISH MEDICAL JOURNAL"

Popular Health Journal

204. The proposal to publish a popular health journal was put forward by the Science Committee in January, 1948, and referred to the Journal Committee for its consideration. The Journal Committee later reported to the Council that it had under sympathetic consideration the possibility of publishing such a journal under the general editorship of the Editor, *British Medical Journal*. A preliminary memorandum on the subject, reviewing existing health journals and giving some preliminary estimates, was put before the Journal Committee in October, 1948. A subcommittee was then appointed to go into financial and other details. This subcommittee consisted of the Chairman of Council, the Treasurer, the Chairman of the Journal Committee, the Chairman of the Publishing Subcommittee, and the Chairman of the Science Committee. The subcommittee, after taking expert advice, finally recommended to the Journal Committee the publication of a popular health journal. The Journal Committee carefully examined the proposals put forward by the subcommittee, and endorsed its recommendation.

At its meeting on May 11, 1949, the Council was presented with a full account of the proposals and a detailed provisional estimate of income and expenditure. It also had before it a "dummy" of the proposed journal. The Council approved the Journal Committee's recommendation and accepted also a related recommendation from the Finance Committee. The Finance Committee had raised no objection on financial grounds "on the understanding that the date for the inception of the new journal is determined by the Council at the meeting in March, 1950, in the light of the financial position then obtaining."

Recommendation: That the Association undertake the publication of a popular health journal, and that the date for the inception of the new journal be determined by the Council in March, 1950, in the light of the financial position of the Association then obtaining.

ORGANIZATION

Agenda of Representative Meetings

(Continuation of para. 128 of Annual Report)

205. Criticism of the conduct of business at Representative Meetings and particularly Special Representative Meetings has been received from a number of sources. It has been suggested that on several occasions the Agenda has been so long and some items so controversial that it has been impossible for many motions or amendments submitted by Divisions to receive adequate discussion. This situation has led to a feeling of frustration and to demands for review of the machinery for dealing with the Agenda.

The Representative Body appointed a small Committee to consider this problem. A report was submitted by this Committee to the A.R.M. 1946, when it was decided that no action should be taken to modify the functions of the Agenda Committee, but to vary the constitution of that Committee by the addition of two members elected by the Representative Body. The A.R.M. 1948 decided that the number of members elected by the Representative Body to the Agenda Committee should be increased from two to four.

The Constitution and Functions of the Agenda Committee

It is important that the position of the Agenda Committee should be clearly understood. The Committee consists, under the Standing Orders of the Representative Body, of the Chairman and Deputy-Chairman of the Representative Body, the Chairman of Council, and four members appointed by the Representative Body. The Committee has power to co-opt from among the Chairmen of Standing Committees not more than four additional members having regard to the nature of the business to be transacted.

The Standing Orders of the Representative Body explicitly provide that the function of the Agenda Committee is to arrange the Agenda so that motions by Divisions and Branches shall be strictly relevant to paragraphs of reports submitted by the Council; and the Committee is empowered to place other motions not strictly relevant to the Council's report in an

appropriate order on the Agenda. In the case of Special Representative Meetings the instruction to the Agenda Committee is to report as to the method of dealing with the Agenda of the Meeting. In short, the sole function of the Agenda Committee is to arrange the order of business. The Committee submits a formal recommendation of its proposals to the Representative Body, but it is always open to that body to vary the order of business.

It will be clear, therefore, that the Agenda Committee has no power of veto. It cannot exclude a motion on the ground that it is already covered by another, it cannot combine motions which are similar in intent and differ only in wording, nor has it authority to frame a composite motion covering a number of motions from Divisions in the same field. As matters stand every Division of the Association has an absolute right to have its motion included in the Agenda, provided the motion is submitted within the prescribed period laid down in Standing Orders.

The Business of Annual and Special Representative Meetings

Experience has shown that there is no special difficulty in dealing with the business at the Annual Representative Meeting, which extends over 3½ days; but that the problem of congestion of the Agenda is more likely to arise at Special Representative Meetings. In the case of the Annual Representative Meeting the business centres upon the Annual Report of the Council; in the ordinary course of events there is ample time for Divisions to consider that report and to submit motions for inclusion in the Agenda and for the meeting to deal with all the items on the Agenda. Special Representative Meetings, however, are invariably called at short notice to deal with special problems, some of which are of an urgent nature. It is not unusual for a very large number of motions to be put forward at such meetings by Divisions and Branches, and it is this situation which has given rise to proposals for modifying the present procedure so as to simplify the consideration of the questions which the meeting has been called to discuss.

In recent years the Agenda Committee has endeavoured to meet the problem by "starring" particular motions which, in its view, covered a number of motions on the same subject and on which the main discussion should take place. It has been left to the Chairman of Representative Body to determine which motions were covered by the starred motion or other motions and to rule that the representatives of constituencies submitting motions held to be covered should speak to the selected motion. This has led to a position where, in speaking upon the selected motion, a number of representatives have covered the same ground. There has thus been repetition and a badly balanced debate. "Starring" has also been found unsatisfactory, as the representatives of some constituencies have felt that the "starred" motion on which the discussion took place did not bring out the precise point made by their constituency.

It will, however, be agreed that an Agenda containing several hundred motions is unwieldy, that it adds considerably to the burden of chairmanship, and is conducive to an atmosphere of pressure and a feeling of working against time.

A further problem arises when constituencies submit long motions covering a number of subjects. Such motions are not conducive to the expeditious conduct of Representative Meetings, and it is ordinarily to the advantage of constituencies to frame their motions as precisely as possible.

Possible Methods for dealing with the Problem of the Congested Agenda

Two methods have been suggested for dealing with the problem of the congested Agenda at Representative Meetings—one local, the other central.

The first would make use of the large local groupings of the Association as a filter between the Divisions and the Agenda Committee. Divisions would be required to refer their motions in the first instance to, say, Branch Councils or to a body composed of Representatives of grouped Branch Councils selected for the purpose—e.g., using the groups for election to the Council. The special body might have power to exclude redundant propositions, to combine similar motions, or itself to frame a composite motion embodying the points contained in the motions submitted by its constituent Divisions and Branches. The method at first sight has an attractive appear-

ance of tidiness and, since it would operate through elected regional bodies of the Association, suggests a proper democratic responsibility. In practice, however, it would probably be rather cumbersome and would require considerable time for function. The Council is convinced that this proposal is unsound. The Divisions are rightly jealous of their autonomy, and any interference with the direct access of a constituency to the Representative Meeting would lead to resentment and delay.

The second method would give to the Agenda Committee similar powers and is open to the same objections. Even if the power were conceded and the Agenda Committee were to recommend to the Representative Body in its report that certain motions should be altered or eliminated, this might lead to so much discussion by representatives of affected constituencies that it would be better to discuss the actual motion. The Council believes that it would be undesirable and possibly dangerous to place in the hands of the Agenda Committee the power to exclude or to alter motions submitted for the Agenda.

The following is a possible method of dealing with the problem:

(i) To broaden the basis of the Agenda Committee.

(ii) To give the Agenda Committee power to compose an additional motion covering a number on the same subject, or where this is unnecessary to decide (by starring) the particular motion in a group on which discussion should take place, it being understood that the right of a Division to include a motion in the Agenda of Representative Meetings is retained;

(iii) To give suitable opportunity for representatives whose motions have been grouped, or held covered, to choose from among their number a proposer who would move the motion and be allowed to speak for ten minutes. Other speakers would be limited to five minutes;

(iv) The report of the Agenda Committee would not be subject to the approval of the meeting;

(v) Divisions and Branches should be encouraged to seek the advice of the Regional Secretaries at Head Office in the framing of resolutions for the Agenda of Representative Meetings.

The Council in submitting this report is anxious that this complex problem should be fully understood in the Divisions and Branches. The essence of the problem appears to avoid restricting in any way the right of a Division or Branch to submit a motion for inclusion in the Agenda, but to give the Agenda Committee such modified powers as will secure that the business of the Meeting is dealt with expeditiously and that there is reasonable time for the consideration of the views of the local units of the Association.

The Council makes no recommendation, as it feels that it would be more appropriate for Divisions to submit motions to the A.R.M. for dealing with the problem when full consideration has been given to the various aspects of the question dealt with in this report.

Procedure followed by Other Bodies

206. Members may wish to know the procedure followed by other organizations in dealing with this problem.

National Union of Teachers.—Some 600 local bodies with a conference of over 2,000 members. Prior to the conference the local bodies are informed of the motions and amendments before the conference and are invited to vote so as to determine the order in which subjects are to be dealt with. The agenda is arranged in the order thus determined, subject to the right of the executive to bring forward matters of urgency. The Agenda Committee must admit motions, etc., of local bodies to the agenda; it has no power of veto, but in the case of motions covering much the same ground it invites the local bodies to elect a select committee to select the motion on which the discussion should take place, and this procedure is usually followed.

The National Association of Local Government Officers.—Some 1,000 local units with a conference of not more than 1,200 members. The Agenda Committee has no power of veto, but it may, without consulting the local units, group and then under one motion or amendment, motions or amendments that have a similar object.

Labour Party.—800 local units; conference of 1,000. Each unit may submit only one motion for the agenda of the conference and one amendment to the preliminary agenda, subject to the proviso that where a question has been decided by the

by the Annual Conference on motion or amendment concerning such principle may be included in the agenda from a local unit within a period of three years unless with the approval of the national executive.

Arrangements are made for consultations of local units prior to the conference with a view to simplifying resolutions and amendments covering the same subject; there is similarly prior consultation by correspondence on resolutions of local units. The results of such consultation must be forwarded to the head office, failing which resolutions, motions, or amendments will be deleted from the conference agenda.

The Conference Arrangements Committee allocates a time-table for the discussion of subjects and indicates the motions, amendments, etc. (which are not necessarily all those on the agenda paper on the subject in question), to be discussed within the time allowed.

Grouping for Direct Election of 37 Members of Council (Continuation of para. 124 of Annual Report)

207. The Council has given further consideration to the plan for the grouping of Branches and Divisions for the direct election of 37 members of Council.

The Council recommends:

Recommendation: That the following plan for the grouping of Branches and Divisions for election of 37 members of Council be approved:

Group	Area in terms of B.M.A. Branches or Divisions	Proposed No. of seats	Membership
(i) England and Wales			
A	Divisions of North of England Branch in North Eastern Region (it being left to the discretion of the Branch to suggest a division of the Group into 2 electoral areas)	2	1,764
	Cumberland		
	Westmorland (part)		
B	East Yorkshire Branch	2	2,767
	Yorkshire Branch		
C	Lancashire and Cheshire and Isle of Man Branches (it being left to the discretion of the Branches to suggest any appropriate electoral divisions for the area)	4	4,305
D	Lincolnshire Branch	2	1,599
	Derbyshire Branch		
	Nottinghamshire Branch		
	Leicestershire Branch		
E	Birmingham Branch	2	2,473
	Staffordshire Branch		
	Worcester and Hereford Branch		
F	Berks, Bucks, and Oxford Branch	1	1,309
	Northamptonshire Branch		
G	Cambs and Hunts Branch	1	995
	Norfolk Branch		
	Suffolk Branch		
H	Metropolitan Counties Branch (Divisions in Middlesex) (it being left to the Metropolitan Counties Branch to suggest any appropriate electoral division of the area)	2	1,913
I	Metropolitan Counties Branch (Divisions in London, Stratford, and S.W. Essex) (it being left to the Metropolitan Counties Branch to suggest any appropriate electoral division of the area)	4	5,273
	Hertfordshire Branch	1	1,393
	Essex Branch		
	Bedfordshire Branch		
	Surrey Branch	2	1,838
	Kent Branch	1	1,271
	Sussex Branch	1	1,062
	Southern Branch	1	1,394
	Dorset and West Hants Branch		
	Bath, Bristol and Somerset Branch	2	1,618
	Gloucestershire Branch		
	Wiltshire Branch		
	South Western Branch	1	999

Group	Area in terms of B.M.A. Branches or Divisions	Proposed No. of seats	Membership
Q	North Wales Branch	1	699
	Shropshire and Mid-Wales Branch		
R	South Wales and Monmouthshire Branch	1	1,293
(ii) Scotland			
S	Aberdeen Branch	1	1,333
	Dundee Branch		
	Northern Counties of Scotland Branch		
	Perth Branch		
T	Edinburgh and South-East of Scotland Branch	1	1,544
	Fife Branch		
U	Glasgow and West of Scotland Branch (Glasgow Division)	1	1,157
V	Border Counties Branch (Dumfries and Galloway)	1	1,569
	Glasgow and West of Scotland Branch (6 County Divisions):		
	Argyllshire		
	Ayrshire		
	Dumbartonshire		
	Lanarkshire		
	Renfrewshire and Buteshire		
	West Wigtownshire		
	Stirling Branch		
(iii) Northern Ireland			
W	Northern Ireland Branch	2	1,212

SCIENCE

Association Prizes

(Continuation of paras. 139-142 of Annual Report)

208. The Council thanks the following, who have assisted in judging the awards for the Association Prizes made in 1949: Dr. Janet Aitken, Dr. G. O. Barber, Professor F. J. Browne, Professor Sir Henry Cohen, Miss M. H. Cordiner, Mr. Ernest Finch, Dr. R. G. Gordon, Sir Gordon Gordon-Taylor, Professor C. W. Illingworth, Mr. R. Kennon, Dr. J. C. Matthews, Miss E. J. Merry, Dr. C. E. Newman, Mr. F. A. Williamson, Mr. Noble, Sir Leonard Parsons, Miss Agnes Pavey, Professor Arnold Sorsby, Mr. R. W. D. Turner, Professor R. J. Willan, and Professor James Young.

The Council also thanks those who have visited and reported on the Association's Research Scholars—namely, Professor J. H. Burn, Professor Sir Henry Cohen, Brigadier D. B. McGregor, Professor T. J. Mackie, Professor E. D. Telford, and Professor R. Milnes Walker.

Foreign Corresponding Members

209. In the list of Foreign Corresponding Members contained in para. 144 of the Annual Report of Council Professor Adolf Meyer is described as Professor of Psychiatry, Phipps Institute, Baltimore. This is incorrect. Professor Meyer is Professor Emeritus of Psychiatry in the Johns Hopkins University School of Medicine, Baltimore.

ARMED FORCES

National Service Officers

210. The Council has been informed that the new rates of marriage allowance for members of the Armed Forces which came into operation on Nov. 24, 1948, and were granted to meet the increased cost of living, do not apply to those called up under the National Service Acts since Jan. 1, 1947. Discrimination also exists in the matter of annual leave: the Council's view is that the amount of leave granted should be comparable to that which the officer would receive in civilian life.

The Council has informed the Ministry of Defence and Service Departments that it deprecates this discrimination, which reacts particularly harshly upon medical officers, many of whom, owing to the relatively late age at which they are called up for National Service, are married before entry into the Forces.

Pensions

(Continuation of para. 151 of Annual Report)

211. The Council has now received from an actuary a report comparing retirement benefits in the Armed Forces with those

in the National Health Service. In view of his conclusion that they compare satisfactorily the Council has decided to take no further action at the moment. The matter will be reopened, however, if current negotiations lead to any marked increase in the remuneration of National Health Service practitioners.

SCOTLAND

Representation of Scotland on the Council of the Association (Continuation of para. 124 of Annual Report)

212. The proposals for modification of the constitution of the Council of the Association as they affect the direct representation of Scotland on that body have been considered by the Scottish Committee and accepted.

Organization of Consultants and Specialists in Scotland (Continuation of para. 153 of Annual Report)

213. The Central Consultants and Specialists Committee (Scotland) has considered in their relation to Scotland the proposed terms and conditions of service of hospital, medical, and dental staffs, and has referred its comments to the Central Consultants and Specialists Committee. It has appointed an Ophthalmic Services Subcommittee to replace the former Ophthalmic Services Subcommittee of the Scottish Negotiating Committee; and has prepared, by means of a special subcommittee, a report on the remuneration and status of medical superintendents and the policy which should govern their appointment in the future. The question of a Joint Subcommittee with the General Medical Services Subcommittee (Scotland) to deal with the problem of general practitioners in Scottish hospitals and institutions is under consideration.

Organization in Respect of General Medical Services under National Health Service in Scotland (Continuation of para. 154 of Annual Report)

214. The General Medical Services Subcommittee (Scotland) is discussing with representatives of Scottish Local Authority Associations the circumstances under which fees should be payable to general medical practitioners for services rendered to local authorities and the question of what services are covered by the fees payable to such practitioners under the Health Service. A number of other matters connected with the general medical service in Scotland have been discussed with the Department of Health—e.g., expenses of local medical committees, the method of application to and scope of the Inducement Fund in Scotland, telephone charges in rural practice, and the remuneration of general practitioners giving emergency dental treatment in the Highlands and Islands areas. The question of the direct access of general practitioners to x-ray facilities without prior reference to physicians and surgeons at out-patient departments of hospitals is under consideration, and is also under discussion by the appropriate Advisory Committee of the Scottish Health Services Council.

Health Centres and Group Practice (Continuation of para. 155 of Annual Report)

215. Resulting from the discussions with the Secretary of State, local medical committees in Scotland have been asked for suggestions with a view to easing practice difficulties pending the development of health centres, in order that the matter may be further discussed with the Department of Health. The question has also been referred to the Scottish Health Services Council and is under consideration by one of the Standing Advisory Committees of the Council.

Scottish House

216. Plans are under consideration for alterations to the Scottish House at Nos. 6 and 7, Drumsheugh Gardens, Edinburgh, to provide common-room, reading-room, and writing-room accommodation for members, which at present is not available, adequate cloak-room and storage accommodation, catering facilities, and increased accommodation for the staff.

HEALTH CENTRES

(Continuation of para. 3 of Annual Report)

217. When the Council issued its Interim Report on Health Centres in July, 1948, certain matters remained to be considered. These have since been dealt with and the Council has approved the paragraphs below for inclusion in its final report, copies of which will be available at the A.R.M. The association of general practitioners with hospitals is a subject which is to receive separate attention and is now excluded from the report.

Health Centres and Health Education

In the Council's Interim Report a brief reference was made to health education as an item in the minimum range of service that health centres should provide. Further consideration has since been given, and the Council's view is that it is essential to preserve the personal and private nature of medical attention which is such a valuable feature of existing family medical practice. It believes that this is also the view of the general public. While realizing that family practice as it exists to-day is incomplete when separated from the work of the local authority clinics, and urging their reunion, the Council wishes to find in the resulting health centre none of the impersonal, institutional atmosphere of the clinic or hospital out-patient department. At first sight the health centre offers opportunity for all methods of health propaganda, but many of them are incompatible with this ideal.

The Council is therefore definitely opposed to the use of posters, exhibitions, gramophone records, and films in health centres. It regards the individual education continually carried on in the family doctor's everyday work as probably the most effective kind; under the conditions of close co-operation envisaged by the Council its influence would be extended by the work of the health visitors attached to the health centre. Leaflets, in the hands of both doctors and nurses, would be of value, especially if compiled by those who used them. Group instruction and discussion might be useful and compatible with the Council's ideals if the groups were small, confined to the patients of the centre, and concerned with specific subjects such as infant care, minor ailments, and first aid; their success would no doubt vary with the personality and ability of the doctor conducting them. In considering the question of public lectures it should be remembered that general practitioners as a class are not experienced at handling audiences, nor likely to find the time to become so. Also the Council feels that public lecturing at a health centre by the staff might transgress the ethical principles accepted by the profession. This would not apply to lectures by the medical officer of health or other visitors; but the Council believed that advertised public lectures on health topics are seldom well attended, with the sole exception of those on venereal disease.

The Council is of opinion that, excepting the intimate methods of personal instruction, health education should be conducted not from health centres but from educational centres. It does indeed already start in the schools; should it not continue to be associated with other subjects of education for all ages, through such agencies as the technical colleges, the W.E.A., the cinema, and the radio? It seems likely that in this way a larger proportion of the public would be reached and a more balanced knowledge of the place of hygiene in human life would be imparted. After all, most people will not go near a health centre unless they have some specific medical need, and it is probably not desirable that they should.

To sum up, the Council has come to the conclusion that the private health education inseparable from personal medical attention is more important and is the only kind appropriate to a health centre. Any attempt to use the centre for public health propaganda should be actively discouraged in the experimental period, lest the public be given quite a wrong impression of the type of health centre the Council hopes to see evolved.

Section 21 of the National Health Service Act, 1946, places upon local health authorities the duty of providing health centres at which facilities shall be available for all or any of a number of purposes, including the publication of information on questions relating to health or disease, and for the delivery

of lectures and the display of pictures or cinematograph films in which such questions are dealt with. The wording of this section, however, leaves the Council in no doubt that its provisions are permissive and not compulsory so far as they relate to health education in health centres.

Health Centres in Rural Areas

The scattered nature of medical practice and the limited means of transport available to the lay public in country districts materially affect the advisability of the establishment of rural health centres. Patients would be unlikely to attend a health centre situated in a less convenient place than the residence of the nearest practitioner. The problem therefore resolves itself into one of geography, and it is recognized that different localities must vary in regard to the above factors. Furthermore, health centres of the communal surgery type are unsuitable in village communities. For these reasons it is impossible to lay down any hard-and-fast rules for the establishment of health centres in rural areas.

One of the disadvantages of rural practice is the difficulty in obtaining specialist opinion. The Council is inclined to the view that in rural areas a cottage hospital at which a consultant service is available might well be combined with a health centre and thus serve a dual purpose.

The Council is interested in the experiment of the Joseph Rowntree Village Trust, which is providing a mobile unit to visit outlying districts. It is to be used primarily for maternity and child-welfare clinics and is staffed by a nurse and orderlies and is available for the doctors of the locality. The Council feels that this experiment should be watched with interest and, if successful, copied in suitable localities, perhaps with extended functions.

Specialist Services

When a general-practitioner specialist is a member of a health centre staff his special qualifications will increase the range of service provided for the patients, and his colleagues in the centre will refer cases to him for consultation and treatment.

The Council considers, however, that no advantage would be gained by specialists who work exclusively as such holding sessions at health centres. Except for visits to patients confined to their homes, it will be much more efficient for their work to be concentrated at the hospital, which contains all the equipment and the auxiliary services they require. There should, however, be organized co-ordination between the health centre and the local hospitals. When consultation, investigation, or specialist treatment at the hospital is required the health centre patient will be referred to the hospital out-patient department, or if necessary his family doctor will call out the specialist to see him in his home. The health centre may occasionally form a convenient meeting-place for the three.

Radiology is an example of a specialty which should in the Council's opinion usually be conducted by a specialist devoting to it the whole of his time. The field of his work is so great, and adequate equipment to cover the field so expensive, that the hospital is his sole appropriate place. The Council is, therefore, opposed to the provision of any x-ray apparatus at health centres, except possibly in the isolated rural areas. It should be possible for a health centre doctor to refer a patient direct to the radiologist as to any other hospital specialist.

In the same way the pathologists and their elaborate equipment must be situated in the hospital. The Council considered various ways of improving the very inadequate pathological services now available to the general practitioner. It came to the conclusion that only simple tests usually carried out by nurses and doctors should be done on the health centre premises. Various forms of ramification of the hospital laboratory to the periphery were considered, and rejected in favour of the frequent and rapid transport of specimens to the laboratory and telephoning of reports. This would be cheaper than any other method as well as more efficient, even if done on an elaborate scale involving, for instance, the employment of a motor-cycle messenger by the laboratory. Whenever it is desirable the patient himself should be sent direct to the clinical pathologist, or the clinical pathologist called to his house.

OVERSEAS

Private Practice by Colonial Medical Officers

218. The Council has considered the report of the Commission on the Private Practice of Medicine and Surgery by Officers of the Department of Medical Services, Nigeria (by Sir Sidney Phillipson), and has noted with satisfaction that the Commission's conclusions on this difficult subject are broadly the same as its own—namely, that private practice by Colonial medical officers should be forbidden where private practitioners of good standing are available, but that where this alternative does not exist and Colonial medical officers are obliged to attend private persons, they should be authorized to charge and retain fees for so doing.

INTERNATIONAL RELATIONS

219. The Association has continued to send distinguished British practitioners to lecture abroad. The following list shows the lecturers and countries visited since June, 1948, and the subjects of the lectures:

Lecturer	Country	Subject
R. G. Pulvertaft, F.R.C.S.	Portugal	Orthopaedic Surgery
I. Lawson Dick, F.R.C.S.	Norway	Orthopaedic Surgery
Professor G. Jefferson, F.R.C.S.	Austria	Neurology
Dr. J. S. Heller	Austria	Pharmacology
Professor M. J. Stewart	Czechoslovakia	Pathology

Mr. St. J. D. Buxton, F.R.C.S., has been sent to Greece to lecture on orthopaedic surgery, accompanied by a limb-fitting technician, whose visit was arranged by the British Council. Reports received by the Association indicate that these lectures and visits continue to be highly appreciated.

Receptions were given at B.M.A. House to the International Congress of Industrial Health in September, 1948, and the International Congress of Mental Health in August, 1948.

MEDICAL BENEVOLENCE

220. The sum of £8,972 10s. 4d. was received during 1948 by the Charities Trust Fund of the Association for medical charities, and the following statement shows the amounts collected and distributed during the twelve months:

	1948 £ s. d.
Amounts received from the B.M.A. Charities Trust Fund for General Fund	4,455 19 2
(a) Royal Medical Benevolence Fund—	
(1) Allocated from B.M.A. Charities Trust Fund for General Fund	3,573 8 8
(2) Earmarked for Fund	840 3 0
(b) Royal Medical Foundation of Epsom College:	
(1) Allocated from B.M.A. Charities Trust Fund for General Fund	62 19 6
(2) Earmarked for Sherman Biggs Fund	
(c) Royal Medical Benevolence Fund:	
(1) Allocated from B.M.A. Charities Trust Fund for General Fund	£8,972 10 4
(2) Earmarked for Fund	
(d) Sir Charles Hastings Fund	
	1948 £ s. d.
(a) Royal Medical Benevolence Fund—	
(1) Allocated from B.M.A. Charities Trust Fund for General Fund	2,166 14 3
(2) Earmarked for Fund	3,573 8 8
(b) Royal Medical Foundation of Epsom College:	
(1) Allocated from B.M.A. Charities Trust Fund for General Fund	1,950 0 10
(2) Allocated from B.M.A. Charities Trust Fund for Sherman Biggs Fund	216 13 4
(3) Earmarked for General Fund	856 16 0
(4) Earmarked for Sherman Biggs Fund	23 7 0
(c) Royal Medical Benevolence Fund:	
(1) Allocated from B.M.A. Charities Trust Fund for General Fund	3,045 17 2
(2) Earmarked for Fund	
(d) Sir Charles Hastings Fund	
	62 19 6
	122 10 9
	£8,972 10 4

The amounts received through the Fund are gratifying and show that the interest in the medical charities is being maintained. The medical charities are constantly receiving demands on their funds, and the Council hopes that members of the profession will do all they can to help.

H. GUY DAIN,
Chairman.

APPENDIX VII

A COMPREHENSIVE OCCUPATIONAL HEALTH SERVICE

Introduction

1. It is the considered opinion of competent authorities, both medical and lay, that there should be an expansion of occupational health services. This is the opinion of important groups such as the Trades Union Congress, the Royal College of Physicians of London, the Association of Industrial Medical Officers, and the Association of Certifying Factory Surgeons. That it is also the general policy of the Government is shown by statements made by Ministers of the Crown at the International Congress on Industrial Medicine held in London in September, 1948. For example, the Minister of Labour and National Service, according to a report in the *British Medical Journal* of Sept. 18, stated that he strongly supported the formation of a national industrial medical service, and that this was part of the Government's policy.

2. No detailed plan of how any expansion could take place has as yet been published. It is known, however, that the Factory Department of the Ministry of Labour is collecting information on the present medical situation in factories, and that a series of questions relating to the future development of factory medical services was sent to employers by the Industrial Health Advisory Committee of the Factory Department.

3. For various reasons the contributions of the Factory Department to the promotion of health in industry are necessarily limited. The Factories Acts of 1937 and 1948 lay down minimum rather than optimum standards; there are many working communities which are not within their scope; and there are only about 350 inspectors available for visiting the 280,000 work-places covered by the Acts. Moreover, owing to the nature of its relationship with industry, the Factory Department, through its visiting inspectors and Appointed Factory Doctors, can make only a very limited contribution to the solution of the psychological problems of individual and group character which recent experience has shown to be important in the industrial world. In short, advice, inspection, and statutory medical examination, although important, form only part of an occupational health service.

4. In view of the limited scope of the Factory Department, nationalized industries and certain private industries, Government Departments, and public bodies responsible for the health, safety, and welfare of their employees have established their own medical services, realizing that a medical service for the group is necessary for promoting health at work. The 800 part-time and 165 whole-time medical officers in factories are now a vital part of the existing occupational health service.

General Principles

5. It is the view of the Council that there are certain general principles which are basic to any plan for expansion of occupational health services. These principles should form a guide to those persons on whom the responsibility may fall for planning, initiating, or supervising such services.

6. In the first place, the term "occupational health," and its scope, needs definition. Occupational health is concerned with the study of individuals in relation to the physical and psychological demands of their occupations, and of work and the work environment in relation to their effects on health. Occupational health now includes the subjects of industrial or occupational medicine, industrial surgery, industrial physiology, toxicology in relation to industrial hazards, industrial rehabilitation and resettlement, industrial or occupational psychology, and industrial hygiene and engineering. It must be clearly understood that non-medical experts, in collaboration with the doctor, play an active part in the promotion of occupational health.

7. An occupational health service is primarily preventive in character. It is intimately concerned with all human problems in the occupational group. It includes, or should include, (1) a hygiene or environmental service; (2) the assessment of fitness for different forms of employment; (3) a co-ordinated

rehabilitation and resettlement programme; (4) measures for the emergency treatment of injuries and illness occurring at the place of work; and (5) participation in research and educational schemes.

8. Occupational health services should no longer be confined to the practice of medicine in factories. Already schemes operate in coal-mines, in the transport and shipping industries, in public utility companies, for the staff of hotels, restaurants, and shops, for large groups of clerical workers, and for university students. Evidence of the need for development outside the industrial field is contained in the recently published final report of a Committee of Inquiry set up by the Home Secretary and the Secretary of State for Scotland (*Health, Welfare, and Safety in Non-Industrial Employment; and Hours of Employment of Juveniles*, Cmd. 7664).

9. No occupational health service can be successful without the full collaboration of all sections of industry. In any future plans, schemes for the provision of services, and the services themselves, must be acceptable to both managements and employees.

10. Further development and co-ordination by some central authority will be necessary before existing services can become comprehensive, before there can be broad integration of one type of service with another, or before a positive link can be created between occupational health and the National Health Service.

11. In the opinion of the Council, the Ministry of Health is the appropriate central authority to plan and supervise a national occupational health service.

12. This view is taken for the following reasons. First, it is considered a fundamental principle that an occupational health service should be supervised by the Government Department which already has general responsibility for the national health.

13. Secondly, the hospital and specialist services and the general-practitioner service now play an active part in promoting occupational health and will make an even greater contribution in the future. For example, the modern conception of the rehabilitation and resettlement of disabled workers and the need for expert clinical assessment of occupational diseases make an intimate link with the hospital services essential. So far as the general-practitioner service is concerned, a close liaison between the National Health Service and the occupational health service is important because any considerable expansion of the latter service can be effected only by the recruitment of general practitioners adequately trained to undertake work among occupational groups on a part-time basis.

14. Thirdly, the public health service administered by the local health authorities is likely to have increasing responsibilities in relation to occupational health. For instance, health services for small occupational units might be based on health centres provided by local health authorities. These authorities already have responsibility for the health of the school child, and it is generally accepted that a closer link between the school medical service and the health services for juvenile workers is desirable. Further, the public health service, by training and experience, has the preventive approach to health problems which is essential in the sphere of occupational health. Again, the responsibilities of the local authorities in connexion with the location of industry and the provision of residential accommodation and transport services are intimately concerned with the health of industrial workers.

15. Finally, the Council considers that, so far as their contributions to the promotion of occupational health in any future occupational health service of a national character are concerned, the closest possible integration of the three divisions of the National Health Service should be effected.

16. The Council considers it essential that, before there is any expansion of the existing occupational health service, the Ministry of Health should arrange surveys to ascertain the further needs of different areas and the particular character of the service required. Even after such surveys have been conducted, experiments in methods of providing services will be necessary before plans for a comprehensive service can be made. It is for this reason that the Council considers it inadvisable to advance detailed proposals at the present time.

CONFERENCE OF HONORARY SECRETARIES

A Conference of Honorary Secretaries of Divisions and Branches was held at B.M.A. House, London, on May 10 under the chairmanship of Dr. WILLIAM HUNTER (North of England Branch).

The CHAIRMAN OF COUNCIL (Dr. Guy Dain), after welcoming the secretaries, without whose work, he said, the Association would crumble to pieces, reviewed the important events of the past year. He referred with pride to the steadiness of Association membership; the resignations expected in some quarters had not come about, and the membership was now at the peak of 60,441; one thousand members had been recruited during the last three months. On the question of general-practitioner remuneration, it appeared that the Ministry was not yet ready to give an answer. A strong protest had been made against this unreasonable delay. It looked as if the Ministry was endeavouring to put off a settlement for as long as possible. Experience had shown that some modification of the machinery for central bargaining was necessary, and accordingly it had been decided to set up the British Medical Guild. The National Insurance Defence Trust would continue to function; general practitioners who were subscribing through that channel would not, of course, be asked to subscribe to two funds, but means were being created for collecting subscriptions from members in other branches of the profession. The constitution of the Association was being revised, and the proportion of directly elected members of Council would be increased. Dr. Dain also referred to the setting up of the Empire Advisory Bureau and to other services, including the organization, with offices in London, Manchester, and Edinburgh, for putting practitioners in touch with assistants and locumtenents. In view of the great financial strain upon the Association owing to the work connected with the National Health Service, as well as the special services which the Association itself had inaugurated, it was proposed to raise the general subscription by one guinea.

Many questions were asked by the secretaries about the new Service and also about the Guild. The Chairman of Council said he hoped it was understood that all practitioners should be invited, and indeed vigorously persuaded, to allow deductions to be made from their executive council cheques in order that a fund might be created substantial enough to support the profession in case of need. With the increased number of persons now at risk the deduction per person on a doctor's list would enable the fund to increase more speedily than the N.I.D. fund had done.

Questions were also asked with regard to the proposed Association war memorial, which it was suggested should take the shape of an ornamental fountain in the courtyard at Headquarters. A strong feeling was manifest that instead of a memorial in stone it should take the form of educational scholarships for the children of fallen members. The Chairman of Council said it would be open to the Representative Meeting to decide exactly what form the memorial should take.

Regional Offices

The SECRETARY (Dr. Charles Hill) explained the method now in operation for making available in the regions the services of Headquarters secretarial staff. The idea of resident regional secretaries had been canvassed, but it was felt that it would be more useful for the Divisions to have the periodic visits of a secretary who spent two-thirds of his time at Headquarters and thus was able to have and convey a close and detailed knowledge of what was happening at the centre. Offices for clerical purposes in the regions were being started, the idea being to have in each region a place where clerical and general utility services could be provided, and possibly from these beginnings a visiting headquarters for regional secretaries might be created at which they could meet Divisional secretaries and members. Such offices had been established at Oxford, Cambridge, Leeds, Manchester, Sheffield (a tentative arrangement), and Liverpool; negotiations were proceeding in Newcastle, and in Wales an Association House was to be taken, probably at Cardiff. In Northern Ireland a satisfactory arrangement obtained with an office in the Whitla Institute at Belfast.

Dr. W. HUNTER said that the North of England Branch Council feared that this policy of regionalization might overweight the administrative machinery of the Association and require a gradual increase of clerical staff on Civil Service lines. The North of England had had its own office system in operation for many years, and saw no reason for this upheaval. He was very proud of the Divisions and Branches and felt that these were the units that counted—not the administrative regional office. Interference from Headquarters was not desired. "We want not a man from Headquarters to keep an eye on the periphery but a man from the periphery to keep an eye on Headquarters." The regional secretary must not act as a buffer to soften the impact of criticism of central policy from Divisions and Branches. The North of England appealed to Division secretaries to stir up inactive Branches and replace lethargic Branch officials at annual meetings by live men. A Branch could do much to help its Divisions; in practice the Branch was the Divisions and should act as a co-ordinating body.

Dr. R. G. GIBSON (Winchester) urged that members of the secretarial staff should stay a reasonable length of time in the regions, visiting practitioners in their homes if possible. To address a meeting of 10% of the members of the Division was not satisfactory.

In further discussion the value of regional offices for clerical purposes was questioned in some quarters. The secretary of the Gloucestershire Branch said it would be as easy for him to communicate with London as with a regional office situated, say, at Bristol. Dr. Hill, in reply, said he thought it was a fair summary of the discussion that there was approval of the central-cum-local method. He agreed that ideally more time should be spent in the Divisions by the assistant secretaries, but it must be remembered that they were primarily servants of the centre, and that in so far as the periphery sought to influence central policy this must be done through the Representative Body. The visiting secretary was not in a position to accept instructions from a Division on an issue of policy if that policy differed from what had been decided centrally. He also felt that visits to Divisions should continue to be by invitation. No doubt a case could be argued for the creation of more central staff, but this would mean that each member of the staff was only fully aware of a smaller segment of central activity.

The Future Role of Divisions

Dr. J. A. PRIDHAM, chairman of the Organization Committee, drew attention to a memorandum compiled by Dr. L. S. Potter, Assistant Secretary, on the role of the Divisions in the medico-political work of the Association. It was in his view an excellent one. He went on to describe the altered organization which had arisen consequent upon the introduction of the National Health Service, in particular the creation of two autonomous committees—the General Medical Services Committee and the Central Consultants and Specialists Committee. It was important to emphasize that in this new set-up the role of the Divisions was still going to be of enormous importance. It was the Division which would canalize the general feeling of practitioners at the periphery. One of its functions would be to prevent what he described as the splintering of the profession and to harmonize at the local level the work of general practitioners and of consultants and specialists.

Many questions relating to methods of conducting secretarial business were asked and answered. Some of the secretaries requested a more intimate method of communicating information, such as a revival of the Secretary's letter. Opinions were requested on possible improvements of the *Supplement*, but the only suggestion elicited was the old one, that the *Supplement* should be detached and have an exclusive circulation. The technical reasons against this were explained. Dr. FRANK GRAY (London) suggested that in future membership of the Division executive might well be considered as a step towards membership of the local medical committee.

Dr. A. S. WILSON (Holland Division) was unanimously elected chairman of the 1950 conference. Dr. PRIDHAM mentioned that the chairman of the conference would receive all the documents of the Organization Committee and be invited to attend its meetings, thus ensuring a closer liaison between Headquarters and the Secretaries Conference than had hitherto obtained.

Correspondence

Part-time Specialist Work

SIR,—Some years ago, at a time of anxiety, this country was assured by a statesman that his efforts would bring "peace in our time," a pronouncement soon proved to be merely wishful thinking and completely out of tune with the times. Now the best part of a year has passed since the hospitals of the country were taken over by the State under the National Health Service, accompanied by much publicity and trumpeting. At that time, and since, leaders of our profession hastened to assure the rank and file that all was well, and that as a result of their efforts they saw a future full of promise for all who whole-heartedly co-operated. But are we again to witness politicians' inability to control circumstances?

The Service has accepted the principle of continuance of some private practice. From the practitioner's point of view this appears secure in that his remuneration relates to the number of patients he attends under the Service and limitations are not imposed upon him preventing him from developing a certain, limited, private practice. Recently the proposals for the remuneration of consultants have been published, and our leaders and notably the medical press have hastened to say how generous the proposals are. Machinery for the paying of full- and part-time staff of specialist rank has been worked out to separate the personnel at specialist level into two groups—namely, full- and part-time.

The time has now come when regional boards are trying to fix hospital establishments. The power now lies in the hands of the bureaucrats as to whether they favour full- or part-time posts, for by their handling of hospital establishment part-time service and private specialist practice may perish. Where, for example, can a part-time specialist look for help for a private patient if he, engaged in part-time service, cannot look about him to obtain help from a part-time radiologist, radiotherapist, pathologist, bacteriologist, or biochemist, or even venereologist, in the area if the patient wishes to have a private-patient relationship with one of these, unless they too are on part-time work?

Clearly the trend is towards a full-time service. All young men will start their careers under full-time service, and part-time service can persist only if they are allowed to take up part-time posts as they get older. In the practice of medicine and surgery it would be a tragedy if promotion or retirement were conducted on the lines of the armed Services so that full-time workers, perhaps at the age when their energies were flagging, but certainly at the age when experience was most ripe, were retired to make way for younger men, as might be the case if it was full-time for all. Surely the more sensible and more economic method of stabilizing the profession would be by personal contracts so being arranged that a full-time worker could, as he gets older, reduce his contract to part-time so as, perhaps, in one case to protect his health, in another to take part in local government work or charitable or other public work not directly within his professional life. Can the present trend which we are witnessing be considered to make such transfer likely?

In actual fact a gulf has been put between full- and part-time work. A full-time worker is subject to regulations debarring him from certain privileges even outside his hours of contract. His pension is dependent upon his last three years' remuneration, which surely is a strong deterrent to reduction of working hours in the later years of life. If the future develops a scheme of mainly full-time clinicians, is it not likely that the responsibilities and strains of clinical life, so little appreciated by the office worker, will produce a generation of clinicians near retirement unable to keep up the pace, clinging, even against their will and perhaps in poor health, to full-time employment as the only alternative to complete retirement. Perhaps we will see them falling back on that so-called occupation of organization, which will all too frequently mean interference with the doctor-patient relationship of other specialists in a manner calculated to keep themselves as much as possible in the centre of things without exposing themselves to the full strain of clinical work.

Will it not be desirable to have some assurance from our leaders and from the Minister of Health as to the security in the future of private practice and part-time work? I suggest that it is necessary to have some guarantee of the following nature:

(1) That there is agreement between the Ministry and the profession that the principle of part-time work is to be encouraged and that there is opportunity for continuance of some private practice including the provision of some private beds.

(2) That the division between full- and part-time work be abolished together with the restrictions imposed upon full-time employment and that all consultants are offered a contract which can be varied up to a maximum of five-and-a-half days' work a week, and allowed to work outside these hours in a doctor-patient relationship without restriction.

(3) That the establishment of hospital staffs be kept fluid, so that when hospital appointments are made they are not made rigidly follow some established precedent, but are made to fill the need holding at that time; so that in practice a specialist holding part-time appointment may on retirement be replaced by a specialist holding a full-time appointment, or alternatively a specialist holding a full-time appointment may, if the local need justifies it, be followed by one holding a part-time appointment.

(4) That all appointments at specialist level are made accepting the principle that the individual has the option of being employed for less than a full working week if he so desires, or can exercise his option at some later date.

(5) That the pension machinery be reviewed to abolish the distinction between the present full- and part-time schemes.

I feel certain that the Royal Colleges and other leaders of our profession have been too interested in what happens in the centre of each Region and at teaching hospitals to inquire into the conditions under which the vast majority of specialists in this country, who are working in non-teaching hospitals, may be asked to work. I trust that the working members of the profession, looking for leadership to the Royal Colleges and to the British Medical Association, are not merely going to hear shouts of "security in our time" from men who have their eyes only on their next few years.—I am, etc.,

Nottingham.

A. N. BIRKETT.

Grading of Specialists

SIR,—I am instructed by my committee to send you a copy of the enclosed letter which has been sent to the Liverpool Regional Hospital Board:

"My committee wish to draw the attention of the regional board to the rising tide of indignation felt widely amongst the regional board's specialists at the method and results of the grading of specialists by the assessment committees in this region. Furthermore, we wish to draw attention to the following points:

"The use of the grades senior hospital medical officer and junior hospital medical officer to describe those performing specialist work. These grades have been applied to many persons holding specialists' appointments in regional board hospitals.

"There are many anomalies in the gradings which have been circulated, and it would appear that in particular insufficient weight has been given to specialist experience in the armed Forces."

—I am, etc.,

Liverpool.

V. COTTON CORNWALL,
Hon. Secretary, Liverpool Regional
Hospitals Medical Association.

Honour of Profession

SIR,—From reading the *Supplement to the Journal* and talking to my colleagues I find a great measure of agreement upon various matters in the new Health Service which require rectification. Apparently the majority of us think that 4,000 patients cannot be cared for properly by one doctor who also wishes to keep abreast of his medical reading, go to an occasional clinical or doctors' meeting, and have some leisure. It follows, of course, that we will require a much higher capitation rate if we are to have smaller numbers. The majority of us think that as mileage allowances stand at present a country or even a semi-urban practitioner is not being paid much more than half as well as a city doctor.

The younger men at least, both principals and assistants, are agreed that the present system which allows a doctor to hold 6,400 patients and pay a young doctor five, seven, or nine hundred a year to do half the work is far from satisfactory. We would all agree to an assistant being employed in order that an ailing doctor could carry on till his son took over, or to the case of a "trainee assistant" where there is likely to be "training."

There does not seem to be agreement among us one way or the other as to a sliding scale of capitation fees.

But far more important than any of those matters, and one which Mr. Bevan (Mr. Grant in Northern Ireland) would require to ponder over very seriously, is the fact that a gradual coarsening of the fibre of the general practitioner is at present in progress. It happens in this way: In the past week I have lost a patient who required me, without success, to give her posterior-pituitary extract for alopecia areata without specialist advice, another because I did not deal myself with a wart very near the limbus of the eye. An entire family left me because I could not get them coal.

I am at present waiting to find out if two insolent people will make good their threat of leaving me because I would not certify them as unfit to travel to the medical referee (in my area, there being no travelling medical referee, the certificate would have made them safe to continue to draw benefit).

I am continually being asked for single injections of penicillin, for jars of malt, certificates for corsets, certificates of incapacity when the illness is doubtful, letters requiring patients to be x-rayed for whatever they determine, and I know that, if I refuse, their cards will be transferred and they will have their demands fulfilled elsewhere.

It is a bitter experience for one who could not, and never would have the slightest desire to, earn his living away from medicine to feel that this professional prostitution is being forced upon him. Indeed, Sir—and the thought of it does not appeal to me—I am afraid that, if safeguards for our professional honour cannot be found within the present system, we will be forced in time into asking our Minister to convert us into a fully salaried Service.—I am, etc.,

CONN MCCLUSKEY.

Dungannon, Co. Tyrone.

Trainee Specialist Associations

SIR.—It is becoming apparent from the numbers of trainee specialist associations springing up all over the country that doctors in this category are aware of their present uncoordinated, unrepresented position, and are realizing that unless they help themselves no one else will.

At present the grading of posts, and of trainee specialists themselves, is going on without the methods and criteria by which these things are done being either uniform or public. Nor are trainee specialists themselves having any say in the matter except in the few areas where they are represented upon the medical advisory committees of their hospitals.

It is high time, therefore, for trainee specialists to organize themselves on a national basis so that their opinions may carry weight and that they may obtain the representation on medical committees in the National Health Service which their numbers and responsibilities justify.

It seems necessary that trainee specialist groups should be formed as soon as possible in every region, and I would be glad if anyone in this category wishing to form one for this region would get in touch with me.—I am, etc.,

20, Norham Gardens, Oxford.

H. A. W. FORBES.

The Dental Service

SIR.—My dentist, who recently entered the Health Service, has attended to my teeth for many years. He has by various forms of treatment kept my teeth and gums in good condition. He found, under the regulations of the Service, that he had to apply for special permission to be paid for this form of treatment. The reply was to ask for an examination by an inspector from the Dental Estimates Committee, and this duly took place. Now, although I was in my 68th year, I still had twenty-three teeth, many of them, of course, with fillings in them. The result of the inspector's examination was that he recommended that eighteen teeth should be removed. This included my nine remaining molars, which were quite useful teeth, and many of which my dentist held to be serviceable for a number of years. My dentist's reply was that he would absolutely refuse to do this, as he considered it dangerous to my health, was unnecessary, and also bad dental treatment. I quite agreed with him and told the inspector that I should on no account consent to such a procedure. I am in excellent health and there seemed absolutely no reason for removing the teeth. There was, it is true, alveolar absorption, but the gums were in a healthy con-

dition and the teeth were useful biting teeth. There was only one—under treatment—which was causing any active trouble, and also one which required to be filled. My dentist considered that it might cause very severe injury to my health to remove all these teeth, and I have personally known cases in which this occurred when a large number of teeth were removed.

Surely it is absolutely wrong that the Ministry officials should attempt to dictate to a dental surgeon what his treatment should be? If the Act leads to proceedings like this it must be a very bad Act.—I am, etc.,

London, W.1.

N. S. FINZI.

Discipline in N.H.S.

SIR.—(1) A doctor was held by a medical service committee to have given a patient pre-dated certificates (*Journal*, Feb. 26, p. 371); if true, an inexcusable, blameworthy, albeit what may be called a technical, offence. Penalty: 150 guineas fine and severe censure. Savage and senseless when compared with (2).

(2) A doctor according to the report (*Journal*, April 9, p. 638) was held by a medical service committee to have persistently failed to attend a small child when called. As a result it is alleged the child died of bronchopneumonia. Penalty: £10 fine and censure.

Comment on these two examples of disciplinary action is needless. If we are to be drilled and dragooned for all manner of things under the N.H.S. (and one does not dispute the need for it in the above two cases if the facts are true) let justice not only be done but let it also appear to be done.—I am, etc.,

Hove, Sussex.

G. L. DAVIES.

Steering Committee for Representative Meetings

SIR.—With the near approach of another Representative Meeting it is worth while considering whether these meetings can be made more satisfactory than they are, for I find after the score or so I have attended a fairly general feeling that a lot of time has been wasted. Some representatives also have a legitimate grievance that though their motions may have commanded general support they have been defeated for some technical reason or, more often, because they have embodied an unfortunate phrase or clause. There is also sometimes a feeling that the Agenda Committee has manipulated the result by the order in which notions have been discussed.

Now doctors are usually busy people, and some of us feel that no efforts should be spared to economize time and yet stimulate useful discussion of matters which concern us all vitally. Various steps have been taken towards this end by "starring" motions or by grouping them, but the ideal has not so far been reached. I would like to suggest the employment of a sort of "steering" committee, and after some experience of the way they work I would suggest the following.

The steering committee should consist of a few officials or members of the Council, who should from time to time throughout the meeting call together representatives supporting a group of motions dealing with a certain subject, together with one or two members of the Council particularly interested or briefed in that aspect of medical policy. These motions should then be discussed informally, and as a result the representatives would probably be able to agree among themselves on the best-worded motion to support, or perhaps they might frame an alternative resolution which would embody the general conclusion and at least not be technically invalid. The Council members would be able in private to give any required information to the representatives, so that a lot of time would not be wasted—as it often has been—through heated discussion due to ignorance or misconception of the facts.

No representative should be debarred from putting the special motion to the A.R.M. if he thinks it right to do so, but this preliminary discussion would prevent the interminable waste of time involved in putting almost similar motions, and also prevent the occasional seeming arbitrariness of the chairman in deciding on which of a similar series the discussion and voting should take place. It would put the proceedings much more in the power of the representatives and also ensure that those who propose resolutions are in possession of the necessary facts for their proper presentation.

Any motion so agreed upon in the steering committee should not be just formally put and passed without explanation.

indeed, it should be incumbent on the proposer to explain the point of his resolution and the objections and modifications urged against it. Having put the A.R.M. in possession of the salient facts it would then be open for any representative to speak as at present, and the chances are that by limiting the number of motions in this way fuller discussion would be promoted and important matters of principle properly ventilated and decided. As such, the results should be more worthy of our profession and of that humane temper and thorough examination of evidence that our work demands.—I am, etc.,

Winsford, Cheshire.

W. N. LEAK.

Large and Small Practices

SIR,—In view of the many sharp divisions between men who run large practices and doctors who care for small ones, which it would seem, in answer to the Minister's dearest unspoken wish, are becoming a weekly feature of this and other columns, it would surely be wise to establish it as an axiom that the man with 2,000 patients runs his practice *himself*, and the man with 4,000 patients does not. This, in 19 cases out of 20, is fact, not argument; and, for better debate, it should be accepted as such by both sides before the shouting starts.

I have no doubt that the 4,000-plus man can run a practice "successfully"—that is, without killing his patients by neglect or himself by overwork. Indeed, with a small area to serve, a good secretariat, a State-subsidized assistant, and a brisk professional manner, he should have a shorter day than his brother in the country, for a large part of his daily work is in fact done for him by a drove of specialists and technicians, house-men, sisters, nurses, and medical students, all of whom, except the last, are separately paid by the State. The country doctor with a small list sends few of his patients to hospital or clinic, and, when he does so, often finds that it is to his colleagues or to himself that he has referred them.

There is room for both classes of doctor in the community; indeed, the 4,000-plus kind is in type the beau-ideal of the Welfare State. But it is to the country doctor with his smaller list, his greater distances, and his long working day that we owe our sympathy and support: sympathy and understanding if he sees in one who is paid twice as much for doing with outside help what he must do alone, a cross between a chemist's assistant and a reception clerk, with that most dangerous of vestiges—enough medical learning still clinging to his ink-soiled fingers to prompt an occasional and risky sortie into genuine medicine; practical support and sympathy from the lucky few who, like myself, are little affected by the sickle of reform; support and sympathy, in speech and writing, above all from the many who, by a stroke of luck and the passing of an Act, have been made financially secure for the first time. Let the Big Man in medicine new style, as, with his assistant "in" for him, he sits at ease before his televisor, instructing his secretaries, or chatting easily with his manieurist—let him spare a thought, a word, a letter on behalf of his brother in the country toiling late to bring cheer to some lonely farmstead and a crust to his wife and family. The fight for his welfare is on and he needs our help, not our rivalry.

To autocracy we have lost every battle; let us do our best to win this last.—I am, etc.,

Purley, Surrey.

GUY CARRELL.

Special Tax

SIR,—It is with great apprehension that I have read Dr. F. G. Wood-Smith's letter (*Supplement*, May 7, p. 266) suggesting that patients should pay to the doctor a flat rate of, say, 1s. per item of service. I believe that we should be absolutely overrun by our patients if this suggestion were adopted. Our patients have to overcome a certain amount of inhibition at present when they call on us. This hypothesis may be a little difficult to believe when one looks into the crowded waiting-room; however, it appears quite reasonable when one compares the number of calls to-day with the number of calls one year ago.

If the patient has to pay a fee to the doctor, I am certain that this inhibition will diminish reciprocally with the amount paid; our patients will feel that for 1s. or 2s. 6d. they can demand from us even more than they do now. I quite agree that a contributory payment at the time of attendance would deter the patients to a certain degree from abusing the Service,

but in my opinion they should contribute a certain percentage of the cost of the *prescribed medicine*, and this should be paid to the *chemist*.—I am, etc.,

Bristol.

PETER H. KEPPICH.

Assistantships

SIR,—As a previous letter of mine (*Supplement*, April 2, p. 216) in defence of the practice of employing assistants as a very good method of entry into practice has brought forth several replies, may I be permitted to answer two which appeared in the *Supplement* of April 23 (p. 250) signed "Another Assistant" and "X. Y. Z."?

My original letter was written in answer to a suggestion that *all* assistantships should be abolished as evil institutions. I am aware from what applicants for our own vacancy told us that there are many principals who are grasping, unscrupulous, and ill-mannered.

Because one occasionally hears of an immoral parson one does not condemn all parsons as immoral. An assistant's remedy is obvious: as soon as he becomes aware that his principal is not prepared to behave fairly he can give notice. My belief is that, in any populous area, a live assistant can soon increase a practice to provide a just claim for a partnership, and where accountants' figures show this the principal has no right to decline. If he pleads incompatibility of temperament he should have said so within a reasonable period.

To "X. Y. Z." I would say this. My reference to a man learning the intricacies of general practice did not refer to learning fresh knowledge of medicine and surgery. In fact I agree with his remark about "unlearning." When I left Guy's my physician made the remark that I knew more medicine and surgery than I should ever know again, but that in ten years I'd have learnt to be a "doctor."

The young man we have just admitted to partnership is good—very good. He is on the list of practitioner-obstetricians and has a very sound knowledge, yet he quite frequently has to ask help from my partner or myself because he lacks personal experience of dealing with people—the sick, their friends and lay advisers, relatives, and what not. It takes years to know what local consultants are most suitable to certain types, because consultants vary greatly, and to introduce the wrong type of surgeon or physician is often disastrous. As to all work and no pay, I know of no principal who pays less than £750 plus a house and often a car allowance.

But to my main points: how do these people suggest we should proceed? In the past one bought; that is all done away with except for one's house, but that is still one's own property and one can elect to remain in residence after disposing of one's practice. A death vacancy is advertised—many apply. Who is most likely to get it? Someone known locally or someone who knows someone who knows someone locally. Are the general run of young aspirants better off? "X. Y. Z." talks of "the hard way." I never found it so hard. I knew my obligations—the bank and finance company worked out that I'd have about £750 a year (pre-war) out of an income of £1,300 or so. But the practice just kept ahead and I never had so little as that even in the first year.

It seems to me it is now much harder to get established as a principal. It depends on chance. But take our own practice: if our new partner is really successful there is no doubt we shall need an assistant again, but this time we cannot offer a "view" unless and until the new assistant enables the practice to extend to provide for him. We are surrounded by six or seven other principals, and there must be a saturation point. Is this to exploit the young man who has so much to learn? I don't see it. If after a year or two he wishes to pass on to an assistantship with view, he will have learnt a great deal from a practice with 11,000 patients in a town with a large medical school with many well-known surgeons and physicians to call on in consultation.

No, Sir, the path of the assistant should be cleared of unnecessary obstacles. It should be an established custom for all principals with an assistant to have a quarterly audit, and, as soon as the returns show that the income has increased sufficiently, the assistant should have the right to claim a share. But assistantships cannot be abolished.—I am, etc.,

A. B. C.

Whither Medicine ?

SIR,—Lord Horder, in a dinner address to the West London Medico-Chirurgical Society on Feb 18 entitled "Whither Medicine ?" (*Journal*, April 2, p 558) presents a very good case for the high moral ideals that the medical profession are aiming at. It should be read and studied by all thinking men and women, including politicians of all parties. I fully agree with "Medical Practitioner" (*Daily Telegraph* April 4) and Dr J P Matthews (*Supplement* April 2, p 216). These are extremely inspiring letters and express the views of many of us who have given the subject the serious consideration that it deserves.

Dr Semple, speaking at a general meeting of the Lincoln Division on March 17 (*Supplement*, April 9, p 228) asked: "Do we want lists of 4 000 and an early attack of coronary thrombosis, or lists of 2 000 and a high standard of medicine?" In my opinion this is no exaggerated statement. Many of us, though, are attempting a high standard of general and preventive medicine too, with what the B.M.A. calls the "average" list, and no private practice.

"Medical Practitioner" suggests two solutions to the problem that is facing our profession. Others have thought on similar lines hesitated to write the Press or the *Journal*, but have written to the Secretary of the B.M.A., Dr Charles Hill. The first is concerned with some method of improving the remuneration, and the other is "to educate the public by all the devices of propaganda, etc." I would also add, from personal experience, improvement of the hospital side of the Service. This does concern the general practitioner, and I write as a G.P. of many years' experience in an industrial district.

I cannot do better than draw the attention of your readers to what Lord Horder in his address calls the "basic needs" of the citizen and the doctor. "Medical Practitioner" does not state who is to "educate the general public in how the new Service should be used." Lord Horder suggests that if the politicians won't be guided we have "no alternative but to appeal to public opinion," continuing to serve the patient in the manner which the doctor believes to be in the patient's best interests.

I am in full agreement with that course but would wish to be more emphatic in our claims. In this connexion I am inclined to agree with the attitude of Dr John Hale Power whose letter also appears in the *Supplement* (April 2, p 215) with the exception that refusal to sign any State certificate would jeopardize the patient's best interest. Again quoting from Lord Horder's address: "We physicians must lead we must guide the politicians, since they cannot act without expert help, we must keep the citizen's end up, since he learns to rely upon us for support."

Finally, and most important of all problems, and mentioned by Dr. Matthews, is the apathy in the profession itself. I attribute this also to that "fed up" feeling due to the long-drawn-out negotiations but also to the lack of unity in the medical profession and the ability merely to "grouse" in private so beautifully put by one of the elders of the profession at a recent Divisional meeting: "We are all a set of twerps." I do not agree with the word "all." This remark was made after the meeting. Let us all speak freely at our Divisional meetings of our difficulties etc.

I wish to state that any observations I have made are purely in my capacity as a general practitioner with no other professional allegiance but to the B.M.A. for the past 27 years—I am etc.,

Leeds

HARRY SLIGRE

Domiciliary Midwifery Payments

SIR—Dr Harris Avery draws attention to the discrepancy in midwifery payments (*Supplement* April 30, p 260), and points out that under the NHS scheme a fee of 7 guineas is payable for every booked case compared with the fee of 4½ guineas payable on a "medical aid," which usually involves more work for the doctor.

On the other hand there is a further discrepancy in which a practitioner called by a midwife to attend in connexion with an abortion or miscarriage receives 4 guineas, but under the NHS he would receive only 3½ guineas. No wonder there are some practitioners who having successfully applied to be

included on their obstetric lists have little interest in this side of medicine other than to be called in by a midwife to deal with a miscarriage. It is usually an easy 4 guineas.

These anomalies are presumably due to the Minister's inordinate haste to have the scheme ready for July 5 last—I am, etc.

Plymouth

C R BARKER

Charge Patients for Service

SIR—Some time ago (*Supplement* Dec 4, 1948 p 211) you published my letter regarding the suggestion that patients should pay 1s per service to the doctor. It now appears that the Government are considering some similar step in order to reduce the cost of the Service, but it seems to be their idea that the State should keep the billing.

An opportunity like this is unlikely to occur again. The Government are in a mood to consider levying a charge per service. While this is so I would suggest that we offer to accept this charge in lieu of an increased capitation fee. It is said that we render 5-7 services per patient per year, which means on an average that the charge would be equivalent to a 6s increase in the capitation fee. Counting 40 million people as being in the Service, this is equal to an increase in the pool of 12 million pounds a year—which is roughly the increase we need to bring the betterment factor up to 170%.

This system would have many advantages:

- (1) Patients would appreciate the Service more by having to pay a little, and the weekly cough bottle types would dwindle in numbers.
- (2) Remuneration would be more adequate without cost to the State.
- (3) The excellent principle of more work more pay would apply a little more markedly.
- (4) Costs over the G.P. service as a whole would fall, as prescribing would diminish.

Could there be a more fair and reasonable solution of ours and the Government's problems?

Further, as regards a sliding capitation fee, this could then be applied to our present one if it were still felt that smaller lists needed further assistance, and in this respect, in my view, the more that is put on the first thousand the better, as average lists are sure to fall when the number of doctors increases as increase they will in the next 10-20 years. The more there is on the first thousand the less will our individual incomes fall in the future. Action will, however, have to be swift before Sir Stafford Cripps makes up his mind—I am, etc.

Leeds

S A SMITH

The Amending Bill

SIR—The National Health Service Act was described recently by a High Court judge as a miracle of ineptitude. The Minister of Health promised us doctors that he would introduce an amending Bill, and that he would give us doctors an opportunity of discussing with him and his officials the proposed amendments to be introduced in the Bill before it was finally drafted for presentation to Parliament. This he has failed to do, and the amending Bill has now been tabled.

This amending Bill can only be described as a miracle of easiness and bluff. Many of us G.P.s cast our minds to the early 1920's, when after repeated attempts to obtain better remuneration the old Insurance Acts Committee—now the General Medical Services Committee—called for mass resignations of doctors serving under the N.H.I.—got them and held them—to be used if doctors' terms of service were not improved and better pay given for work done. The result we all know.

The position now is exactly comparable to that existing then in the early 1920's, and similar action is called for. Let us waste no more time. We want deeds not words—I am, etc.,

Oxford Medical

H VICKERS

FEEs FOR FIRST-AID LECTURES

It is stated in paragraph 85 of the Annual Report of Council (*Supplement* April 2, p 174) that the St. John Ambulance Association has adopted the mileage rate of 1s a mile (each way) beyond two miles. The British Red Cross Society informs us that it also adopted this mileage rate when the fees for lectures and examinations were increased.

H.M. Forces Appointments

ROYAL ARMY MEDICAL CORPS

Lieutenant-Colonels L. S. C. Roche, H. W. Daukes, and R. R. Leaning, O.B.E., have retired on retired pay and have been granted the honorary rank of Colonel.

Lieutenant-Colonel H. Clain has retired on retired pay on account of disability. (Substituted for the notification in a *Supplement* to the *London Gazette* dated Feb. 8.)

Major H. A. Ferguson, retired, re-employed, has been restored to the rank of Lieutenant-Colonel on ceasing to be re-employed and has been regranted the honorary rank of Colonel.

Majors R. E. Waterston, H. N. Perkins, R. J. G. Morrison, J. W. Orr, M.C., and J. L. Gordon, O.B.E., to be Lieutenant-Colonels.

Major D. J. H. Jones has retired on retired pay and has been granted the honorary rank of Lieutenant-Colonel. (Substituted for the notification in a *Supplement* to the *London Gazette* dated July 9, 1948.)

Major J. A. Davidson has retired, receiving a gratuity, and has been granted the honorary rank of Lieutenant-Colonel.

Major J. Davidson has relinquished his commission, retaining the rank of Major.

Major G. L. Ritchie has been restored to Establishment.

Temporary Commissions.—Majors R. S. de C. Bennett and J. H. Robinson have relinquished their commissions, retaining the rank of Major.

Major J. A. Manifold has been seconded with the Foreign Office. Captains C. C. Corfield, J. H. Brodie, and H. M. Upshon to be Majors.

Short Service Commissions.—Captain W. S. Rhodes has retired, receiving a gratuity, and has been granted the honorary rank of Major. Captain S. J. Nathan to be Major.

Short Service Commissions (Type "B").—Majors H. Shield, M.C., T.D., from T.A., and S. J. Nathan, R.A.R.O., to be Majors.

Women's Forces Employed with R.A.M.C.: *Short Service Commission (Type "B")*.—Captain (Mrs.) H. McKendrick to be S. Commander.

REGULAR ARMY RESERVE OF OFFICERS

Major-Generals O. Ievers, C.B., D.S.O., F. D. G. Howell, C.B., D.S.O., M.C., F. Casement, D.S.O., W. B. Purdon, D.S.O., O.B.E., M.C., H. H. A. Emerson, C.B., D.S.O., and T. S. Coates, C.B., O.B.E., late R.A.M.C., having exceeded the age limit for liability to recall, have ceased to belong to the Reserve of Officers.

Colonels (Honorary Brigadiers) C. C. Crawford-Jones, C.B.E., A. A. M. Davies, R. K. Mallam, O.B.E., E. U. Russell, M.C., A. D. Stirling, D.S.O., and J. B. A. Wigmore, late R.A.M.C., having exceeded the age limit of liability to recall, have ceased to belong to the Reserve of Officers, retaining the honorary rank of Brigadier.

Colonels A. Dawson, O.B.E., L. Dunbar, O.B.E., A. Jackson, E. C. Lang, D.S.O., W. F. M. Loughman, M.C., L. Murphy, D.S.O., R. E. U. Newman, C.B.E., M.C., S. D. Reid, J. Rowe, O.B.E., M.C., G. F. Rudkin, D.S.O., E. D. K. Seaver, R. W. Vint, and J. M. Weddell, C.B.E., late R.A.M.C., having exceeded the age limit of liability to recall, have ceased to belong to the Reserve of Officers.

INDIAN MEDICAL SERVICE

Colonel A. V. Lopes has retired.

Lieutenant-Colonels J. McM. Wilder and E. G. Hurd-Wood have retired and have been granted the honorary rank of Colonel.

Lieutenant-Colonels R. A. Wesson and W. J. Webster, C.I.E., M.C., have retired.

Majors J. G. Thomson, D. G. McCauly, and W. H. A. Thorne, O.B.E., have retired and have been granted the honorary rank of Lieutenant-Colonel.

Majors A. H. Barzilay, D. McCarthy, J. O'Neill, R. J. Jarvie, M. M. Mansfield, M. K. Bryce, W. J. Stewart, R. I. Reid, and F. C. Jackson to be Lieutenant-Colonels.

Major A. M. McGavin has retired.

Captains E. L. Wilson, H. C. Rogers, J. J. Woodward, S. H. Heard, M.B.E., J. E. Ennis, R. D. D. Birdwood, M.C., J. M. M. Drew, O.B.E., R. M. McCullough, H. V. Morris, F. W. Snedden, O.B.E., J. L. M. Whitbread, S. G. Nardell, L. E. Elkerton, H. F. T. MacFetridge, D.S.O., P. M. Kirkwood, M.B.E., W. D. P. Griggs, G. S. Michelson, P. W. Kent, R. O. Yerbury, J. P. O'Riordan, H. Rees, D. F. Eastcott, W. S. Hacon, and L. H. Cooper to be Majors.

Captain N. C. Todd has retired and has been granted the honorary rank of Major.

EMERGENCY COMMISSION

Major E. L. Jones has relinquished his commission and has been granted the honorary rank of Lieutenant-Colonel.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-Country Borough Councils.—Dartford, Wallend.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huxton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

Association Notices

GROUP OF DERMATOLOGY

A conference of members of the Group of Dermatology will be held at B.M.A. House on Thursday, June 16, 1949, at 2 p.m. to receive a report from the Group Committee and to discuss matters of interest to members. All members of the Group are invited to attend.

ELECTION OF MEMBER OF COUNCIL, WEST INDIAN GROUP OF BRANCHES, 1949-52

The following is the result of the election for a member of Council by the Grouped West Indian Branches, 1949-52:

H. B. Morgan (London)	77 votes (elected)
J. B. Wrathall Rowe (Harrow)	37 votes
No. of voting papers issued	361
No. returned	114

CHARLES HILL,
Secretary.

Diary of Central Meetings

MAY	
31 Tues.	International Relations Committee, 2 p.m.
JUNE	
2 Thurs.	General Medical Services Committee, 11 a.m.
2 Thurs.	Proprietary Medicines Committee, 2 p.m.
2 Thurs.	Joint Committee of the B.M.A. and National Veterinary Medical Association, 3 p.m.
3 Fri.	Committee on Psychiatry and the Law, 2 p.m.
9 Thurs.	Publishing Subcommittee, 11 a.m.
10 Fri.	Library Subcommittee, 12 noon.
10 Fri.	Science Committee, 2 p.m.
10 Fri.	Public Health Committee, 2 p.m.
16 Thurs.	Dermatologists Group, Committee, 11.30 a.m.
16 Thurs.	Group of Dermatology Conference, 2 p.m.

Branch and Division Meetings to be Held

BOLTON DIVISION.—At Bolton Royal Infirmary, Tuesday, May 31, 8.30 p.m., annual general meeting. Consideration of Annual Report of Council, election of officers, etc.

EAST HERTS DIVISION.—At County Hospital, Hertford, Thursday, June 2, 8.30 p.m., annual general meeting.

LEICESTERSHIRE AND RUTLAND BRANCH.—At Nurses' Recreation Room, Leicester Royal Infirmary, Wednesday, June 1, 8.30 p.m., annual general meeting. Address by Dr. E. Grey Turner.

METROPOLITAN COUNTIES BRANCH.—At B.M.A. House, Tavistock Square, London, W.C., Tuesday, June 7, 2.30 p.m., annual general meeting. Agenda: Induction of Dr. C. G. Martin as President of the Branch and President's Address, etc.

MID-ESSEX DIVISION.—At Chelmsford and Essex Hospital, Sunday, May 29, 10 a.m. Dr. R. Sleight Johnson: "Streptomycin in the Treatment of Chest Diseases."

NORTH-EAST SUFFOLK DIVISION.—At Nurses' Lecture Room, Lowestoft and North Suffolk Hospital, Sunday, May 29, 3 p.m., annual general meeting. Consideration of Annual Report of Council of B.M.A. (*Supplement*, April 2, p. 174), etc.

OXFORD DIVISION.—The Oxford Division is celebrating the centenary of the birth of Sir William Osler on Tuesday, July 12. The programme includes a medical meeting in the Sir William Dunn School of Pathology at 2.15 p.m., when Lieutenant-General Sir William MacArthur and Sir Henry Cohen will speak; tea in Osler House at 4.30 p.m.; and a dinner in Christ Church at 7.30 p.m., at which Professor J. A. Ryle will propose "The Art and Science of Medicine," Sir Hugh Cairns "Sir William Osler," and the Regius Professor of Medicine, Professor A. D. Gardner, "The Guests." The price of the tea is 2s. per head and that of the dinner £1 12s. 6d. A limited number of tickets are still available, and anyone wishing to attend should write at once to Dr. C. W. M. Whitty, 121, Woodstock Road, Oxford.

WANDSWORTH DIVISION.—At Stanley's Masonic Halls, 51, Lavender Gardens, Lavender Hill, London, S.W., Tuesday, May 31, 8.30 p.m. Annual meeting. Election of officers, etc.

WINCHESTER DIVISION.—Wednesday, June 1, (1) At Royal Hampshire County Hospital, 3 p.m., clinical meeting. Address by Mr. A. M. A. Moore: "Applied Anatomy in General Practice"; (2) At Norman Mede Hotel, 7 p.m., annual meeting; 8 p.m., chairman's sherry party; 8.30 p.m., dinner. Talk by Dr. S. J. Hadfield: "Current Events."

RETURN TO PRACTICE

The Central Medical War Committee announces that Dr. A. W. J. Houghton, M.R.C.P., Draper's Hall, Shrewsbury (Shrewsbury 2129), has resumed civilian practice.

SURGICAL ASPECTS OF MENINGITIS*

BY

Sir HUGH CAIRNS, K.B.E., D.M., F.R.C.S.

Nuffield Professor of Surgery, University of Oxford

There is general agreement that in the last 50 years adequate surgical treatment of infections of the middle ear and mastoid has greatly reduced the incidence of meningitis and other intracranial infections. This can be confirmed by comparing cases of the present day with those described by William Macewen in his classic work, *Pyogenic Infective Diseases of the Brain and Spinal Cord*, published in 1893. Similarly, improved surgical cleansing and suture of open wounds of the head have effectively prevented many cases of meningitis. These facts are so well known that all that is necessary here is to remind ourselves what a valuable procedure it can be to release pus from the ear by prompt incision of the ear-drum or to spend time in careful treatment of the simple scalp wound.

Historical

Horsley (1890) seems to have been the first in modern times to operate for meningitis; a year before lumbar puncture was introduced he established continuous drainage of the cerebrospinal fluid (C.S.F.) through a laminectomy wound; and he also irrigated the subarachnoid space with weak bichloride of mercury. About the same time Mayo-Robson (1890) and others drained the lateral ventricles. These pioneer efforts were important for the development of neurosurgical technique, but did not save lives.

Surgical methods were employed for three main purposes: (1) the application of antiseptics and antisera; (2) drainage of C.S.F., continuous or intermittent; and (3) irrigation of the cerebrospinal pathways with "physiological" fluids. The only antibacterial substance whose use seems to have been attended by any success was Flexner's meningococcal antiserum. It was introduced into the lateral ventricles (Cushing and Sladen, 1908) and later, with more success, into the cisterna magna (Ayer, 1920): the advantage claimed over these routes over the usual lumbar route was that the serum might more easily spread to all parts of the cerebrospinal pathways, especially when there was a spinal block.

Dandy (1924) concluded that antiseptics were of no value or pyogenic meningitis, but wrote: "Despite past and present failures, one cannot but feel that the future treatment of septic meningitis may yet lie in antiseptics or sera. Though seemingly impossible from our present knowledge, the detection of a specific antiseptic or of a specific serum so accurately balanced as to be without injury to the naked nervous system seems no more unlikely than Flexner's remarkable antimeningococcal serum, or the recent brilliant discovery by Sicard that lipiodol could be injected into the subarachnoid space, cast a dense shadow, and still be harmless to the delicate host."

Continuous drainage from the cisterna magna or lumbar subarachnoid space was tried by a number of workers (Dandy, 1924; Spurling, 1928; Thompson, 1937), while a few favoured continuous ventricular drainage, particularly when hydrocephalus was developing (Hampson, 1935). The reasons advanced for drainage were: to provide exit for the inflammatory products; to reduce intracranial pressure; and to promote increased flow of C.S.F. and thus to dilute the toxins. Kubie (1928) advocated that during drainage large amounts of hypotonic fluids should be given by vein or subcutaneously, as well as water by mouth, to promote the flow of C.S.F.

Irrigation with Ringer's solution was tried—from lumbar region to cisterna magna (Murphy, 1907), from ventricles to the lumbar subarachnoid space (Day, 1913), and from cortical subarachnoid space to cisterna magna (Eagleton, 1921)—but without any clear evidence of benefit; though Hampson (1935) mentioned a case in which, after blocking at the foramen magnum by presumed tonsillar cone, the flow of C.S.F. was re-established by instilling fluid into the lumbar space under positive pressure while intracranial pressure was reduced by ventricular drainage.

In small groups of cases good results were reported after the use of one or more of these methods, and in meningococcal meningitis the results in larger series indicated a modest improvement on what had been obtained before (Ayer, 1920; Hampson, 1935; Tripoli, 1936). However, the "surgical" methods were not generally adopted, and their use in acute meningitis was largely abandoned as soon as sulphonamides showed their worth—an event which indicates that the subject of meningitis is dominated by bacteriological considerations and that surgical methods can play but a subsidiary part. Destroy the bacteria, and the inflammatory products and toxins can be looked after by the meninges without drainage of the C.S.F. or irrigation of its pathways.

Since the advent of penicillin in 1942 there has been a revival of surgical methods of treatment; for penicillin does not pass the blood-C.S.F. barrier in sufficient amount, and thus must be directly introduced. Surgical methods have also proved their worth in the application of streptomycin; though in the case of this drug it is difficult to understand why the intrathecal route should be necessary, as it clearly is, since good levels of streptomycin in the C.S.F. can be obtained by intramuscular administration alone.

Post-operative Meningitis.—The interests of the neurosurgeon in meningitis develop naturally from his concern to prevent meningitis after head wounds or "clean" operations such as removal of cerebral tumour. When the first cerebral glioma was removed by Godlee in 1884, "a slow

*University of London Lecture delivered at Westminster Hospital on Feb. 10, 1949.

infection of the wound occurred, and after four miserable weeks of disappointed hopes the patient died of meningitis" (Trotter, 1934). At one time in my practice one-quarter of the operative deaths were from intracranial infection, in particular from meningitis (Cairns, 1939b). The local application of penicillin before closure of the wound has reduced the incidence of infection in our major cerebral and spinal operations from 4.4 to 0.9% (Pennybacker *et al.*, 1947). This subject need not be considered in detail, but there are a few points of general application.

Pathology and Anatomy of Meningitis

I do not propose to describe the pathological anatomy of meningitis, but rather to touch upon some aspects of it which arise from surgical experience.

I. The Resistance of Brain Tissue to Infection

From our work on operative infections we concluded that the brain itself is relatively resistant to bacterial infection, whereas the large cerebrospinal pathways—the ventricles and basal cisterns—are much more prone to become infected.

1. Culture plates exposed in the operative field always yielded bacterial growth and showed that even with the most careful aseptic technique it is impossible to prevent bacterial contamination of the wound during long intracranial operations (Cairns, 1939b).

2. On occasions cocci have been seen in films and cultures of material aspirated from the bed of a cerebral tumour in the first days after operation, yet no sepsis has developed.

3. In the days before penicillin the incidence of infection after posterior fossa operations was 1 in 12, all of them cases of meningeal infection, whereas after operations on the cerebral hemispheres it was 1 in 30, and the majority of these were infections of the bone and scalp (Pennybacker *et al.*, 1947). In other words, most of our cases of intra-cranial infection have been cases in which there was a wide opening of the arachnoid cisterns or ventricles, though it is likely that just as many bacteria fell into the brain tissue as into the cerebrospinal spaces.

The relative resistance of the brain tissue, which may be due to the speed with which large numbers of microglial phagocytes gather at any injured part of the brain, may account for the remarkable freedom of the brain tissue from gross infection in many forms of non-surgical leptomeningitis. In pyogenic meningitis bacteria often get into the brain as well as into the leptomeninges; for example, in pneumococcal meningitis they can be seen at necropsy in the brain tissue itself beneath the pia-arachnoid and around the walls of the ventricles, yet in the cases which survive an early death abscess within the brain is an event of great rarity. Furthermore, drainage or excision of an abscess of the cerebral hemisphere is rarely followed by meningitis, although the brain must often be contaminated at the time of operation.

It is astonishing to see what a perfect intellectual recovery can often follow the most intense meningitis. In most bacterial infections of the leptomeninges it seems as though the brain looks after itself. Indeed, as regards subsequent brain function the complication most to be feared is arteritis of the penetrating vessels, with resultant cerebral infarction, rather than any purulent cerebritis (Cairns and Russell, 1946; Daniel, 1949).

II. "Saprophytic" Bacteria May Produce Meningitis

From our operative infections we have also learned that bacteria which are supposedly saprophytic to man may set up severe and even fatal meningitis and ventriculitis (Cowan, 1938); such organisms as *Micrococcus tetragenus*, *Diplococcus mucosus*, *achromobacter*, *Staphylococcus albus*, and

certain Gram-negative bacilli. In these infections the general symptoms may at first be slight, and so also is the cellular reaction in the C.S.F. But the meningitis is of an adhesive type: it blocks the cerebrospinal pathways and thus produces progressive hydrocephalus, perpetuating the lesion for which operation was undertaken in the first instance. This slow progressive post-operative meningitis has become less common since the introduction of antibiotics, a point confirming its bacterial origin, for some were wont to regard it as "aseptic meningitis."

The condition is important in adding to our understanding of certain cases of spontaneous progressive hydrocephalus of infective or probably infective origin (Dott and Levin, 1936). In these cases there is often no initial acute illness or obvious history of meningitis, and the case may masquerade as non-infective hydrocephalus. But in her important review of the pathology of hydrocephalus Dorothy Russell (1949) has shown that at least some of them are of bacterial origin.

III. The Influence of Raised Intracranial Pressure

In the acute stage of any form of meningitis intracranial pressure is raised. This rise of pressure is not usually an important cause of symptoms in the early stage—that is, before there has been time for adhesions to form—though it may become so later. In tuberculous meningitis we tried continuous drainage of the lateral ventricles in the acute stage in the hope of lessening the coma and other severe symptoms. There was no improvement; Dandy (1924) had the same experience on draining the cisterna magna in acute purulent meningitis.

In tuberculous meningitis we also found that withdrawal of the ventricular C.S.F. at its source was immediately followed by a very great rise of the protein content of the lumbar C.S.F. (from 100 to 4,000 mg. per 100 ml.) (Fig. 1) and an unusually early deposit of fibrin in the cisternae ambiens and interpeduncularis. Evidently, if C.S.F. is to be drained away in the acute stage of meningitis it should, if possible, be taken from the site of maximum inflammation and not from the ventricles. The diluting action of the newly formed ventricular fluid with its small protein content is probably useful in preventing deposition of fibrin and pus, with blockage of the cerebrospinal pathways. I must emphasize that these conclusions relate only to the acute stage: ventricular drainage may be of great value in the subacute and chronic stages of meningitis.

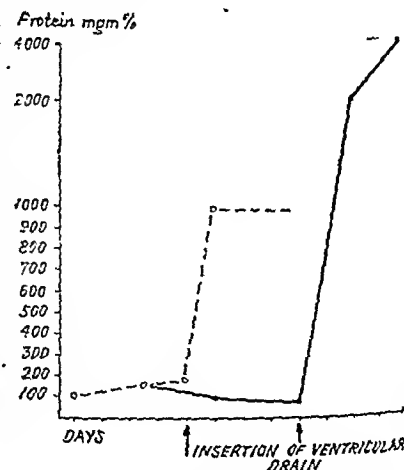


FIG. 1.—Two cases of tuberculous meningitis, showing rise of protein in lumbar C.S.F. following continuous drainage of lateral ventricle.

IV. Blockage of the Cerebrospinal Pathways

Any part of the cerebrospinal pathways may become blocked in meningitis, but this is not serious unless it affects the main bottlenecks and thus interferes with the onward flow of the bulk of the cerebrospinal fluid. The blockage may be due to fibrin and inspissated pus or to granulation

tissue in various stages of organization, and symptoms may arise during the stage of active infection or subsequently. In the latter case the stage of active infection may have been inconspicuous, or it may have occurred many years before the onset of symptoms of obstruction. Thus, Baker (1934) reported a remarkable case of death from hydrocephalus after three weeks' illness in a girl of 17 who had had meningococcal meningitis at the age of 18 months.

X-ray studies after air injection have enabled the site of obstruction to be determined with precision (e.g., Smith *et al.*, 1948, Figs. 5 and 6). Dyes have also been used, and we have found the use of antibiotics as trace substances convenient and helpful.

The main sites of obstruction are: (1) foramen of Monro, (2) aqueduct of Sylvius, (3) foramina of Magendie and Luschka, (4) cisterna ambiens, and (5) spinal canal. (Fig. 2.) It is possible also that obstruction as a result of meningitis might take place at the arachnoid granulations alongside the venous sinuses, but we have not obtained any convincing proof of that.

At the first three sites mentioned obstruction prevents the escape of C.S.F. from the ventricular system, with the result that there is little C.S.F. in the lumbar subarachnoid space, and the spinal pressure may fall. Dyes or antibiotics injected into the ventricles cannot be detected in the spinal C.S.F., and passage in the reverse direction is also blocked. These obstructions give rise to what Dandy (1918) called "obstructive hydrocephalus." On the other hand, if the obstruction is in the cisterna ambiens at the tentorial opening, C.S.F. escapes from the ventricular system and distends the infratentorial basal cisterns and spinal subarachnoid space, but cannot reach the subarachnoid space over the cerebral hemispheres whence it is absorbed. There is then abundant fluid on lumbar puncture, and dyes or antibiotics injected into the ventricles pass freely into the spinal C.S.F. This condition Dandy termed "communicating hydrocephalus."

Obstruction of the spinal subarachnoid space does not interfere seriously with the circulation of the C.S.F. or cause rise of intracranial pressure, but it is important in preventing antibiotics administered by the lumbar route from reaching the cerebral subarachnoid spaces and ventricles. Spinal block can be easily studied in life, and thus provides us with an indication of the course of subarachnoid obstructions in general.

From daily lumbar puncture in our cases we have learned that the obstruction may be incomplete; that it may disappear within 24 hours or last several weeks or even longer; and that there is a strong tendency for it to disappear long before all the inflammatory granulation tissue has resolved.

V. Foraminal Herniations of Brain Substance

In the obstructions which produce rise of intracranial pressure a complicating factor is introduced by herniation of parts of the brain through foramina, such as the foramen magnum and the tentorial opening. These obstructions have been mainly studied in relation to intracranial tumours (Spatz and Stroescu, 1934; Vincent *et al.*, 1936; Jefferson, 1938; Cairns, 1939a), but the same factors may operate in meningitis (Hampson, 1935). When the lateral ventricles are dilated the hippocampal gyri tend to be displaced into the tentorial opening (Fig. 3) and thus may convert a partial obstruction of the cisterna ambiens into a complete one. When the foramina of Magendie and Luschka are obstructed the fourth ventricle dilates, with displacement downwards of the cerebellar tonsils through the foramen magnum (Fig. 4), thus perhaps converting a partial block into a complete one, or adding yet more compression upon

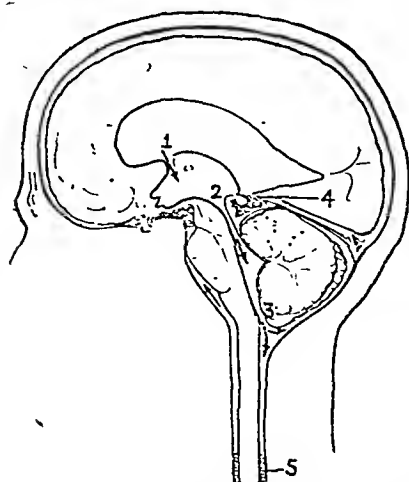


FIG. 2.—Sites of obstruction of cerebrospinal pathways. (1) Foramen of Monro; (2) aqueduct of Sylvius; (3) foramen of Magendie (and foramina of Luschka); (4) cisterna ambiens; (5) spinal subarachnoid space.

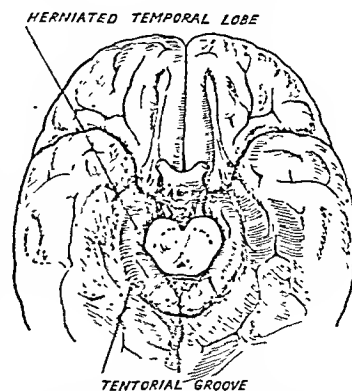


FIG. 3.—Downward herniation of temporal lobe through the tentorial opening.

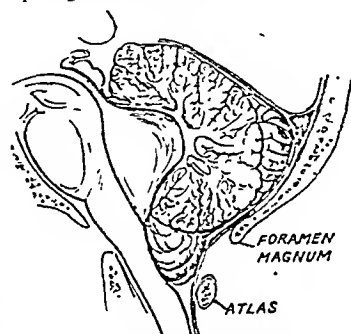


FIG. 4.—Downward herniation of cerebellar tonsils through the foramen magnum.

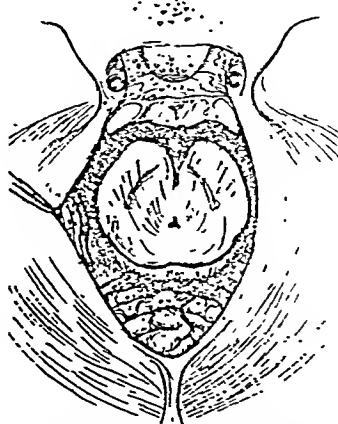


FIG. 5a.—Upward herniation of cerebellar vermis through tentorial opening in a case of communicating hydrocephalus due to occlusion of the cisterna ambiens by tuberculous granulation tissue.

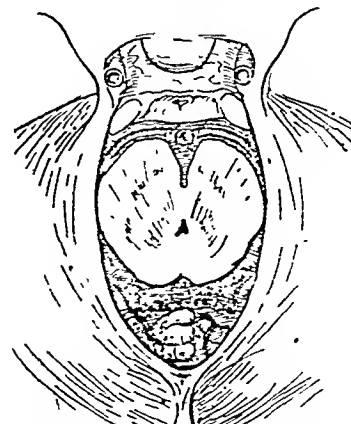


FIG. 5b.—Normal tentorial opening. For comparison.

the adjacent medulla oblongata; or the cerebellar vermis may be displaced upwards through the tentorial opening, adding obstruction of the subarachnoid bottleneck around the midbrain to the already existing obstruction at the exits of the fourth ventricle. This type of obstruction is also seen in communicating hydrocephalus from obstruction of the cisterna ambiens (Figs. 5a and 5b).

These additional obstructive factors may operate intermittently, with corresponding fluctuations in the clinical state of the patient. At an early stage the brain herniation can be relieved by one or more ventricular tapplings, and the patient may thus be tided over a dangerous period of obstruction. At a later stage the herniated brain may become impacted and then, though dangerous symptoms may be circumvented by continuous ventricular drainage, the patient usually dies from compression of the brain stem. Death is often quite sudden, the clinical events leading up to it being inconspicuous.

VI. Relapse

Relapse has long been recognized as a feature of meningococcal meningitis, and since other varieties of meningitis have been brought under control by sulphonamides and antibiotics they also have been shown to relapse. Thus it has been seen at Oxford in a high proportion of cases of pneumococcal meningitis (Smith *et al.*, 1946a), in meningitis due to *Pseudomonas pyocyanea* and other Gram-negative saprophytes (Lewin and Vollum, 1948), in tuberculous meningitis (Cairns and Taylor, 1949), and in influenzal meningitis (Neligan and Ounsted, 1949—personal communication).

Relapse or recurrence of meningitis may be due to infection from without, as in certain cases of chronic pneumococcal infection of the petrous bone and overlying dura, or to repeated infections through fractures involving the

paranasal sinuses with tearing of the overlying dura. More commonly it is due to recrudescence of an infective focus within the central nervous system. These foci are minute abscesses, or collections of fibrino-purulent material containing bacteria in the subarachnoid space (Smith *et al.*, 1946a, Fig. 3) or within the lateral ventricle (Fig. 6); or, in the case of

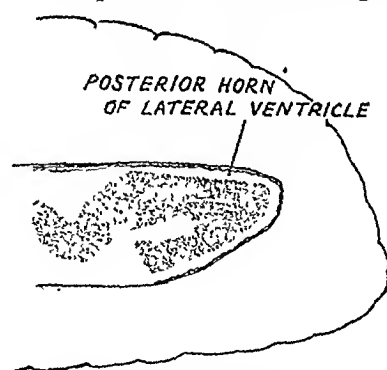


FIG. 6.—Fibrino-purulent clot containing Gram-positive cocci, in posterior horn of lateral ventricle in a case of pneumococcal meningitis after head injury. The patient was recovering from his first attack of meningitis, when he died of traumatic fat embolism.

tuberculous infection, fibrino-caseous material containing bacteria in the meninges or brain (Fig. 7).

The power of antibiotics to penetrate such non-vascular areas of infection is very limited, and the appropriate antibiotic must therefore be maintained in the C.S.F. until the fibrinous area has been completely absorbed, with release of all its bacteria, or until the lesion has become organized or enclosed in dense fibrous tissue, as may happen in tuberculous meningitis. This principle is important in the treatment of all cases of meningitis which are prone to relapse. In tuberculous meningitis, a disease which under treatment runs a very slow course, streptomycin must be maintained in the C.S.F. for many months.

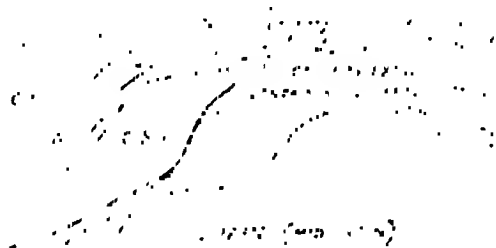


FIG. 7.—Fibrino-caseous material containing numerous acid-fast bacilli in cisterna ambiens. From a case of tuberculous meningitis which was fatal on the 70th day of streptomycin treatment. (Diagram by Dr. Dawn Bosanquet.)

The Part of Surgical Operations in Meningitis

Operative procedures may be undertaken in connexion with meningitis for the following reasons: to prevent meningitis, to assist in rapid diagnosis of meningitis and of some of its complications, for the introduction of antibiotics, and to relieve or circumvent obstruction of the cerebrospinal pathways and the associated rise of intracranial pressure.

Prevention of Meningitis

The importance of prompt surgical treatment of scalp wounds and infected ears has already been mentioned. During the recent war, as a result of segregation and follow-up of Service patients with head injuries, we learned that meningitis was more common after head injury than we had formerly thought, and especially after fractures of the anterior fossa. Further evidence on this point was forthcoming when patients with pyogenic meningitis began to recover as a result of penicillin treatment. Five of our first 38 cases of pneumococcal meningitis followed head injury.

Case Report

A man aged 44 (No. 20301/43) was admitted in a confused but not comatose state to the Radcliffe Infirmary on Dec. 17, 1943, on the third day of an attack of pneumococcal meningitis. He was treated with penicillin intrathecally and intramuscularly and made a prompt recovery. By Dec. 27 he was lucid, and neurological testing showed severe hyposmia, which he said dated from a head injury due to a motor-cycle accident some seven years before. Inquiries revealed that at that time he had had a bruise on the left eye and temple with epistaxis, but no fracture had been seen in the radiographs, and there had been no leakage of C.S.F. from his nose.

The story suggested that his meningitis might have resulted from bacterial infection through an old fracture involving the paranasal sinuses. Radiographs taken after he had recovered from the meningitis showed no definite signs of an old fracture, but it was thought that there might be a deficiency in the posterior wall of the left frontal sinus. At operation on Feb. 15, 1944, the left side of the anterior fossa was explored intradurally through a frontal osteoplastic flap. No abnormality was found in the dura over the left frontal sinus, but further back, over the ethmoidal sinus region, there was a smoothed cleft (1 by 0.3 cm.) in the dura into which passed a diverticulum of arachnoid, of the inferior surface of the left frontal lobe (Fig. 8). This was evidently the remains of a brain herniation through a dural tear and fracture at the time of the head injury seven years before, but all that it now contained was a leash of small blood vessels and some C.S.F. When the vessels had been divided and the sleeve of arachnoid had been detached from the bone it was possible to pass a probe down into the ethmoidal sinus. The cleft was closed with a graft of temporal fascia.

The patient made an unevenful recovery and returned to work in April, 1944. During the next five years, up to the time of his last report in February, 1949, he had remained well and at work, though suffering occasionally from headaches.

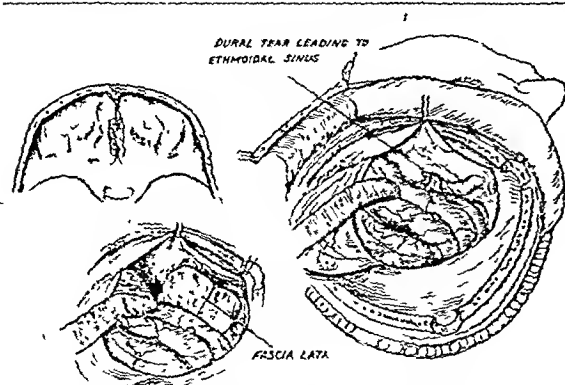


FIG 8.—Dural tear and fracture into the left middle ethmoidal sinus. Repaired with graft of fascia lata.

I have seen meningitis develop at all stages between one day and 10 years after fractures of the anterior fossa involving the paranasal sinuses, with tearing of the overlying dura. Thus no one with an unclosed dural tear over a fractured ethmoid or frontal sinus can be regarded as safe from this risk. The meningitis, usually pneumococcal, may follow a cold in the head, but often it comes when the sinuses are not infected. In certain cases it is easy to predict the presence of a dural tear: cases with persistent cerebrospinal rhinorrhoea or with intracranial aerocele after head injury (Cairns, 1937), or cases like that just described in which there has already been one attack of meningitis. But there are other patients with anterior fossa fracture and loss of smell, but no rhinorrhoea or aerocele, who will get meningitis at some future time if a dural repair is not carried out. Much work was done on these cases during the war (Cairns, 1942; Calvert, 1942, 1947; Stewart and Botterell, 1947; Johnson and Dutt, 1947). Successful diagnosis depends largely on the radiographic evidence of fracture lines across the anterior fossa, and interpretation of these is still very difficult.

Fractures of the middle cranial fossa may establish a connexion between the middle ear and the subarachnoid space and thus give rise to meningitis, with or without escape of C.S.F. from the ear. In these injuries, other than those due to gunshot wounds, meningitis usually arises within the first few weeks if at all. In blunt injuries the path between ear and brain usually closes spontaneously. But after gunshot wounds operative dural repair may be necessary (Johnson and Dutt, 1947).

While on the subject of meningitis after head injury I must mention an uncommon complication which requires urgent surgical intervention. In a few cases the escape of C.S.F. from the nose may be so profuse that it is impossible to maintain an adequate level of penicillin in the C.S.F. by the usual intrathecal dosage. If meningitis has already begun in such a case it may be necessary to give penicillin by lumbar puncture twice or thrice daily in the usual doses and to operate to close the C.S.F. leak immediately the acute stage of the meningitis has been overcome.

Diagnosis of Meningitis

Ventricular estimation and ventriculography are sometimes important in diagnosis. Now that there is an effective treatment for most varieties of meningitis, early diagnosis has become a matter of great importance. The advice of Goodhart and Still (1913) on the diagnosis of tuberculous meningitis—to wait for the disease to declare itself—is no longer sound. Every hour of delay in applying the appropriate antibiotic intrathecally seriously diminishes the patient's chances of recovery. To arrive at the correct

diagnosis there is no need in most cases to employ operative methods; all that is required is lumbar puncture and bacteriological examination of the C.S.F., the whole procedure being carried through with all the sense of urgency that would be applied to the investigation and treatment of a patient with perforated duodenal ulcer. But in some cases the diagnosis cannot be quickly solved without the use of ventricular estimation or ventriculography.

For example, if the meningitis begins with focal symptoms and raised intracranial pressure, as it may occasionally do in both tuberculous and pyogenic meningitis, there may be need to exclude the presence of tuberculoma or brain abscess; for in the presence of a space-occupying lesion intrathecal injections of antibiotics may so alter the intracranial pressure as to precipitate catastrophic herniations of the brain. Streptococcal meningitis seems to be particularly dangerous in this respect, since it often coexists with a brain abscess whose symptoms are masked by the presence of meningitis (Smith *et al.*, 1946b); these cases must be distinguished from those in which meningitis and ventriculitis are the terminal events following rupture of a brain abscess into the ventricle.

There are also the cases in which the association of running ears with meningitis arouses suspicion that the meningitis is secondary to a brain abscess. There is yet another group of cases in which rapidly growing gliomas alongside the ventricles or basal cisterns may produce pleocytosis of the C.S.F., drowsiness, headache, and vomiting, and so simulate tuberculous meningitis. Red herrings are strewn across the path of clinical diagnosis in meningitis no less than in other diseases. By clinical methods, given time, they can be recognized for what they are but time is not to spare.

The doubts and difficulties can be promptly solved by tapping the lateral ventricles. If both ventricles yield abundant C.S.F. it is safe to assume that there is no space-occupying lesion in the cerebral hemispheres (ventricular estimation) if the result of ventricular tap is equivocal there should be no hesitation in injecting air for ventriculography. We have used this method on many occasions in cases of acute meningitis and suspected meningitis and can report nothing but good from its use. It does not seem to upset the patient or aggravate the meningitis, whether tuberculous or pneumococcal. If there is no evidence of a space-occupying lesion the appropriate antibiotic can be promptly given by lumbar or ventricular route. And if a brain abscess is revealed, prompt evacuation or removal of the abscess combined with intrathecal chemotherapy may be life-saving.

Burr-holes for ventricular studies may on occasions disclose some unsuspected condition in the subdural space. In one case of very severe pneumococcal leptomeningitis burr-holes for the introduction of penicillin into the ventricles disclosed free pus in the subdural space, which was thereupon treated by local instillations of penicillin through an indwelling rubber catheter (Cairns and Russell, 1946, Case 5). In another case, of an infant with pneumococcal meningitis who could not retain penicillin in her C.S.F. for more than a few hours after lumbar injection of the usual amounts and thus could not get rid of her meningitis, burr-holes revealed a large subdural hydroma into which the subarachnoid penicillin was shown to be leaking (Smith *et al.*, 1946a, Case 8). After the subdural hydroma had been drained the arachnoid leak evidently closed, for the patient regained the power of retaining penicillin in her subarachnoid space and then her pneumococcal meningitis promptly subsided.

It was from this case that we learned that there is no barrier to the passage of penicillin from blood stream to subdural space, or in the reverse direction, as there is

between blood stream and C.S.F. The dura and subdural space behave like somatic tissues. This fact has since been repeatedly confirmed by studying the transmission of penicillin from the blood stream to subdural haematoma (Schiller *et al.*, 1948).

The cases which I have cited in this section are uncommon ones, and ventricular studies are not often needed in diagnosis of meningitis. But they may be required urgently in any case, and no hospital can regard itself as fully equipped to diagnose meningitis unless it has neurosurgical facilities readily available.

There is one further point: bacteriological diagnosis of the type of meningitis may sometimes be obtained from the ventricular fluid when repeated examination of the spinal fluid has failed. This applies especially in tuberculous meningitis, though in most forms of pyogenic meningitis also the organisms are abundant in the ventricular fluid.

Introduction of Antibiotics by Surgical Operation

(a) Into the Lateral Ventricles

In our first cases of pneumococcal meningitis to be treated with intrathecal penicillin, early in 1943, the ventricular route was used; but we soon found that penicillin injected into the lumbar subarachnoid space spread quickly into the ventricles "against the flow," and also into the cerebral subarachnoid space (Cairns *et al.*, 1944). Thereafter the lumbar route was used routinely, the ventricular route being reserved for those cases threatened with spinal block. The signs of impending block have already been described (Smith *et al.*, 1946a), and subsequent experience has strengthened our belief that, whenever there is suspicion that penicillin injected into the lumbar subarachnoid space is not spreading freely to all parts of the cerebrospinal pathways, frontal burr-holes should be made for tapping the anterior horns of the lateral ventricles. When the earlier impure preparations of penicillin were injected into the lateral ventricles they occasionally produced a reaction, but nothing of importance seems to attend the injection of the crystalline preparations in the usual dose (for adults, 10,000–20,000 units).

The *cisternal route* can be equally effective in cases of spinal block, but when there is severe head retraction or restlessness it may be difficult or dangerous; and we have observed a greater liability to severe reaction to antibiotics—stupor, pin-point pupils, incontinence of faeces—from cisternal than from ventricular injection.

In tuberculous meningitis the ventricular route for streptomycin has proved of great value in a small proportion of the cases, particularly in those in which the daily lumbar puncture becomes difficult. For a variety of reasons, which have been described elsewhere (Cairns and Taylor, 1949), we believe that, though they may not prove necessary, it is nevertheless an advantage to make frontal burr-holes at the beginning of streptomycin treatment in all cases of tuberculous meningitis.

These burr-holes are useful for other purposes than diagnosis and therapy: by ventricular estimation, supplemented at a later date by ventriculography, something can be learnt of the condition of the lateral ventricles in meningitis. At the beginning of pneumococcal meningitis the ventricles are smaller than normal, but within a few days they become slightly larger than normal. In tuberculous meningitis the ventricles are usually already dilated by the time there are signs of meningitis—a fact which suggests that the initial stages of this disease are relatively symptomless.

We learn from ventricular studies that there is always some progressive dilatation of the ventricles in meningitis, even in cases which show little or no sign of obstruction and no appreciable sign of brain damage.

(b) Into the Chiasmal and Adjacent Cisterns

In tuberculous meningitis the main deposit of granulation tissue is found at necropsy in the interpeduncular space, cisterna ambiens, cisterna chiasmaticus, and the adjacent sylvian fissures. These spaces are continuous with one another, and obstruction of the cisterna ambiens by fibrin or granulation tissue is likely to interfere with the spread of streptomycin, whether administered by the ventricular or by the lumbar route, to the more rostrally placed cisterns and to the sulci of the cerebral hemispheres. Therefore we have tried the effect of administering streptomycin direct into the chiasmal cistern through indwelling polythene tubes. Under local analgesia a small frontal flap is turned and the chiasmal region is exposed by lifting up the frontal lobe, and tubes are passed into the interpeduncular space and towards each sylvian fissure. Streptomycin solution (500 to 1,000 μ g. per ml.) is instilled through the tubes two to four times daily in amounts up to 6 ml. at a time for 10 days. Streptomycin levels in the fluid from the tubes at the end of six hours have usually ranged from 20 to 40 μ g. per ml.

We have used this method in seven patients, all but one of whom were infants or children. In one other case the tubes were inserted into the cisterna ambiens through subtemporal approach, but very little fluid could be obtained from that cistern and the method seemed inferior to the chiasmal approach. Of the eight patients three had excellent recoveries and five died. In four of the patients including one who recovered, the cisterns were already filled with organizing granulation tissue, and the tubes were probably of little use. The two best cases were those of an infant aged 20 months with intense infection and many positive films and cultures, and a boy of 9 years, both operated on about the eleventh day of symptoms, which was earlier than the others. In both cases abundant fluid escaped from the tubes in the intervals between streptomycin instillations.

The protein and cell content of the fluid from the interpeduncular region was always high, and in all except one case, in which there was a complicating spinal pachy meningitis, it was higher than that of the lumbar and ventricular fluids. For example, in one case, that of a infant of 8 months operated on on the fifteenth day of illness, samples of fluid obtained almost simultaneously showed:

	Protein (mg. per 100 ml.)	White Cells (per c.mm.)	Mycobacterium tuberculosis
Ventricular	40	62	—
Lumbar	130	98	++
Interpeduncular ..	1,000	175	++

It seems reasonable to conclude that from an early stage the most intense disease is in the interpeduncular and adjacent cisterns.

I have no evidence as yet that this method of administering streptomycin improves the recovery rate. If the cisterns are already solid with fibrin and granulation tissue it cannot be effective. On the other hand, if the cisterns are patent, streptomycin administered by the lumbar or ventricular routes should reach all parts and therefore there should be no need for interpeduncular application. Yet, since the protein content of the C.S.F. in the interpeduncular region is so high, continuous drainage of the fluid from that region for some days might be advantageous. This remains to be proved. From the experience to date we are satisfied that the method can be carried out without harm even in young infants who are seriously ill.

(c) Into the Subdural Space

In purulent pachymeningitis there is free pus in the subdural space and the condition is usually due to streptococcal infection, rarely β -haemolytic forms, and is secondary to spreading osteomyelitis of the skull following pansinusitis. The leptomeninges are often not infected until the terminal stages. Sometimes, however, the condition may accompany or follow leptomeningitis. The clinical picture is a sharply defined one, now modified, though not usually to an unrecognizable extent, by penicillin (Schiller *et al.*, 1948; Cairns and Schiller, 1948). Before the introduction of penicillin we treated 18 patients with this disease, and all died. Since early in 1943 ten cases have been treated with penicillin by the systemic, subdural, intraventricular, and subarachnoid routes, and seven recovered. In view of the fact that penicillin passes freely from the blood stream to the subdural space, it should theoretically be possible to treat this condition by the intramuscular route alone. But so far in practice it has proved necessary to instil penicillin solution into the subdural space at frequent intervals for several days through an indwelling catheter. One of the advantages of this method may be to prevent the formation of loculated subdural abscess, which is a common and dangerous complication.

Obstruction of C.S.F. Pathways with Rise of Intracranial Pressure, and their Treatment

There are two varieties of obstruction to consider: (i) obstruction by inspissated pus or granulation tissue which arises while the infection is still active, and (ii) obstruction by fibrous adhesions which comes on after the infection has subsided, sometimes years later. In addition the effects of these obstructions may be intensified by herniations of brain tissue, which have already been described. In general, treatment of obstructions in the purulent stage of meningitis should be by intermittent or continuous drainage of CSF, open operations being reserved for the cases which have reached the stage of fibrous adhesions and clear CSF.

It will be convenient to consider the obstructions according to site, but first some general remarks must be made on the question of diagnosis. In a case of acute meningitis which is not progressing favourably frontal burr-holes should be made. The onset of obstruction should be suspected from changes in the pressure and content of the ventricular and lumbar fluids. If pressures are rising and the lumbar fluid is still abundant, it is probable that there is blockage at the cisterna ambiens. If the lumbar fluid is scanty the hydrocephalus may be due to obstruction at the foramina of the fourth ventricle. Further information can be obtained from observing the spread of antibiotics. For example, if the fourth ventricle is obstructed an antibiotic injected into the lateral ventricle cannot be detected in the spinal fluid two to six hours later; or the test may be applied in the reverse direction. To be sure, the patient will already be having the appropriate antibiotic before the test is required, but with forthright doses can usually be so spaced that a satisfactory test situation is provided. If not, then a different antibiotic can be used as the test substance: for example, penicillin in tuberculous meningitis (Smith and Daniel, 1947).

In infants ventricular punctures can be made through the anterior fontanelle, which also serves as a useful guide to the state of intracranial pressure. In children the degree of separation of the cranial sutures as shown by radiographs is a reliable guide to the onset and course of hydrocephalus.

The onset of ventriculitis is apparent from the rise of protein, and usually also of cells, in the ventricular fluid.

The site of obstruction can be determined precisely only by ventriculography or encephalography. With skill in its manipulation a relatively small amount of air will suffice. In meningitis that is chronic from the start air studies should usually be made at an early stage of the investigations.

1. Foramen of Monro

Dott (1927) has described a case of unilateral hydrocephalus following fibrous obstruction of one foramen of Monro in an infant, due to an inflammatory process of infective origin, though there was no previous history of meningitis. The obstruction was successfully relieved by making a hole in the septum lucidum so that all fluid from both ventricles drained away through the healthy foramen of Monro of the opposite side.

There is another variety of obstruction of the lateral ventricle which we have observed after penetrating wounds of the body of the lateral ventricle (Cairns, *et al.*, 1947) and which Dorothy Russell (1949) has seen after haemorrhage at birth. A septum forms between the roof and floor of the ventricle, closing off a part of the ventricle which contains choroid plexus, with the result that there is progressive hydrocephalus of that part of the ventricle. I know of no evidence that it may follow meningitis, but it is possible that it might do so. It is important to recognize this condition, since it is easily cured by removing the choroid plexus in the obstructed part of the ventricle.

2. Aqueduct of Sylvius

If a patient with purulent ventricular fluid begins to deteriorate, with rise of ventricular pressure and increase of the protein content of the ventricular fluid, the probability of obstruction of the aqueduct of Sylvius by a plug of inspissated pus is considerable. The outlook is bad in such cases, and I cannot lay claim to any success. The treatment which we advocate in such a case is drainage of the CSF from the ventricles in the hope that the purulent obstruction of the aqueduct of Sylvius will resolve first, intermittent drainage by means of repeated ventricular taps; if that is not sufficient, as judged by the clinical condition of the patient and the ventricular pressure, then continuous ventricular drainage. Irrigation with Hartmann's solution (Sachs, 1942-3) might also be tried. I have heard it suggested that insufflation of air by the lumbar route might be attempted, to blow the plug of pus out of the aqueduct into the third ventricle, but this is probably more than most patients with this condition could stand.

Glial stricture of the aqueduct of Sylvius is not uncommon, but there is no evidence that it arises as a sequel of meningitis (Russell, 1949).

3. Foramina of Magendie and Luschka

Obstruction at the outlets of the fourth ventricle may arise as a sequel of acute infection, when it is usually meningococcal, or from chronic forms of bacterial infection, when the variety of infecting organism is often undetermined. The obstruction may take place during the purulent stage, from silting up of the foramina by inspissated pus and fibrin, or at a later stage, when the C.S.F. has already become clear, from organization of granulation tissue. The site of the obstruction can be determined by air injection.

It is easy to reopen the foramen of Magendie by open operation in these cases, but if possible the operation should be deferred until the C.S.F. has become clear, the patient being treated over the acute stage by means of intermittent or continuous ventricular drainage. Operation at the stage of fibrous or glial adhesions is attended by the risk of recrudescence of the infection, and thus it should be accompanied by active chemotherapy.

If for any reason it seems inadvisable or impossible to deal direct with an obstruction in the fourth ventricle or in the aqueduct of Sylvius, an alternative pathway for the C.S.F. can be provided by ventriculo-cisternostomy, a procedure introduced by Torkildsen (1947). A catheter or polythene tube is passed into the posterior horn of the lateral ventricle and its other end is led into the cisterna magna. It is left *in situ*. This operation usually gives excellent results.

4. Cisterna Ambiens

Obstructions at the cisterna ambiens cannot be removed surgically. Alternative pathways for the C.S.F. can be provided by various routes, of which probably the most satisfactory is an opening of the anterior wall of the third ventricle (third ventriculostomy) so that fluid escaping from the third ventricle passes into the sylvian fissures, thence over the convolutions of the cerebral hemispheres to be absorbed. This operation is sometimes successful, but may fail for a variety of reasons—closure of the ventricular opening, escape of the C.S.F. into the subdural instead of into the subarachnoid space, or because entry to the sylvian and other cerebral fissures is still obstructed as a result of the previous meningitis.

With obstruction at the cisterna ambiens there is a great collection of C.S.F. in the posterior fossa and spinal subarachnoid cisterns. In the purulent stage of the disease repeated lumbar punctures with withdrawal of large amounts of fluid may tide some patients over from the stage of complete obstruction until the cisterna ambiens partly reopens itself.

5. Spinal Block

Spinal block does not usually produce symptoms, and its importance is that it interferes with the intrathecal administration of antibiotics. I have already indicated the alternative measures for continuing intrathecal therapy.

Risks and Advantages of Operations

The operative methods now used in meningitis carry little risk. Cases requiring major operations are infrequent, and by far the most common procedure is the fashioning of burr-holes for access to the ventricles. In our experience intermittent drainage of the ventricles is preferable to continuous drainage, which carries with it the risk of secondary infection, now lessened by the use of antibiotics, and in infants the risk of cerebrospinal fistula once the drainage tube is withdrawn. The use of air to localize obstruction in the subacute and chronic cases is followed by the risk of reactionary rise of intracranial pressure, which must be guarded against by intermittent or continuous ventricular drainage for a few days, if the obstruction is not immediately dealt with surgically. Another risk is recrudescence of acute infection following operative relief of obstruction in chronic meningitis, but this can be countered by appropriate chemotherapy. For the rest the risks of surgical intervention in meningitis are very small.

In acute meningitis operative methods may be useful in preventing sedimentation of pus. In the unobstructed case withdrawal of C.S.F. from the ventricle, the lumbar region, or any other part of the cerebrospinal pathways and injection of antibiotic must increase considerably the circulation of the C.S.F. and its mixture with the antibiotic, especially if fluid is aspirated and reinjected several times. This effect may be the explanation of the puzzling fact that intrathecal streptomycin treatment is necessary in tuberculous meningitis although a theoretically adequate level of streptomycin in the C.S.F. can be obtained by systemic administration alone.

The extra movement and attention which patients with meningitis receive when they have ventricular burr-holes may well be good for them, particularly if they are inert and comatose. There is considerable evidence that gravity acts unfavourably on the course of meningitis. In fatal pneumococcal or other forms of pyogenic meningitis a mass of gelatinous material is often found in the posterior horns of the lateral ventricles containing pus cells and bacteria which must for the time being be impermeable to penicillin and hence a possible focus of relapse. In fatal tuberculous meningitis it is almost invariable to find that exudate is more intense upon the dorsal than on the ventral surface of the spinal cord. The reasonable explanation of these phenomena is that they are caused by gravity; and it may

well be that the deposition will be prevented by frequent movement of the patient, and that restlessness is, within limits, a good thing for a patient with meningitis. I have been struck with the excellence of the results in patients with pneumococcal meningitis who are violently restless in the acute stage of the disease. The nursing of inert patients should therefore include frequent changes of position.

Conclusion

I have tried to indicate the surgeon's approach to the subject, based on anatomy and morbid anatomy, without defining any particular province which shall be his and his alone. The techniques employed in treatment and the sense of urgency which is required in any particular case come easily to the neurosurgeon by virtue of his training and his daily work, but they are not his exclusive province. The contribution which operative methods can at times make to the diagnosis and treatment of meningitis is considerable, but it must always remain subservient to the main problem, which is one of bacteriology and chemotherapy.

REFERENCES

- Ayer, J. B. (1920). *Arch. Neurol. Psychiat.*, Chicago, 4, 529.
 Baker, C. G. (1934). *Guy's Hosp. Rep.*, 84, 115.
 Cairns, H. (1937). *J. Laryng.*, 52, 589.
 — (1939a). *Brit. J. Surg.*, 27, 275.
 — (1939b). *Lancet*, 1, 1193.
 — (1942). *Proc. R. Soc. Med.*, 35, 809.
 Daniel, P., Johnson, R. T., and Northcroft, G. B. (1947). *Brit. J. Surg.* War Surgery Supplement No. 1: Wounds of the Head, p. 187.
 Duthie, E. S., Lewin, W. S., and Smith, H. V. (1944). *Lancet*, 1, 655.
 — and Russell, D. S. (1946). *J. Path. Bact.*, 58, 649.
 — and Schiller, F. (1948). *Proc. R. Soc. Med.*, 41, 805.
 — and Taylor, M. (1949). In the press.
 Calvert, C. A. (1942). *Proc. R. Soc. Med.*, 35, 805.
 — (1947). *Brit. J. Surg.* War Surgery Supplement No. 1: Wounds of the Head, p. 119.
 Cowan, S. T. (1938). *Lancet*, 2, 1052.
 Cushing, H., and Sladen, F. J. (1908). *J. exp. Med.*, 10, 548.
 Dandy, W. E. (1918). *Ann. Surg.*, 68, 569.
 — (1924). *Surg. Gynec. Obstet.*, 39, 760.
 Daniel, P. (1949). *Proc. R. Soc. Med.* In the press.
 Day, E. W. (1913). *Surg. Gynec. Obstet.*, 16, 369.
 Doit, N. M. (1927). *Brain*, 50, 548.
 — and Levin, E. (1936). *Trans. Med.-chir. Soc. Edinb.*, 50, 113.
 Eagleton, W. P. (1921). *Trans. Amer. Otol. Soc.*, 15, 227.
 Goodhart, J. F., and Still, G. F. (1913). *The Diseases of Children*, 10th ed., p. 607. Churchill, London.
 Hampson, A. C. (1935). *Guy's Hosp. Rep.*, 85, 431.
 Horsley, V. (1890). *British Medical Journal*, 2, 1286.
 Jefferson, G. (1938). *Arch. Neurol. Psychiat.*, Chicago, 40, 857.
 Johnson, R. T., and Dull, P. (1947). *Brit. J. Surg.* War Surgery Supplement No. 1: Wounds of the Head, p. 141.
 Kubie, L. S. (1928). *Arch. Neurol. Psychiat.*, Chicago, 19, 997.
 Lewin, W., and Vollum, R. L. (1948). *Lancet*, 2, 446.
 Mayo-Robson, A. W. (1890). *British Medical Journal*, 2, 1292.
 Murphy, J. B. (1907). *Surg. Gynec. Obstet.*, 4, 385.
 Pennybacker, J. B., Taylor, M., and Cairns, H. (1947). *Lancet*, 2, 159.
 Russell, D. S. (1949). *Spec. Rep. Ser. med. Res. Council*, No. 265. H.M.S.O., London.
 Sachs, E. (1942-3). *J. Mt Sinai Hosp.*, 9, 767.
 Schiller, F., Cairns, H., and Russell, D. S. (1948). *J. Neurol. Neurosurg. Psychiat.*, 11, 143.
 Smith, H. V., and Daniel, P. (1947). *Tubercle*, 28, 64.
 — Duthie, E. S., and Cairns, H. (1946a). *Lancet*, 1, 185.
 — Schiller, F., and Cairns, H. (1946b). *Proc. R. Soc. Med.*, 39, 613.
 — Vollum, R. L., and Cairns, H. (1948). *Lancet*, 1, 627.
 Spatz, H., and Strosser, G. J. (1934). *Nervenarzt*, 7, 425.
 Spurling, R. G. (1928). *Kentucky med. J.*, 26, 242.
 Stewart, O. W., and Bolterell, E. H. (1947). *Brit. J. Surg.* War Surgery Supplement No. 1: Wounds of the Head, p. 112.
 Thompson, C. G. K. (1937). *Lancet*, 2, 1242.
 Torkildsen, A. (1947). *Ventriculo-cisternostomy*. Gruntd, Oslo.
 Tripoli, C. J. (1936). *J. Amer. med. Ass.*, 106, 171.
 Trotter, W. (1934). *Lancet*, 2, 1207.
 Vincent, C., David, M., and Thiebaut, F. (1936). *Rev. neurol.*, 65, 536.

In a recent issue of the *Journal of the American Medical Association* (April 30, 1949, p. 1284) there is a description of the United States Navy's scheme to set up bone banks in some of its hospitals. It is considered that the plan, which has been made possible by the improved methods of freezing and preserving bone, will assist hospitals in which bone grafting is undertaken. Frozen human bone has been preserved for as long as 308 days in an ordinary ice-cream cabinet, and then used successfully in bone-graft operations.

AYERZA'S DISEASE, SILICOSIS, AND PULMONARY BILHARZIASIS

BY

Sir HENRY TIDY, K.B.E., M.D., F.R.C.P.

Consulting Physician, St. Thomas's Hospital

Ayerza's disease was first fully described in a monograph by Arrillaga, of Buenos Aires, in 1913. Arrillaga claims that it is a morbid entity with a fairly constant clinical course and picture terminating with cardiac failure and an extreme degree of cyanosis, the latter feature leading him to give it the name "cardiacos negros." The subjects are adults. The predominant pathological change is sclerosis of the pulmonary artery and its branches. The lungs also show chronic changes, a fact which brings the entity into the group of cardio-pulmonary diseases. The aetiology and the cause of the extreme cyanosis have been regarded as somewhat of a mystery. Syphilis was formerly thought to be the cause of the pulmonary arteritis, but this has been disproved.

Since the publication of this monograph a number of cases considered to be of a similar nature have been recorded under such titles as Ayerza's disease, pulmonary arteriosclerosis, and sclerosis of the pulmonary vessels. These cases form a motley group. They come from various parts of the world in small numbers, often single examples. The subjects are of all ages, many in very early life. In a few instances the aetiology is obvious—such as those cases with congenital cardiac lesions. An occasional case is claimed to be syphilitic. Many are ascribed to the end-results of chronic lesions of the lung parenchyma, thus belonging to the cardio-pulmonary group. When advanced cor pulmonale has developed and the heart fails there is inevitably cyanosis, but only in a few instances has it approached the extreme degree described by Arrillaga.

This heterogeneous collection of cases of varying aetiology and manifestations clearly cannot explain the frequency and the consistent features of the disease described in Brazil. What, then, is the explanation of its presence in this geographical area?

Pulmonary Bilharziasis

In the course of the last twenty years studies by members of the Faculty of Medicine of Cairo have gradually uncovered manifestations of lesions of the pulmonary artery and its branches produced by the action of bilharzial ova. Modern progress started in 1928 with the description by Sorour (1932) of the pathology, and Azmy and Effat in 1932 gave the first clinical account of two cases diagnosed during life. These pioneer communications were followed by clinical records by Day (1937) and by a very full pathological study by Shaw and Ghareeb (1938).

Since that time progress has been rapid, with studies by Moussa (1942), Bedford *et al.* (1946), Khattab (1946), Kenawy (1947), Erfan (1948), and others. These communications are of great interest and may be referred to for full details.

The clinical symptoms and physical signs, the radiological appearances of the lung and cardiovascular system, and the course and progress have been pieced together and correlated with the morbid anatomy. It is now possible to diagnose the condition clinically and radiologically at a fairly early stage during life, and numerous cases are being recognized.

Briefly, the initial morbid process may be said to be obliterative endarteritis of the small branches of the pulmonary artery resulting from the action of ova which reach the site as emboli. With repeated reinfections the

process extends centrally. Finally, the main branches of the pulmonary artery may become dilated to aneurysmal proportions and cor pulmonale develops. The lung parenchyma, however, remains uninvolved or only slightly affected, and fibrosis is completely absent. So long, therefore, as the right ventricle, by hypertrophy, is able to force enough blood past the obstruction the lung tissue can oxygenate it satisfactorily. Hence cyanosis does not develop till the heart fails, and even at that stage cyanosis never reaches the degree described in cardiacos negros. The gross changes in the pulmonary artery and its branches led Shaw and Ghareeb to suggest the name of Egyptian Ayerza's disease for advanced cases. This has often been used, but the condition is now more generally known as cardio-pulmonary or pulmonary bilharziasis.

These cases prove that advanced disease of the pulmonary artery and its branches does not of itself produce cyanosis. The cases in Egypt also differ substantially from those in Brazil in the mildness or absence of pulmonary symptoms, though certain allergic manifestations such as asthma are now being studied.

Is Silicosis the Primary Factor?

Thus there are two geographical areas in which sclerosis of the pulmonary artery and branches occurs with considerable frequency but with certain differences in the clinical course. The Egyptian group proves that the special features of Ayerza's disease in Brazil cannot be ascribed solely to the changes in the pulmonary artery and its branches.

The Egyptian delta is a flat country lying little above sea-level and completely devoid of mines, and the subjects of pulmonary bilharziasis are nearly all farmers or from the families of farmers. The Brazilian subjects, on the other hand, are gold-miners working in valleys at an altitude of 14,000 feet (4,270 metres) in the Andes. The occupation suggests that silicosis may be the primary aetiological factor, while the tremendous altitude may account for the unusually high degree of cyanosis. Ayerza's disease thus can be reasonably explained as the result of silicosis occurring at great altitudes.

Dr. K. O. Courtney, of the Canal Zone Medical Service, who is familiar with the locality, states in a verbal communication that the cases with cardiac failure were formerly brought down to the plain by train. The railway rises to 16,000 feet (4,880 metres) before starting the descent, and deaths during the journey were not uncommon. Patients are now brought down by air. It is observed that on reaching the plain the cyanosis improves.

Pulmonary bilharziasis is unlikely to be the principal factor in Brazil in view of the long pulmonary course. *Bilharzia mansoni* is the only type present in Brazil, and ova of this variety cannot reach the lung until after the development of bilharzial cirrhosis of the liver, which is accompanied by splenomegaly, but it is possible that the condition of the liver and spleen respectively might have been erroneously ascribed to alcohol and malaria, both of which are mentioned by Arrillaga as aetiological factors. The existence of pulmonary bilharziasis, so far as I am aware, has not been reported in Brazil, though it must almost certainly occur there, and a case in Porto Rico was reported by Clark and Graeff (1935). The histology of pulmonary bilharziasis is so specific that it can be readily diagnosed when the possibility of its presence is once recognized. The differentiation of silicosis and pulmonary bilharziasis radiologically would certainly present difficulties and has not yet been studied, but there are several parts of the world where the two processes may coexist.

It is therefore suggested that Ayerza's disease as seen in Brazil is the result of silicosis occurring at high altitudes,

while the possibility of pulmonary bilharziasis as a main or contributory factor should also be borne in mind.

REFERENCES

- Arrillaga, F. C. (1913). *Cardiacos Negros*, Monograph. Buenos Aires.
 Azmy, S., and Effat, S. (1932). *J. Egypt. med. Ass.*, 15, 87.
 Bedford, D. E., Aidaros, S. M., and Girgis, B. (1946). *Brit. Heart J.*, 8, 87.
 Clark, E., and Graeff, I. (1935). *Amer. J. Path.*, 11, 693.
 Day, H. B. (1937). *Trans. R. Soc. trop. Med. Hyg.*, 30, 575.
 Erfan, M. (1948). *Ibid.*, 42, 109.
 Kenawy, M. R. (1947). *Gaz. Fac. Med. Cairo*, 15, 47.
 Khattab, M. (1946). *Ibid.*, 13, 53.
 Moussa, A. H. (1942). *Ibid.*, 10, 37.
 Shaw, A. F. B., and Ghareeb, A. A. (1938). *J. Path. Bact.*, 46, 401.
 Sorour, M. F. (1932). *C.R. Congr. int. Méd. trop. Hyg.*, 1928, Cairo, 4, 321.

THE INCIDENCE OF CANCER OF THE UTERINE CERVIX

BY

R. G. MALIPHANT, M.D., M.R.C.P., F.R.C.S.
F.R.C.O.G.

Gynaecologist, Cardiff Royal Infirmary

(From the Department of Obstetrics and Gynaecology, Welsh National School of Medicine)

Although cancer of the uterine cervix when taken early is to a large extent curable, the proportion of cases coming to treatment at an early stage is so small that little impression is being made on its mortality rate. Not one case in ten reaches hospital with the disease confined to the uterus, and many come with such extensive lesions that only palliative treatment is possible. In spite of the efforts expended in educating the public on cancer, and the emphasis placed on the subject in our medical schools, much delay is still due to ignorance and neglect, but late diagnosis is also attributable in large measure to the insidious manner in which the disease develops. In cancer of the cervix there is no close correlation between the length of history and the extent of the disease, and more than half the women seen at Cardiff Royal Infirmary within three months of the first symptom are classified as having a stage 3 or stage 4 cancer (Maliphant, 1947).

Whereas early cervical cancer is usually symptomless, many cases are devoid of symptoms until they are far advanced, and this clinically mute phase is one of the main obstacles to early diagnosis. It is for this reason that in some countries, and notably in the U.S.A., women of cancer age are now being encouraged to undergo periodic gynaecological examination as the best and often the only means of ensuring prompt diagnosis. Cancer detection clinics have been established in most large centres, and the number of cases of cancer discovered in presumably well individuals has been so high that the representative character of the persons attending the clinics has been questioned (Jones and Cameron, 1947).

In the extensive literature on cancer of the cervix very little information is available on the number of living persons afflicted with the disease, and the purpose of this inquiry is to ascertain its incidence rate, together with the relative probabilities of the disease developing in the various age, civil state, and parity groups of the population. Such data would not only provide information on the number of new cases that would be expected in a particular group of women but may also have a practical bearing on problems relating to the aetiology and control of the disease.

Women who develop cancer of the cervix are measurably different from other women, and an attempt is first made to ascertain the degree to which the cancer hazard is affected

by such variants as age, marital status, and parity. Many reports have shown the distribution of such characteristics in women who develop or die of the disease, but they have rarely shown the distribution of the same characteristics in the community from which the cancer patients have been drawn. It is with this object in view that our patients have been examined against the background of the local population. At Cardiff Royal Infirmary 1,200 consecutive cases seen during the 25-year period 1922-46 have been analysed: 80% were residents of Glamorgan. As 1931 was close to the middle year of this observation period the 1931 Census figures were used in the main as the standard of comparison. The age, civil state, and child-bearing experiences of the community are then correlated with the tendency to develop cervical cancer.

Age

In this series 98.5% of the patients were married, and their ages ranged from 20 to 80 years. Their distribution by age is shown in Table I, together with that of married (widowed and divorced) women in Glamorgan at the 1931 Census.

TABLE I.—Distribution by Age

Age Group (Years)	Cancer of Cervix. C.R.I., 1922-46		Married Women of Glamorgan: 1931 Census		Estimated Relative Risk of Contracting the Disease (a) as % of (b) (c)
	No.	% (a)	No.	% (b)	
20-24	5	0.4	15,877	5.2	7
25-29	14	1.2	32,306	10.7	11
30-34	53	4.4	38,399	12.7	35
35-39	123	10.2	38,540	12.7	80
40-44	162	13.5	35,692	11.8	114
45-49	205	17.1	33,164	11.0	155
50-54	211	17.6	30,214	10.0	176
55-59	187	15.6	25,443	8.4	186
60-64	126	10.5	19,798	6.5	161
65-69	75	6.2	14,603	4.8	129
70+	39	3.5	18,509	6.2	56 ?
	1,200	100	302,485	100	

Although cancer of the cervix may be seen at extremes of age, it is predominantly a disease of middle life, and only 20% of the patients had reached the age of 60. A little less than one-third (30%) were under 45, a little over one-third (36%) were 55 or over, and the remaining one-third (34%) were in the decade 45-54 years. It is not so much the age of the individual as the senescence of the uterus which determines the occurrence of the disease, and if regard be paid to the number of women living at a given age it is observed that the cancer hazard continues to rise until the age of 60. The risk in the various age groups may be expressed by showing column (a) of Table I as a percentage of column (b). It is noted that the relative risk of the disease developing increases enormously from age groups 25-29 to 30-34, and at ages 35-39 it is more than twice as high as at ages 30-34. The rate of increased relative risk continues to rise until the peak is reached at ages 55-59. From this point it shows a steady decline, the rate becoming steeper and steeper in older women. Beyond the age of 70 this gradient is probably fictitious, as our series, in common with others compiled from hospital figures, is likely to be deficient in women over this age.

Lane-Clayton (1927) has drawn attention to the divergence between the age incidence of uterine cancer as shown by hospital figures and by mortality rates. The older the individual the less likely is she to attend hospital, but Mackenzie (1939) has shown that it is not until the age of 70 is reached that age as such acts as a serious deterrent to obtaining treatment. The inclusion of missing cases at ages of 70 and over in the above series would mean an adjustment throughout the entire percentage distribution, and

this in turn would reflect on the relative risks given in column (c), but it is unlikely that the main deductions would be falsified.

Civil State and Child-bearing

Of the cancer patients 18 (1.5%) were unmarried and non-parous. Two single women who had borne children were regarded as "married" for the purposes of this inquiry. At the 1931 Census 22% of Glamorgan women over 20 years were unmarried, and at ages 35-64 years—the time of life in which cervical cancer is most common—10% were unmarried. The low incidence of the disease in single women is probably attributable to the comparative infrequency of cervical infection in this group. That cervical cancer does occur in single women, and apparently in virgins, recalls the inherent tendency of some individuals to develop malignant disease in the absence of any recognizable extrinsic predisposition.

That the increased risk in married women is due solely to child-bearing has been disputed, and sexual intercourse has been indicated as a factor of some aetiological importance. Here an attempt has been made to measure the relative importance of these two factors—sexual intercourse and child-bearing—by comparing the relative risks of the cancer developing in single women, nulliparous married women, and parous married women. The proportions of the cancer patients falling into these three groups were known directly, but the numbers in the community were estimated in the following manner. In March, 1946, a Family Census was conducted by the Royal Commission on Population, and on request the secretary of the Commission supplied Dr. Greenwood Wilson, medical officer of health for the City of Cardiff, with a duplicate set of those Census cards which related to Cardiff women. From an analysis of these by age, social class, and number of live births the proportion of married women in Cardiff who were childless in 1946 was calculated. It was found to vary within the limits of 13 to 18%, according to age and social class, but the mean figure for those over 40 in all classes was precisely 15%. The 1931 Census returns for the County of Glamorgan showed 21,613 unmarried women and 182,851 married women of cancer age (35-64 years), and on the assumption that 15% of the married women were childless the proportions of single women, childless married women, and parous married women in the community were obtained (see Table II).

TABLE II.—Comparison of Civil State and Parity of Glamorgan Women of Cancer Age (35-64 years) (1931 Census), with 1,114 Women of Same Age Group with Cancer of Cervix

	Cancer of Cervix	Community	Estimated Relative Risk of Contracting the Disease (a) as % of (b)
	(a)	(b)	
Unmarried	18 (1.3%)	21,613 (10.5%)	12
Married—nulliparous	45 (4.0%)	27,428 (13.4%)	30
Married—parous	1,054 (94.7%)	155,423 (76.1%)	125
	1,114 (100%)	204,464 (100%)	

From this it may be seen that for women of 35-64 years (1) approximately 99% of the cancer patients were married, as compared with only 90% of the community; (2) of 60 nulliparous women in the cancer series only 25% were unmarried, the corresponding figure for all nulliparous women in the community being 44%; (3) 94.7% of the cancer patients, as compared with 76% of the women of the community, gave a history of one or more confinements; and (4) only 4% of the married women with cancer were childless, as compared with 13.4% of the women of the community. The figures showing the relative risks run by the three groups indicate that when a woman has reached

the age of 35 or more her risk of contracting cancer of the cervix is twice as great if she has been married, and ten times as great if she has also had children, than if she were single.

Repeated Child-bearing

As child-bearing is so closely correlated with cancer of the cervix some addition to the risk would be expected after each confinement, but previous studies have failed to establish any association between the number of pregnancies and the supervention of cancer (Lane-Clayton, 1927).

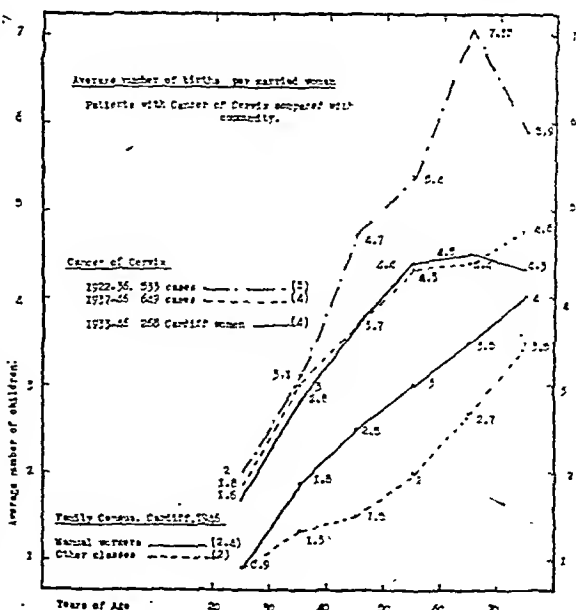
The average number of births (excluding abortions) among 1,182 married women with cervical cancer was 4.5, while the general average fertility of married women aged 40 and over in the community was 2.8 (Cardiff, 1946). But the deduction from this evidence that cancer of the cervix is related to large families could be challenged on three grounds:

1. The two series differ in point of time—the cancer series relating to a 25-year period, 1922-46, and the Family Census to the end-point of this period. During the interval covered by the cancer series there has been a decline in the average size of family, and the difference between the two means may reflect merely this decline in fertility.

2. The Family Census figures, which formed the only available standard of comparison as regards parity, relate to Cardiff women, whereas 80% of the cancer patients came from outside

TABLE III.—Average Number of Births per Married Woman. Three Groups of Patients with Cervical Cancer Compared with the Wives of Manual Workers in Cardiff generally (Family Census 1946)

Age Group	Family Census 1946		Women Suffering from Cancer of Uterine Cervix					
			Glamorgan Women				Cardiff Women Only	
	No. of Women	Mean No. of Births	No. of Women	Mean No. of Births	No. of Women	Mean No. of Births	No. of Women	Mean No. of Births
20-29	699	0.93	6	2.0	9	1.8	3	1.6
30-39	1,135	1.83	88	3.1	83	3.0	29	2.83
40-49	1,082	2.55	170	4.7	206	3.7	91	3.7
50-59	959	3.0	163	5.4	210	4.3	84	4.4
60-69	698	3.5	91	7.15	118	4.4	38	4.5
70+	443	4.0	15	5.9	23	4.8	23	4.3
	5,016	2.4	533	5.0	649	4.0	268	4.0



the city boundaries, so the differences could be explained if it were shown that the average size of family was greater among women outside the boundaries, from which most of the patients were drawn.

3. The Family Census figures relate to all social classes, while the cancer cases were patients seen in hospital, so the larger families in the cancer series could be attributed to their belonging to the lower-income groups.

To meet the first two points a separate analysis is made, subdividing the cancer series into three parts: those seen before 1937, those seen during the period 1937-46, and a separate group relating to Cardiff women only (Table III). For each group the average number of births per woman was calculated, and a comparable standard is provided from the Family Census. To meet the social class objection the Family Census figures were formed into two groups: (a) the wives of professional men, salaried workers, and employers of labour (1,765); and (b) the wives of skilled and unskilled manual workers (5,016). This second group is considered to be a suitable standard of comparison for the hospital patient series.

It is to be observed that no difference in fertility is apparent between Cardiff women suffering from cervical cancer and those residing in other parts of Glamorgan. When the fertility of the more recent group of cancer patients is compared with that of the lower-income groups of the community it is noted that the average size of family is always slightly greater in women with cancer, and this is true whether women of the same age groups are compared or whether cancer patients are compared with Census figures applicable to women ten years older. The consistency of the excess in every age group obviates the need for any arithmetical tests of significance.

In Table IV the relative risk of incurring the disease is calculated in women of 40 and over according to parity. Women under 40 have been excluded from this table, as the community figures would be weighted by large numbers whose families would not be complete and in whom the hazard of cancer would be small. These figures indicate

TABLE IV.—Percentage Distribution by Number of Children for (a) Married Women Suffering from Cervical Cancer and (b) Wives of Manual Workers (Cardiff, 1946) Women of Completed Fertility Only, Aged 40 and Over

No. of Children	Cancer of Cervix Glamorgan, 1937-46 (a)	Family Census Cardiff, 1946 (b)	Estimated Relative Risk of Developing Cancer (a) as % of (b)
0	32 (5.1%)	464 (14.5%)	35
1	84 (13.5%)	549 (17.2%)	78
2	115 (18.5%)	596 (19.0%)	97
3	95 (15.2%)	463 (14.5%)	105
4	69 (11.1%)	342 (10.7%)	104
5	58 (9.3%)	228 (7.1%)	130
6 and over	171 (27.3%)	540 (17.0%)	160
	624 (100%)	3,182 (100%)	

that women with many children suffer from cervical cancer more frequently than do women with few children or only one child, and the relative risk increases slightly with each confinement, so that the woman who has had six or more children is exposed to a risk twice as great as the woman who has had only one child. They do not support the view that one childbirth is as effective a cause of cancer of the cervix as repeated labours.

It is generally acknowledged that cancer of the cervix also has social and racial distinctions, but these have not been explored in this survey. There can be little doubt that the disease is more common in the poor of any community (Stocks, 1947), and this is not attributable solely to increased child-bearing. As the social scale is descended there is a small increase in the number of children per family, but other factors are probably operative in the lower-income

groups, and more would seem to depend on bad environmental conditions and defective personal hygiene than on the bearing of larger families. It has also been claimed that habits and customs are responsible for the relative infrequency of the disease in women of the Hebrew race. If Jewesses were as susceptible as Gentiles to cervical cancer the local Jewish women might have been expected to contribute to the series under review, but not one of the 1,200 patients was Jewish. The relative immunity of Jewesses to cervical cancer is not clearly understood. It has been attributed to the observance of the Mosaic Code by married Jewesses, with its laws of separation and insistence on genital cleanliness, and it has also been ascribed to the practice of ritual circumcision, but the view that it is a fundamental racial character acquired through inheritance is perhaps still the most acceptable.

Estimated Incidence

The incidence rate of the disease—the relative number of new cases occurring annually—may be determined on the basis of mortality or morbidity records, but mortality tables for cervical or uterine cancer are still difficult to interpret. Neither is it easy to obtain data directly concerning the number of living persons suffering from the disease. The number of women with cancer is larger than the number with diagnosed cancer, and still larger than the number seen at hospitals. In country districts relatively more persons with cancer fail to obtain hospital attention, and, in order to keep the number of such persons as small as possible, an estimate is best made in an area with good hospital facilities, reasonably accessible to all groups of the community.

Cardiff, with its relatively compact population, seemed to lend itself to this form of inquiry. Its sick and infirm are received by three large hospitals, and from their combined records it was found that during the 12-year period 1935-46 the mean annual number of new cases of cancer of the cervix diagnosed in Cardiff women was 22. This figure required adjustment to allow for the few cases which may have been treated elsewhere, and also for those who may have died at home, untreated or undiagnosed. With these adjustments, it was computed that 30 new cases of the disease develop each year in the women of Cardiff. As no evidence was found that patients coming to the Infirmary from outside Cardiff made the series less representative of cancer of the cervix cases in Cardiff, the distribution by age, marital status, and fertility of these 30 women is assumed to correspond with that of the main series as shown in Tables I and II. Relating the distribution so obtained to the population as recorded in the 1939 Register, the cancer hazard in women of ages 35 to 64 years, according to civil state and parity, is shown in Table V.

TABLE V.—Estimated Risk of Cancer of the Cervix Developing at Ages 35-64 Years for Single and Married, and for Parous and Non-parous, Women

Civil State and Parity	Cardiff C.B. Population, 1939 Register	Estimated No. of New Cases of Cervical Cancer per Annum		Estimated Annual Risk of the Disease Developing at Ages 35-64 Years
		No.	% of Total	
Married women:				
Non-parous ..	7,294	1.128	4	1 in 6,500
Parous ..	41,333	26.705	94.7	1 in 1,500
Total married women	48,627	27.833	98.7	1 in 1,700
Single women ..	7,907	0.367	1.3	1 in 21,500
Total women ..	56,534	28.2	100	1 in 2,000

From the foregoing it would seem that the probability of the disease developing in any one year in women of this age group ranges from 1 in 1,500 in parous women to

1 in 21,000 in single women. In Table VI a more detailed examination of the risk in married women is made according to age, against the 1931 Census figures.

TABLE VI.—*Estimated Risk of Cancer of the Cervix Developing in Married Women at Increasing Years of Age*

Age	Cardiff C.B. Population, 1931 Census	Estimated No. of New Cases of Cervical Cancer per Annum	Estimated Annual Risk of the Disease Developing
20-29	8,131	0.45	1 in 17,000
30-34	7,147	1.32	5,400
35-39	7,022	3.06	2,300
40-44	5,522	4.05	1,360
45-49	6,113	5.13	1,190
50-54	5,690	5.25	1,050
55-59	4,724	4.68	1,000
60-64	3,932	3.15	1,250
65-69	3,117	1.56	1,700
70-74	2,103	0.75	2,800 ?
75-79	1,214	0.18	6,730 ?
80+	865	0.06	14,400 ?
		30.00	

It will be observed that the cancer hazard is maximal during the sixth decade, when it is of the order of 1 in 1,000. Attention has been drawn earlier to the probable deficiency of patients of 70 and over in this series. This may require some adjustment of the number of new cases—increasing the numbers at ages 70 and over, and lowering by a corresponding amount the numbers under 70. As a result the risk of the disease developing at 70 and over is probably greater than the figures in Table VI suggest, but it is unlikely that the small adjustments required at ages under 70 would materially affect the calculated risks.

Discussion

Although cancer of the cervix does occur in unmarried women, and apparently in virgins, it is predominantly a disease of married life, showing a predilection for women who have borne children. What influence child-bearing has on the cervix to render it especially susceptible to cancer is not known, but the operative factor, whether traumatic, infective, or hormonal, has to exert its action for many years before the specific effect is shown. In this series 157 of the cancer patients were confined on only one occasion, and a mean interval of 20 years elapsed before the malignancy was discovered.

In 11% cancer appeared within 10 years of parturition, in 17% the interval exceeded 30 years, and in the remaining 72% the interval between the confinement and the cancer ranged from 10 to 30 years. The length of this interval had no influence on the morbid anatomy of the lesion or on the clinical course of the disease (Maliphant, 1947). Neither did the nature of the confinement seem to be significant: 82% of the parous cancer patients had normal obstetric histories, with an average of over four unassisted deliveries per patient; 15% had at least one instrumental delivery; and in 3% one or more of the confinements were described as difficult. It is highly probable that figures of this order would be found in a control series of women not suffering from cancer, which would not lend support to the view that trauma itself is an important causative factor in cervical malignancy.

Although the severe tears which may accompany a difficult instrumental delivery do not seem to be any more likely to lead to cancer in later years than the small lacerations concomitant with natural birth, they both allow organisms easy access to the cervical tissues. Infection, by stimulating hyperplasia, heteroplasia, and heterotopia of the glandular epithelium, disturbs the epithelial equilibrium at the squamo-columnar junction, and the resulting erosion has been described as a battlefield on which two types of

epithelium are the contestants. Erosions are commonly inflammatory in origin, but similar epithelial changes may result from hormonal influences, and, once established, such areas of epithelial restlessness seem to be of paramount importance as forerunners of cancer. Nevertheless, the percentage of erosions which become cancerous is very small. It has been estimated that more than half the adult female population have infected cervixes, and for every woman with an infected cervix who develops cancer there would appear to be approximately a thousand who do not (Table V).

Chronic cervicitis is a precursor of cancer only if it exists in conjunction with some unknown factor of individual susceptibility. This may be some form of hereditary predisposition or be dependent upon some underlying metabolic or nutritional disturbance. In this connexion it is noteworthy that Ayre (1947) found evidence of excessive tissue oestrogens coupled with low thiamin excretion in women suffering from cancer of the cervix, and he suggests that the disease may prove to be the abnormal response of cervical epithelium to chronic infection when it exists in the presence of nutritional deficiency of thiamin and a consequent excess of the specific growth hormone, oestrin. In any event, chronic cervicitis may be regarded as only one of several aetiological factors, and, even if it were established that clearing up cervical infection would prevent cancer, to prevent one case it would be necessary to maintain in a healthy state the cervixes of about a thousand women. It is probable that the medical profession, by treating cervicitis, is daily making a small contribution to prophylaxis, but there can be little prospect of any appreciable reduction in the incidence of the disease by such measures.

The only immediate hope of reducing the persistently high mortality from cervical cancer is by discovering more cases at an early stage. There is room for further educational effort to persuade women to report symptoms and to see that every woman who reports suspicious symptoms is thoroughly investigated. Diagnosis at the earliest phase could be possible only by routine examination of the apparently healthy. The annual or semi-annual examination of parous women over 35—the age at which the prevalence of the disease shows a rapid rise—could not fail to lead to the discovery of many cancers still in their silent phase, but the practical difficulties in instituting such measures for the community are evident. On the basis of the incidence rate found in this inquiry, it would seem that even in the more vulnerable fraction of the community—parous women aged 35 to 64—only one cervical cancer would be found annually in every 1,500 women examined, although no doubt other lesions, both benign and malignant, of the exposed sites would also be discovered.

Considerable interest is being shown in the various smear techniques as developed by Papanicolaou and Traut (1943) for the diagnosis of malignant disease of the genital tract, and in their applicability to mass surveys. In suspect cases these cytological methods cannot displace biopsy, but they may make an important contribution to the control of cancer as a screening test for the detection of symptomless cancer in the community.

Summary

The distribution of certain characteristics in a series of 1,200 women suffering from cancer of the uterine cervix is compared with the distribution of the same characteristics in the community, and the differences are considered to measure the differences in the risk of incurring the disease.

Cancer of the cervix is a disease of middle life, but the risk of contracting the disease continues to rise until the age of 60.

Beyond this age the risk shows a steady decline: while the female population is decreasing, the incidence of cervical cancer is decreasing at a faster rate.

The cancer hazard is increased by marriage irrespective of child-bearing, but the disease shows a predilection for women who have borne one or more children. Its occurrence seems to be independent of the nature of the confinement, but each pregnancy adds slightly to the risk of cancer developing in later years. Whether the responsible agent associated with child-bearing is infective or hormonal, it takes an average period of 20 years to produce its effect.

In women of cancer age (35-64 years) the probability of the disease developing in any one year seems to range from 1 in 21,000 single women, through 1 in 6,500 in childless married women, to 1 in 1,500 in parous women.

There is little prospect of effecting any appreciable reduction in the incidence of the disease by prophylactic measures, and the pressing need is diagnosis at a stage when cure is not only possible but probable by existing therapeutic methods. The role of periodic health examinations in the detection of symptomless cervical cancer in the community is discussed.

I am indebted to Dr. Lewis-Faning, statistician to the Department of Preventive Medicine of the Welsh National School of Medicine, for invaluable advice on the statistical aspects of this paper. My thanks are also due to Dr. Greenwood Wilson and to his chief clerk, Mr. Brain, for analysing the Family Census returns; to Dr. D. G. Morgan for details of cancer admissions to Llandough and St. David's Hospitals; and to my colleagues in the department of obstetrics and gynaecology for access to their case records.

REFERENCES

- Ayre, J. E. (1947). *Amer. J. Obstet. Gynec.*, 54, 363.
Jones, H. W., and Cameron, W. R. (1947). *J. Amer. med. Ass.*, 135, 964.
Lane-Clayton, J. (1927). Ministry of Health Report on Cancer of the Uterus. No. 40. London.
Mackenzie, S. (1939). *Reports on Public Health and Medical Subjects*, No. 89. London: H.M.S.O.
Maliphant, R. G. (1947). *J. Obstet. Gynaec. Brit. Emp.*, 54, 155.
Papanicolaou, G. N., and Traut, H. F. (1943). *Diagnosis of Uterine Cancer by Vaginal Smear*. New York.
Stocks, P. (1947). *Studies on Medical and Population Subjects*, No. 1. London.

PSYCHIATRIC PATIENTS AND THE DISABLED PERSONS (EMPLOYMENT) ACT

BY

A. HARRIS, M.A., M.D., D.P.M.

Assistant Physician

AND

MARY A. LANE

Psychiatric Social Worker

The Bethlem Royal Hospital and the Maudsley Hospital

In December, 1946, a system of weekly conferences between us and the disablement rehabilitation officers of the Camberwell Labour Exchange was instituted at the Maudsley Hospital for all patients presenting problems in the finding and choice of work.

The patient was prepared for the conference by at least one preliminary interview with the psychiatric social worker in which the purpose of registration under the Disabled Persons (Employment) Act was explained and his aspirations in the field of possible employment discussed. At the subsequent conference, when the medical and social aspects of the patient's needs could be explained to the D.R.O., doctor and social worker were able to contribute suggestions which seemed indicated as the interview proceeded. This arrangement was of particular value, as the D.R.O. alone would not have been in a position to judge what concessions he should make to the patient's objections or hesitations. It was also useful for the hospital team to be able to modify the plans and recommendations for the patient when, as a result of listening to the

interview, it became apparent that the type of work suggested was not in fact suitable or readily available.

As a result of early experience in the working of the scheme a form was introduced for all in-patients in which sections were to be filled in by the doctor, the occupational therapist, and the remedial gymnast, the aim being to collect all possible information concerning the patient's employability. The information available for out-patients was necessarily much more scanty.

Results

A follow-up inquiry was made not less than six months after the conference, chiefly by means of a questionnaire filled up by the patients. This paper is based on an analysis of the patients dealt with in this way who were first seen by the D.R.O. before Dec. 31, 1947.

Table Showing Results of a Follow-up

Diagnosis	In Employment				Unemployed		Untraceable		Total
	Settled		Pre-carious		Men	Women	Men	Women	
	Men	Women	Men	Women					
Depression	16	3	1	3	4	2	1	0	30
Anxiety state .. .	9	2	4	2	3	3	0	0	23
Hysteria	4	0	4	0	1	3	0	1	13
Obsessional state ..	0	0	0	0	1	0	0	0	1
Psychopathic personal- ity	3	0	4	1	6	1	4	1	20
Mania	1	0	0	0	0	0	0	0	1
Schizophrenia .. .	7	3	3	0	7	4	0	1	25
Organic states, inclu- ding epilepsy .. .	2	1	0	0	3	2	0	1	9
Total	42	9	16	6	25	14	6	4	122
Age:									
Under 20	5	0	2	0	5	3	0	1	16
20-30	20	5	4	1	7	4	5	2	48
30-40	6	2	4	4	7	3	1	0	27
40-50	6	1	6	1	4	3	0	0	21
Over 50	5	1	0	0	2	1	0	1	10
In-patient ?									
Yes	35	7	10	4	15	9	4	3	87
No	7	2	6	2	10	5	2	1	35
Civil state:									
Married	19	2	8	1	8	3	3	0	44
Single	23	7	8	5	17	10	3	4	77
Widowed (women)		0		0		1		0	1
Occupational therapist's report:									
Favourable	21	3	4	1	3	2	0	0	34
Doubtful	4	0	3	0	1	0	0	0	8
Poor	2	1	1	1	6	1	0	1	13
Previous work record:									
Good	28	7	6	2	7	6	1	0	57
Fair	3	0	3	0	0	0	0	1	7
Poor	11	1	7	3	18	6	3	1	50
Recommendations of hospital:									
Carried out	36	7	12	3	7	6			71
Not carried out ..	6	1	4	3	16	8			38
No specific rec. made	0	1	0	0	2	0			3

Of the men 31 had changed their occupations and 27 were doing the same type of work as they did before their breakdown; 23 of the former were well settled and eight were in precarious work, and 19 of the latter were well settled and eight precariously employed. There is no evidence, therefore, that change of occupation in itself has any particularly harmful or beneficial effect. Two reverted to their previous occupation after attempts had been made to settle them in something thought to be more suitable. Eight were well settled in work of a type inferior to that they had undertaken before their illness. Ten were tradesmen and artisans, seven clerical and shop workers, 12 outdoor agricultural workers, drivers, etc., 18 labourers and unskilled workers, four were in training, and seven were following miscellaneous occupations. There were eight

patients of subnormal intelligence: three of these were in settled employment, three were in precarious employment, and two were unemployed. Of the 25 unemployed men 12 had had no work since they had been seen at the conference, whereas 13 had had some. Thirteen had had two or more jobs, but five of these were now regarded as well settled, while only three were unemployed.

Of the 14 women unemployed nine had had some work and five no work at all. Of those in employment, of the six women with depression three had clerical jobs, two shop-assistant jobs, and one was in domestic service; of those with anxiety state three had clerical jobs and one was in domestic service; the three schizophrenics were working in clerical jobs; the patient with organic disease was working as a domestic servant; and the psychopath was undergoing training for clerical work. The results were worse than in the men perhaps because women are not subjected to the same degree of economic pressure and find a position of dependence more acceptable socially.

Discussion

The diagnosis of psychopathic personality seems to carry an unfavourable occupational prognosis, as one would expect considering the implications of erratic and antisocial behaviour that it usually conveys, but the numbers are too small for the results to be statistically valid.

Age appeared to have surprisingly little effect. Examination of the age-diagnosis distribution showed little relation between them, the diagnoses being scattered diffusely through the age groups.

The relative lack of success with those who had merely attended the out-patient department compared with the ex-in-patients is probably due more to the high proportion of mild chronic cases which they contain—the more acute cases of favourable prognosis usually being admitted to the wards—than to any other factor, although they undoubtedly receive on the average less attention than the in-patients and information about them is less complete.

Failure to carry out the recommendations of the hospital was usually due to circumstances beyond the patient's or the D.R.O.'s control, but it was occasionally due to the patient's change of mind. Housing shortage is one of the chief factors limiting mobility and consequently choice of work at the present time, and one finds in practice that many patients have in fact only one or two possibilities to consider. The results are strikingly better in the cases where the recommendations of the hospital were carried out, but caution must be exercised in interpreting these figures as showing what could be achieved if a greater choice of jobs were available. A defect of the patient, such as difficulty in the interview with a prospective employer, might prevent both the carrying out of the hospital's recommendations and the effective settlement of the patient anywhere.

The 17 patients who never succeeded in getting any work necessarily fell into the "recommendations not carried out" group, but a considerable proportion of them were unemployable by ordinary standards. The small group who did well in spite of rejecting the advice given to them—for example, the man who was told that he should take up training in agricultural work but found himself a clerical job, and the telephone engineer who was told that his job was too difficult for him but nevertheless persisted in it—form a useful corrective to dogmatic attitudes. Nevertheless the figures suggest that a widened range of choice would substantially increase the chances of successful settlement.

An occupational therapist's report was available on 55 patients; the proportion of these who were at work was slightly higher than for the whole group because of the

refusal of some of the most difficult patients to do occupational therapy. Nearly three-quarters of those who were given favourable reports were in settled employment and two-thirds of those who were given poor reports were totally unemployed. It seems that the opinion of the occupational therapist affords considerable help in assessing the patient's employability in ordinary life.

The previous work records were classed as good, fair, and poor according to the amount of unemployment, the length of time that jobs were held, and the degree of success attained; in some cases information was not adequate for classification. They were, of course, prognostically significant, but the comparatively high proportion of those with poor records who achieved settled jobs is noteworthy.

In view of the general impression of the value of personal contact it would appear worth while to compare the results in the group of patients who were dealt with at the Camberwell Exchange, and so by the D.R.O.s who had attended the hospital conference, with those who were settled by other exchanges. Of the 11 male Camberwell patients eight were in satisfactory employment, one had had some work, one had been totally unemployed, and one was untraceable. Of the seven female Camberwell patients four were in satisfactory employment, one had had some work, one had had none at all, and one was untraceable. These figures show a statistically significant superiority in the results of the Camberwell group, which suggests that where placement can be made by the D.R.O. who has been to the conference it is on the whole more successful.

The general impression is that success or failure in any one case depends on the complex interaction of a wide variety of factors—social attitudes, family circumstances, environmental accidents, and personality qualities inherent in the patient—so that the finding of a method of approach to resettlement in employment applicable to the group as a whole is likely to prove extremely difficult. Although the patients remain stubbornly individual in the problems which they present, they cannot, of course, avoid being affected by processes influencing the general level of employment in the country. As the demand for labour rises it becomes progressively easier for them to obtain and keep jobs, and the removal of brakes on mobility, such as the provision of adequate housing, would help them as well as the healthy workers. This is a preliminary inquiry aimed at defining the problems and not at discovering a solution for them; the results may prove of some interest to those planning larger undertakings.

Summary

A follow-up of 122 psychiatric patients placed on the Disabled Persons Register was made—73 were employed, 39 were unemployed, and 10 were untraceable. Of those in employment 51 appeared well settled in their jobs and 22 to be holding on to them precariously. Seventeen had had no work at all since being put on the register. Groups separated on the grounds of age, diagnosis, and civil state showed no significant differences, and even those patients of dull intelligence seemed as likely to keep a job as the brighter ones, although the numbers were so small that there might well be differences which a more extended inquiry would make evident. The previous work record and the occupational therapist's report while the patient was in hospital had prognostic value with regard to employment. It seems that the fullest advantage of the hospital conference method is obtained when the D.R.O. who attends the conference is the one responsible for the actual resettlement of the patient.

Our thanks are due to the D.R.O.s of Camberwell Exchange, who have co-operated with us enthusiastically and offered us every help and courtesy; and to Mr. Lubin, of the Psychological Department of the Institute of Psychiatry, for a statistical examination of our figures.

PHYTO-PHOTO-DERMATITIS

BY

H. E. BELLINGER, M.B., Ch.B.N.Z.

Wing Commander, R.A.F.

Phyto-photo-dermatitis is a bullous eruption appearing on parts of the body which have been in contact with certain plants and simultaneously exposed to sunlight some 48 hours previously. Until recently (Roxburgh, 1947) standard textbooks on skin diseases have paid little attention to this relatively common dermatitis. We owe the term phyto-photo-dermatitis to Klaber (1942). It is an adequate name which describes the aetiology of an eruption caused by a variety of plants. The term phyto-photo-dermatitis includes dermatitis bullosa striata pratensis (Oppenheim), Oppenheim's disease, meadow dermatitis, parsnip dermatitis, and berloque dermatitis.

The incident described below is recorded because of the large number of cases occurring within a few days, and because of a surprising lack of familiarity with the condition shown by many practitioners and the patients and their relatives.

The disease is by no means unknown to country folk. However, many inquiries made over the past eight years in Wiltshire, Somersetshire, Devonshire, and Lincolnshire revealed that none of the people with whom discussions have been held realized the true causes of the dermatitis. In the country, children running bare-legged through long grass in the summer months are quite often affected, but as the parents are familiar with the signs and symptoms the doctor is seldom consulted. It is not common for adults to be afflicted in such circumstances. Whether this can be attributed to the style of clothing or whether some degree of desensitization occurs during childhood has not been ascertained. Another point of interest is that it seems to be more prevalent in districts where heath-land and moors exist.

Oppenheim (1926) gave the first clear and detailed description of the condition, which had affected a number of his patients sunbathing on the grass in the Viennese suburb of Ottakring. Two years later he realized the significance of contact with plants in the production of dermatitis, when he thought that siliceous compounds in the plants might be the important factor (Oppenheim and Fessler, 1928). From this time various plants in many different countries have been incriminated. Although Philadelphia (1931) seemed to have recognized that sunlight might be a factor in the production of the dermatitis, it was not until Kitchevatz (1934a), in France, carried out experiments with ultra-violet rays that the dermatitis was known to be due to a photosensitization arising from contact with the juices of certain plants. He later (1936b) ingeniously utilized the advent of an eclipse of the sun to strengthen his arguments.

Botanical Aspects

As further cases are published it is possible that many more plants possessing photodynamic properties will be recorded, but the following list of those involved in phyto-photo-dermatitis may be of value. References are also given as an aid to more detailed study.

The wild parsnip, *Pastinaca sativa*, appears to have been the plant first, and most commonly, associated with photosensitivity (Stowers, 1897; Hartmann and Briel, 1927; Heye, 1929; Hirschberger and Fuchs, 1936; McKinlay, 1938; Jensen and Hansen, 1939; Klaber, 1942). Cultivated parsnips have been reported by Whittle, Hellier, and Lee (1946) as being responsible for the dermatitis in some instances. Other plants accused are yarrow or milfoil, *Achillea millefolium* (Philadelphia, 1928; Gans, 1929; Spillman and Weiss, 1931); angelica, *Angelica sylvestris* (Bogdanovitch *et al.*, 1935), buttercup, *Ranunculus bulbosus*, and mustard, *Sinapis arvensis* (Spillman and Weiss,

1931); bindweed, *Convolvulus arvensis* (Klaber, 1942); common rue, *Ruta graveolens* (Oppenheim, 1932); the allier fraxinella, *Dictamnus fraxinella* (Baronovsky, 1929), and gas plant, *D. albus* (Cummer and Dexter, 1937); cow-parsnip *Heracleum sphondylium*, and its cultivated relatives: *H. giganteum* (Straton, 1912) and *H. mantegazzianum* (Miesche and Burckhardt, 1937; Kuske, 1938); figs, *Ficus carica* (Straton 1912; Legge, 1921; Kitchevatz, 1934c; Behcet *et al.*, 1939; Klaber, 1942); meadow grass, not identified specifically (Oppenheim, 1926; Hartmann and Briel, 1927; Corsi, 1933; Corson 1935; Kitchevatz, 1936a); Persian or Tahitian lime (Sams 1941); agrimony, *Agrimonia eupatoria* (O'Donovan, 1942).

It will be noticed that, although a considerable number of species are involved, they belong to a few families only: Umbelliferae (wild parsnip, cultivated parsnip, cow-parsnip yarrow, angelica); Rutaceae (common rue, gas-plant, limes); Rosaceae (agrimony); Moraceae (figs); Ranunculaceae (buttercup); Cruciferae (mustard). The majority of these plants belong to the families Umbelliferae and Rutaceae.

Geographical Distribution

Phyto-photo-dermatitis has a wide geographical distribution. Following on Oppenheim's first communication in Austria in 1926, cases were soon reported from Germany and France. In the latter country Jacowski collected several cases from the airfield at Etampes and its neighbourhood. Five were French airmen who, between June 23 and 29 1935, sunbathed or walked bare-legged in the grass. Two further cases were children belonging to French Air Force families living on the same station, exposed to the sunlight and grass at the same time. A number of other people so exposed were not affected (Jausion and Jacowski, 1936b). Cases were also reported from Italy, Yugoslavia, Russia, Switzerland, Denmark, Spain, and the United States of America.

From the time of Stowers (1897) no cases were recorded in Great Britain until Straton (1912) reported a case in Wiltshire following contact with figs. Corsi (1933) described the typical skin eruption in a student who indulged in sunbathing after a swim near Tunbridge Wells. McKinlay (1938) described several similar cases from Salisbury Plain where, later, O'Donovan (1942) reported some dozen more. Until O'Donovan's cases occurred in the hot summer of 1940 no importance had been attached to the disease. Public interest at this time had been aroused to the danger of noxious war gases, and the appearance of blisters on the skins of unsuspecting people—Service and civilian—gave concern to the local public authorities, who at first had the impression that the victims had come into contact with mustard gas. At that time I attended eight cases amongst Army personnel who were doing airfield guard duties in the heart of the Plain. These soldiers were undergoing intensive field training, stripped to the waist in the hot sunshine. They had thus come into contact with patches of cow-parsnip, which they used for concealment and cover. Within forty-eight hours the affected men's chests and bellies were covered with the characteristic striate, criss-crossed weals and blisters. Whittle *et al.*, quoted above, have also mentioned some cases occurring in France in 1944 amongst A.T.S. girls peeling cultivated parsnips in bright sunshine. Klaber (1942) recorded two cases due to contact with wild parsnip in 1940, and another in 1941 in which bindweed appeared to be involved.

Biochemical and Biophysical Aspects

The nature of the photosensitizing substance in these plants which causes the dermatitis has not yet been fully elucidated. Kitchevatz (1936a) showed that it is not chlorophyll, but that alcoholic extracts from figs had this property. Jausion and Jacowski (1936b) suggested that sweating as well as exposure to strong sunlight was required before

erythema and vesiculation followed an application of watery extract of grass. Obvious sweating was not found to be essential in the experiments detailed below. Following the production of bullae some forty-eight hours after the application of the undiluted juices of rue, wild parsnip, and figs in bright sunlight, Kuske (1938) began to investigate the photodynamic properties of a group of ketonic compounds known as furo-cumarins. Chemically pure compounds were obtained from oil of bergamot to produce bergapten, oxi-peucedolin from masterwort (*Peucedanum ostruthium*), and fucisin from figs, while others have been isolated from a number of essential oils as well as from dill and parsley. All these substances when applied to the skin in sunlight produced bullae or erythema after forty-eight hours, followed by prolonged pigmentation. It would be interesting if these complex ketones could be isolated from all the plants producing phyto-photo dermatitis, but that is beyond the resources of most clinical workers in this field.

Jensen and Hansen (1939) have elucidated the biophysical aspects of the problem in a series of carefully conducted experiments. They showed that the active range of the solar spectrum required to produce the dermatitis lies between 320 and 366 millimicrons in the long-wavelength end of the ultra-violet section, with a less active band between 264 and 280 millimicrons. These findings probably account for the incidence of the disease at the height of summer, when these rays are able to penetrate the atmosphere, and also explain the failure of a number of workers to reproduce the photodynamic effects with ordinary artificial ultra-violet rays. Jensen and Hansen further demonstrated that irradiation of alcoholic extracts of wild parsnip did not render the extract active of itself. Individual susceptibility to the plant was found to be unlikely in that all the subjects tested gave similar results.

Present Series

The cases occurred at a Royal Air Force station in Lincolnshire during the summer of 1947. Two different squads, with forty airmen in each, were sent by their physical-training instructors on a twelve-mile race—the first on July 15 and the second on the 16th. The first mile or two was across fields and then over an assault course thickly overgrown with wild parsley (*Anthriscus sylvestris*) and yarrow, while the remainder of the run was along roads where an occasional patch of cow-parsnip was found in an immature stage of growth. The race on both days was held in brilliant sunshine, and the airmen ran in short trousers, many without vests or stockings. On the morning of the 17th an airman who had taken part in the first run reported sick, complaining of intense irritation and weals on the legs the previous evening, some thirty-six hours after exposure. By the morning large blisters had developed. During the next two days twenty-three more airmen were found to be suffering from the same symptoms with varying degrees of severity. At the same time four officers' children and seven children from the married airmen's quarters, some of whom had been reported as having contracted chicken-pox, were found to be suffering from minor degrees of phyto-photo-dermatitis. Subsequent inquiries from the parents elicited the information that three of these children had been diagnosed as suffering from varicella in the same month a year previously, and that the skin eruption was identical with that of the present outbreak.

The clinical features of this series of cases were a sudden onset of itching or burning in areas of the skin exposed to the plants and sunlight simultaneously twenty-four to forty-eight hours previously. Within six hours of the onset long linear weals with a bordering zone of erythema appeared followed in a few hours by bullae. The bullae varied in size from dew drops to large wrinkled blisters 5 in. (12.5 cm.) in diameter. The blisters were surrounded by an areola of bright red erythema 4 in. (12.5 cm.) wide, merging imperceptibly into the surrounding skin. The smaller bullae tended to be strung along straight weals like necklaces on a cushion, while the larger ones were oval or linear in shape and 4 to 10 in. (10 to 25 cm.)

long. The largest blister completely encircled the left lower leg, and had a length of 5 in. above the ankle and a depth of 3 in. (7.5 cm.). Seven ounces (200 ml.) of straw-coloured fluid were removed by aspiration. The same airman also had numerous weals and smaller blisters on both legs, extending half-way up the thighs, and on the chest and abdomen down to the waistline. A pattern of scarlet stripes and long blisters criss-crossing one another, or with a tendency for several adjacent ones to run in parallel lines, was the characteristic picture. The skin between the lesions and the parts not exposed appeared to be normal. There was no associated conjunctivitis or rhinorrhoea. Seven severe cases required treatment in hospital, but within ten days the largest blisters had healed. Minor cases did not seem to be troubled for more than two or three days. A deep-purple pigmentation remained at the site of the lesions for the several weeks it was possible to keep most of the victims under observation. Four cases still showed faint but easily discernible pigmentation, faded to a violet hue, six months later.

Patch-tests were carried out on two hospital patients and two unaffected volunteers. The flowers, leaves and stalks of wild parsley, yarrow, and cow-parsnip were applied to the arms, control areas were protected from sunlight by adhesive plaster and test areas were exposed to the sunlight. Only the wild parsley exposed to sunlight gave positive results to the flowers, leaves, and stalks in all four subjects. Erythema appeared in twenty-four hours, followed by small vesicles in forty-eight to seventy-two hours. The patches were left on for six hours, and the subjects under observation spent most of that time in bright sunlight. For the remainder of the time under observation they remained covered. The tests were repeated on four more volunteers in much the same manner, but the flowers, leaves and stalks were only rubbed on to the normal skin. All four gave much stronger positive results with wild parsley than did those in the previous test on exposure to sunlight. This time, in one person, cow-parsnip produced erythema in seventy-two hours followed in a few days by desquamation and faint residual pigmentation. Aqueous and alcoholic extracts of the same plants were then painted on the arms of four subjects, one arm exposed to sunlight and the other covered. All four again produced erythema followed by slight vesiculation with both extracts of the wild parsley but not with other plants. One of the volunteers on to whose skin the plants had been rubbed still after eight months, has pigmentation of the areas which gave positive results with wild parsley.

The results obtained from these patch tests seem to confirm the observation made in the field that wild parsley was the offending plant in this series of cases. It would also appear that the photo-sensitizing substance is present in alcoholic and watery extracts. Support is given to Jensen and Hansen's suggestion that phyto-photo-dermatitis is not due to individual susceptibility to the particular plants giving rise to it. The fact that yarrow and cow-parsnip, both of which have been found by other workers to possess photodynamic properties, did not produce any result, or in the latter case produced only a weak one, is difficult to explain. It suggests that the same species of plants may possess photodynamic properties in one location and not in another, or that they possess these properties at a certain stage of maturity or at different periods of the summer. Further work is required to solve these problems.

Differential Diagnosis and Treatment

Since the effects of noxious gas warfare have become more widely known phyto-photo-dermatitis has more than once given rise to the belief that the patients have come into contact with mustard gas. It is, however, easily distinguished by the absence of erythema in the axillae and groins, of conjunctivitis or of respiratory and other systemic symptoms. The blisters of phyto-photo-dermatitis, though sometimes very large, are wrinkled like the folds of a slack tent and not tense and dome shaped as with mustard gas.

Phyto-photo-dermatitis is sometimes confused with varicella especially when children have one or two small bullae on the hands and legs. The characteristic mixture of fresh lesions crusting and healing vesicles of varicella is absent while the distribution of phyto-photo-dermatitis is on the exposed parts only.

Treatment consisted of aseptic aspiration of the large blisters and the application of sedative lotions such as calamine or calamine and lead, which tend to dry up the lesions. Liniment of calamine or zinc cream is useful in the late stages to keep the skin soothed yet supple.

Summary

Thirty-six cases of phyto-photo-dermatitis are recorded. A further eight cases are noted.

Wild parsley (*Anthriscus sylvestris*) was found to be the plant responsible for the outbreak. This was confirmed by patch-tests.

The history, the geographical distribution, and the biochemical and biophysical factors of the disease are briefly discussed, along with the species of plants indicated as causing it.

Differential diagnosis and treatment are also mentioned.

I wish to thank the D.G.M.S., Royal Air Force, Air Marshal P. C. Livingston, for permission to publish this article. Special thanks are due to Senior Sister Miss V. M. Ashworth, A.R.R.C., and to Flying Officer A. J. Beale for their interest and help in the investigations.

Addendum.—Since this article was prepared for publication three more cases have occurred on the same Royal Air Force station. Three aircraft apprentices, lying with rolled-up shirt-sleeves on the grass watching athletics on May 19, 1948, in bright sunshine, developed typical vesicles on the forearms on May 21. Investigation has not been completed in these cases.

BIBLIOGRAPHY

- Baronovsky, E. A. (1929). *Rusk. vestrik. dermat.*, 58.
 Behcet, H., et al. (1939). *Ann. Derm. Syph.*, Paris, 10, 125.
 Benthams, G., and Hooker, J. D. (1937). *Handbook of the British Flora*, 7th ed., Reeve, Ashford, Kent.
 Berlin, C. (1930). *Derm. Wschr.*, 90, 733.
 Blum, H. F. (1941). *Photodynamic Action and Diseases Caused by Light*. Reinhold, New York.
 Bogdanovitch, I. I., et al. (1935). *Sovetsk. Vestn. Vener. Derm.*, p. 389.
 Corsi, H. (1933). *Brit. J. Derm.*, 45, 524.
 Corson, E. F. (1935). *Arch. Derm. Syph.*, Chicago, 32, 616.
 Cummer, C. L., and Dexter, R. (1937). *J. Amer. med. Ass.*, 109, 495.
 del Vivo, G. (1930). *G. ital. Derm. Sif.*, 71, 467.
 Förting, H. (1928). *Derm. Wschr.*, 86, 538.
 Freund, E. (1916). *Ibid.*, 63, 931.
 Gans, O. (1929). *Disch. med. Wschr.*, 55, 1213.
 Giraudeau and Acquaviva (1934). *Bull. Soc. franç. Derm. Syph.*, 41, 973.
 Goodman, H. (1936). *Arch. Derm. Syph.*, Chicago, 34, 271.
 Guillaume, A. C. (1927). *Les Radiations Lumineuses*. Masson, Paris.
 Hartmann, E., and Briel, J. (1927). *Derm. Z.*, 50, 205.
 Henry, S. A. (1933). *Brit. J. Derm. Syph.*, 45, 305.
 Heye, R. G. H. (1929). *Disch. med. Wschr.*, 55, 1722.
 Hirschberger, A., and Fuchs, H. (1936). *Münch. med. Wschr.*, 83, 1965.
 Hutchinson, J. (1946). *Wild Flowers*, 2nd ed. Penguin, London.
 Jausion, H., and Jacowski, F. (1936a). *Bull. Soc. franç. Derm. Syph.*, 43, 1663.
 — (1936b). *Ibid.*, 43, 1684.
 Jensen, T., and Hansen, K. G. (1939). *Arch. Derm. Syph.*, Chicago, 40, 566.
 Kitchavatz, M. (1934a). *Ann. Derm. Syph.*, Paris, 5, 293.
 — (1934b). *C. R. Soc. Biol.*, Paris, 116, 675.
 — (1934c). *Bull. Soc. franç. Derm. Syph.*, 41, 1751.
 — (1936a). *Ibid.*, 43, 581.
 — (1936b). *Ibid.*, 43, 1564.
 Klaber, R. (1942). *Brit. J. Derm. Syph.*, 54, 193.
 Kuske, H. (1938). *Arch. Dermat. Syph.*, Wien, 178, 112.
 Legge, R. T. (1921). *Calif. St. J. Med.*, 19, 461.
 Legrain and Barthe, R. (1926). *Bull. Soc. franç. Derm. Syph.*, 33, 662.
 McKinlay, R. (1938). *J. R. Army med. Cps.*, 71, 401.
 Mariconda, G. (1936). *Dermosifilograf.*, 11, 117.
 Mathews, F. P. (1937). *Arch. Path.*, 23, 399.
 Miescher, G., and Burckhardt, W. (1937). *Schweiz. med. Wschr.*, 67, 81.
 O'Donovan, W. J. (1942). *Brit. J. Derm. Syph.*, 54, 39.
 Oppenheim, M. (1926). (*Wien. dermat. Ges.*, Oct. 20, 1926.) In *Z. Haut- u. Geschlkr.*, 1927, 22, 311.
 — (1932). *Ann. Derm. Syph.*, Paris, 3, 1.
 — and Fessler, A. (1928). *Derm. Wschr.*, 86, 183.
 Philadelphia, A. (1928). *Wien. klin. Wschr.*, 3.
 — (1931). *Derm. Wschr.*, 92, 713.
 Prosser-White, R. (1934). *Occupational Affections of the Skin*, 4th ed., p. 365. Lewis, London.
 Roxburgh, A. C. (1947). *Common Skin Diseases*, 8th ed., p. 90. Lewis, London.
 Sims, W. M. (1941). *Arch. Derm. Syph.*, Chicago, 44, 571.

- Siemens, H. W. (1927). *Derm. Wschr.*, 85, 1577.
 Spillmann, L., and Weiss (1931). *Bull. Soc. franç. Derm. Syph.*, 38, 1095.
 Stanto, J. (1929). *Arch. Derm. Syph.*, Wien, 157, 429.
 Stokes, J. H., Beerman, H. and Ingraham, N. R. (1942). *Amer. J. Med. Sci.*, 203, 608.
 Stowers, J. H. (1897). *Brit. J. Derm. Syph.*, 9, 285.
 Straton, C. R. (1912). *British Medical Journal*, 2, 1139.
 Ullmo, A. (1932). *Ann. Derm. Syph.*, Paris, 3, 31.
 Weber, L. F. (1937). *Arch. Derm. Syph.*, Chicago, 35, 129.
 Whittle, C. H., Hellier, F. F., and Lee, H. G. (1946). *Proc. R. Soc. Med.*, 40, 14.
 Zurhelle, E. (1928). *Münch. med. Wschr.*, 75, 723.

THE PROGNOSIS AND TREATMENT OF SPRUE IN INDIA

BY

K. D. KEELE, M.D., M.R.C.P.

Physician, Ashford Hospital, Staines, Middlesex

In a clinical survey of 600 cases of sprue during the last war it was noted that only 31% had reached complete remission of the disease before evacuation from India, and it was believed that the relapse rate in England was high. The object of this paper is to assess the prognosis and results of treatment in a further series of 62 cases treated by me in India in 1945-6 and followed up for a period of two years in England. Their fate may be representative of that of the 1,073 cases sent back to England between 1943 and 1946. The value of the methods of treatment used in these cases can now be judged in perspective: and since these cases are likely to be the last treated without folic acid they may provide a basis for assessing the results of folic acid or other treatment.

Scheme of Treatment

Cases were treated on admission by diet alone or by diet with parenteral liver and other substances, according to the severity of the symptoms of relapse. Whenever possible, cases were treated by diet alone (Group 1). If diet failed and symptoms of relapse persisted, the patient was given for a preliminary period an "investigation diet," from which such therapeutic substances as liver were omitted (Group 2). With this diet the effect of parenteral liver, nicotinic acid, and riboflavin was assessed, particular attention being paid to clinical features such as weight stools, and blood count, as well as to fat-balance, glucose tolerance, and, in 10 cases, nitrogen balance. Ten cases showed such severe signs of relapse that no preliminary control period was possible and parenteral therapy was begun immediately (Group 3).

This grouping demonstrated the value of dietetic treatment alone. Cases which responded satisfactorily were classified as mild sprue. Those which failed to respond to a trial of dietetic therapy, or were so ill on admission that it could not be considered, were given parenteral liver and classified as severe sprue. It was therefore justifiable to attribute any improvement that occurred in severe sprue as due to parenteral therapy and not to dietetic measure alone. At this stage various remedies were tried in order to obtain preliminary assessment of their potency and/or mode of action. It was intended to do further trials of apparently active substances alone under controlled conditions in an adequate number of cases, but this proved to be impracticable.

These observations form the basis of the brief remarks in this paper on the value of various therapeutic methods used. Further details may be found in the report on sprue submitted to G.H.Q. India (in press).

Criteria of Progress

(a) *Short Term*.—Response to treatment was indicated by the appearance of the signs of the remission phase of the disease. These have been described in detail in a previous paper, in which it was emphasized that, besides gain in weight and cessation of diarrhoea, transient glossitis, desquamation of the skin, and increased abdominal distension almost constantly appeared. Steatorrhoea and abdominal distension were the last signs to disappear before completion of the remission phase. Thus the criteria for complete remission were (1) restoration of weight to within 10 lb. (4.5 kg.) of normal, (2) stools normal in number, colour, and fat content, (3) absence of abdominal distension, (4) ability to maintain Nos. 1-3 on a normal diet.

(b) *Long Term (after 2 Years)*.—Details have been obtained from each patient after two years in England as to (1) complete remission since return from India, (2) loss of time from work with symptoms suggestive of sprue or any other disease, and (3) necessity for hospital treatment with relapse. In the first group remission may be considered complete, and in the second partial; in the third treatment has failed. I am indebted to patients, doctors, and hospitals for details of cases which I have been unable to examine myself.

Results of Dietetic Treatment

(a) *Short Term (3 Months)*.—Fifty-two patients were treated initially with diet alone, by means of the Napier high protein-low fat sprue diets 3, 4, and 5. (See Table, (a).) The fat content

Blood transfusion was successful in two cases in which response to liver therapy was not adequate. All these cases were treated for some six months before being evacuated from India. Of the 25 cases 10 were in complete remission, 13 in partial remission, and two failed to respond. All those in partial remission continued to have steatorrhoea and abdominal distension.

Long Term (2 Years).—During two years 14 have been in complete remission, one has had symptoms keeping him from work, and six have relapsed and received further treatment in hospital. Three cases have not been traced. Of the two evacuated in a state of relapse, one has been in complete remission since his return, and one has developed pulmonary tuberculosis, entering a sanatorium in June, 1947, where he has since died.

The following summarizes these results:

	Short Term (6 months)	Long Term (during 2 years)
Cases in complete remission ..	10 (40%)	14 (56%)
Cases in partial remission ..	13 (52%)	1 (4%)
Cases having relapse ..	2 (8%)	6 (24%)
Died of pulmonary tuberculosis ..	—	1
Cases untraced ..	—	1
Total ..	25	25

Of 62 cases of sprue, therefore, 43 (69.4%) have remained well for two years in England, and a further five (8%) have had mild gastro-intestinal symptoms. Ten (16.1%) cases have relapsed since leaving hospital in India. Nine of these relapsed on the ship during evacuation to England under conditions of crowding, excessive heat, and dietetic insult. Five have suffered further relapses during their second year in England.

Diet	Calories	C	P	F	Vit. A (I.U.)	Thiamine (mg.)	Riboflavin (mg.)	Nicotinic Acid (mg.)	Ascorbic Acid (mg.)	
3	1,513	159	118	45	14,000	1.2	6.0	18.3	31	(a) Diets used in routine treatment (include liver 4 oz. orally daily)
4	2,109	233	139	69	16,000	1.4	6.3	25.5	31	
5	2,584	308	149	84	17,000	1.6	6.3	26.9	43	
Investigation										(b) Investigation diets used in therapeutic trials
I	2,037	215	139	69	1,900	1.1	3.2	9.4	28	
II	2,620	290	149	96	3,500	1.3	3.2	10.8	40	

(a) Napier's Diets 3, 4, and 5, as used in the dietetic treatment

(b) Investigation Diets. These modified Napier Diets were used for patients on parenteral therapy.

was checked at intervals by analyses of milk, fish, and meat. Thirty-seven of the patients were evacuated to England after about three months' treatment, 23 of them in a state of complete remission and 14 in partial remission. The remaining 15 failed to respond to treatment. Of the 14 in partial remission six had persistent abdominal distension alone and four had steatorrhoea alone; the remainder had a combination of these and failed to regain weight. However, all were progressing well at the time of embarkation, a date not governed by medical considerations.

(b) *Long Term (2 Years)*.—During two years 29 cases have been in complete remission, four have periodically developed symptoms keeping them from work, and four more have relapsed and returned to hospital. It is noteworthy that the 15 which failed to respond in the first instance were treated with parenteral liver as severe cases. The following summarizes these results:

	Short Term (to 3 months)	Long Term (during 2 years)
Cases in complete remission ..	23 (44.2%)	29 (55.8%)
Cases in partial remission ..	14 (26.9%)	4 (7.7%)
Cases having relapse ..	15 (28.9%)	19 (36.5%)
Total cases ..	52	52

Results of Parenteral Therapy

Short Term (6 Months).—This group of 25 cases comprised those previously mentioned who had failed to respond to dietetic treatment (15 cases), and those too ill on admission to be treated by diet alone (10 cases). All these cases were given investigation diets similar to the Napier sprue diets (see Table, (b)), but without foods with possible therapeutic value, such as liver, bananas, and vitamin concentrates. They received liver over long periods, and some were given trials of injections of nicotinic acid and riboflavin for a short time.

Effective Factors in Treatment

Much of the confusion regarding the treatment of sprue can be avoided by appreciation of the cyclic evolution of the disease. The characteristics of the relapse and remission phases of the disease have been previously described and will not be further discussed, but, as an example, the recognition that a glossitis usually lasting 2-3 weeks occurs early in remission has obvious bearing on assessing the efficacy of a therapeutic substance. Liver therapy is dramatic, and may be life-saving when given in relapse, but has no detectable action when remission has developed. All therapeutic effects must therefore be assessed according to the point in the disease which has been reached at the time of treatment. A patient in relapse will always pass through remission at a variable rate before reaching complete symptomatic cure. The therapeutic factors briefly noted below will be assessed from this aspect.

Diet (Napier's sprue diets 1 to 5).—Of 52 cases treated by diet alone, 37 (71%) underwent remission, but only 23 (44%) completed this phase in three months. Further cases recovered later, however, and 29 (56%) have remained well for two years in England. The effective factors in the diet are difficult to assess. Fifteen cases which relapsed or failed to improve on diet were deprived of liver, bananas, and vitamin extracts for periods up to 12 days as a preliminary to liver therapy, without any deterioration in their condition in this time.

Protein.—In 10 cases undergoing remission during liver therapy a positive nitrogen balance was found by Dr. R. C. Clutton. In one of these a negative nitrogen balance had

been present during relapse, due to increased faecal nitrogen. In spite of dehydration, several cases in relapse exhibited low plasma proteins, which rose during remission. These facts may indicate the value of a high protein diet in both phases of the disease.

Fat.—During relapse, in cases where fat balance was possible, absorption of fat still remained in the region of 50%. There was no evidence of fat excretion during remission in two cases on a fat-free diet. Raising the fat intake from 69 g. to 96 g. daily, when justified by the clinical state, did not alter the percentage absorbed.

Carbohydrate.—A glucose-tolerance curve is doubtful evidence of carbohydrate absorption in a disease which may involve liver function. Such curves, however, have been flat in relapse and often remained so for at least the first two weeks of remission, later rising to normal. Two cases since returned to England have had glycosuria, and one, since recovered, has been treated for diabetes for some months. This case had typical flat glucose-tolerance curves in India.

Vitamins of the B Group.—Nicotinic acid (150 mg. daily) and riboflavin (5 mg. daily), added to parenteral liver, produced no change in fat absorption or the clinical state in five cases, which were static in early remission. An impression that yeast extract slightly accelerated the already slowly increasing fat absorption needs confirmation.

Salt.—In one case in severe relapse the effect of 10–15 g. of sodium chloride daily by mouth was tried for ten days. During this time fluid stools rose from three to nine a day, weight dropped from 88 to 86 lb. (39.9 to 39 kg.) (normal weight 156 lb. (70.8 kg.)), anorexia increased, weakness became extreme, and there was vomiting. The blood pressure rose from 100/70 to 105/75 mm. Hg. Serum sodium rose from 258 mg. per 100 ml. to 310 mg. per 100 ml., the plasma volume rising from 2.1 to 2.5 litres. This patient responded well to subsequent liver therapy. The serum sodium changes well illustrate how improvement may be found in one facet of the case in the presence of gross clinical deterioration.

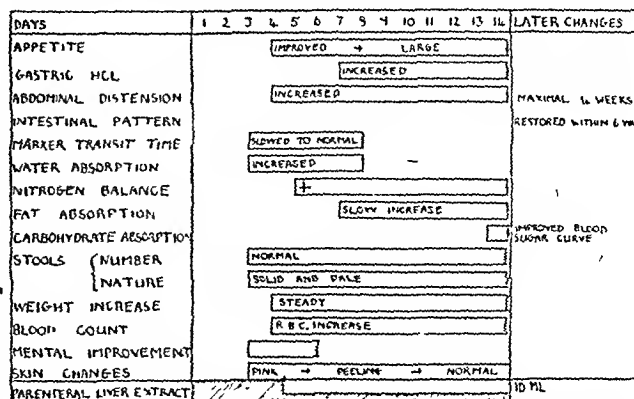
Sulphaguanidine.—This drug, given as for bacillary dysentery, improved the diarrhoea of relapse in sprue, often within 24 hours. The danger of dehydration was thus rapidly overcome, an invaluable advantage during the period of four days needed for liver to take effect. Sulphaguanidine was only partially effective alone, and diarrhoea returned when it was stopped. It did not produce remission of symptoms and its usefulness lay solely in controlling diarrhoea until liver became effective.

Liver Therapy

Although it has been known for some 20 years that parenteral liver is effective in sprue, its mode of action has never been clear. It has been presumed to be analogous to its effect in pernicious anaemia. As the haemopoietic action of liver was found to be delayed in these cases an attempt was made to ascertain the reason for its undoubted efficacy. The liver preparation used was a crude extract of Indian manufacture, and a sample assayed in England was reported as equivalent to a standard proprietary preparation as regards haemopoietic activity. Dosage used was 10 ml daily for four days intramuscularly, followed in most cases by a further 4 ml daily for some weeks.

The effects of liver depend on the phase of the sprue cycle during which it is given. It is active and beneficial in relapse but affords little benefit, if any, to a patient in remission. This is confirmed in the present group of cases by the fact that 13 of 25 patients were still in partial remission after some six months' treatment, during which liver was given over long periods. The more marked the relapse syndrome the more effective was liver therapy: its action

was not proportional to the severity of the anaemia. The effects of liver and the times of their occurrence are shown in the Chart. There was a latent period of 3–4 days; then



glossitis, if present, disappeared rapidly, whether *post* or *propter hoc* is not clear. Mental improvement was early and marked. Skin pallor changed to a warm flush and desquamation appeared at the end of about one week. The appetite improved, and became large. Gastric hydrochloric acid increased. Highly acid resting juice with hyperchlorhydric curves—never found in relapse—were common. Abdominal distension increased for 3–4 weeks. After six weeks' liver therapy the intestinal pattern reappeared on barium meal in one case in which it had been absent during relapse. In four other cases showing good response to liver it was also normal. Transit time of a marker through the gut was prolonged.

Stools, though pale, became normal in number and consistency within 3–7 days. This diminished loss of water in the stools coincided with the beginning of gain in weight. In one case nitrogen balance became positive within a week of starting liver therapy. Fat absorption, apart from initial improvement with the cessation of diarrhoea, increased only slightly. The part that liver played in this is doubtful. Blood sugar curves improved inconstantly after two weeks, but it seems doubtful if this can be attributed to increased carbohydrate absorption alone.

Haematological changes have been described in a previous paper. Reticulocytosis was slight (not above 3%), but the red cell count slowly rose over a period of weeks, with steady diminution in the mean corpuscular volume to normal. It was remarkable how the blood count and the weight of the patient approached normal values together. On two occasions liver failed to produce the effects described, which were, however, initiated by a subsequent blood transfusion.

Conclusions

In these cases the action of liver manifested itself on the gastro-intestinal tract from tongue to colon, producing evidence of increased absorption of water and water-soluble substances. No such marked effect was seen on fat absorption. Haemopoietic response was slow and unlike that produced in pernicious anaemia. The effect of liver was, in short, to reproduce with remarkable accuracy the syndrome of remission which occurred in the mild cases on diet alone. Such observations supply strong *prima facie* evidence of the action of an intestinal factor in the crude liver extract used. Should such action be due to folic acid, this substance will be shown to produce a comparable therapeutic action in cases of sprue in relapse.

Summary

The results of treatment are described in 62 cases of sprue in India, later followed for two years in England. Complete

remission following dietetic and/or parenteral liver therapy occurred in 69.4% of these cases and definite relapse in 16.1%, nearly all of whom first relapsed during transit to England.

A brief review of the effective factors of treatment is given and the action of parenteral liver therapy analysed.

REFERENCES

- Keele, K. D. (1946). *British Medical Journal*, 2, 111.
— and Bound, J. P. (1946). *Ibid.*, 1, 77.
Napier, L. E. (1943). *The Principles and Practice of Tropical Medicine*.
Report on Sprue in India, G.H.Q. (India). In press.

Medical Memoranda

A Case of Thrombophlebitis Migrans

The following case report may be of interest because it draws attention to the association of thrombophlebitis migrans with neoplasm, and because of an unusual event simulating an arterial block which occurred late in the illness.

CASE REPORT

A married shorthand-typist aged 25 was admitted to the hospital on April 16, 1948, with a three-weeks history of pain in the right side of the chest, an irritating dry cough, and increasing dyspnoea. In the past she had had bronchitis.

On examination she was febrile—100° F. (37.8° C.)—and was found to have a right pleural effusion with displacement of the mediastinum to the left. There was no clubbing of the fingers or evident enlargement of glands. A blood count showed: haemoglobin, 14.2 g. (96%); white cells, 12,300 (polymorphs 77%, lymphocytes 15%). The erythrocyte sedimentation rate was 6 mm. in one hour. The sputum showed mixed organisms, and β haemolytic streptococci in culture. Tubercle bacilli were not seen. An x-ray film confirmed the presence of fluid but was otherwise unhelpful. Pleural tap produced clear fluid, mainly lymphocytic, with some endothelial cells and an occasional polymorph. Culture was sterile. A provisional diagnosis of tuberculous effusion was made.

Owing to increasing dyspnoea, fluid was withdrawn from the chest on April 26 and 29 and May 4, 7, 12, and 14, always from the right side, although the effusion was bilateral by May 14. The specimen taken that day contained a fair number of red cells and 15% of endothelial cells.

On April 22 the patient developed pain in the right calf, thrombosis of the saphenous and femoral veins becoming complete over the next four days. Then thrombosis was detected in the left calf, and two days later there was swelling of the right arm, with pain over the right side of the chest, and haemoptysis, followed the next day by thrombosis in the left antecubital fossa. In view of the migrating form of the thrombosis a neoplasm in the chest was considered likely, but could not be demonstrated.

During the next week there was considerable improvement in the swelling of the legs; but a week later thrombosis of the right external jugular veins occurred, and after another week thrombosis of the innominate vein with dilatation of the veins over the front and back of the upper part of the chest.

On May 18 she complained of pain in the right hand, which was found to be blue and cold from the lower third of the forearm. No arterial pulsation could be felt with certainty below the axilla. There were no objective sensory changes over the affected hand or wrist. An arterial block was diagnosed, but embolectomy was out of the question, and the patient died some seven hours later.

Necropsy.—The principal findings were: (1) Bilateral pleural effusions and pericardial effusion. (2) A primary growth 1 cm. in diameter with a necrotic centre was growing from a minor bronchus of the right middle lobe of the lung. It was anaplastic, being partly spheroidal and partly squamous. (3) Multiple small nodules of growth were found in the parietal pleura and in the visceral surface of the pericardium. (4) Metastases were also found in the liver, both suprarenals, the left ovary, the head of the left femur, the lower deep cervical, paratracheal, mediastinal, and para-aortic glands, and the lymphatics of the pericardium and myocardium. (5) The superficial veins of the thorax were thrombosed, as were the jugular, the innominate, the vena azygos, and the main branches of the pulmonary veins. There was a large ante-mortem thrombus protruding from the superior vena cava into the right auricle of the heart. (6) Ante-mortem thrombus was also found in the axillary, brachial, and antecubital veins on the left, and also for about 1 in. (2.5 cm.) in the left femoral vein beneath the inguinal ligament. (7) The left axillary-brachial-radial artery was patent throughout its entire length and there was no evidence of embolus in it. (8) There was a very

small patent foramen ovale. (The skull was not opened, and other veins were not observed).

DISCUSSION

Two points of minor interest are: the youth of the patient—she was only 25—and the silent onset and rapid dissemination of the growth; for, apart from a recent bronchitis, from which she had made a complete recovery with a clear x-ray picture, she had been well.

The likelihood of a bronchial carcinoma being the primary cause of the pleural effusion was suggested by the onset of thrombophlebitis migrans, and was of course confirmed at necropsy.

Finally there was the occurrence of what appeared to be an arterial block in the left brachial artery, as evidenced by a cold, blue, painful hand and wrist, with a vague line of demarcation and absent arterial pulsation. It was debated at the time whether the block was due to an embolus from the lung or through a patent foramen, or whether it was due to an extension of the infected process to the artery wall from the neighbouring thrombosed vein. However, at necropsy no obstruction to the artery was demonstrable, nor could anything be found to account for this terminal episode.

C. A. HINDS HOWELL, D.M., M.R.C.P.
Physician, Ashford County Hospital.

Otitis Externa Granulosa

The presence of granulations within the external auditory meatus is usually regarded as indicative of chronic suppurative otitis media, and this disease is in fact the commonest cause of their formation. It seems less well known that such granulations may be found in the presence of an intact drumhead and normal middle ear.

Clark (1946) described a granulomatous type of purulent otitis externa which he had seen when in charge of a British Army E.N.T. centre in India. He reported "a sessile plaque attached to the outer surface of the drumhead itself, or small pedunculated masses arising from the meatal walls." Moffett (1943), also from India, described and illustrated cases of "granulating myringitis," but he emphasized that in this condition no diffuse external ear inflammation was present. He did, however, state that "granulations in the external auditory meatus associated with various types of otitis externa are by no means uncommon."

While Command otologist for Austria (and for part of the time for North Italy as well) over a 12-months period I observed 13 cases of otitis externa granulosa. During the same period I saw 118 cases of otitis externa *without* granulations and 82 cases of chronic otitis media. (Cases of chronic otitis media with otitis externa *secondary* to the middle-ear discharge have been recorded only under chronic otitis media. Cases of furunculosis occurring *without* a pre-existing otitis externa have been excluded. Cases of otitis externa confined to the pinna were often dealt with by the dermatologist and have also been excluded. The term "chronic otitis media" has been used comprehensively to include long-standing chronic suppurative otitis media and cases of "old dry perforations" that had become reinfected.)

Most of my cases, in all three groups, were seen during the hot weather, and an association with swimming generally seemed to be aetiologicaly significant. The cases with otitis externa granulosa were usually those in which the cutaneous inflammation was especially severe or neglected and in which there was a foul-smelling purulent discharge. Such a case was very likely to be diagnosed and treated as C.S.O.M. by the unwary.

The granulations in my cases were more often of the pedunculated type, arising from any part of the deep meatus and only in the minority of cases having attachment to the drumhead. Three of my 13 cases were associated with a meatal furuncle. No cases of Moffett's "granulating myringitis" were seen.

The differential diagnosis from chronic otitis media was made by cleaning with wool mops (using olive or arachis oil) and the gentle removal of granulations with aural crocodile forceps. One could then see (though perhaps not till the second or third treatment) an intact drumhead with normal landmarks. The externa cases responded to cleansing much quicker than cases

of chronic otitis media with granulations. Another point was that the odour of the pus in some cases early raised a suspicion that one was dealing with an entirely external otitis. Also the transmitted pulsation often seen on observing the pus coming from a middle ear is absent in a purely cutaneous suppuration. The presence of mucus in the discharge sometimes indicated that there was a middle-ear infection before the perforation could be seen.

A variety of C.S.O.M. that one must be very careful not to confuse with otitis externa granulosa is that with granulations protruding from an attic perforation or from a meatal fistula. One can diagnose the latter by noting that the discharge comes from a fistula or attic perforation on using Siegle's speculum. Gentle use of a probe will confirm this.

Much has been written on the subject of treatment of otitis externa, and I do not intend to enter into details. In my cases I became convinced that by far the most important thing was gentle but thorough daily cleansing of the meatus. But granulations, when present, were removed with crocodile forceps, and occasionally use was made of a silver nitrate bead fused on to a probe. This alone rapidly cured most cases.

NORMAN A. PUNT, F.R.C.S. Ed., D.L.O.,
Late Major, R.A.M.C.

NOTE.—Since the submission of this paper Johnston (1948) has written an excellent article on ear conditions, including otitis externa granulosa

REFERENCES

- Clark, J. V. (1946) *J. Laryng.*, 61, 586
Johnston, C. M. (1948) *British Medical Journal*, 2, 1049.
Moffett, A. J. (1943) *J. Laryng.*, 58, 453

Pre-pubertal Gonococcal Peritonitis

Peritonitis and salpingitis are rare complications of gonorrhoeal infection in female children (Bidwell, 1904; Hamilton, 1910; Koplik, 1910; Fraser, 1923; McLachlan, 1947). Few case reports have been published (Comby, 1901; Dowd, 1902; Hunner and Harris, 1902; Bidwell, 1904; Carpenter, 1904; Welt-Kakels, 1904), and statistics regarding incidence are difficult to obtain, but most would agree with McLachlan (1948, personal communication) that there is peritoneal involvement in about 1%. The following is the report of a case in which unilateral tubal involvement following an untreated gonococcal vulvo-vaginitis of short duration simulated acute appendicitis so closely that laparotomy was indicated.

CASE REPORT

A girl aged 7 was brought to the casualty department by her mother on April 27, 1948, with the complaints of vulval soreness which had begun twenty-four hours previously, abdominal pain of twelve hours' duration, and dysuria for three days. The mother had noticed that the child had a vaginal discharge at the time of complaining of dysuria; vomiting had occurred twice shortly before being brought to hospital. The bowels had been acting regularly. The mother denied having any symptoms, and stated that her husband was also healthy.

On examination the child appeared toxic. The face was flushed, the tongue furred and dry. The temperature was 101.8° F. (38.8° C.) and pulse rate 140. On abdominal examination, limitation of respiratory movement affecting the lower abdomen was seen and general abdominal pain complained of, but on palpation the maximum tenderness and rigidity were localized in the right iliac fossa. Inspection in the lithotomy position revealed a red, oedematous vulva, purulent vulvo-vaginal discharge, and redness of the vagina and urethral meatus. A film of the discharge showed pus cells and scanty Gram negative intracellular diplococci morphologically indistinguishable from gonococci. Culture confirmed that this organism was *Neisseria gonorrhoeae*.

A diagnosis of acute peritonitis was made, but, as appendicitis could not be excluded because of the major localization of pain in the right iliac fossa and a rising pulse rate, further examination under general anaesthesia, and possible laparotomy, were advised.

Under nitrous-oxide-oxygen-ether anaesthesia no abnormality could be felt in the right iliac fossa. Examination of the cervix by means of a small Ferguson-type speculum showed marked injection of the vaginal portion but no obvious discharge from the cervical canal. This suggested appendicitis rather than the rarer gonococcal salpingitis as the cause of symptoms. The abdomen was therefore opened through a right paramedian incision. A small amount of turbid colourless free fluid was found in the pelvis. In the right

iliac fossa the caecum and small bowel showed some patches of exudate and congestion. The right Fallopian tube was thickened and distended with purulent material, which was leaking from the fibrinated extremity. Bacteriological examination of this exudate showed numerous pus cells and typical Gram-negative diplococci, but no growth was obtained on culture. The left tube and ovary were normal, as was the appendix, which was not removed. The wound was closed in layers without drainage after a suspension of penicillin solution (500,000 units in 10 ml. of normal saline) had been introduced into the peritoneal cavity.

Convalescence was uneventful after the institution of a course of penicillin-sulphamezathine therapy, the child being discharged on the fifteenth day with a well-healed wound and no genito-urinary symptoms. Repeated examinations during convalescence and subsequently have shown no clinical or bacteriological sign of relapse.

Both parents were examined for gonorrhoea, with negative results; the epidemiological aspects could not, however, be satisfactorily completed, as the child had been on holiday some distance from home and it was impossible to trace contacts. As no history of interference was elicited, the inference was "accidental infection."

COMMENT

In the published reports the reason most often given for laparotomy has been the difficulty of accurate differentiation between acute appendicitis and salpingitis. Bloch *et al.* (1938) state that since Hatfield's case in 1886, 56 cases had been reported up to 1938, and in 20 of these laparotomy was performed because of incorrect or uncertain diagnosis. Notes (1938) added 16 cases of his own, in none of which did he perform laparotomy. Weill-Hallé *et al.* (1940) reported a further case treated successfully with sulphapyridine. A comprehensive summary of the condition is provided by Norris (1913) and by Maguire (1944), who stress the difficulty of excluding appendicitis as the cause of peritoneal signs and symptoms. The latter adds two cases, and mentions another of interest in which appendicitis was misdiagnosed as gonococcal peritonitis, principally because of the presence of leucorrhoea, and treated conservatively for four days before the need for laparotomy became evident.

In the case reported by us the possibility of the symptoms being due to gonococcal salpingitis was fully realized. The history, the localization of the abdominal findings, and the lack of cervical discharge made it impossible to exclude appendicitis completely. A therapeutic test with penicillin was considered, but, with a rising pulse rate, the delay of even a few hours which would have been prejudicial in a case of acute appendicitis seemed a contraindication to conservative treatment.

Our thanks are due to Dr. A. E. W. McLachlan for much helpful advice and encouragement, and to Mr. P. H. R. Ghey for permission to publish details of the case.

MICHAEL SOLOMONS, M.B., B.Ch.,
Assistant Master, Rotunda Hospital;
Late Gynaecological Registrar.

Addenbrooke's Hospital,
Cambridge.

J. F. R. WITHEYCOMBE, F.R.C.S.,
Resident Surgical Officer

REFERENCES

- Bidwell, L. A. (1904) *Brit. J. Child. Dis.*, 1, 435.
Bloch, H., Pacella, B. L., and Locastro, B. (1938). *Arch. Pediat.*, 55, 714.
Carpenter, G. (1904) *Brit. J. Child. Dis.*, 1, 437.
Comby, J. (1901). *Arch. méd. Enf.*, 4, 513.
Dowd, C. N. (1902) *Ann. Surg.*, 35, 276.
Fraser, A. R. (1923) *A. M. J.*, 1, 1. Kimpton, London.
Hamilton, B. W. (1910) *J. Child. Dis.*, 1, 1.
Hatfield, M. P. (1886). *Arch. Child. Dis.*, 1, 1.
Hunner, G. L. and Harris, N. MacL. (1902). *Bull. Johns Hopk. Hosp.*, 13, 121.
Koplik, H. (1910). *Diseases of Infancy and Childhood*, 3rd ed. Kimpton, London.
McLachlan, A. E. W. (1947) *Handbook of Diagnosis and Treatment of Venereal Diseases*, 3rd ed. Livingstone.
Maguire, D. L. (1944). *J. Pediat.*, 24, 650.
Norris, C. C. (1913) *Gonorrhoea in Women*. Saunders, Philadelphia.
Noles, B. (1938). *Amer. J. Obstet. Gynec.*, 35, 331.
Weill-Hallé, B., Papaioannou, A., and Lagroua (1940) *Bull. Soc. Pediat.*, 37, 511.
Welt-Kakels, S. (1904). *N.Y. med J.*, 80, 823.

The U.S. medicinal chemicals industry manufactured £50,420,000 worth of drugs and other medical products during 1947, according to a report just compiled by the Bureau of the Census of the U.S. Department of Commerce. This represents an increase of 860% over the output for 1939, when the last census was taken. This phenomenal growth is partly due to the discovery of penicillin and other antibiotics and the increased use of other medical products, such as vitamins. The average number of workers in the industry for 1947 was 9,414 as compared with 1,802 in 1939, wages were 12 times larger than in 1939, and the total expenditure for new plant and equipment during the year totalled £3,375,000.—B.U.P.

Reviews

ESSAYS ON SOCIAL MEDICINE

Measurements of the Public Health. Essays on Social Medicine By F. A. E. Crew, M.D., D.Sc., Ph.D., F.R.C.P.E., F.R.S. (Pp. 243; 57 figures. 18s.) Edinburgh and London: Oliver and Boyd. 1948.

Professor Crew follows the excellent plan of taking as the text for his book the data published by the Registrar-General for Scotland. He reproduces the more important tables, comments on their contents, points out how the vital statistics differ from those of other countries, and discusses their social and biological implications. For instance, the figures of multiple births lead the author to explain the difference between identical and fraternal twins and triplets, and that leads on to the question of Nature *versus* nurture. The chapter on the sex ratio opens with statistics of the ratio at birth and to the post-natal population, and common-sense remarks on the immediate causes are followed by a lucid account of the sex-determining mechanism. This leads to a brief study of the inheritance of haemophilia, and the chapter ends with a discussion of the usefulness of sex. No doubt one travels a long way from mere figures—thus, the statistics of divorce lead to observations on the origin of the family—but for readers with no passion for sums (perhaps a majority of medical students) it is surely the right method. It will persuade many that dull arithmetic can be both a foundation for and a means of testing very interesting social theories. It was the method of that great pioneer, John Graunt.

It may be a little ungracious to criticize the detail of an interesting book, but, as actuaries are often amused by lay misunderstanding of that overworked phrase "the expectation of life," it is necessary to say that the lower half of p 15 is incorrect. The expectation of life at any age is not the "probable number of years" a person of that age may expect to live, and actuaries do *not* construct life tables for the primary purpose of computing expectations of life. The expectation of life at age x is the sum of the lengths of life of all who died older than x , divided by the number who reached age x ; that is, it is the arithmetic mean of the frequency distribution of lengths of life where x is the origin of measurement. If, and only if, the frequency distribution were symmetrical, mean and mode (the tallest ordinate of the frequency curve) would coincide. The distribution of ages at death is very skew, and at different ages the mode is greater or less than the mean. For instance, at age 30 (E.L. No 10, males) the expectation of life is 38.21; the mode of the curve of deaths is between age 74 and age 75, so the "probable" after-life time is somewhere between 44 and 45 years. But at age 75 the expectation is 6.43 years, and the "probable" after-life time is less than a year.

However, a reader will not come to this book to learn statistics, but to gratify curiosity as to what vital and medical statistics suggest to an inquiring mind, and his interest should be stimulated by it. On the whole, Professor Crew's outlook is optimistic—possibly over-optimistic. He does indeed warn the reader that great pestilences may arise again, but he has confidence in our defences. "The freedom from the epidemic diseases which the Scottish population now enjoys rests on the unremitting attention of the public health authorities and their medical staffs and upon the intelligent awareness of the general public concerning the nature of these diseases and the means that have been made available for their control." But there is always the possibility that "flu" may become influenza. Between 1848 and 1889 nobody in Great Britain bothered his head over influenza, and by 1914 the younger generation had forgotten or never knew the influenzas of 1890 and 1891. Young people now do not remember the autumn of 1918.

MAJOR GREENWOOD

THE STRUGGLE TO SURVIVE

Reproduction and Survival By R. Christie Brown, F.R.C.S., F.R.C.O.G. (Pp. 108. 6s.) London: Edward Arnold. 1948.

The author believes that the statement that reproduction is a physiological and a healthy process requires amplification. Without wishing to stress the dangers of childbearing, he thinks it necessary at the present time, when the public is being taught

that childbirth is simple and safe and should be more or less painless, to call a halt and review Nature's purpose in reproduction: to ensure survival of the race. In doing so Nature has no care for the parent. Numerous examples are cited in support of this view, from the mites that eat their mothers during hatching to the salmon that, after spawning, rapidly ages and dies, and the drone which, after fertilizing the queen, falls back to the earth dead, leaving most of his entrails attached to his mate. Nature, besides being ruthless, is on the whole stupid, favouring the survival of the physically strong and eliminating the weak. Medicine has different values, however, and recognizes that the physically weak are often mentally superior and therefore worth preserving.

While generally supporting this view—that Nature needs watching—the author makes a curious exception. He assumes, probably correctly, that the embryo elaborates its own hormones and is therefore dependent on itself for its intra-uterine survival. Although he administers hormones in early pregnancy to prevent miscarriage, he would withhold endocrine therapy after the eighteenth week, when elaboration of hormones by the corpus luteum ceases and the foetus has to rely on its own resources. He advances the interesting view that the stronger and healthier the foetus the more abundant the hormones produced in the placenta, and in consequence the more the mother suffers during her pregnancy; and, on the contrary, the less she suffers in pregnancy the less effective are the foetal hormones. But as the mother is then less prepared for labour—the cervix less softened, the pelvic joints less relaxed, and the uterine contractions less efficient—she loses in labour what she gains in pregnancy.

In the final chapter the philosopher becomes again the practical obstetrician who gives wise advice on how Nature's attempts to eradicate those she considers least fitted to survive may be frustrated. The work will appeal to those who want something different from the ordinary textbook. To others who are not interested in the arguments and speculations of the earlier chapters the last three will more than justify the small expenditure necessary to give it a place on their bookshelves.

F. J. BROWNE.

ELEMENTARY ANAESTHESIA

Elementary Anaesthesia By W. N. Kemp, M.D., C.M. (Pp. 289, 100 figures. 55.00 or 27s. 6d.) Baltimore: The Williams and Wilkins Company. London: Baillière, Tindall and Cox. 1948.

This book gives a good picture of the modern transatlantic practice of anaesthesia and analgesia. It opens with a brief historical résumé, which is followed by an account of the physiological and pharmacological background to anaesthesia, and a description of the signs of narcosis. Premedication and modern techniques with general and local agents are well described, although no mention is made of refrigeration beyond a passing reference to ethyl chloride sprays. Curare is discussed adequately, but it is unfortunate that both "standard" and "high potency" solutions are referred to in "Squibb units" and not in milligrams. It should surely be possible by now for international agreement to be reached on such an important matter as the standardization of curare solutions.

It is perhaps inevitable that many British readers will not agree with some of Dr. Kemp's conclusions. He has, for example, a low opinion of trichlorethylene—"the only indication for the use of this agent is the total absence of other less toxic and more reliable general anaesthetic drugs such as ether, chloroform, cyclopropane, etc." Under anaesthesia for thyroid surgery the somewhat startling statement is made: "With the advent of propyl thiouracil, thyroidectomy will soon be a rare operation." This does not appear to be the present view of such American authorities as the staff of the Lahey Clinic. Dr. Kemp is a staunch supporter of the existence of "status lymphaticus" and devotes a whole chapter to the subject, including an account of some original work. He regards the cause of the condition as a temporary hypofunction of the adrenal cortex in a child already handicapped by inadequate thyroid function, the latter due to insufficiency of dietary iodine.

The binding, printing, paper, and illustrations are all first class, but there are many typographical errors, particularly in

proper names. For example, a casual reading showed that Henry Hill Hickman, Humphry Davy, von Liebig, Fourneau, R. R. Macintosh, R. Machray, and Joseph Priestley are all misspelt. This is a pity, as it tends to convey an impression of slovenliness which the book does not deserve.

C. LANGTON HEWER.

ABDOMINAL HERNIA

The Surgery of Abdominal Hernia. By George B. Mair, M.D., F.R.F.P.S.G., F.R.C.S. (Ed.). (Pp. 408. 138 figures. £1 5s.) London: Edward Arnold, 1948.

We can recommend this book as a reasonable and well-documented consideration of present views on all types of abdominal hernia. The author is for the most part justifiably critical of many modern methods, but he shows considerable partiality for the method of repair by whole skin grafts—a method of which he was a pioneer in Britain. It is perhaps unwise to allow thirty pages in a small book to such a full description of a type of operation which yet has to prove its merit in the surgical world.

After a chapter of general observation we are instructed in the management of strangulated hernia, and then chapter by chapter the author describes the various types of hernia, including their complications and a full account of the best line of treatment. It is impossible in a short review to discuss the many debatable views expressed, but it is clear that he has made a conscientious and informed attempt to assess correctly the merits of the various operations. The author states (p. 20) that a cold abscess will not give an impulse on coughing. The reviewer well remembers every member of an intelligent Fellowship class diagnosing as a femoral hernia what was in reality a cold abscess simply because it gave a good impulse on coughing.

The book is of handy size, printed on good paper, well illustrated, and there is a good list of references at the end of each chapter. In the bibliography of diaphragmatic hernia we missed the most valuable contribution of Dunhill.

ZACHARY COPE.

BACTERIOLOGY

Zinsser's Textbook of Bacteriology. Ninth edition. Revised by David T. Smith, M.D., Donald S. Martin, M.D., Norman F. Conant, Ph.D., Joseph W. Beard, M.D., Grant Taylor, M.D., Henry I. Kohn, Ph.D., M.D., and Mary A. Poston, M.A. (Pp. 992. Illustrated. \$10.) New York: Appleton-Century-Crofts, Inc. 1948.

This well-known textbook, first published in 1910, the work of Zinsser, together with Hiss and later Bayne-Jones, is now dedicated to its original authors and re-compiled by seven of the present staff of the Duke University School of Medicine. It has been extensively revised, and its illustration, lavish even by American standards, includes many beautiful photographs and much useful graphic and tabular matter, particularly with reference to the epidemiological and public health aspects of its subject. In scope and scale it is much more than an ordinary textbook, and the professional bacteriologist will find it a useful guide to the best current American practice. The section on fungi, often lacking or inadequate in other textbooks, is particularly full, and nearly a fifth of the whole book is devoted to rickettsiae and viruses. There is very little to criticize, but we may note that "reversed selective bacteriostasis" is a myth, that the pigment produced by *Bact. melaninogenicum* is not melanin, and that *B. subtilis*, as far as we know, has nothing to do with hay fever. There are very extensive lists of references and an appendix on methods: the table of contents occupies 30 pages and the index 40.

L. P. GARROD.

1. Surgeon's Domain, by Dr. Bertram M. Bernheim (pp. 217; 9s. 6d. Kingswood, Surrey: The World's Work (1913), Ltd.), is a frank and amusing commentary on American surgery as seen through the eyes of one who, as he admits himself, came in by the back door. Dr. Bernheim has been for many years attached to the Johns Hopkins Medical School, and gives personal reminiscences of many of its great men. His cheerfully tolerant attitude towards dichotomy, commercialized operating, and slipshod diagnosis may alarm some of his readers in Britain and embarrass some of his colleagues in America, but the narrative runs with a cheerful swing that cannot fail to interest the surgical reader.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Text-Book of Ophthalmology. By Sir W. S. Duke-Elder, K.C.V.O., M.A., D.Sc., Ph.D., M.D., Ch.B., F.R.C.S. Vol. 4. (Pp. 1,154. 70s.) London: Henry Kimpton. 1949.

This volume is concerned with the neurology of vision and motor and optical anomalies.

Nutrition and Physical Fitness. By L. J. Bogert, Ph.D. 5th ed. (Pp. 610. 21s.) London: W. B. Saunders. 1949.

A non-technical work.

A Comprehensive Review of Dentistry. Edited by V. F. Trapozzano, D.D.S., F.A.D.P. (Pp. 661. 32s. 6d.) London: W. B. Saunders. 1949.

In catechism form, written for United States dental students.

Histopathology of Irradiation from External and Internal Sources. Edited by W. Bloom, M.D. (Pp. 808. 48s.) London: McGraw-Hill. 1948.

Report of three years' research under the direction of the Atomic Energy Commission.

Muscles: Testing and Function. By H. O. Kendall and F. P. Kendall. (Pp. 278. 41s.) London: Baillière, Tindall and Cox. 1949.

Illustrated descriptions of muscle-testing procedures and their functional significance of muscle weakness and contracture.

Diagnostische und Therapeutische Eingriffe des Internisten. By E. Regenbogen. (Pp. 262. M. 14.40.) Stuttgart: Georg Thieme. 1949.

Clinical methods for the house officer.

Foundations of Psychology. Edited by E. G. Boring and others. (Pp. 632. 24s.) London: Chapman and Hall. 1948.

An elementary textbook.

Lung Dust Lesions (Pneumoconiosis) versus Tuberculosis. By L. G. Cole, M.D., F.A.C.R. (Pp. 474. \$10.00.) New York: American Medical Films. 1948.

Differential diagnosis is emphasized.

Cirugía de las Parálisis Espásticas. By F. B. Mora. (Pp. 156. 65 cents.) Jose Janes. 1948.

Surgery of spastic paralysis.

L'Aesthésie au Cyclopropane. By Dr. Lavoine. (Pp. 126. N. price.) Paris: Vigot. 1949.

A short account of cyclopropane anaesthesia.

Hematology. By C. C. Sturgis, M.D. (Pp. 915. 63s.) Oxford: Blackwell. 1949.

A comprehensive work.

Atlas der Augenkrankheiten. By R. Thiel. 5th ed. (Pp. 22. M. 60.) Stuttgart: Georg Thieme. 1948.

An atlas of diseases of the eye.

Les Maladies de L'Appareil Cardio-Vasculaire et les Maladies du Sang. By J. Trabaud and J. R. Trabaud. Vol. 4. 2nd ed. (Pp. 216. No price.) Paris: Vigot. 1949.

A handbook of treatment.

Die Durchleuchtungstechnik der Thoraxorgane. By E. A. Zimme. (Pp. 119. 12.50 Swiss francs.) Basle: Benno Schwabe. 1949.

An account of the uses of fluoroscopy.

Dermatologische Kosmetik. By L. Kumer. (Pp. 192. Sch. 30.) Vienna: Wilhelm Maudrich. 1949.

A short book on dermatology, mainly concerned with treatment.

Society and the Criminal. By Sir Norwood East, M.D. F.R.C.P. (Pp. 315. 10s.) London: H.M.S.O. 1949.

Anaesthetics for Medical Students. By Gordon Ostler, M.B. Chir., D.A. (Pp. 108. 7s. 6d.) London: J. and A. Churchill. 1949.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JUNE 4 1949

AN A3 NATION?

The physical measurements and state of health of recruits to the fighting Services have often been used as evidence of the general health of the nation. In fact, in both peace and war such figures are of very doubtful value. In peacetime—before 1939, that is—the recruits offering themselves were self-selected and certainly not a cross-section of the young male population. In addition, the standards set for their acceptance or rejection varied from time to time with the needs of the Services for men. During war the examinations are spread over a very much wider field, but many occupations are reserved and the men in them not called up. Once more this limitation of the men medically examined must seriously affect the picture and make it inapplicable to the male population as a whole. The best example of such bias was probably the famous "C3 nation" report¹ of the first world war, for this was based upon the medical boards' returns for 1918, when the men examined were the residue of repeated examinations and the physically fit had already been enlisted.

With the coming into force in 1939 of the Militia Training Act a much more hopeful prospect of obtaining satisfactory statistics at once became apparent. Under the regulations every male aged between 20 and 21 years of age was obliged to register for military training. Owing to the outbreak of the second world war the examination of the, roughly, 300,000 young men concerned was not completed, but some 90,000 had been through the medical boards, their priority being based merely upon date of birth. A few exempted or deferred trades—the most important of which would be farm workers—prevent this sample being strictly representative in the statistical sense, but it is certainly good enough to give a reliable picture of the young men of 1939. These data were therefore made available to the Medical Research Council by the Ministry of Labour and have been fully analysed by Dr. W. J. Martin,² working in the Council's Statistical Research Unit at the London School of Hygiene and Tropical Medicine.

Martin's report is certainly a sound corrective to the pessimism created by the "C3" report of 1920, and, indeed, is encouraging in that it is based upon data obtained so soon after the years of economic depression in the early nineteen thirties. Slightly over 81% of those examined were put in Grade I—men fully fit or with remediable and only minor disabilities. Nine per cent. fell in Grade II—men with poor eyesight, deformities of the feet, or other moderate defects—while 5.2% came into Grade III and 2.7% into Grade IV—men with marked disabilities or serious disease. (A proportion of these would, of course, have been absent from the examinations—in sanatoria and

hospitals—and consequently there is some understatement of the number in the final grade.) Subdivision of these figures shows a rather higher standard of fitness in the countryman as compared with the townsman, and it is interesting to note that this superiority is quite, indeed particularly, distinct in the measurements of eyesight. Thus men with a visual acuity of 6/6 or better in both eyes formed 73% of the total in the rural districts, 67.5% in the small towns, and only 62.5% in the large towns.

The average physical measurements of all these young men are expressed by a weight of 135.7 pounds (61.6 kg.), a height of 5 ft. 7.5 in. (1.69 metres), and a chest circumference of 35.6 in. (89 cm.). In these measurements, too, the country dweller holds some advantage, and migrants from their place of birth were on the average physically superior, though slightly, to the stay-at-homes. This difference may bear upon the level of local mortality and morbidity rates, the migrants being, as has been believed in the past, the more physically fit. It is this mobility of the population that perhaps accounts for the relatively small differences in physique displayed by Martin's detailed regional analyses. The maximum difference in the mean stature is only about one inch (2.5 cm.)—from a mean of 68.1 in. (1.70 metres) in the home counties to 67.0 in. (1.68 metres) in Lancashire. In weight the differences are rather larger but not really great, the highest averages being 138½ to 138¾ lb. (62.88–62.99 kg.) in the southern and home counties, and the lowest 132 lb. (59.93 kg.), again in Lancashire. Taking the three countries as a whole, there is surprisingly little difference between England, Wales, and Scotland.

These figures, though confined to males of a particular year of life, are on an unprecedented scale for this country, and should clearly form a very useful yardstick against which to measure progress or deterioration. It may be hoped, therefore, that further analyses will some time be made of the post-war generation of young men. The value of this field of observation has also been recently, perhaps unexpectedly, shown in quite another connexion. In the investigation by Drs. Alice Stewart and J. P. W. Hughes of tuberculosis in the boot and shoe trade, published in this *Journal* last week (p. 926), it was found that the physique of men called up in 1942–3 was rather lower in the shoe-makers than in other trades. Thus it seems that this occupation may to some extent attract men of subnormal physique—a fact which might well contribute to the excess of phthisis among them. Martin's pre-war figures will also be of interest to the worker in anthropology and to those who have the rather more prosaic, but very important, task of seeing that machines, benches, uniforms, etc., are made to fit the man.

SURGERY IN THE TREATMENT OF
MENINGITIS

The development of the different sulphonamides, penicillin, and streptomycin has been of such rapidity that it is difficult to appreciate the improvement in the prophylaxis and treatment of many types of infections which have followed their introduction. Improved prognosis has emphasized the importance of early diagnosis and stimulated investi-

¹ *Physical Examination of Men of Military Age by National Service Medical Boards*, 1923, London: H.M.S.O.

² *The Physique of Young Adult Males*, Med Res Coun Memo No. 20, 1949, London: H.M.S.O. Price 1s 3d

gators to determine the most efficient methods of systemic and local chemotherapy. In infections of the meninges, formerly so often fatal, the alteration in prognosis has been remarkable. Further, the risks of meningeal infection following brain wounds, basal skull fractures, and the surgical therapy of brain abscesses, as well as in other intracranial operations, have been greatly reduced. In a University of London lecture published in the opening pages of this issue Sir Hugh Cairns discusses the pathology and treatment of meningitis in the light of the knowledge gained since the introduction of chemotherapy.

Apart altogether from the infection of the meninges, there arises in most cases a varying degree of obstruction to the circulation of the cerebrospinal fluid. This is important not only because it leads to an internal hydrocephalus but also because it may prevent antibiotics introduced into the meningeal spaces from being adequately distributed through them. While in the early stage of the inflammatory processes such obstruction will be due to pus and fibrin, organization of granulation tissue at a later stage may cause permanent obstruction by fibrous adhesions. Such a possibility must be borne in mind and treatment given if necessary, for death from hydrocephalus may occur in spite of successful sterilization of the meninges. Even minor degrees of obstruction to the flow of cerebrospinal fluid from the ventricles to the subarachnoid space may be associated with the formation of a pressure cone at the tentorial opening or the foramen magnum, with a consequent aggravation of the block. Cairns stresses the tendency for meningitis to recur. This may be due to the persistence of the infective process which gave rise to the meningitis. The importance of adequate therapy for the primary lesion—for example, a chronic otitic infection—is thus clear. But recrudescence of infection may be the result of the encapsulation of organisms by non-vascular fibrin, which protects them from antibiotics: therapy must continue until the fibrin is absorbed or organized into a fibrous tissue capsule for the contained organisms. Alteration of the patient's posture may prevent the gravitation of pus and fibrin into the posterior portions of the ventricles and subarachnoid space.

The operations which may be required during the course of meningitis include such diagnostic procedures as lumbar and ventricular puncture and pneumo-encephalography, as well as the introduction of antibiotics into the cerebrospinal-fluid spaces. While lumbar injection of the latter may suffice, evidence of a developing spinal block, obtained manometrically and by examination of the cerebrospinal fluid, indicates the need for cisternal or ventricular injections. Meningitis may often follow head injuries in which there is a fracture of the anterior cranial fossa, and in cases of cerebrospinal-fluid rhinorrhoea or of aerocele dural repair must be carried out early to prevent this complication. If these signs are absent, and if there is no clear radiological indication of the site of a fistula between the meninges and the nose or one of its accessory sinuses, the indications for prophylactic surgery are by no means clear.

Perhaps in due course the most important aim of surgery in the treatment of meningitis will be to overcome obstruc-

tions to the cerebrospinal-fluid circulation. In the acute stage of such obstruction drainage of the inflammatory exudate by lumbar or ventricular puncture will suffice, but in the stage of formation of fibrous adhesions more radical treatment will be required. The site of the obstruction must be accurately determined—pneumo-encephalography is useful for this purpose—and it is also important to differentiate between the cases of communicating and non-communicating hydrocephalus. In this connexion Cairns suggests that antibiotics may be used as trace substances to replace the better-known Dandy dye test.¹ It seems likely that the obstruction to the circulation of cerebrospinal fluid in many cases of meningitis will be in the subarachnoid space—even when the hydrocephalus is of the non-communicating type; and when an obstruction in the neighbourhood of the cisterna magna exists it is probable that other cisternae in the posterior cranial fossa and above it will frequently be stenosed. In such circumstances an opening into the fourth ventricle through the obliterated cisterna magna will do no more than bring the ventricle into continuity with the subdural space. The recent advances in the treatment of meningeal infection may thus lead to the extension of the pioneer work of Dandy in the treatment of internal hydrocephalus. Perhaps a reduction in the secretion of cerebrospinal fluid which Dandy and, later, Putnam and Scarff² have obtained in cases of communicating hydrocephalus by cauterizing the choroid plexus may provide a solution in some cases.

INDUSTRIAL REHABILITATION

Occupational health may be difficult to define, but those whose aim it is to promote it are concerned, in the words of the Council's useful report on "A Comprehensive Occupational Health Service,"³ with the study of individuals in relation to the physical and psychological demands of their occupations, and of work and the work environment in relation to their effects on health. Many industrial workers with some sort of disability mental or physical, suffer from ill-health rather than occupational ill-health. They have made the best of things; they work in a job where their limitations are recognized and their capabilities allowed full expression and they feel content. There are others—and in many cases their physical disabilities are slight—who find it impossible to get back to work after an illness or accident. The industrial rehabilitation service takes care of these and it can also help those who, because of some long standing condition, are gradually overcome by a sense of inadequacy to such an extent that they feel incompetent to continue working even if the physical disability may be no worse. This service is run by the Ministry of Labour which established a centre at Egham, Surrey, in 1943 and since August of last year has opened eleven others, including the one at Leicester described on another page.

The work is still in the experimental stage, but the results so far seem to justify its being continued and indeed expanded. Most of the cases admitted to the Leicester

¹ *Ann. Surg.*, 1918, 68, 569.

² *Ann. J. Dis. Child.*, 1942, 63, 297.

³ *British Medical Journal Supplement*, 1949, 1, 296.

² *British Medical Journal*, 1949, 1, 965.

³ *British Medical Journal Supplement*, 1946 1, 187.

unit have some mild psychological disability. The unit finds that a considerable number of these have become neurotic since being given a certificate for "light work" by their doctors. In many factories light work is menial work, and workers are apt to become demoralized by having to do it for long. Unfortunately, the only alternative open to most of them is to stay at home, though some of the Leicester staff thought that this would be the lesser evil. The ideal would be to send all those who wish it to a local rehabilitation unit, facilities for which do not exist at present in most places. Though giving the temporarily disabled light work seems to help the production drive, it may well in the end hinder it by creating a large body of men who, having once slipped from their industrial niche, are unable to return to it.

The Government's policy of full employment is too limited in scope: it refers to men rather than to ability. Many industrial workers are vaguely discontented because their talents are not fully employed. The rehabilitation services can help to solve the problem, though the best solution may lie deeper—in modifying industrial methods, on which much investigation is being done by industrial psychologists. An important function of these units is assessing ability. They give the man a chance to show what sort of work he is best able to do, and this is an important factor in restoring his self-confidence. It is essential also for doctors to know something of conditions in the factories where their patients work, and they can gain useful information and help from employment exchanges and the Ministry of Labour's Disablement Rehabilitation Officers. The fruitful results of collaboration with these officers are recorded by Dr. Harris and Miss Lane at page 982.

Whether the Ministry of Labour ought to be in charge of rehabilitation is questionable. It has established these units under the Disabled Persons (Employment) Act, 1944. Meanwhile the Minister of Health is urging hospitals to increase their facilities for rehabilitation. Though both Ministries are in Whitehall it sometimes seems that technical advances in the last 100 years have done little to speed communication between them, and it is unlikely that each could run its own rehabilitation service without duplication, confusion, and waste. The Minister of Health has stated recently in a memorandum² to hospitals that "every practitioner should assume responsibility for seeing his patients through to the point where they can either resume their former employment or be passed to the Ministry of Labour's disablement resettlement officers for placing in some suitable alternative occupation." Yet many of these are precisely the patients that ought to go to industrial rehabilitation units. The report³ of the Association's Rehabilitation Committee in 1946 emphasizes that the medical services of industry should be part of a comprehensive health service administered by a single Government Department, and the Council in its report on a comprehensive occupational health service expressed its opinion that the Ministry of Health is the appropriate central authority to plan and supervise such a service. It would seem to be proper for industrial rehabilitation to be a part of that service and come under the Ministry of Health.

SECRETARY OF THE MEDICAL RESEARCH COUNCIL

Under the National Health Insurance Act of 1911 provision was made for a medical research fund, and in 1913 the Medical Research Committee was established to administer this fund. Walter Morley Fletcher was appointed the first secretary of the committee in 1914, and when the Ministry of Health was established in 1919 the responsibility for Government-aided medical research was placed in the hands of a committee of the Privy Council. In 1920 the Medical Research Committee was reconstituted as the Medical Research Council and incorporated by Royal Charter. The secretary of the M.R.C. is also secretary of the Committee of the Privy Council for Medical Research. The Medical Research Council itself is responsible for the election of the secretary. It consists of twelve members, nine of whom are chosen for their scientific and medical distinction; of the other three one must be a representative of the House of Lords and one of the House of Commons. This rule of election removes the risk of political influence and interference with the work of the M.R.C., and the fact that its secretary is also secretary of the Privy Council committee provides for direct contact between him and the Lord President of the Council, the Minister responsible to Parliament for the work of the M.R.C. These sound provisions were the result largely of the wise statesmanship of the late Sir Walter Fletcher.

Sir Edward Mellanby retires from his position as secretary of the Medical Research Council on Oct. 1 and will be succeeded in this onerous and responsible post by Professor H. P. Himsworth, now Director of the Medical Unit of University College Hospital. Edward Mellanby, the second secretary of the M.R.C., was appointed in 1934. At that time he occupied the Chair of Pharmacology at Sheffield and was honorary physician to Sheffield Infirmary and a member of the M.R.C. At the time of his appointment he had already had a distinguished career as a research worker, research that had been largely directed to nutritional problems. In 1918 he showed that rickets was due to the absence from the diet of a fat-soluble factor, which McCallum and his co-workers subsequently proved to be vitamin D. He found phytic acid was one of the factors responsible for the rachitogenic influence of cereals which he had demonstrated in 1922. Mellanby summarized in his Croonian lectures to the Royal Society in 1943 his work on the effect of vitamin A on the growth and shape of bones and so indirectly on the function of the central nervous system. In 1946 we had the privilege of publishing¹ his discovery of the ill effect of agerized flour on dogs, observations subsequently confirmed by himself² and other workers. One outcome of this is that the food and drug administration in the U.S.A. has introduced legislation against the use of agene in the bleaching of flour. It is indeed remarkable that Sir Edward Mellanby, in spite of the heavy and growing administrative duties of the secretary of the M.R.C., has nevertheless during his period of office been able to make such important contributions to

¹ *British Medical Journal*, 1946, 2, 835

² *Ibid.*, 1947, 2, 238.

³ *Ibid.*, 1948, 1, 942.

⁴ *Ibid.*, 1948, 1, 983.

research; and it is of interest to note that his distinguished wife, Lady Mellanby, has shared his interest in nutritional problems in her series of investigations into dental caries. The severest testing-time for the Medical Research Council came in the war of 1939-45, and under its secretary's enlightened guidance the Medical Research Council threw itself into solving the many problems of health and disease confronting this country during that period of storm and stress. The work done during this time was recorded in a special report of the Medical Research Council and summarized in these columns.³

Professor H. P. Himsworth, whose election as the new secretary of the M.R.C. will be widely welcomed by the medical profession, has a difficult but inspiring task in succeeding to such eminent predecessors in his office. His published work gives an impressive record of research into various aspects of diabetes, on which subject he gave the Goulstonian lectures of the Royal College of Physicians in 1939. Another subject to which Professor Himsworth has made important contributions is liver disease, and in a review in these columns⁴ of his monograph on this, published in 1947, it was stated: "The crucial moment in Professor Himsworth's researches was when he decided that the best way to begin studying T.N.T. poisoning in man was to feed T.N.T. to rats." His contribution on another of his themes—thiouracil in thyrotoxicosis—to the Annual Meeting of the B.M.A. at Cambridge last year was published in the *Journal* of July 10, 1948. His work made him ideally suited as President of the Section of Experimental Medicine of the Royal Society of Medicine. In greeting Professor Himsworth as his successor the medical profession will wish Sir Edward Mellanby years of success in the research work to which he will now be able to give much more of his time.

CANCER OF THE CERVIX

The study of the social factors associated with cancer of specific sites has provided clues which have made possible the prevention of whole groups of cases, as, for example, industrial cancers of the skin, and there is evidence to suggest that in a similar way the commoner cancers of the mouth, stomach, lung, and uterus may be discovered to be preventable. Elsewhere in this issue Dr. R. G. Maliphant reports on a series of 1,200 cases of cancer of the uterine cervix which he has studied in order to determine the relation of this condition to age, marriage, and child-bearing. The Registrar-General's mortality figures have shown that cancer of the uterus is commoner in married than in single women, and that under the age of 55 it is relatively rarely associated with infertility. It is unfortunate that these figures cannot be separated into cases of cancer of the cervix and cancer of the body of the uterus, but probably the differences would be even greater in the case of cancer of the cervix. Nor can it be determined from the Registrar-General's data whether marriage contributes to the production of cancer of the uterus in any way other than by predisposing to child-bearing. On such points a clinical inquiry can be of great value.

The possibility that marriage could be of importance in itself, apart from childbirth, has recently been stressed by

Kennaway.¹ He has collected statistics from many countries indicating that the incidence of cancer of the uterus in Jewesses is only about a third of that in other sections of the community—a low incidence which appears to be due entirely to the infrequency of cases of cancer of the cervix. Handley² believes that this is a consequence of the male practice of circumcision, and he cites the low incidence of the condition in the natives of Fiji, where the men are circumcised, in contrast to that in the Hindu immigrants. Kennaway, on the other hand, suggests that the Jewish practice of abstinence from intercourse during the first half of the menstrual cycle is a more likely explanation. If either of these hypotheses are true (and there are some who maintain that they are unnecessary and that heredity is a sufficient explanation) it must be expected that marriage will contribute to the development of cancer of the cervix even in the absence of child-bearing.

According to Maliphant's findings marriage does so contribute. In his series of cases marriage more than doubled the risk, while child-bearing increased it tenfold; moreover, the greater the number of children the greater the risk became. To obtain these results he compared his series, collected over the years 1922-46, with the Family Census conducted by the Royal Commission on Population in 1946. This difference in time detracts from the confidence which can be placed in the results, particularly that of increased risk with each addition to the size of the family—a finding contrary to Lane-Clayton's³ experience. For though the marriage and infertility rates may not have altered appreciably, the average size of family has certainly fallen. Maliphant recognizes the difficulty and makes such allowances as can be made, but, good though his reasoning is, some doubt must remain until a more exactly controlled series can be obtained.

He does not believe his findings indicate that any prophylactic measures are practicable other than early diagnosis. Yet if marriage in itself increases the risk, and Jewish women, who do not notably refrain from marriage, are largely immune, it would seem reasonable to inquire whether there is not something that can be learnt from Jewish customs. There remains also the Registrar-General's observation that uterine cancer is commoner among women of the poorer social classes, single as well as married, and this observation may also suggest methods of prophylaxis.

PREGNANCY AND THE THYROID GLAND

The role of the thyroid gland in pregnancy, and the changes it undergoes, have been the subject of much speculation though but little careful investigation. Certain facts are undisputed: for example, complete absence or extirpation of the thyroid gland causes sterility in both sexes, though once pregnancy is established thyroidectomy does not interrupt it; clinical hyperthyroidism does not prevent conception or alter the normal course of pregnancy; and hyperplasia of the gland occurs in pregnancy, though there is no certainty that this hyperplasia is associated with hyperfunction. On the other hand, the evidence is much less conclusive for the widely held belief that hypothyroidism, even of "subclinical" degree, may cause impaired fertility and that administration of dried thyroid extract corrects the condition, or for the perhaps less generally accepted opinion that hypothyroidism may be responsible for abortion, toxæmia, and other disorders of pregnancy.

In order to gain more certain knowledge of some of these relationships Peters, Man, and Heinemann⁴ studied

¹ *Brit. J. Cancer*, 1948, 2, 177.

² *Lancet*, 1936, 1, 987.

³ *Cancer of the Uterus*, Ministry of Health Report No. 40, 1927, London.

⁴ *Yale J. Biol. Med.*, 1948, 20, 449.
J. biol. Chem., 1947, 171, 439.

The precipitable iodine of the serum in several groups of women. They found that in normal non-pregnant women the precipitable iodine varies between 4 and γ per 100 ml. of serum. In 22 pregnant women, from the second month of gestation to full term, the range was from 6.2 to 11.2 γ (mean 8.3 γ). This rise in serum precipitable iodine was found not to run parallel with the rise in the basal metabolic rate, since the former occurs very early in pregnancy whereas the latter begins only after the fourth month. Twelve precipitable iodine estimations on the sera of women with threatened abortion, or who actually aborted, ranged from 2.8 to 5 γ per 100 ml.; in eight of these cases the figure was less than 6.2 γ , which was the lowest concentration found among normal pregnant women. None of these women showed signs of hypothyroidism. Seven patients in whom serum iodine concentrations of less than 6 γ per 100 ml. were discovered early in pregnancy were treated with thyroid extract; in all cases the treatment raised the level of precipitable iodine in the serum, and the pregnancies proceeded without interruption. With commendable caution the authors suggest that deficiency of precipitable iodine in the serum may be the cause of some, though certainly not all, miscarriages. They estimated the concentration of precipitable iodine in the serum of women with histories of repeated miscarriages in the intervals between pregnancies, but they found no significant differences when these figures were compared with those obtained in the case of normal non-pregnant women, or did they find the serum precipitable iodine below normal in any of a group of 20 women who sought advice because of infertility. The latter finding lends no support to the belief that thyroid deficiency is a frequent cause of infertility. In four cases of toxæmia of pregnancy the values were again within the normal limits for pregnancy.

It cannot be regarded as proved that the amount of precipitable iodine in the serum closely reflects the thyroid hormone content of the blood. However, there is evidence to support this contention, notably that provided by Taurog and Chaikoff,² who by means of the technique of isotope dilution—using thyroxine labelled with radioactive iodine—have directly identified the precipitable iodine of normal serum with thyroxine. Though the number of cases studied by Peters and his colleagues was small (as they fully admit), their investigation of the thyroid gland in pregnancy is a useful contribution to the subject. Since the technique of assaying the precipitable iodine in the serum is relatively simple, there should be no practical difficulties to prevent similar studies being undertaken on larger groups of cases.

TREATMENT OF ANGINA WITH THIOURACIL

The treatment of angina pectoris by total removal of the thyroid gland was introduced by Blumgart, Levine, and Berlin in 1933, and though it met with some success it has since been abandoned, even by its authors, owing to the serious and irrevocable nature of the operation, the difficulty of estimating the required dose of thyroid extract in patients with spontaneous variations in the severity of their angina, the raised blood cholesterol, and occasional unfortunate complications such as tetany and recurrent laryngeal paralysis. Nevertheless, the idea that angina pectoris could be improved by reducing the circulatory demands of the body and by depressing the physiological responses to adrenaline was sound. When thiouracil began to be used clinically it was an obvious step to try it in cases of angina pectoris, for if the result was unsatisfactory the drug could be abandoned and the *status quo* restored. The usual dose of 0.2 g. t.d.s. until there is demonstrable improvement,

when it may be reduced to 0.3–0.1 g. daily. With propylthiouracil toxic reactions are rare, but fever and rashes are not uncommon with methylthiouracil, which may not be well tolerated by patients with angina. The usual precautions against agranulocytosis must also be taken. Treatment should not be considered a failure unless there is no improvement after six weeks; most patients are better after 14 days.

Fisher and Zukerman¹ strongly support the claims made for thiouracil in the treatment of angina pectoris: they obtained good results in 14 out of 16 cases. Last year in this *Journal* Dr. G. Shoenewald² also reported good results in three cases. In a series of 10 cases Hollander and Mandelbaum³ noticed improvement in only four after treatment with propylthiouracil, but they consider further trial of the drug is warranted. It is time a large series of cases was treated under scientifically controlled conditions.

THE ROYAL SOCIETY

The guests of the Royal Society at its *Conversazione* on May 26 once again enjoyed an exhibition of intellectual grace and wit without having to endure the many hours of patient research that lay behind it. Several advances in microscopy of interest to medical men were demonstrated. Mr. J. Dyson, of the Associated Electrical Industries Research Laboratory, showed how a microscope could be adapted by means of a special optical system for examining material some distance from the objective lens. Surgeons may find such an instrument useful for scrutinizing more closely the tissues displayed at operation if sufficient illumination can be obtained. Phase-contrast microscopy, by which the structure of living unstained tissues and organisms can be clearly discerned, was a feature of last year's exhibition. On Thursday Dr. J. R. Baker and his colleagues, of the Department of Zoology, Oxford, showed how an ordinary microscope can be adapted to the method with simple apparatus and at low cost. Their ingenuity should be of help to medical schools, where all the microscopes could readily be used for routine teaching by the phase-contrast technique.

The National Institute of Medical Research was displaying beautiful electronic micrographs of viruses adsorbed on the membranes of fowl red cells, and in a quiet corner it illustrated with skiagrams and photographs the dire effects of rickets on *Xenopus laevis* toads. When *xenopus* toads were bred in this country after their importation had been prevented by the outbreak of war they were found to have bony deformities and fractures, characteristic features being enlargement of the lower jaw and arched back. Investigation showed that, unlike rats, they must be supplied with vitamin D as well as calcium and phosphorus for bone formation. Dr. Lester Smith, of Glaxo Laboratories, showed how the anti-pernicious-anaemia factor, vitamin B₁₂, is extracted by means of partition chromatography from liver, which contains only about one part per million.

A notable contribution to the amity of man was a machine that played noughts and crosses with a human opponent. The Fellows were to be seen battling bravely against its electrical circuits, but logic triumphed, and it always won or drew, though on one occasion a spirit of slightly embarrassed satisfaction ran through the audience when it made a mistake because of a technical hitch. The suggestion, the possibility, of imperfection seemed to illuminate a more distant horizon, and to add wonder to contentment.

¹ *British Medical Journal*, 1948, 1, 251.

² *J. Mich. Med. Soc.*, 1947, 48, 1059.

³ *Ann. Int. Med.*, 1948, 23, 1150.

ROYAL SANITARY INSTITUTE CONGRESS

HEALTH SERVICES UNDER THE NEW ACT

The annual Health Congress of the Royal Sanitary Institute, held at Brighton during the week beginning May 23, attracted an attendance of about 2,400, including delegates from foreign, dominion, and colonial governments, home Government departments, nearly 1,000 local authorities, and universities and voluntary organizations. The eight sections were devoted respectively to preventive medicine, engineering and architecture, maternal and child health, veterinary hygiene, food and nutrition, housing and town planning, tropical hygiene, and hygiene in industry. There were special conferences for medical officers of health, engineers and surveyors, sanitary inspectors, and health visitors.

Preventive Services "Played Down"

In the Preventive Medicine Section Professor Andrew Topping, of Manchester University, devoted his presidential address to the National Health Service. He declared himself an ardent protagonist of a State medical service.

"I was, and still am, in favour of a salaried service, and, although the profession as a whole has violently opposed this view, I believe that more and more of the thinking element are beginning to realize that the advantages would far outweigh the disadvantages, and that were it introduced, it would immediately remove many of the difficulties, financial and otherwise, which now beset the Service."

Professor Topping's criticism of the present Service was that its emphasis was entirely wrong. Curative medicine was very generally given pride of place, and prevention was very much the poor hanger-on. "The great majority of doctors would welcome the opportunity of taking an active part in disease prevention, but they are so snowed under with routine treatment of trivialities that the urge quickly dies and consciences become hardened." He found it depressing to read of complaints from a doctor that if he was called to see a child the mother expected him to discuss her own health and that of other members of the family. The complaint was understandable under present conditions of overwork, but it would have shown a better appreciation of realities if the doctor had regretted his inability to meet the mother's wishes and had not dismissed them as intrinsically wrong.

"The Minister of Health has tacitly given his blessing to the present state of affairs by takingunction to his soul for the astronomical increase in the number of bottles issued since the inception of the Service. We all know perfectly well that this feature is very far from being indicative of an improved health service, and it is unfortunate that the great mass of the unthinking public are being confirmed in their erroneous impression that it is so. With very few, if any, exceptions, major improvements in the health of the people have been attributable to betterment of the general standard of living and to the preventive health services rather than to the work of general practitioners or hospital staffs."

The marked fall in the number of students taking the D.P.H., Professor Topping added, was indicative of the difference between the remuneration offered to the newly qualified assistant in general practice, who could get a salary of about £1,000 a year, and to the assistant medical officer, who must have been qualified for at least three years, and preferably should hold a higher qualification, and was offered a salary of £700. It was tragic that one of the immediate, though unforeseen, effects of the new Act had been to "play down" the preventive services and dissuade young medical men and women from making preventive medicine their career.

He attacked with equal vigour the Minister's mistake in not giving priority to health centres with housing, and concluded with the remark that "if we are still demanding more hospital beds ten years from now our health services have been a failure."

Research in Public Health

The opportunities for research in the sphere of public health were discussed by Dr. C. Metcalfe Brown (M.O.H., Manchester). He mentioned the recent investigation in which Manchester had co-operated with a number of other towns in various parts of the country in research, originated and

controlled by the Medical Research Council, into the efficacy of whooping-cough vaccines. This was an admirable example of teamwork, bringing in several universities, public health laboratories, and local authority health departments. In Manchester alone 6,000 children had been included in the trials. Again in Manchester and in other areas trials were being made of a British gamma globulin for the prevention and modification of measles in young children, and in the near future an investigation into the safety and antigenic potency of new diphtheria prophylactics was to be undertaken. Twelve county boroughs had agreed to use in their respective areas one of two new phosphate-adsorbed toxoids and to investigate over one or two years the reaction rates, any untoward sequelae, and the incidence of diphtheria among the inoculated.

Sir W. Allen Daley (Chief Medical Officer, L.C.C.), in an address to a conference of medical officers of health, said that the new Act had come into operation with much less disturbance and friction than many expected. This was due to the abundant good will which had been displayed by all concerned and a single-minded desire to make this great experiment a success. Medical officers of health were anxious to proceed with the provision of health centres, and in this connexion joint consultations between the executive council and the local medical and dental committees were needed. Except on large new housing estates, to which doctors would have to be imported, it was necessary to ensure that the local doctors wanted to work in and from a health centre before steps were taken to acquire and adapt property or erect new buildings. Some health centres must be got into commission quickly so that experience might be gained by experimenting with various types.

One of the most important sections of the Act, Sir Allen Daley continued, was that which dealt with "care and after-care." This had already created many difficulties. First, there was the differentiation between convalescent-home treatment provided free of charge by the hospital authority and admission to holiday homes for which the health authorities were recommended by the Ministry to make a charge. Medical opinion on whether convalescence or a holiday was needed in an individual case might well differ: He looked forward to the day when preventive measures could be applied to many more diseases than was now possible, and when every patient discharged from hospital would pass to the joint care of the general practitioner and the aftercare officers of the health authority.

In a reference to the midwifery service, Sir Allen Daley urged that there should be greater uniformity in the criteria required for admission to the list of general-practitioner obstetricians. Some committees, he understood, had approved all applicants, while others had been quite rigid in requiring that those admitted to the list should have had special postgraduate experience in obstetrics. The extent of the responsibilities to be carried by the midwife and whether or not she was allowed to be the "specialist in normal midwifery" would determine the quality of future entrants to the profession.

Institutional Midwifery

The case for and against institutional midwifery was argued by Dr. J. Stevenson Logan (M.O.H., Southend-on-Sea). A high proportion of institutional deliveries was not necessary for the achievement of low maternal and neonatal death rates or still-birth rates, as was shown by experience in Holland, where 80% of the babies were born at home. The abnormal or complicated pregnancy would always call for treatment in hospital, and, while overcrowding existed, the ordinary decencies demanded maternity beds. But on the other hand the woman confined in hospital or in a maternity home was deprived to a greater or less degree of the close contact with her baby in the early days of its life, and opinion among paediatricians and psychologists alike seemed to be that the importance of this factor had been overlooked by the more enthusiastic advocates of institutional confinements.

"Looking at it from the community point of view, can we afford at this juncture, when hospital provision is so desperately needed for those who cannot in any circumstances be adequately cared for and relieved at home, to contemplate the unregulated increase of maternity beds, which can only be made at the expense of other hospital provision?"

Dr Logan also touched on the question of analgesia and mentioned that one of his midwives told him that since the publication of details about the recent royal confinement the demand for analgesia had been stimulated. If this was at all true of the country as a whole, it showed how perilous it was to be dogmatic about what was really necessary or what women really wanted. It was clear, however, that arrangements for analgesia required strengthening, and it might be that the awareness of the midwifery profession as a whole required quickening. The state of affairs when a woman who genuinely desired analgesia was denied it should be ended as quickly as possible.

Points from Other Contributions

A section under the presidency of Professor Thomas Ferguson, of Glasgow University, discussed hygiene in industry. Professor Ferguson said that the total number of disabled persons in the United Kingdom was about 900,000, of whom 8 to 9% were unemployed. About 40% of the disabled were surgical cases, and 25% medical, with smaller proportions falling into psychiatric and other groups. He described the various residential centres for rehabilitation and the sheltered workshops, such as Hillington, near Glasgow.

Mr William Gissane gave an account of the work of Birmingham Accident Hospital. He urged that the staffs of casualty and fracture departments should be trained at a central accident hospital. Some of these departments, he said, were first-class, others good, and some frankly bad, but they were a vital part of any regional accident service. Dr Maxwell Jones described the work of the industrial neuroses unit which had been established for two years at Belmont Hospital Sutton. The average length of stay was about three months. It was not expected to cure these patients, who were generally chronic neurotics, but to help them to become reasonably independent and self-supporting.

Under the presidency of Professor P. A. Buxton, a Tropical Diseases Section discussed principally the question of malaria control. Dr P. C. C. Garnham said that in Northern Greece the present steep fall in the incidence of malaria was ascribed to natural conditions and only to a very limited extent to the DDT campaign. At the same time the attack on the mosquito by the new insecticides seemed to be fulfilling its early promise.

INDUSTRIAL REHABILITATION UNIT

The Ministry of Labour opened an Industrial Rehabilitation Unit at Leicester in the middle of September, 1948. At first only non-resident cases were accepted, but from Jan. 17 of this year residents have been accommodated also. The non-residents are men and women from the surrounding area within a radius of about 15 miles. At present there are between 50 and 60 of them. The residents come from any part of the country—chiefly the North and Midlands—and only men are taken; there are 43.

The unit is controlled and financed by the Ministry of Labour and National Service. The manager has been chosen for his long experience of industrial conditions and additional experience of training men. He is not medically qualified. A part-time medical officer employed by the Minister of Labour visits the unit daily. He also has a wide knowledge of industry. There is a rehabilitation officer, whose background again is industrial, not medical, and a Ministry of Labour D.R.O. is also part of the team. A whole-time State registered nurse looks after the patients and does any first aid that may be necessary, and a trained dietitian is in charge of the kitchen, which can provide special diets—for example, for patients recovered from peptic ulcer. A trained social welfare worker helps the patients over their domestic difficulties, visiting their homes to gain further information if necessary. There are in addition group supervisors who look after the patients in the workshops and garden.

Source of Patients

The patients fall into two main groups though the distinction is perhaps artificial, since there are all grades between the extremes. First, there are men who have passed the convalescent stage of some disorder but are left with a residual

disability, often only psychological. These patients may have suffered from anything—fractured bones, the loss of a limb, tuberculosis—any medical or surgical disorder. Secondly there are the patients who may have some long-standing defect and who have gradually become unable to work satisfactorily in industry. The condition itself may have become no worse, but the man's attitude to it has. More than half of the patients in both categories suffer from some form of neurosis or have psychopathic personalities.

The main channel of entry is through the employment exchanges. These are primarily men who have suffered some illness or accident and find they are unable to obtain a job in industry. Sometimes factories get into touch with the I.R.U. direct. In both circumstances the opinion of the employment exchange or factory must be backed by a medical opinion from the man's own general practitioner or a Ministry of Labour medical officer or a factory medical officer. If the man is referred by a factory or in any other way—for example, by his general practitioner—the unit then refers the matter to the man's local employment exchange and obtains information from them.

In assessing whether a man is suitable for rehabilitation the unit's first consideration is the ultimate chance of the man's employment when he leaves the unit. This is assessed on the information obtained from his local employment exchange and great weight is attached to it. If there is little likelihood of the man's being employed in his trade in his own locality, and if he is unwilling to move elsewhere, he would not be accepted by the I.R.U. The I.R.U. does not train him for a new trade.

Work at the Unit

When a man arrives at the unit the medical officer examines him and tells the manager what the man cannot do—for example, work in a dusty atmosphere, sit in draughts, or stand for long. He also lays down a scheme of remedial exercises and treatment if necessary. The man is given an informal welcome to put him at his ease and put on "diversionary work." This consists of some simple task, usually in the garden under the supervision of the gardener. Meanwhile the social welfare worker investigates his domestic difficulties and the group supervisors watch his behaviour. His characteristics are then assessed, and the man is put on to more specialized work such as handicrafts, bench or machine engineering, woodwork, and so on. He may be tested with Raven's matrices, if necessary.

The course lasts up to twelve weeks, though the average is seven to eight. Towards the end of this time the man is put on a job in the unit, but often in contract with a firm outside. He then earns the normal wages and works the normal hours of industry. This stage is introduced to make him feel that he is once again a part of industry, and his future employer may be invited to see him at work and talk to him. So far 90% of the men and women have been returned to their old jobs, placed in other jobs, or sent for vocational training. Only intelligent and young patients pass to the vocational training centre. Of the remaining 10% some are discharged as medically unsuitable before the course ends, and a very few leave of their own accord.

The unit seems to be successful in making the patients fit for industry again, and particularly in overcoming the feelings of inadequacy from which so many of them suffer. It is following up the results at three- and six-monthly intervals. Though it is too early yet to say how significant they are, they seem to be very encouraging.

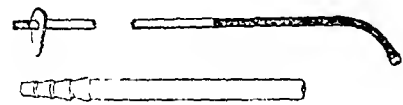
The scheme under which new entrants to the South Wales coal fields have to undergo clinical and x-ray examinations is to be extended to recruits at all coalfields in Great Britain. This was announced by Mr Alfred Robens, Parliamentary Secretary to the Ministry of Fuel and Power, who stated that the National Coal Board was building up its own medical service, which already consisted of a chief medical officer at headquarters and a medical officer in all the larger coal divisions. He said that fatalities in mines had gone down from the average of 1,200 a year between 1900 and 1920 to 467 in 1948, the lowest figure ever recorded. It should not be overlooked, however, that coal-mining is relatively still the most dangerous occupation and accounts for about one-quarter of the total fatal accidents occurring in industry.

Preparations and Appliances

A BRONCHIAL SUCTION CATHETER

Dr. J. L. GRIFFIN, senior anaesthetist, Taunton Hospital, writes: The instrument here described was designed primarily for routine use by the anaesthetist towards the end of upper abdominal operations and in chest cases, with the aim of preventing atelectasis. The catheter consists of a straight metal tube 27 cm. long, with a bore of 3 mm. The distal end is a rubber-covered flexible cable 7 cm. long, with an inherent curve and an atraumatic sucker end. A pointer at the proximal end

indicates the direction of the curve (see diagram). The instrument is light in weight, so a heavier screw-on handle extension is supplied, which helps



to counterbalance the rather heavy tubing from the sucker machine. Delicate control is thus obtained.

This catheter, tried out on the bronchial tree of the dissected lung, passed with certainty each time into the desired bronchus. X-ray photographs following a partial gastrectomy confirmed this. When air alone flows unobstructed through the catheter the suction apparatus develops a negative pressure of 8 in. Hg. It picks up thick mucus easily, and will pass down a No. 6 Magill tube if required.

Technique of Use.—The instrument should be well lubricated for its whole length by a water-soluble jelly. Extra lubricant is required if it is to pass through a Magill tube. The larynx is exposed by a laryngoscope (Macintosh) and, if necessary, the upper lip is held out of the line of vision by an assistant. Once the tip of the catheter is through the cords the laryngoscope may be withdrawn if desired and the suction switched on. By moving the catheter gently up and down the trachea, and rotating it at the same time, any mucus lying there is removed, since the sucker tip is constantly in contact with the tracheal wall. (For this reason it is more effective than the standard gum-elastic endotracheal catheter for tracheal toilet.) The catheter is next passed down into the right and then the left bronchus by making use of the pointer, and for more efficient suction of the branches may be rotated in this position; it should be kept moving while suction is applied.

The instrument is very useful in cases where, owing to faulty technique or mishap, blood or pus enters the trachea, and when stomach contents are inhaled. Its use in children for the instillation of lipiodol has not been investigated, but it may have possibilities. Probably less lipiodol would be needed, with consequently less interference with respiration. Any excess lipiodol could be immediately aspirated.

Messrs. Charles King have arranged to make this instrument for me.

Reports of Societies

TREATMENT OF CARCINOMA OF VULVA

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on May 20, Professor HILDA LLOYD presiding, a discussion took place on the treatment of carcinoma of the vulva.

Mr STANLEY WAY, of Newcastle-upon-Tyne, said that it was ten years since the subject was discussed in the Society, and in the intervening period there had been considerable changes of opinion. There was an increasing awareness that radium and x rays could do little to effect cure of carcinoma of the vulva. The fearful necrosis which so often followed their application, even in reasonable doses, must be well known. It appeared that surgery was the method of choice. No other site, not even excluding the breast, was more suitable for radical surgical attack. Mr. Way then confined his remarks to the extended radical operation which he had practised for the last

six years. It involved a very wide removal of the vulva and resection of all superficial inguinal and sub-inguinal lymph nodes. He had devised this extended operation as the result of studies which he was able to make in Newcastle. The results of less radical procedures were not encouraging, and the futility of minor surgery he thought was fully demonstrated. The incidence of lymph-node involvement in 88 cases which he took over while working out his technique was found to be 51%.

Cases in which he had carried out his extended operation numbered just over 60. He had rejected or excluded 11 cases, so that his operability rate was 85%. After 64 operations there were 10 deaths before discharge from hospital, including one after uncompleted operation and one death from cerebral haemorrhage three months after operation. The operative mortality might be considered high, but it must be remembered that these patients had very little hope without surgery. The chief cause of death had been wound infection. He hoped that streptomycin would help in this connexion, but it was certainly not a drug to be used indiscriminately as penicillin was used at present. Only 12 of these cases had been operated on five years ago. The five-year survival rate was 83%; the three-year rate 88%.

Most of the extended operations were done in one stage, and he was very much in favour of this if it could be done safely. He had no wish to minimize the difficulties of the operation if it was to be carried out thoroughly in one stage. The longest time he had taken for the one-stage operation was three hours; the shortest, one hour and 10 minutes. But far more complicated and exacting than the operation itself was the aftercare of the patient.

Incidence

The Registrar-General's figures, Mr. Way said, showed that about 400 women in England and Wales died from this form of cancer every year. This was almost certainly an underestimate, for often such deaths were returned as due to cancer of the vagina or uterus. He believed that there might well be 600 cases annually, but even this was not a large figure when distributed over the whole country. At the previous discussion in the Section in 1939 Professor F. J. Browne had suggested that, as the disease was not common, all the cases in an area should be sent to one hospital where special interest was taken in such conditions. The speaker had been able to persuade his colleagues in Newcastle to do this, with the result that he had seen 127 cases of carcinoma of the vulva in the last ten years. He had recently written to a number of centres in Great Britain to find out how often carcinoma of the vulva was seen, and he found that in a number of teaching hospitals in London the gynaecological surgeon saw an average of only about one case a year; in provincial centres the average was slightly larger. Whatever method of treatment was employed, one case a year for each gynaecological surgeon would not offer sufficient experience in either treatment or nursing. He concluded by expressing the view that many more cases could be treated surgically than at present.

On the question of incidence, Mr. A. P. BENTALL said that possibly the incidence varied in different parts of the country, and it might be that in the eastern counties it was higher than elsewhere. In 1945 in the Norfolk and Norwich Hospital there were 10 cases of carcinoma of the vulva, 11 in 1946, 6 in 1947, and 11 in 1948—an average of 9.5 cases a year out of an average of 707 cases of malignant disease.

Mr. J. B. BLAILEY presented an analysis of cases seen at the Chelsea Hospital for Women and the Royal Cancer Hospital during the period 1933-47. Anything like a complete analysis was impossible owing to deficiencies in the follow-up. At Chelsea out of 29 patients treated during this period the number of five-year survivals was 11 (38%). Early cases with no clinical evidence of involvement of the inguinal glands and treated by simple excision numbered 10; of these, 5 patients had died and 1 was untraced, giving a five-year survival rate of 40%. The results at the Royal Cancer Hospital were similar. Out of 49 patients the five-year survivals were 23 (47%); again a number of cases were untraced. Among 8 early cases treated by simple excision of the vulva or some part of it there were 4 deaths, giving a five-year survival rate of 50%.

The choice in treatment lay between radical surgery and, if the patient was unfit for excision of the vulva, telerradium. In fact, with modern anaesthesia, few elderly women were unfit for surgery. He hesitated to disagree with Mr. Way, but he did not think that in the majority of cases it was necessary to remove the iliac glands, which were involved only very late. He also drew attention to the Stockholm technique, especially a paper by Berven in 1947 on electrocoagulation of the vulva and the application of telerradium to the groin. With electrocoagulation there was surprisingly little shock and pain, and a good deal of sepsis was avoided.

The first general principles for treatment of cancer of the vulva were that the whole vulva must be excised, preferably with the diathermy knife, or else destroyed by electrocoagulation. He preferred the former technique in most cases. The inguinal glands must always be removed. It was possible to start treatment with telerradium one week after excision.

Radical Excision

Mr. ALAN BREWS said that he encountered very few cases of malignant disease of the vulva, but like Mr. Way and many others he was dissatisfied with the poor results of superficial surgical procedures and with radiotherapy. In recent years he had been practising a moderately radical surgical excision of the vulva, with block resection of superficial and deep lymphatic glands from both groins. He had performed this type of operation 12 times—on an average two or three times a year. He had always used combined spinal and light general anaesthesia. He had used diathermy extensively for all skin incisions, and coagulation for all but the largest vessels. He had aimed at the removal of all superficial inguinal and femoral glands; he had not as yet removed the external iliac gland. He had always removed the upper part of the internal saphenous vein. The wound was kept at rest for as long as possible. Only after three weeks, with healthy granulations everywhere, did he allow the patient up, wearing a loose linen garment. She was then sent to a convalescent home for about six weeks, when healing was usually complete.

His cases were too few and recent for useful statistics, but he thought the results encouraging. He had had one primary death, with very extensive local recurrences within a month of the original operation, but he had had no other serious complications as yet. The absence of pyrexia and serious infection and the complete freedom from pain had been notable. His small series included two cases of malignant melanoma; both died within a year of operation, one with a mass of recurrences in the bladder and the other with widespread visceral secondaries in the lungs and liver. He endorsed Mr. Way's plea for concentration of these cases in a few units where an experienced team would give each patient a greater chance of useful survival. It might be that in each region only one such team would be needed.

After some general discussion, Mr. WAY, in reply, said that he could not help feeling that there was still an element of caution abroad. On the subject of palpable nodes, 36% of his cases in which nodes were not felt in the groin were nevertheless found to have cancer. The Berven treatment relied on the palpation of lymph nodes to ascertain whether or not there was involvement. He had never seen lymph-node involvement respond to x-ray or radium therapy. Until the cautious attitude towards the surgery of carcinoma of the vulva was overcome results would not improve. He added that this was a disease which could be practically eliminated by the surgical treatment of leukoplakia beforehand.

The Minister of Health is worried about the amount of time spent by members and officers of local authorities attending conferences. A letter from the Ministry asks local authorities to send representatives only to those conferences at which attendance is desirable in the interests of the council and that the number sent is no more than is sufficient for this purpose. Save in very exceptional circumstances the Minister would not sanction payment for sending representatives to conferences held abroad. The Minister hopes that councils will use their influence where possible to limit the duration of conferences and to see that they are held in reasonably accessible places.

Correspondence

Jenner and Medical Science

SIR.—Sir Edward Mellanby's oratorical contempt (May 28, p. 921) will not suffer him even to name the man whom Bulloch (not Bullock) thought the most learned man he ever knew. Poor Creighton! I must face alone, with such fortitude as I possess, the charges of forming "imbalanced" ("unbalanced"?) and wrong judgments, of having little knowledge of and making little allowance for human nature, and of killing Kruger with my mouth. I do not suppose many people have read my book—it is out of print and likely to remain so. I am not sure Sir Edward has read much of it. I dare say righteous anger led him to cast it aside before he reached my final conclusion that "Jenner was, directly or indirectly, the means of saving many hundreds of thousands of lives"; I added, "That is a less grandiose conclusion than some others have reached, yet, I submit, quite enough to entitle Englishmen to take pride in the recollection that Jenner was their countryman."

However, I still think Jenner was loose-thinking and, ultimately, fact-blind (not fact-blinded, as Sir Edward writes), and to explain how I reached this imbalanced, or unbalanced, judgment will not take much space. In 1798 Jenner wrote to a foreign physician: "At present I have not the most distant doubt that any person who has once felt the influence of perfect cowpox matter will ever be susceptible of that of smallpox."

As Sir Edward so rightly says, we must judge a man by what was known, or probable, when he wrote, not by what later experience proved. When Jenner wrote, it was known that natural smallpox did sometimes attack inoculated persons, and instances of two attacks of natural smallpox in the same person had been recorded. It was, I suggest, loose thinking to infer from his experiments that the new prophylactic was more efficient than the "natural" prophylactic. He might reasonably have hoped that it was equally efficient and less dangerous.

It was, I suggest, to be fact-blind to have written a quarter of a century later, after all that had happened:

"My opinion of vaccination is precisely as it was when I first promulgated the discovery. It is not in the least strengthened by any event that has happened, for it could gain no strength; it is not in the least weakened, for if the failures you speak of had not happened, the truth of my assertions respecting those coincidences which occasioned them would not have been made out."

Sir Edward tells us that "the test of the acceptability of a discovery depends upon whether it is true and not whether it seems sensible or even whether it can be verified by the statistician." Or, in other words, a discovery is acceptable if it is a discovery. Certainly many discoveries—e.g., in the field of ethics—cannot be verified by statisticians, or even by biochemists, but is the discovery of a prophylaxis one of them? Pearson and Woodville in Jenner's time did not think so; the Medical Research Council in our time does not seem to think so.—I am, etc.,

Loughton, Essex.

MAJOR GREENWOOD.

Treatment of Basal-cell Carcinoma

SIR.—In our article in the *Journal* of April 30 (p. 737) we stressed in the title the "especial reference to lesions on the neck, trunk, and limbs." For this reason we made no further reference to the 210 cases in which the tumour was situated on the face or scalp.

It is as a primary treatment of rodent ulcer that we especially recommend surgical excision. The following two tables are compiled from the personal case records of one of us (C. W.). They refer to basal-cell carcinomata on the face and scalp treated between 1915 and 1935: a complete "follow up" was conducted in 1938.

The first table shows the results of surgical excision as primary treatment of rodent ulcer; they are surely better than those shown by radiotherapy. The statement that "there should be no recurrence with adequate surgical excision" is

TABLE I.—Results of Treatment by Primary Excision

	No. of Cases Treated	Not Traced	Died of Inter-current Disease	Recurred	Recurrence Free	Percentage Free from Recurrence
Patients treated between 1915-1925	51	18	10	1	22	96%
Patients treated between 1925-1935	62	20	16	0	26	100%

TABLE II.—Results of Treatment by Excision Following Failure of X-ray Treatment

	No. of Cases Treated	Not Traced	Died of Inter-current Disease	Recurred	Recurrence Free	Percentage Free from Recurrence
Patients treated between 1915-1925	25	10	4	5	6	54%
Patients treated between 1925-1935	35	14	7	8	6	43%

more than an "expression of hope." If the excision is adequate there is no pathological basis for recurrence—all the tumour cells have been removed. Professor D. W. Smithers's figures (May 14, p. 865) show how difficult it is to eradicate all the tumour cells by radiotherapy.

The second table illustrates one of the special hazards of radiotherapy. Recurrences following x-ray therapy as the primary treatment are much more difficult to eradicate. Further recurrences are only too liable to occur. This is the sort of case that Professor Smithers will pass over to the surgeons. Perhaps this is what Professor Smithers means when he says, "Surgeons and radiotherapists do better by working together." In many fields we are only too ready to agree with him, but not in the treatment of basal-cell carcinoma.

We do not agree that irradiation gives a better chance of cure in lesions on the eyelids. Surgical excision will cure the patient, with far less chance of recurrence than irradiation. In the past irradiation produced a good cosmetic result more often than surgery; but with the development of plastic surgery the cosmetic results of surgery can now compete with those of irradiation.

So often, and Professor Smithers's figures show how often, irradiation results in delay in cure and makes further treatment more difficult. Therefore we recommend that all rodent ulcers should be excised when first seen. And if the patients are "worried" they may be "premedicated," for it is worth curing them at their first treatment.—We are, etc.,

CECIL WAKELEY.
PETER CHILDS.

London, W.1.

SIR,—On reading the recent correspondence concerning the treatment of rodent ulcer I was reminded of an interesting case, a female mental patient, who was admitted to hospital at the age of 51 in 1938.

At this time she showed a pale scar in the left infra-orbital area of the face about which she was unable to give any information, and as there were no signs of any pathological activity it was ignored. Towards the end of the year 1944 a new lesion was observed, this time on the forehead over the left eyebrow, but it showed little reaction and did not appear to warrant much closer investigation. However, its chronicity led to the calling of a consultant, who diagnosed rodent ulcer in 1947, and radium therapy was prescribed. This was carried out in the Christie Hospital, Manchester, the patient visiting for sessions of treatment once a month, commencing in September, 1947.

In December of that year a third ulcer appeared in the right infra-orbital region, and therapy was applied to this also. In January, 1948, the irradiation produced a conjunctivitis and blepharitis on the right side necessitating local palliative treatment, and the sessions were discontinued temporarily. In March, 1948, a further lesion appeared on the left side of the nose, which was watched carefully; surprisingly it regressed, and healed of its own accord. In June, 1948, the lesion over the left eyebrow succumbed to a simple pyogenic infection, which was treated locally with gentian violet with success, and in September the irradiation therapy was discontinued, as the ulcers had healed.

The patient has been examined by the consultant at three-monthly intervals since, and no further activity has been observed, nor has there been any glandular involvement up to March, 1949. She will be seen again in June, but the prognosis is considered very good.

The interesting point about this case seems to be the recurrence of the same disease in different but close areas, and the possibility of minute traces of active pathological tissue being still *in situ* after apparent healing gives rise to the suspicion that direct spread has insidiously taken place. The directions of spread are such as to make this supposition improbable, so that one is forced to assume each lesion was a neo-neoplasm *per se*. Perhaps some reader might clarify this point.—I am, etc.,

Winwick, Lanes.

P. A. M. ROBERTSON.

Penicillin-resistant Staphylococci

SIR,—Dr. N. G. B. McLetchie (April 23, p. 725), in criticizing our use of the word "strain," has raised a matter of general interest. He appears to wish to limit its use to that usually given to "type."

The word appears to have two slightly different meanings, both of which may be used without ambiguity. This was done by Dr. G. Martyn (April 23, p. 710), who writes, "The high incidence of penicillin-resistant strains probably reflects the strain circulating in the hospital." Here strain in the second place bears the meaning "kind" or "sort" and suggests that had typing methods been available the circulating strains might have belonged mainly to one particular type.

Allison and his colleagues use "strain" in a quite different sense from "type"—a type including many strains from different patients. In summarizing an outbreak of staphylococcal food-poisoning these authors state that "the 125 strains submitted or isolated were typed by serological and bacteriophage methods. . . . 113 belonged to the serological type III, phage type 6/47" (*Mon. Bull. Min. Hlth*, 1949, 8, 38).

It is legitimate to regard any single organism on a swab as potentially a strain, just as in horticulture each individual seedling in a stand may give rise by vegetative propagation to a clone. It is here that difficulty arises in comparing the figures given by different authors. While one worker may accept into a series several strains from swabs and cultures from different parts of the body of a single patient, another will add only one to his collection. The figures will then require very careful analysis if a comparison is to be made.

We have taken a total of 315 strains from 241 persons. This in practice means that each patient gave at least one strain and sometimes two. The second was added if some definite difference in colonial appearance could be observed and reproduced in subculture, or if some definite difference in penicillin sensitivity or in coagulase production were present.—We are, etc.,

A. VOUREKA.
W. HOWARD HUGHES.

London, W.2.

Transfusion Compatibility Tests

SIR,—A recent case observed at hospital illustrates how at error in rhesus grouping, together with reliance on the saline compatibility test, led to the administration of rhesus-positive blood to a rhesus-negative individual previously immunized by repeated blood transfusions.

A man aged 34 had suffered from ulcerative colitis since 1944. On four previous occasions 19 pints (10.8 litres) of group A blood had been transfused without any reaction other than mild pyrexia without rigor; on the last occasion the temperature after transfusion had reached 102° F. (38.9° C.), and a mild asthmatic attack had occurred. On April 6, 1949, the patient was again admitted for transfusion. An experienced laboratory technician recorded his blood group as A rhesus-positive, and accordingly a compatibility test using patient's serum and donor cells suspended in saline only was employed. This showed no incompatibility after one hour at 37° C. The blood was accordingly issued as compatible. After about 50 ml had been transfused the patient experienced a rigor and complained of severe throbbing headache with pains all over his body. The temperature rose to 102° F. (38.9° C.). In view of this reaction the ward sister stopped the transfusion after 150 ml. of blood had been given. Recovery was uneventful. The following day a sample of patient's serum was again incubated with the donor cells, after which an indirect Coombs test was done. This showed very strong agglutination of the donor erythrocytes. Subsequent investigation showed the patient to be in reality rhesus-negative, and his serum to contain anti-Rh (anti-D) blocking antibody active against the cell transfused in a dilution of 1/80. The donor cells suspended in 25% bovine albumin were strongly agglutinated at 37° C. by his serum.

within five minutes. On April 11 the titre of the antibody had risen to 1/5120.

This case strongly endorses the plea made by Drs. B. Godwin and A. J. McCall (May 14, p. 870) that all compatibility tests should be made as a routine with the donor cells suspended in bovine albumin. Had this been done in the above case the error in rhesus grouping would have been easily detected and the false sense of security engendered by the erroneous rhesus test on the patient would have been rapidly dispelled. Now that 30% bovine albumin is available commercially in this country it would seem to be the duty of all pathologists and transfusion officers to abandon the time-honoured but fallacious saline compatibility test—I am, etc.,

Worcester

P. KIDD

SIR,—Many will disagree with the statements made by Drs. B. Godwin and A. J. McCall (May 14, p. 870). The case reported by Drs. A. C. Buchan and John Wallace (April 16, p. 660) can hardly be said to illustrate the danger attending the use of saline cell suspensions in a direct compatibility test. There is no evidence that albumin-agglutinating antibodies were present in the circulation before the transfusion, and even if they were it is by no means certain that they would have been detected by a rapid compatibility test using an albumin cell suspension.

What it does illustrate is the danger in omitting to test the patient's Rh type. Had this test been done there should have been no transfusion reaction, since Rh-negative blood would presumably have been administered.

Any rapid direct compatibility test is likely to prove "unsatisfactory and dangerous" if too much is expected of it. Such a test should provide a safeguard against gross technical or clerical errors—e.g., a mistake in ABO grouping or the wrong label on a bottle of blood—errors happily rare and, indeed, rarer than those inherent in the compatibility test itself. It is not, however, an adequate test for detecting Rh antibodies and will often fail to do so.

Thousands of tests on pregnant women carried out in this laboratory, using Diamond and Abelson's technique in parallel with the standard tube and Coombs techniques, have shown that while the first is an excellent rapid method of ABO grouping and Rh typing when potent antisera selected for the purpose are employed it not infrequently fails to reveal the presence of Rh antibodies even when sensitive cell suspensions are used. It will fail more often in direct compatibility tests, where one is dealing not only with antibodies of unknown potency and speed of reaction but with stored cells of unknown sensitivity.

Nearly all dangerous transfusion reactions, not due to ABO incompatibility, occur in Rh-negative (D-negative) persons, and these can be avoided by D-typing and transfusing Rh-negative blood. In urgent cases the method of Diamond and Abelson is satisfactory for this purpose; and since supplies of suitable anti-D sera are available there is little excuse for failing to carry out a test of this kind before blood transfusion is undertaken.

The problem of the rare Rh antibodies occurring in D-positive persons, and the still rarer anti-Kell and anti-Lutheran, is not solved by the albumin compatibility test. Such a test, if carried out in the hope of detecting rare antibodies in cases requiring urgent transfusion, might well be confined to those with a history suggestive of immunization (transfusion or pregnancy) or where no history can be elicited. And its limitations must be appreciated. In the case of planned transfusions more accurate and sensitive techniques would naturally be employed.

It cannot be emphasized too strongly that D typing is of prime importance and should never be omitted. By the use of this test Rh-negative blood will be conserved, dangerous immediate reactions due to the presence of anti-D eliminated, and the more remote but equally real danger, so often ignored, of immunizing patients against the D factor will be avoided.

Drs. Godwin and McCall state: "The use of a satisfactory compatibility test is therefore a more important safeguard against dangerous reactions than is routine Rh testing with a limited range of sera, for only in this way can the reactions due to the rarer Rh antibodies and other irregular agglutinins

be avoided." If this is taken to mean that D typing can be omitted provided the direct compatibility test recommended by them is carried out, those who follow this advice will be casting away the substance for the shadow, and the artificial immunization of Rh-negative persons will still continue.—I am, etc.,

Blood Transfusion Centre, Sheffield

R. H. MALONE.

An Unfortunate Precedent

SIR,—Dr. A. P. Cawadias (May 21, p. 910) refers to the appointment of the President of the Royal College of Physicians to the Awards Committee as not an "unfortunate precedent." Later on in his letter he states, "As in the course of centuries the College changes its mode of action, abandoning its academic ivory tower, it has to come more into the open struggle." Surely the "unfortunate precedent" is in reality this fact, and that the College has seen fit in doing so to act in a manner in direct opposition to the expressed desires of the whole medical profession, in consequence it has lost in some degree the respect and confidence of the profession.

The College of Physicians is a very specialistic body, and as such should not presume to meddle with professional administration, which requires wide knowledge and practical experience of affairs not to be gained by the examination and training necessary for acquiring a specialistic diploma.—I am, etc.,

St Mawes Cornwall

B. H. SHAW.

Curare-modified E.C.T.

SIR,—Dr. S. J. G. Spencer says (May 14, p. 869) that the dosage of d-tubocurarine chloride used by us is "dangerously high," but mentions no danger other than respiratory arrest. Our purpose in mentioning the prolonged periods of apnoea which we have occasionally encountered was to show that we do not consider this to be a serious danger if an adequate method of artificial respiration with oxygen, such as we describe, is at hand.

The disadvantages of giving 5 mg of tubocurarine at two-minute intervals seem to us to outweigh any possible benefit. He states that his method produces "adequate muscular relaxation without severe respiratory depression." Adequate for what purpose? The patients whom we treated had physical illnesses which make an insufficiently modified convulsion a much greater potential danger than hypersensitivity. It takes eight minutes to inject 20 mg d-tubocurarine chloride by his method. Slow injection of this drug is stated to increase the danger of bronchospasm, its effect on an agitated, uncooperative, depressed patient seems to us to make the treatment unnecessarily unpleasant. The same quantity of the drug injected quickly will not have the same effect as when injected slowly. We agree that the correlation between weight and effective dosage is low, and we now use a standard initial dose of 18–20 mg. for females and 25 mg. for males. This is varied occasionally when the physical condition would make greater modification desirable.

Dr. Spencer does not say why he considers "it is important to reach by calculation the correct end-point with thiopentone." Rapid administration of 0.25 g of thiopentone ensures unconsciousness in every patient, while the (remote) danger of prolonged respiratory arrest is adequately guarded against by the Lucas respirator. The method he describes is more time-consuming. We do not use neostigmine as a routine, because of its unpleasant side-effects. Artificial respiration is always carried out by a doctor and with a Lucas respirator is an easy procedure.

We should like to add that since our report we have treated another fifty cases of a similar character with no casualties, and also to refer Dr. Spencer to the large number of cases treated by Drs. Hobson and Prescott,^{1,2} to whom we are grateful for our knowledge of the technique we have described.—We are, etc.,

P. D. W. SHEPHERD
D. C. WATT.

Stokeley, Herts

REFERENCES

- ¹ *British Medical Journal*, 1947, 1, 445
- ² *Lancet*, 1949, 1, 819.

"Death Following Abortion"

SIR,—Will you grant me space to comment on a report (May 7, p. 825) and to correct any misapprehensions which may arise from it? Is it correct to head the report "Death Following Abortion"? The certificate from the general practitioner stated that the patient was pregnant about five months. On examination I formed the opinion that the pregnancy was approaching the twenty-eighth week, and sent her into the nursing-home for induction of premature labour.

The patient was referred by the G.P. to the psychiatrist, with a letter stating that she was mentally disturbed and suicidal. She was referred to me by the psychiatrist, who sent me the G.P.'s original letter, together with a letter from himself saying: "I am perfectly satisfied that her pregnancy should be immediately terminated." Some hours later he sent a detailed report stating: "I consider that it is absolutely essential to terminate this pregnancy, even although it is advanced, to safeguard this young woman's mental stability." I was informed that she had already attempted suicide, but that her mother had unexpectedly arrived in time to rescue her. On the basis of the two medical reports, and the impressions I formed when I saw the mother and the girl, and examined the latter, I decided that immediate termination of the pregnancy was indicated, whether or not the child was viable.

It was not until the inquest, eleven days after the patient's death, that I learned that the matron was not a registered nurse. The certificate of registration of the nursing-home hangs in the entrance hall, and I presumed that the matron herself was registered.

The fact that death did not take place till ten or fifteen minutes after the operation was not only "suggested by the matron," as stated in your report. This was stated on oath by both the anaesthetist and myself.

The Home Office pathologist stated in evidence that an operation of this kind could be carried out at a public hospital, under the National Health Service, without any cost to the family of the patient. That is true. So could any other surgical operation. So could all the operations, of any kind, that are carried out in all the private nursing-homes in the country. But many patients who can afford to pay private fees prefer to have a doctor of their own choice and the amenities of a private nursing-home.—I am, etc.,

London, W 1.

NORMAN HAIRE.

The Lock Hospital

SIR,—It is difficult to entertain with even a modicum of seriousness the idea of closing the National Gallery and transferring the pictures that hang therein to the foyer of the Odeon Cinema. I feel that I am one of the very few who can speak upon the subject of the London Lock Hospital with both a knowledge of, and a disinterest in, the subject. I have been a medical officer in the Lock, but my material association with it terminates within a matter of days.

The Lock is not without a few of the many faults possessed by every hospital. It is served by some doctors who have a wealth of experience not known elsewhere, and by some venereologists whose ability is indisputable; it is also served, and this may be looked upon as one of the hospital's few faults, by some general surgeons whose interest in venereal diseases is secondary. But why pull down a house when the installing of electricity would perfect its structure?

As a teaching centre the Lock has facilities and clinical material which makes it unsurpassed and insurpassable. And the patients—a minor detail—what of them? They range socially from the highest to the lowest, from the stage to the street, from the sublime to the pediculous. Are they to be consulted? It is a simple matter to take one's spirochaetes around the corner to another clinic—but confidence lacks the motility of the spirochaete, and the confidence of the patients in the Lock is one of the most striking aspects of the hospital. Many patients have been attending for sixty years; the fact that they still attend, indeed the fact that they still live, is testimony of the highest worth. The Lock was not built in a day: to it all roads lead. Let wisdom prevail!—I am, etc.,

LONDON, W.1.

RAYMOND OLIVER.

Treatment of Rheumatoid Arthritis

SIR,—I was interested in the leading article (May 7, p. 812) on a new treatment for rheumatoid arthritis. In 1927 the hospital to which I was attached was seeking information regarding the value, if any, of ultra-violet light in the treatment of tuberculous arthritis in children. Attention was drawn to some similarity between certain of the cases and Addison's disease, and it was decided to give whole suprarenal gland to certain cases. The clinical improvement in the first case so tried was so startling that I have always been convinced that there was here a line for further research.

Schafer¹ suggests that the suprarenal capsules have what he calls an "antitoxic" property. The improvement in a series of eleven cases was not so convincing, but was not exactly negative. The work was controlled by blood sedimentation rates, etc.; it was published in the *Archives of Disease in Childhood* (1929, 4, 47).—I am, etc.,

Ormskirk, Lancashire.

JOHN D. CRAIG.

REFERENCE

¹ *Endocrine Organs*, 1924, London, p. 93.

SIR,—Your timely leading article (May 7, p. 812) speaks of a "waning of belief in an all-important infective factor" in the aetiology of rheumatoid arthritis. With all due respect to the belief of others, may I as one who for nearly thirty years has devoted himself to the intimate study of rheumatism reiterate my often expressed view that the role of infection in the causation of rheumatoid arthritis is a very important one?—

Years ago I drew attention¹ to certain clinical aspects of rheumatoid arthritis which in my opinion point quite clearly to an infective origin. Consequently I laid down certain therapeutic principles (systematically carried out and strictly observed rest, nutritional treatment, etc.) which soon found general acceptance and stood remarkably well the test of time ever since. In the course of years I saw many thousand patients who had been either completely cured or at least saved from permanent crippledom with the help of treatment on these lines. It was thus possible to demonstrate the "reversibility" of rheumatoid arthritis more than twenty years ago.

It is therefore quite impossible for me to understand why it should be "difficult to harmonize the microbic theory of rheumatoid arthritis with modern knowledge." One has, of course, to bear in mind that rheumatoid arthritis is a disease of complex character and of multiple origin. In a small monograph² I stressed the point that in addition to infection other aetiological factors have to be considered. In this connexion I was much impressed by the fact that certain types of rheumatoid arthritis could be found almost exclusively in young females and others in women in or near the menopause. Nor did I fail to notice the striking differences in the clinical picture of rheumatoid arthritis according to the age of the patient ("growing pains" of early childhood with little or no changes in the joints and practically never a raised temperature; very marked swellings of the joints and tendency to higher temperature in adults; slight clinical changes without high temperature but coupled with extreme painfulness of the joints in old patients). All these facts have clearly pointed to a certain correlation with, and an involvement of, the endocrine glands. It was logical to assume that the disturbed correlation of these glands and the resulting biochemical changes must play a very important part in the pathogenesis of the disease.

It is therefore erroneous to say that "the disease is part of a basal biochemical disturbance of unknown type." In reality "the basal biochemical disturbance" forms part, but one part only, of this complex disease. The fact of the matter is that the two main causative factors, infection and endocrine disturbance, under the additional influence of climate, environment, occupation, etc., bring about an almost capricious variety of clinical picture in rheumatoid arthritis; but in every case it is the impact of the infection which "starts the ball rolling."

In the interplay of the two main aetiological factors the bacterial toxins are playing the role of the "noxious agents" which Selye and others found lately to be able to produce a "general adaptation syndrome." These experiments are really just another proof of the correctness of the "microbic" theory.

The complex aetiological origin of rheumatoid arthritis makes it obvious that no unilateral therapeutic approach can ever yield satisfactory results, and I never missed an opportunity of pleading for a multilateral one. Impressed by the fact that patients suffering from rheumatoid arthritis—if there is no complication by other disease—have almost invariably low blood pressure (in contrast to cases of gouty arthritis, who almost invariably display high blood pressure), also bearing in mind the always present derangement of the internal secretory balance of these patients, for more than fifteen years I used to administer systematically natural anterior pituitary and adrenocortical extracts and have found these hormones to be very effective in the advocated multilateral therapeutic approach.

On the other hand, having seen during thirty years many "new treatments" emerge triumphantly and also disappear "unwanted and unwept," I hope to be forgiven if I utter a word of caution. One must realize that every therapeutic principle—powerful as the action may be within its own sphere—can be effective in one definite direction only, and must of necessity be inadequate to deal with a complexity of pathological factors, as represented in the aetiology of rheumatoid arthritis. When planning treatment for a case of rheumatoid arthritis it will be always necessary to assess and evaluate the *ad hoc* composition of the aetiological mosaic and to arrange the therapeutic arsenal accordingly. As far as I can see—*ut falsa vates sim*—there will never be a "blue print" for the treatment of rheumatoid arthritis, the successful treatment of which for a long time to come will require much special knowledge and circumspection from the physician.—I am, etc.,

London, W.1.

L. SCHMIDT.

REFERENCES

- ¹ *British Medical Journal*, 1928, 1, 493.
- ² *Prescriber*, 1931, 25, 213.
- ³ *Clinical Aspects and Treatment of Articular Rheumatism*, 1924, Vienna.

Morton's Metatarsalgia

SIR,—In the introductory sentence of the annotation on Morton's metatarsalgia (May 14, p. 858), there is an implication that T. G. Morton was the first to describe this syndrome in 1876. Possibly some of your readers may be interested in the following :

"Another form of neuralgic affection occasionally attacks the plantar nerve on the sole of the foot, between the third and fourth metatarsal bones, but nearest to the third, and close to the articulation with the phalanx. The spot where the pain is experienced can at all times be exactly covered by the finger. The pain, which cannot be produced by the mere pressure of the finger, becomes very severe whilst walking, or whenever the foot is put to the ground.

"Relief can only be afforded by the application of lateral compression, a strip of plaster about an inch wide being drawn tightly over the foot and round the sole. I believe this application acts by drawing the metatarsal bones closer, and thus affording protection to the affected nerve, which, when the parts are capable of expansion, is more exposed to pressure."

This occurs on page 52 of *A Treatise on Corns, Bunions, the Diseases of Nails, and the General Management of the Feet*, by Lewis Durlacher, Chiroprapist to the Queen, and published by Simpkin, Marshall and Co. in 1845, thirty-one years before Morton published his description.—I am, etc.,

London, S.W.3

C. E. KEMP.

Thiosemicarbazone

SIR,—In the many various publications about tuberculosis there is no mention of the drug thiosemicarbazone. This is a new compound suggested by Professor Domagk, of Wuppertal, Germany, for the chemotherapy of tuberculosis. While serving with the R.A.M.C. in Germany I attended the congress of the West German E.N.T. specialists at the University of Bonn. Professor Domagk (inventor of "prontosil") was the main lecturer. He gave a detailed account of his experiments in the treatment of tuberculosis with thiosemicarbazones. He did not disclose the formula of the compound.

Following his lecture, papers were read by clinicians from various medical centres where this drug is used experimentally for treatment. A report from the clinic for the treatment of lupus in Münster stated that the new drug cured lupus in a short time. A professor of otolaryngology reported his ex-

perience in treating laryngeal tuberculosis with thiosemicarbazone. Dysphagia disappeared in 3-4 days after the commencement of treatment, even in the very severe cases. Treatment of pulmonary tuberculosis was disappointing so far.

There is little we can learn nowadays from German medicine, which is unbelievably backward. But there are a few things of importance, and it may be useful to know more about them. It is a great pity that so many British doctors now in Germany with the R.A.M.C. make such little use of their stay there from this point of view.—I am, etc.,

Norwich.

L. FISH.

*An abstract of a paper on thiosemicarbazone by Professor Domagk (*Nord. Med.*, 1948, 39, 1322) appeared in *Abstracts of World Medicine* (Feb., 1949, p. 246).—Ed., *B.M.J.*

Treatment of Varicose Veins

SIR,—I cannot let this correspondence pass without putting in a good word for injection therapy. I feel that letters on any subject in your columns should be helpful rather than condemnatory, and that it would be a pity if such an excellent method of dealing with varicose veins should be damned either by a theoretical boggy of deep thrombosis—which I have never seen—or by the charge of almost certain recurrence.

I have been injecting varicose veins for over nineteen years, and have done well over 20,000 injections, of which I have regretted only a few. Five out of six of my patients come to me or to my clinic at Battersea Central Mission on the recommendation of former patients whose varicoses I have completely cured to their own satisfaction. I even injected my own varicose vein three years ago, and to-day there is not a sign of what was a very large and twisted varix.

I think that the secrets of success are : (a) inject as high as possible ; (b) inject very rapidly with the leg in a horizontal position and sweep the wave of sclerosing fluid down the vein and into its tributaries with the band (this needs considerable practice and confidence) ; and (c) always apply a compression bandage, usually of the adhesive type, and keep this on for a fortnight. In certain cases this means strapping the limb from the foot to the thigh, or at least as high as the upper limit of the varicosity.

It would be useless to deny that in a small proportion of cases there is a recurrence due to recanalization. But this occurs quite early—usually within six months—and it will be found that the vein wall is thickened and that a second injection, made with the same precautions, will produce a lasting hard sclerosis, and that the offending vein will disappear completely in a few months.

Recurrences also occur after ligation, and quite a number of my patients have had the Trendelenburg operation done previously. But I do not on that account condemn the operation, and it may be that a combination of both methods would result in fewer recurrences than either alone. Finally, let each continue to practise and try to perfect his own technique, and if his results are good he will have no lack of a steady flow of well-satisfied patients.—I am, etc.,

London, S.W.7.

R. SIMPSON HARVEY.

Dried Plasma for Domiciliary Midwifery

SIR,—Even in these days of antenatal clinics and x rays cases of unexpected twins continue to occur in general practice. I recently saw such a case, and found myself delivering uniovular twins in a bedroom at night.

Both arrived without difficulty, but in the third stage there was considerable post-partum haemorrhage due to atonic non-detachment of the placenta. Manual removal was not feasible, and it was then that I was truly thankful that I had with me a supply of plasma to give without delay. Resuscitation, combined with ergometrine, was successful, and the placenta was eventually removed in hospital the next morning. All three are doing well.

May I suggest that all who practise domiciliary midwifery should carry with them a special bag containing at least two pints (1.1 litres) of dried plasma, the necessary sterile water, and a giving set? May I also suggest that midwives should carry plasma and be trained to give it? And it should, of course, be a stock possession of every maternity home.

I am a firm believer in analgesia, but if I had to choose between having a gas or triline apparatus for the comfort of my patient or a supply of plasma for the safety of her life I should undoubtedly select the plasma. Furthermore, I believe many more women would volunteer to give their blood to the banks if they knew it would be devoted to making plasma for obstetric emergencies in the home. Because of recent political arguments, the general public knows how important analgesia in childbirth is considered. The provision of dried plasma for domiciliary midwifery is, in my opinion, of even greater urgency.—I am, etc.,

Herne Bay, Kent.

C. T. H. WHITESIDE.

Reform of Mental Hospitals

SIR,—I have read the review (April 30, p. 761) by Dr. Edward Glover of Mr. H. G. Woodley's book on the above subject with considerable interest. The review starts off with the phrase, "No doubt there is a good case for the reform of institutional psychiatry," and concludes, "In fact the main virtue of the book is that the author attempts, however unsuccessfully, to do what would be much better done by psychiatrists themselves, if only they were so disposed."

This is the root of the problem. Mental patients are inarticulate, and even when they recover and become articulate their appeal is discounted as being that of persons lacking in judgment; while unfortunately those who are in charge of large mental institutions naturally tend to accept things as they are, and the spirit of radical reform is conspicuous by its absence from the recommendations of the great majority of those who have the care of our unfortunate mentally sick brothers and sisters.

It would be of considerable interest to know how much the National Health Service expends per head on those who are physically ill and how much we spend per head on those who are mentally ill. I feel sure that if the figure were known the public conscience would be startled by the abyss between our concern for the ailing in body and those who are ailing in mind.

The root-and-branch reform of our mental institutions is long overdue, but it will not come until the public conscience is aroused to the urgent need for classification and individual treatment of mental patients in a much greater number of units far smaller in size than the great barracks where to-day all types and degrees of mentally sick persons are herded together for mass control.—I am, etc.,

Wrexham, Denbighshire.

CYRIL O. JONES.

Paediatrics and Family Practice

SIR,—We are very glad that Professor W. S. Craig, Dr. F. Charlotte Naish, and Dr. M. F. G. Buchanan (May 7, p. 801) are attempting to bring the medical student into touch with the problems of family practice. At the same time we fear their initial premise "that the instruction of the medical student is concerned primarily with the training of the family doctor" will not go uncontested. The Medical Curriculum Committee of the B.M.A. states bluntly, "The object of undergraduate teaching is not to train general practitioners, but to provide the student with a foundation for his later career in any branch of medical practice," and it can count on weighty support within the profession.

Yet, lacking a clear directive principle, the insatiable curriculum daily devours apace, threatening the efficiency and zest of teacher and student alike. The nature of this principle is perhaps the most important issue in medical education to-day. As teachers, we frequently ask ourselves the question, "What exactly are you trying to do?" and more and more we are inclined to answer with Professor Craig and Drs. Naish and Buchanan, "To train a family doctor." Once this view is accepted an effective principle of integration is introduced in the curriculum.

We are now trying to discover the amount and kind of disease in children encountered by practitioners in different kinds of practice, and Dr. Naish could probably help us on this point straight away. With this information added to out-patient and ward experience we shall be able to see the paediatric needs of the family doctor in better perspective and arrange our teaching accordingly. Further, deliberate practitioner

training would also permit a more precise answer to the fundamental question which any reform of the curriculum must raise—namely, What should be considered undergraduate and what postgraduate subjects? Nor does this apparently utilitarian approach deprive the student of that basic foundation which the B.M.A. Committee rightly desires. "Medical education, like all education, is primarily an appreciation of method, and secondly a knowledge of fact," and a variety of subjects can provide material equally suitable for the development of that appreciation.

In this department we are engaged also in studying a number of common disorders in childhood as they present to the family doctor, and we are increasingly impressed by the refreshing effect that this has on our work and teaching. What is more, the consistent appreciation of the students during the past two years has convinced us that their essential curiosity and zest for learning have not been weakened by our preoccupation with those common disorders which will be the concern of the majority for the rest of their lives.

The need is not to give the student just a glimpse of yet another clinic, but rather to give him substantial contact with the day-to-day work of family practitioners. We understand that for some time the Edinburgh Medical School has used the domiciliary practice in this way, and their observations would be very welcome. Valid assessment of the success or failure of this method cannot be made quickly; it will be shown in the rising or falling standard of family practice in the years ahead. For this reason we should set little store on the immediate comments of the students or the apparent toleration of their presence by the patients. There is need for careful preparation, experiment, and prolonged observation in this matter. With these reservations, we would like to join with Professor Craig and Drs. Naish and Buchanan in their plea for the fuller use of family practice in undergraduate teaching, and we hope their paper will promote fresh consideration of this important question.—We are, etc.,

S. D. M. COURT.

F. J. W. MILLER.

Newcastle-upon-Tyne.

SIR,—I read with great interest the article of Professor W. S. Craig and Drs. F. Charlotte Naish and M. F. G. Buchanan entitled "Instruction of the Medical Student in Paediatrics" (May 7, p. 801). When I entered my present practice in a working-class district of London in 1937 I found that I seldom saw an infant or young child unless he was acutely ill. Many of my patients were so poor that they waited until their children were very ill indeed before consulting me. I therefore encouraged them to join the London Public Medical Service, in order that, by paying a few pence a week, they would be entitled to medical attention whenever necessary.

Early in 1938 I started to hold my own children's clinic 'ohé afternoon a week, which my P.M.S. patients were urged to attend as part of the service. Except for my four years' absence in the Forces, the Clinic has been held regularly ever since. The work done is practically identical with that described by Dr. Charlotte Naish in her own clinic—examination and weighing of infants, advice on infant feeding, vaccination, and immunization, and discussion of general health and behaviour problems. Careful records are kept of each case.

I find the mothers most appreciative. They prefer the intimate atmosphere of their own doctor's consulting-room to the rather impersonal one of the infant-welfare centre. Moreover, if am called in to a sick child my work is made the easier by the fact that I know the family, and mine is a familiar face to the child.

Nevertheless, there is one problem which I should be interested to know if Dr. Naish shares. Despite the fact that I stress the importance of regular routine examination I find that when the infants reach the age of one year it is almost impossible to persuade the mothers to bring them to the clinic regularly. Whether because of lack of time or because of diffidence in troubling the doctor, older infants and children are rarely brought to see me unless they appear unwell.

I was, however, most gratified to read of the work being done by Dr. Naish and her partners. My colleagues have often made me feel that my interest in positive health in paediatrics was an amiable eccentricity and that such work belonged rather to



Varicose veins

the most **efficient** injection treatment

Ethamolin offers specific advantages over any other sclerosing agent for varicose veins. Given sufficiently early, Ethamolin frequently brings *lasting* benefit, marked relief can be obtained even in cases of prolonged untreated varicosity. Ethamolin forms a firm, adherent thrombus. Sloughing is not caused if the solution escapes around the vein and there are no general reactions except in the very rare case of hypersensitivity. The total dosage required is normally less than 6 cc. being powerfully bactericidal. Ethamolin reduces the risk of infection to a minimum. With Ethamolin the practitioner is thus equipped to deal with the majority of his varicose patients without need to resort to operative measures.

GLAXO

ETHAMOLIN

MONOETHANOLAMINE OLEATE

2 cc. ampoules boxes of 6 and 100 bottles of 15 cc. and 50 cc.

GLAXO LABORATORIES LTD GREENFORD MIDDLESEX BY post 3434

TEMPUS IN AGRORUM CULTU CONSUMERE DULCE EST (OVID)



'Tis sweet to spend one's time in the cult of the field . . . yet for those who are allergic to pollen, pleasure is cut short at this time of the year by the distress of hayfever and allergic rhinitis.

Prompt relief of congestion may be obtained by the simple application of a few drops of 'ENDRINE' nasal compound. Free breathing is ensured by ephedrine, which shrinks the engorged mucosa, whilst the bland oily base soothes the inflamed mucous membranes.

ENDRINE

Nasal Compound

Formula: ephedrine 0.5% w/w, menthol 0.5% w/w, camphor 0.5% w/w, eucalyptol 0.5% w/w, oil of camphor 0.35% w/w, light liquid paraffin q.s. to 100

JOHN WYETH & BROTHER LIMITED
Clifton House, Euston Road, London, N.W.1
BEPLIX - ALUDRON - PETROLAGAR - PLASTULES

Wyeth

Progress in Therapy

A CONSTANT AIM of Boots' research department is to explore every possibility in drug production and place the results at the disposal of the medical profession. The following are three recent additions to the comprehensive range of Boots' Medical Products.

1

D.F.P.

Di-Isopropyl Fluorophosphonate

A potent miotic and inhibitor of cholinesterase for the treatment of glaucoma, paralytic ileus and myasthenia gravis.

2

Histostab

A satisfactory antihistamine with few undesirable side-effects, for the treatment of a wide range of allergic conditions.

3

Suspension of Sulphathiazole-Boots

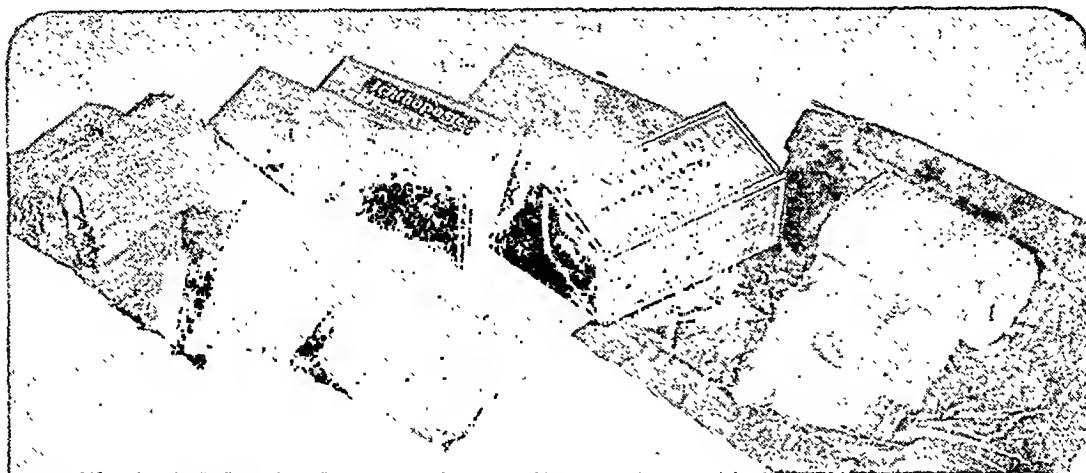
A palatable, finely divided suspension of Sulphathiazole for the treatment of infections in children. Specially prepared to overcome the difficulty of giving frequent doses of tablets.



Literature and further information on request from Medical Dept.

BOOTS PURE DRUG COMPANY LIMITED
NOTTINGHAM, ENGLAND

S40



Viscopaste and Ichthopaste Bandages

Viscopaste and Ichthopaste bandages are recommended as an alternative to elastic adhesive bandaging, in the treatment of chronic varicose and eczematous conditions and where the patient's skin is hyper-sensitive. Both bandages have non-fray edges and are thoroughly impregnated with zinc oxide

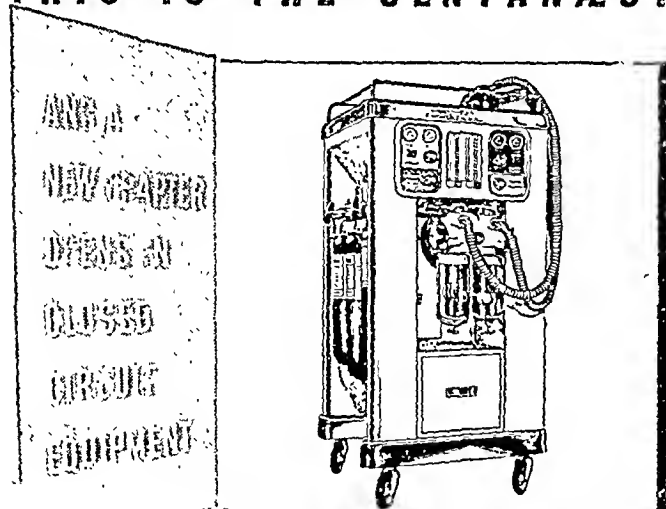
gelatin paste of the Unna type. Ichthopaste contains, in addition, 2% Ichthyol.

Available in 6 yd. lengths by $3\frac{1}{2}$ " wide.

Descriptive literature may be obtained on request to the Medical Department of the Manufacturers.

VISCOPASTE & ICHTHOPASTE Bandages are made in England by T. J. Smith & Nephew Ltd., Hull

THIS IS THE CENTANÆST



It presents all the features of the Combined Boyles and C.M. Absorber in a convenient form. The Centanæst is clean. All gas conduits are enclosed; the apparatus is easily visible and fully protected. The Absorber can be readily accessible and easily changed. The cabinet is provided with drawer and table space. The British Oxygen Company Ltd. is proud to put the Centanæst at the service of the Medical Profession.

BOYLES APPARATUS The introduction of the "Centanæst" will not eliminate from our range of apparatus the universally known Boyles Table. Our Model "G" with the Coxeter-Mushin Absorber presents a combined apparatus for the administration of "open" or "closed circuit" anaesthesia.

THE BRITISH OXYGEN COMPANY LTD
WEMBLEY MIDDLESEX RUSHOLME MANCHESTER
INCORPORATING COXETER & SON LTD. and A. CHARLES KING LTD

For promoting *Natural Restful Sleep*

THE control of insomnia presents a problem that often cannot be effectively or safely solved by recourse to the use of hypnotic drugs.

"Ovaltine" provides a safe and natural means of inducing sleep in many cases, especially where the basis of the insomnia is digestive unrest, nocturnal hunger or nervous instability. Taken before retiring, it promotes quiet and restful sleep by reason of its gentle sedative effect on the nervous system and its faculty of assisting digestive ease.

"Ovaltine" is a natural food prepared from milk, eggs, malt extract, cocoa and soya. It is possessed of a truly delightful taste and is appreciated by every type of patient.

Ovaltine

A. WANDER, LTD.
Manufacturing Chemists,
London, W.1.

M335

the province of the local health authorities than to that of general practice. To learn that I share the views of such well-known paediatricians is indeed encouraging.—I am, etc.,

London, W.6.

B. ROSEFIELD.

Routine Medical Examinations

SIR,—I read with interest Dr. M. E. M. Herford's admirable letter (May 14, p. 870) entitled "Routine Medical Examinations." He has not mentioned one use of the examination with regard to prospective employees which is, I consider, of great importance. It is that the examination, when accompanied by a full health history of the applicant, enables a Pulheims system to be used. This system may be either that used in the Army (see the *Journal* of Jan. 15, p. 83) or one which the industrial medical officer has compiled as specially applicable to the industry with which he is concerned.

It is then possible to make a recommendation to the personnel department with regard to the job (or jobs) which the applicant is fitted best to fill. This ensures the most economical use of the man's labour, and guards him against any industrial hazard which might be specially dangerous to him in view of any departure from the normal in his physical or mental state.—I am, etc.,

London, S.W.7.

R. FRANK GUYMER.

Death Following Neostigmine

SIR,—Just before reading Professor R. R. Macintosh's note (May 14, p. 852) on death following injection of neostigmine, sudden death occurred under very similar circumstances, on the operating table, in a patient whom I was anaesthetizing.

A deeply jaundiced woman of 62 was being operated on for the relief of common bile-duct obstruction. The anaesthesia was "kemithal" 1 g., *d*-tubocurarine 25 mg. in divided doses, and 50% nitrous oxide and oxygen. Assisted respiration was maintained throughout.

There were a few cardiac irregularities during the operation, which lasted about 60 minutes, but otherwise nothing of note. Some cyclopropane was given at the end of the operation to afford complete relaxation for the sewing up of the peritoneum. The patient's condition was satisfactory.

When this was finished 2 mg. of neostigmine mixed with 1/100 gr. (0.65 mg.) of atropine was injected intravenously. A short while after this the patient quite suddenly became grey and pulseless. The abdomen was reopened very rapidly and cardiac massage was performed, together with the usual remedial measures. No response whatever was obtained.

At necropsy the operation area was perfect, and the only finding was said to be a very poor myocardium.

This, of course, was highly unsatisfactory and disturbing from the anaesthetist's point of view, and in view of Professor Macintosh's case I feel this should be published as a possible further example of death caused by the rapid injection of neostigmine.

I have made a practice, since hearing of Professor Macintosh's case, of giving the neostigmine and atropine in very small divided doses. It might also be remarked that we have found that slowing of the pulse occurs much less commonly if the proportion of atropine to neostigmine is that of 1/100 gr. (0.65 mg.) to 2 mg.—I am, etc.,

Lincoln.

J. CLUTTON-BROCK.

Research in Renal Disease

SIR,—Dr. A. A. Osman (May 21, p. 910) has drawn attention to a number of matters which far transcend in general importance the particular one which prompted him to write to you—hence this present note. We ourselves stress, as he has done, the leading role played by renal disorders in the incidence of crippling disease and of death; we also think, as he obviously does, that there should be far fuller integration of knowledge about the kidney, more systematic planning and co-ordination of research to add to that knowledge, and expert transmission of the results in the ways best calculated to ensure that renal irregularity is recognized and, if possible, checked before irreversible changes have occurred.

These objectives demand co-operation between a wide variety of preclinical, clinical, and other workers, very much more generous endowment than has hitherto been available, and one

or more research and teaching headquarters. From the experience of two of us at Oxford during 1945–7, and of the three of us in London from early in 1948 to date, we can testify whole-heartedly to the value of the many-sided approach to renal problems. The story of the Oxford co-operative effort is well enough known; and we need not give it again here. In the current renal researches our own main contributions are necessarily those of a physiologist, a comparative physiologist, and an orthopaedic surgeon, and we are very conscious of the widening of our scope which association with other workers—pathologists, obstetricians, renal-clearance experts, and so forth—is making possible.

Because of our experience on a small scale with relatively scanty research time and financial support, we can envisage the sort of success which could attend the efforts of a far wider association of researchers with fuller time, proper accommodation, adequate endowment, and centralized direction. In the same building or buildings, as a correct counterpart to all this, the knowledge secured by past and current research could be made available in clear-cut form to postgraduates and students, and they could be briefed in the best methods for the prevention and arrest of kidney malfunctioning.

Is it too much to hope that the necessary steps will before long be taken, and that some more radical kind of halt will thereby be called to the disablement and fatalities produced by renal disorders? There are many institutes of cardiology but few, if any, of nephrology, though the heart is more often than not the victim of the kidney's initial malpractice.—We are, etc.,

K. J. FRANKLIN,
St. Bartholomew's Hospital Medical College.
E. C. AMOROSO,
Royal Veterinary College.
J. TRUETA,
Wingfield-Morris Orthopaedic Hospital.

Hereditary Cheiropompholyx

SIR,—The case seen by Dr. S. H. Curry (May 21, p. 913) appears to be the local variety of epidermolysis bullosa more or less completely localized to the hands or feet or both hands and feet, characterized by a recurrent bullous eruption in summer—the exciting cause being the hot weather more than local trauma.

The familial incidence was first pointed out by E. A. Cockayne,¹ who could find only one similar case previously recorded,² and that without known family incidence. This was in a boy, then aged 4 years, under my care, who, I hear, suffered very much from the complaint in summer when he was in the Royal Air Force during the late war. I have been told of a similar case in a boy aged 6 years, but with hereditary incidence. Many cases have been recorded in America—see especially Waisman's³ report entitled "Recurrent Bullous Eruption of the Feet and Hands (Weber-Cockayne)." The striking pedigree given by J. B. S. Haldane⁴ should also be seen.—I am, etc.,

London, W 1

F. PARKES WEBER.

REFERENCES

- ¹ *Brit. J. Derm. Syph.*, 1938, 50, 358.
- ² *Proc. R. Soc. Med.*, 1926, 19, 72.
- ³ *J. Amer. med. Ass.*, 1944, 124, 1247.
- ⁴ *J. Hered.*, 1942, 33, 17.

POINTS FROM LETTERS

Treatment of Spondylitis with Cortical Extract

Dr. J. THOMSON SHIRLAW (Wigan) writes: After reading the leading article (May 7, p. 812) I am constrained to mention a case of ankylosing spondylitis treated by me last year with an extract of suprarenal cortex. The patient's own statement of its effects is that, whereas his symptoms were aggravated by previous injections of gold and the application of x rays, they were improved after the adrenal cortex injections. I was led to adopt this treatment by the appearance in him of thick, solid limbs, shoulders, and buttocks, loss of sexual desire, and exhaustion after little effort. Owing to the high cost of the remedy I gave 40 minims (2.4 ml.) twice weekly; as he improved I reduced this to once weekly. Such doses were too small and too widely spaced. Now, encouraged by the results of the clinical trials mentioned in your leading article, I hope to resume the treatment and will make it more intensive. There is little doubt that in my case, at any rate, there is a break in the harmonious relations of the functions of the pituitary and adrenal glands.

Medical Notes in Parliament

NATIONAL HEALTH SERVICE (AMENDMENT) BILL

The National Health Service (Amendment) Bill was given a second reading in the House of Commons on May 24.

The Lord Advocate, Mr. JOHN WHEATLEY, said the purposes of the Bill were broadly three. First, to clarify and amend the application to partnerships of those sections of the National Health Service Acts which prohibited the sale of practices by doctors in the Service and which compensated them for the resulting loss of the selling value of the goodwill. Secondly, to carry out certain promises of amendment made to the medical profession in the discussions both before and since the beginning of the Service. Thirdly, to make certain minor administrative changes which experience had shown were desirable.

Mr. Wheatley then described in detail the effect on medical partnerships of Part I of the Bill, which was printed in full in the Supplement of May 21 (p. 274). There were only 50 "mixed practices," of which only one was in Scotland, and the new fund required for compensation in these cases was not likely to be large. He drew attention to the opportunity given to all members of partnerships who had not yet joined the Service to do so before the second appointed day, which would be two months after the date on which the Amending Bill became an Act. The committee under the chairmanship of Mr. Justice Slade had recommended that assistants should be treated in the same way as partners, and effect had been given to this recommendation.

It was realized that, despite all the attempts which had been made to secure justice as between one party and another, there might be the odd case in which the operation of the principles laid down by the Slade Committee and incorporated in the Bill might lead to hardship. Provision had therefore been made for arbitration in such cases, and, failing agreement between the parties on a single arbitrator, the issue would be referred to a committee consisting of a legal chairman appointed by the Lord Chancellor or the Lord President of the Court of Session, a medical practitioner appointed by the President of the British Medical Association, and an accountant. Finally, in Part I of the Bill it was made clear that Section 35 of the principal Act, or Section 36 of the corresponding Act in Scotland, did not prevent a doctor who had never been in the Service from selling the goodwill of his practice even although part of that goodwill was acquired from a partner inside the Service.

It was possible under the Health Service Acts, and in point of fact under the National Health Insurance Acts ever since 1912, to introduce by regulation a whole-time salaried service. The pledge given by the Minister of Health that it would be made clear in legislation that a full-time service could not be instituted by regulation alone was fulfilled in relation to general practitioners by Clause 10 and in relation to specialists by Clause 11 of the Bill.

Among other minor matters which arose under Part II of the Bill professional members of the tribunal were to be drawn from a standing panel of members of the profession selected to cover the different types of practice involved, whether rural, industrial, or some other type. All executive councils were in future to elect their own chairman from among their own members. Provision was made for the removal from the lists of executive councils of doctors or others who had removed from the district and were not, in fact, available for that or any other reason to provide services in that area. The period for claiming fees under the Midwives' Act was extended from two months to three months.

Under Clause 12 they had put the coping stone on the structure of Whitley Councils built up for the negotiation of the terms and conditions of service of all of the many types of officers engaged in the National Health Service by enabling arbitration machinery to be set up where disagreement arose between the official and the staff sides. The intention was to set up a tribunal for the Health Service on the lines of the Civil Service Arbitration Tribunal, the details of its constitution and procedure to be settled by the terms of an arbitration agreement made between the two sides. He was confident that the Bill would receive support from all sides of the House. It was but a further step in the development of a scheme which, in its short span of ten months, had already invoked the admiration and respect not only of the people of this country but of the people of the whole world.

Buying and Selling Goodwill

Sir HUGH LUCAS-TOOTH said he did not feel strongly about the retention or otherwise of the power of a doctor to sell the goodwill of his practice. This was not really a question of

principle in his view—a view generally shared by the Opposition. The members of some professions had been able at all times to sell and to buy the goodwill of their practices. The members of other professions had not been so able. That applied, for example, to the legal profession, and he thought that it was a pity that there had not been the same state of affairs in the medical profession. He recapitulated the criticisms of Sections 35 and 36 of the principal Act put forward by Mr. Willink in the committee stage and on report. It was a pity the Minister of Health had not consulted with the law officers on these points at the time they were discussed.

After the principal Act was passed lengthy discussions took place between the Minister and the doctors. The doctors had three main objections to coming into the new Service: the fear of a full-time salaried service; their objection to the abolition of buying and selling of practices; and their fear of direction. The doctors had quite properly and democratically held a plebiscite at which general practitioners voted by an overwhelming majority of the order of 12 to 1 against coming into the scheme. The doctors meant business, and the Minister had had to give way. On every principal objection which the doctors raised the Minister had had to give way.

Subject to detailed consideration in committee the Opposition thought this was a good Bill and they desired to give it their support. Clause 10 said: "The remuneration to be paid . . . shall not . . . consist wholly or mainly of a fixed salary." He thought that effect would be given to those words if the fixed or basic salary did not exceed half the total emoluments.

Concluding, he said that the fundamental trouble with the Health Service Acts was that the choice of priorities was wrong. The Acts were founded on two fallacies: that unlimited money would be available, and that only expenditure was needed to provide a good health service. Free spectacles were admirable things, but were very rarely matters of life. The more free spectacles were available to the people the longer the queues would become at the hospitals. The hospitals were matters of life in this connexion.

Mr. BEVAN, intervening, said that it was perfectly competent for the Opposition to put down an amendment to the Bill removing from the range of free issues any part of the Health Service. If they wished to do that they should take the opportunity. If the Opposition wished to restrict the range of free health treatment it was quite open to them to put down an amendment.

Mr. FRANK BYERS said that the question of the direction of doctors had been used as a sort of political propaganda stunt. The National Health Service was a long-term project and he deplored irresponsible political sniping at the Health Service and at the Government in their administration of it. He thought that there were many things that would have to be amended. The position of the rural doctor would have to be looked at again. The Bill ought to have been called the National Health Service (Amendment No. 1) Bill, because there would have to be amending Bills Nos. 2, 3, and 4, and then a consolidating Bill.

Specialist Services

Mr. MESSER thought that the Minister in this Bill had given the doctors more than most people would consider necessary. Discussing specialist services, he said that part-time specialist services were tied up with the paid beds provision. Children who required tonsillectomy might have to wait for nine months to two years for the operation but could be admitted to hospital at once if the operation were done privately at a cost of from £30 to £50. That was one of the dangers of part-time specialists.

The part-timer could undertake work which entitled him to 94/11ths of the salary he would earn as a full-time specialist. He was entitled to up to 800 guineas per annum for domiciliary visits. He could make special visits on behalf of the regional board at 5 guineas per visit. He could work as a locum tenent at 5 guineas per half-day, and he was entitled to work in his own private practice. There were also such things as income tax allowances for expenses that were denied the full-time specialist.

He mentioned these things because he thought too much importance was being placed on the proviso that in no circumstances would there be introduced a regulation which would make all specialists full-time. Mr. Messer went on to suggest that consideration might be given to placing on the regional hospital boards the responsibility for the provision of facilities for postgraduate study.

Mr. PETER THORNEYCROFT criticized not so much what was in the Bill as what was left out. On the question of analgesia in childbirth he had a proposition to put to the Minister of Health. Two new Clauses had been placed on the Order Paper, and if the Minister would accept them on the committee stage he would withdraw his Analgesia in Childbirth Bill. Those new Clauses gave him 75% of what he wanted.

Mr DAVID RENTON, speaking as the son of a general practitioner, took objection to the vagueness of Clause 10. It would be useful if the Minister were to give the House some idea of what he had in mind when he said that in special circumstances the proviso with regard to there being no fixed salary or not mainly a fixed salary should not prevail. If these 'special circumstances' were to be interpreted too broadly the whole effect of this amendment would go by the board.

The Minister and the Medical Profession

Dr BROUGHTON welcomed the Bill but he also thought that the Minister had gone too far in trying to meet the demands of the medical profession. He quoted extracts from a leading article in the *British Medical Journal* of May 21 (p 904): "The B.M.A. conducted a campaign against the introduction of a whole-time salaried medical service." "It did not accept the assurance of the Minister that this was not the Government's intention." "Mr Bevan once more bowed before the storm."

The Act of 1946 was arranged so that the Minister could conform to the wishes of the medical profession and the best interests of the country. The day might come when the profession wanted a full-time medical service, and it would have difficulty in obtaining one if Clause 10 became law. He suggested that the Minister was pampering a section of the profession most politically prejudiced and panic-stricken. He quoted again from the same *B.M.J.* leading article.

The only other criticism he made was in regard to the proposal that the executive councils should allot to the medical, dental, and other local committees such sums for deferring the administrative expenses, including travelling and subsistence, as were necessary. Why should the administrative expenses of these committees and the travelling and subsistence allowances of the members have to be met by compulsory deductions from the salaries of doctors, dentists, and pharmacists? This should be a public expense. Doctors were not wealthy men, and they must not be judged by their gross incomes because many of them had heavy practice expenses. They asked only that their remuneration should be sufficient to allow them to give freely their self-sacrificing service in accordance with the traditions of an honourable profession.

Mr BAIRD said he was astonished to hear Mr Renton deploring the fact that the National Health Service Act had been treated as a political issue. The Health Service scheme had been political right from the very beginning and up and down the country before the Bill was introduced the Tory Party and the B.M.A. were misrepresenting what was in the minds of Labour members. He referred especially to the dental services under the NHS. It was written into the original Act of 1946 that the Minister should provide a priority service for expectant mothers and young children, but the fact was that the establishment of dentists employed by local authorities for this purpose for treating the priority classes was under 50%. The Minister should take over the treatment of these priority classes and run it on a regional basis. There were perhaps 10% of the dentists who were guilty of acting in a most unprofessional manner.

Conciliation Machinery

Mr LINSTED said it was hopeless to think of attracting dentists into a salaried service while there was the enormous disparity between official salaries and what could be earned in private practice. The Minister's main task now was to carry the professions with him. He had gone some way to meet the doubts of the medical practitioners, and it was of value to have a statutory guarantee that a full-time salaried service should not be introduced save by Act of Parliament. He thought that some gesture to the dentists was very badly needed. The dentists felt that they were faced with a unilateral alteration of terms of service by regulation.

He felt that Clause 12 should be carefully considered because it brought into the NHS a large section of the conciliation machinery applied to industrial disputes. This raised two important points of principle. First, the Minister of Labour was brought in under the Conciliation Act and as a matter of constitutional propriety he wondered whether it was right or proper for one Minister to purport to arbitrate in a dispute where one of the parties was a Minister of the Crown. This wanted looking into on the committee stage to ensure that they were not putting either the Minister of Health or the Minister of Labour into a false position.

The second and more important point was that if the industrial court was chosen under the Industrial Courts Act, 1919, as a means for resolving a dispute between the Minister and any section of employees in the National Health Service then there was no provision for the enforcement of any award which might be made. He hoped the Minister would be able to give some assurance that in these arbitration proceedings,

whatever form they took, he would as party to them regard himself as bound in advance by the decision of the arbitrator.

Mrs MANN referred again to the question of analgesia under the Midwifery Service, and quoted freely from the report of a subcommittee of the Medical Women's Federation which appeared in the opening pages of the *British Medical Journal* of Feb 26 (p 333).

Mr HOWARD welcomed the amendment to the Bill allowing hospital boards and management committees to subscribe to certain approved associations. He hoped that the right accorded to certain committees to elect their own chairmen would be extended. He asked the Minister to explain the significance of another minor amendment the removal of the words 'loss of remunerative time' and their substitution by 'any loss of earnings which would otherwise be made.' Was this amendment significant, sinister, or merely silly?

He also made the point that in some of the Acts recently imposed by the Minister the question of war damage had been treated unfairly. One hospital had put in its original budget provision for capital expenditure which included £100,000 of war damage. That item had now to be cut to £90,000. Therefore the board of that hospital must leave a vast amount of war damage unprepared for yet another year. This difficulty applied to every hospital in every blitzed area. In conclusion, he urged the Minister to carry out his declared intention of delegating responsibility as widely as he possibly could. Without such delegation the Service could not possibly work satisfactorily.

Safer Motherhood

Dr HADEN GUEST said it had been contemplated from the beginning that it would be necessary to introduce not only one but a series of amending Bills. There were two simple and important things that had been done since the NHS came into operation. Women and children who had previously had to pay for medical treatment were now able to get treatment without paying fees at all. The other great gain was in the reorganization of the hospital system.

He thought that some Members were inclined to attach too much importance to the question of analgesia in childbirth. It was desirable that women should be relieved of the pain of childbirth, but that was by no means the only thing of value about a properly organized maternity service. Analgesia was not necessarily wanted for all women but safer motherhood was.

They wanted to reduce to nil the number of deaths in childbirth and the number of cases of injury to mother or child at the time of birth. This could be done. He referred to a series of 5,000 consecutive deliveries without a maternal death reported recently by Mr Norman Emblin in the *British Medical Journal* of Feb 12 (p 260). These results had been achieved not by anaesthetics or analgesics only, but by the setting up of an organization which meant that every difficult case had a doctor and a medical and surgical specialist team in attendance.

He pointed out, however, that a great increase in the use of analgesia had been brought about by administrative methods under the National Health Service. In 1938 the proportion of women who received analgesia in childbirth was only 0.4%. By 1943 it was 1.2%, and by 1945 3%. The 1946 figure was 6.9%. By 1947 it was 13.3%, and in the last six months of 1948 the figure had gone up to 35%. He thought that this was one of the advantages that had flowed from the NHS. It was not true to suggest that the Ministry of Health was failing in its duty in this respect.

Colonel STODDART SCOTT thought the Bill improved the original Act, but he hoped that hospital management committees and governing bodies of teaching hospitals would also be able to choose their own chairman. He referred to the fact that before July 5, 1948, it was obligatory upon local authorities to provide accommodation for the aged sick. The 1946 Act took this responsibility away from the local authorities and put it into the hands of the regional hospital boards. He did not believe that the boards had carried out these duties in the same way as they were carried out before.

When people were old and a little muddled it was found that the only hospital accommodation available to them was in a mental hospital. At one Birmingham hospital in 1947-8 only 20 people over the age of 65 were admitted. In the period of 1948-9 the figure was 93, and of these old men and women 30 had died from pneumonia, heart trouble, and similar conditions. It was difficult to get old people who were chronically ill into other accommodation such as previously existed.

In the NHS the first priority must be an adequate hospital service. It was remarkable that a drastic cut imposed on the Health Service by the Minister should have been on that element of the Service which had borne the brunt of increasing attendance. At some general hospitals in the North out-patient attendances had increased by 100%. He thought it more important that hospital accommodation should be available than that

people should be able to obtain two pairs of identical spectacles, or that wigs should be given to foreigners.

Drugs for Private Patients

Mr. HENRY STRAUSS welcomed the Bill and so did Sir WAVELL WAKEFIELD, who said that there was one matter which he had raised previously at question time. When the Service was introduced the Minister stated that people would be free to have the Service in whole or in part. Members of the public who wished to pay for the services of a doctor and therefore did not use that part of the Service felt a great grievance because they were debarred from having the free appliances or drugs available to patients who took advantage of the whole Service.

It was wrong that because a person elected to be a private patient he should be debarred from the benefits that the Minister had stated very definitely would be available to him. Many doctors while in the State service had private patients. In treating State patients doctors could not prescribe appliances or drugs which were not acceptable to the State. Surely the same set of rules and the same administrative requirements could be applied to the person who was a private fee-paying patient.

Foreigners who made no contribution received the service free of charge. Private patients could not receive drugs and appliances which they had paid for by way of taxes. The Minister ought to remove this grievance and make it possible for people to receive drugs though paying fees for private treatment from doctors. He also suggested that whatever expense there would have been to the State ought to be allowed for in any charges made for private paying-beds.

Lieut.-Colonel WALTER ELLIOT said that there were now about 454,000 hospital beds in the country. The Emergency Medical Service had run this number up to well over half a million, and so long as there were 50,000 hospital beds in existence but not staffed all the steps which could be taken towards solving the problem of producing an adequate Health Service had not been taken.

There had been considerable uneasiness and distress among the medical profession. There was still a deep Freudian bruise in the mind of the medical profession about the negotiations, which were conducted more as a military operation than as a kind of negotiation. However, the Bill before them carried out the promise of the Minister, and he did not think there was any breach of faith in the Bill.

Dr. Broughton, he said, had early acquired the political trick of using that part of a quotation which suited him and leaving out the rest. He had quoted from the *British Medical Journal* leader to the effect that they had refused to accept the assurances of the Minister. He had left out the explanation in the second half of the sentence, which was that although the Minister might not remain he could not bind his successor. He might perhaps have quoted also another leader in the *British Medical Journal* (May 14, p. 856) dealing with the actual reduction in beds which would follow the recent circular from the Minister.

He quoted at length from this leading article on the effect of the recent cuts on St. Bartholomew's Hospital, Oxford, Bristol, Birmingham, and Manchester. The cost of the health services was still rising and had not yet reached its peak. The Opposition did not propose any cuts in the health services; the money to complete them would have to be found. The Bill before them certainly implemented the promises made by the Minister during the passage of the Bill, promises which the Opposition believed to be necessary. If they had not been implemented then it would have given rise to a grave breach of faith.

The Minister's Reply

Mr. BEVAN said that most of the doubt which arose in 1946 and subsequently and most of the anxieties which the doctors had been suffering were a direct consequence of the unbridled propaganda of some leaders of the medical profession at that time. They created suspicion and doubt where none in fact existed. The Amending Bill was necessary not because of the obscurity of the original Act but because of the complexity of the subject. At the same time, although there were between 17,000 and 18,000 G.P.s in the country, this Bill affected only 50 partnerships.

The proposed new Clauses about analgesia he would deal with at the committee stage. He could certainly not accept the peculiar bargain of agreeing to admit those Clauses in return for the withdrawal of a Private Member's Bill that might never reach the Statute Book. The country was being given the impression that if only these new Clauses were in operation more women would be relieved of pain in childbirth. This was not true. They were up against the physical limitations of the lack of sufficient trained midwives and general facilities.

Every sick person must feel that he or she was receiving as much attention as any other person. It was wrong to suggest that a certain group of patients were to have priority over any

other group. Before many years had passed every woman in this country would be able to have analgesia or anaesthesia if she wanted it.

The Minister then went on to discuss the question of expenditure. One member had asked, "Why on earth should we cut the hospital service and issue free spectacles?" By what conceivable alchemy could he transmute a citizen without a pair of spectacles into a trained nurse looking after a patient? He could not get trained nurses by letting half the country go blind. If the Opposition wished to economize at the expense of the provision of one of the free services let them have the courage to put down an amendment.

The administrative expenses of the National Health Service Act worked out at 2.3% of the total cost. The administrative expenses of private insurance companies were anything from 9½ to 40%. This 2.3% total included the Health Division of the Ministry of Health, the price-fixing machinery for the pharmaceutical services, the Dental Estimates Board, all the executive councils, all the regional hospital boards, and all the management committees and secretarial expenses.

Administrative expenditure should be scrutinized narrowly, but there were no great savings to be obtained on the administrative side. The financial cuts were an attempt by the central administration progressively to exercise financial discipline over the whole Service while at the same time leaving the utmost amount of independent action at the periphery.

To the extent that abuses existed in the Health Service, to the extent that there were faults, they arose directly from those parts of the Health Service that had to be articulated through private enterprise—opticians, dentists, chemists, but not so much the chemists. He believed that before long everybody would take pride in the Health Service. It was already an inspiration to other nations.

The Bill was read a second time and committed to a Standing Committee, and the Money Resolution was agreed to in Committee.

Overcrowding in Mental Hospitals

On May 19 Mr. SORENSEN asked to what extent mental hospitals in London and the Home Counties were overcrowded; approximately what proportion of beds and wards was not being used through lack of staff; and whether recruitment for the mental hospital services was progressing or not.

Mr. BEVAN answered that accommodation in use was overcrowded by 4,048 beds (approximately 11% of the total). The proportion of bedspace available but not used because of lack of staff was 4.1%. Separate figures for wards not in use for this reason were not available. Recruitment of nurses was progressing. In 1948 there were 15% more nurses employed in these hospitals than in 1945.

Artificial Limbs

Answering Lord WILLOUGHBY DE ERESBY, Mr. MARQUAND stated on May 24 that about 50 patients had worn artificial legs fitted with suction sockets for periods ranging up to about two years. As a result of observations made during these trials a number of modifications had been made, especially in the valve. A supply of the improved valves had just been received. He intended to ask a number of limb-makers throughout the country to fit suction sockets to their particular make of legs for trial by not less than another 100 patients.

Mr. Marquand further said that six mechanical hands of one type had undergone trials by selected amputees since April of last year. Reports were available for consideration by the Standing Advisory Committee on Artificial Limbs at their next meeting. Another type of mechanical hand had been produced and was being tested. If the Standing Advisory Committee was satisfied with the performance of either or both of these types of mechanical hand they would be made available to all disabled war pensioners and National Health Service patients for whom they were suitable.

Administrative Staff.—Mr. MCFARLANE inquired on May 17 what was the number of persons engaged on hospital administration in Scotland on July 1, 1948; and the number at present engaged. Mr. WOODBURN replied that information on the number at July 1, 1948, would have to be obtained specially and he did not feel justified in asking hospital authorities for it. The present number of officers engaged in administration (including clerical and typing staff) was about 2,200, which comprised the staffs of the five regional boards, the 84 boards of management, and the 425 hospitals in the Service.

Dental Services.—There were 9,347 dentists on the dental lists in England and Wales on May 1. The Ministry of Health Estimates, Class V(2), provide £28,204,000 for the cost of the general dental services in England and Wales.

No 19

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended May 14

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included) (b) London (administrative county) (c) Scotland (d) Eire (e) Northern Ireland
Figures of Births and Deaths, and of Deaths recorded under each infectious disease, for: (a) The 126 great towns in England and Wales (including London) (b) London (administrative county) (c) The 16 principal towns in Scotland (d) The 13 principal towns in Eire (e) The 10 principal towns in Northern Ireland
 A dash — denotes no cases; a blank space denotes disease not notifiable or no return available

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	44	1	17	3	—	36	2	21	2	—
Deaths ..		1	—	—	—	1	—	—	—	—
Diphtheria ..	90	16	24	1	5	153	14	57	10	3
Deaths ..	1	—	—	—	—	1	—	—	—	—
Dysentery ..	77	7	35	1	—	111	24	59	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute ..	3	1	—	—	—	2	—	1	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Erysipelas ..	—	—	19	9	3	—	—	30	8	1
Deaths ..	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years ..	35	7	8	47	1	30	3	9	18	1
Deaths ..	—	—	—	—	—	—	—	—	—	—
Measles* ..	8,363	1105	444	213	202	11,579	1040	202	177	68
Deaths† ..	—	—	—	1	—	2	—	—	1	—
Ophthalmia neonatorum ..	46	2	10	1	1	46	7	9	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever ..	10	—	—	—	—	7	—	—	—	—
Deaths ..	1	—	—	—	—	—	—	—	—	—
Pneumonia, influenza, (from influenza) ..	406	20	2	8	11	611	30	2	5	5
Deaths ..	15	1	2	3	—	7	1	1	—	—
Pneumonia, primary ..	171	19	165	46	7	169	28	219	20	10
Deaths ..	—	—	—	—	—	—	—	—	—	—
Polio-encephalitis, acute ..	1	—	—	—	—	2	1	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Polymyositis, acute ..	11	1	4	—	—	19	—	2	1	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Puerperal fever ..	—	—	9	—	—	—	—	5	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia† ..	78	6	5	—	—	101	5	2	—	—
Deaths ..	—	—	—	—	—	1	—	—	—	—
Relapsing fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Scarlet fever ..	993	70	177	55	35	1,675	134	283	47	45
Deaths ..	—	—	—	—	—	—	—	—	—	—
Smallpox ..	1	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Typhoid fever ..	7	—	—	1	1	6	—	—	3	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Typhus fever ..	—	—	—	—	—	—	—	—	—	—
Deaths ..	—	—	—	—	—	—	—	—	—	—
Whooping-cough* ..	2,906	183	208	129	82	3,117	217	45	124	15
Deaths ..	11	1	—	5	—	9	3	—	2	1
Deaths (0-1 year) ..	297	42	32	26	8	276	41	62	24	10
Infant mortality rate (per 1,000 live births) ..	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths) ..	4,655	681	628	202	116	4,431	688	581	178	131
Annual death rate (per 1,000 persons living) ..	—	—	12.6	12.5	—	—	—	11.7	11.1	—
Live births ..	8,177	1319	1056	487	235	8,504	1344	1107	471	247
Annual rate per 1,000 persons living ..	—	—	21.2	30.2	—	—	—	22.3	29.5	—
Stillbirths ..	210	25	34	—	—	217	42	25	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	31	—	—	—	—	25	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from polymyositis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Analysis of Deaths in 1947

The Medical Tables of the Registrar-General's Statistical Review for 1947 record that 515,591 civilians died in England and Wales during that year, an increase of 26,537 over 1946. This gave a crude death rate of 12.3 per 1,000 civilian population, compared with 12.0 in 1946 and an average rate of 12.1 for the 10 years 1929-38. Of these deaths 144,570 were due to heart diseases and 77,649 to cancer. These two groups thus accounted for 28.0%, and 15.1% of the total respectively; in 1938 these proportions were 24.3%, and 13.9%.

Deaths due to diseases of the coronary arteries and angina pectoris showed an abnormal increase, numbering 33,168 in 1947, compared with 28,580 in 1946 and 15,409 in 1938. To get a true comparison between those two years it is necessary to discount the changes in the sex and age structure of the population. When this is done, taking the 1938 incidence as 1,000, the corresponding figures in 1947 are 1,851 for men and 1,765 for women, indicating a total increase of about 80% in mortality attributed to this cause over the nine years.

Deaths from cancer show that male mortality is still increasing, and that the halt in the decline of female mortality seen in 1946 has been maintained. While for cancer of some sites, such as the mouth and pharynx, mortality is falling for both sexes, the mortality from cancer of other sites shows great increases. Among the 77,649 deaths in this group cancer of the lung contributed 9,535 (7,805 men and 1,730 women), compared with 4,658 (3,609 men and 1,049 women) in 1938. This accounts for three-fifths of the increase in male deaths from cancer.

Deaths from appendicitis numbered 1,491, less than half the total recorded in 1938, when there were 3,027.

Food Poisoning

The Ministry of Health memorandum on food poisoning (188/Med) was issued in 1935. Since then there have been two important developments in connexion with the control of disease conveyed by food—namely, the notification of food poisoning under Section 17 of the Food and Drugs Act, 1938, and, more recently, the establishment of the Public Health Laboratory Service. The memorandum has therefore been revised and issued to all medical officers of health.

Section 17 (1) of the Food and Drugs Act, 1938, provides that if a medical practitioner suspects that a patient is suffering from food poisoning he shall send to the medical officer of health a certificate stating (a) the name, age, and sex of the patient, and the address, and (b) particulars of the food poisoning.

The main object of Section 17 is to ensure that the M.O.H. is informed of outbreaks of illness occurring in his district and believed to have been caused by food. Although food poisoning is not defined in the Act of 1938, the Minister does not think that notifications under Section 17 need include cases in which food causes an infectious disease which is otherwise statutorily notifiable as such. In practice this has not happened except on occasions when cases of illness clinically and epidemiologically indistinguishable from food poisoning have been so notified but have proved on investigation to be cases of bacillary dysentery. This is unavoidable, and in general the experience of the last 10 years has shown that the notification of food poisoning has achieved the purpose intended—namely, that circumstances requiring further investigation and action of a kind which a general practitioner cannot be expected to undertake are brought promptly to the notice of the local M.O.H., who can then enlist the help of the Public Health Laboratory Service.

The Registrar-General has requested medical officers of health from the beginning of 1949 to include the notified cases of food poisoning in their weekly returns and also to make a quarterly return of the total of such cases amended by reason of corrected diagnoses. The publication of these figures at regular intervals by the Registrar-General may help to bring to light hitherto unrecognized factors in the causation of food-borne disease.

Discussion of Table

In England and Wales a decrease was recorded in the notifications of measles 854, whooping-cough 147, acute pneumonia 88, and typhoid fever 30. There was an increase in the incidence of scarlet fever 95, cerebrospinal fever 23, and dysentery 18.

A fall in the incidence of measles was reported in most areas; the largest falls in notifications were Southampton 116 and Middlesex 100. The only notable exception to this general trend was a rise of 190 in Kent.

A small rise in the incidence of scarlet fever occurred in the South and North and a slight fall in the Midlands; the only large variation in local returns was an increase of 43 in Lancashire.

There were small variations in the notifications of whooping-cough, the largest being a decrease of 91 in the total for the south-west counties.

The largest outbreaks of dysentery were Lancashire 30 (Oldham C.B. 27) and Yorkshire West Riding 15 (Sedburgh R.D. 10). The next largest return was Cornwall, Bodmin M.B. 7.

In *Scotland* there was an increase of 51 in the notifications of scarlet fever, and decreases were recorded for whooping-cough 21 and measles 16. The rise in the incidence of scarlet fever was confined to the western area. Notifications of dysentery in Glasgow increased from 14 to 25.

In *Eire* there were decreases in the notifications of measles 14, scarlet fever 12, and diarrhoea and enteritis 9. In Dublin C.B. an increase of 26 was recorded in the notifications of measles.

In *Northern Ireland* an increase of 33 in the notifications of measles was the chief feature of the returns. The incidence of measles increased in County Tyrone 30, Belfast C.B. 20, and County Antrim 10; in the remaining areas a decrease was reported.

Quarterly Return for Eire

During the December quarter of 1948 the birth rate was 20.0 per 1,000, which was 0.3 below the rate for the fourth quarter of 1947. The infant mortality rate was 48 per 1,000 registered births, being 17 below the rate for the preceding December quarter. The general death rate was 11.4 per 1,000 and was 0.2 below the rate for the preceding fourth quarter.

For the whole year the birth rate was 21.9 per 1,000 and was 1.3 below the rate for 1947. The infant mortality rate was 49 per 1,000 registered births and was the lowest rate ever recorded. The general death rate was 12.2 per 1,000, and this also was the lowest ever recorded.

The death rate from tuberculosis was the lowest on record. Deaths from pulmonary tuberculosis numbered 2,398, and from other forms of tuberculosis 619; these figures were 433 and 250 respectively below the totals for 1947. Deaths attributed to the principal epidemic diseases numbered 651 and included 340 from diarrhoea and enteritis in infants under 2 years (80 in Dublin C.B.); 196 from whooping-cough; 61 from measles, 31 from diphtheria; and 14 from typhoid fever.

Week Ending May 21

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,008, whooping-cough 2,824, diphtheria 92, measles 8,478, acute pneumonia 441, cerebrospinal fever 34, acute poliomyelitis 11, dysentery 55, smallpox 6, paratyphoid 8, and typhoid 4.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

In Congregation on May 28 the honorary degree of D.Sc. was conferred on Viscount Addison, K.G., P.C., M.D., F.R.C.S., Lord Privy Seal and Chairman of the Medical Research Council; Professor C. F. Cori, professor of biochemistry in the Washington University School of Medicine; Sir Charles Harrington, Ph.D., F.R.S., Director of the National Institute for Medical Research; Kaj Linderström-Lang, Director of the Carlsberg Laboratory, Copenhagen; Professor A. W. K. Tiselius, professor of biochemistry in the Royal University of Uppsala; and Professor Jacques Tréfouel, Director of the Institut Pasteur.

UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examination indicated.

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—R. Buri, J. A. Byrne, H. A. Charlton, M. G. Corcoran, F. J. Fleischer-Dioleto, W. J. Foote, J. Gemmell (honorary medal for the Milne Medal in Tropical Medicine), J. Haworth, J. C. V. Murphy, W. L. Palmer, D. Paukan, G. Pringle, K. L. Stuart (recommended for Warneford-Yorke Medal in Tropical Hygiene), S. W. Thomson, R. C. Troup.

UNIVERSITY OF SHEFFIELD

At a meeting of the University Council held on May 20 the following appointments to part-time posts were made: *Lecturer in Social and Industrial Medicine*, Dr. James Sharpe; *Clinical Teacher in Obstetrics and Gynaecology*, Mr. David H. Lees; *Clinical Teacher in Surgery*, Mr. R. B. Zachary.

The following resignations from the posts indicated in parentheses were received: Dr. J. H. Bowie (Lecturer in Bacteriology); Dr. J. M. G. Scott (Lecturer in Medical Pathology); Dr. T. Stapleton (Lecturer in C. H. Health); and Dr. Joan Laird (Research Assistant in the Department of Medicine).

Medical News

Association of Scientific Workers

Lord Boyd-Orr has been elected president of the Association of Scientific Workers.

Scholarships in Norway

The Norwegian Government is offering two scholarships to British university graduates or students intending to graduate this year. A knowledge of Norwegian is desirable though not essential. The scholarships are tenable for the academic year Sept. 1, 1949, to June 15, 1950. Applications should be sent before June 13 to the Controller, Education Division, The British Council, 3, Hanover Street, London, W.1.

Visit of Italian Pathologist

Professor Guido Vernoni, Director of the Rome Institute of General Pathology and Professor of Pathology in the University of Rome, is spending a fortnight in Britain under the auspices of the British Council visiting pathology and biochemistry laboratories. He lectured on "The Pathogenesis of Cancer" at the Chester Beatty Research Institute on May 23 and on "The Pathogenesis of Fevers" at the Royal Society of Medicine on May 24.

Memorial to Army Nurses

Field-Marshal Sir William Slim, C.I.G.S., unveiled on May 28 at the Queen Alexandra's Military Hospital, Millbank, a memorial plaque to the nurses of Queen Alexandra's Royal Army Nursing Corps who lost their lives during the war of 1939-45.

International Health Control

The Public Health Committee of the Brussels Treaty Permanent Commission has simplified the health control measures for those travelling by sea or air between Britain, France, Belgium, Holland, and Luxembourg. Each country will inform the others of all diseases notifiable in its territory, and provide a list of its main seaports and airports, the names, addresses, and telephone numbers of the medical officers in charge, and details of the sanitary equipment at each port. The countries will adopt a uniform type of warning postcard on which passengers landing in an "infected" area or from a "suspected" ship state the address to which they are going.

The Centenary of the Brompton Hospital

It is hoped to hold a dinner in November of this year to celebrate the centenary of the Brompton Hospital. All those who have been on the medical staff or residents of the hospital who would like to be present at the dinner are asked to send their names and addresses to the House Governor, who will in due course give them further details of this notable occasion.

Society for General Microbiology

At the annual general meeting of the society the following were elected officers for the coming year: *President*: Professor J. W. McLeod, F.R.S.; *Hon. Treasurer*: Mr. H. J. Bunker; *Hon. Secretaries*: Dr. J. G. Davis (general) and Dr. W. E. van Heyningen (meetings). Full particulars of the work of the society may be obtained from Dr. Davis, 35, Villiers Road, Southall, Middlesex.

Register of Chiropodists

The 1949 Register of Chiropodists has now been published and medical practitioners can obtain copies free on application to the Registrar of the Board of Registration of Medical Auxiliaries, Tavistock House (North), Tavistock Square, London, W.C.

Honoured by Medical Library Association

Mrs. Eileen R. Cunningham, Librarian of Vanderbilt University School of Medicine, is the first recipient of the Medical Library Association's Marcia C. Noyes Award—a silver tray—in recognition of her outstanding achievements in medical librarianship. The award is named after one of the Association's charter members and its first woman president. A past president of the Medical Library Association (1947-8), Mrs. Cunningham is the author of *Classification for Medical Literature*, now in its third edition, as well as many papers on medical librarianship, medical bibliography, and medical history.

Medical Statistics

The General Register Office states that the classification of occupations to be used for the 1951 census will be similar to the one used for 1931. There are about 600 unit groups classified in 28 main groups. Each unit group has a three-figure code number. The Press Officer at the Ministry of Health can give further information on

'AVLON'

brand

PROCAINE HYDROCHLORIDE B.P.

Procaine Hydrochloride is one of the safest and most reliable of local anaesthetics. Its effect is rapid and powerful, but it has no central toxic action, it is non-cumulative and causes no liver damage.

Because of these advantages procaine is widely used, and is regarded by many authorities as the drug of choice for such purposes as regional, infiltration and spinal and dental anaesthesia. It has useful applications also in ophthalmology and rhinolaryngology.

For these and other uses as a local anaesthetic, 'Avlon' brand procaine hydrochloride is available in powder form and in sterile isotonic solutions of several strengths with or without adrenaline (1 in 50,000).

Powder: Bottles of 10, 50, and 100 grammes.

Sterile Solutions: 0.5%, 1%, 2%, 5% (with or without adrenoline) in bottles of 25 c.c. and 50 c.c., and ampoules of 2 c.c., 3 c.c. and 5 c.c.

IMPERIAL CHEMICAL (PHARMACEUTICALS) LTD.

A subsidiary company of Imperial Chemical Industries Ltd.

WILMSLOW, MANCHESTER



Why Ribena in Wounds and Fractures?

Because hypovitaminosis-C inhibits formation of reticulum and collagen, thus retarding healing and adversely affecting the condition of the resulting scar. Similarly it interferes with normal callus formation. Because, too, 'Ribena' is a particularly rich source of the natural vitamin-C complex 'Ribena' consists solely of the undiluted juice of fresh ripe blackcurrants and sugar; it provides a minimum of 20 mgm. of vitamin-C per fluid ounce.

Many surgeons employ 'Ribena' both pre- and post-operatively, particularly in operations on the gastro-intestinal tract and in orthopaedic procedures. Important indications also are cases on acute and chronic sepsis, such as contaminated wounds and infected sinuses. More detailed information will be gladly sent on request.

Rubena is the pure undiluted juice of fresh ripe blackcurrants with sugar, in the form of a delicious syrup. Being freed from all cellular structure of the fruit, it will not upset the most delicate stomach. It is particularly rich in natural vitamin C (not less than 20 mgm per fluid ounce) and associated factors

Ribena BLACKCURRANT SYRUP
(RIDES VIGOR)

H. W. CARTER & CO., Ltd (Dept. 11 A.)
The Royal Forest Factory, Coleford, Glos.

Enre—Inquiries should be addressed to Proprietaries (Enre) Ltd.,
17-22, Parkgate Street, Dublin

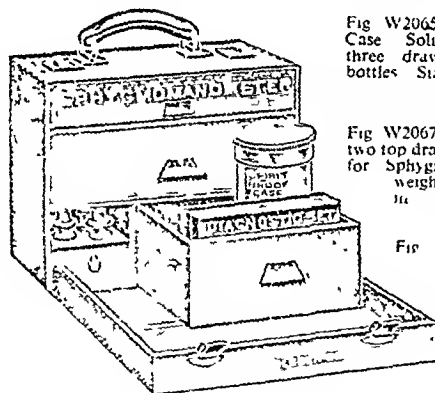
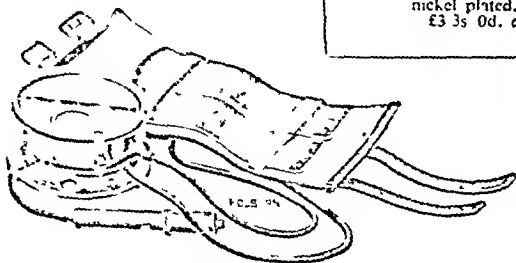


Fig W2065. Surgeon's Visiting Case Solid brown hide with three drawers and rack for bottles. Size 15 x 12 x 6 1/2 in. £9 15s 0d

Fig W2067. A similar bag with two top drawers and space below for Sphygmomanometer, light weight. Size 15 1/2 x 9 1/2 x 5 1/2 in. £7 13s 0d

Fig W2070. Midwifery Case Brown cow-hide with washable lining compartment below for rack of 6 bottles and sterilizer. £12 15s 6d.

Sterilizer with stand and lamp, nickel plated. £3 3s 0d. extra.



For a complete list of instruments with instructions for use Original French make. £15

See also our list of instruments

HOLDORN SURGICAL INSTRUMENT CO., LTD.,
15, Charterhouse Street, Holborn Circus, E.C.1
H. 2267/2



CONTROLLED SLEEP

The Bayer group of hypnotics, three members of which are described below, covers all degrees of insomnia.

'EVIPAN' A somnifacient of medium strength, rapidly absorbed and excreted. Sleep is induced in 10-20 minutes and the hypnotic effect lasts 3-6 hours.

'PHANODORM' A fairly powerful hypnotic for general use, inducing sleep within 30-60 minutes and maintaining it for 6-8 hours.

'EVIDORM' A rapid-acting hypnotic of medium strength. Sleep is induced in 10-20 minutes and lasts 6-8 hours.

The above products are supplied in packings of 10, 50, and 250 tablets.

A booklet entitled "The Bayer Range of Hypnotics" is available upon request.

BAYER PRODUCTS LIMITED
AFRICA HOUSE • KINGSWAY • W.C.2 (HOL. 8730)

"FOR THIS RELIEF MUCH THANKS..."

HAMLET, ACT 1, Scene 1.



Francisco's remark can find ample application in everyday usage and might well express the feelings of those who have obtained rapid relief from PAINFUL SPASMS of smooth-muscle organs.

Spascol
REGD.

Contains an important new synthetic anti-spasmodic, offering outstanding advantages over papaverine in the symptomatic treatment of SPASMS AND SPASTIC DYSMENORRHOEA.

1. RAPID AND PROLONGED THERAPEUTIC ACTION.
(1 tablet taken orally gives prompt relief, lasting from 3 to 6 hours).
2. NON-HABIT FORMING.
3. WELL TOLERATED.
4. EFFECT IS MAINTAINED BY A SMALL DOSE.

Packings of 10 tablets.

Samples and Literature on request

FORMULA: Each tablet contains 1—(3:4:5, triethoxyphenyl)—6, 7—dimethoxy-isouquinoline, 0.04 gm.; Hyoscine Hydrobrom. 0.0001 gm.; Ext. Belladonna, 0.001 gm.; Rhizome, Rhei, 0.005 gm.



Manufactured by
COATES & COOPER LTD.
PYRAMID WORKS - WEST DRAYTON - MIDDLESEX

classification to those concerned with medical statistics. By arrangement with the World Health Organization H.M. Stationery Office is obtaining copies of the *International Statistical Classification of Diseases, Injuries, and Causes of Death*. It will be published in two volumes and will replace the *Manual of the International List of Causes of Death* and the *Provisional Classification of Diseases and Injuries* issued by the Medical Research Council. The Ministry urges all hospitals to use this list, particularly in connection with the national morbidity inquiry. One copy is being sent to regional hospital boards and boards of governors for each of their hospitals taking part in the inquiry. Information about the new list may be obtained from the General Register Office, Somerset House, Strand, London, W.C.2

FILMS

Mr Lionel Colledge, of Upper Wimpole Street, London, W.1, left 68,682. Dr Mul Raj Soni, of Withington, Manchester, left 27,727. Dr John Rea Henry, of Blaby, Leics, £13,100, and Dr George Williamson, of Murtle, Aberdeenshire, £48,741.

COMING EVENTS

Royal Free Hospital School of Medicine

The Duchess of Gloucester will present the prizes and certificates awarded by the Royal Free Hospital School of Medicine in the Beveridge Hall, Senate House, University of London, Malet Street, W.C., on Wednesday, June 8, at 3 p.m.

Medical Superintendents' Society

The annual general meeting of the Medical Superintendents' Society will be held at B.M.A. House, Tavistock Square, London, W.C., on Thursday, June 9, at 10 a.m. On Friday, June 10, also at B.M.A. House, there will be a conference to discuss "The Problem of the Chronic Sick Patient". The annual dinner of the society will be held at Frascatti's Restaurant, 32, Oxford Street, London, W., on the evening of June 10.

British Association of Physical Medicine

A short course of lectures on the various aspects of physical medicine has been arranged on Tuesdays and Thursdays from June 9 to July 19, inclusive, at 5 p.m. They will be suitable for candidates preparing for Part II of the Diploma in Physical Medicine. Further details can be obtained from the honorary secretary, British Association of Physical Medicine, 45, Lincoln's Inn Fields, London, W.C.2.

Consultants' Meeting at Birmingham

There will be a general meeting of consultants in the Birmingham Region No. 12, at Nuffield House, Queen Elizabeth's Hospital, Birmingham, on Saturday, June 11 at 2.30 p.m., to discuss the proposed terms of service.

Faculty of Radiologists

The annual meeting of the Faculty of Radiologists will be held at the University of Sheffield on Friday and Saturday, June 17 and 18. The programme is as follows: June 17, 10 a.m., annual general meeting, 11 a.m., meeting of Diagnosis Section, discussion on "The Pulmonary Manifestations of Tuberculosis in Children," to be opened by Dr R. Margaret C. Macpherson. Dr John L. Emery, and Dr Thomas Lodge, meeting of Therapy Section, demonstration on "The Clinical Use of Radioactive Iodine" by Professor E. J. Wayne, Mr G. W. Blamfield, and Dr H. Miller, 2.40 p.m., meeting of Therapy Section, discussion on "The Problems of Organization Involved in the Use of Therapeutic Quantities of Artificial Radioactive Isotopes," to be opened by Dr A. S. McFarlane on "Distribution," Dr W. Arrol and Mr K. Fearnside on "Production," and Dr W. K. Sinclair and Dr J. J. Nickson on "Hospital Organization," 4.30 p.m., tea and tour of Sheffield National Centre for Radiotherapy, 7 p.m. for 7.30 p.m., dinner at Royal Victoria Hotel. June 18, 10 a.m., joint meeting of Diagnosis and Therapy Sections, discussion on "Metastatic Tumours of Bone," to be opened by Professor S. L. Baker, Dr F. Campbell Galding, Dr A. C. Craoke, and Mr G. W. Blomfield. An exhibition of radiographs, pathological demonstrations, and techniques in radiotherapy will be open throughout the meeting in the Department of Geography of the University. Full particulars of the meeting may be obtained from the secretary of the Faculty at 45, Lincoln's Inn Fields, London, W.C.2.

Films at London School of Hygiene and Tropical Medicine

Two films entitled "The African Schistosomiasis" and "Still Waters" intended for the instruction of the medical profession and for public education respectively, will be shown at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C., on Thursday, June 30, at 3 p.m. The films have been prepared by the Health and Public Relations Departments of the Government of Southern Rhodesia.

Course in Bronchoscopy and Oesophagoscopy

A course in the theory and practice of bronchoscopy and oesophagoscopy will be given in Paris on July 3-14 by Professor Chevalier L. Jackson and Dr A. Soulas. Particulars may be obtained from Dr Soulas, 184, Avenue Victor-Hugo, Paris, 16^e.

Congress of Obstetrics and Gynaecology

The twelfth British Congress of Obstetrics and Gynaecology will be held at Friends House, Euston Road, London, N.W.1, on July 6-8. The programme is as follows: July 6, 10 a.m., Congress opened by the Minister of Health "Modern Caesarean Section," introduced by Mr McIntosh Marshall. 2 p.m., (1) Guest Paper—"Endometriosis," by Dr Joe V. Meigs (Boston, Mass.), (2) "The Methods of Assay and Clinical Significance of Pregnenediol in the Urine," introduced by Professor G. F. Marnan and Dr G. I. M. Stryer. 8.45 p.m., reception by the President and Council at the Royal College of Obstetricians and Gynaecologists at the Senate House, University of London, W.C.1. July 7, 9 a.m., meeting of the Central Committee of the Congress. 9.30 a.m., general business meeting of the Congress. 10 a.m., "Essential Hypertension in Pregnancy," introduced by Professor George W. Pickering and Professor F. J. Browne. 2 p.m., (1) "The Management of Pregnancy in Diabetes," introduced by Mr John Peel and Dr W. G. Oakley; (2) "Hernia of the Pouch of Douglas," introduced by Mr Charles Read. 8-10.30 p.m., reception by the President of the Congress and the London Committee in the Zoological Gardens, Regent's Park, N.W.1. July 8, 9.30 a.m., "Modern Concepts in Diagnosis, Prognosis, and Treatment of Carcinoma of the Uterus," (1) "The Diagnosis of Uterine Cancer by Cytology," by Dr J. Ernest Ayre (Montreal), (2) "Pre-cancerous Changes in the Cervix," by Professor Gilbert I. Strachan, (3) "Prognosis Based on Biopsies," by Dr A. Glucksmann, (4) "Partial and Complete Pelvic Exenteration for Uncontrolled Uterine Cancer: A Preliminary Report," by Dr Alexander Brunschwig (New York), (5) "Surgical Treatment of Carcinoma of the Cervix," by Dr Joe V. Meigs (Boston, Mass.). A discussion will follow, to be opened by Mr Victor Bonney (London), and continued by Professor Subodh Mitra (Calcutta) and others. 2 p.m., discussion on "Maternal Mortality," introduced by Sir William Gilliatt. 7.15 p.m. for 8 p.m., Congress banquet at Guildhall, City of London. Those intending to be present are asked to notify the honorary secretaries of the congress as soon as possible at 58, Queen Anne Street, London, W.1. The cost of the banquet at the Guildhall is 45s. Applications for ladies' tickets should reach the honorary secretaries by June 20. Associate membership entitling the holder to attend the meetings costs one guinea.

Medical Association of Eire

The annual meeting of the association will be held at University College, Cork, on July 7-9. The meeting will be addressed on July 7 by Dr Charles Hill, secretary of the British Medical Association.

SOCIETIES AND LECTURES

Manday

EDINBURGH UNIVERSITY—At Physiology Lecture Theatre, University New Buildings, Teviot Place, Edinburgh. June 6, 5 p.m., "The Renaissance and its Teaching" by Dr Douglas Guthrie.

Tuesday

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE—At Anatomy Lecture Theatre, University New Buildings, June 7, 5 p.m., "Tuberculosis of Joints" by Professor Walter Mercer.

INSTITUTE OF NEUROLOGY, National Hospital, Queen Square, London, W.C.—June 7, 5 p.m., "Surgical Principles in Intracranial Surgery" by Sir Hugh Cairns.

INSTITUTE OF UROLOGY—At St Paul's Hospital, Endell Street, London W.C., June 7, (1) 11 a.m., "Pathological and Serological Diagnosis of Gonorrhoea" by Dr R. Thomson. (2) 5 p.m., "Disturbances of Micturition Due to Nervous Disease and Injury," by Mr Harland Rees.

LONDON UNIVERSITY COLLEGE—At Physiology Theatre, Gower Street, W.C., June 7, 5.15 p.m., "Muscular Contraction," by Professor A. V. Hill.

WRIGHT-FLEMING INSTITUTE OF MICROBIOLOGY, St Mary's Hospital Medical School, Paddington, W.—June 7, 5 p.m., "Electron Microscopy of Bacteria and Viruses" by Dr A. S. McFarlane.

Wednesday

INSTITUTE OF UROLOGY—At St Paul's Hospital, Endell Street, London, W.C., June 8, (1) 11 a.m., "Local Complications of Gonorrhoea in the Male" by Dr A. H. Harkness, (2) 5 p.m., "Infertility of the Male," by Mr A. R. C. Higham.

LONDON UNIVERSITY COLLEGE—At Physiology Theatre, Gower Street, W.C., June 8, 4.45 p.m., "Selective Toxicity with Special Reference to Chemotherapy," by Professor Adner Albert.

SOUTH-WEST LONDON MEDICAL SOCIETY—At Bolinebroke Hospital, Wandsworth Common, S.W., June 8, 8.15 p.m., "Modern Treatment of Heart Disease," Bolinebroke Lecture by Dr R. E. Rodgers.

Thursday

CLINICAL SOCIETY OF THE ROYAL FREE HOSPITAL, Gray's Inn Road, London, W.C.—June 9, 5.15 p.m., "Mammoplasty," by Dr. Ernesto F. Malbec (Director of Plastic Surgery at Hospital of Ramos Mejia, Buenos Aires). Visitors welcomed. (Change of date.)

EDINBURGH UNIVERSITY.—At Anatomy Theatre, University New Buildings, Teviot Place, Edinburgh, June 9, 5 p.m., "Mental Deficiency and Social Medicine," Honyman Gillespie Lecture by Dr. R. Bailey

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., June 9, (1) 11 a.m., "Ano-rectal Gonorrhoea," by Dr. A. H. Harkness; (2) 5 p.m., "Fistula of the Bladder (acquired)," by Mr. F. R. Kilpatrick.

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., June 9, 4.45 p.m., "Some Aspects of Nitrogen Metabolism in the Mammal," by Dr. J. S. Bach.

LONDON UNIVERSITY.—At Institute of Neurology, National Hospital, Queen Square, London, W.C., June 9, 5 p.m., "Surgical Principles in Intracranial Surgery," by Sir Hugh Cairns.

RESEARCH DEFENCE SOCIETY.—At Royal Society of Tropical Medicine and Hygiene, 26, Portland Place, London, W., June 9, 3.15 p.m., annual general meeting; "Physiological Research and the Visitation Act," Stephen Paget Memorial Lecture by Professor C. Lovatt Evans, F.R.S.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—June 9, 5 p.m., "The Mind of Mechanical Man," Lister Oration by Professor Geoffrey Jefferson, F.R.S.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—June 9, 4.30 p.m., "Psychiatry," lecture-demonstration by Dr. D. Curran

APPOINTMENTS

Dr. Hugh W. Jones has been appointed Director of the Department of Pathology and Clinical Laboratories of the Mason Clinic, Seattle, Washington, D.C., U.S.A.

Dr. Jones was formerly Chief of Pathology at the Walter Reed General Hospital, Army Medical Centre, Washington

FULHAM AND KENSINGTON HOSPITAL MANAGEMENT COMMITTEE.—The following appointments at Fulham Hospital are announced: *Senior Surgical Registrar*, N. N. Tereshchenko, F.R.C.S. *House-surgeon*, Margaret V. Bickerton, M.R.C.S., L.R.C.P.

MILLER, RICHARD GRAHAM, M.B., Ch.B., D.P.H., Divisional Medical Officer North-East Division, National Coal Board

PARKER, THOMAS, L.R.C.P. & S. Ed., L.R.F.P. & S. Glas., D.P.H., Administrative Medical Superintendent to Board of Management for Paisley and District Hospitals

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Buchanan.—On May 16 1949 at Birmingham, to Joan (née Macaulay), wife of Ian Buchanan a daughter

Kildjian.—On May 22 1949 at Queen Victoria Nursing Institute, Wolverhampton to Doreen Elizabeth, wife of Wing Commander A. Kildjian. F.R.C.S. 1 son

Stone.—On May 19 1949, at 12, Avenue Road, London, N.W., to Lynn, wife of Dr. A. D. Stone of Uxminster, a sister for Gillian—Jacqueline Susan

MARRIAGES

Carlisle Hillary.—On May 14, 1949, at St. Martin-in-the-Fields, London, W.C. Jim & Marion Carlisle M.B. B.S. D.R.C.O.G., Ryton-on-Tyne, to June St. Hillary Hillary B.S. Auckland, New Zealand

Hoffman Large.—On May 28 1949, at the Chapel Royal, H.M. Tower of London, Arthur Hoffman M.B., M.R.C.P., to Catharine Elizabeth Large M.B. B.S.

DEATHS

Blanton.—On May 27 1949 at 4 Valley Road West Bridgford, Notts, John Frederick Blanton M.B. B.S. aged 87 years

Polin.—On May 21 1949 at Upper Grange, Hinckley, Shropshire, Thomas Donald Polin L.R.C.P. & S. Ed. L.R.F.P. & S. Glas., late Wing Commander R.A.F.

Cummins.—On May 26 1949 at Oxford, Stevenson Lyle Cummins, C.B., C.M.G., M.D. Colonel late A.M.S., of the Priory, Thaxted, Essex

Irish.—On May 21 1949 at Queen Alexandra's Military Hospital, Millbank, London, S.W. Donald Cotman McCulloch Elliot, M.B., B.S., F.R.C.S., L.R.C.P. 1 son 1 daughter

Greener.—On May 27 1949 at Royal East Sussex Hospital, Hastings, Norman Greener M.B. M.R.C.S. L.R.C.P. D.M.R.E. L.D.S., R.C.S., aged 62

Bastie.—On May 22 1949 at Southend General Hospital, Jemima Brown M.B. Ch.B. B.P. at 1, Tudor Way, Hockley, Essex

Spray.—On May 27 1949 suddenly at his home, 109, Lavington Road, W. 12, P. to Spray L.S.A. late of West Green, London, aged 70

Webb.—On May 27 1949 at 4 Claremont Villas, Cheltenham, John Curtis Webb M.B. Ch.B. B.P. aged 50

Webb.—On May 17 1949 Henry Cadman Webb, C.B. M.R.C.S., L.R.C.P. 1 son 1 daughter R.N. (retired), of 20, Festung Road, Cheltenham

Wetherby.—On May 27 1949 at 13 F. J. Wetherby Road, Edinburgh, Charles Wetherby M.B. Ch.B. C.M.G. M.B. Ch.B. Col. Vet. 1 M.S. (retired)

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Abdominal Pregnancy

Q.—A recent question on abdominal pregnancy (March 5, p. 422) led me to read more about the condition. In none of the books consulted was a description of the diagnosis given. How is the diagnosis made, and what are the difficulties in diagnosis?

A.—The diagnosis can be difficult, and the condition is frequently overlooked if only because its rarity tends to put it out of mind. Many cases are recorded in which the real state of affairs was discovered only when an attempt was made, to induce labour by rupturing the membranes. The patient may recall an attack of one-sided lower abdominal pain together with a little vaginal bleeding, regarded perhaps as threatened abortion, early in pregnancy—that is, at the time of extra-uterine rupture. Throughout pregnancy there may be attacks of abdominal pain with faintness and perhaps occasional decidual bleeding from the uterus. The patient sometimes complains of an undue amount of nausea, vomiting, flatulence, or colic, and the foetal movements cause pain; the pregnancy is "uncomfortable." The abdominal tumour tends to be asymmetrical and its borders are less well defined than those of an intra-uterine pregnancy. Contrary to the common account, foetal parts are not as a rule more easily palpated, but malpresentations are common. The gestation sac, unlike the uterus, does not contract, and another swelling—the uterus—may be felt alongside it.

On bimanual examination the key to diagnosis is identification of the uterus, moderately enlarged, separate from the main swelling. Ballottement of the presenting part cannot be elicited in the uterus. At the time of spurious labour the foetus dies; the cervix may open to some extent and the decidua be cast off. X-ray examination is often helpful. Instead of the uterine shadow around the foetus there may be translucent areas due to gas in the neighbouring bowel. The foetus is often in an abnormal position and shows unusual attitudes—"the flying foetus." Hysterosalpingography can confirm the diagnosis, but is rarely employed so long as there is any possibility that the pregnancy is intrauterine.

Urticarial Reaction to Penicillin

Q.—How common are urticarial reactions to penicillin, and are they likely to recur if a second course of penicillin is ever necessary? A patient received 200,000 international units of penicillin intramuscularly daily for eight days for a carbuncle in the neck. Ten days after the first injection a severe urticaria and angioneurotic oedema appeared. What is the position with respect to giving the patient penicillin again, either alone or with antihistamine drugs?

A.—Urticarial reactions to penicillin occur in a small proportion of cases. The rash usually clears up satisfactorily even if the penicillin is continued, and as a rule does not recur if a second course is given (Lyons, C., *J. Amer. med. Ass.*, 1943, 123, 1007). Intradermal tests with penicillin often have negative but occasionally positive results. An injection of 0.1 ml. of a solution of penicillin in a strength of 1,000 units per ml. of physiological saline may be made intradermally in the forearm, with 0.1 ml. of saline as a control in the other arm. The test areas should be examined after one hour and after six hours. If there is no marked weal or flare the test may be repeated in a strength of 10,000 units per ml. If the reactions to both tests are negative it may be assumed that urticaria is unlikely to recur should a further course of penicillin be given. If either is positive and a further course of penicillin is required, it is worth while giving antihistamine drugs from the beginning of treatment.

Absence of Abdominal Reflex

Q.—Is the loss of the abdominal reflex, either on one side or on both, evidence of an organic lesion?

A.—Bilateral absence of the abdominal reflexes does not necessarily indicate organic disorder, and is common in people beyond middle life, particularly if they are obese. The abdominal reflexes are very often lost after pregnancy, and in otherwise normal people they are occasionally absent or very difficult to obtain. Asymmetry of the reflexes is always evidence of organic disorder, but it must be borne in mind that this disorder may be anywhere in the structures subserving the reflexes, so that local injury—including abdominal operations—may lead to abolition of the reflex from one segment of the abdomen. After local causes have been excluded, asymmetrical loss of the abdominal reflexes may be taken as evidence of disorder in the peripheral or central nervous system, but usually such a diagnosis would not be made on the evidence of abdominal reflexes alone. Assessment of their significance can usually be helped, if there is associated asymmetry in the tendon reflexes or the plantar responses, or in the appreciation of sensory stimulation. Most neurologists make use of the abdominal reflexes in demonstrating a mild lesion of the pyramidal tracts based on observation of disturbed function or of a disorder of the deep reflexes, rather than the other way round.

Carriers of Salmonella

Q.—What is the best method of clearing up a *Salmonella* enteritidis infection in the intestine? A girl aged 11, who had diarrhoea for a fortnight and is now quite well apart from an occasional evening temperature of 99° F., is passing heavily infected stools. I understand she is likely to remain a carrier for many months unless this is treated. What treatment would you advise?

A.—Persistent carriers of the salmonella food-poisoning organisms are rare, but a fair proportion of cases excrete the organism for four to twelve weeks after the acute infection. These convalescent carriers become negative spontaneously, and it is doubtful if any local bowel therapy will accelerate the cure, since the focus of infection is probably the gall-bladder. However, a course of succinyl sulphathiazole or other poorly absorbed sulphonamide may be tried, while laxative or cholagogue medicaments may be prescribed to encourage a good flow of bile. If the carrier state persists for twelve weeks or longer the patient may become a permanent or chronic carrier. In such cases duodenal bile-stained contents should be aspirated to find out if the gall-bladder is in fact the seat of infection. If it is, it will usually be diseased, and cholecystectomy, which should carry very little operative risk in a healthy child of 11 years, may be advised with good prospects of cure.

The salmonella bacteria of the food-poisoning group are more resistant to penicillin and streptomycin than is the typhoid bacillus, and for this and other reasons chronic carriers of these organisms are unlikely to respond to treatment by antibiotics.

Nocturnal Frequency in a Diabetic

Q.—A patient aged 68 has had diabetes mellitus for twenty years, and despite 80 units of insulin daily has a fasting blood sugar level of over 200 mg. per 100 ml. He was for two months recently in bed with angina pectoris. He dreads the nights because he is unable to sleep, as he has to rise every two hours to urinate. What treatment do you advise to help him get a good night's rest?

A.—Further investigations are necessary before a diagnosis of the cause can be made. The question of enlarged prostate, either benign or malignant, and any other obstruction at the neck of the bladder, must first of all be excluded by a competent genito-urinary surgeon. If no abnormality is present, it is possible that the patient's blood sugar level during the night is very low indeed, as hypoglycaemia sometimes causes great frequency of micturition. The fact that the blood sugar level is over 200 mg. per 100 ml. fasting does not exclude the possibility that it may be very low between midnight and 8 a.m. If hypoglycaemia is the cause, an extra 10 to 15 g. of carbohydrate on going to bed will prevent the hypoglycaemia, and a further 15 g. of carbohydrate could be taken later on in the night if the patient is still troubled by frequency.

Pain after Coronary Thrombosis

Q.—Is short-wave diathermy of value in relieving the pain often present after an acute attack of coronary thrombosis? This pain may be in the substernal, submammary, cervical, or suprascapular region. Is there any contraindication to this form of treatment? For how long should it be continued? Can you suggest any drugs for the same purpose? Nitrites have been found not to give relief. The patient I have in mind is aged 53, with a blood pressure of 125/85 mm. Hg.

A.—Pain, apart from angina pectoris or a cardiac neurosis, is an uncommon sequel to an acute attack of coronary thrombosis. In the case mentioned the pain is not described as intermittent, nor is it affected by nitrites, so that angina of effort is unlikely. Its distribution is widespread for the pain of a cardiac neurosis, but if the pain during the thrombosis occurred over this area then this diagnosis is quite possible. Causes in the skeletal and muscular systems giving rise to referred pain in this area should be looked for, and, if none is present, reassurance and sedative drugs, such as phenobarbitone with theobromine and belladonna, should be tried. Short-wave diathermy has been used for the pain of angina of effort, with varying results. It is of little use, however, in cases following coronary thrombosis.

Dyspareunia

Q.—A married woman aged 26 complains of difficulty in coitus. She is keen to have a child, but some shock when she was 9 seems to have created a psychological reaction. I thought that graded glass vaginal dilators might help, but she wonders whether there is any danger of their breaking and has heard that they are painful in use. How should these dilators be employed, and should cocaine ointment be used with them, or would this be likely to have any adverse effect?

A.—Graduated glass or plastic vaginal dilators might well be helpful, but it is doubtful whether a patient of this type will be able to use them herself without first being shown how to do so by a doctor or nurse. The risk of their breaking is negligible. The smallest dilator should be passed first, and only when this can be done easily should the next size be tried. Any difficulty due to muscle spasm can be minimized if the patient adopts the dorsal position with the knees drawn up and concentrates on abducting the thighs. The muscle usually relaxes in response to gentle but firm continuous pressure on the dilator, and the dilator should be left in place for about fifteen minutes. Having reached the largest size, the dilator should be used once or twice daily, and left in for fifteen to thirty minutes each time, for two or three weeks before coitus is attempted again. It might be passed, too, immediately before the first few attempts at intercourse. A lubricant should be used with the dilators, but cocaine or other analgesic ointments are not very helpful, because the problem is not superficial tenderness but muscle spasm associated with nervous inhibition. If cocaine is used it is likely to be absorbed in small amounts, and might therefore produce a reaction in an individual sensitive to it.

Psychoneurosis and Neurosyphilis

Q.—Is the Ministry of Pensions entitled to a frank diagnosis of "neurosyphilis" in a patient to whom they have paid a pension for psychoneurosis for the past twenty years? If not, will the interests of the patient suffer if a non-committal answer is given?

A.—The first part of the question seems to be ambiguous. Presumably what is meant is that the patient, who has for twenty years suffered from psychoneurosis, has recently been found to have neurosyphilis. There does not seem any valid reason why this should be communicated to the Ministry of Pensions unless they specifically ask for it. The medical board examining the patient should be able to diagnose neurosyphilis; but if it asks for, say, the results of pathological examinations of the cerebrospinal fluid the information can hardly be withheld. It seems very unlikely that the patient has had neurosyphilis for twenty years unless he has had a considerable amount of treatment. There is no reason why a person suffering from psychoneurosis should not contract syphilis and subsequently develop neurosyphilis, but this latter could hardly account for mental symptoms lasting for twenty years, and the medical board would surely appreciate that.

Thyrotoxicosis and Pregnancy

Q.—A woman aged 35, who has had a swelling in the neck since the age of 21, has the classical signs of hyperthyroidism, but with a rise in the basal metabolic rate of only 22%. She is now five months pregnant. Is it advisable to treat such a case with thiouracil during pregnancy? Are the risks to the mother increased, and is there any risk that the foetus will be affected?

A.—It is usually wise to withhold thiouracil during pregnancy, as reports suggest that the drug may lead to goitre in the foetus. The patient in question, whose basal metabolism is elevated by only 22% in the fifth month of pregnancy, cannot have a severe grade of thyrotoxicosis, and it seems doubtful whether much additional risk will be incurred by allowing her to go to term.

Inheritance of Renal Calculi

Q.—A man aged 40 has suffered from oxalate calculi in the kidneys since the age of 16. He has had operations on both sides, but has been told that more stones may form. His father suffered from the same trouble, and he has avoided marriage for fear of transmitting the tendency to his offspring. I would be glad of information about the chances of inheritance of this disability.

A.—This is not an easy question to answer. The condition is relatively common, yet references to heredity in the literature are infrequent and vague. One would be tempted to dismiss inheritance as a factor of much importance and to conclude that the chances for any children of this patient are little worse than those for any random child, save that sometimes conditions in whose causation heredity appears to play little part do, very rarely, yield a history pointing to the operation of a gene in a particular family group. A fuller family history would probably help.

Painful Nodules on Heels

Q.—A woman aged 46 has for three years suffered from small painful subcutaneous nodules on the back and sides of both heels. Each nodule starts as a very tender spot, and a body the size of a pin's head can be felt, freely movable under the skin. For a month or two it increases in size and becomes less tender; at the end of three to four months it is the size of a grain of rice and comparatively painless. In the meantime another nodule has started which goes through the same slow process. The patient is otherwise in perfect health.

A.—Plantar warts would seem to be the most likely cause of the signs and symptoms described, and may be treated by soaking the affected areas in 3% formalin solution for ten minutes each night for six weeks. If this is not the diagnosis, biopsy and histological examination are suggested. Xanthomatosis or calcinosis cutis are possible but rare causes of such lesions.

Argyria

Q.—In a case of argyria in which the pigmentation is confined to the face, conjunctivae, and neck, is the condition likely to become worse on exposure to sunlight although the drug has been stopped? What lines of treatment do you advise?

A.—The discoloration in argyria tends first to affect exposed parts. It does occur on other sites and in internal organs. There is not much literature on the question raised, but experience would suggest that, once established, pigmentation is not likely to get progressively worse. There is no effective treatment.

Bundle-branch Block and Hypertension

Q.—A man aged 55 has bundle-branch block with pronounced cardiac hypertrophy and a blood pressure of 170/110 mm. Hg. The attacks of "palpitations" cause him great distress, and sometimes last a week. Can you suggest anything that might be helpful?

A.—The treatment in this case should be directed to the hypertension and consequent severe myocardial damage which are indicated by the cardiac hypertrophy. The bundle-branch block and the attacks of palpitation are a sequel to damage to the conducting tissue and myocardium respectively, probably due to interference with the coronary vascular supply. There are no symptoms of bundle-branch block, and no treatment for

it apart from the treatment of its cause. The attacks of palpitation may be due to the onset of complete heart-block, or more probably of paroxysmal tachycardia, fibrillation, or flutter. The exact condition should be determined by an electrocardiogram taken during an attack, the treatment being decided by its cause. This is essential.

Generally the patient should exert himself only within his cardiac reserve, and avoid undue fatigue, excitement, alcohol, and tobacco. He should have phenobarbitone gr. 1 (65 mg.) twice a day, "cardophyllin" 0.2 g. three times a day, and be adequately controlled by digitalis. He should avoid causes known to induce attacks. For the attack, if due to paroxysmal tachycardia, experiments to discover a mechanism to cut short the attack should be tried, such as carotid-sinus pressure, not too vigorously undertaken in such a patient, abdominal pressure, cold drinks, and other well-known procedures. For this and for paroxysmal flutter or fibrillation, quinidine 6 gr. (0.4 g.) two-hourly for five doses should be given on two or three successive days. Potassium salts and phenobarbitone should be tried at the same time. If the attack is due to complete heart-block, adrenaline may be given. This is absolutely contra-indicated should the attacks be caused by tachycardia, fibrillation, or runs of extrasystoles. The prognosis appears to be very grave.

NOTES AND COMMENTS

Auricular Fibrillation in the Elderly.—Dr. MAX WINTERNITZ (Usti nad Labem, Czechoslovakia) writes: Your questioner ("Any Questions?" April 9, p. 643) is told that "the only drug likely to prevent attacks (of auricular fibrillation in a man of 64 with no other signs of cardiac disease) is quinidine 3 to 5 gr. (0.2-0.32 g.) three times a day indefinitely." While this is a recognized scheme of treatment in such patients, there are other possible ways. My patients are asked to keep careful notes on the occurrence and duration of attacks for a control period during which sedatives only are given. When the spontaneous course of the disease has been established a test dose of quinidine is given to exclude idiosyncrasy, followed by 3 gr. thrice daily. This dose is increased to 6 gr. (0.4 g.) if the smaller dose has not reduced the frequency and duration of attacks. This treatment is continued if effective; if not it is discontinued. If attacks are infrequent and/or of long duration an attempt is made to shorten the individual attack by taking quinidine after the onset of an individual attack only—3 gr. every two hours until the attack ceases. Alternative attacks are treated at first, to decide whether quinidine has any shortening effect on attacks. If quinidine should prove ineffective a single dose of pulv. fol. digitalis gr. 25 (1.65 g.) is given, followed after two days by maintenance doses of 1.5 gr. (0.1 g.) per day. This may abolish the liability to further attacks in some cases; in others permanent fibrillation will be established. Most patients of the stated age will prefer a digitalis-controlled permanent fibrillation to the insecurity of sinus rhythm with frequent paroxysms of rapid arrhythmia. If neither quinidine nor digitalis prove helpful, and if the attacks are frequent and incapacitating, an attempt with thiouracil is justified, irrespective of the presence or absence of thyrotoxic signs. The dose should be on the higher side, and treatment must be protracted, in order to reduce the B.M.R. to subnormal levels, but the proneness to fibrillation will be significantly reduced in a high percentage of patients.

Vaccine Lymph.—Dr. L. G. JACOB (Bracknell, Berks) writes: An even simpler method of expelling vaccine lymph from capillary tubes than that described under "Preparations and Appliances" (May 7, p. 818) is by breaking off one extremity, passing the broken end of the tube through a flame, and then warming the contained air of the other end over the flame. With care there is no risk of inactivating the lymph by heat.

Dr. E. F. BLUMBERG, of King's Road, London, has also sent us a description of this method.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Alitology Western, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads, Western, Lond.* MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra, Western, London*.

B.M.A. SCOTTISH OFFICE: 7, Drumheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JUNE 4 1949

THE SECRETARY REPORTS

PLUGGING AWAY

The General Medical Services Committee is in continuous negotiation with the Ministry, endeavouring to clarify the various points which have arisen during the first ten months working of the Service. While some of these points—taken by themselves—may not be regarded as of first importance they form in the aggregate part of the steady improvement in the terms and conditions of service.

For example, the Ministry has been urged to relieve the rural practitioner of what in some cases is an unusually heavy expense—namely, the charges incurred in telephone calls in making arrangements for a patient's admission to hospital. Evidence is being collected on the extent of this problem and particularly on the extent to which it has been aggravated by the National Health Service. It has been suggested to the Ministry either that a practitioner should be directly reimbursed for telephone calls made in connexion with the admission of his patients to hospital or that general authority should be given for the charges to be reversed.

The problems arising from the inflation of doctors' lists have also been the subject of discussion between representatives of the General Medical Services Committee and officials of the Ministry. This inflation arises from the inclusion in doctors' lists of names in duplicate which in turn arose from the fact that many insured persons under the old NHI scheme who were automatically transferred to the National Health Service list of their old panel doctor also completed a form ECI applying for inclusion in his list.

Other reasons for such inflation include

(1) Existence of a certain amount of inflation before the appointed day, partly from wartime difficulties and partly from the failure of some approved societies to notify "exits".

(2) The decision not to remove from doctors' lists the names of persons whose insurance was due to terminate on June 30 1948. The numbers were fairly substantial, consisting largely of people who had taken up work during the war or had continued to work when they might otherwise have retired, and who ceased to be employed between June 30, 1946, and Dec 31, 1946.

(3) The appearance of some persons' names on more than one doctor's list within the same executive council area. Some of these were insured persons before July 5, 1948.

(4) Removal of a person from one executive council area to another where registration is effected with a doctor in the new area without disclosure of the fact that the patient is on the list of a doctor in the other area.

Though strenuous efforts have already been made to improve the position there is still evidence of inflation in many areas. For example, in each of some twenty counties or county boroughs the number of patients on doctors' NHS lists is in the aggregate more than the population of the area. Discussions have taken place on possible means of checking this inflation, and the subject is still under review. In many areas the elimination of duplication will be a long process, owing to the need for inquiry where duplication is suspected but cannot be established from executive council records. The absence of the national identity number, the inclusion or omission of an initial, or change of address or marital status all give rise to difficulties in identification. Many cases will be resolved only by personal inquiry.

Another subject on which representations have been made to the Ministry is that of mileage in maternity cases. The committee's view is that a practitioner practising in an area where a mileage scheme normally operates should be entitled to a single payment for each maternity case booked, at the

rate of 3s a mile (outward journey) for the distance in excess of two miles between the practitioner's surgery and the patient's address. These mileage payments will be a first charge on the Central Mileage Fund.

At present a practitioner requiring an Aschheim Zondek test for pregnancy is required to refer his patient to the hospital, the decision whether or not the test can be undertaken resting with the hospital consultant. As a result of the Committee's representations the Ministry has agreed that general practitioners requiring an Aschheim Zondek test can obtain this by making direct application to the appropriate department of the hospital concerned, subject of course to the reservation that adequate facilities are available.

The Ministry has been asked to take action to relieve the position of those practitioners practising in the neighbourhood of a school who are frequently being asked to attend children for emergencies occurring at school without the patient's doctor having been given the opportunity of attending the case. The Ministry has undertaken to approach the Ministry of Education with a view to the issue of suitable instructions to school authorities to ensure that where possible the child's own doctor shall be called in for such emergencies.

One of the more unsatisfactory repercussions of the introduction of the National Health Service has been the delay in settling an appropriate fee for vaccination and diphtheria immunization undertaken by general practitioners. The Ministry's view has been that these services form part of the general practitioner's normal obligations to his patients under his terms of service and that any fee involved would be payable only in respect of the report to the local health authority and not on account of the actual service rendered. Discussions with the associations of local authorities could not proceed further on this basis. But as a result of further talks between the committee and the Ministry of Health it has been agreed that the submission of a report to a local health authority is *not* the only factor to be taken into account in assessing the fee. In the committee's view it would be appropriate for discussions to be reopened with the associations of local authorities, and it is hoped that a meeting for this purpose will be arranged shortly.

Hospital Medical Staffs

The Joint Committee of the Royal Colleges, the Royal Scottish Corporations and the Central Consultants and Specialists Committee, after reviewing the comments and recommendations of its constituent bodies, has conveyed to the Ministry of Health its observations on the proposed terms and conditions of service for hospital medical and dental staff. The Government's proposals in their final form are expected to be issued to hospital authorities and to the profession next week. As soon as the final document is received the Joint Committee will seek the view of its constituent bodies on the advice to be given to the profession on the question of acceptance of service.

The Central Consultants and Specialists Committee has decided to circulate the document to its regional committees together with a factual statement by its secretary.

The Joint Committee will meet on the morning of June 22 to consider the views of its constituent bodies on the question of acceptance of service.

Consultants and specialists have been asked not to enter into any form of permanent contract until the profession has determined its attitude.

A note on the Town and Country Planning Act will appear in these columns next week.

National Health Service

ADMISSION TO HOSPITAL

The following resolution was passed by the Local Medical Committee for the County of London on May 24 :

(a) That the Committee regrets that the letter dated March 15, 1949, from the Ministry of Health does not contain any constructive proposals for overcoming the difficulties which at present exist in connexion with providing hospital beds for acute cases, and draws attention to the fact that although four months have nearly elapsed since the matter was discussed with the Department's officers apparently nothing has been done; it therefore calls upon the Minister to take immediate and effective action.

(b) That, since the National Health Service Act gives no individual citizen the right to treatment in hospital, however acute the illness, and as hospital authorities are failing to provide such treatment and the service is thus lacking in an essential safeguard for the public, the Committee requests that, by administrative action and if necessary by amendment of the law, a duty should be placed upon hospital authorities which will ensure that cases in urgent need of admission to hospital are, in fact, admitted.

(c) That the Local Medical Committee makes the following suggestions regarding the admission of urgent cases to hospital :

(i) That an "admission medical officer" be appointed for each group of hospitals

(ii) That when the admission medical officer has received a request from a practitioner to admit a patient, and has satisfied himself that it is an urgent case, he shall take over from the practitioner the responsibility for finding a bed.

(iii) It shall then be the duty of the admission medical officer to endeavour to find a bed in one of the hospitals of the group.

(iv) That if no bed in the group be available the admission medical officer shall approach the admission medical officers in the adjoining groups

(v) That if the admission medical officer is still unable to secure a bed he be instructed to approach the Emergency Bed Service, who shall then become responsible for obtaining admission of the patient to any hospital

(d) That in order to minimize the difficulty occasioned by shortage or unequal distribution of nursing staffs, the Committee considers that as an emergency measure endeavours should be made to form a general pool of nurses, and, further, that authority should be given to the regional hospital boards to engage trained nurses at salaries in excess of the Rushcliffe Scale.

(e) That the Committee is of opinion that unless immediate action is taken there is a grave possibility of a complete breakdown of the service during next winter, which will prevent practitioners from carrying out their obligations under Clause 7(1) of the Terms of Service.

(f) That the foregoing resolutions be transmitted to the Ministry of Health, the General Medical Services Committee, the Public Relations Department of the B.M.A., the Executive Council, the four Metropolitan Regional Hospital Boards, and the Emergency Bed Service.

MATERNITY MEDICAL SERVICES EMERGENCIES

Where a doctor has been called in under the National Health Service, otherwise than by a local health authority midwife, to deal with a miscarriage in a woman who has not made previous arrangements for maternity medical services (or to deal with some other Period I obstetric emergency in similar circumstances), he may complete Form E.C.24 or 24A afterwards to enable him to claim payment of the Period I fee, provided that the emergency occurs after the end of the eighth week of pregnancy. Before that time cases requiring treatment would be dealt with under the normal arrangements for general medical services.

Emergency confinements qualify for Period II payments where the patient has not made previous arrangements for maternity medical services and the doctor is not called in by a local health authority midwife.

If the doctor called in is not on the obstetric list and not the patient's own Service general practitioner or his deputy, he would be expected to hand over responsibility to the patient's own doctor as soon as possible. The latter claims the fee and divides it with his colleague by mutual agreement.

TEMPORARY RESIDENTS

Payment for the medical treatment of temporary residents under the National Health Service, in respect of the first two quarters, was similar to that made under the National Health Insurance Act, each area receiving from the Central Pool the sum of 8s. for each temporary resident. It has since been decided, on the recommendation of the General Medical Services Committee, that the payment from the Central Pool shall be 15s. for each ordinary temporary resident and (provisionally) 2s. 6d. for each temporary resident in a convalescent home. The last figure will be reviewed in the light of experience and further information on the number of claims received.

The local distribution of the money received by each executive council under this heading will, as in the past, be entirely a matter for each area to determine by joint consultation between the executive council and the local medical committee.

Mileage for temporary residents will be a charge on the Mileage Fund and not on the Central Pool for treatment purposes.

HOSPITAL EYE SERVICE OPHTHALMIC OPTICIANS

The Ophthalmic Group Committee has considered certain questions relating to the staffing of hospital eye departments, and has expressed the view that ophthalmic opticians employed in the hospital service should be appointed on a full-time basis. It recognizes that in many areas this can be achieved only if the staffing arrangements are co-ordinated throughout the region in such a way as to provide scope for full-time posts, and for this reason the Group Committee considers that the appointment of ophthalmic opticians should be made at Regional level.

The committee is also of the opinion that, pending the establishment of the permanent eye service, ophthalmic surgeon should be required to give systematic instruction only to ophthalmic opticians employed at hospitals in a full-time capacity.

Regional hospital boards and boards of governors are being informed of the views of the Group Committee.

TRAINEE ASSISTANTS AND NATIONAL SERVICE

The Ministry of Health, after consultation with the General Medical Services Committee, has introduced a new condition into the conditions on which training grants are payable in respect of trainee assistants—namely, that in future the grant will not be payable in respect of trainees who are liable for military service.

HARROGATE MEETING RAIL TRAVEL ARRANGEMENTS

Members travelling by train to Harrogate are advised by the North-Eastern Regional Officer of British Railways to obtain seat reservations as soon as possible, as the normal traffic on these trains at this time of the year is heavy. These reservations should be made at the local railway station or through travel agents.

There are two pullman trains from London to Harrogate daily—viz., the Queen of Scots Pullman, which leaves King's Cross at 11.30 a.m., arriving at Harrogate at 4.2 p.m.; and the Yorkshire Pullman, leaving King's Cross at 5.30 p.m., arriving at Harrogate at 10.17 p.m.

The Queen of Scots Pullman also leaves Glasgow (Queen Street) daily at 10.15 a.m., Edinburgh (Waverley) at 11.24 a.m. and arrives at Harrogate at 3.48 p.m.

For the return journey a member of British Railway staff will be in attendance at Stand No. 12 in the Exhibition to be held in the Sun Pavilion throughout the period of the meeting, to make reservations on trains leaving Harrogate for various parts of the country.

GENERAL MEDICAL COUNCIL

ONE HUNDRED AND SEVENTY-FIFTH SESSION

The summer session of the General Medical Council opened at 44, Hallam Street, W., on Tuesday, May 24, 1949. Sir HERBERT LIGHTFOOT EASON presided.

PRESIDENT'S ADDRESS

The PRESIDENT delivered his address, of which an abstract follows :

Dr. J. W. Bone

My colleagues on the Council will, I have no doubt, have heard with the deepest regret of the death of Dr. Bone on April 14 after a long and serious illness.

During the twenty years of his membership he served continuously on the Public Health Committee, for whose work he was specially qualified as the holder of a Diploma in Public Health granted by the University of Edinburgh, of which he was a medical graduate, and on the Pharmacopoeia Committee, in whose work he took an unfailing interest as a general practitioner. When the Council appointed him a Treasurer in 1939 he became a member of the Finance Committee, and he was a skilful and vigilant chairman from 1944 until his death. He was a no less active and useful member of the Executive Committee from 1940, and he made well-informed and judicious contributions to the work of the Special Committee on the Curriculum from 1944 to 1947, and of the Legislation Committee first appointed in 1944. He had, further, been chairman since 1944 of the English Branch Council.

My own impression of him when he was first elected to the Council in 1928 as a direct representative for England was that he felt it was his mission to instil more life into, and effect some reforms in, what I think he considered rather an antiquated body. But as the years went on, and he got more familiar with the traditions and procedure of the Council, he mellowed considerably, and by the end of his long term of service he had become one of the stoutest defenders of the Council against uninformed criticism and misdirected schemes for its reformation.

His advice to the Council in their judicial work was invaluable in matters affecting general practice and the misdemeanours and errors that might be committed by members of his profession; and his opinion in this sphere rightly carried much weight, in that for many years he had been a most successful and honourable representative of general practice. We personally shall miss him very much owing to his sterling honesty, his kindness, and the enthusiasm with which he entered into every aspect of the Council's business. I feel sure that my very deep personal regrets at his death are shared by all my colleagues.

Other Personal References

The Council also have to deplore the death on April 10 of Mr. Edward Sheridan, a past president of the Royal College of Surgeons in Ireland and professor of dental surgery in University College, Dublin. Mr. Sheridan was an original member of the Dental Board established under the Dentists Act, 1921, and was the first member of the dental profession to be chairman of the Board when he succeeded Sir Francis Acland in 1939.

The death on Nov. 15 of Dr. Stuart McDonald, Emeritus Professor of Pathology in the University of Durham, will have reminded the senior members of the Council of a valuable service which he rendered to medical education on our behalf, though he was never one of our number, after his retirement from his Chair.

Members who knew Mr. Charles George Andrews as an officer of the English Conjoint Board or here will share the deep regret of his colleagues on the staff of the Council at his sudden death in the office on Jan. 14.

The Council will regret that we have lost the services and the presence of Mr. Robertson, who came here as a Crown nominee in 1946.

The Council have to congratulate Sir Wilson Jameson, who contributed so much to our counsels as a Crown nominee from

1942 to 1947, on being appointed a Knight Grand Cross of the Order of the British Empire. I think no man has had to serve the Minister of Health as Chief Medical Officer in a period of greater stress during his tenure of office than has Sir Wilson Jameson, and I think both those with whom he has worked and the public at large will realize what magnificent work he has done for the public health of England both before and, more especially, since he filled his present post. We ourselves deplored the day when he felt it incumbent on him to retire from the Council, and the honour that has been bestowed on him has given the greatest pleasure to all his former colleagues here.

We also have to congratulate our colleagues Sir Henry Cohen and Sir Sydney Smith on the honour of knighthood which has been conferred upon them. In their presence I will raise no blush on the cheeks of either of them by saying more than this, that in our opinion both of them have exceedingly well deserved this distinction.

The Medical Register

Members will have seen with interest that the *Medical Register*, which was a book of 335 pages when the first issue of it was published ninety years ago, has become so bulky that this year, for the first time, it is published in two volumes.

At the end of 1947 the *Register* contained the names of 77,929 practitioners, of whom 67,261 were registered on qualifications granted in the British Islands, 6,509, including 813 temporarily registered, in the Commonwealth List, and 4,159, including 3,748 temporarily registered, in the Foreign List.

The number whose names were added or restored to the *Register* in 1948 was 3,984, over 1,000 more than in 1947, and the highest on record. But at the end of 1948 the number of names in the *Register* was 76,292, or 1,637 less than at the end of 1947, and exactly the same as at the end of 1946.

This result follows from the substantial completion during 1948 of the heavy task of determining the position of practitioners eligible to apply for normal registration under the Medical Practitioners and Pharmacists Act, 1947, either by virtue of their temporary registration under Defence Regulation 32B or the Polish Resettlement Act, 1947, or as persons who served in a medical capacity in H.M. Forces overseas, or rendered analogous service to the Allied cause during World War II.

The primary effect of the Act was that the names of 1,396 practitioners were added to the Foreign List in the *Register*. Registrations in the Commonwealth List and in the local registers for England, Scotland, and Ireland, which made up the total addition of 3,984, did not vary materially in number from those in 1947.

So much for addition. Subtraction from the number of practitioners registered again turned mainly on the operation of the Act of 1947.

The names of 4,467 practitioners were removed from the *Register* on the determination of their temporary registration under the Act. Of these 3,119 did not apply for normal registration within the statutory time limit. We may safely assume that most of this great number are practitioners from the Commonwealth or from the United States of America who have returned to practise at home.

I am sure that the Council would wish me to take this opportunity of saying that the arid details of registration and removal from the *Register* do not obscure for us the immeasurable self-sacrifice and devotion of these medical men and women who joined the ranks of their colleagues here when the need was dire.

1,340 have become normally registered in the Commonwealth List or the Foreign List; and 8 have become normally registered on qualifications granted in the British Islands.

About 1,000 practitioners are known to have passed from the profession by death in 1948; and the total subtraction of 5,621 in the year was completed by two penal erasures and 144 non-penal erasures for failure to answer statutory inquiries about registered addresses.

Reciprocity with Canadian Provinces

One of the most important duties delegated by the Council to the Executive Committee under Section 9 of the Medical Act, 1858, has been since 1887 that of taking "the steps

time he was thinking of going into a practice made vacant by death—and he consulted the clerk to the local executive council, who suggested the Baguley estate. Consent was given to his going there, and after searching round for some time he obtained a surgery and started practice on Nov. 7.

He strongly denied that he had ever canvassed for patients. Asked why he called on Mrs. Thompson and Mrs. Winters, he said he was visiting a patient in the same block of flats and was told that those ladies wished to see him and register with him. He never said he was the doctor for the estate. The ladies welcomed him and said what an advantage it was to have a doctor near at hand. He did not discuss who their doctor was before transference, and he used no influence to get them to change.

Asked by the President whether he thought it wise to make such a call, he said that so many patients were asking to be registered at that time that he regarded it as the normal thing on a new estate. They were strangers to each other and to himself. The same sort of thing could never have happened at Stockport. At the time he thought there was no harm in responding to the request, but since these proceedings started his point of view had changed. With regard to the case of Mr. Parry, he was attending a patient next door to him, and on leaving he was approached by Mr. Parry, who, after asking after the patient, said how pleased he was to have a doctor so near, asked him to come into his house, and registered with him. Afterwards he treated him at his surgery for some time.

The President: Did you think it wise to go to his house in the first instance?

Dr Wiseman: I was invited in.

The witness said that it was the same with other persons. He visited them because a request had been made for him to do so through a neighbour who was already a patient of his.

With regard to the notice displayed in the post office, he was wholly unaware that it was being shown until a complaint from Dr. Pearce was transmitted to him by the local committee. He did not put the notice up or ask the postmaster to do so, and immediately he heard about it he asked that it be taken down. It merely contained the words: "Messages may be taken here for Dr. Wiseman." No address or surgery time was appended.

In cross-examination, he denied that he had ever said he was the doctor for the estate, his words were "a doctor on the estate." In the course of further questions, Dr. Wiseman said he thought Dr. Pearce was the influence behind the statements of the various witnesses. Mr. Taylor was thereupon granted permission to recall Dr. Pearce, who denied that he had any personal motives or that he had called upon the several women named and asked them to make statements. He was not present when they made their statements, and it was not true that he had inspired a common formula in the statements. He agreed that he had asked people who had transferred from his list what had led them to do so.

At the conclusion of the evidence Mr. Richards addressed the Council on behalf of the respondent. Mr. Taylor desired to make a final speech on behalf of the complainants, but the President said that the custom in ordinary courts would be followed by the Council, whereby if no evidence other than that of the defendant himself were tendered on his behalf the Council for the complainants would not have the opportunity of making a second speech.

Judgment

After a lengthy consideration *in camera* the President stated that the Council had found certain facts proved—namely, that in or about November or December last Dr. Wiseman had canvassed patients of the practice of Dr. Pearce with a view to inducing them to become patients of his, in particular that he had canvassed Mr. George Parry with a view to inducing him and his family to become patients and had procured him to hand to him his medical card and the medical cards of his family as preparatory to the transfer of himself and his family to the respondent's list, and that he had canvassed in the same way Mrs. F. M. Thompson and Mrs. Sylvia Winters. In relation to the facts so proved the Council had judged him to have been guilty of infamous conduct within the meaning of Sect. 29 of the Medical Act, 1858, and in contravention of para. 6 of the Warnings Notice issued by the Council, and had instructed

the Registrar to erase from the *Register* the name of Michael Ansel Wiseman.

Mr. Richards: I take it that in view of that judgment the other charges are not proved?

The President: I have said the charges which are proved.

Convictions

The Council considered the case of Dr. Graham George Robertson, registered as of Mariners Lane, Tynemouth, who had been convicted at Tynemouth on Jan. 3 of driving a motor-car when under the influence of drink and had been fined £20 and disqualified from driving for 12 months. Mr. F. P. Winterbotham, solicitor to the Council, said that Dr. Robertson had been before the Council previously on similar charges, and in February, 1946, his name was erased from the *Register* but was restored two years later.

Dr. Robertson gave evidence as to this occurrence, which actually arose out of a New Year's Eve party. He submitted testimonials as to his excellent behaviour, and Mrs. Robertson gave evidence on his behalf.

The Council found the conviction proved, "but in spite of this temporary lapse the Council has decided neither to postpone judgment nor to direct the Registrar to erase your name."

The final case was that of Dr. Norman Fraser Stocks, registered as of Priestfield Road, Edinburgh, who appeared on two recent convictions of being in charge of a motor-car whilst under the influence of drink, one at Clay Cross in October, 1948, and the other at Berwick-on-Tweed in December, 1948.

Dr. Stocks, in reply to his counsel, Mr. A. W. Standing, said that he had had a nervous breakdown following severe war strain (he had been torpedoed whilst serving in the war). Counsel drew attention to his fine war record and to certain domestic difficulties.

The Council found the convictions proved but postponed judgment for 12 months.

ELECTIONS AND EDUCATIONAL BUSINESS

The following were elected by Council to be members of the Penal Cases Committee: Sir Henry Cohen, Dr. Dain, Dr. Gregg, Sir Cecil Wakeley, Dr. Waterfield, Dr. Campbell, Sir Sydney Smith, and Professor Picken.

Sir Henry Cohen, Dr. Brocklehurst, and Sir Andrew Davidson were appointed respectively chairmen of the Education, Examination, and Public Health Committees.

To fill the vacancy in the joint treasurership of the Council occasioned by the death of Dr. Bone, Sir Cecil Wakeley was appointed.

Dr. Brocklehurst, Sir Sydney Smith, and Mr. Stoney were appointed representatives of the three Branch Councils, for England, Scotland, and Ireland respectively, on the Dental Board.

Professor J. H. Biggart was nominated by the Council for appointment by the Minister of Home Affairs, Northern Ireland, as a member of the tribunal constituted under the Dangerous Drugs Regulations, 1938 (Northern Ireland).

Dr. Bigger, Dr. Hedley, Sir Sydney Smith, and Sir Cecil Wakeley were appointed to constitute the Finance Committee of the Council. Dr. Hedley reported that last year there was a substantial surplus in the Council's income, thanks to the registration of a large number of foreign practitioners under the Medical Practitioners and Pharmacists Act. This would not recur.

Sir ANDREW DAVIDSON presented a report from the Public Health Committee in which was set out for the information of the Council the statistics relating to D.P.H. courses and examinations since the new rules for the D.P.H. in 1946.

Sir LEONARD PARSONS raised the question of the large number of separate courses with the relatively small number of entrants.

Sir SYDNEY SMITH pointed out that with the larger rewards now obtainable in fields of practice other than public health it might be increasingly difficult to attract recruits into the public health service.

Professor PICKEN agreed that it was economically unsound to be running a large number of courses for a relatively small number of students attending any one course. But in view of the fact that it was not known at the moment how many people would be required in the public health field he thought it would be unwise to ask the universities to cut down their courses or

to attempt to combine the courses of different universities. He had himself tried to divert students to other centres, but had found it very difficult to persuade them. It would be as well to let the matter rest as it was at the moment.

The PRESIDENT said that the licensing bodies were independent. The Medical Act, 1886 (Sect. 21), said that they might combine, but the Council had no power to enforce combination. Such combination was certainly desirable, because a number of licensing bodies had only a small number of students and granted a small number of diplomas. The Council, however, could not interfere in the matter.

The report of the Examination Committee, submitted by Dr. Brocklehurst, contained the usual tables, and that of the Pharmacopoeia Committee, by Dr. Campbell, embodied a report of the Pharmacopoeia Commission, setting out its recent activities in the direction of nomenclature and of weights and measures.

The Council then considered *in camera* reports from its Executive and Legislation Committees, and the four-day session concluded.

Retirement of Mr. Hempson

At the conclusion of one of the cases at this session the President of the Council said that he understood this was the last occasion on which Mr. Oswald Hempson would appear before them. He first appeared before the Council as solicitor in 1918, and since then had appeared in many cases, either in his private capacity or as solicitor to the Medical Defence Union. The Council wished to express to him its high appreciation of his valuable services by his lucid presentation of the facts of a case and his skilful and intelligent advocacy. He carried with him into his retirement the best wishes of the Council. Mr. Hempson made a suitable acknowledgment and said what an honour he esteemed it to have appeared so frequently.

Annual Report of B.M.A. Council—Financial Statement

Balance Sheet December 31, 1948

1947	£	1948	£ s. d.
Surplus Account—			
Balance at December 31, 1947	349,385	8 10	
Less Excess of Expenditure over Income for the year 1948 per annexed account	8,367	6 9	
349,385		341,018	2 1
140,000		140,000	0 0
30,000		30,000	0 0
519,385		511,018	2 1
Liabilities and Provisions—			
Loans (amount which investments have been earmarked per contra)	7,100	7,100	0 0
Bank Overdraft	14,839	12 5	
Creditors and accruing expenses	8,767	19 9	
Amounts received in advance	14,507	13 0	
Provisions for:			
Current Taxation (see Note 2) including 55.2% proportion of income tax	5,525	0 0	
Schedule A 1948-49 accrued to date	48,042	0 0	
Dilapidations and redecoration of premises	1,882	0 0	
Losses on transfer of Colonial subscriptions			
82,527		81,833	5 2

Notes—1. The Association is a company limited by guarantee, the liability of members being limited (except as provided in paragraph 6 of the Memorandum of Association) to 1 guinea each.

2. The Inland Revenue have raised the question of taxation liability on income from the Association's publications. The Association maintains that should there be any liability it is not substantial to date, and no provision therefore has been made in these accounts.

3. (a) The subsidiary company, the Scholastic, Clerical and Medical Association Ltd., was placed in voluntary liquidation on 10th December, 1942, in these circumstances it is considered that it would be misleading to deal with the company in group accounts.

(ii) The net aggregate amount of the profits of the subsidiary to 10th December 1942, so far as concerns the members of the British Medical Association as at 31st December, 1948, and during the year ended on that date, were as follows:

	For the 51 years to 10th Dec. 1948	For the 51 years ended 31st Mar. 1948	Prior Total
Gross	2,093	—	2,093
Less: Income Tax	942	—	942
	1,151	—	1,151

(a) Deal with the accounts of the B.M.A. for the year 1948

Gross	—	2,093	—	2,093
Less: Income Tax	—	942	—	942
	—	1,151	—	1,151

(b) Not yet dealt with in the accounts of the B.M.A. (after clearing date) 201 1,383 10,564 12,654

4. No emoluments were receivable by the members of the Council of the Association other than in their capacity as directors of the subsidiary company. The emoluments so received in respect of the period from 1st April, 1947, to 10th December, 1948, were:

Fees	4,454
Other emoluments	12,345
	16,799

£609,951 7 3

1947	£	1948	£ s. d.
Fixed Assets at net book amount at January 1, 1947, of assets acquired before that date (for which figures of cost are not readily obtainable), with additions since at cost, less depreciation and Sinking Fund instalments—			
Leasehold premises, Tavistock Square and Upper Woburn Place and North and South Wing Extensions	313,374	19 9	22,978 13 4
Premises held by feu charter, Nos. 6 and 7, Drumshugh Gdns., Edinburgh, and contents	2,720	0 0	600 0 0
Furniture and Office Equipment	18,885	9 8	2,509 9 1
Library	3,765	0 4	1,000 0 0
	628,745	9 9	27,178 2 5
315,066		203,563	7 4
Subsidiary Company (See Note 3)—			
598 shares of £10 each fully paid in Scholastic, Clerical and Medical Association Ltd. (in Voluntary Liquidation) at cost	6,033		6,033 10 0
—represented by net assets estimated to produce £16,000			
Investments at cost—			
(a) Representing Reserves			
£58,500 3% Savings Bonds, 1940-70	59,036	5 0	
£30,000 2½% Savings Bonds, 1964-67	26,000	0 0	
£47,500 3% Savings Bonds, 1965-75	47,500	0 0	
£1,000 3% Defence Bonds	1,000	0 0	
£100 2½% Defence Bonds	600	0 0	
£10,000 2½% National War Bonds, 1954-56	10,000	0 0	
£2,500 Barclays Bank "B" stock	10,512	13 0	
£100 Commercial Union Assurance Co Ltd. stock	5,875	0 0	
(b) Representing Loans per contra—			
£7,100 3% Savings Bonds, 1960-70	7,100	0 0	
(Market value at 31st December, 1948, £173,441)			171,593 15 0
(c) Sinking fund insurance policies at premium cost to date	53,457	7 11	
221,502		225,281	2 11

Current Assets—			
Stocks of paper for publications, stationery, etc.	9,590	13 5	
Payments in Advance	1,607	9 8	
Debtors (including unpaid subscriptions)	56,767	3 8	
Less provision for losses	852	0 3	
Balances at Banks and cash in hand			62,917 7 0
63,959			

£609,951 7 3

A. M. A. MOORE,
Treasurer

H. GUY DAIN,
Chairman of Council

CHARLES HILL,
Secretary

REPORT OF THE AUDITORS TO THE MEMBERS OF THE BRITISH MEDICAL ASSOCIATION

We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit. In our opinion proper books of account have been kept by the Association so far as appears from our examination of those books and audited returns adequate for the purposes of our audit have been received in respect of the Scottish Committee. We have examined the above balance sheet and annexed income and expenditure account which are in agreement with the books of account and returns. In our opinion and to the best of our information and according to the explanations given us the accounts give the information required by the Companies Act, 1948, in the manner so required and, subject to Note 2 thereon, the balance sheet gives a true and fair view of the state of the affairs of the Association as at 31st December, 1948, and the income and expenditure account gives a true and fair view of the income and expenditure for the year ended on that date.

3, Frederick's Place, Old Jewry, London, E.C.2.

2nd June, 1949

PRICE, WATERHOUSE & Co.,

Chartered Accountants

FINANCIAL STATEMENT				SUPPLEMENT TO BRITISH MEDICAL JOURNAL	
Income and Expenditure Account for the Year ended December 31, 1948					
EXPENDITURE		1948		1947	
		£	s. d.	£	
Meeting Expenses	...	20,836	1 3	14,563	
Expenses (including Auditors' Remuneration and Interest on Loans,	...				
£172 10s 0d	...				
Grants, Regional Offices and Direct	...				
Expenditure on Local Organization	...				
Provision for Depreciation—					
Leasehold Premises, Tavistock					
Square, W.C. 1					
North					

EXPENDITURE		1948	1947
	Abstract A	s. d.	£
Central Meeting Expenses		20,836	13,505
General Expenses (including Auditors' Remuneration, £172 10s 0d and Interest on Loans, (284)			
Premises Expenses			
Capital Grants, Regional Offices and Direct Expenditure on Local Organization			
Library Expenses	B	24,231 12 8	23,445
Central Staff Expenses	C	18,739 17 6	15,040
Printing, Stationery and Postages	D	32,295 16 11	23,445
Clark of Works and Architects' Fees	E	4,503 1 9	4,007
Bad Debts and Allowances	F	60,887 0 8	53,339
Charges incurred in purchase of stock	G	16,296 15 11	11,107
		448 2 0	517
		- - -	47
		- - -	270
		£178,243 8 8	135,738
Taxation—			
Corporation Duty			
Income Tax based on income of the year	£	1,184 10 0	
(Property Tax, £7,290; on Investments and Deposits £1,335)			
		10,624 18 11	
		11,809 8 11	17,410
Less Grant towards Cost of Central Medical War Committee			
Balance transferred from Journal Summary Account		£190,052 17 7	153,154
		7,000 0 0	
		20,971 14 2	
		27,971 14 2	37,288
		£162,081 3 5	115,866
Provision for Loss of Subscriptions, less losses recovered		3,015 12 10	
Provision for Losses on Transfer of Colonial Subscriptions		1,500 0 0	2,787
			2,000

EXPENDITURE (contd.)										December 31, 1948	
	£	s.	d.	£	s.	d.	1948	1947			
							£	s.	d.	/	
Provision for Depreciation—											
Leasehold Premises, Tavistock Square, W.C.1	3,000	0	0								
North and South Wing Extension	5,000	0	0								
Instalment of Sinking Fund for Redemption of Leasehold Premises											
Scottish House, Edinburgh	3,488	6	8								
Furniture and Fittings				11,488	6	8					
Library				300	0	0					
				1,687	6	8					
				500	0	0					
Less proportion chargeable to Abstract H				13,875	13	4					
Transfer to General Contingency Reserve				300	0	0					
Transfer to Reserve for Development of Regional Offices							13,575	13	4	1	
Balance transferred to Balance Sheet										2	
										1	
										7	
INCOME											
Subscriptions for year	19,532	7	4				145,035	6	0	138,11	
Rents											
Income from Investments (Gross)											
Subsidiary Company (See Note 3)											
Other											
Indries											
cess of Expenditure over Income transferred to Balance Sheet							20,712	18	8	28,392	
							56	18	2	64	
							8,367	6	0		
							180,172	0	7		

Questions Answered

Hospital Medical Staff Committees
define the functions of the
statutory

Hospital Medical Staff Committees

Q.—Please define the functions of the hospital medical staff committee as statutorily enacted? At my hospital the committee limits itself to minor matters of staff conditions, such as the canteen menu or the supply of table-tennis balls, which are not otherwise dealt with by the trade unions concerned. The medical superintendent informs me that the general policy of the hospital and the conditions regarding treatment of patients and staff interrelations are outside the committee's territory and are therefore not discussed. Is this the case?

A.—Hospital medical staff committees have no statutory recognition. The Medical Act, 1936, states that the B.M.A. is to be consulted in the appointment of the medical staff.

A.—Hospital medical staff committees have no statutory recognition. The Minister of Health replied to a question in the B.M.A. Questionary (*Journal*, April 17, 1948, p. 742) as follows:

The Minister entirely agrees with the system of medical committees in hospitals. But he could not *compel* medical staffs to set them up (nor would the Association presumably wish him to try!). He has already included in his guidance to regional boards and hospital management committees a declaration of the importance which he attaches to the system and asked that every encouragement and facility should be given to it.

(One of the points that were put forward in the amending Bill was that the Government should appoint a representative special committee to consider the question of the medical staffs' control of the hospitals.)

One of the points that were put forward for inclusion in the amending Bill was that the Minister should recognize representative specialist staff committees (as he does local medical committees) at hospital management committee, regional hospital board, and board of governors levels, and that (as with the medical committees) he should prescribe the powers and duties of these committees from time to time as necessary. It was not included in the Bill. The profession would like to see these committees as internal committees of the Service, to give them access, and to encourage full co-operation. As initial functions it should be stated that such committees (a) shall have reasonable access at all times to their executive body, (b) shall, on being recognized, give prompt attention to requests from their executive body, and (c) shall be a normal and regular source from which executive bodies ask advice.

Dangerous Drugs Act: Restoration of Authority
The Police announces that the authorities
under the Dangerous Drugs Regulations will be
restored to Dr. ...

Dangerous Drugs Act: Restoration of Authority
The Home Office announces that the authorities granted by the Dangerous Drugs Regulations under the Dangerous Drugs Act, 1920, have been restored to Dr. Robert Archibald Herschell Morison.

Correspondence

Locally Recruited C.M.S. Officers

Locally Recruited C.M.S. Officers

SIR,—In the Memorandum on the Remuneration of Officers of the Colonial Medical Service (Annual Report of Council. Supplement, April 2, p. 205) you suggested that locally recruited medical officers should receive salaries less than the standard recommended, and that the proportion to be reduced is to be negotiated. May I ask who is to carry out the negotiation? Is it the B.M.A., which, as far as I am aware, has never shown any interest in "locally recruited medical officers," a number of whom are members of the Association and graduates of British universities and colleges?

I disagree with your suggestion of unequal pay, and advance the following in support, taking the African medical officer as an example:

It costs the African far more to obtain a medical officer than it does his British colleague. He, also, has to be housed and transported, and his family must be supported. The African medical officer is also liable to be killed or injured in the line of duty, and his family must be provided for. The African medical officer is also liable to be killed or injured in the line of duty, and his family must be provided for.

It costs the African far more to obtain his qualifications in Britain than it does his British colleague; his living expenses are far greater. He, also, has to educate his children in Britain if there is to be any future for them. A perusal of the report of the Commission on Higher Education in West Africa, by the Rt. Hon. Walter Elliot will enlighten you on the state of education in the Colonies. Like his British colleague, the African medical officer undergoes frequent moves, and so also has to keep two homes. Social services in Britain have lightened considerably the responsibilities of the individual Briton to his family. No such services exist in the West African Colonies, so that the locally recruited officer has a greater burden to shoulder in this respect. Expatiation allowance based on the rate of the locally recruited officer has another name the Harragin Commission appears to have.

social services in Britain have lightened considerably the responsibilities of the individual Briton to his family. No such services exist in the West African Colonies, so that the locally recruited officer has a greater burden to shoulder in this respect.

Expatriation allowance based on the recommendations of the Harragin Commission appears to be a means of maintaining under another name the *status quo* by which the British medical officer, having similar qualifications and experience, is paid 33½% more for doing the same job. This disparity in salaries has certainly not made for cordiality and co-operation between the two groups.

Finally, may I ask whether the interest of the Government in recruiting officers have ever been the same in the two groups.

Finally, may I ask whether the interests of the locally recruited officers have ever been represented in your deliberations, and, if so, by whom?—I am, etc.,

OLADELE A. AJOSE.

No Fee for Service
 ents that M...

No Fee for Service

SIR,—There are hints that Mr. Bevan, under the eagle eye of Sir Stafford Cripps, is unlikely to show much tolerance to the requests of general practitioners for an increase in the capitation fee for the first thousand patients on N.H.S. lists. There are

suggestions in the lay Press that doctors might well be permitted to augment their inadequate Treasury payments by charging patients a small sum for consultations.

In a leader in the *News Chronicle* of May 9, 1949, it is pointed out that some of the financial problems in the New Zealand Health Service have been solved by making patients pay a small charge for consultations, treatment, and the provision of aids to health. It is suggested that Mr Bevan should not shrink from similar charges if they can be shown to be necessary. To quote: "Until people understand how to use public services, a small contribution from their pockets might save the day financially, and it would be good for self-respect."

There may be many good arguments for charging patients a small fee, but one is doubtful of any enhancement of their self-respect by such a procedure. What of the doctor? Is he not going to squirm at having to stretch out his hand for his shilling or sixpence? A token of the doctor-patient relationship! In the confidential atmosphere of the consulting-room the patient is to confirm his trust in the family doctor by crossing his palm with silver. One can hear the less sensitive patient muttering, "Your tip"—the *pourboire* of the Paris taxi-driver. What of the much-advertised free Health Service?

Not all of our patients haunt the waiting-room. One does see pleasant patients who, with genuine ailments, come for the first time since the Service started. What would they think of us? They have made no demands on the Service until their first consultation, which is a right by Act of Parliament. A shilling a time from the man who requires a daily dressing or twice-daily penicillin injections from the woman with the inoperable carcinoma. A shilling a time to reduce the attendance of patients and augment the practitioners' incomes. Jangling of silver on a salver or in an empty dressings tin, or to be marked down to account. Why not a shilling-in-the-slot machine to open the waiting-room door? No, we simply could not prostitute ourselves in this manner.

If we are to maintain a good standard of medical practice and retain our self-respect we must not be unduly harassed by money matters. We must be paid adequately by the Treasury and we must not be distracted from our essential and exacting work by thoughts of inadequate finance or by the harsh rattle of coins. Let us insist on 100% action from the Whitley Council, the Association, and the democratically elected Minister of Health.—I am, etc.,

Kilmarnock, Ayrshire

IAN B.-K. MACGREGOR

Incidence of Sickness: Correction

SIR,—May I draw your attention to an error in the article "Incidence of Sickness" (*Supplement*, April 30, p. 254)?

Table I is said to present "Percentage of Persons Interviewed who had an Illness during the Month." These percentages have evidently been calculated from the data given in Table A of our *Quarterly Return* and refer not to persons ill during the stated month but during the three previous months.

The correct rates, which can be derived from our Table E, are as follows:

Percentage of Persons Interviewed Who Had an Illness or Injury during the Month

	1947		1948	
	16-64	65+	16-64	65+
July	58.2	79.2	61.5	79.3
Aug.	57.7	79.1	60.2	80.9
Sept.	63.2	80.0	63.3	81.1
July-Sept. average	59.7	79.4	61.7	80.5

—I am, etc.,

London, W C 2

W. LOGAN,
Statistician (Medical),
General Register Office

Association Notices

ELECTION OF COUNCIL

The following are the results of the election of members of Council by those Groups where there were contests:

Group E (Bedfordshire, Cambridge and Huntingdon, Essex, Hertfordshire, Norfolk, Northamptonshire, and Suffolk)			
J. C. Pearce (Diss) ..	463	Elected	
A. Staveley Gough (Watford)	268		
No. of voting papers issued	2,637		
No. returned	731		
Group I (Metropolitan Counties)			
Lord Horder (W.I.) ..	1,696	Elected	
R. Hale-White (N.W.I.)	1,263	Elected	
F. Gray (W.C.I.)	866	Elected	
E. Steeler (W.I.)	847	Elected	
G. de Swei (W.I.)	699		
J. A. Gorsky (S.W.I.)	671		
R. Kelson Ford (S.W.I.)	502		
J. F. Murphy (S.W.I.)	432		
No. of voting papers issued	7,362		
No. returned	2,044		
Spoiled papers	31		
Group K (Dorset and West Hants, South Western Wiltshire)			
J. A. Pridham (Weymouth)	484	Elected	
S. Noy Scott (Plympton)	350		
No. of voting papers issued	1,759		
No. returned	824		

In the following constituencies, for which no nomination papers were received, the Council appointed the practitioners named, under its powers under By-law 63 (2):

Group F (Berks, Bucks and Oxford, Birmingham and Staffordshire):
S. F. L. Dahne, Caversham

Group R (Northern Ireland): N. S. Dickson, Templepatrick.

CHARLES HILL,
Secretary

ANNUAL GENERAL MEETING

Notice is hereby given that the Annual General Meeting of the British Medical Association will be held at the Grand Hotel, Harrogate, on Monday, June 27, 1949, at 9 p.m. Business: (1) Minutes of the last meeting, held June 29, 1948; (2) Induction of President, 1949-50; (3) Balance Sheet and Income and Expenditure Account for the year ending Dec. 31, 1948. (4) Appointment of Auditors

CHARLES HILL,
Secretary

EXTRAORDINARY GENERAL MEETING

Notice is hereby given that an Extraordinary General Meeting of the British Medical Association will be held on Monday, June 27, 1949, at the Grand Hotel, Harrogate, immediately following the Annual General Meeting, when the following resolution will be proposed as a Special Resolution:

Resolution

That the Articles of Association be altered in the manner following:

(i) *Article No. 1*—By deleting the figures "1929" and by substituting therefor the figures "1948."

(ii) *Article No. 4 (1)*—By inserting before the word "voting" the words "receiving notices of General Meetings or of"

(iii) *Article No. 22*—By deleting this Article and by substituting therefor the following new Article to be numbered 22:

"22 The Association shall in each calendar year hold a General Meeting as its Annual General Meeting in addition to any other meetings in that year. Not more than fifteen months shall elapse between the date of one Annual General Meeting and that of the next. The Annual General Meeting shall be held at such time and place as may be fixed by the Council, and if no time is so fixed shall be held on Oct. 20 for if that day be a Sunday on Oct. 21), and if no place is so fixed shall be held at the registered office of the Association."

(iv) *Article No. 24*—By deleting this Article and by substituting therefor the following new Article to be numbered 24:

"24. The Council may whenever it thinks fit and (without prejudice to the provisions of the Companies Act, 1948) it shall

ANNUAL MEETING PROGRAMME: CORRECTION

In the Annual Meeting Programme (*Supplement*, April 23, p. 242). Combined Meeting of the Sections of Child Health and Preventive Medicine, the name of Dr. H. C. Cameron (London) was included in error.

upon a requisition made in writing as hereinafter provided by any one hundred or more Members convene an Extraordinary General Meeting."

(v) *Article No. 25.*—By deleting this Article and by substituting therefor the following new Article to be numbered 25:

"25. A requisition must state the objects of the meeting and must be signed by the requisitionists and deposited at the registered office of the Association, and may consist of several documents in like form each signed by one or more requisitionists."

(vi) *Article No. 26.*—By deleting this Article and by substituting therefor the following new Article to be numbered 26:

"26. If the Council does not within twenty-one days from the date of the deposit of a requisition proceed duly to convene an Extraordinary General Meeting, the requisitionists, or any one hundred of them, may themselves convene a meeting for the objects specified in the requisition, but any meeting so convened shall not be held after the expiration of three months from the said date. A meeting convened by the requisitionists shall be convened in the same manner, as nearly as possible, as that in which the General Meetings are to be convened by the Council."

(vii) *Article No. 27.*—By deleting this Article and by substituting therefor the following new Article to be numbered 27:

"27. In the case of an Annual General Meeting or of a meeting for the passing of a Special Resolution twenty-one clear days' notice at the least and in any other case fourteen clear days' notice at the least specifying the place, the day, and the hour of meeting, and in the case of special business the general nature of such business (and in the case of an Annual General Meeting specifying the meeting as such) shall be given in manner hereinafter mentioned to all the Members (other than those who under the provisions of the Regulations and By-laws are not entitled to receive the notice) and to the Auditors for the time being of the Association. The accidental omission to give notice to, or the non-receipt of notice by, any person entitled to receive notice shall not invalidate the proceedings at any General Meeting."

(viii) *Article No. 41.*—By deleting this Article and by substituting therefor the following new Articles to be numbered 41(a) and 41(b) respectively:

"41(a). The Council shall be composed of the President of the Association, the President-Elect, the immediate Past-President, the Chairman of the Representative Body, the Chairman and (during the year immediately following his period of office as Chairman of Council) the Past Chairman of Council, the Chairman of the General Medical Services Committee, the Chairman of the Central Consultants and Specialists Committee, and the Treasurer, *ex officio*, and of members of the Association elected by the bodies and in the manner prescribed in that behalf by the By-laws."

"41(b). No Member of Council shall vacate or be required to vacate his office as a Member of Council on or by reason of his attaining or having attained the age of 70 and any Member of Council retiring or liable to retire under the provisions of the Regulations or the By-laws and any person proposed to be elected or appointed a Member of Council shall be capable of being re-elected or reappointed or elected or appointed, as the case may be, as a Member of Council notwithstanding that at the time of such re-election or reappointment or election or appointment he has attained the age of 70, and no special notice need be given of any resolution for the re-election or reappointment or election or appointment or approving the election or appointment as a Member of Council of a person who shall have attained the age of 70, and it shall not be necessary to give to the Members notice of the age of any Member of Council or person proposed to be re-elected or reappointed or elected or appointed as such."

(ix) *Article No. 50.*—By deleting this Article and by substituting therefor the following new Articles to be numbered 50(a), 50(b), and 50(c) respectively:

"50(a). The Council shall once at least in every calendar year lay before the Association in General Meeting an Income and Expenditure Account for the period since the preceding account, made up to a date not earlier than the date of the meeting by more than nine months. The Council shall also cause to be made out in every calendar year and to be laid before the Association in General Meeting a Balance Sheet as at the date to which the Income and Expenditure Account is made up. Every such Balance Sheet shall be signed on behalf of the Council by two of the Members of Council and shall have attached to it a report by the Council with respect to the state of the Association's affairs and the amount, if any, which they propose to carry to reserves. It shall also have attached to it the Auditors' report and such other documents as shall be required by the Statutes to be annexed thereto."

"50(b). The Council shall also annually prepare an Estimate of the probable income and expenditure of the Association for the coming year and a Report of the proceedings of the Association for the past year and the Balance Sheet and Income and Expendi-

ture Account and the said Estimate and Reports of the Council shall be presented to the Annual Representative Meeting.

"50(c). A copy of each of the said documents shall be sent to the Secretary of every Branch and Division and published in the *Journal* not less than twenty-two days before the Annual General Meeting."

(x) *Article No. 51.*—By deleting from this Article the words "In addition to the above-mentioned Report."

CHARLES HILL,
Secretary.

June 4, 1949.

Diary of Central Meetings

JUNE

- 7 Tues. Nutritional Requirements Subcommittee, 11.30 a.m.
- 9 Thurs. Publishing Subcommittee, 11 a.m.
- 10 Fri. Library Subcommittee, 12 noon.
- 10 Fri. Science Committee, 2 p.m.
- 10 Fri. Public Health Committee, 2 p.m.
- 15 Wed. Coroners Acts Committee, 2 p.m.
- 16 Thurs. Dermatologists Group Committee, 11.30 a.m.
- 16 Thurs. Group of Dermatology Conference, 2 p.m.

Branch and Division Meetings to be Held

FURNESS DIVISION.—At Ulverston Golf Club, Sunday, June 12, 2 p.m., annual golf meeting.

GREENWICH AND DEPTFORD DIVISION.—At Miller Hospital, Greenwich High Road, London, S.E., Wednesday, June 8, 8.30 p.m., annual general meeting.

METROPOLITAN COUNTIES BRANCH.—At B.M.A. House, Tavistock Square, London, W.C., Tuesday, June 7, 2.30 p.m., annual general meeting. Agenda: Induction of Dr. C. G. Martin as President of the Branch and President's Address, etc.

WESTMINSTER AND HOLBORN DIVISION.—At Holborn Town Hall, W.C., Thursday, June 9, 8 p.m., general meeting. Consideration of Annual and Supplementary Reports of Council, 1948-9; instruction of Representatives to A.R.M.

H.M. Forces Appointments

ARMY

Major-Generals W. Foot, C.B., M.C., K.H.P., and Sir Edward Phillips, K.B.E., C.B., D.S.O., M.C., late R.A.M.C., have retired on retired pay.

Brigadier (Temporary Major-General) K. A. M. Tomory, O.B.E., late R.A.M.C., to be Major-General.

Colonel R. D. Camcron, C.B.E., M.C., late R.A.M.C., to be Brigadier.

Colonel S. Arnott, C.B., C.B.E., D.S.O., late R.A.M.C., has retired on retired pay and has been granted the honorary rank of Major-General.

Colonels W. W. S. Sharpe, W. Russell, M.C., and G. T. Gimlette, late R.A.M.C., having attained the age for retirement, are retained on the Active List supernumerary to Establishment.

Colonel W. M. Cameron, C.B.E., late R.A.M.C., has retired on retired pay and has been granted the honorary rank of Brigadier.

Lieutenant-Colonels F. McL. Richardson, D.S.O., O.B.E., and J. W. Eames, from R.A.M.C., to be Colonels.

ROYAL ARMY MEDICAL CORPS

Major H. M. Rice has retired, receiving a gratuity.

Major S. W. Smith has retired on retired pay on account of disability. (Substituted for the notification in a *Supplement* to the *London Gazette* dated Dec. 31, 1948.)

TERRITORIAL ARMY RESERVE OF OFFICERS: ROYAL ARMY MEDICAL CORPS

Major (Acting Lieutenant-Colonel) A. Cowie, D.S.O., from Active List, to be Major.

Major E. H. Markby, from Active List, to be Major.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-County Borough Councils.—Dartford, Wallsend.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

LUMBO-DORSAL SYMPATHECTOMY IN SEVERE HYPERTENSION

AN INTERIM SURVEY

BY

J. C. HARLAND, M.D., M.R.C.P.

Medical Chief Assistant and Registrar, Westminster Hospital

AND

F. d'ABREU, Ch.M., F.R.C.S.

Assistant Surgeon, Westminster Hospital

[WITH PHOTOGRAPHURE PLATE]



The treatment of hypertension by resection of the dorso-lumbar sympathetic nervous system has been practised for many years in the United States, where there is already an extensive literature on the subject. This literature has been reviewed elsewhere (Blodgett and Cutler, 1947; Bassett, 1948). It is only recently, however, that this treatment has attracted any great interest in this country. It might be helpful, therefore, to review a series of consecutive cases operated on at Westminster Hospital. The number—24 cases—is not large, and any conclusions can be only of a tentative nature. However, all these cases had been fully investigated before operation and have been carefully observed since, and an idea of the value of this form of treatment has begun to emerge.

Analysis of Material.—Of the 24 patients 15 were men, and of the nine women seven were married and two single. The youngest patient was a girl of 17, and the oldest a man of 60. The average age of the group was 42 years. There was no appreciable difference in age at operation between the men and the women. Six of the patients were over 50. The age incidence in decades was as follows. Under 20 years, 1 case; 20–29, 2 cases; 30–39, 4 cases; 40–49, 11 cases; 50–59, 5 cases; 60 years, 1 case.

Diagnosis

In five cases there seemed to be a cause for the hypertension: three patients had chronic nephritis, one patient had calculi in both kidneys, and the fifth, a married woman aged 47, had suffered from eclampsia 28 years previously. One patient with renal hypertension, a man aged 53 who had a clear history of acute nephritis at the age of 23, stated that his father and brother had both died from a "stroke." In this case the chronic nephritis had entered a malignant phase, and the familial tendency to high blood pressure had probably accentuated the disease. In the other 19 cases, in spite of careful interrogation and investigation, the origin of the hypertension was obscure, except that nine had a family history of hypertensive cardiovascular disease, suggesting that they might be cases of essential hypertension. However, when the records of these 19 patients were viewed as a whole an impression was gained that many were cases of chronic renal disease rather than essential hypertension.

Malignant Hypertension.—There were six cases of malignant hypertension in this series—four primary and two

secondary. The following criteria were used in making the diagnosis: (1) The presence of papilloedema with or without oedema of the surrounding retina—all six cases; (2) necrosis of the glomeruli or afferent arterioles on renal biopsy or at necropsy—five cases; (3) gross impairment of renal function—three cases; and (4) cerebrospinal fluid pressure greater than 300 mm. of water—two cases. Malignant hypertension may be a primary disease in a previously healthy person, or it may be secondarily superimposed on an existing renal disease. It is useful to make this distinction, as the primary cases have a prospect of greater and more permanent relief by operation. In one other case of renal hypertension the presence of a malignant phase was in doubt:

A married woman aged 50, who had suffered from severe occipital headaches for two years, had a blood pressure which varied between 180/120 and 300/170 mm. Hg. but was usually in the region of 240/150. Retinal examination revealed severe vascular sclerosis with occlusion of the right superior temporal artery. There was considerable retinal oedema, with many haemorrhages but only a few exudates and no papilloedema. The blood urea was 24 mg. per 100 ml. and the urea clearance 48% of normal. The cerebrospinal fluid pressure was 230 mm. of water. Pyelography revealed calculi embedded in both kidneys. Renal biopsy performed at operation showed necrotic changes in the afferent arterioles.

Symptoms

All patients had symptoms referable directly or indirectly to their raised blood pressure. Headache, often accompanied by severe lassitude, was the commonest. Only two patients did not complain of it, and in 13 it was the presenting symptom. Eleven patients had visual disturbances. Four had suffered from encephalopathic attacks before operation—an index of the severity of the hypertension in this series. Three patients had cardiac dyspnoea—paroxysmal in one and on exertion in the other two. Only three patients had prior knowledge (15, 14, and four years respectively) of their raised blood pressure. In all the other cases hypertension was a recent discovery.

Physical Findings

Blood Pressure.—In all patients the blood pressure was recorded on several occasions before operation. It was confirmed that the diastolic pressure gave a better indication of the severity of the hypertension. In only three patients

was the diastolic pressure constantly below 130 mm. Hg. The systolic pressure varied widely from day to day, sometimes by as much as 60-70 mm. Hg, but it was below 200 mm. Hg in only one patient. With rest in bed, most patients showed some fall in blood pressure, as shown by the accompanying table.

Blood Pressure (mm. Hg)	On Admission	With Bed Rest
Systolic:		
180-199	1 patient	4 patients
200-219	4 patients	7 "
220-239	6 "	7 "
240-259	8 "	6 "
260-279	4 "	—
280	1 patient	—
Diastolic:		
110-129	3 patients	10 patients
130-149	9 "	7 "
150-169	9 "	7 "
170-189	3 "	—

The effect of sedatives was investigated in five cases. "Sodium amytal," 3 gr. (0.2 g.), was given three times at hourly intervals, and the blood pressure was recorded at hourly intervals thereafter. The diastolic pressure fell below 90 mm. Hg in three of the five cases. The experience has not been large enough to estimate the usefulness of the test in selecting patients for operation.

Fundal Appearances.—The retinae were abnormal in all 24 patients—the six cases of malignant hypertension had papilloedema; 13 patients had haemorrhages and exudates, usually with retinal oedema, as well as arterial sclerosis; and five had arterial changes only; two of the latter had hypertensive heart disease, and one, a woman aged 52, was blind in one eye from an occlusion of the central retinal artery 16 years previously. Her blood pressure had been recorded as normal at the eye hospital she attended at that time.

Cardiac State.—This was assessed clinically, radiologically, and by electrocardiogram in all cases. Hypertensive heart disease was regarded as present when there was considerable cardiac enlargement and a grossly abnormal electrocardiogram. Four patients were considered to have this condition. Minor degrees of cardiac enlargement, usually observed radiologically, and minor electrocardiographic changes, such as diphase or early inversion of T waves, were not considered indicative of this state. Congestive heart failure was not present in any of these four patients, but two had increasing breathlessness on exertion and one had frequent attacks of paroxysmal dyspnoea with blood-stained sputum and radiological pulmonary engorgement. The other patient, a woman aged 49, had no cardiac symptoms before operation, but one month afterwards developed congestive failure, from which she died four months later.

Renal Function.—The blood urea and the van Slyke urea-clearance tests were estimated in every case. The specific gravity of the urine was recorded daily, and often by depriving the patient of fluids for 12 hours in order to obtain the maximum urine concentration. Seven patients had a blood urea greater than 40 mg. per 100 ml., and five had a urea clearance of less than 70% of normal. Both tests were abnormal in three of the patients with malignant hypertension. The intravenous pyelogram was normal in 19 patients. One other had compensatory enlargement of the left kidney, and another had calculi in the lower calices of both kidneys. Excretion of the dye was poor in two of the patients with malignant hypertension. A retrograde pyelogram was normal in one patient with an equivocal intravenous test. A portion of renal cortex was removed at operation for histological examination on 12 occasions.

Although the appearance was abnormal in every case, and on the whole consistent with the clinical and pathological findings, not enough experience of this procedure has been acquired for an opinion to be given on its value.

Lumbar Puncture.—This was performed on 12 patients before operation. In nine the cerebrospinal fluid pressure was greater than 170 mm. of water, and greater than 300 mm. in two of the patients with malignant hypertension.

This series therefore consists of comparatively youthful patients suffering from severe hypertension. There is little that medical treatment alone can offer such patients, and the prognosis is always doubtful and often grave. As in addition symptoms were severe enough to interfere with their work and daily lives, it was felt that operation was justified.

Operation

The operative procedure in all cases was that of Smithwick and need not be elaborated, the coeliac ganglia, splanchnic nerves, and sympathetic chain being removed. The chain was excised in varying lengths, but never less than from the ninth dorsal to the first lumbar inclusive. The operation differs from that of other reported methods in that the coeliac ganglia were always excised. The amount of post-operative back pain could be diminished by resecting the twelfth (subcostal) nerve as fully as possible. All cases are now drained, owing to the difficulty in distinguishing between deep haemorrhage and post-operative hypotensive reaction, which undoubtedly caused the two deaths after operation. A blood transfusion was given only if there was appreciable haemorrhage from the drainage-tube.

Complications.—Two patients died as a direct result of operation, both from haemorrhage within 24 hours. A liability to haemorrhage due to increased capillary fragility is well known in severe hypertension. A pronounced fall in systolic pressure, with narrowing of the pulse pressure is a usual accompaniment of this operation, and as a result immediate post-operative haemorrhage is difficult to detect. There is considerable loss, too, of the usual autonomic response to haemorrhage, and profound shock quickly develops. Three patients had post-operative complications severe enough to delay convalescence—two had an empyema and the other developed a massive pleural effusion, which responded well to repeated aspiration.

In 11 cases the following minor complications occurred: pneumonia and atelectasis, 3; pneumothorax, 2; haematoma formation, 2; pleural effusion, 1; infection of wound 1; paroxysm of auricular fibrillation lasting for two hours 1; bulging of the abdominal wall due to section of the eleventh and twelfth intercostal nerves during operation, 1.

Mortality

In addition to the two post-operative deaths, three other patients have since died—in two cases two months and in one case five months after operation. All three were seen in the early stages of this investigation and were considered at the time to be gravely ill; they would not now be submitted to operation. Renal function was poor, and a necropsy the typical changes of malignant hypertension were found. Two died from uraemia and one from congestive heart failure, and operation appeared to have no effect on the progress of their disease.

Results of Operation

In one of the remaining 19 cases the operation remained incomplete because of an empyema which developed after the first stage. The other 18 have been observed for varying periods: over 18 months, 1 case; 12-18 months, 7 cases; 6-12 months, 9 cases; and 5 months, 1 case.

Effect on the Blood Pressure

This has been disappointing. After a temporary fall for a week or two the blood pressure starts to rise again and within three months has returned to the neighbourhood of the pre-operative figure. In only five of the 18 cases has the fall in blood pressure been appreciable, but even in these the final figure is well above normal.

No striking blood-pressure changes with alteration of posture have been observed. Only three patients have reported dizziness on standing up, and this was transitory. There was some fall in blood pressure in most cases immediately on standing up from the recumbent position, but this was no greater than could be accounted for by the ability of blood pressure in the hypertensive patient.

This failure to produce permanent lowering of blood pressure suggests that the effect of operation can at most be palliative.

Retinal Change

The improvement in the appearance of the fundus oculi has been as rapid and dramatic as that reported elsewhere (Bourne *et al.*, 1948). Retinal oedema, haemorrhages, and exudates have with one exception disappeared, and so far have not returned. This improvement is useful for purposes of record, and it may also represent a diminution in the rate of progress of the disease. It is felt, however, that there has been a tendency to lay undue stress on this fundal improvement, and a word of caution is necessary. The grading of retinal change suggested by Wagener and Keith (1939) is useful as a guide to severity, but its limitations should be appreciated.

In benign essential hypertension, the presence of retinal changes probably indicates a tendency to cerebral vascular accidents (Foster Moore, 1916-17), but not to heart failure or coronary artery disease. Also, many cases of benign hypertension have occasional exudates and haemorrhages which appear and reabsorb spontaneously over a period of years. Thrombosis of the retinal veins, too, may produce a startling fundus appearance without necessarily any worsening of outlook for the patient. Again, although exudates and haemorrhages cleared from the retinae of these patients, it was noteworthy that the vessels themselves showed little alteration even when only spasm was observed. Lastly, hypertensive retinopathy is commonly symptomless, and visual impairment slight unless papilloedema is present, or unless the patient is unlucky enough to have a patch of exudate or a haemorrhage over the macula or a thrombosis of one of the vessels, and consequently the improvement in fundal appearance is of less interest to the patient than to the observer. Therefore it is felt that this improvement should be regarded with caution.

Cardiovascular State

Perhaps the most urgently required information concerns the effect of this operation in hypertensive heart disease. Is there any prospect of improvement here as in the fundus oculi, or will the heart be as little affected as the blood pressure? Unfortunately this series is too small to provide an adequate answer, there being only four cases of hypertensive heart disease. Their case records are as follows.

Case 1.—A blacksmith aged 30 had suffered from attacks of paroxysmal breathlessness, occasionally associated with blood-stained sputum, for a month before his admission to Westminster Hospital in April, 1947. Apart from a similar isolated attack in August, 1946, his previous health had been good. His father had died from the effects of high blood pressure.

His physique was good, but the heart was enlarged, and radiography revealed pulmonary engorgement. Pulsus alternans, gallop rhythm, and rales at the lung bases were observed for

48 hours after admission, but there was no congestive failure. The blood pressure was 235/135 mm. Hg, falling to 180/120 mm. Hg with rest in bed. There was a sharp inversion of the T waves in lead I and left axis deviation in the electrocardiogram. The retinal arteries were thickened, and many exudates and a few haemorrhages were present. Renal function was normal.

Immediately after lumbo-dorsal sympathectomy in April-May, 1947, the blood pressure fell to 135/85 mm. Hg, but three weeks later it rose to 160/110. Two months later he was well, had gained 12 lb. (5.44 kg.) in weight, and not only had the heart decreased considerably in size and the lungs cleared radiologically, but the T waves in lead I were large and upright and the retinal exudates had disappeared.

Eighteen months after operation there had been no further breathless attacks, and he had been working continuously as a carpenter. He was slightly breathless on exertion, probably due mainly to obesity, as his weight had increased from 8 st. 12 lb. (56.25 kg.) at the time of operation to 11 st. 9 lb. (73.94 kg.). The blood pressure was 210/165 mm. Hg, and the retinae were normal apart from arterial changes. The lung fields were clear radiologically, but there was moderate enlargement of the left ventricle. The T waves were diphasic in lead I but negative in CR₁. (For chest films see special plate, Figs. 1, 2, and 3. Electrocardiograms of this case are shown in Figs. A, B, and C.)



FIG. A.—Case 1. Hypertensive heart disease. Electrocardiogram lead I before lumbo-dorsal sympathectomy. T wave sharply inverted.

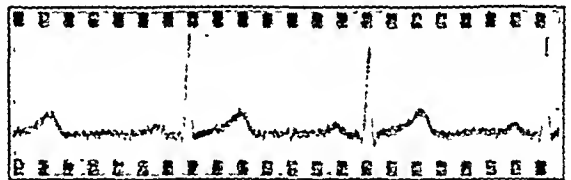


FIG. B.—Case 1. Hypertensive heart disease. Electrocardiogram lead I two months after lumbo-dorsal sympathectomy. T wave now upright.



FIG. C.—Case 1. Hypertensive heart disease. Electrocardiogram lead I eighteen months after lumbo-dorsal sympathectomy. T wave now diphasic.

This patient appeared to derive considerable benefit from operation, although the heart is now enlarging again and the fall in blood pressure was only transitory.

Case 2.—A gatekeeper aged 42 had suffered from high blood pressure with persistent early morning headaches for five years, breathlessness on exertion and dizziness for four years, and for two months had felt very tired and unwell. The blood pressure was 230/150 mm. Hg, with persistent pulsus alternans, and the heart was considerably enlarged. The T waves in leads I, II, and CR₁ were inverted, with left axis deviation reversible by inspiration. Lumbo-dorsal sympathectomy was performed in May, 1948. Headache and dizziness ceased at once, and the

breathlessness slowly improved. Seven months after operation he was working, was feeling well, and became only slightly breathless on moderate exertion. His weight had increased from 9 st. 6 lb. to 11 st. 4 lb. (59.87 to 71.67 kg.). The heart size, however, was unaltered, and the blood pressure was 205/140 mm. Hg, although pulsus alternans had not been observed since two months after operation. In September the electrocardiogram showed that left axis deviation had disappeared and TCR₄ was upright, but T was still negative in the other leads.

Here objective improvement has not been striking, although subjectively the patient is much better, and for this reason it is felt the operation was worth while.

Case 3.—A married woman aged 47 had suffered from eclampsia 28 years previously. She had intermittent headaches for many years, and for five months had been breathless on exertion. There was no family history of high blood pressure. She was obese and there was moderate cardiac enlargement; the blood pressure was 230/150 mm. Hg. The electrocardiogram showed left bundle-branch block, and there were retinal arterial changes. Renal function was normal. A month after sympathectomy in December, 1947, the blood pressure was 145/90 mm. Hg, but a year later the figure was 240/140. Her heart, however, had not increased in size, and her breathlessness appeared to be mainly due to her obesity, as she had gained 9 lb. (4.08 kg.) in weight. Left bundle-branch block was still present.

Case 4.—A married woman aged 49 had suffered from high blood pressure for 19 months, associated with headaches, which ceased for three months with sedative treatment and then recurred. For a month she had blurring of vision in both eyes. The blood pressure was 220/160 mm. Hg, the heart was enlarged, and the lungs were engorged radiologically. T₁ was diphasic, the ST segments were depressed, and left axis deviation was present in the electrocardiogram. Sympathectomy was performed in May, 1948, but the blood pressure fell only to 180/140 mm. Hg. A month later she suddenly developed rapidly progressive congestive heart failure, from which she died in October, 1948. The post-mortem findings were those of congestive heart failure with malignant hypertension.

Malignant Hypertension

Four of the six patients with malignant hypertension are now dead. One died as a result of operation, two from uraemia two months later, and one from heart failure five months later. These last three patients stood the operation well, but the course of the disease was not delayed. The two survivors, both women, are now well and have shown considerable improvement. Their case histories are as follows.

Case 5.—A married woman aged 57 had for a month suffered from severe headaches, worse on stooping, with mistiness of vision. Both eyes showed gross papilloedema, with extensive haemorrhages and a few exudates around the disks (Plate, Fig. 4). The blood pressure was 270/140 mm. Hg, and the cerebrospinal fluid pressure was greater than 300 mm. of water. Radiological films of the skull, the electro-encephalogram, heart, and renal tract were all normal. Sympathectomy in March-April, 1948, only slightly lowered the blood pressure, but the papilloedema, retinal haemorrhages, and exudates rapidly disappeared (Plate, Fig. 5). The headaches also ceased, and seven months later she was well, although the blood pressure was still 260/140 mm. Hg.

Case 6.—A girl aged 17 complained of early morning headache, often associated with vomiting, for two years. Apart from transient mistiness of the left eye in August, 1947, her health had always been good. The blood pressure was 260/180 mm. Hg. There was moderate albuminuria, but no casts were seen, and the blood urea was 39 mg. per 100 ml. Mr. E. F. King reported on the retinae (Plate, Fig. 6): "There is retinal oedema particularly of the optic nerve heads and areas immediately adjacent. There is gross retinal exudate round the optic disks, and scattered exudates throughout the fundi, but only a few haemorrhages. Attenuation of the arteries and congestion of the veins is pronounced."

Renal biopsy performed at sympathectomy in March, 1948, showed the necrotic changes of malignant hypertension. Nine months later she felt well, had no headache, and her weight had increased from 8 st. 1 lb. (51.26 kg.) at the time of operation to 10 st. 12 lb. (68.95 kg.). The blood pressure was 180/120 mm. Hg. The vision in the left eye was poor (hand movements only), but good in the right eye. Mr. King reported: "Both fundi, left much more than right, show consecutive optic atrophy. There is extreme attenuation of the arteries, some in the left eye being completely occluded, and widespread retinal degeneration and some old retinal exudates. There are no recent haemorrhages and exudates" (Plate, Fig. 7).

In Case 6 the result has been particularly satisfactory, as the blood pressure has been significantly lowered, the malignant phase being replaced by a relatively benign hypertension. The fundal appearance, too, has considerably improved, although there is impaired vision due to consecutive optic atrophy.

General Health

Undoubtedly one of the most impressive features of this operation is the general improvement in health it causes. Headache, lassitude, and vertigo disappear, and the patients quickly acquire new energy. Most patients have returned to work, and often they must be deterred from working too hard. A significant gain in weight was noticed in 13 patients—sometimes of more than 2 st. (12.7 kg.)—and obesity has occasionally called for dietetic restriction. Only one patient, obese before operation, lost weight afterwards.

Discussion

Lumbo-dorsal sympathectomy has been performed in 24 cases of severe hypertension, 18 of which have been observed for varying periods up to 18 months. The high blood pressure has remained virtually unaltered, and for this reason the operation is expected to be only palliative. In spite of this, however, general health and vigour are improved, headache and lassitude have disappeared, and weight has been gained. Occasionally the heart may decrease in size and the electrocardiogram improve if hypertensive heart disease was not too severe before operation. Even if this does not occur, breathlessness on exertion may diminish and cardiac asthma disappear.

There is as yet little information to indicate which case of hypertensive heart disease will benefit most by operation or how long improvement will last, and the experience from the four cases recorded here is too small to give a clear guide. It is felt, however, that auricular fibrillation, congestive heart failure, past or present, and evidence of coronary artery disease are contraindications to operation. Patients with considerable cardiac enlargement, persistent pulsus alternans, gallop rhythm, or gross electrocardiographic changes are unlikely to improve, and should be submitted to operation only when other strong indicators are present. The following patient was refused operation on account of his cardiovascular state:

Case 7.—A man aged 48 had known of his high blood pressure and enlarged heart for five years. For two years before his admission to Westminster Hospital in February, 1947, he had suffered from intermittent headache, momentary double vision, and gradually increasing intermittent claudication. The blood pressure was 220/130 mm. Hg, with pulsus alternans. The heart was enlarged, and gallop rhythm was present. The retinal vessels showed arterial sclerosis, and no pulsation could be felt in the arteries of the feet. The blood urea was 36 mg. per 100 ml.

Rest in bed brought temporary improvement, but his headache recurred on discharge from hospital, and he became short of breath on slight exertion. In May, 1947, he developed a left hemiplegia. In May, 1948, the sudden onset of auricular fibrillation caused acute congestive failure, which responded well to treatment in another hospital. When seen in August, 1948,

here was considerable cardiac enlargement and auricular fibrillation. The liver margin was just palpable, with slight neck-vein engorgement but no oedema. The hemiplegia was unaltered. The blood pressure was 180/80 mm. Hg. His condition was considered to have advanced beyond the stage where sympathectomy was practicable.

It is considered that operation should be limited to relatively young people, as permanent arteriosclerotic changes are less likely to have occurred. Moreover, the disease generally progresses more rapidly in the young and intervention is more necessary. However, an upper age limit has not been adhered to rigidly, although any patient over the age of 50 requires special scrutiny. Each case should be viewed on its merits, and age should contraindicate operation only when permanent vascular disease is present, which with even merely a temporary lowering of blood pressure would make arterial thrombosis a serious hazard.

Malignant hypertension is not in itself a bar to operation. In fact, when the disease is primary it is especially indicated provided renal function has not seriously deteriorated. Two of the six patients in this series, both primary cases, are alive and have improved considerably. Operation seems to have "broken the vicious circle," and the malignant phase for the time being has abated. The prospect of relief of even a few cases of this grave condition is distinctly promising. In three of the fatal cases the patients were severely ill and had poor renal function, so their failure to respond caused little surprise. It must be emphasized that patients with poor renal function should not be submitted to operation. The blood urea should be less than 60 mg. per 100 ml. and the urea clearance greater than 50% of normal. It is doubtful if the operation is ever justified where the blood urea is greater than 80 mg. per 100 ml.

Operation may be performed in cases of hypertension secondary to some irremovable cause. There were three cases of chronic nephritis in this series, and some others may have had nephritis of the *repens* type, although there was no direct evidence of this. If the renal function is satisfactory progress of the disease may be slowed by operation.

Lumbo-dorsal sympathectomy then seems beneficial to young patients with severe hypertension who have severe symptoms, no substantial arteriosclerosis or gross heart disease, and good renal function. Such patients represent only a minority of all cases of hypertension, and operation will afford only partial relief. There is, however, considerable relief of symptoms, and the tempo of the disease appears to be slowed. Complete relief could hardly be expected seeing that the kidney remains uninfluenced, and for this reason it is felt that more extensive resections of the sympathetic nervous system, involving more than two operations with their additional hazards, are unjustified.

The advisability of operating on early cases of hypertension before the heart and other organs are affected may be considered. Should not hypertension in its larval stages be sought, as early cancer is sought, for surgical treatment? Such reasoning is fallacious, as the problems of cancer are dissimilar from those of persistent hypertension. Moreover, pathological change in response to raised blood pressure varies widely from case to case, although hypertension starting in youth usually has a graver prognosis than that beginning in later life. Nor can one tell whether a young patient with mild hypertension will go rapidly downhill or will lead a useful life for 10, 20, or more years. This being so, a surgical procedure involving two major operations in a patient who is virtually well is unjustifiable, particularly when the operation is not curative, and its late effects are

uncertain. For this reason operation was not advised in either of the two following cases.

Case 8.—A locomotive fireman, aged 27, for four years had attacks of momentary dizziness in which he did not fall. He had been under observation for two years, during which time his blood-pressure range was 200–170 mm. Hg systolic and 130–115 mm. Hg diastolic, except twice when figures of 140/95 and 130/80 mm. Hg had been obtained. His family history was healthy and his previous health good.

On admission to Westminster Hospital in May, 1948, he was rather apprehensive, and the blood pressure was 200/120 mm. Hg, but a daily record showed a consistently high figure. The cardiovascular system was otherwise normal. The urine was normal and he could concentrate to a specific gravity of 1030. The retinal arteries showed spasm in some segments but no exudates or haemorrhages. On sedation with sodium amyltal the lowest blood pressure recorded was 130/95 mm. Hg.

Since then his blood pressure has remained consistently high, and he is considered to have essential hypertension, although he admits that "his nerves quicken every time he has his blood pressure taken." His dizzy attacks have ceased spontaneously, and his condition is not considered serious enough to warrant sympathectomy at present.

Case 9.—A married woman had in April, 1942, when aged 22, suffered for six months from high blood pressure with morning headache, nausea, and blurring of vision in the right eye. On examination the blood pressure varied between 260/200 and 160/130 mm. Hg, and the heart was enlarged. The retinae showed bilateral papilloedema, numerous haemorrhages and exudates, with a right macular fan and narrowing of the arteries. There was moderate albuminuria, with occasional hyaline casts. The blood urea was 36 mg. per 100 ml. and the urea clearance 49% of normal. Intravenous pyelography was normal. The cerebrospinal fluid was normal, but the pressure was 250 mm. of water.

Whilst in hospital at that time she had severe headaches, vomited frequently, and had an epileptiform convulsion, but later improved considerably, although on discharge the blood pressure was still 200/150 mm. Hg. In October, 1943, a pregnancy, her first, was terminated on account of her medical condition, but by June, 1945, her headaches had become less frequent and she returned to work. In February, 1946, she had an attack of slurring of speech and drowsiness lasting a week, and was readmitted to Westminster Hospital. With rest and sedatives her blood pressure fell from 210/130 to 160/100 mm. Hg. An electrocardiogram showed left axis deviation with inverted T waves in leads I and CR₁. Papilloedema, exudates, and haemorrhages were no longer present in the retinae, but her physical condition was otherwise the same.

On discharge from hospital she returned to light work, as her headaches had virtually ceased, and thereafter the blood pressure averaged 170/110 mm. Hg. On reassessment in April, 1948, the blood pressure fell to 140/95 mm. Hg with rest in bed, but the heart size was the same as in 1942. There were no exudates or haemorrhages in the fundi, and the cerebrospinal fluid pressure was 120 mm. of water. The blood urea was 39 mg. per 100 ml. and the urea clearance 40% of normal. She is still under observation, and is well.

This patient's condition shows a remarkable spontaneous improvement, over a period of six years, from a severe hypertensive state with encephalopathy to a relatively benign condition. If sympathectomy had been performed in 1942, as had been contemplated, her improvement would no doubt have been attributed to this. Her story indicates the difficulty of assessing such cases with a view to operation.

Another reason for not operating in the early stages is that a high blood pressure is often symptomless, and the patient seeks advice only when the heart or other organs are impaired. The disease may then be well advanced, even beyond the scope of sympathectomy, as in the following case.

Case 10.—A civil servant aged 46 had always been in good health until January, 1948, when he started to have recurrent

sore throats. In 1943 he had been accepted as a first-class life by an insurance company, the blood pressure then being 130/90 mm. Hg. In June, 1948, he was admitted to Westminster Hospital for tonsillectomy, and on pre-operative examination was found to have a blood pressure of 230/150 mm. Hg with pulsus alternans. There was no other cardiovascular abnormality, except that the fundi revealed exudates, haemorrhages, and vascular changes. The blood urea, however, was 120 mg. per 100 ml., and the urea clearance 26% of normal. Whilst in hospital he was free from symptoms and sympathectomy was not performed, on account of his poor renal function. He died from uraemia three months later.

Summary and Conclusions

Twenty-four cases of severe hypertension which have undergone lumbo-dorsal sympathectomy are presented. Their pre-operative state is described, and the results of operation are discussed. The following conclusions are reached: (1) the chances of permanently lowering the blood pressure are slight; (2) retinopathy, when present, may improve considerably; (3) there is not enough evidence to indicate clearly the effect in hypertensive heart disease—some patients may appear to improve temporarily, but this is unlikely with severe disease; (4) operation causes striking symptomatic relief, with notable gain in weight; and (5) in primary malignant hypertension the malignant phase may disappear.

In a properly selected case the relief is greater than that which can be obtained by medical treatment alone. Such cases are not numerous. The operation should be limited to severe and rapidly progressive cases with severe symptoms referable to their hypertensive state which comply with the following conditions: age less than 50 years, the renal function should be good, there should be no evidence of coronary or cerebral artery disease, and there should be no severe heart disease or heart failure.

Operation in early and mild cases is not advisable.

We are indebted to Sir Arnold Stott, Sir Adolphe Abrahams, Dr. W. E. Lloyd, Dr. S. P. Meadows, Dr. C. J. Gavey, Dr. F. D. Hart, and Dr. J. L. Lovibond, under whose care these patients were admitted, for permission to use their case records. We are particularly grateful to Sir Arnold Stott and Dr. C. J. Gavey for their continuous assistance and advice, and to Mr. E. F. King for his ophthalmic reports on these patients. We also wish to record our gratitude to Mr. C. E. Drew and Miss Joan Smith for help with the records and follow-up; to Dr. Peter Hansell for reproducing the chest films and electrocardiograms; and to Miss F. E. Stevens for clerical assistance.

REFERENCES

- Bassett, R. C. (1948). *Med. clin. N. Amer.*, **32**, 187.
 Blodgett, J. B., and Cutler, E. C. (1947). *Medical Annual*, p. 131. Bristol and London.
 Bourne, G., et al. (1948). *Proc. R. Soc. Med.*, **41**, 728.
 Moore, R. Foster (1916-17). *Quart. J. Med.*, **10**, 29.
 Wagener, H. P., and Keith, N. M. (1939). *Medicine, Baltimore*, **18**, 317.

Dr. F. M. Foote, executive director of the United States Society for the Prevention of Blindness, said in his address to the society's conference in New York: "Among the most serious eye problems that we must tackle is glaucoma. We are all deeply disturbed to know that at least 25,000 Americans are blind from glaucoma and approximately 150,000 more have lost the sight of one eye from this disease. We know that untold numbers of men and women over 35 years of age are working this morning in offices, in industry, in their own homes, unaware that they have early glaucoma—unaware that, unless they are fortunate enough to be among those discovered early, they will lose their eyesight so slowly, so gradually, that a large part of their useful vision will be gone before obvious symptoms bring them to the attention of a competent eye specialist. . . . The best estimates available on eye injuries in industry indicate that each year 100 workers are blinded and an additional 1,000 lose the sight of one eye. It should be possible, 40 years from now, to show that 90% of this unnecessary eye-loss has been prevented. If a man has defective eyesight, as in the case with 40% to 50% of industrial workers, he will find that safety glasses actually help him to do his job better if the hardened lenses are ground to include the correction he needs. Industry is in a position, therefore, not only to prevent accidental loss of sight, but also to help in preventing the loss of a skilled employee because of a visual handicap due to disease."

PAINFUL AMPUTATION STUMPS AND PHANTOM LIMBS*

TREATMENT BY REPEATED PERCUSSION TO THE STUMP NEUROMATA

BY

W. RITCHIE RUSSELL, M.D., F.R.C.P., F.R.C.P.Ed

(From the Department of Neurology, Radcliffe Infirmary, Oxford)

Current surgical practice concerned with amputation involves many measures which are designed to protect the stump neuromata from trauma or irritation. At the operation the nerves are often divided as short as possible, while most modern prostheses aim at avoiding pressure on nerves. In spite of these precautions pain in the amputation stump or phantom limb remains common (Sliossberg, 1948), and is often associated with spasmodic twitchings of the stump. The latter may become so violent that the term "epilepsy of the stump" is sometimes used; Weir Mitchell (1872) employed the term "chorea" to describe them.

The medical treatment of these cases has been disappointing, and the difficulties encountered in getting relief by surgical measures is evident from the current neurosurgical practice of treating some of these cases by excising areas of the brain.

The following case records, however, indicate that treatment at the periphery may, after all, prove successful by a very simple procedure. This possibility was considered for three chief reasons. First, in the normal limb nerve endings in the skin are rendered insensitive by occupation which involve repeated minor trauma or prolonged firm pressure on the skin. Secondly, conduction of a mixed nerve is easily interrupted by repeated pressure, without the production of any spontaneous pain. Thirdly, the regenerating nerve fibres in an amputation stump are likely to be no less vulnerable to minor trauma or pressure than are normal nerves and nerve endings. It seemed obvious therefore, that the effect of maintaining tender neuromata in a chronically concussed state merited investigation.

The first method tried was to deaden the neuromata with procaine and to percuss them for 10 to 15 minutes with a piece of wood.

Case 1

In 1937 a man aged 25 lost portions of four fingers of the left hand in a machine accident. He made a good recovery, and remained fit for work as a carpenter until February, 1942, when the palm of the left hand began to sweat excessively. One year later, while serving in the South African Army, he began to experience sharp stabbing pains in the phantom fingers and dorsum of the hand. On Feb. 28, 1944, the stellate ganglion was excised. The pain was relieved for two weeks, but then returned with great severity.

On examination in Cairo, four weeks after operation, Horner's syndrome was present on the left and the injured hand did not sweat. The ends of the amputation stumps were very tender, especially over some palpable neuromata. There was no sensory loss. On April 2 the digital nerves of the index-finger stump were injected with procaine, and then for about 15 minutes the end of the stump was hammered quite vigorously with a light piece of wood (a wooden test-tube container). This treatment was very successful, and the other tender stumps and scars were similarly treated. Thereafter it was found that if the patient two or three times daily tapped the tips of the amputation stump on a table for several minutes at a time, or if he applied prolonged pressure by handling tools firmly, he could keep all spontaneous pain and stump tenderness in abeyance.

*A preliminary report.

On April 26 he was using his hand freely without pain, and after designing and constructing a small wooden hammer, which he gave us for the treatment of similar conditions, he was discharged to duty on April 29.

Circumstances precluded the further study of such cases at that time. In recent months, however, six consecutive cases of intractable pain in amputation stumps and phantom limbs have been treated with such uniform success that this preliminary report seems desirable.

Case 2

A private aged 25 was injured by a circular saw in December, 1947. Both thumb and index finger of the right hand were severely damaged and partly amputated. After several plastic operations further amputations were carried out and tender neuromata were excised in January, 1949. The wounds healed, but the neuromata grew again quickly and caused great pain on attempts to use the hand.

On March 5, 1949, the neuromata were injected with procaine and percussed lightly for about 10 minutes. The patient was then given vigorous gripping exercises in order to cause pressure on the neuromata. Thereafter he continued to hammer the neuromata whenever the sensitivity returned. He found, however, that squeezing a piece of wood with his hand was most effective, and even on waking in the morning, when some sensitivity had returned, a few vigorous squeezes of a cricket-bail abolished the sensitivity.

Case 3

A soldier aged 24 was wounded in Italy in June, 1944. There were injuries to the right frontal region of the brain, the left eye, and the left shoulder. The left upper limb was amputated through the shoulder-joint.

When admitted to hospital in February, 1949, various aspects of his case were investigated, but only the state of the amputation stump need be considered here. There was considerable pain in the phantom arm, which consisted of the forearm, hand, and fingers in a position of flexion. There was a large stump neuroma, measuring nearly 2 in. (5 cm.) in diameter, which when pressed upon caused pain in either the radial or the ulnar half of the phantom hand.

Treatment by percussion to this neuroma first aggravated the phantom-limb pain, but after treatment for about five minutes the pain disappeared, and with it the phantom sensation for half the hand also vanished for at least an hour. A slight change in the position of the hammering deadened that half of the hand which was unaffected by the first treatment.

The neuroma in this case was difficult for the patient to reach himself, and it was found that the application of local pressure was more convenient. A golf-ball was bandaged to lie over the neuroma at the shoulder, and the patient, by leaning his weight on the ball for half an hour, succeeded in making the neuroma insensitive for some hours.

Case 4

A man now aged 47 was wounded in 1917 at the age of 16. He lost his right foot and had a below-knee amputation performed. The stump caused a lot of trouble, and several operations and re-amputations were carried out. Finally in 1920 a mid-thigh amputation was done. Severe pain in the stump and phantom foot continued, and six further operations were carried out between 1929 and 1942 to excise neuromata and spurs on the stump. In 1946 pain was again severe, and in August, 1946, the sciatic nerve was divided in the buttock and the distal part of the nerve removed. After this he was almost free of pain for a year; but again the pain recurred, and during the past three years it has been very troublesome and has become steadily more frequent and severe. The pain was severe during the day and kept him awake at night. He was taking both codeine and phenobarbitone tablets regularly. He could wear his artificial leg all day, but after walking for half a mile shooting pains and involuntary jerking of the stump forced him to stop. The pains were felt chiefly in the phantom foot, especially on its lateral aspect.

The patient was admitted to hospital on March 29, 1949, with a view to surgical division of the spino-thalamic tract. It was decided, however, first to try the effect of percussion treatment.

The amputation stump appeared healthy, but there were several tender spots which on pressure caused pain in the phantom.

Treatment was begun on April 2. Progress was good, and after three weeks he was discharged home. By this time pain in the phantom was infrequent, and could be quickly abolished by percussion. For periods of several hours the phantom disappeared entirely. The jumping of the stump also ceased. He had required no drugs, and had slept eight to nine hours every night for two weeks. A mechanical vibrator* was specially effective in his case, and for some hours after treatment there was neither pain nor awareness of the phantom.

When seen two weeks after returning home he reported that one or two short periods of hammering administered daily by his wife sufficed to keep the pain in abeyance.

Case 5

This patient, now aged 54, was wounded in 1918 in the right thigh. Chronic infection followed, and violent jerks of the wounded leg—it would jump right out of bed—led to high mid-thigh amputation in 1947. Pain in the phantom, however, became continuous from the day of the amputation. A tight pain in the lateral three toes of the phantom was particularly unpleasant. He could wear his prosthesis for only an hour at a time. The stump was healthy, but there were medial, lateral, and posterior tender spots which on pressure caused pain in the phantom.

Treatment was started on April 7, 1949, and proved to be very successful. Percussion with a mallet and applicator was specially effective, and the patient learnt to abolish all phantom pain by this method.

On discharge home on May 13 he was able to wear his prosthesis all day; he slept well without drugs, and the pain and jactitation of the stump were controlled by self-administered treatment for about 15 minutes daily. When seen a week after returning home the amount of hammering required to allay pain had become even less.

Case 6

This patient, now aged 59, was hit in the right knee by a shell fragment in 1918. Chronic infection followed, and a mid-thigh amputation was carried out in 1929. He remained free of all pain until November, 1948, when the stump began to jactitate in association with a "kicking" pain in the phantom leg. He found that a bandage applied to the stump so tightly that it ulcerated the skin was effective in arresting the jactitation of the stump.

Treatment was begun on April 22, 1949, and was very successful. It was soon possible for him to wear his prosthesis all day without either pain or jactitation. After treatment had been continued for a month he found that hammering for about 10 minutes twice daily was sufficient to keep the phantom-limb pain in abeyance.

Case 7

A man now aged 37 was wounded in the left foot on Oct. 24, 1942, and had a mid-leg amputation. He has been conscious of a phantom foot ever since, and the sensation of his great toe nail being twisted off was most unpleasant. There was also some jactitation of the stump at night.

The stump was healthy, but there were three very sensitive neuromata. Treatment was started on April 28, 1949. The sphygmometer cuff quickly rendered the neuromata insensitive for the first treatment, and the patient learnt to abolish both phantom and its pain by percussing the neuromata with a wooden mallet and applicator. If he treated the stump in the evening he could depend on having a comfortable night. He was discharged home on April 13, and a week later the amount of treatment necessary was even less.

When he was first treated percussion for 10 minutes abolished the phantom for about half an hour, but after two weeks one treatment of less duration abolished the phantom completely for four hours, while discomfort was avoided by one short period (five minutes) of treatment daily.

During percussion of the posterior neuroma this patient gave a vivid account of the temporary aggravation of the phantom sensations. These included reopening of the old wound of his

* The "Stanco" vibrator, as supplied by Stanley Cox, Ltd., 11, Gerrard Street, London, W.1.

foot, followed by a sensation of blood welling up between his toes. Percussion of a medially placed neuroma caused a temporary sensation of the nail being lifted off the phantom great toe. He generally felt he could move the phantom toes, but after treatment by percussion this subjective ability to move the phantom disappeared.

Present Plan of Treatment

The evolution of the best plan of treatment is still a matter for experiment, but the following method will be successful in most cases.

The use of a local analgesic before the first treatment has been discontinued as unnecessary, and instead a sphygmometer cuff is applied to the amputation stump and inflated to over 200 mm. Hg. Within two or three minutes the tender scars and neuromata become less sensitive, and gentle hammering with a wooden mallet or by means of a mechanical vibrator can be started and continued with increasing vigour for about 10 minutes. The blows of the mallet are usually transmitted to the neuroma through a wooden applicator (see below).

If the stump is too short for the sphygmometer cuff, hypalgesia of the neuromata can be obtained by prolonged pressure on them, and indeed the application of pressure is just as effective as hammering in abolishing the stump pain, as shown by the use of a golf-ball in Case 3.

During percussion or pressure on the neuromata a great variety of sensations are referred to the phantom foot or hand. These gradually become less, and the part of the phantom affected becomes numb and painless in 5 to 10 minutes if the strength of percussion is correct.

There are usually at least three neuromata in each stump, which should all be treated in the same way. Bruising of the stump should be avoided if possible, but if a bruise develops the next treatment can be applied to the nerve just above the neuroma.

After treatment the patient should wear his artificial limb for as long as he wishes—the more the stump is exercised the better. Jactitation usually ceases to be troublesome after the first or second treatment.

Treatment at first must be repeated at least twice daily, but before long one treatment a day is usually sufficient, and the patient soon learns to knock away his phantom pain whenever it becomes troublesome. A heavy mallet is required to treat neuromata buried under thigh muscles, but in other instances a light mallet may be adequate.

Repeated pressure is often useful, as in Case 2, while in a few instances the application of a sphygmometer cuff at a pressure of 200 mm. Hg for half an hour rendered the stump comfortable for many hours. This method, however, is probably not suitable for frequent use.

The patients soon learn the optimum period of percussion, and should each be provided with a suitable mallet and a wooden applicator with a smooth metal cap. For the applicator, half the handle of a hammer with a "dome-of-silence" on one end is very suitable if the rough edges of wood are filed smooth. The patients should continue treatment once or twice a day for several weeks; thereafter the duration and severity of treatment required should be ascertained by experiment in each case. Adequate information regarding the necessary duration of treatment is not yet available.

During percussion of the neuromata, but before the onset of general numbness in the stump, many sensations appear in the phantom that are of great physiological interest. Among these are, first, the reappearance of long-since-vanished parts of the phantom, and secondly the reappearance, as in Case 7, of pre-amputation sensations of the type described by Henderson and Smyth (1948).

Finally, it seems probable that some other painful conditions, such as tender scars, are just as easily relieved by this method of treatment.

Summary

The otherwise intractable pains and jactitations which sometimes occur in amputation stumps and phantom limbs may be abolished by repeated percussion of, or pressure on, the stump neuromata.

Repeated treatment by hammering or by a mechanical vibrator has proved to be highly successful in all of seven cases treated.

During treatment many interesting sensations appear in the phantom.

I am specially indebted to Dr. J. Spalding, who has assisted in this study, and to several members of the Ministry of Pensions medical administrative staff, who have encouraged this work and have referred patients for treatment.

REFERENCES

- Henderson, W. R., and Smyth, G. E. (1948). *J. Neurol. Neurosurg. Psychiat.*, 11, 88.
Mitchell, S. Weir (1872). *Injuries of Nerves and Their Consequences*. Lippincott, Philadelphia.
Sliossberg, A. (1948). *Les Algies des Amputés*. Masson, Paris.

CHEMICAL SYMPATHECTOMY

BY

H. A. HAXTON, M.D., Ch.M., B.Sc., F.R.C.S.

Consultant Surgeon, Crumpsall Hospital, Manchester

The interruption of sympathetic activity in the extremities is not now a new process; it dates back for over 20 years. Reviews of large numbers of cases (Telford, 1944; Haxton, 1947a) have established the value of this treatment for a greater variety of circulatory disorders than is generally appreciated, and much discomfort and suffering can be relieved by its application. In addition to its beneficial effects in arteriosclerosis, thrombo-angiitis obliterans, erythrocyanosis, poliomyelitis, Raynaud's disease, perniois, and erythromelalgia, sympathectomy has been found to effect a prolonged and apparently permanent cure of hyperhidrosis (Adson, Craig, and Brown, 1935; Telford, 1938; White, 1939; Haxton, 1948). But to achieve such benefits one or more open operations of a major character are required, and although the mortality rate is very small in expert hands (Telford, 1944) the treatment entails a good deal of discomfort and a convalescence of several weeks at least.

Patients who are in poor general condition are denied the benefits of sympathectomy, and although there is no fixed age limit comparatively few are treated by this operation after 60. Furthermore, a considerable number of sufferers from vascular disorders are not troubled seriously enough to justify the upset of open sympathectomy, and yet there is no doubt that their lot can be made much easier and their outlook improved by sympathetic interruption. It would seem, therefore, that there is a place for non-operative interruption of sympathetic activity if this can be achieved with little disturbance to the patient and with a lasting effect.

Paravertebral injections of 85% alcohol were introduced by Swetlow (1926) for anginal pain; but he aimed rather to anaesthetize the intercostal nerves than to block the sympathetic chain. The latter procedure was developed successfully by White (1935), who used alcohol to destroy the upper thoracic ganglia. Although a lasting interruption of sympathetic activity can be obtained, the injection of alcohol is followed in a considerable proportion of cases by a prolonged and painful neuritis. Ochsner (1943) states that the incidence of this complication is too high to make alcohol injection a justifiable substitute for open sympathectomy,

and the few cases which I have treated thus have confirmed this conclusion. De Takats and his co-workers (1946), too, have abandoned the paravertebral injection of alcohol because of the unpleasant complications.

Phenol in aqueous solution has been used to destroy periarterial and presacral sympathetic nerves (Doppler, 1926; Binet, 1933) mainly in gynaecological cases. Doppler decided to use 6% phenol after a trial of many substances, including acids, bases, alcohols, and ethers, and Binet reports experiments which demonstrated that painting with 5% phenol interrupts the conductivity in the cervical sympathetic chain of rabbits. There was, however, a considerable return of conduction within an hour. Mandl (1947) injected 0.2 ml. of 6% phenol into the cervical ganglion of rats and noted that the Horner syndrome persisted for 14 days. Degenerative changes were present in the ganglion for up to 45 days after the injection. He states that his solution causes no damage to other tissues—a conclusion reached also by Binet (1933). This evidence suggests that aqueous phenol should be a useful agent for paravertebral injection of the sympathetic chain in cases in which an interruption of activity longer than that provided by procaine is required. So far as can be determined, however, it has not been thus used by previous workers.

I have used such injections in the treatment of vascular disorders since March, 1947, and altogether some 220 cases have received one or more paravertebral injections of aqueous phenol. This experience has shown the treatment to be of undoubted value and worthy of addition to the surgeon's armamentarium. Only lower-limb cases will be considered here, as the application of the procedure to vascular disorders of the upper limb is still considered to be in the experimental stage and no conclusions may be drawn.

Method

The method has undergone several alterations in the light of investigations on the cadaver and by radiography after the injection of a diodone-procaine mixture (Haxton, 1947b). Now two 12-cm. needles are inserted through skin weals 7 cm. from the midline and opposite the second and third lumbar vertebrae. These points are more lateral than is advised by American writers (Labat, 1922; White, 1935; Ochsner, 1943), but trial in the necropsy room shows that unless the needles are inserted with considerable obliquity they cannot be made to pass near the sympathetic chain. The needle must establish contact with the side of the vertebral body, and by manipulation it is persuaded to slide tangential to the bone for a further distance of 1 to 2 cm. The point may be felt to pierce the psoas fascia, and when it is in the correct plane a tentative injection of procaine should flow easily; in fact, a drop of fluid on the end of the needle is often sucked in. This indicates, rather surprisingly, that the intra-abdominal pressure is commonly sub-atmospheric.

A careful watch must at all times be kept for the welling of blood or cerebrospinal fluid from the needle. When the needle is correctly positioned a preliminary injection of 2 ml. of 4% procaine is made. As a rule the patient notices a feeling of warmth in the limb before this is detected by the observer, but the sole of the foot should begin to warm up within a few minutes of the injection unless there is severe organic arterial obstruction. Provided there are no symptoms of numbness or paralysis the injection is completed with aqueous phenol. It is important, however, that the whole technique of inserting the needles with accuracy should be mastered by careful practice in many cases before any injections of phenol are undertaken, because failure to place the needle point correctly may cause serious complications.

I believe that a more lasting effect is secured with 10% phenol in water than with a 6% solution, but at the former strength the solution and syringes must be kept warm or precipitation will occur. A total of 10 to 12 ml. is used as a rule, and this is well within the toxic dose, as Binet (1933) often injected 50 ml. of 6% phenol without untoward effects. No evidence of toxic reaction has appeared in this series. The patient remains in the lateral position for 15 minutes to prevent spread of the injection, and can then get up and go home if ambulant.

Results

When the needles have been accurately placed, warming of the corresponding foot has occurred within five minutes except in cases of severe arterial obliteration and when the feet have been very cold at the start. In more than 90% of cases a warm and dry foot has been obtained, and in 60% the effect has been a lasting one, the foot remaining warm and dry for months. In some cases in which the effect has not persisted the injection has been repeated and a good and lasting result obtained. The longest follow-up is now nearly two years, and the signs of sympathetic denervation remain. In two cases in which subsequent sympathectomy by open operation has been carried out there has been evidence neither of further improvement in the blood flow in the foot nor of greater symptomatic relief. Successful injection therefore results in a sympathetic interruption which is lasting and complete enough for practical purposes.

In the two cases in which sympathectomy was performed after phenol injection of the lumbar chain the interval in one was two days and in the other seven days. In both there was oedema of the tissues surrounding the chain—more pronounced in the earlier case—and some opacity of the sheath over the psoas muscle. The sympathetic chains looked swollen and their rami were easily broken. Histological examination of the chains revealed that the majority of the ganglion cells had lost their nuclei and were degenerating. A small piece taken from the anterior surface of the psoas major muscle showed some degeneration of the superficial fibres. A third patient, operated on five months after a phenol injection, had a fair amount of fibrosis in the vicinity of the sympathetic chain, and this made sympathectomy rather more difficult than usual. These observations show that phenol destroys the ganglion cells of the sympathetic chain and thereby produces the same effect as sympathectomy by open operation, and, further, that it causes little damage to surrounding structures.

Complications have been few, consisting for the most part of some irritation of the genito-femoral nerve. This develops in about 10% of cases and is manifest by hyperaesthesia in the groin, not often severe enough to cause great discomfort and lasting as a rule about three weeks. Only once has any more serious complication developed, and that was in an early case: an obese woman who developed signs of a low spinal analgesia lasting three hours and a weakness of the quadriceps on the injected side lasting three months. The needle was here incorrectly placed and the injection must have entered an intervertebral foramen. There should be no risk of such a complication if a 12-cm. needle is used and is inserted for its full length in obese patients.

A variety of conditions have been treated by "chemical sympathectomy," with the following results.

Hyperidrosis

One severe case affecting the feet was injected in October, 1947, with an immediate and dramatic cure which has remained complete. This demonstrates well the efficacy of phenol in producing a lasting interruption of sympathetic activity.

Erythrocyanosis and Perniosis

Six cases of cold blue legs with painful nodules of fat necrosis and, in some, chronic ulceration were treated with lasting benefit in all but one. Similar relief has been provided in two cases of severe chilblains.

Arteriosclerosis

Twenty-three patients have been treated for intermittent claudication, and the majority of these have stated that they benefited, some considerably. A few have had no benefit, but injection is always worth a trial, since there is a good chance that it will help the patient and the risk of harm is negligible.

The main field for sympathetic interruption is in the severer degrees of organic arterial occlusion due to arteriosclerosis with thrombosis in the arteries or, in younger men, occasionally to thrombo-angiitis obliterans. Severe ischaemia is indicated by pronounced colour changes between dependent and elevated positions of the leg and also by pain in the foot, which is worse in bed, and which, by interfering with sleep, rapidly exhausts the patient. This unhappy state can be greatly changed for the better by sympathectomy; much symptomatic relief is provided, and the risks of gangrene are reduced (Telford, 1944; Telford and Simmons, 1946). Chemical interruption by phenol injection has now been used in 65 such cases. It has given profound and lasting relief from rest pain in half of these and considerable relief in nearly all the remainder (Table I).

TABLE I.—Results of Chemical Sympathectomy with Phenol in 66 Cases of Arteriosclerosis of the Lower Limbs

	Relieved	Improved	Unchanged	Total
Pain	32	27	6	65
Claudication	2	21	13	36
Gangrene of toe	13	6	4	23
Ulceration	18	7	4	29

Pain due to inflammation in the neighbourhood of a gangrenous or infected part is not, however, relieved by this treatment or by sympathectomy. Phenol injections have greatly improved the precarious circulation in the foot, and in several cases with gangrene of one toe healing has been achieved with loss only of the affected digit. Patches of gangrene on the heel and chronic ulcers on the outside of the leg have likewise healed, with preservation of the limb. Patients have been very grateful for the relief afforded, and I have no doubt that the method merits a high place in the treatment of arteriosclerotic ischaemia in patients too old or otherwise unsuitable for open sympathectomy, and in those in whom the impairment of the blood flow is not advanced enough to justify the disturbance of an open operation.

Some of the arteriosclerotic cases have been complicated by diabetes mellitus and yet they have had good results. One woman with gangrene of both middle toes, with severe rest pain and intermittent claudication at 30 yards (27.4 metres), had one side injected, with resulting complete relief of pain in the ipsilateral foot and rapid healing of the gangrenous area. The patch on the other foot continued to spread and cause pain until that side was injected, after which rapid healing occurred. She was seen 18 months later and was symptom-free, with warm, dry, well-nourished feet and no claudication.

Venous Insufficiency

Fifty-eight cases of old white leg and similar deep-vein thrombosis have been treated by phenol injection with benefit to the patient in all but a few instances (Table II). After injection

TABLE II.—Results in 58 Cases of Chronic Venous Insufficiency of the Lower Limbs

	Relieved	Improved	Unchanged	Total
Ulcer	19	26	3	48
Swelling	6	16	28	50
Pain	24	19	3	46

tion patients have reported that there is less aching and tiredness in the leg, and the warm foot is often much appreciated. In some the swelling has been reduced, but this is by no means a constant sequel. The explanation of this improvement lies

partly in the removal of venous spasm, with a resulting fall in venous pressure, and partly in the improved nutrition of the capillary walls, with reduced transudation into the tissues.

When chronic ulceration has been present, often for many years, the injection has been followed by increased vascularity of the ulcer base, and healing has occurred in 40% of cases, although the patients remained ambulant and wore only tulle-gras and "viscopaste" dressings, well supported by crêpe bandages. In some cases supportive treatment alone had been tried for many weeks without effect. Any patient in whom a chronic ulcer of the leg due to venous insufficiency is associated with a cold and damp foot (evidence of sympathetic over-activity) now has a chemical sympathectomy as part of the treatment.

Conclusions

Sympathetic interruption by the injection of aqueous phenol has much to recommend it. Compared with open operation it is a relatively minor ordeal for the patient necessitating no rest in bed (most cases have been treated as out-patients). Sufferers from vascular disorders will much more readily submit to this than to the major operation of open sympathectomy, and the treatment can be employed in cases in which operation is considered unjustifiable because of the age and general condition of the patient or because the chances of improvement are insufficient—e.g., in claudication and chronic ulceration of the leg.

The injection results in destruction of the ganglion cells with a consequent interruption of sympathetic activity which can persist for two years at least. It is likely that some sympathetic activity will return in most cases, as indeed happens after open operation (Haxton, 1947b); but the method has the merit, denied to operation, that it can be easily and rapidly repeated if necessary. Complications are slight as a rule, and apparently much less troublesome than those following alcohol injections.

It must be strongly emphasized, however, that this method should be employed only by those who have had much experience with paravertebral injection of the sympathetic chain with local analgesics, since injection of phenol into the theca or a blood vessel would probably have serious consequences. In competent hands the method is a safe one, but the untried and untrained operator could easily cause disaster.

The sum total of suffering saved by this simple treatment has been very large, and patients have been extremely grateful for the relief provided, particularly since their pain and disablement have often been of long duration and many other treatments have been tried without benefit.

Summary

Six or ten per cent. phenol in aqueous solution has been used for paravertebral injection of the lumbar sympathetic chain in 200 cases. It destroys the ganglion cells and produces a lasting sympathetic interruption. Favourable results have been obtained in a variety of circulatory disorders, and complications have been few.

REFERENCES

- Adson, A. W., Craig, W. M., and Brown, G. E. (1935). *Arch. Surg., Chicago*, 31, 794.
 Binet, A. (1933). *Gynéc. et Obstét.*, 27, 393.
 de Takats, G., Fowler, E. F., Jordan, P., and Risley, T. C. (1946). *J. Amer. med. Ass.*, 131, 495.
 Doppler (1926). Cited by Binet (1933).
 Haxton, H. A. (1947a). *Ulster med. J.*, 16, 13.
 — (1947b). *Brit. J. Surg.*, 35, 69.
 — (1948). *British Medical Journal*, 1, 636.
 Labat, G. (1922). *Regional Anesthesia*. Saunders, Philadelphia.
 Mandl, F. (1947). *Paravertebral Block*. Heinemann, London.
 Ochsner, A. (1943). *Surg. Clin. N. Amer.*, 23, 1318.
 Swetlow, G. I. (1926). *Amer. J. med. Sci.*, 171, 397.
 Telford, E. D. (1938). *Brit. J. Derm. Syph.*, 50, 637.
 — (1944). *Proc. R. Soc. Med.*, 37, 621.
 — and Simmons, H. T. (1946). *British Medical Journal*, 1, 386.
 White, J. C. (1935). *The Autonomic Nervous System*. Kimpton, London.
 — (1939). *New Engl. J. Med.*, 220, 181.

EOSINOPHILIC XANTHOMATOUS GRANULOMA WITH HONEYCOMB LUNGS

BY

THOMAS PARKINSON, M.D., M.R.C.P.

Medical Tutor, St. Bartholomew's Hospital, London; Clinical
Assistant, Brompton Hospital, London

[WITH PHOTOGRAVURE PLATE]

The precise nature of the Hand-Schüller-Christian syndrome is unknown. Originally it was thought that the various pathological changes were specific, and that they were due to abnormal intracellular lipid metabolism (Thannhauser, 1940). More recently it has been realized that the disease is probably a phase in a generalized disorder of the reticulo-endothelial system, and that it has certain features in common with eosinophilic granuloma of bone. The following case is reported as an example of the transition between these two diseases, and because, in addition to the recognized bony and pituitary manifestations, it shows pulmonary infiltration and polycystic, or honeycomb, lungs. So far as is known, no similar case has been reported from this country, and the occurrence of the disease in a subject of the patient's age is unique.

Case History

A boot-repairer aged 56 was admitted in September, 1948. In 1942 he had begun to notice breathlessness on exertion, and this symptom progressed slowly until his admission. In 1942 a radiograph of the chest showed diffuse pulmonary shadows, and he was treated for a short time in a sanatorium. A single specimen of sputum was alleged to contain tubercle bacilli, but this finding was not confirmed. In 1944 he had a fracture of the right femur, which occurred without local injury whilst he was sawing wood. Radiographs at this time showed a cyst of the femur at the site of fracture, but the fracture united in four months and no further investigations were undertaken. Nine months before admission there was a return of pain over the old fracture. In February, 1948, he suddenly began to suffer from excessive thirst and, soon after, from the passage of large quantities of urine. His thirst was such that he would often drink 20 pints (11.36 litres) of fluid daily. These symptoms were partially controlled by a proprietary pituitary snuff. Before the onset of these symptoms he had suffered from no serious illness. One of his sisters had died from pulmonary tuberculosis.

On examination he was seen to be a thin, normally proportioned man. There was no rash or abnormal pigmentation, and hair distribution was normal. Scattered rhonchi were heard over both lungs. The heart was normal; the blood pressure was 120/88. The liver and spleen were not palpable. A thickening of the right femur was palpable over the site of the old fracture. The nervous system was normal. There was no exophthalmos or any lymph-node enlargement.

Investigations.—A blood count showed Hb, 104%; red cells, 4,700,000; white cells, 10,000 (eosinophils 1%); sedimentation rate, 32 mm. in 1 hour (Westergren). Plasma proteins, total 7.8 g. per 100 ml. (albumin 5.6 g., globulin 2.2 g.). Serum cholesterol, 235 mg. per 100 ml. Serum calcium, 10.1 mg. per 100 ml. Serum alkaline phosphatase, 12 K.-A. units. The Wassermann reaction was negative. Vital capacity, 2,850 ml. (63% of normal). The hypertonic saline infusion test (Carter and Robbins, 1947) confirmed the presence of true diabetes insipidus.

Radiological examination showed a cystic area in the right femur immediately below the united fracture (Plate, Fig. 1). There was a generalized reticulation associated with miliary mottling through both lung fields (Fig. 2). The reticulation formed small annular shadows about 0.5 cm. in diameter. Tomography confirmed the presence of small cystic areas in the lungs. There was no enlargement of the mediastinal glands. The skull showed irregular translucencies resembling exaggerated venous channels rather than lipid deposits. The

pituitary fossa was normal. The remainder of the skeleton was normal.

Bicopsy of the right femoral cyst was made on material obtained from a small incision on the outer side of the thigh. Histologically the sections showed vascular granulation tissue with a cellular exudate. The cells were almost all eosinophilic granulocytes, but some lymphocytes and large mononuclear cells were present. No foam cells or lipid-containing macrophages were seen. The appearances were typical of eosinophilic granuloma of bone.

Treatment.—The diabetes insipidus was controlled by the injection of 10 units (0.5 ml.) of "pitressin tannate" once or twice daily. In November, 1948, a course of deep x-ray therapy was given to the right femur. There was complete relief of pain in the leg after the third day of treatment. In December, 1948, deep x-ray therapy was given to the pituitary fossa and then to the lungs. This produced no improvement in symptoms. The patient was last seen in March, 1949, when he stated that there had been no change in his breathlessness, and the dose of pitressin required to control the diabetes insipidus was the same. Radiographs of the chest and femur showed no change two and a half months after completion of radiotherapy.

Discussion

The term "eosinophilic granuloma of bone" was first used by Lichtenstein and Jaffe (1940) to denote a localized granulomatous condition of bone containing large numbers of eosinophilic granulocytes and giving rise to areas of cystic rarefaction. Otani and Ehrlich (1940) described similar cases earlier in the same year under the title of "solitary granuloma of bone." They found lipophages in biopsy material from one of their cases, but dismissed the possibility that the bony lesions were local manifestations of Hand-Schüller-Christian disease on the grounds that none of their seven cases showed evidence of generalized disease.

Previously, however, Fraser (1935) had reported four cases of the same condition as "skeletal lipid granulomatosis" and had described the pathological changes as taking place in three stages—namely, endothelial-cell proliferation, eosinophilic infiltration, and lipid storage. More recently it has become apparent that the local bony granulomata may be merely a part of a generalized disorder affecting the skeleton and viscera, and that other generalized reticuloses—namely, the Hand-Schüller-Christian disease and the acute reticulosis of infancy sometimes called the Letterer-Siwe disease (Aht and Denenholz, 1936)—may give rise to bony changes radiologically and histologically identical with those of eosinophilic granuloma. For these reasons it has been postulated that eosinophilic granuloma, Hand-Schüller-Christian disease, and Letterer-Siwe disease are all variants of a common pathological disorder (Wallgren, 1940; Farber, 1941; Mallory, 1942; Jaffe and Lichtenstein, 1944). Thus Mallory (1942) found all grades of transition between the three disorders and concluded that in infancy the disease was manifest as the rapidly fatal Letterer-Siwe disease, later in childhood as the Hand-Schüller-Christian disease, and in older children or adults as eosinophilic granuloma.

Jaffe and Lichtenstein (1944) considered that the three disorders "represented a peculiar inflammatory reaction to some, as yet, unknown agent of infection," the distinctive histological features in a given case depending on the duration of the disease. In their opinion the presence of fibrosis and lipid-containing macrophages is merely indicative of chronicity. The increasing number of recorded cases which do not fall accurately into any one category, but which show features of all three diseases, has fully confirmed this view. It seems correct to regard eosinophilic granuloma as being a reticulosis with bony localization rather than a specific disease of bone.

As it is now accepted that these disorders are but phases of the same disease, it would be an advantage to have a single name to embrace the important features of all three. To avoid confusion in terminology Thannhauser (1947) suggested the name of "eosinophilic xanthomatous granuloma" as being descriptive of the main histological features. Until further knowledge is forthcoming on the aetiology of the disease this name should be adopted for the type of case described in this paper. The present case shows evidence of pulmonary, pituitary, and bony disease, and it is to be assumed that all three organs are affected by the same pathological process. The biopsy material from the bone showed granulation tissue and eosinophilic infiltration, and although lipophages were absent from this section it is probable, by analogy with other reported cases, that they may exist elsewhere.

That pulmonary infiltration occurs in eosinophilic xanthomatous granuloma has been recognized since Rowland (1928) described the case of a child aged 2 years who died from pulmonary fibrosis secondary to xanthomatosis. Since then many cases have been reported, and the recorded cases have been reviewed by Thannhauser (1940), Versiani *et al.* (1944), Weinstein *et al.* (1947), Ponseti (1948), Oswald and Parkinson (1949), and Schafer (1949). Oswald and Parkinson reported a case in which the granuloma gave rise to diffuse small cysts throughout both lungs, and they were able to find three similar cases in the literature. A similar case was reported by Schafer (1949). The case reported here shows the characteristic radiological changes of honeycomb lungs and is a further example of cystic pulmonary changes occurring in a more chronic phase of the disorder.

To clarify the protean manifestations of this disease it is suggested that eosinophilic xanthomatous granuloma should be regarded as a generalized disease of unknown aetiology, occurring in an acute or chronic form. In the acute variety, which occurs in infancy and early childhood, there is progressive infiltration of the skin, bones, lymph nodes, and viscera, leading to early death. The chronic variety, occurring in older children and adults, may present in a complete or an incomplete form. In the complete form there is pituitary, bony, and pulmonary disease, with possibly other visceral manifestations. In the incomplete forms, which are not uncommon, pulmonary, pituitary, and bony lesions occur either singly or in any combination. Thus, when the bony symptoms predominate the disease will be regarded as "eosinophilic granuloma of bone," and when the pituitary alone is affected it presents as diabetes insipidus.

It is the relation of the chronic form of this disease to pulmonary disorders that is particularly emphasized, for the possibility that lung fibrosis and cyst formation may be the sole manifestation of eosinophilic xanthomatous granuloma must be considered. It seems likely that such cases will arise, and confirmation of this concept is to be found in the association of pituitary disorders, transient or permanent, with honeycomb lungs (Oswald and Parkinson, 1949). Pathological evidence on this point is difficult to obtain, as in the chronic phase of the disease fibrosis obscures the histological picture. Further histological studies on this subject will be published elsewhere (Cunningham and Parkinson, in the press).

The response to irradiation therapy in eosinophilic xanthomatous granuloma is variable. In most instances the bony lesions respond symptomatically, and sometimes there is radiological improvement. The effect of irradiation on the pituitary and pulmonary disease is occasionally beneficial but usually without effect (Currens and Popp, 1943; Weinstein *et al.*, 1947; Ponseti, 1948). The present case had

complete relief of pain in the femur, but the diabetes insipidus and the respiratory symptoms were unaffected; there were no radiological changes following treatment.

A final point of interest in this case is the age of the patient. The oldest case previously reported was that of a man aged 50 (Versiani *et al.*, 1944).

Summary

A case of eosinophilic granuloma of bone in a man aged 50 is described. The patient also had diabetes insipidus and honeycomb lungs.

Irradiation therapy relieved the pain of the bony lesion but did not affect the pituitary or pulmonary disease.

The name "eosinophilic xanthomatous granuloma" should be used to include the three diseases commonly known as the Hand-Schüller-Christian disease, Letterer-Siwe disease, and eosinophilic granuloma of bone.

The occurrence of pulmonary manifestations in this disease is discussed.

I wish to thank Dr. Neville Oswald for permission to publish this case, and Mr. Norman K. Harrison, of the Department of Medical Photography, St. Bartholomew's Hospital, for the photographs.

REFERENCES

- Abt, A. F., and Denenholz, E. J. (1936). *Amer. J. Dis. Child.*, 51, 499.
Carter, A. C., and Robbins, J. (1947). *J. clin. Endocrinol.*, 7, 753.
Currens, J. H., and Popp, W. C. (1943). *Amer. J. med. Sci.*, 205, 780.
Farber, S. (1941). *Amer. J. Path.*, 17, 625.
Fraser, J. (1935). *Brit. J. Surg.*, 22, 800.
Jaffe, H. L., and Lichtenstein, L. (1944). *Arch. Path.*, 37, 99.
Lichtenstein, L., and Jaffe, H. L. (1940). *Amer. J. Path.*, 16, 595.
Mallory, T. B. (1942). *New Engl. J. Med.*, 227, 955.
Oswald, N., and Parkinson, T. (1949). *Quart. J. Med.*, n.s., 18, 1.
Olani, S., and Ehrlich, J. C. (1940). *Amer. J. Path.*, 16, 479.
Ponseti, I. (1948). *J. Bone Jt Surg.*, A 30, 811.
Rowland, R. S. (1928). *Arch. intern. Med.*, 42, 611.
Schafer, E. L. (1949). *Amer. J. Path.*, 25, 49.
Thannhauser, S. J. (1940). *Lipidoses*, New York.
— (1947). *Arch. intern. Med.*, 80, 283.
Versiani, O., Figueiró, J. M., and Junqueira, M. A. (1944). *Amer. J. med. Sci.*, 207, 161.
Wallgren, A. (1940). *Amer. J. Dis. Child.*, 60, 471.
Weinstein, A., Francis, H. C., and Sprockin, B. F. (1947). *Arch. intern. Med.*, 79, 176.

ACUTE PNEUMONITIS IN A BERYLLIUM-WORKER

BY

G. RIDDELL ROYSTON, M.D., M.R.C.P., D.C.H.

[WITH PHOTOGRAPHIC PLATE]

The following case of acute bronchiolo-alveolitis is thought to be due to working in an atmosphere containing beryllium dust. It is believed to be the first acute case to be reported in this country.

Beryllium was discovered in 1797 by Vauquelin, who called it glucinum, owing to the sweet taste of its salts. It is a brittle steel-grey metal that is soluble in acids, and occurs chiefly as beryl, the double silicate of beryllium and aluminium ($\text{Be}_3\text{Al}_2(\text{SiO}_3)_6$). Phenacite (Be_2SiO_4) and chrysoberyl ($\text{Be}_3\text{Si}_2\text{O}_7$) also occur.

During the 1939-45 war beryllium was used in increasing quantities as an important component of certain alloys and for the production of phosphors for fluorescent lighting and gas mantles. The exact compositions of fluorescent mixtures for the manufacture of strip lighting are trade secrets, but they usually contain varying proportions of beryllium, zinc, manganese, and silica.

J. C. HARLAND AND F. D'ABREU: LUMBO-DORSAL SYMPATHECTOMY IN SEVERE HYPERTENSION



FIG. 1.—Case 1. Before lumbo-dorsal sympathectomy. Considerable cardiac enlargement and pulmonary engorgement.



FIG. 2.—Case 1. Two months after sympathectomy. Heart size has decreased and there is no pulmonary engorgement.

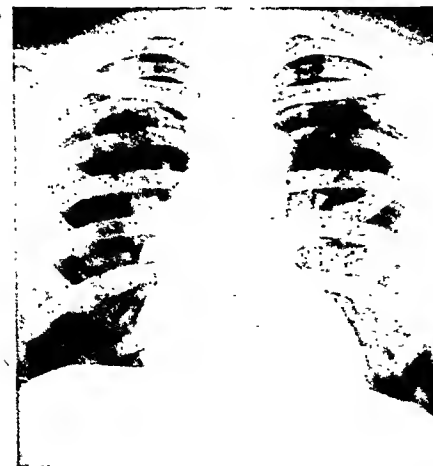


FIG. 3.—Case 1. Eighteen months after sympathectomy. Heart still smaller than before operation, and still no pulmonary engorgement.

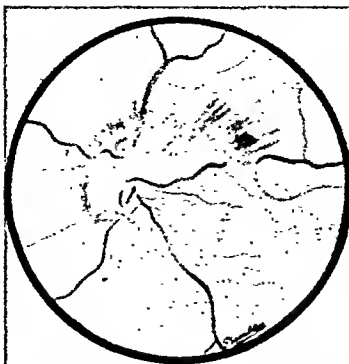


FIG. 4.—Case 5. Malignant hypertension. Left fundus before sympathectomy: showing papilloedema and numerous haemorrhages.

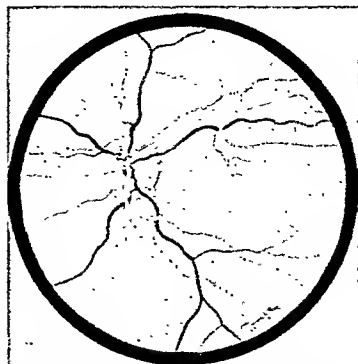


FIG. 5.—Case 5. Left fundus seven months after sympathectomy. Normal appearance.

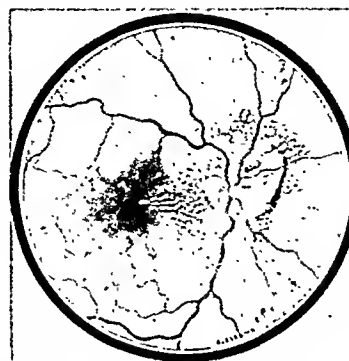


FIG. 6.—Case 6. Malignant hypertension. Right fundus before sympathectomy; papilloedema, a haemorrhage, numerous exudates, and considerable arterial spasm.

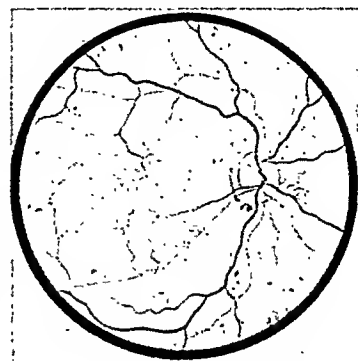


FIG. 7.—Case 6. Right fundus nine months after sympathectomy. Papilloedema has disappeared, and only a few small old exudates remain. Some areas of retinal degeneration and some branches of retinal artery in spasm.

T. PARKINSON: EOSINOPHILIC XANTHOMATOUS GRANULOMA WITH HONEYCOMB LUNGS



FIG. 1.—Cystic rarefaction in right femur below old fracture.

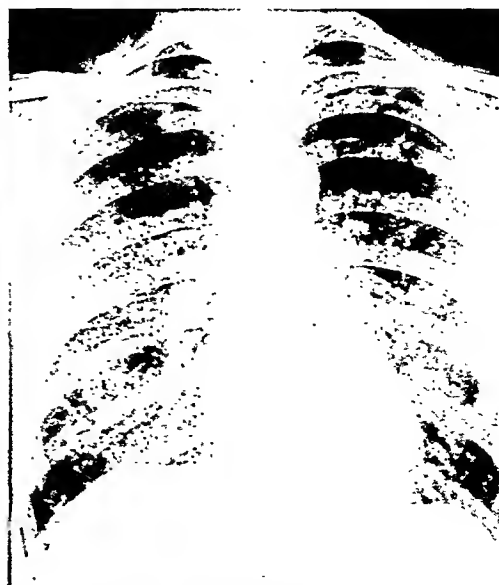


FIG. 2.—Generalized reticulation in both lungs.

G. RIDDELL ROYSTON: ACUTE PNEUMONITIS IN A BERYLLIUM-WORKER

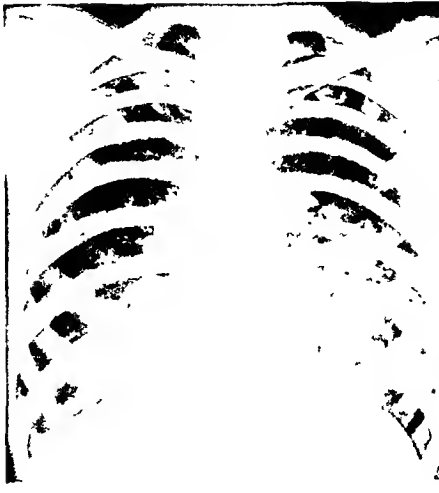


FIG. 1.—Soft mottling. (June 27, 1947.)

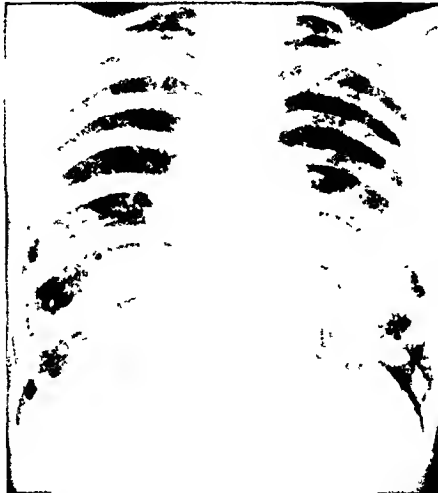


FIG. 2.—Apparently typical miliary tuberculosis. (July 11, 1947.)

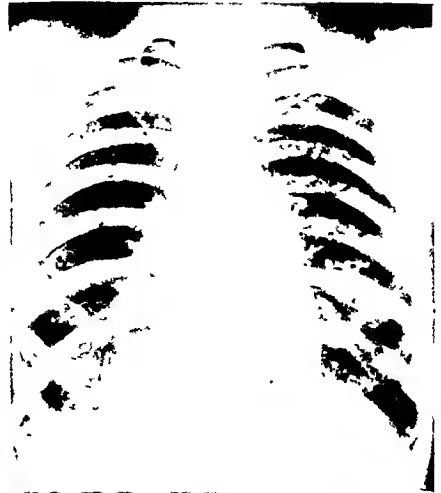


FIG. 3.—Considerable resolution. (Aug. 7, 1947.)

F. D. BEDDARD: ARTERIOVENOUS FISTULA OF THE LUNG



FIG. 1.—Postero-anterior view.



FIG. 2.—Tomogram.



FIG. 3.—Bronchogram.



FIG. 4.—Angiogram.

K. DAMODARAN: INFECTIVE HEPATITIS AND PORTAL CIRRHOSIS

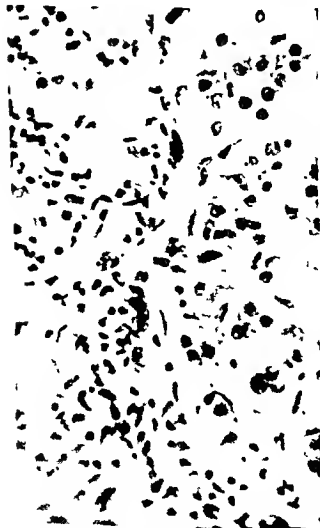


FIG. 1.—Liver $\times 300$. Marked cellular infiltration. Second week.



FIG. 2.—Glomerulus $\times 400$. Showing pigment granules. Second week.

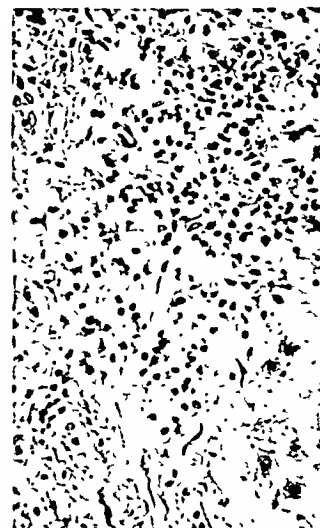


FIG. 3.—Liver $\times 250$. Post-arsenical hepatitis. Cirrhosis and round-cell infiltration.

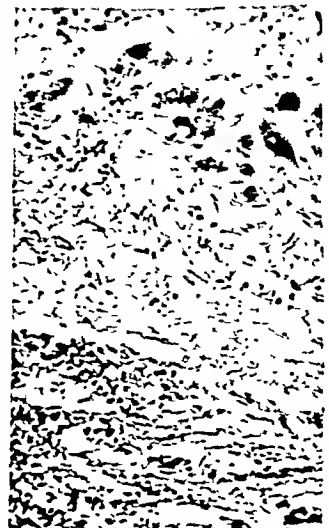


FIG. 4.—Liver $\times 240$. Portal cirrhosis, showing round-cell infiltration.

Case Record

A man aged 30 had been working in the laboratory of a radio factory for five weeks, when he developed shortness of breath on exertion and a slight unproductive cough. Dyspnoea became progressively worse, and three weeks later, on June 27, 1947, he attended hospital as an out-patient. There was no history of a haemoptysis or any symptoms of nasopharyngitis. His appetite was good, his bowels normal, and there had been no night sweats or unusual taste in the mouth. He felt perfectly fit and well except for his dyspnoea, though he thought he might have lost a little weight. His main disability was his dyspnoea on effort that interfered with his hurrying for a bus.

His occupational history revealed that from 1936 to 1939 he worked in a rolling mills, rolling zinc sheeting. There were no fumes. From 1939 to 1946 he was in the Army and served in North Africa and Italy, having what sounded like an attack of infective hepatitis on returning to this country in 1946 and two attacks of malaria. He then worked for a year on a guillotine machine in a rolling mills, after which he started work in a laboratory of the radio factory. There he spent about two hours of each working day mixing the powders used for coating the insides of the tubes used for strip lighting. I was unable to determine the exact composition of this powder, as it was a trade secret, but beryllium and zinc were definite constituents. The actual mixing was done by hand by stirring the dry powders in a large bowl without a lid and without the aid of extractor fans or the wearing of masks. The atmosphere was heavily laden with dust during the mixing process. The dust settled in the laboratory, and during the day was no doubt often disturbed, becoming air-borne.

On examination on June 27 he looked well built and was without any cyanosis or finger-clubbing. He had an unproductive cough and became markedly dyspnoeic with the effort of undressing. Respiratory movements were good, and abnormal physical signs were confined to the lungs, where rhonchi and medium rales could be heard scattered throughout. These added sounds were not more pronounced at the bases. The heart appeared normal, and the blood pressure was 110/65.

As his dyspnoea was out of all proportion to the physical findings he was admitted on July 4 as a suspected case of tuberculosis. His subsequent progress was as follows. From July 4 until his discharge on Aug. 16 he remained afebrile with a normal pulse rate. By July 12 his symptoms had practically disappeared and added sounds could no longer be heard in the lungs. The erythrocyte sedimentation rate (Wintrobe), which on admission was 22 mm. in one hour, remained unchanged. Three specimens of fasting-stomach contents and one specimen of lung juice were all negative for tubercle bacilli both on direct examination and on culture. Seven specimens of sputum were similarly negative. A blood count on July 7 showed 104% haemoglobin (Haldane) and 8,300 white cells (4,814 polymorphonuclears, 2,656 lymphocytes, 332 monocytes, and 498 eosinophils). Cold agglutinins were present up to a dilution of 1 in 16 on July 10.

The x-ray appearances were of particular interest. The first picture (Plate, Fig. 1), taken on June 27, showed an indeterminate soft mottling, which in some areas was almost millet-seed. It was distributed all over the lungs, being especially marked in the lower zones and the axillary part of the right upper zone. It suggested an early miliary tuberculosis or possibly a sarcoid. The second picture (Fig. 2), taken a fortnight later, seemed to be typical of miliary tuberculosis. The appearance was unchanged on July 22, but a further picture on Aug. 7 (Fig. 3) showed considerable resolution. On Sept. 10 almost complete resolution had occurred without any evidence of fibrosis, and it became difficult to imagine that the condition was tuberculous. A final radiograph on March 5, 1948, was perfectly normal and showed no trace of the original changes.

Clinical Picture

Beryllium has on several occasions been blamed for causing illness. Two of the first accounts were by Zama-khovskaya (1934) and Martinskovsky and Syroechkovsky (1934), both of whom were quoted by Gelman (1936).

They considered toxicity could be attributed to beryllium fluorides, of which the oxyfluoride was particularly toxic. Gelman, discussing poisoning due to the vapours arising from the foundry method of extracting beryllium, considered that their special physical condition (great dispersion) explained their characteristic toxic effect, and that the tissue damage was due to the fluorine being separated from the oxyfluoride at the level of the bronchioles and the alveoli.

Two main types of respiratory disease have been described—the acute and the delayed. In the acute form Van Ordstrand *et al.* (1943) described three cases which they called chemical pneumonia, occurring in workers exposed to beryllium. The exact compounds were not stated, but the fluorides were specifically excluded. They considered the aetiology unknown, having seen a similar case in a worker in a rayon factory where there had been no exposure to beryllium. These cases all presented insidiously, with increasing dyspnoea on exertion, a dry cough, low-grade fever with shallow respirations, some cyanosis, and fine rales throughout the lower halves of both lungs.

The onset of the symptoms preceded the x-ray changes by three weeks or more. The x-ray changes started with diffuse haziness of both lungs, progressing to soft irregular areas of infiltration accompanied by increase in the peribronchial markings. This was followed by absorption of the diffuse infiltration and the appearance of a small nodular infiltration which cleared completely within one to two months. Six additional patients from the same beryllium plant were all found to have identical radiological changes.

Van Ordstrand *et al.* (1945) had 128 cases with respiratory manifestations over a period of four years; 38 of these, including five fatalities, were described as chemical pneumonitis. The onset of symptoms was insidious, with cough and occasional blood-stained sputum, followed by dyspnoea, an abnormal taste in the mouth, anorexia, and some loss of weight and increasing fatigue. Of the signs, cyanosis was usual, with rapid pulse, reduced vital capacity, and fine rales scattered throughout the lungs. X-ray changes were not usually present until two to three weeks after the onset of the disease and were as already described (Van Ordstrand *et al.*, 1943). They cleared in from one to four months, and it is emphasized that as a rule this was before complete subsidence of the symptoms or disappearance of the physical signs, though in one case they persisted for a further two months. In these cases they considered the severity to be proportional to the degree of exposure to chemical irritation by dust and fumes. Ninety had chemical nasopharyngitis and/or tracheobronchitis. This latter type of illness developed predominantly among furnace-workers.

The laboratory investigations were unremarkable. The erythrocyte sedimentation rates were essentially normal, and blood counts and blood chemistry were also normal. Tubercle bacilli have not been found (Van Ordstrand *et al.*, 1945). Reports on the morbid anatomy consist of five cases described as a typical pneumonitis (Van Ordstrand *et al.*, 1945). The salient features appear to be grossly heavy lungs (1,100–1,380 g.) with diffuse pulmonary oedema and haemorrhagic extravasation, considerable plasma-cell infiltration with a relative absence of polymorphonuclear cells, and some evidence of organization.

Treatment is symptomatic, with both penicillin and the sulphonamides being useless (Van Ordstrand *et al.*, 1945). Complete bed rest is regarded as essential, and no work should be permitted until all signs and symptoms of the disease have disappeared and the x-ray appearance of the lungs has returned to normal.

In the delayed form of the disease 17 cases of delayed chemical pneumonia were reported by Hardy and Tabershaw (1946) and Hardy (1947). Four of these came on while the patients were still exposed to beryllium after periods of exposure varying from eight months to five years. Two of these died. The remaining 13, four of whom died, developed symptoms from three months to three years after cessation of exposure to beryllium. Of the survivors only one is regarded as cured. Pascucci (1948), in his follow-up of the 11 survivors, found 30% dead and the same proportion *in statu quo*. The interval between exposure and the onset of symptoms may be as great as six years (Wilson, 1948). Agate (1948) has described a case in which the chest radiograph at first suggested miliary tuberculosis.

Discussion

On admission and for the first few weeks of observation this case was considered to be miliary tuberculosis; and, though the patient was afebrile, felt remarkably fit and well, and had only a slightly raised erythrocyte sedimentation rate, the x-ray film of the lungs on July 7 certainly seemed to confirm the diagnosis. However, the subsequent course of the illness as shown by serial radiographs rendered the diagnosis of miliary tuberculosis unlikely. Not only had the lungs cleared radiologically in eight weeks without streptomycin treatment but they had cleared completely without any residual fibrosis.

Eosinophilic lung is unlikely with only 500 eosinophils per c.mm. in the white count and the absence of bronchial spasm.

Ascariasis remained a possibility, but stools were free from ova when examined one year later, at which time they might well have been expected to be positive had the original infection been due to roundworm larval migration.

Miliary changes of similar distribution to those of miliary tuberculosis can occur in sarcoidosis, but though they may clear completely they take three to ten years to do it. They also tend to fluctuate over a period of months or years and are often accompanied by changes in other structures.

Pneumoconiosis is ruled out by the occupational history, the mycoses by the examination of the sputum, and carcinomatosis by the recovery of the patient.

It is of interest that the x-ray changes simulating miliary tuberculosis have not previously been described in the acute form of the disease but have been seen in the delayed type. The symptoms antedated the x-ray changes by about three weeks, but they cleared completely after eight days, at which time the x-ray miliary appearance was at its maximum. The x-ray changes subsequently persisted for a further two months in spite of the apparent well-being of the patient.

It seems possible that this man's illness was due to his contact with beryllium.

Summary

A case presenting clinically as a bronchiolitis occurring in a man handling fluorescent powders containing beryllium is described.

The x-ray changes were miliary in character and completely cleared in eight weeks without residual fibrosis.

The patient made a complete recovery.

The literature is briefly reviewed.

I am indebted to Dr. H. Jowles, at whose suggestion the diagnosis was made, to Dr. T. R. Riley for his reports on the earlier x-ray films, and to Dr. G. Doel for his reports on the later ones. I wish also to thank Dr. C. A. Birch for permission to publish this case.

BIBLIOGRAPHY

- Agate, J. N. (1948). *Lancet*, 2, 530.
 Branion, H. D., Guyatt, B. L., and Kay, H. D. (1931). *J. biol. Chem.*, 92, p. xi.
 Businco, L. (1939). *Boll. Soc. ital. Biol. sper.*, 14, 649.
 — (1940). *Rass. Med. industr.*, 11, 417.
 Caccuri, S. (1940). *Ibid.*, 11, 307.
 Comar, M. (1935). *Thèse Paris*, No. 607.
 Gelman, I. (1936). *J. industr. Hyg.*, 18, 371.
 — (1938). *Occupation and Health Supplement*. International Labour Office, Geneva.
 Hardy, H. L. (1947). *Bull. New Engl. med. Center*, 9, 16.
 — and Tabershaw, I. R. (1946). *J. industr. Hyg.*, 28, 197.
 Hyslop, F., Palmes, E. D., Alford, W. C., Monaco, A. R., and Fairhall, L. T. (1943). *Nat. Inst. Hlth Bull.*, No. 181, U.S. Pub Health Service, Washington.
 Jacobson, S. A. (1933). *Arch. Pathol.*, 15, 18.
 Jones, J. H. (1938). *Amer. J. Physiol.*, 124, 240.
 Kay, H. D., and Skill, D. I. (1934). *Biochem. J.*, 28, 1222.
 Kress, J. E., and Crispell, K. R. (1946). *Guilrie Clin. Bull.*, 13, 91.
 Marradi Fabroni, S. (1933). *Med. d. Lavoro*, 24, 474.
 — (1934). *Ibid.*, 25, 441.
 Martinskovsky, B. I., and Syroechkovsky, E. E. (1934). *Obuch Institute of Occ. Dis. Moscow*.
 Pascucci, L. M. (1948). *Radiology*, 50, 23.
 Sobel, A. E., Goldfarb, A. R., and Kramer, B. (1935). *J. biol. Chem.*, 108, 395.
 Van Orstrand, H. S., Hughes, R., and Carmody, M. G. (1943). *Cleveland Clin. Quart.*, 10, 10.
 — De Nardi, and Carmody, M. G. (1945). *J. Amer. med. Ass.*, 129, 1084.
 Volter, S. V. (1940). *Farm. Toksikol.*, 3, 82.
 Weber, H. H., and Englehardt, W. E. (1933). *Zbl. GewHyg.*, 10, 41.
 Wilson, S. A. (1948). *Radiology*, 50, 770.
 Zamakhovskaya, E. M. (1934). *Obuch Institute of Occ. Dis. Moscow*.

INFECTIVE HEPATITIS AND PORTAL CIRRHOSIS

BY

K. DAMODARAN, M.B., B.S.

Major, R.A.M.C.

[WITH PHOTOGRAPHIC PLATE]

This paper is based on the clinical findings in 550 cases of infective hepatitis and necropsy findings in 22 fatal cases in different stages of hepatitis occurring in various theatres of war. The clinical types, signs, symptoms, pathology, and complications were discussed in two previous articles (Damodaran and Hartfall, 1944; Damodaran, 1948). The present paper is mainly concerned with the course of infective hepatitis and its sequelae.

Infective hepatitis, as already shown, causes a diffuse inflammation of the hepatic cells, varying from mild cloudy swelling to frank necrosis. Complete resolution takes place in a few weeks in the majority of cases. In a small proportion, however, fibrous-tissue reaction occurs in the portal spaces, producing various degrees of cirrhosis. The hepatic cells show different stages of necrosis, which is more advanced in the central zones of the lobules. This centrilobular zonal necrosis becomes apparent only at the later stage of the disease, approximately at the end of the second week. Round-cell infiltration is pronounced in the early stages, especially in the portal tracts. In later stages cellular infiltration diminishes and is almost confined to the periphery of the lobules, unless there has been an acute exacerbation or relapse.

Fig. 1 (Plate) shows the picture of the liver in the second week of the disease. The section was taken from the liver of an Indian soldier who died of fulminating infective hepatitis. Note the intense infiltration by round cells, most marked at the periphery of the lobules. The hepatic cells are in the early stage of necrosis. These changes were seen diffusely throughout the liver. The only other organ affected as seen at necropsy was the kidney. Fig. 2 (Plate) shows the swollen glomerulus with a few bile-pigment granules.

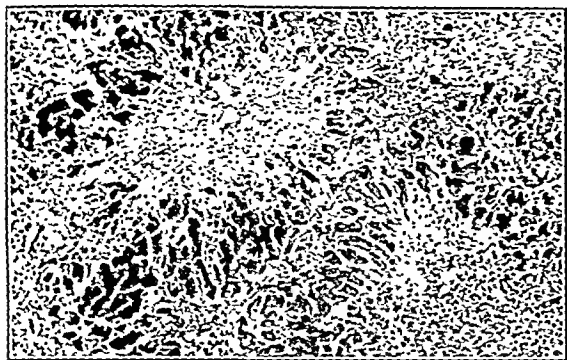


Fig. 5.—Liver $\times 50$. Centrilobular necrosis Third week.

The accompanying Fig. 5 shows centrilobular necrosis in the third week of the disease. The section was taken from the liver of a British soldier who died at the end of the third week. Cellular infiltration is scanty. The centrilobular necrosis is not uniform throughout the liver. Fig. 6 shows another part of the same liver. Note the advanced necrosis. The lobular architecture of the liver is completely lost. This advanced necrosis corresponded to paler areas of the liver seen macroscopically. Early fibrous-tissue proliferation at the periphery of the lobules is noted in some sections.

As the lobular pattern of the liver is distorted during the course of infective hepatitis fibrous tissue grows irregularly when healing takes place, without preserving the normal lobular architecture. It thus encloses multiple lobules as well as portions of lobules, giving the picture of portal cirrhosis. This was well illustrated in the previous paper (Damodaran, 1948).

Post-arsenical Hepatitis

The effect of hepatotoxic substances like alcohol, arsenic, and gold on infective hepatitis was described in detail by Damodaran and Hartfall (1944). Their observations agree with the findings of Borensztejn (1948), who described 216 cases of hepatitis in a Polish venereal disease treatment centre in Germany in 1946-7; 65% of his cases occurred during the peak months of October, November, and December. This figure exactly fits in with the findings in Malta during the siege. Note the high incidence of the disease during the months of October, November, and December. Unless this epidemiological finding is borne in mind one is likely to ascribe the fall in incidence after December entirely to the various prophylactic measures adopted to combat the disease. Ten of Borensztejn's cases of post-arsenical jaundice occurred so early in the course of treatment that the theory of syringe transmission is ruled out.

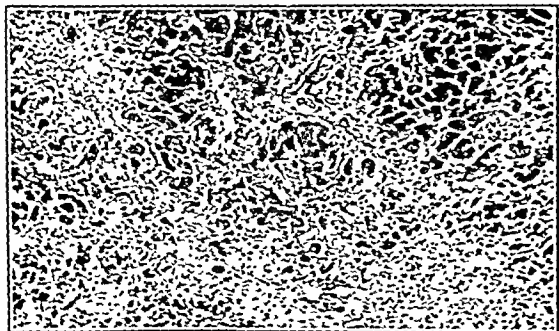


Fig. 6.—Liver $\times 50$ Diffuse necrosis. Third week.

He ascribed them to toxic hepatitis due to arsenic—in other words, arsenic-precipitated jaundice. These cases cannot be attributed to the toxicity of arsenic alone, as the incidence of jaundice is negligible during massive arsenotherapy for syphilis (1,200 mg. of "mapharside" in five days). The most significant finding is the difference in mortality between post-arsenical jaundice and jaundice not treated with arsenic. In the former the mortality was 30.8%, whereas in the latter it was less than 3% in the same clinic. †

This illustrates the effect not only of arsenic but of all other similar hepatotoxins on the severity of infective hepatitis if administered during the incubation period, as shown before (Damodaran and Hartfall, 1944).

The histological appearance of the liver in post-arsenical hepatitis is the same as that in infective hepatitis, both in the early and in the late stages. Fig. 7 and Fig. 3 (Plate) show the late sequelae of post-arsenical hepatitis. The sections were taken from the liver of a British soldier who died five years after the initial attack of hepatitis. He developed jaundice after completing five courses of arsenic treatment for syphilis in October, 1943. Penicillin followed by arsenic was given in 1947 for a fresh attack of primary syphilis. Jaundice developed after the tenth injection of

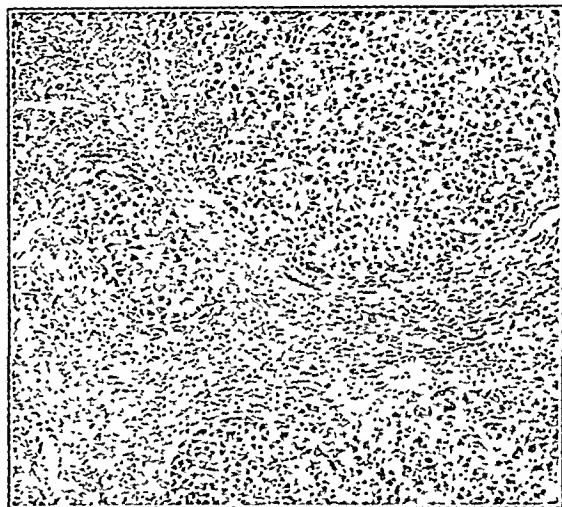


Fig. 7.—Liver $\times 80$. Post-arsenical hepatitis with cirrhosis. Late stage

arsenic. He was treated in hospital for two and a half months and was discharged after the jaundice had cleared up. Two months later he relapsed without any obvious cause: bilirubin, 14 mg. per 100 ml.; colloidal gold, 555532; thymol turbidity, 12 units; plasma proteins normal. He died a fortnight after admission. Note the marked cirrhosis, the cellular infiltration, and the islet of liver parenchyma enclosed by fibrous tissue.

It seems that in this case the liver never completely recovered from the effects of the first attack of hepatitis in 1943. The second course of arsenic, in 1947, brought about jaundice, which cleared up under treatment. The liver, however, did not recover completely, but progressed to cirrhosis. Hepatic failure gradually set in.

Portal Cirrhosis

A case of hepatitis sine icterus progressing to portal cirrhosis was described in the previous paper (Damodaran, 1948). I came across three similar cases in a military hospital in India in 1946. All these patients were teetotallers

and non-vegetarians—two Hindus and one Moslem. The cases were fully investigated to rule out any other possible diagnosis. They were treated with high protein diet for two to three months, but there was no evidence of any improvement. Two of them were finally invalidated out because of portal cirrhosis. The condition of the other patient gradually deteriorated. He developed progressive jaundice and ascites and was tapped a few times. He died in coma due to hepatic failure four months after admission to hospital. Necropsy showed typical portal cirrhosis as illustrated in Fig. 4 (Plate) and Fig. 8. Note the round-cell infiltration in the portal tracts.

These three soldiers had been on normal well-balanced Army diets for two to three years before they developed cirrhosis. A nutritional factor has thus been eliminated. Besides, dietetic treatment had no effect on the course of the disease, though given early enough. Infective hepatitis was prevalent among the Forces at that time. Still, it was possible to doubt whether these cases were really hepatitis sine icterus progressing to cirrhosis: so I decided to investigate whether cirrhosis could be present in an isolated area affected by infective hepatitis. I visited a small village 500 miles away where infective hepatitis was known to be prevalent, and found one case of subacute necrosis, one of infective hepatitis which progressed to portal cirrhosis, and one of portal cirrhosis with ascites. The association of infective hepatitis, subacute necrosis, and portal cirrhosis is not a chance coincidence.

The course of infective hepatitis and its sequelae can be indicated as in the accompanying diagram.

Resolution is the usual result in the vast majority of cases. Acute necrosis occurs in from 0.2 to 1.5% of cases. Subacute necrosis occurs slightly more frequently. It is not

canaliculi are also obstructed owing to the swelling of the cells, and jaundice develops. Cellular infiltration is scanty in the central zones of the lobules because the blood supply is diminished, blood being diverted into newly opened channels.

The severity of the disease depends on the diffuseness of the lesion. If all the liver cells are affected the organ will be knocked out early, even before histological changes become apparent. When the liver is so inflamed one can imagine what effect hepatotoxins would have on it. They would not only precipitate jaundice in hepatitis

sine icterus but would bring about acute or subacute necrosis as well. A therapeutic dose of arsenic, gold, or carbon tetrachloride would leave the normal liver undamaged but would have a synergistic necrosing effect on the liver already damaged by infective hepatitis. The significance of this would be better realized if we recognized that infective hepatitis could exist without jaundice.

Fatty change is not a prominent feature of the liver in acute infective hepatitis or in the subsequent cirrhosis except in chronic alcoholics. Experimental cirrhosis in animals is accompanied by significant fatty change in the

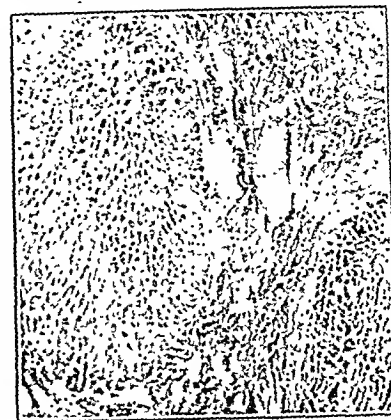
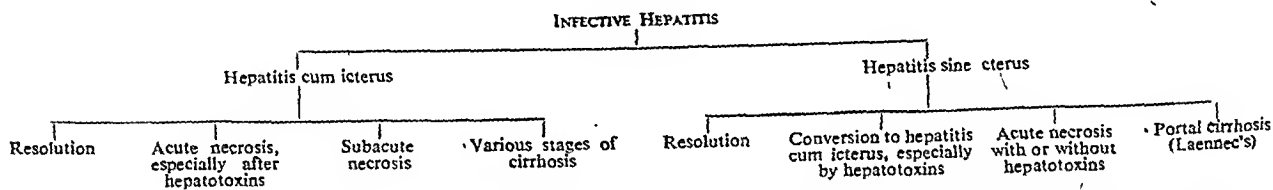


FIG. 8.—Liver $\times 30$. Late stage of hepatitis sine icterus. Portal cirrhosis.



possible to estimate what proportion of cases develop cirrhosis.

Jaundice may or may not appear during the course of the disease; or it may appear in the beginning, middle, or towards the end.

Discussion

For a long time the sequelae of infective hepatitis remained obscure because there was no correlation between the clinical and pathological findings. The histological appearance of the liver is so different in various stages of the disease that the pathologist considered these as separate diseases. Acute and subacute necrosis of liver are in fact only fulminating and severe types of infective hepatitis.

The hepatic cells are inflamed diffusely, but consideration of the architecture of the liver lobules shows that the central zones are the most vulnerable part and so naturally suffer most. Though there is a double blood supply, there is only one outlet through the intralobular (central) vein. In the acute stage there is not only round-cell infiltration in the portal tracts but also diapedesis of red blood cells showing congestion. The sinusoids are narrowed owing to swelling of the liver cells, and so the outlet is partly obstructed. The unnamed minute vessels in the diaphragm are opened up as a result, establishing communication between the sinusoids and the right lateral thoracic vein. The latter vein is seen distended in some severe cases. The bile

liver. There is no evidence to show that deficiency of proteins and vitamins has any aetiological significance in infective hepatitis and subsequent cirrhosis. The cirrhosis described in African pellagrins by Gillman and Gillman (1945) seems to resemble haemochromatosis rather than classical Laennec's cirrhosis. It is preceded by pronounced fatty change.

The external appearance of the liver may vary at different stages: in the early stage it is smooth; later it appears finely granular; and in the final stage it is grossly nodular and somewhat atrophic.

Liver-function tests are occasionally unreliable in assessing the damage done to the liver. Serum from the patient the section of whose liver is illustrated in Fig. 5 gave normal results for serum colloidal gold, thymol turbidity, Takata-Ara, and serum alkaline phosphatase tests two days before his death and again on the day he died. In the case illustrated in the accompanying Fig. 7 and in Fig 3 (Plate) all tests done were positive before the patient died. The tests in both cases were made in the same laboratory. The severity of the cases could be assessed more accurately by clinical examination alone.

Treatment

In no other disease has the treatment so much changed from time to time, according to the prevailing views on the pathogenesis of the condition, as in infective hepatitis. Daily

purgatives and lacto-vegetarian diet were the basis of treatment in the past, when a mucous plug in the ampulla of Vater and catarrhal inflammation of the bile ducts were thought to be the cause of jaundice. Duodenal intubation and lavage with magnesium sulphate solution were tried for the same reason. After animal experiments deficiency of proteins and vitamins was blamed, patients were put on high protein diet and massive doses of methionine, cystine, and vitamin B complex. Miraculous cures were claimed for protein hydrolysates and plasma transfusion. Equally miraculous cures have resulted from transfusion of glucose-saline. Rapid improvement has also been reported due to direct irrigation of the biliary tract with saline during laparotomy. When good results are claimed for such widely different treatments none of these can be specific. The assessment of the value of any form of treatment is exceedingly difficult owing to the natural tendency of the disease towards spontaneous cure. It is only when large numbers of patients have been treated that inefficacy of certain methods can be proved.

The liver has a marvellous capacity for recovery and regeneration. In the acute stage, when the liver cells are inflamed, rest to the organ is indicated more than anything else. Glucose, liberal fluids, and mild laxatives are beneficial. The diet should be light, low in fat, but otherwise balanced. The patient can leave the bed soon after the urine becomes bile-free.

In venereal disease treatment centres extreme care is essential for the prevention of post-arsenical hepatitis. Besides care in sterilizing syringes and needles, each patient receiving injections should be carefully examined before injection. Malaise, nausea, urobilinogen in urine, a trace of bile, or dark urine are all contraindications to arsenical treatment. If arsenic is given after the urine has turned dark, acute necrosis is likely to result. In relapse cases arsenic should be given up for good.

Once cirrhosis is established there is nothing at our disposal to prevent its progress. All that can be done is to prevent the surviving hepatic cells from degeneration. Restricted activities, well-balanced but low-fat diet, and glucose are helpful. All hepatotoxins should be scrupulously avoided. Ascites should be tapped if there is considerable fluid. Anaemia should be treated with iron and liver extracts. If bleeding occurs vitamin K should be injected. All measures to improve general health should be taken.

Morphine is not advisable even in small doses in cholaemia of acute necrosis and late stages of cirrhosis. Even $\frac{1}{4}$ gr. (8 mg.) of morphine is likely to cause fatal coma in a severe case. If delirium is present and insomnia is troublesome, 4 dr. (15 g.) of paraldehyde should be given in saline by rectum and repeated as necessary.

Summary

The course of infective hepatitis and its sequelae are described. Post-arsenical hepatitis is discussed. The development of portal cirrhosis is traced from its source—hepatitis sine icterus. The association of infective hepatitis, subacute necrosis, and portal cirrhosis in areas where infective hepatitis is prevalent is not a chance coincidence. A clinico-pathological classification indicating the course and sequelae of infective hepatitis is given. The mechanism of the production of centrilobular necrosis is discussed. The difference between Laennec's cirrhosis and experimental cirrhosis is stressed. The external appearance of the liver in different stages is described. The unreliability of liver-function tests in estimating the severity of infective hepatitis is demonstrated. Treatment is critically surveyed. Photomicrographs to illustrate the picture of the liver in different stages of the disease are given.

I wish to record my indebtedness to Professor S. J. Hartfall for his constant interest and encouragement. I am indebted to Colonel E. Underwood and Colonel D. Murray for permitting this work to be carried out. My thanks are due to Lieutenant-Colonel R. Kempthorne, Captain Krishnaswamy, Captain Bernstock, and Captain Dexter for valuable help. My thanks are also due to Mr. Dodds for the photomicrographs and to Privates Harry Castle and K. A. Pallister for help in procuring records and other material.

BIBLIOGRAPHY

- Annotation (1948). *British Medical Journal*, 2, 213, 794, 988; (1949). 1, 189, 278.
 Borensztein, D. (1948). *Lancet*, 1, 941.
 Cameron, D. G., and Newhouse, M. L. (1948). *British Medical Journal*, 1, 253.
 Coleman, P. N. (1948). *Ibid.*, 2, 858.
 Damodaran, K. (1948). *Ibid.*, 1, 1079.
 — and Hartfall, S. J. (1944). *Ibid.*, 2, 587.
 Gillman, J., and Gillman, T. (1945). *Arch. Path.*, 40, 239.
 Goodwin, John (1948). *British Medical Journal*, 1, 64.
 Himsworth, H. P. (1947). *Lectures on the Liver and its Diseases*, pp. 56, 156. Oxford.
 Morton, R. S. (1948). *British Medical Journal*, 2, 938.
 Sellers, E. A., Lucas, C. C., and Best, C. H. (1948). *Ibid.*, 1, 1064.
 Sherlock, Sheila (1948). *Lancet*, 1, 817.

TREATMENT OF ABORTUS FEVER WITH SULPHONAMIDES AND BLOOD TRANSFUSION

BY

C. ROMER, M.B., B.S.

Medical Registrar, Worcester Royal Infirmary

Since the annotation in the *British Medical Journal* (1947, 2, 700) on the treatment of undulant fever by sulphonamides and blood transfusion two cases have been seen in which this new suggestion could be tried. (These are reported because of the satisfactory response to treatment and because of an interesting complication.)

Case 1

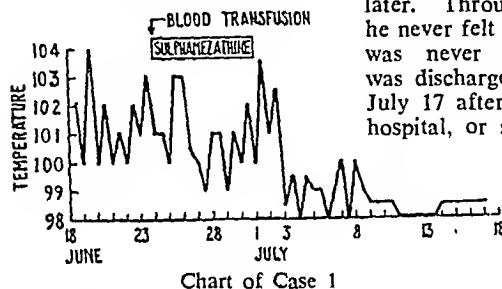
The patient, a youth aged 16, was in perfect health until the beginning of June, 1948, when he began to feel cold and had three attacks of shivering. A week before admission he developed gingivitis. On June 16 he woke up to find that he was blind in the left eye. He had had no pain and did not feel ill. Two days later he was admitted to hospital. His previous history and that of his family were not relevant. He was a farm labourer, spending most of his time with cattle. His employer had also been ill "with something similar," and it was subsequently confirmed that he too had had undulant fever. Bowels and micturition were normal. There was no loss of appetite or weight.

On admission his temperature was 103° F. (39.4° C.), pulse rate 112, and respiratory rate 28. He was flushed and was sweating profusely; nevertheless, he was emphatic that he did not feel ill. Gingivitis was present. His tongue and throat were normal. Blood pressure was 130/70. The cardiovascular, respiratory, and central nervous systems were normal. There was no enlargement of the spleen or liver, but slight enlargement of the cervical, axillary, and inguinal lymph nodes. There were a few macules on the arms and calves. Hess's test was negative. Vision in the right eye was normal except for a refractive error (hypermetropia); the pupil acted on accommodation and to direct light, but the consensual light reflex was absent. The left pupil was larger than the right, and it reacted neither on accommodation nor to direct light, although the consensual light reflex was present. The left eye had an internal strabismus (congenital) and was amblyopic. Ophthalmoscopy showed a recent thrombosis of the central retinal vein, and it was fortunate that it was in the amblyopic eye.

Abortus fever was considered a likely diagnosis for two reasons: the history of working with cattle, and the little discomfort associated with the marked pyrexia and sweating.

Investigations.—A blood count on June 18 showed: haemoglobin, 87% (13.5 g.%); colour index, 0.89; red cells, 4,920,000; white cells, 6,000 (neutrophils 3,600—band forms 720, segmented forms 2,880—lymphocytes 2,280, monocytes 120). An agglutination test on June 18 gave a positive reaction to both *Brucella abortus* and *Br. melitensis* in all dilutions from 1 in 20 to 1 in 5,120. Lumbar puncture on June 19 showed: pressure, 60 mm.; no block; approximately 5.5 ml. of clear colourless fluid; 1 cell per c.mm.; red cells, very scanty—cytology, lymphocytes only seen; protein, 18 mg. per 100 ml.; pandy, no increase; Lange, 100,000; Wassermann, negative; chlorides, 700 mg. per 100 ml. A blood culture on June 19, when the temperature was 103.6° F. (39.8° C.), gave a growth of an organism which was morphologically similar to *Br. abortus* and *Br. melitensis*. However, it refused to grow under aerobic conditions, but did so readily with an increased CO₂ tension. This indicated *Br. abortus*. Radiographs of the chest and skull on June 19 were normal. The urine was normal.

Treatment and Progress.—On June 24 he was given 1 pint (570 ml.) of fresh blood and 3 g. of sulphamezathine followed by 2 g. six-hourly. This was continued until July 1—total, 59 g. The pyrexia continued as shown on Chart 1, settling on a lower plane on July 3. A painful small effusion of the left knee developed on June 26 which disappeared four days later. Throughout, he said he never felt ill. The spleen was never palpable. He was discharged afebrile on July 17 after four weeks in hospital, or six weeks since the onset of the illness. He was seen again on Aug. 21 and Sept. 18, when he was



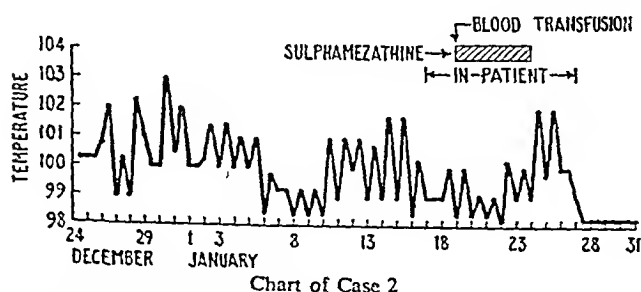
in perfect health. In December he was reported to be still well. The left eye has remained blind.

A differential white count on July 2, after sulphonamide, showed: white cells, 4,100 (neutrophils 1,681—band forms 246, segmented forms 1,435—eosinophils 123, lymphocytes 2,091, monocytes 205).

Case 2

A married woman aged 46 was admitted on Jan. 17, 1949, the diagnosis of abortus fever having been made two weeks previously, the agglutination reaction being positive. She complained of pyrexia in the afternoons and evenings, with much sweating—sufficient to cause her to rise and change her night attire. Her previous history was as follows:

In October, 1948 (12 weeks before admission), she had "influenza." Her symptoms were identical with those described above, and she stated she had not felt well since, sweating having occurred on and off. This was evidently the onset. In December (six weeks before admission) the symptoms became worse, occipital headaches and ulcers in the mouth occurring for the first time. She had had a slight macular rash on the body the week before admission. No joint pains occurred. Her previous history and that of her family were not relevant.



She had lost weight (no details available). The undulant nature of the fever is well shown in Chart 2, kept by her daughter. Both she and her husband worked in a Milk Marketing Board office but handled only milk return forms. They lived in the

country, the milk supply being direct from a farm and not pasteurized. There was no known contact. On examination her general condition was good, with no obvious loss of weight. She was sweating. The temperature was 99° F. (37.2° C.), the pulse rate 100. All systems were normal. The spleen was not palpable and there was no rash.

Investigations.—An agglutination test on Jan. 1 gave a positive reaction in a dilution of 1 in 1,280 to *Br. abortus*. A blood count on Jan. 18 (before transfusion) showed haemoglobin, 93% (14.5 g.%); colour index, 0.95; red cells, 4,920,000; white cells, 4,000 (neutrophils 2,320—band forms 1,240, young forms 40, segmented forms 1,040, eosinophils 80, lymphocytes 1,160, monocytes 440). A blood count on Jan. 27 (after transfusion) showed: haemoglobin 90% (14 g.%); colour index, 1; red cells, 4,510,000; white cells, 5,000 (neutrophils 2,000—band forms 650, segmented forms 1,350—eosinophils 500, lymphocytes, 2,000, monocytes 500). A blood culture on Jan. 17 gave a good growth of *Br. abortus* after seven days' incubation. A fractional test meal showed a low acid curve. This was done as it is remarkable that a milk-borne disease should be only sporadic, and it may be that individual susceptibility depends on failure of this first line of defence. The urine was normal.

Treatment and Progress.—On Jan. 19 she was given a blood transfusion of 1 pint (570 ml.) of fresh blood and 3 g. of sulphamezathine followed by 2 g. six-hourly until Jan. 24—total 47 g.

On Jan. 27, the day she left hospital and eight days after starting treatment, she became afebrile and has remained so ever since. When seen on Feb. 26 and March 25 (two months follow-up) she was in normal health.

Discussion

Two cases of abortus fever (one having a rare complication) successfully treated with sulphonamides and blood transfusion is added to the two of Holmes and Hughes (1948). In Case 1 sulphamezathine and a single transfusion of 1 pint of fresh blood were used, beginning three weeks from the onset of the disease. Three weeks later the patient was discharged cured, and remained so. Holmes and Hughes used sulphadiazine and three small transfusions; their cases were treated eight weeks and six weeks from the onset, and were discharged after two weeks' treatment. This is encouraging in a disease which commonly has a long duration (Price gives an average length of three to four months; while Saville mentions three to six months). In the literature no reference to thrombosis of the central retinal vein in abortus fever has been found.

Although two swallows do not make a summer, and this treatment of abortus fever has been criticized by Professor Debono (1949), it seems only reasonable to conclude that the strain of *Br. abortus* met with in this country is sensitive to such treatment. The results certainly justify further trial.

My thanks are due to Dr. J. O. Terry, under whose care the patients were, and to Mr. I. Lloyd-Johnstone for his report upon the condition of the eyes in Case 1.

REFERENCES

- Debono, J. E. (1949). *British Medical Journal*, 1, 194.
Holmes, J. MacD., and Hughes, R. (1948). *Ibid.*, 2, 859.

The annual general meeting of the Society for Relief of Widow and Orphans of Medical Men was held on June 1. Dr. Aliso Glover, a vice-president, was in the chair. The annual report and financial statement for 1948 was approved. At present the membership of the society is 250. Forty-six widows are in receipt of grants, and the total sum distributed during the year was £4,545. Income exceeded expenditure by £802 9s. 2d. It was decided that by-law 46 should be amended so that any widow whose annual income does not exceed £150 will be eligible for grants, as compared with an annual income of £125 as at present. The meeting concluded by passing a vote of thanks to Sir Robert A. Young, the president, for his services during the past year. Membership of the society is open to any practitioner living within a 20-miles radius of Charing Cross, and further details may be obtained on application to the secretary of the society, 11, Chandos Street, W.1.

TREATMENT OF HERPES ZOSTER WITH LIVER EXTRACT

BY

H. S. GASKELL, M.B., Ch.B.

Medical Officer, E. Stow, Suffolk

Although the eruption of herpes zoster may appear without discomfort, the pain associated with the condition is sometimes considerable; and post-herpetic neuralgia may occur with such severity and persistence that, as Osler (1898) recorded, it has been known to drive a patient to commit suicide. The treatments recommended have been legion, including iron, arsenic, strychnine, gelsemium, valerian, and aconite, as well as the customary analgesics; freezing, iniments, diathermy, and the injection of distilled water beneath the skin have also been used.

Dickie (1946) relieved herpetic pain in prisoners of war by use of injections of liver extract, which was the only drug available. I have since had the opportunity of observing the effect of liver extract administered empirically to 40 patients with herpes zoster. In all cases the preparation used was "neo-hepatex," administered intramuscularly.

Case Histories

Case 1.—June 19, 1946. Male aged 76. Herpes of left forehead, with severe pain. Dosage: 4 ml. The following day there was no pain and the lesion had not extended. A further 1 ml. was given the next day. There was no post-herpetic pain or recurrence.

Case 2.—July 20, 1946. Male aged 47. Herpes of forehead. Dosage: 4 ml. first day, followed by 2 ml. on the two ensuing days. Pain ceased after the first injection.

Case 3.—Oct. 2, 1946. Female aged 71. Herpes involving the twelfth thoracic segment on the left side, with severe pain. Dosage: Two injections of 4 ml., with three days' interval. Pain completely relieved by Oct. 7.

Case 4.—Oct. 3, 1946. Female aged 63. Herpes of left side of head and neck, with severe pain. Dosage: 4 ml. on Oct. 3 and Oct. 5. Completely free from pain after Oct. 5.

Case 5.—Oct. 4, 1946. Male aged 16. Herpes of right buttock and thigh, with moderate pain. Dosage: 4 ml. Pain and vesicles disappeared in 24 hours.

Case 6.—Oct. 14, 1946. Male aged 77. Complained of post-herpetic neuralgia for 10 months. Dosage: 4 ml., with relief of pain. A further 4 ml. was injected on Oct. 16.

Case 7.—Oct. 28, 1946. Male aged 68. Post-herpetic neuralgia for 15 months. Three injections of 4 ml. produced no diminution of pain.

Case 8.—Nov. 28, 1946. Male aged 38. Herpes genitalis for 6 weeks. Dosage: 4 ml. on two successive days. By Dec. 3 the herpes had disappeared.

Case 9.—Jan. 13, 1947. Male aged 23. Herpes of left chest, with moderate pain. Dosage: 4 ml. on three successive days. Pain-free on Jan. 16.

Case 10.—Jan. 14, 1947. Female aged 75. Three days' history of herpes of right thigh, groin, and lower abdomen, with severe pain. Dosage: 4 ml. on two successive days. Complete relief of pain.

Case 11.—May 5, 1947. Female aged 56. Herpes of right upper thorax, right shoulder, and neck, associated with severe pain. Dosage: 4 ml. on May 5 and May 6; 2 ml. on May 10. The pain became considerably less by May 8, and the patient was pain-free on May 12.

Case 12.—July 1, 1947. Female aged 59. Two weeks' history of herpes of forehead, with moderate pain. Dosage: 4 ml. on July 1 and July 2, with diminution of pain.

Case 13.—July 14, 1947. Male aged 66. Herpes of left face for a week. Dosage: 4 ml. on July 15, 17, and 19. Pain relieved after first injection. Pain-free by July 26.

Case 14.—Sept. 8, 1947. Male aged 34. Two days' history of herpes of left groin. Dosage: 4 ml. on Sept. 8, 9, 12, and 15. By Sept. 15 he was pain-free and the rash had faded.

Case 15.—Sept. 18, 1947. Female aged 26. Herpes of left face, with considerable pain and constitutional disturbance. Dosage: 4 ml. on Sept. 20. This had no effect on the condition, which cleared, however, by Oct. 9.

Case 16.—Sept. 24, 1947. Male aged 22. Herpes of left chest. Dosage: 4 ml. on Sept. 24 and 25, with relief of pain.

Case 17.—Dec. 1, 1947. Female aged 67. One week's history of herpes of upper right chest. Two days previously the rash had spread to the right side of the neck and face, and there was considerable pain and malaise. Dosage: 4 ml. on Dec. 1, 2, and 8. Pain lessened after the first dose and completely disappeared by Dec. 12.

Case 18.—Jan. 21, 1948. Female aged 31. Two days' history of herpes of the left chest, with pain. Dosage: 4 ml. on Jan. 21. Pain-free, with no further extension of the rash by Jan. 24.

Case 19.—July 10, 1948. Female aged 58. One week's history of herpes of the left side of the neck. Dosage: 4 ml. on the succeeding two days. Pain was relieved by July 12, and had completely disappeared by July 19.

Case 20.—Aug. 19, 1948. Male aged 73. One day's history of herpes of right hip and abdomen, with severe pain and malaise. Dosage: 4 ml. on Aug. 19 and 21, with relief of pain.

REFERENCES

- Dickie, H. (1946). *British Medical Journal*, 1, 942.
Osler, W. (1898). *Principles and Practice of Medicine*, New York.

Medical Memoranda

A Case of Abortus Infection treated with "Aureomycin"

Spink *et al.* (1948) reported a series of 24 cases of human brucellosis due to *Br. melitensis* treated in Mexico with "aureomycin" (Lederle Laboratories). They say: "In such a disease a long follow-up study will be necessary to evaluate the drug completely. . . . But the immediate results of treatment have been so encouraging and so unexpected that this report is being made." The following is an account of a case of *Br. abortus* infection in which the immediate results were striking also.

CASE REPORT

The patient, a man aged 58, became ill fairly abruptly in the middle of February, 1949, at a time of influenza prevalence. The persistence of the illness led to its differentiation from influenza, and a blood agglutination reaction on March 16 gave a titre to *Br. abortus* of 1:500, less decisively 1:1,000. At this time the pyrexia was mainly at night, and often there was a night sweat. He was given 36 g. of sulphamezathine over six days without effect. The pyrexia next became diurnal also and the number of sweats increased to several in a 24-hour period. At this stage he was admitted to hospital on March 28, about six weeks from the onset.

His general condition was comparatively good, but he was anxious about his apparently interminable, uncomfortable, and incapacitating illness. Clinical examination did not reveal anything inconsistent with brucellosis: no enlargement of the spleen was detected. Agglutination reactions again gave 1:500 to *Br. abortus*, and blood culture was negative. An issue of streptomycin was obtained, but no apparent effect from the drug was noted with a dosage of $\frac{1}{2}$ g. intramuscularly every six hours, and after five days the drug was stopped. Two days later aureomycin was started by mouth and given as follows: one capsule (250 mg.) every twelve hours for two days and two capsules (500 mg.) every six hours for $7\frac{1}{2}$ days (a total of 16 g.

of drug). The initial smaller dose was to minimize any tendency there might be to a sharp reactive rise of temperature on beginning treatment—a tendency reported in the series of Spink *et al.*

After starting the drug the pyrexia, which had been broadly of an intermittent pattern swinging between limits of 97 and 102° F. (36.1 and 38.9° C.), became in about 24 hours more continuous and reached over 103° F. (39.4° C.); in a further 36 hours it began to fall rapidly and reached normal in about another 24 hours, where it remained. It was still steadily normal 10 days later, when the patient's wish to return home was acceded to (April 22), and on interviewing him on May 12 he reported continued freedom from his former febrile sensations, and a single check on his temperature gave a normal level.

The drug was easily administered and caused no apparent toxic reactions.

I am indebted to Dr. R. E. Jones, of the Public Health Laboratory, Coventry, for serological data and other assistance, and to Dr. T. H. W. Ritchie, of Bedworth, Warwickshire, for clinical information.

J. F. GALPINE, M.D., M.R.C.P.Ed., D.P.H., D.C.H.

Medical Superintendent, Isolation Hospital, Coventry.

REFERENCE

Spink, W. W., Braude, A. I., Castaneda, M. R., and Goytia, R. S. (1948). *J. Amer. med. Ass.*, 138, 1145.

Arteriovenous Fistula of the Lung

[WITH PHOTOGRAVURE PLATE]

Until recently arteriovenous fistula of the lung has only rarely been reported. It was thought worth while, therefore, to record the following case, with details of the investigations made to establish the diagnosis. The question of the advisability of surgical treatment in this case is discussed.

CASE REPORT

The patient, a man aged 36, first came under medical care in August, 1947, complaining of a dull ache in the right upper chest which he attributed to strenuous and unaccustomed exercise taken some two weeks before. There was a history of slight morning cough for some years, with an occasional trace of mucoid sputum, in which he had noted streaks of blood once only, on the day before he was first seen. This streaking has since been observed on another occasion. No dyspnoea or other symptoms have been present. His previous history was not relevant, and on close questioning epistaxis or other evidence of a bleeding diathesis was not admitted. Goldman (1948), in a review of the literature, has stressed the hereditary factors in the aetiology of the condition, but in this case the family history, so far as it could be obtained, was also negative.

Physical examination did not reveal any cyanosis or finger-clubbing, and no abnormal physical signs were found in the respiratory system. The pulse was regular at 80 per minute and was not collapsing in character. There was no evidence of enlargement of the heart or of cardiac murmurs. The blood pressure was 135/75 mm. Hg in both arms. A soft murmur, heard only in systole, was present over a roughly circular area about 6 in. (15 cm.) in diameter in the lower part of the right axilla. The murmur was faint but could be well heard with the patient lying on his left side and extended over a pillow. It was not appreciably affected by respiration. Careful examination of the skin and mucous membranes revealed no evidence of other haemangiomas or telangiectases. Other systems were normal.

The diagnosis was chiefly established by radiography. The postero-anterior film (Plate, Fig. 1) showed a mottled opacity in the lower zone of the right lung which on the lateral film overlay the lower part of the heart shadow. Between the opacity and the vascular markings of the right hilum was a longitudinal shadow which on tomography (Fig. 2) could be clearly identified as consisting of two main parts representing

branches of the pulmonary artery and vein. On screening, opinion was divided on whether the shadow pulsated, but it was noted in a bronchogram (Fig. 3) that, whereas nearly all the bronchial shadows, including those in juxtaposition to the heart, were present and clearly defined, those close to the main opacity were blurred.

Mr. R. C. Brock kindly arranged for angiography at Guy's Hospital, and the resulting radiograph (Fig. 4) leaves no doubt regarding the vascular nature of the lesion. Mr. Brock also reported a normal bronchial tree on bronchoscopy.

Blood examination revealed: red cells, 6,100,000 per c.mm.; haemoglobin (Haldane), 110%; white cells, 6,000 per c.mm., with a normal differential count. Oxygen saturation was found to be 89% in a specimen of arterial blood. The sedimentation rate was 2 mm. in one hour (Westergren). Culture of sputum revealed a mixed growth of normal pulmonary flora. The vital capacity was 4,500 c.cm. The electrocardiogram (three standard leads) was normal in all respects.

The case has now been observed over a period of seven months without any change in the clinical or radiological picture.

DISCUSSION

On the data available the lesion must be regarded as a vascular abnormality or tumour in the substance of the lung, with a minimal pulmonary arteriovenous shunt but no evidence of similar lesions or telangiectasia elsewhere though the presence of such lesions cannot be excluded *ante mortem*. In view of the minimal shunt in this case the possibility of the systemic (bronchial) circulation being implicated, as suggested by Maier *et al.* (1948), must be considered. The main practical problem is whether surgical removal should be advised. On the one hand we are dealing with a virtually symptomless lesion with very little disturbance of the normal physiology. On the other there is the danger of haemorrhage and the possible extension of the lesion with an increase in the shunt or even malignant change. At the moment there would appear to be no general contraindications to surgery, but from the few reported cases it would seem that operative removal is not without risk, particularly where there is a large pulmonary arteriovenous shunt. There is also no certainty that other lesions are not present.

Surgical removal has been advised but so far refused so that pathological data on the nature of the lesion are not available.

I would like to thank Dr. F. H. Young, physician to the Brompton Hospital, for permission to publish this case and for his helpful criticism; Dr. F. Prime for performing the oxygen saturation test; and Dr. L. G. Blair for the skiagrams.

F. D. BEDDARD, M.B., B.S.,
late A.R.M.O., Brompton Hospital.

REFERENCES

Goldman, A. (1948). *Amer. Rev. Tuberc.*, 57, 266.
Maier, H. C., *et al.* (1948). *J. thorac. Surg.*, 17, 13.

At a meeting of the Professional and Technical Council, B of the Whitley Councils for the Health Services on April 20 the following agreement was reached on the salaries of medical laboratory technicians employed in the National Health Service in England, Wales and Scotland. *Student and Junior Technician*: Aged 16, £110 p.a.; 17, £125; 18, £145; 19, £165; 20, £195; 21, £225; 22, £240 10s.; 23, £260; 24, £279 10s.; 25 and over, £299. On passing the Intermediate Examination of the Institute of Medical Laboratory Technology (or equivalent qualification), or the Inter. B.Sc., the salary is increased by £13 per annum at any point on the scale. If no examinations are passed, the salary is increased to £312 per annum at age 30. *Technician*: £370×£15–£435. On gaining the Fellowship of the Institute of Medical Laboratory Technology (or equivalent qualification) the salary is increased by £15 at any point on the scale. *Senior Technician*: £450×£20–£530. *Chief Technician*: £530×£20–£650. London weighting: In the Metropolitan Police Area all scales are subject to London weighting on the following basis: Age 16–20, £10; 21–25, £20; 26 and over, £30. The new scales operate from April 1, 1949.

Reviews

INFECTIOUS DISEASES

Traité de Médecine. Vol. I. Maladies Infectieuses. By A. Lemierre, Ch. Lenormant, P. Pagniez, P. Savy, N. Fiessinger, L. de Gennes, A. Ravina. (Pp. 1,096. 2,200 francs.) Paris: Masson et Cie. 1948.

The Acute Bacterial Diseases. By H. F. Dowling, M.D., F.A.C.P. (Pp. 465; illustrated. 32s. 6d.) London and Philadelphia: W. B. Saunders. 1948.

These two books cause one to reflect on the needs of the reader of the textbook on infectious diseases. Some will want a work which devotes special care to the description of all aspects of the infections, a book to which reference can be made when the unusual is encountered and which will reflect the breadth of the writer's experience. Such is the clinician's book, and after the detail of the clinical description the reader is satisfied with less in the way of bacteriology, pathology, epidemiology, or even specific therapy. This is the classical approach, and the original texts of books like Ker's *Infectious Diseases* and Ricketts's monograph on smallpox still remain as up to date as when they were written because of the mastery they display in their clinical observation. Others, however, will be content if the clinical descriptions are less detailed, provided there is adequate discussion of the most recent knowledge of, for example, bacteriology or therapy. Naturally, this type of book tends to "date" more quickly, especially in these days, when treatment may change so rapidly.

Either of the present books may be recommended to both groups of readers, though each has its emphasis towards one or other aspect of its subject. The French work tends towards the classical form. The present volume is the first of a series of seventeen which will clearly supply a comprehensive review of modern French medicine. The infectious diseases described comprise most of the notifiable diseases common to this country. A detailed clinical description is supplied; and, as one would expect in a Continental textbook, each disease is carefully subdivided into every possible clinical type. There is no doubt that the book excels in painting the clinical picture, and though the British reader will not agree with all the interpretations he will enjoy the reading.

The section on typhoid fever (which occupies 164 pages) may be used to exemplify the style. The bacteriological description is impoverished by an absence of reference to recent advances, and the importance of phage typing is not mentioned. This naturally weakens the section on epidemiology. The discussion of pathogenesis is excellent; so is the detailed description of the clinical course of the disease and its treatment. Here, as elsewhere, the fine subdivision into different clinical types rather engenders the view that "the disease is everything." One would welcome an extended discussion on the host-parasite relationship and a more obvious appreciation that the form of the infection is not merely a question of the causative organism.

Scarlet fever is excluded from the section on streptococcal diseases and is described as a specific malady, the writer agreeing with the Dicks on the specificity of the scarlet fever streptococcus. There is thus no concept of scarlet fever as but part of the whole range of streptococcal disease. The role of re-infection as a causative factor in many of the complications is not stressed, and the possible connexion between scarlet fever and rheumatic fever is overlooked. Finally, one notes that the use of laboratory methods in the diagnosis of smallpox is not well discussed and the place of egg-culture not mentioned. But these deficiencies, viewed from the classic approach, are secondary to the excellence displayed in the description of the disease.

Dowling's book, as one would expect, is a praiseworthy survey of the "new look" in fevers. Here the author turns away from the strictly clinical or pathological approach, and, because of the importance of the aetiological agent in dictating treatment, groups the diseases on a bacteriological basis. There is thus particular emphasis on the place of laboratory aids in obtaining a precise diagnosis. Having decided on the most rapid and certain methods to be used, the author discusses

specific therapy and the effects which may be expected from its correct application. In the first part of the book are four chapters dealing with serum therapy, sulphonamides, penicillin, and streptomycin. These present a clear review of the subjects and should be particularly valuable to the person who is not dealing with these substances daily in infectious diseases, for they are essentially practical. Throughout the book there is a profusion of practical diagrams and individual case records, permitting the reader to see how his case ought to respond to the treatment advised. Though it is somewhat expensive for the student, there can be no doubt that the practical tone of the book and its ready appeal to the visual memory make it a useful volume for the undergraduate. The graduate can be assured of finding in it a fund of ripe experience.

T. ANDERSON.

STUDIES IN NEUROLOGY

Critical Studies in Neurology. By F. M. R. Walshe, M.D., F.R.S. (Pp. 256. 15s.) Edinburgh: E. and S. Livingstone. 1948.

In this convenient little volume Dr. Walshe reprints some of his well-known contributions to neurological literature. He excels at writing a critical review, and the reader cannot fail to admire his remarkable clarity of thought, choice of words, and vigour of expression. Six of his studies are reprinted, including those on cutaneous sensibility, the motor cortex, and the pyramidal system, as well as his address on the integration of medicine.

A prime purpose of this reprint is "to stimulate critical thinking amongst postgraduate students." While some knowledge of recent neurophysiological and anatomical work is desirable for the full appreciation of Dr. Walshe's reviews, students in many branches of medicine will welcome this collection of his stimulating studies.

W. RITCHIE RUSSELL.

AGONAL ACIDOSIS

Investigations on Agonal Acidosis. By I. B. Fabricius Hansen. (Pp. 134. No price.) Copenhagen: P. Branner, 29, St. Kongensgade. 1948.

This monograph is the result of an elaborate study of blood chemistry in 38 cases of impending death. Particular attention was paid to changes in acid-base balance, and known causes of acidosis, such as diabetes and nephritis, were excluded from the series. The author concludes that a profound acidemia is a frequent finding in the agonal state, the value of the blood pH falling to 7.0 or lower. This acidosis is partly due to organic and inorganic acids—lactic, pyruvic, phosphoric and sulphuric—but decreased pulmonary ventilation is a contributory factor, causing a rise in the CO₂ tension of the blood. Azotemia is also usually present, but is not directly correlated with the acidosis.

A possible criticism of the results lies in the method of blood sampling, which was by venesection or by cardiac puncture after death. Arterial blood would have been more appropriate for these studies. This difference would, however, probably not invalidate the general nature of the results. The relation of the findings to therapy is discussed, and a case is recorded in which an apparently moribund patient was revived by treatment with nikethamide and ephedrine. On the whole the results recorded are those which might have been expected from previous work, but this well-documented account forms a valuable record of the nature of pre-mortal changes in blood chemistry.

N. F. MACLAGÁN.

GROUP THERAPY

Introduction to Group-Analytic Psychotherapy. Studies in the Social Integration of Individuals and Groups. By S. H. Foulkes, M.D. (Pp. 181. 21s.) London: William Heinemann Medical Books. 1948.

The author describes methods developed by him to deal with civilian out-patients when wartime demands, which could not be met by individual psychotherapy, forced psychiatrists to experiment with group techniques. These methods were later applied to military patients at Northfield Military Psychiatric Hospital, and after the war to patients at Bart's. What was originally expedient to meet a particular situation became, in

TREATMENT OF HEPATIC CIRRHOSIS

Cirrhosis of the liver is not a condition which physicians expect to cure. In fact, in a paper appearing elsewhere in this issue Damodaran states that once cirrhosis is established there is nothing at our disposal to prevent its progress. But the discovery of the importance of malnutrition in the pathogenesis of the condition has led to improvements in treatment. Since Patek¹ introduced the high-protein, high-vitamin regime in 1937 many reports have appeared on cases of hepatic cirrhosis treated on similar lines. With very few exceptions these confirm Patek's favourable results. In the majority of the cases the effect of treatment was assessed only on clinical grounds, but liver-function tests were occasionally employed. The objective evidence of improvement recently obtained by Beams and Endicott² is therefore welcome. They studied a group of fourteen patients on high-protein, low-fat diets, nine of whom received a daily supplement of 4.5 to 5 g. of methionine. In all the patients receiving the supplement the histological changes indicated a favourable response, while in only one of the other patients were significant histological changes noted after treatment. This paper is illustrated by excellent photomicrographs which clearly show the improvements described.

Two other methods of treating hepatic cirrhosis have recently been reported; these are directed more towards improving the symptoms than towards reversing the changes in the liver. Schemm and Layne,³ following the former's success in the treatment of the ascites of congestive cardiac failure by a high fluid intake and diet low in sodium and high in acid ash, have used similar methods in the treatment of cirrhosis. The result in nineteen of the twenty cases treated was complete clearance of the ascitic fluid. Even when the serum protein was low and the albumin-globulin ratio reversed, large amounts of fluid were successfully eliminated, and the authors conclude with justification that too much emphasis has been placed on the increased venous pressure in the portal circulation and on the "critical level" of the plasma albumin as causes of ascites. This conclusion, at least as regards the effects of serum albumin, is confirmed by the report⁴ that in three cases intravenous injection of albumin was without effect upon either the ascites or the urinary output. It therefore seems that the liver plays an important part in water metabolism apart from its effects upon the serum proteins and the portal circulation. The observation⁵ that parenchymal hepatitis is associated with a fall in the anti-diuretic agent normally present in the urine indicates a possible mechanism by which the metabolism of water is disturbed in hepatic disease. Adequate excretion of this anti-diuretic factor, probably of pituitary origin, may depend upon the integrity of the liver, and impairment

of liver function might therefore lead to excessive water retention.

The second method of treatment is directed towards the correction of the endocrine disturbance frequently associated with hepatic disease. The commonest manifestation of such disturbance is a tendency to feminization in the male, as shown by gynaecomastia and testicular atrophy. These symptoms, together with alopecia pectoralis, spider naevi, and palmar erythema, are probably the result of impairment of the normal hepatic mechanism for the inactivation of steroids.⁶ Since the B vitamins appear to be necessary for the inactivation of oestrogens but not of androgens,⁷ the latter will be more completely inactivated than the former in patients with the malnutrition that frequently accompanies chronic hepatitis. Rosenak, Moser, and Kilgore⁸ have therefore studied the effect of testosterone propionate on twelve cases of alcoholic cirrhosis. They gave 25 to 100 mg. three times weekly after the progress on routine therapy had been assessed. All of the twelve patients treated felt better, and in eleven of them improvement was also noted in some of the following features: body weight, loss of ascites, spider naevi, and palmar erythema. This treatment, however, did not affect the growth of body hair or testicular atrophy, though sexual vigour was improved. Some improvement in the results of liver-function tests was also observed. The authors, while admitting the possibility that the observed benefits may have resulted from an improvement in general health, considered that testosterone was a valuable addition to the routine treatment of these cases. Since an increase of the basophil granules of the liver cells has been observed both after high-protein feeding and after androgen administration⁹ there may be reasons other than those mentioned by the authors for adopting this method of treatment.

CONSULTANTS' TERMS

The Ministry of Health has now announced the terms and conditions of service for consultants and specialists in the Health Service, and the statement appears in the *Supplement* this week. These are the final terms formulated after discussions held during the last few months with the profession. Consultants and specialists will have an opportunity of considering the terms before July 5, when the Central Consultants and Specialists Committee and the Joint Committee successively meet to consider the views of their constituents. No one should sign a contract until the Joint Committee has expressed its opinion on the Ministry's statement.

The financial terms offered are substantially the same as those in the original proposals.¹ It will be noted that consultants appointed at the age of 31 or earlier are still penalized for their youth. It is questionable whether these terms adequately translate the Spens recommendations into present-day values, since the increase varies between about 13% and 10%. If allowance is made for the Government superannuation contribution of 8% the betterment factor is between 22% and 19%. The remuneration offered medical superintendents is unsatisfactory in that the proportion of their time devoted to administration is to be

¹ *Proc. Soc. exp. Biol., N.Y.*, 1937, **37**, 329.

² *G. Clin. Pathol.*, 1947, **9**, 718.

³ *ibid.*, 1947, **9**, 705.

⁴ Patek, A. J., Mankin, H., Colcher, H., Lowell, A., and Earle, D. P., *J. clin. Invest.*, 1948, **27**, 135.

⁵ Raj, E. P., Robson, J. S., Clarke, D., and Hoagland, C. L., *J. clin. Invest.*, 1948, **24**, 316.

⁶ Selye, H., *J. Pharmacol.*, 1941, **71**, 236.

⁷ Block, J. S., and Bakand, G. R., *Endocrinology*, 1943, **32**, 97.

⁸ *Gastroenterology*, 1947, **9**, 695.

⁹ Hill, K., and Kornechuk, V., *British Medical Journal*, 1938, **1**, 438.

¹ *British Medical Journal Supplement*, March 19, p. 149

paid for at the rate appropriate to lay administrative staff (unless they devote only a small proportion of their time to it); yet a medical man brings qualifications to the task that the layman does not, and he should be remunerated accordingly. The Ministry's document states that boards should try to reduce to a minimum the time given by medical staff to administrative duties, but if it is the Minister's intention to eliminate medical superintendents from the Service he should say so directly instead of putting forward terms which may indirectly have that effect.

It is doubtful whether the security of tenure of posts offered consultants is adequate. The document states that no period of tenure or of notice should be specified in the contracts, and consultants may consider the safeguards offered to be too slight. If he thinks that the hospital board is unfairly terminating his appointment, the consultant can send a statement of the facts to the Minister, who will obtain the views of the board and put the case before a professional committee. The committee may interview both parties. In the light of the committee's findings the Minister may confirm termination, or direct reinstatement, or arrange a third solution agreeable to the parties concerned. It would be preferable if the case were put before the professional committee before the board considered the matter, and undoubtedly the consultant ought to have the right to appear before this committee if he wishes to. The Minister has included a paragraph pointing out that the board has a moral obligation to assist the consultant to obtain comparable work elsewhere if reorganization threatens his displacement or the serious disturbance of his services. Less reassuring is the absence of any provision preventing boards from whittling down the number of sessions done by a part-time consultant.

Consultants will be unlikely to find these terms so unreasonable that they wish to reject them outright. If this is the case, then the committees representing consultants and specialists may advise general acceptance of the terms and conditions offered, leaving open the question of modifying this and that detail in the light of experience.

STREPTOMYCIN AND THE LABYRINTH

It has been known from an early stage in the trials of streptomycin that damage to the labyrinth is not infrequent after large doses of the drug. A recent study by Barr, Floberg, Hamberger, and Koch¹ has shown that a daily dose of less than 1 g. and a total dose of less than 60 g. carry a relatively small risk of vestibular damage provided there is no impairment of renal function. Where, however, the kidneys are damaged or, in cases with normal renal function, if the dose of streptomycin exceeds the above limits, the amount of the drug in the blood may rise to a concentration sufficient to damage the vestibular system. Thus these authors observed evidence of vestibular disturbances in 16 out of 26 cases receiving more than 60 g. The evidence that streptomycin may affect the hearing is less conclusive. In the majority of the cases where deafness occurred, the disease for which the drug was given may equally well have caused damage to the eighth

nerve. Nevertheless, streptomycin may occasionally damage the hearing. The site of damage to the vestibular system is still in dispute. Glorig and Fowler² considered their clinical studies showed that streptomycin injures the vestibular nerve peripherally. Floberg, Hamberger, and Hyden,³ using cytochemical methods, demonstrated on experimental animals that the localization of such injuries is both peripheral and central; they found definite changes both in the vestibular ganglion and in Deiter's nucleus.

It is not often that an undesirable side-effect of a drug can be turned to good account, but Fowler⁴ has used streptomycin as a specific neurotoxin to damage the vestibular organ in cases of vertigo unsuitable for other forms of treatment. In a preliminary trial, four patients suffering from severe attacks of vertigo due to Ménière's disease and not relieved by medical treatment were given 0.5 g. of streptomycin every three hours (4 g. per day). The total dose varied from 25 g. to 33 g. The effect on the vestibular system was checked by daily caloric tests according to the method of Hallpike.⁵ The results appear to have been uniformly successful: the attacks of vertigo were completely or almost stopped for at least five to nine months, and in three out of the four cases the hearing was unaffected. In the dosage employed streptomycin produced what amounted to bilateral vestibular nerve section: the patients lost all reaction to labyrinthine stimulation. Violent rotation caused no nystagmus, and even iced water syringed into the ear for five minutes produced no reaction. The effect on locomotion varied with the previous functional efficiency of the vestibule and the age of the subject: if the disease had caused slight damage to the labyrinth the immediate result of streptomycin administration was severe vertigo such as is seen after surgical ablation of the labyrinth. The older the patient the less perfect was the compensation which ultimately took place. Compensation, however, was never complete, and all the patients subsequently found difficulty in walking in the dark. It would appear that this method of treatment merits further trial; as Fowler points out, it should be limited to those patients under the age of 50 with Ménière's disease affecting both vestibules in whom medical treatment has failed. Where the disease is unilateral the destruction of the labyrinth by alcohol injection or ablation is still the method of choice.

EXPERIMENTAL INTERVERTEBRAL DISK LESIONS

It is now established that lesions of the intervertebral disk frequently cause low back pain and sciatica, and removal of the offending disk relieves these symptoms in a great many patients. Unfortunately this is not invariably the case; furthermore, spinal fusion has not been successful in relieving pain in patients whose symptoms persist after the removal of a prolapsed intervertebral disk. Haas¹ has shown experimentally that excision of the disk by an anterior approach will result in fusion of the adjacent vertebrae, and other workers^{2,3} have reported that lesions similar to those noted in hypertrophic spondylitis can be caused by similar less extensive operations. Key and Ford⁴ have recently produced intervertebral disk lesions by operations on dogs. They found that vigorous curettage of the disk space from the posterior approach did not lead to bony fusion between bodies of the vertebrae. The value of this procedure is therefore doubtful. Moreover, vigorous traction on the adjacent nerve root may be followed by

¹ *Acta oto-laryng., Stockh., Suppl.*, 1949, 75.

² *Ann. Otol., etc. St. Louis*, 1947, 55, 379.

³ *Acta oto-laryng., Stockh., Suppl.*, 1949, 75.

⁴ *Trans. Amer. Acad. Ophthal. Otol.*, 1948, March-April, 293.

⁵ Hallpike, C. S., and Cairns, H., *J. Laryng.*, 1938, 53, 625.

¹ *J. Bone Jt Surg.*, 1946, 28, 544.

² Keyes, D. C., and Compere, E. L., *ibid.*, 1932, 14, 897.

³ Lob, A., *Dtsch. Z. Chir.*, 1933, 240, 421.

⁴ *J. Bone Jt Surg.*, 1948, 30-A, 621.

⁵ *Arch. Dis. Childh.*, 1943, 18, 102.

⁶ *British Medical Journal*, 1949, 1, 132.

excessive fibrosis in this region, and the constant presence of adhesions around the nerve roots in the experimental animals suggests that this may be a cause of post-operative pain. As a result of these findings Key and Ford recommend that the disk should be carefully and gently removed, and that the posterior nerve roots should be protected from trauma.

These observers also found that unilateral protrusion of a disk will follow the surgical weakening of the annulus fibrosus on that side. The superficial portion of the wound so made heals over, but there appears to be no power of healing in the deeper part of the disk, probably because of its avascularity. In consequence a prolapse gradually develops. They even found it possible to produce a lesion of the intervertebral disk by puncturing the annular fibrosis with a needle. It is interesting to note that the animals subjected to this experiment were young, for in 1943 Findlay and Kemp⁵ described osteomyelitis of the second and third lumbar vertebrae with collapse of the intervening intervertebral disk in a 1-month-old child. This lesion followed an attempt at lumbar puncture in the presence of skin sepsis. Recently Bromley, Craig, and Kessel⁶ have reported in this *Journal* a case of osteomyelitis of the third and fourth lumbar vertebrae associated with partial collapse of the intervening disk. Four years previously, when the patient was 12 years of age, lumbar puncture had been performed while she was suffering from meningococcal meningitis. In children the short distance between the skin and the disk, the thin annulus fibrosus, and the protrusion backwards of the disk under tension when the back is flexed for lumbar puncture all render this structure vulnerable to both infection and prolapse following damage by a lumbar puncture needle. It is obvious, therefore, that great care should be taken in the performance of lumbar puncture in order to minimize the danger of a prolapsed disk.

ABSORBABLE HAEMOSTATICS

Surgeons have long been haunted by the spectre of haemorrhage from inaccessible vessels. Much has been done by good lighting and exposure of the field of operation to reduce this danger, and much can be done by local pressure maintained with patience for many minutes if necessary. But in the rare case, even in experienced hands, packs or haemostats have had to be left in wounds, prolonging the period of danger for the patient and of worry for the surgeon. If they are left for more than 24 hours there is grave risk of infection, while their removal may restart the haemorrhage. The arrival of absorbable haemostatics has abolished these dangers, and several surgeons have reported on their usefulness.

Of the four substances in use oxidized cellulose, fibrin foam, and gelatin sponge have been developed in the U.S.A., and calcium alginate is a British product. All appear to be very effective haemostatics, and comparisons of the first three have shown them to be about equal in this capacity.¹ Oxidized cellulose, however, has the disadvantages that it is highly acid and so inactivates thrombin and penicillin, and it does not adhere so firmly as does gelatin; moreover, it has to be sterilized chemically with bacteriological control. There appears to be little difference in the efficacy of fibrin foam and gelatin sponge, but fibrin is more complicated to use and to sterilize and is more easily broken up. Gelatin sponge, which can be sterilized by dry heat, is

inexpensive, non-antigenic, non-irritant, and does not inactivate antibiotics or thrombin. Its efficiency as a haemostatic has been shown by its use to cover actual defects in large veins² and for wounds of the heart.³ Large nephrotomy incisions, extending into the renal pelvis, healed well without leakage of urine after packing with gelatin foam.⁴ A further application of absorbable haemostatics is for packing large cavities which have rigid walls. A notable example is the use of gelatin foam in the pleural cavity after pneumonectomy.⁵ Provided too large amounts are not used, dogs and rats tolerate it well. It stabilizes the mediastinum and reduces greatly the amount of fibrinous exudate, and at the same time it does not interfere with repair. If infection is present the gelatin is rapidly liquefied and does not aid the infective process. This experimental work suggests that gelatin foam will have a valuable place in thoracic surgery.

Calcium alginate gauze has been shown to be a useful haemostatic in liver wounds in cats,⁶ and it has the merit that it can be sterilized by autoclaving. It appears to be well tolerated in the tissues, and no untoward reactions were observed. There can be little doubt that the use of these and other absorbable haemostatics will increase, especially for arresting troublesome haemorrhage.

MEDICO-SOCIAL WORK IN V.D. CLINICS

Now that gonorrhoea and syphilis are so amenable to treatment, at all events in their early stages, more social and epidemiological studies are being undertaken with the object of finding out how the venereal diseases can be completely eliminated. Before the recent war almoners and social workers were employed in only a few of the larger V.D. clinics, and most stress was laid on treatment as a means of reducing the incidence of V.D. During the war contact tracing became an accepted practice, especially after some highly trained American nurses showed what it could accomplish, and consequently many more patients attended the clinics. All patients must be impressed with the necessity for continuing treatment, and defaulters must be followed up. There is, however, much more in the V.D. problem than this. Why are people promiscuous? Where are they promiscuous? Where do the uninfected meet the infected? Why do they not report for examination and treatment? Why do they default? Macfarlane¹ has recently given answers to these and other questions in a report on the results achieved by a medico-social unit set up in connexion with the V.D. department at the Newcastle General Hospital. The unit consisted of an almoner with assistants, clerical staff, and three full-time and three part-time health visitors. An analysis of the records of 1,000 patients attending the department revealed the following facts: 82% received some assistance from the unit; 1,560 contacts were brought to examination, and of these 70% were suffering from gonorrhoea or syphilis or both; 74% of the 1,000 patients were married; public houses were far the commonest meeting-places. Personal factors leading to promiscuity included unhappy homes, criminal tendencies, poor to moderate intelligence, irreligion, ill use of leisure, drab lives, drinking, and poor moral fibre. Long-term plans for the reduction of V.D. must take these causes of promiscuity into consideration.

Defaulters are common in all V.D. clinics, and in Newcastle they are written to and visited. Of 3,478 defaulting women, 2,032 reattended as a result of 6,344 letters and 5,195 visits, and 70% of male patients responded to one or two communications. These figures indicate the amount of labour involved. The main reasons for default include

¹ Jenkins, H. P., Janda, R., and Clarke, J., *Surgery*, 1946, 20, 124.

² Nicholls, A. R., *Ann. Surg.*, 1946, 124, 952.

³ Nicholls, H. M., Boyden, A. M., and Goodman, M. J., *W. J. Surg. Obstet. Gynec.*, 1943, 58, 441.

⁴ MacDonald, J. S. A., and Mathews, W. H., *Canad. med. Ass. J.*, 1948, 58, 118.

⁵ Strat, J. T., Clagett, O. T., and Grindlay, J. H., *Proc. Mayo Clin.*, 1947, 22, 54.

⁶ Paine, G., *Ann. Surg.*, 1947, 125, 102.

¹ *Publ. Hlth. Lond.*, 1948, 62, 4.

² *J. vener. Dis. Inform.*, 1948, 29, 296.

difficulty of leaving work, illness, domestic troubles, and irresponsibility: it is clear that an efficient medico-social unit can help patients to overcome some of these handicaps. Penicillin treatment is considered to have increased defaulting because it shortens the period during which signs and symptoms persist. Inadequately treated syphilitic patients are a danger to themselves and to the community, and Macfarlane thinks that when adequate treatment can be obtained without difficulty such patients should be compelled to complete their treatment.

There can be no doubt that education, particularly sex education, is likely to be the most effective single method of solving the V.D. problem. Stokes² considers that the object of sex education is "to place reason in control of emotion without emotion losing its colourful and revivifying vitality." In his opinion sex education should begin at an early age, and if the educators—parents, school-teachers, doctors, and clergymen—are themselves ill-equipped to give the necessary instruction they must be educated first. Since promiscuity is the most important cause of the venereal diseases, it seems unlikely that any method of control will eliminate them until people cease to be promiscuous.

VOLUNTARY SOCIETIES AND THE STATE

The place of a voluntary society in a democratic State is rather like that of a doctor in his practice—the better it does its work the more likely it is to find its occupation gone. Some voluntary associations are complaining that under the Health Act their work has been taken over by the Government and there is nothing left for them to do. They do not always appreciate the compliment the State has paid them, and they may be inclined to overlook that even in a nationalized service there are plenty of outlets for voluntary effort. The value of the personal touch in services which are likely to become more and more impersonal cannot be overestimated. As Lord Beveridge¹ has pointed out, a "good" society cannot be made without voluntary action for social advance, even in what he calls a "social service State."

The Earl of Cranbrook, a member of the Royal Commission on Population, was announced to speak on the report of that Commission at the annual meeting of the Family Planning Association on May 28, but, because of delay in the publication of the report, he gave instead an informative and amusing dissertation on the place of voluntary societies, of which, he said, he had learned a great deal while sitting on the Commission. He divided them into two overlapping groups—the propagandist and the functional. One of the earliest examples of the former was the society founded by Wilberforce to combat the slave trade. In the functional group the friendly societies were among the first. Lord Cranbrook admitted that sometimes the voluntary societies were the resort of fanatics—people in whose bonnets was such a buzzing that they could hear nothing else. But even fanatics, he said, had their purpose; by their countering influences they helped a man to keep in the middle of the road, avoiding both intolerance on the one hand and indifference on the other, and he said that if he had a son who was a research student he would counsel him to subscribe to an anti-vivisectionist society just to maintain his poise. He had recently visited Germany, where he was unable to find any voluntary societies, with the result that the sort of work which such societies did here, and pressure groups did in the United States, was done by the various political parties, so that everything became more and more a "party" matter. It is to be hoped that the tendency for local councils, which now

undertake so much of the work begun by voluntary agencies, to divide themselves into political groups will not have the same result.

Another advantage which Lord Cranbrook found in voluntary societies was that they gave earnest people an opportunity to put in "overtime" for the benefit of the community. Many local health authorities have tried as far as possible to give the old voluntary organizations a place in their schemes, both because the latter had the experience and also because the authorities could enlist "sweated" labour without any pricking of conscience. Many people were glad to continue voluntary service; it was not uncommon for volunteers to serve as drivers and attendants in ambulance services taken over by local authorities. Lord Cranbrook did not develop an idea which he left with his audience, that there might be a voluntary organization new to this country, which might incur as much odium as Wilberforce's and yet be as successful in getting its idea accepted—namely, a society which would endeavour to ensure that useful citizens did not grow into a useless elderly dotage.

CLIMATE AND RHEUMATISM

The effect of climate on the cause and development of rheumatic diseases has hitherto been judged mainly by popular impressions rather than scientific research, though some papers of interest based upon careful observation, especially on humidity, were published in the old *Journal of Balneology and Climatology*. A serious obstacle to research has always been the difficulty of finding observers and persons willing to be kept under strict experimental conditions for sufficient length of time. Recently, however, the subject has attracted attention in Sweden, and Edström and his colleagues¹ at the University of Lund have studied the effect of hot, dry climatic conditions on rheumatic patients over a period of six years. A hospital ward of two beds was equipped as a climatic laboratory with double walls and ceiling, so that temperature and humidity could be maintained at any desired level.

In this "laboratory" sixteen patients in a late stage of rheumatic fever and eighteen patients with rheumatoid arthritis have been treated, each of them for a period of about three months, during which they were not allowed to leave the ward for any purpose. The room was maintained at a temperature of 89.5° F. (32° C.) with a relative humidity of 35%; these conditions were found to be comfortable. The authors observed that the skin temperature of the extremities became higher and that peripheral vasoconstriction was changed to vasodilatation; the oxygen saturation of the blood rose from a level of 51% in a room at 68° F. (20° C.) to 82% in the special ward; the cardiac output of normal hearts was unchanged; and in most cases the calorie consumption and the basal metabolic rate were also unchanged. Cultures of the throat flora were taken in all cases, and β -haemolytic streptococci were present at the outset in eleven of the patients with rheumatic fever and thirteen of the patients with rheumatoid arthritis; in 22 of these patients the streptococci disappeared. This interesting observation supports the view that hot, dry climates may be of benefit in rheumatic diseases. The principal effects on the symptoms and signs of disease were lessening of peri-articular swelling, diminished pain and stiffness, larger appetite, and improved circulation. No tendency to recurrence after return to normal room temperatures was observed in any case. The results of this remarkable piece of clinical research are of value as a study in but cannot be of much assistance in the treatment of rheumatism in practice.

¹ *Voluntary Action—A Report on Methods of Social Advance*, 1948, London. See also leading article in the *British Medical Journal*, 1948, 2, 792.

MEDICAL SCHOOL IN JERUSALEM THE HEBREW UNIVERSITY'S NEW FACULTY

[FROM A CORRESPONDENT]

The Undergraduate Medical School of the Hebrew University of Jerusalem was formally opened by Sir Leon Simon, chairman of the Executive Council, on May 17, in the presence of the Prime Minister and other notabilities. The Hebrew University has had for many years full teaching faculties of science, arts, and agriculture, and before the war was planning a faculty of medicine.

A new hospital of some 300 beds was built on Mount Scopus together with laboratories for pathology, bacteriology, parasitology, and hormone and cancer research. Before teaching could be started it was necessary to enlarge the institutes of chemistry, physics, and biology, and to provide accommodation for departments of anatomy, physiology, and pharmacology. The war stopped progress along these lines and post-war disturbances slowed down the rebuilding programme.

At the end of the British Mandate and with the outbreak of Arab-Jewish fighting the university area was completely cut off from the Jewish part of Jerusalem and all work there came to a standstill. Fearing this development, the Jewish authorities had removed as much of the hospital and laboratory equipment as possible into the New City and had fitted up temporary accommodation. These makeshift hospitals cared for many thousands of sick and wounded in Jerusalem.

Among the volunteers who helped the Israeli Army during the fighting were medical students from many countries who had left their work at different stages in their curriculum and who, when the fighting ended, either could not or did not wish to return to their former medical schools. The Israeli Government and the University naturally felt that they were morally bound to assist these men to complete their training, and so a medical school has been opened in what must surely be unique circumstances. As the University still has no access to its own buildings all the teaching will have to take place in the present temporary quarters.

Ex-Service men who have passed their second M.B. examination are being admitted to clinical courses which will be adjusted to their special circumstances and will lead to a degree in medicine. Students who have done most of their preclinical work will be given revision courses, which will of necessity consist mainly of lecture work, and will proceed to a special second M.B. examination. Finally, new students are being accepted for the equivalent of a first M.B. course, which will extend over two years.

Return to Mount Scopus

It is hoped that during the coming months relations with Transjordan may improve sufficiently to enable the University to return to its own home on Mount Scopus, where normal teaching and research could be resumed. The medical school will be quite small, admitting about 50 students a year, and later may accept some dental students also. Buildings still to be erected will cost about £1,000,000, and several years may elapse before they are ready for use. The completed medical school will be well equipped on modern lines. The teachers are of high standing and extremely keen, and there is every reason to hope that the new school will become one of the leading institutions of its kind in the Middle-East.

The present prospects for the medical profession in Israel are not bright. There are more doctors in the country than are really needed. The chief medical insurance organization, the Workers Sick Fund, which employs a good many whole-time doctors to serve the needs of the workers in the chief trade unions, pays its doctors badly and works them hard. Private practice is rapidly dwindling, because all the new immigrants and all the men and women called up for National Service, and their families, are automatically made members of the Workers Sick Fund, and the minimum number of additional new doctors is then engaged by the Fund. There is talk of a National Health Service to be organized by the Israeli Government. Some account of this proposal was given in the *Journal* of May 7 (p. 817). Unfortunately the bargaining position of the doctors is extremely weak, and there is a grave danger that most of the

doctors in Israel may have their standard of living reduced below that of skilled craftsmen, taxi-drivers, or building labourers. It is to be hoped that the Israeli Government and the trade union organizations which so greatly influence government policy will appreciate that in the long run it is wise to maintain the status of medicine as a learned and honourable profession.

CONTROL OF TRYPANOSOMIASIS

INSECTICIDES AND ANTRYCIDE

The relation of the recently discovered "antrycide" to the problem of tsetse-fly disease was the subject of an address by Dr. D. G. Davey, one of the team responsible for the work on this drug, at a joint meeting of the Royal Empire and Royal African Societies on May 25.

On the value of insecticides in general in the control of tsetse-fly disease Dr. Davey expressed some scepticism. Both D.D.T. and gammexane killed the tsetse fly easily and quickly if they were brought into contact with it. Extermination was difficult enough even when small pockets of tsetse country were being treated, but in continuous stretches of bush extending for hundreds of miles it was well-nigh impossible. Work had therefore been directed to the discovery of a drug which could be given to domestic animals to kill any trypanosomes and to protect them from further infection.

The task of fashioning the drug—very much a matter of trial and error—was carried out by a team of biologists, synthetic chemists, and biochemists, assisted by hundreds of mice, with some rats and rabbits. Modern drugs, Dr. Davey pointed out, were "fine tools that only interfere, as it were, with the free life of the organisms that cause disease, rather than cudgels which bludgeon them out of existence."

The properties which a drug for this purpose must possess were: (1) the ability to cure animals infected with the disease, and, moreover, to cure them with a single dose, preferably given under the skin; (2) an action not confined to one species or organism; (3) a certain flexibility allowing a considerable margin of error in its use; and (4) prophylactic powers. He claimed that antrycide possessed these properties in greater measure than any other drug. With the co-operation of the Colonial Office and the Sudan Government, field trials of antrycide had been made in East Africa and the Sudan, and it had been shown that the curative powers of the drug were good, that its action extended not only to trypanosomes commonly found in cattle but also to those in horses and dogs, that it conferred on treated cattle a protection lasting several months, and that it was simple to use. Not sufficient was known about antrycide as yet to state its positive failings. Only further trials would show what contribution to the development of Africa it could make.

Resistant Strains

Dr. Davey went on to indicate some difficulties which he foresaw. These were not confined to antrycide alone. It was possible, for example, that as the use of the drug extended over the enormous territory of Africa strains of trypanosomes would be encountered which would behave differently from those treated already. Again, the misuse or abuse of antrycide might lead to the production of artificially resistant strains. Many of the people who would be employed in the administration of the drug would be lacking in a sense of responsibility, to say the least, and others might be frankly dishonest in measuring doses, and, should this happen, then sooner or later the trypanosomes would become trained to resist even full doses.

A third potential failing was bound up with this possibility of the development of resistant strains. When a drug was given to confer protection on an animal the protection did not last for ever; the drug was slowly eliminated, and eventually a time came when the amount present was insufficient to help to kill trypanosomes, yet this very small concentration of drug might yet be sufficient to influence future behaviour to the drug, so that the trypanosomes would be trained to resist higher concentrations.

At present there seemed to be two main ways of settling a tsetse area. The first was to try to persuade people to enter the area without animals; this was extremely difficult. The other way was to clear the area before the people entered, and this was very expensive. Now a third way would become possible. People might enter virgin tsetse country with their cattle protected by anticyde, and know that their animals would remain fit and healthy for from four to seven months. They could then be re-treated and a further period of protection obtained, and perhaps a third and a fourth, and during this period, covering two years or so, because of the presence of people the game would have receded and the reservoir of infection would have dwindled.

Dr. Davey said that he had been particularly impressed by an experiment done in Kenya. Just over a hundred miles from Nairobi, lying alongside the Mombasa-Nairobi road, was a heavily infested tsetse area. In it was a map point—it could hardly be called a place—called Kiboko. Cattle were put into Kiboko last October, some treated and some untreated. The first of the untreated cattle died five weeks after it entered the area; the last was dead within eleven weeks. One or more of the treated cattle started to look ill rather more than four months after their entry into the fly area; many of them still looked fit, and some of them were apparently free of infection after six months amongst the tsetse fly.

ALEXANDER PIGOTT WERNHER MEMORIAL TRUST FUND

In accordance with a scheme approved by the trustees, an allocation of £4,000 per annum has been made for the award of travelling fellowships or grants in furtherance of the objects of the Fund, which are defined as being "the prevention and cure of blindness and deafness in the United Kingdom and British Empire, and in particular research in connexion therewith by financing medical men and students within the Empire to study methods and practices in all countries of the world." These awards will be made primarily for research in ophthalmology and otology for periods of up to a year, but grants may also be given for short-term visits abroad to study new methods of investigation and treatment in these fields. These funds will be administered by the Medical Research Council, and applications should accordingly be addressed to the secretary of the Council, 38, Old Queen Street, Westminster, London, S.W.1.

Reports of Societies

PREGNANCY AND TUBERCULOSIS

A joint meeting of the Newcastle-upon-Tyne Obstetrical and Gynaecological Society and the North of England Tuberculosis Society was held on March 25 in the Medical School, King's College, Newcastle-upon-Tyne.

Professor E. FARQUHAR MURRAY, president of the Obstetrical Society, was in the chair. He said that, while no one would dispute the inadvisability of a tuberculous mother undergoing the strain of lactation, the effect of pregnancy on the tuberculous process and particularly on its ultimate prognosis was still obscure. In many cases where termination had been advised there appeared to be doubt about the activity of the disease, and even when the disease was active doubt remained about whether termination of the pregnancy was really justifiable or not. His considered opinion was that those cases which were going to improve did so, and those doomed from the start went steadily downhill whether pregnant or not and in spite of treatment.

After stressing that young women with tuberculosis should be advised not to marry or to become pregnant for at least a year after a clinical cure of the tuberculosis, he asked what were the criteria of cure. He referred to the teaching that termination should be undertaken before the third month but not after that, and pointed out that this was illogical. Finally he said that a case might be made out for the induction of premature labour and forceps delivery in cases of respiratory embarrassment, particularly in cases with a recently induced artificial pneumothorax.

Analysis of Cases

Dr. ROWLANDS said that in his opinion pregnancy had no serious influence on the course of pulmonary tuberculosis, provided that the patient was treated appropriately both during the pregnancy and after the confinement. In the case of a seriously ill woman who became pregnant, termination of the pregnancy would not prevent a fatal termination of the disease; therefore the pregnancy should be allowed to go to term and the child, invariably quite healthy, should be allowed to survive.

The case records of 67 women who became pregnant while suffering from pulmonary tuberculosis had been examined and the results tabulated.

Total Cases (67)	Condition at time of Confinement	Following Confinement		Present Condition			
		Deterioration	No Deterioration	Disease Quiescent	Disease Still Active	Died	
Sputum positive (32)	Quiescent	16	1	15	15	1	—
	Active	16	12	4	4	7	5
Sputum negative (by direct smear only) (35)	Quiescent	32	4	28	30	2	—
	Active	3	3	—	2	1	—

The histories of the 16 sputum-positive active cases were discussed. They showed that when the disease was advanced and treatment inadequate—usually because of the refusal of the patient to undergo institutional treatment—deterioration took place. This happened with 12 of the patients, and 5 died. Four who had adequate treatment during and following the pregnancy continued to make satisfactory progress and eventually became quiescent. In the case of one woman, who was delivered of an illegitimate child, deterioration and eventual death could be ascribed partly to psychological changes. Another of the deaths did not take place until three years after the confinement; deterioration was not noticed until nearly two years after the baby was born and could not then be ascribed to the effects of pregnancy.

The great majority of the other 51 cases had had treatment of one sort or another before they became pregnant, with control of the disease in most cases. Where the disease was quiescent before pregnancy the risk of breakdown was slight, and if it did take place could be checked comparatively easily by proper rest and treatment. Only in cases of active open tuberculosis was deterioration to be expected, but not more so than could be looked for in a comparable stage of the disease in non-pregnant women.

Controlled Investigations

Dr. WOLLASTON pointed out that radiological examinations at antenatal clinics showed an incidence of tuberculosis no greater than in comparable groups. Out of 379 consecutive female admissions to sanatoria only 24 had been pregnant within the previous twelve months. Breakdown of a quiescent lesion during pregnancy could be expected in 7% to 10% of cases, but follow-up of female patients whose disease was quiescent on discharge from sanatoria revealed a relapse rate of 11.3%. In the active cases most writers considered that deterioration was accelerated by pregnancy, but Cohen's deterioration rate of 30% should be compared with the relapse rate of 34% for all female patients discharged from sanatoria. Steward and Simmond's controlled investigation showed no statistical difference in the deterioration rate between comparable series of pregnant and non-pregnant women, in both quiescent and active series of cases.

He considered that pregnancy and child-bearing played little part in the onset and relapse of pulmonary tuberculosis. The important factors were those governing the management of any case of tuberculosis: early and adequate treatment, environmental and economic factors, and the psychological reaction of the mother. Pregnant women should have access to sanatoria so that the lesion could be kept under control before labour. Collapse therapy should be employed wherever possible and without delay; it would prevent termination of pregnancy. The strains a

and worry, and lack of rest that played so large a part in causing relapse were aggravated by child-rearing, and the difficulties in bringing up a child must be taken into account when the question of termination was considered. No tuberculous patient should bring up a child without help in the home, especially at night, for the early months. The mother of the unwanted child or the mother who was frightened of pregnancy was far more likely to break down than the mother who was anxious to have a child; in the latter type of cases improvement might follow.

In conclusion Dr. Wollaston suggested that termination of pregnancy, because of the effects of pregnancy, was indicated only when there was a spreading toxic lesion uncontrollable by treatment; but he thought termination was often indicated for reasons indirectly connected with the pregnancy.

Bone and Joint Tuberculosis

Mr. KENNETH STANGER said there were four problems to be considered in cases of bone and joint tuberculosis associated with pregnancy: (1) Was there any evidence of pregnancy lowering the general resistance to tuberculosis and predisposing to the appearance of a skeletal lesion? (2) Whether pregnancy during the active phase of such a lesion had any aggravating effect. (3) If pregnancy occurred rapidly after the lesion had been considered quiescent, was there any increased risk of recrudescence, and, if so, what was a safe interval to allow before pregnancy? (4) What were the possible mechanical problems which might arise and affect pregnancy or delivery?

There were many difficulties in the study of this problem. He had had the opportunity of seeing and treating most of the cases from Newcastle, Gateshead, and Northumberland for 10 years, numbering in all over 400 cases, but the number in which the relationship of pregnancy to tuberculosis could be considered was narrowed to 18 cases.

These 18 cases were described. In this small series pregnancy did seem to diminish the resistance of the patient and predispose to an osseous lesion. Pregnancy occurring during the active phase of the disease had an aggravating effect, but with careful management no permanent ill effects had been noted. In those cases of pregnancy occurring within three years of the disease being recorded as quiescent, two had been reactivated and two were unaffected, one being a case of sacro-iliac tuberculosis delivered normally without ill effect. Finally, the mechanical problems which might arise, such as a large psoas abscess or a lumbar kyphosis, seemed to have no ill effects on the course of pregnancy.

In the discussion which followed, the question of the induction of pneumoperitoneum immediately following delivery, in order to ensure that the diaphragm did not descend too rapidly, was also raised. The general view was that this was an inadequate form of therapy and that other methods of ensuring elevation of the diaphragm—for example, phrenic crush—were more certain and therefore preferable.

TUBAL MOLE

At a meeting of the North of England Obstetrical and Gynaecological Society held in the Algernon Firth Pathological Department, Leeds, on May 20 the chair was taken by the president, Mr. S. B. HERD.

Professor ANDREW M. CLAYE described the case of a patient of 28 with fever and left-sided abdominal pain five days after delivery. Conservative treatment was instituted, but three days later, as severe pain with fever was still present, the abdomen was opened and a left tubal mole surrounded by matted gut was found and removed. The diagnosis was confirmed microscopically and the patient made a satisfactory recovery. She had had simultaneous intrauterine and extrauterine pregnancies, but she had not subsequently had a further pregnancy. Professor Claye also mentioned a case of ectopic gestation eight months after sterilization by ligating, crushing, and excising a portion of each tube, after which the stumps were buried in the broad ligament.

Dr. H. DOBERMAN described a case of tuberculous cervicitis. Mr. H. AGAR discussed the spontaneous rupture of the uterus during pregnancy in a primigravida, and Mr. D. W. CURRIE reviewed the treatment of stress incontinence.

Nova et Vetera

A SUCCESSFULLY OPERATED CASE OF MEMBRANOUS OCCLUSION OF THE ANUS IN THE SEVENTEENTH CENTURY

The Justices of Peace in the seventeenth century were not a judicial body only; they acted in many ways like the local government authorities of later times. Among their various functions was the relief of the poor. According to the Poor Law Act, 1601, the parishes had to supply the relief, in cash or in kind, and had to appoint the overseers. The general supervision, however, rested with the Justices of Peace, who had the right to levy rates on the parishes or, when necessary, in bigger areas such as Hundreds.

Among the applications to the Quarter Sessions at Manchester which are preserved in the Lancashire Record Office are a number asking for financial support. Some of the applicants based their claims on medical grounds. We have published two such applications in which it is stated that syphilis had been the cause of the distress (Sharpe France and Fessler, *Brit. J. vener. Dis.*, 1945, 21, 177). Not only are the applications, with their description of illness, interesting from the medical point of view, but they are important in that they give some information about the social background of medicine.

Below is the application* of a man from Chadderton (near Oldham), who, in asking for relief and complaining about the overseers, traces his poverty back to the expenses which he had when one of his children, born with a deformity, had been successfully operated on. It seems that it was a case of membranous occlusion of the anus. Aggravating his plight was the factor that his wife could not feed any of her four babies, and that it was necessary to use a "suckling-box." The decision of the Quarter Sessions is sometimes preserved in a marginal note on the application. Unfortunately in this instance there is not such a note, and we do not know whether the Justices of Peace were impressed by the facts reported in the application and granted help.

Midsummer, 1677.

"To the Right Worshipfull the Justices of peace and Quorum at the quarter sessions at Manchester these

"Humbly sheweth that your poore petitioner John Bexwick of Chaderton being a very poore man having a wife and fowre smalle children and his wife neare down lying and the second childe that wass borne wass without any Ishu at his fundament which put me to great charges for I was forced to sell my clothes and my wifs withall that I could mak any money of which wass the first beginning of my poverty for this strange distemper which my child was afflicted with made mee think there as no help which caused mee with the advice of my neybers to send for the minister to crissen my childe, which when he came he demanded of me the cause why I sent for him the childe being so livly and no syne of death which some neigbour women that were in the house declared the cause and did shoe him the greefe which when he saw he took the pains to write to Docter Potter which when he heard of it he sent his man with all hast possible to Docter Hartly of this towne and they were all three at my pore house that same night and taking advice one with another with my consent they tooke the thing in hand and by the diligent use of means and the blessing of god my child is brought to his naturall use of voyding his excrement and forthemore my wife hath not had anny suck at all for anny childe that shee hath had but been forced to norrish them up with suckling box which hath put me to great unconvenyanc as your Worships very well know, and I have beene at the overseers often times but they height me so that I get nothing but faire speeches for they very well know my nesityty for it is very well know among my neighbours that I have been laborrious and diligent in my place to maintaine my family if possibly I could and my wife being in this condition I must needs have som woman with her till god inable her againe and without some relief I cannot therefore I humbly desire your Worships to tak it in to consideration and grant me some lykly thing to maintaine my wife and small children which otherwise are lykly to perrish and your poore petitioner [sic] will pray for your Worships health and happiness."

R. SHARPE FRANCE, F.S.A., F.R.Hist.S.
A. FESSLER, M.R.C.S., L.R.C.P.

A. M. D. writes: Although Dr. Cookson's main life work was centred in the county of Durham he had many friends north of the Tweed. His association with Edinburgh began in his student days at the University and later was revived when he came as an examiner in pathology and also in forensic medicine to the Royal Colleges, in each of which he was a Fellow. Those who knew him in the early period remember him best as an all-round athlete; he got a triple blue—for hockey, cricket, and athletics—and he played hockey for Scotland. This open-air interest remained with him throughout his life, when these strenuous activities were replaced by an intense enthusiasm for angling and for the study of archaeological remains. He had an acute and inquiring mind, and in the midst of heavy routine duties, of hospital and forensic work, he found time to make many interesting observations, only a few of which he published.

In later years increasing work and responsibilities weighed heavily upon Cookson, and he longed for quiet and leisure to pursue the many problems he had encountered. His retirement in 1948 was prompted by this desire, which he had hoped to fulfil after an extended holiday in Canada, seeing both his sons. To one of his activity retirement was merely an occasion for further work, for which he was beginning to chafe when he was suddenly struck down. Cookson was a blend of great professional acumen and refreshing youthfulness. Even in the midst of heavy professional work he would interpolate some quiet joke. He was a delightful and amusing companion, full of quaint stories and pawky sayings, and he loved to act the part of his characters, to the great entertainment of his listeners. He will be greatly missed by those who knew him and who were privileged to be his friends.

Medico-Legal

DISINFECTANT IN MILK

Three Unusual Deaths

Three premature babies who died in Stobhill Hospital, Glasgow, on March 27 were accidentally fed from a bottle containing a mixture of breast milk and "dettol." A formal verdict in accordance with the medical evidence was returned at the inquiry held before Sheriff Wellwood Johnston on May 12.

A pupil midwife described how on the evening of March 26, after removing a bedpan from one ward, she placed on a corner table a bowl of "dettol" solution, which she intended to act as a deodorant. This was the first occasion on which she had done such a thing while at Stobhill Hospital. At the same time she removed a similar bowl which contained about 1 dr. (3.5 ml.) of expressed breast milk. This she took to the formula room on another floor.

Another pupil midwife collected two bowls containing breast milk from two other wards, the milk being taken from the mothers of premature babies. She collected at the same time from the corner table a similar bowl which was half full of a white solution she assumed to be breast milk. She was wearing a mask and was suffering from a cold.

A third pupil midwife, on the same evening at about 8 p.m., went into the formula room and saw that each of the bowls contained what she believed to be milk. In one of the bowls there was about half a pint (284 ml.) of fluid, but this was not unusual. She filled two bottles from that bowl and also poured some of the contents into two other bottles which had not sufficient breast milk. All four bottles were then placed in a saucepan for sterilizing.

A staff midwife who had previously washed the four bottles had not used any "dettol"; she also wore a mask. The nurse in charge of the nursery ward for premature babies made up the ten-o'clock feeds and the sister then tube-fed four babies. The nurse went on to feed another child who refused to suck. The sister meanwhile was having difficulty with another baby. She noticed that one of the tube-fed premature babies was distressed and coughing. The contents of one of the bottles was then found to have an odour of "dettol." The obstetrical registrar was notified.

Medical Evidence

Dr. John Henderson found that the fluid in the bottles looked like expressed breast milk but tasted and smelt of "dettol." He immediately treated the four babies by gastric lavage, nikethamide, and the administration of oxygen. Three of the babies died in the course of the morning of March 27. The first fatal case was a month-old baby, one of twins, delivered prematurely at the end of the seventh month. Another premature baby girl was aged only nine days. The third male baby was also a small premature child and only four days old.

He agreed that "dettol" was widely used as a disinfectant and that in some hospitals it might be used as a deodorant. Very similar bowls of "dettol" were used in the labour room. Steps had since been taken to prevent a repetition of this accident. A colouring agent had been added to all the supplies of "dettol" in the hospital dispensary. He thought that the mixture the babies were given would be roughly half breast milk and half a "dettol" solution of unknown strength.

Dr. Findlay James Ford said that it would be difficult to distinguish between a "dettol" solution and expressed milk, particularly when masks were worn. "Dettol" was used so constantly in the hospital that everybody became accustomed to it: "After you had been in the hospital for about ten minutes I don't think you would even notice the smell."

Professor Andrew Allison, who had performed the necropsies, presented his report. The first baby weighed 3 lb. 15 oz. (1.78 kg.) and had weighed 3 lb. (1.36 kg.) at birth. Deep lividity of the back and cyanosis of the lips were noted. There was partial atelectasis of both lungs. When the abdomen was opened a smell of "dettol" was observed; the stomach contained a small quantity of greenish grumous fluid. The gastric mucosa showed several small erosions. The appearances were those due to an irritant poison and were consistent with the ingestion of "dettol."

The second child weighed 4 lb. 5 oz. (1.95 kg.) and had weighed 4 lb. 8 oz. (2.04 kg.) at birth. There were the same external appearances. Both lungs showed patchy atelectasis, and again there was the odour of "dettol" when the abdominal cavity was opened. At the cardiac end of the stomach the lining membrane showed several small areas of congestion.

The male infant weighed 5 lb. 2½ oz. (2.34 kg.) at birth. The greater part of the middle lobe and about three-quarters of the lower lobe of the right lung were atelectatic. The left lung showed patches of atelectasis. There was considerable redness at the cardiac end of the stomach.

He agreed that all three were small premature infants. The phrase "irritant substance" might perhaps have been used instead of "irritant poison" in each report. Whisky would have been just as fatal to these children. He was not using the word "poison" within the meaning of the Poisons Act but as something that started a train of circumstances that led to death. Any irritant would readily have been fatal with such children. It was well known that "dettol" was a relatively non-toxic substance, but even so it was not a thing to be administered to newly born or premature children.

Finally Mr. Archibald Robert Jamieson stated that he had analysed a sample received from the hospital. This proved to contain 5% of "dettol," 5 to 7% milk, and the remainder water.

Medical Notes in Parliament

INDUSTRIAL HEALTH SERVICES

On June 1 Mr. ATTLEE made a statement on the relationship between the National Health Service and the various health services provided in industry which made a call on medical man-power. He said that, to secure that the country's limited medical resources were used to the best advantage and with regard to economy, it was essential that these services should be organized in such a way as to ensure there was no duplication or misdirection of effort. He had therefore appointed, to advise the Government on this matter, a committee whose members were drawn from the industrial field and various branches of the medical profession. Judge E. T. Dale had agreed to act as its chairman. He suggested to all branches of industry that development of industrial health services should

ON GUARD in tinea territory

Activity is on the increase in swimming pools, baths and other centres of communal activity where the organisms responsible for mycotic infections find their hosts. Key measures to efficient control of such infection are prompt treatment of the developing case and planned protection among likely contacts . . . and in both roles Mersagel is equally effective. Mersagel contains the powerful fungicide, phenylmercuric acetate, in a special water-soluble jelly base. It acts directly against the infecting fungi and maintains intimate contact with the seat of infection. Colourless and therefore clean to use, Mersagel does not normally irritate the skin and is suitable for the patient's personal application



In 1½ oz. tubes & 16 oz. jars

Phenylmercuric acetate (1:750) in a water-soluble jelly base

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX. BY ROYAL WARRANT 3434



FOREMOST *in* DIABETES

The name "diabetes" was first used in medicine by Aretæus of Cappadocia, nearly two thousand years ago. The brand name 'Wellcome,' applied to insulins, is today accepted as the hallmark of excellence throughout the world. Whichever type of insulin the patient needs, a 'Wellcome' preparation is available.

Insulin (UNMODIFIED OR SOLUBLE)
'WELLCOME' *Globin Insulin (WITH ZINC)*
Protamine Zinc Insulin

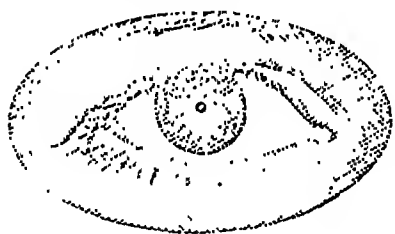


BURROUGHS WELLCOME & CO. (THE WELLCOME FOUNDATION, LTD.) LONDON

D.F.P.

DI-ISOPROPYL FLUOROPHOSPHONATE

For the treatment of
Glaucoma, Paralytic Ileus and
Myasthenia Gravis



A potent miotic and inhibitor
of cholinesterase

D.F.P. resembles physostigmine in promoting the accumulation of acetyl choline in the tissues. But the inhibition of cholinesterase by D.F.P. is irreversible and occurs at a much lower concentration. Clinical trials show that D.F.P. gives prolonged control of intraocular tension in glaucoma, and is often effective when other miotics fail. D.F.P. also increases the motility of both large and small intestines in paralytic ileus and may reduce the requirement of neostigmine in myasthenia gravis.

Available as:

D.F.P. EYE-DROPS-BOOTS. 0.1% solution in arachis oil. Bottles of 10 ml.

INJECTION OF D.F.P.-BOOTS. Sterile 0.1% solution in arachis oil. Box of 6 x 2 ml. ampoules.



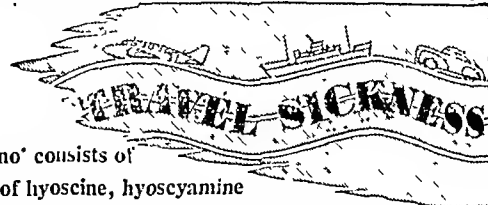
Literature and further information on request to Medical Dept.

BOOTS PURE DRUG COMPANY LIMITED
NOTTINGHAM ENGLAND

S.42

VASANO

for the prevention and treatment of



'Vasano' consists of
a mixture of hyoscine, hyosecyamine
and camphoric acid in balanced combination which affords
optimal central and peripheral action. Hyoscine, acknowledged
as one of the most effective single agents for the prevention
of travel sickness, exerts a sedative influence on the higher
centres and is a parasympathetic depressant, while
hyosecyamine acts peripherally upon the vagus.

VASANO

is a proven remedy for all forms of travel
sickness, by land, sea or air, and is also widely prescribed for the
treatment of Meniere's Disease.



ORIGINAL PACKINGS
TABLETS: 10 & 100
SUPPOSITORIES: 10

167/169 · GREAT PORTLAND STREET · LONDON · W.1
329/H

Painless INTRAMUSCULAR INJECTIONS

e.g. of PENICILLIN, LIVER EXTRACTS,
ARSEN-BENZOLS, BISMUTH, etc.

Many substances create some pain on Intramuscular
injection. Novutox injected at the same time will
prevent this pain.

Most substances are compatible with Novutox,
which is also non-destructible to penicillin during
the time that the latter is undergoing absorption.

Mixtures with Novutox should be made
immediately before use ONLY.

NOVUTOX

Self-Sterilising
Local Anaesthetic

Each c.c. of Novutox 2% contains 0.82 gm. ethocaine hcl.,
0.00002 gm. epinephrine and 0.00002 gm. capryl hydro-
cupreintoxin hcl. Other strengths of Novutox contain these
elements (with or without epinephrine) in varying proportions.

PHARMACEUTICAL MANUFACTURING CO. LTD.
THE LABORATORIES, CHELTENHAM, GLOS.

as far as possible be postponed until the committee's recommendations were available. He hoped that the committee would not take very long to survey the field.

Colonel STODDART-SCOTT asked whether Mr Attlee would extend the inquiry to include the medical service of the Ministry of Pensions and of the Ministry of Education.

Mr ATTLEE said that would delay a decision which was needed. He agreed that the industrial health services should be preserved. What was needed was to prevent overlapping.

The members of the committee are Judge E T Dale (chairman), Mr John T. Byrne, Electrical Trades Union, Dr T A Lloyd Davies, Chief Medical Officer, Boots Pure Drug Co., Mr R R Hyde, Director, Industrial Welfare Society, Dr Walter Jope, Mr K I Julian, Chairman, South-east Metropolitan Hospital Board, Dame Anne Loughlin, former Chairman, TUC, Mr J H Pheazey, Standard Telephones, Ltd., Dr L Roberts, Medical Officer of Health, Sheffield, Dr A T Rogers, and Sir Geoffrey Vickers, National Coal Board. The joint secretaries of the committee are Mr F W Beek, Ministry of Health, and Mr C H Sisson, Ministry of Labour and National Service.

Policy on Sight Testing

On June 2 Mr BEVAN stated that sight testing and the supply of spectacles should, as resources allowed, be carried out in hospitals and clinics provided as part of the hospital and specialist service in charge of ophthalmologists, with opticians playing in them their proper professional part. Government policy was unchanged in this regard.

Port Health Regulations

Answering Mr BOYD CARPENTER on May 26, Mr BEVAN said he had no power to prevent persons from landing because of infectious disease. The Port Health Regulations, 1933 and 1945, prescribed separately the conditions that, in general conformity with the relevant International Sanitary Convention, could be imposed against plague, cholera, yellow fever, typhus fever, and smallpox. Normally the greatest risk to this country was presented by smallpox. If a ship arrived that had, or had recently had, a case of smallpox on board, any person suffering from the disease was disembarked and isolated. Any person exposed to infection on board, unless in the opinion of the Port Medical Officer that person was sufficiently protected by recent vaccination or by a previous attack of smallpox, could be (a) offered vaccination and placed under surveillance for 14 days, or (b) placed under surveillance for 14 days without vaccination, or (c) offered vaccination and isolated until the result of the vaccination is known, and thereafter kept under surveillance for 14 days from the arrival of the ship, or (d) isolated for 14 days after the arrival of the ship.

Requirements (c) and (d) could not be imposed unless the Port Medical Officer considered that there was exceptionally serious risk of the introduction of smallpox into the country. Mr Bevan explained that "surveillance" was defined in the International Sanitary Convention to mean that the persons were not isolated but that the health authorities of the places to which they were going were notified of their coming. Port Health Regulations imposed on such persons obligations designed to secure that they could be effectively supervised. He added that he was considering whether any further powers were needed to check the introduction of infectious diseases from overseas.

Chronic Sick in Mental Hospitals

On May 26 Mr. YATES spoke of the inadequacy of existing facilities for the care of the chronic and aged sick in the city of Birmingham, and asked what steps Mr Bevan proposed to take to improve these facilities.

Mr BEVAN said, in reply, that the Regional Board had two groups of experts investigating the problem, and would take further action in the light of their reports. Meanwhile, unused beds were being brought into use wherever possible and arrangements made with the local health authority for home nursing.

Mr YATES said that in the past year more than 90 aged persons, chronically sick, had been admitted to mental hospitals, of whom about 17 had died within a month of admission.

Mr BEVAN said it should not be assumed that they died because they went to hospital. They were not in the mental hospital as such, but occupied the same physical accommodation as other people. During the war a great deal of the E.M.S. had been housed in separate parts of mental hospitals. He could not accept the statement that old people were certified as mental cases in order to be taken into hospital. That was

a gross and offensive charge against the doctors concerned. As for the statement that a proportion of the patients had died from heart failure, people had died from that cause for millions of years. Members should be ashamed of saying that the doctors and magistrates concerned with certification were certifying old people who were not "mental."

Asked later by Mr YATES to what extent the Birmingham mental hospitals were understaffed, Mr. BEVAN said that at Winslow Green Hospital the deficiency of female nursing staff was 28% and of male 27%. At Rubery Hill the deficiency was female staff 50%, male staff nil. Persistent efforts were being made to recruit staff through the Ministry of Labour and by local recruiting campaigns and advertisement.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

In Congregation on May 28 the following medical degrees were conferred:

M.D.—E B Davies O B Appleyard, F S Carter
M.B., B.Ch.—S G A. Forsyth (by proxy)

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

126 141 E Evans 142 E Fay-
H. Roun, 143 G Westbury,
J. McP Ashley, F. R. St. C
As
June E Barlett, R. W. A. C. Barton, K. L. Batten, D. F. Bedford, Janet B. Bell,
B. S. Bendeth, N. G. L. Bennett, Margaret V. Bickerton, S. H. Birchett, J. A. L.
Bonnell, E. F. Bowers, T. K. Brandreth, T. B. Brewin, J. G. Brice, J. A. C. Brown
R. MacL. Brown, Ena K. Bruck, J. M. Brudenell, R. Burtles, P. Burt, Maria J.
Cahn, June D. Cain, E. J. M. Campbell, K. J. M. Carruthers, R. B. Carruthers,
L. S. Carstairs, J. K. Carter, M. J. Cattoo, D. Charles, B. G. B. Christie, J.
Colquhoun, M. B. Comerford, Annette M. L. Constanter, P. B. Cook, G. A.
Combs, W. E. Cooper, R. E. Cotton, K. J. Covell, D. N. Cow, W. H. Craike,
I. B. Crawford, June D. Cross, Phyllis A. M. Crozier, Patricia Q. Currie, J. A. Daff,
A. J. Davies, Margaret K. Dooglas, Romola D. Dunsmore, R. N. Ebbing, D. A.
Ellertoo, I. L. Evans, I. B. T. Evans, J. H. Evans, H. B. F. Fairley, S. Fernando,
Doreen C. Finch, B. L. Finer, Margaret M. F. FitzPatrick, Barbara J. Fleming,
P. Flinn, M. O. Forster, A. W. H. Foxell, Yvette A. P. Franklin, P. N. Gai,
P. S. Gardner, L. K. Garston, E. Gellaly, D. D. Gellman, H. J. Grweli, R. W.
Glenn, J. E. S. Gould, S. H. Gould, N. D. Gower, A. A. Graham, J. M. Graham,
P. J. Grant, J. T. Groves, G. W. Hadfield, M. H. Handoll, R. Handy, M. J.
Harman, Josephine Harper, J. W. S. Harns, A. Herzheimer, N. L. Higgins,
J. F. Hindle, J. M. Hinton, J. J. B. Hobbs, A. C. S. Hobson, J. P. S. Hodges,
H. Hollis, Margaret A. Holroyde, Margaret C. Horner, P. Howard, A. J. C. Hyde,
Margaret O. Jago, D. T. R. James, O. James, J. L. Jarvis, D. G. Jenkins, R. L.
Jillett, W. Johnson, A. Jones, J. A. B. Jones, J. F. Jones, E. R. Jordan, D. W.
Kennard, Sylvia Kershaw, L. C. Kreeger, Ursula M. Kynoch, B. S. Lang, J. M.
Lancaster, M. Lauchlan, L. F. Levy, A. J. Lewis, M. J. Linnett, C. J. Lucas,
Elizabeth G. S. McDowall, A. E. McLaughlan, A. K. Meant, A. R. C. Margetts,
Joan Marshall, M. D. Mehta, G. H. C. Melrose, A. H. Mendoza, G. G. Meynell,
L. Michaels, D. D. Miller, Margaret R. Miller, O. T. L. Morgan, D. D. B. Morris,
V. C. Morris, M. R. Murley, C. H. Neaves, G. F. Newbold, R. G. Nicholson,
K. C. Nymann, P. O. Oliver, K. I. Padgett, W. K. Pallister, M. C. Peterzide, A. H.
Phillips, N. H. Porter, Betty E. Powe, F. J. Powell, D. L. Pryer, Colette L. Raulin,
P. A. Reed, H. H. Richards, A. E. Richardson, P. Roberts, Margaret Rogers,
F. C. Rose, I. P. Ross, S. S. Rowell, Marian W. Ruscoe, J. L. Russell, A. J.
Salmon, K. M. Saunders, P. D. Saville, Muriel J. Scudamore, G. T. Smedley,
D. W. Smith, R. W. Smithells, G. J. Sophian, M. H. Southall, Jean P. Spalding,
G. C. Squires, E. J. Stafford, H. B. Stafford Kemp, Lorna C. Stanfield, H.
Sterndale, J. A. B. Stewart, A. G. I. Stockley, D. Subington, M. H. Syme,
Patricia C. Tatham, A. W. Taylor, B. Taylor, Brenda A. Taylor, G. B. Taylor,
J. B. Taylor, E. T. Thomas, K. D. W. Thomas, R. G. Thomas, J. M. Timmas,
D. O. Topp, Rita D. C. Tozer, J. C. L. Wade, C. S. Ward, Catherine A. Warrick,
J. A. G. Watson, J. R. Watson, M. A. Weller, J. H. McN White, W. Whittingham,
D. R. C. Wilcox, J. D. Williams, J. L. Williams, Molly T. Williams, F. Wilson,
Josephine P. Winter, W. J. Wright, F. R. H. Wrigley

¹ With honours. ² Distinguished in hygiene and forensic medicine. ³ Distinguished in medicine. ⁴ Distinguished in applied pharmacology and therapeutics. ⁵ Distinguished in surgery. ⁶ Distinguished in obstetrics and gynaecology.

The Services

The Emperor of Ethiopia has conferred the Haile Selassie I Military Medal with one Palm upon Lieutenant-Colonel (Temporary) C B Drew, MBE, R.A.M.C., in recognition of distinguished services in the cause of the Allies.

The Socialist Medical Association has proposed a syllabus for a two year basic training in nursing. The emphasis is on practical training rather than on teaching the nurse theoretical knowledge which she may never need to use. Dr Hugh Gainsborough points out in a foreword that "a nurse does not need to memorize the names of pancreatic enzymes in order to care for a patient suffering from carcinoma of the pancreas." He also advocates postgraduate education for ward sisters.

No. 20

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended May 21.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	34	6	22	—	1	48	5	16	1	—
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	92	10	27	3	5	168	24	45	10	1
Deaths	—	—	—	—	—	2	—	—	—	—
Dysentery	55	5	19	1	1	118	32	40	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Eocephalitis lethargica, acute	—	—	2	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	27	3	5	—	—	24	10	4
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	41	—	—	—	—	19	—
Deaths	12	1	3	3	—	39	2	17	4	2
Measles*	8,478	1105	480	194	183	11,677	994	251	149	77
Deaths†	—	—	—	—	—	—	—	2	1	—
Ophthalmia neonatorum	47	1	3	1	—	57	5	16	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	8	—	1(B)	—	—	8	—	2(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenza	441	24	7	6	10	628	34	5	2	5
Deaths (from influenza)‡	19	2	2	2	—	5	—	1	—	1
Pneumonia, primary	164	29	197	34	9	144	19	201	46	12
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-encephalitis, acute	1	—	—	—	—	2	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomylitis, acute	11	1	3	1	1	20	2	2	3	—
Deaths§	—	—	—	—	—	—	—	—	—	—
Puerperal fever	—	—	9	—	—	—	—	8	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| .. ..	86	10	7	3	1	105	8	20	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,108	70	137	56	31	1,354	105	256	37	26
Deaths†	—	—	—	—	—	—	—	—	—	—
Smallpox	3	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	4	1	—	2	—	6	1	—	1	1
Deaths	—	—	—	—	—	1	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough*	2,824	155	201	159	71	2,680	228	44	101	14
Deaths	12	1	—	2	—	7	—	—	1	—
Deaths (0-1 year)	264	36	28	18	6	250	35	67	21	12
Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding still-births)	4,491	686	533	185	129	4,087	688	568	165	102
Annual death rate (per 1,000 persons living)	—	—	10.7	11.5	—	—	—	11.5	10.3	—
Live births	8,295	1355	1058	430	251	7,958	1318	1088	465	259
Annual rate per 1,000 persons living	—	—	21.2	26.6	—	—	—	22.0	29.1	—
Still-births	191	24	25	—	—	196	24	27	—	—
Rate per 1,000 total births (including still-births)	—	—	23	—	—	—	—	4	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In England and Wales there was an increase in the notifications of scarlet fever 115, measles 115, and acute pneumonia 35. There was a decrease in the incidence of whooping-cough 82 and dysentery 22.

A small rise in the incidence of scarlet fever occurred in most areas, and there were no large changes in local trends. The increased incidence of measles was mainly contributed by the south midland counties; the largest rises were Middlesex 101 and Nottinghamshire 80, and the largest decrease was in Yorkshire West Riding 51.

There were decreases in the notifications of whooping-cough in Warwickshire 48 and Yorkshire West Riding 43.

There was a decrease of 6 in the notifications of diphtheria in London and an increase of 5 in Lancashire and in Durham.

Of the 55 cases of dysentery 23 were notified in Lancashire (Oldham C.B. 15 and Liverpool C.B. 6). Three cases of small-pox were notified from Cornwall, Liskeard R.D.

In Scotland there was an increase in the notifications of measles 36 and of acute primary pneumonia 32. There were decreases in the notifications of scarlet fever 40 and dysentery 16. In Glasgow a rise of 21 in the notifications of acute primary pneumonia was recorded, and in this city 14 of the 19 cases of dysentery were notified.

In Eire notifications of whooping-cough increased by 30, while a decline was reported in the incidence of primary pneumonia 12 and measles 19.

In Northern Ireland there were decreases in the notifications of measles 19 and whooping-cough 11.

Week Ending May 28

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,233, whooping-cough 2,611, diphtheria 100, measles 9,583, acute pneumonia 485, cerebrospinal fever 39, acute poliomyelitis 19, dysentery 85, paratyphoid 8, and typhoid 4.

Medical News

Locum Register for Tuberculosis Work

The National Association for the Prevention of Tuberculosis has set up a Locum Register where names will be kept of doctors looking for temporary positions in clinics and sanatoria, together with a brief note of their medical qualifications. Those who want locum work of this kind are asked to write to the N.A.P.T. Locum Register, Tavistock House North, London, W.C.1, giving the necessary details and, if possible, a telephone number.

Waiting-list for Mental Defectives

The North-East Metropolitan Regional Hospital Board reports that there is a serious shortage of hospital accommodation for mentally defective patients. In that region there is a waiting-list of over 400; at the present rate of admission to the existing accommodation those at the bottom of the list are unlikely to be admitted in less than 8 to 10 years. The mental health committee of the board has recommended the board to obtain permission from the Minister of Health to start erecting temporary accommodation immediately for at least 200 patients. There is also a long-term project for building more permanent accommodation.

Special Diets for Invalids

Doctors who have not received a copy of the Ministry of Food's memorandum Med. 2 (Revised 1948), which describes the arrangements for granting extra rations and priority allowances of food to invalids and people needing special diets, may obtain it from the local food office.

Pharmaceutical Society

Mr. H. Clement Shaw, of T. C. Cornwell Ltd., has been re-elected president of the Pharmaceutical Society of Great Britain for twelve months. Mr. J. F. McNeal and Mr. W. Spencer Howells have been re-elected vice-president and treasurer respectively.

Croydon Executive Council Chairman

Dr. S. A. Forbes has been appointed chairman of the Croydon Executive Council, and has therefore resigned his chairmanship of the Croydon Local Medical Committee. The new chairman of the committee is Dr. R. N. Deane, and Dr. H. H. A. Elder is vice-chairman.

Public Health Salaries

The salary offered for the post of assistant medical officer advertised by Merthyr Tydfil in this issue of the *Journal* conforms to the scale recommended by the B.M.A. It is the first to appear since the ban was imposed on advertisements not in conformity with that scale, and which continues until the local authorities have indicated that they will enter into negotiations on new scales.

Hospital Cots

Referring to the case of a baby that died from a dislocated neck after squeezing his head through the bars of a hospital cot, the Minister of Health has asked hospital boards and committees to take steps to prevent a similar occurrence in their hospitals, such as lashing two-inch twine netting to the bars of cots. Meanwhile new cots should not be purchased unless the maximum space between bars is $3\frac{1}{2}$ ins. and the minimum space 3 ins.

Visited Sweden

Professor Alan Moncrieff, Director of the Institute of Child Health (University of London), has recently visited Sweden at the invitation of the medical faculties to lecture in Stockholm, Uppsala, and Lund.

For Cancer Research

The British Empire Cancer Campaign has granted £1,865 to Oxford University to be used for cancer research in the Dyson Perrins Laboratory.

British Medical Graduates in the U.S.A.

The American Alumni of British Medical Schools, formed in 1940, has recently been incorporated under the laws of the State of New York. Its functions are to serve the interests of graduates of British schools of medicine. Doctors who are graduates of schools within the British Commonwealth of Nations, including the Irish Free State, and who wish to join this organization should communicate with Dr. Theodore Meltzer, secretary, 123 East 37th Street, New York City, 16.

Rest for Nurses

The following "rest-break houses" for nurses and midwives have been opened under the management of the Council for the Provision of Rest-break Houses for Nurses and Midwives (106, St. Clement's House, London, E.C.4): Barton House Hotel, Barton, New Milton, Hants (accommodation for 48); Drygrange Hotel, Melrose, Roxburgh, Scotland (accommodation for 28, to be increased to 55); Peveril House, Buxton, Derbyshire (accommodation for 27). Applications for accommodation should be made direct to the wardens of the houses. These houses are intended to provide a rest for tired nurses and midwives whose health might break down; they are not for convalescents or holiday-makers. Sick leave should be granted with the appropriate pay when a nurse or midwife stays at a rest-break house, but those using the houses will not normally be eligible for sickness benefit under the National Insurance scheme.

R.S.M. Photographic Unit

The photographic unit of the Royal Society of Medicine was founded in December, 1945, with the aid of a generous grant from the Rockefeller Foundation. The short-term policy of the unit was to assist in the rehabilitation of medical libraries which had been damaged owing to the war. It has supplied, with the agreement of the publishers concerned, whole volumes or issues of out-of-print medical periodicals on microfilm. The unit can now serve other organizations, as well as Fellows of the Society, on a basis of non-profit-making payment. It can do photographic work other than microfilming, such as the making of a film strip, lantern slides of all sizes, direct positive prints from x-ray negatives whether in the form of slides, prints, or microfilm, enlargements of clinical photographs, and the making of colour transparencies on 35-mm. film. In addition clinical photography of patients and specimens can be undertaken.

Shortage of Doctors in U.S. Forces

The United States armed Forces estimate that by July 31, 1949, they will face a shortage of 1,600 doctors and 1,160 dentists. By December, 1949, the deficiency is expected to be 2,200 doctors and 1,400 dentists. The Secretary of Defence, Mr. James Forrestal, has therefore opened a national campaign to obtain volunteers from among the younger doctors and dentists who were educated at Government expense or who were deferred from military service because of their status as medical or dental students. Of approximately 18,000 doctors who were given Government grants while students, only some 10,000 served with the Forces; several thousand more men were deferred in order to continue their education. Volunteers will be expected to serve for at least twelve months, and will receive \$100 per month in addition to prescribed pay and allowances. As far as possible volunteers will be employed in posts for which their abilities suit them.

Ambulance Radio

The first ambulances in the United Kingdom to be fitted with radio for emergency calls and general control are being used in Guernsey. Radio apparatus has been installed in five St. John ambulances on the island, and radio calls to ambulances near the spot enable seriously ill patients to be rushed to hospital or to a doctor in a matter of minutes. Each of the five ambulances is able to keep in touch with the others or with headquarters, and over 4,000 calls have been dealt with in the twelve months that the ambulances have been operating.

National League of Hospital Friends

Since the Health Service started, local Leagues of Hospital Friends or similar voluntary organizations bearing other names have been formed with the purpose of maintaining personal interest in hospitals and their patients. The organizations have now formed the National League of Hospital Friends to provide a centre through which they can exchange information and advice. Individuals as well as local leagues may join the National League. Lord Luke is president, Lady Monckton honorary treasurer, Mr. J. P. Wettenhall chairman, and Mr. R. F. Millard acting honorary secretary. A survey recently made by the British Hospitals Association shows that some 560 hospitals have the interest and support of 175 leagues.

Milk from Hospital Farms

Though the Milk and Dairies Regulations, 1926-43, do not apply to hospital dairy farms, the Minister of Health considers that the hygienic requirements prescribed in them should be complied with where possible. At present the State Veterinary Service will continue to carry out tuberculin testing and clinical examination of herds at hospital farms which up to July 5, 1948, were licensed for the production of tuberculin-tested milk, as well as the clinical examination of herds which were licensed for the production of accredited milk and of any herds not so licensed. Local authorities have been asked to take at least twelve samples of milk a year from each of the herds at hospital dairy farms for examination by the methylene-blue test. Boards of governors and hospital management committees should arrange for at least one sample to be taken every three months for biological examination for organisms of tuberculosis and for examinations for *Brucella abortus*. The services of the Ministry's milk inspectors are available on request.

Central Council for Health Education

At its quarterly meeting on April 28 the Central Council for Health Education approved a plan for holding a conference on the objects and methods of health education on Nov. 8 and 9. Dr. Robert Sutherland will spend September and October in the U.S.A. studying the methods of health education there under the auspices of the Rockefeller Foundation.

London Irish Golf

The winners of the competitions held by the London Irish Medical Golfing Society at Sunningdale on May 26 were: Embryo Cup, Dr. J. T. McCarthy; Nelligan Cup, Dr. W. Houston.

Wills

Dr. George James Irvine Linklater, formerly chief executive school medical officer for Edinburgh, left £1,367. Dr. Samuel Robert Hunter, of Dunmurry, Co. Antrim, left £35,896. Dr. Francis Henry Swindon Curd, who was responsible for much of the early work on paludrine and anticyde, left £709. Dr. Donald Hugh Cameron, of Sheffield, left £5,724. Dr. Norman John Boulton, of Kintbury, Berks, left £17,231.

COMING EVENTS

Birmingham Consultants' Meeting Cancelled

The general meeting of consultants in the Birmingham Region, announced to take place on June 11, has been cancelled.

Conference on Maternity and Child Welfare

The National Association for Maternity and Child Welfare will hold its annual conference at Friends House, Euston Road, London, N.W., on June 22, 23, and 24. The general theme of the conference will be "The Effects of Recent Social Legislation on Mothers and Children," which will be discussed in relation to health, education, and welfare. The Minister of Health will deliver an address at the close of the conference, which will be opened by Dr. Charles Hill. Other speakers will include Dr. E. K. Macdonald, Dr. Nora Wattie, Dr. Barbara Bailey, Mr. G. H. Sylvester, Mr. Douglas Houghton, M.P., and Dr. May Baird. Visitors will be welcome either to the whole conference or to single sessions. Full particulars can be obtained from the secretary of the association, 5, Tavistock Place, London, W.C.1.

Golf Competition

The annual competition for the North Manchester Medical Golf Cup will be held at Manchester Golf Club, Hopwood, near Middleton, on June 29. The cup is awarded to the player returning the best net score over eighteen holes. The entrance fee is 7s. 6d. Inquiries should be addressed to Dr. J. A. Strachan, 566, Broadway, Chadderton, Lancs, on or before June 25.

Addison Lecture

The third Addison Lecture will be delivered in the physiology theatre, Guy's Hospital Medical School, London Bridge, S.E., on Thursday, June 23, at 5 p.m., by Sir Henry Dale, O.M., F.R.S., on "Thomas Addison—Pioneer of Endocrinology." The chair will be taken by Sir Herbert Lightfoot Eason, and applications for tickets should be made to the Dean, Guy's Hospital Medical School, London, S.E.1, by Thursday, June 16.

International Congress of Biochemistry

The 1st International Congress of Biochemistry will be held at Cambridge on Aug. 19-25. Information may be obtained from the Honorary Organizer, Lieut-Col. F. J. Griffin, 56, Victoria Street, London, S.W.1. The Congress is in twelve sections: (1) Animal Nutrition and General Metabolism: Chairman, Sir Jack Drummond, F.R.S.; Secretary, Dr. L. J. Harris, Sc.D. (2) Microbiological Chemistry: Chairman, Dr. M. Stephenson, Sc.D., F.R.S.; Secretary, Dr. E. F. Gale, Sc.D. (3) Enzymes and Tissue Metabolism: Chairman, Professor R. A. Peters, F.R.S.; Secretary, Dr. D. M. Needham, Ph.D., F.R.S. (4) Proteins: Chairman, Dr. K. Bailey, Ph.D.; Secretary, Dr. R. R. Porter, Ph.D. (5) Clinical Biochemistry: Chairman, Professor E. J. King; Secretary, Dr. E. N. Allott. (6) Structure and Synthesis of Biologically Important Substances: Chairman, Professor A. R. Todd, F.R.S.; Secretary, Dr. B. Lythgoe, Ph.D. (7) Cytochemistry: Chairman, Professor J. N. Davidson; Secretary, Dr. Charity Weymouth, Ph.D. (8) Biological Pigments: Oxygen Carriers and Oxidizing Catalysts: Chairman, Professor D. Keilin, F.R.S.; Secretary, Dr. E. F. Hartree, Ph.D. (9) Hormones and Steroids: Chairman, Professor F. G. Young; Secretary, Dr. F. L. Warren, Ph.D. (10) Chemotherapy and Immunochemistry: Chairman, Sir Charles Harington, F.R.S.; Secretary, Dr. T. S. Work, Ph.D. (11) Plant Biochemistry: Chairman, Dr. C. S. Hanes, Ph.D., F.R.S.; Secretary, Professor T. A. Bennet-Clark. (12) Industrial Fermentations: Chairman, Mr. H. J. Bunker, M.A.; Secretary, Dr. P. W. Brian, Ph.D.

SOCIETIES AND LECTURES**Monday**

EDINBURGH UNIVERSITY.—At Physiology Lecture Theatre, University New Buildings, Teviot Place, Edinburgh, June 13, 5 p.m., "*The Microscope: Origin and Evolution*," by Dr. Douglas Guthrie.

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., June 13, 4.45 p.m., "*Selective Toxicity with Special Reference to Chemotherapy*," by Professor Adrien Albert.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—June 13, 8.30 p.m., Films: "*The History of the Cinema Film in Medicine*"; "*Angina Pectoris*"; and "*Removal of Foreign Bodies from the Eye*."

Tuesday

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., June 14, (1) 11 a.m., "*Gonorrhoea in the Female*," by Dr. W. N. Mascall; (2) 5 p.m., "*New Growths of the Bladder (Benign)*," by Mr. C. H. Mills.

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., June 14, 5.15 p.m., "*Muscular Contraction*," by Professor A. V. Hill.

Wednesday

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., June 15, (1) 11 a.m., "*Vulvo-vaginitis in Children*," by Dr. W. N. Mascall; (2) 5 p.m., "*New Growths of the Bladder (Malignant)*," by Mr. C. H. Mills.

NATIONAL HEART HOSPITAL: ROYAL SOCIETY OF MEDICINE.—At 1, Wimpole Street, W., June 15, 5 p.m., "*Withering*," St. Cyres Lecture by Professor K. D. Wilkinson.

PHYSICAL SOCIETY: COLOUR GROUP.—At Institute of Ophthalmology, Judd Street, London, W.C., June 15, 4 p.m., 46th Science Meeting, "*The History of Artists' Pigments*," by Dr. H. J. Plenderleith. Followed by discussion.

WEST LONDON HOSPITAL MEDICAL SCHOOL.—At Medical Society of London, 11, Chandos Street, W., June 15, 8.30 p.m., "*Surgical Treatment of Congenital Pulmonary Stenosis*," Second Alexander Simpson-Smith Memorial Lecture by Mr. R. C. Brock.

WEST LONDON HOSPITAL MEDICAL SCHOOL, St. Mary's Hospital Medical School, Paddington, W.—June 15, 5.30 p.m., "*Treatment of Brucella Infection*," by Dr. Leon Unger (Chicago).

Thursday

DREADNOUGHT SEAMEN'S HOSPITAL, Greenwich, London, S.E.—June 16, 3 p.m., demonstration by Mr. D. M. Cooper.

HARVEIAN SOCIETY OF LONDON.—At Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., June 16, 7.15 for 7.30 p.m., Buckston Browne-Gray Hill Annual Dinner.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., June 16, (1) 11 a.m., "*Systemic Gonorrhoea*," by Dr. A. H. Harkness; (2) 5 p.m., "*Congenital Defects of the Testicle and Epididymis*," by Mr. Harland Rees.

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., June 16, 4.45 p.m., "*Some Aspects of Nitrogen Metabolism in the Mammal*," by Dr. J. S. Bach.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 26, Portland Place, London, W.—June 16, 7.30 p.m., Annual general meeting, induction of new president; Professor H. E. Shortt, and presentation of Chalmers Gold Medal for 1949; film, "*Chagas' Disease*," shown by Dr. R. V. Talice (Montevideo).

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—June 16, 4.30 p.m., "*Neurology*," lecture-demonstration by Dr. A. Feiling.

Friday

BIOCHEMICAL SOCIETY.—At Department of Chemistry, The University, Nottingham, June 17, 2 p.m., 277th meeting.

MIDDLESEX COUNTY MEDICAL SOCIETY.—At Central Middlesex Hospital, Park Royal London, N.W., June 17, 3 p.m.

Saturday

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.—At Queen Mary's Hospital, Carshalton, Surrey, June 18, 3 p.m., clinical meeting.

APPOINTMENTS

LODER, R. E., M.B., B.Ch., D.A., Specialist Anaesthetist, Peterborough Area, East Anglian Regional Hospital Board.

SALFIELD, DEREK J., M.D., Assistant Psychiatrist, Crichton Royal Mental Hospital, Dumfries.

SCHROEDER, BERNARD, M.B., Ch.B., D.P.H., Assistant County Medical Officer, North Riding of Yorkshire County Council, Medical Officer of Health, Whitby Urban District and Whitby Rural District.

BIRTHS, MARRIAGES, AND DEATHS**BIRTHS**

Allen.—On May 23, 1949, in London, to Judy (née Collins), wife of Richard A. Allen, M.B., B.S., a son.

Jackson.—On June 5, 1949, at Oxford, to Barbara (née Bonsey), wife of Dr. C. R. S. Jackson, a son.

Keppich.—On May 31, 1949, at Bristol, to Enid, wife of Dr. Peter H. Keppich, a son—Mark Arnold.

Lauckner.—On May 23, 1949, at East London, South Africa, to Dr. Helena (née Taylor), wife of Dr. J. R. Lauckner, Lovedale, C.P., South Africa, a son.

Marlen.—On May 28, 1949, at Thorpe Coombe Hospital, to Joan, wife of Dr. E. A. W. Marlen, a daughter—Ange'a Isabel.

Messer.—On May 27, 1949, to Olive (née Dawson), wife of Basil Messer, M.B., B.S., 1, Undercliffe Street, Bradford, a son.

Rayner.—On May 28, 1949, at Queen Elizabeth Hospital, Birmingham, to Dr. Mary M. Rayner (née Dale) and Captain C. Stephen Rayner, Royal Signals, a daughter—Juliet Marie, a sister for Christopher.

Roberts.—On May 25, 1949, at St. Chad's Hospital, Birmingham, to Margaret (née Holloway), wife of Dr. Keith D. Roberts, a daughter—Diane Marguerite Thornley.

Thornley.—On June 1, 1949, at Manchester, to the wife of Mr. Roland Thornley, F.R.C.S.Ed., a son.

Whitehouse.—On May 26, 1949, at Queen Mary's Maternity Home, Hampstead, to Joan L. (née Tully), wife of Dr. Dennis Whitehouse, a son—Peter John.

DEATHS

Fletcher.—On May 28, 1949, at "Beechwood," Workington, Isaac Fletcher, M.B., C.M., D.P.H., J.P., in his 86th year.

Fox.—On June 1, 1949, Campbell Tibury Fox, M.R.C.S., L.R.C.P., of "St. Margaret's," The Avenue, Littlestone, Kent, and late of Ashford, Kent, aged 77.

Frost.—On June 1, 1949, at 3, Parkside Road, Reading, Augustine Thomas Frost, O.B.E., M.B., B.Ch., Lieutenant-Colonel, R.A.M.C. (ret.), aged 71.

Grayling.—On May 31, 1949, Arthur Grayling, M.B., late of Forest Hill, London, S.E., aged 91 years.

Henderson.—On June 1, 1949, John Henderson, M.D., F.R.F.P.S., Professor of Medicine in St. Mungo's College, Glasgow, from 1913 to 1947, of 6, Newton Place, Glasgow.

McAllen.—On May 31, 1949, at "The Thatched Cottage," Llanwrn, Monmouthshire, Thomas John McAllen, M.B., B.Ch., of Pontypool.

MacLeod.—On April 30, 1949, at Sydney, New South Wales, Charles Gordon MacLeod, M.D., F.R.A.C.S.

Rosenbloom.—Suddenly, on June 1, 1949, at Western Infirmary, Glasgow, Alfred Rosenbloom, M.B., Ch.B., D.T.M., Colonel, I.M.S. (ret.), aged 46, beloved husband of Leah Rosenbloom, M.B., Ch.B.

Shannon.—On May 28, 1949, at 253, Green Lanes, Palmer's Green, London, N., Frederick Shannon, M.B., Ch.B., aged 64.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Bee-stings

Q.—What are the current views on bee-stings? What is known about the nature of the venom; single and multiple stings; anaphylaxis or hypersensitivity, and any other possible complications? What is the best treatment?

A.—The poison-gland system of a bee consists of a small alkaline and a larger acid gland. Bee venom is a complex substance which, it is suggested, contains histamine and a combination of lecithin with basic radicals somewhat resembling apotaxins and cantharidin. It does not contain formic acid. A single sting as a rule causes only a slight local reaction, but if it occurs on the tongue or fauces it may cause oedema of the glottis. Some people, usually as the result of repeated stinging, become allergic to the venom, and this will result in a large painful swelling at the site of the sting with or without a generalized urticaria; in highly sensitive subjects generalized angioneurotic oedema, severe dyspnoea, coma, and death may occur. Death may also occur in non-sensitized subjects from extensive multiple stinging. The sting should be gently removed. Local therapy consists in the application of alkali soap, weak ammonia, sodium bicarbonate solution, methylene blue, alcohol, calamine, or an antihistamine or analgesic ointment. For the milder urticarial reactions an antihistamine drug or ephedrine, or a combination of the two, should be given. For the severe allergic reactions, and for the collapse due to multiple stinging, 5 to 10 minims (0.3 to 0.6 ml.) of adrenaline should be injected and repeated as necessary.

Oestrogens at the Menopause

Q.—Will hormone therapy preserve the secondary sexual characteristics of women at and after the menopause and prevent loss of youthful form, atrophy of the breasts, etc.? Are there any dangers (for example, of carcinogenesis) in prolonged administration of sex hormones?

A.—Oestrogens preserve secondary sex characters to a limited extent in women. They prevent atrophy of the breasts and of the tissues of the genital tract, and in some women at least they increase libido, which tends to wane with advancing years. Their effect on the texture of skin and hair and on bodily figure is, however, less definite, and they do not significantly modify the general process of ageing. The danger of prolonged administration of oestrogens is that they stimulate the uterus to undergo hyperplasia and cause irregular and heavy uterine haemorrhage; they may also stimulate the epithelium of the breasts to unnatural activity. Although oestrogens have been shown to be carcinogenic under certain circumstances in animals, they have never been proved to cause cancer in the human being, and the risk of this was probably exaggerated in the past. They are nevertheless powerful stimulants of the epithelium of the female genital tract, and their prolonged administration might prove an activating factor in the presence of a precancerous lesion or of an inherent susceptibility to malignant disease.

Loss of Ultra-violet Transparency

Q.—Can you provide me with any data concerning the rate of loss of transparency to ultra-violet rays in the quartz of a mercury arc lamp?

A.—The conversion of quartz into its isomers tridymite and cristobalite, which are opaque to ultra-violet irradiation, starts as soon as the burner is put into use. This deterioration occurs most rapidly during the first 500 hours of use, and then takes place more slowly. In the older models after 1,000 hours of

use the intensity of radiation would be about one-half of the original, but in the latest electronic-discharge types only about 20% of the irradiation would be lost in this time. Most burners are fitted with a rheostat by which the intensity of the arc can be increased as the burner grows old, thus maintaining its output. The questioner is referred to Morris's *Medical Electricity* (Churchill, 1946, p. 262) and Kovacs's *Electrotherapy and Light Therapy* (Lea and Febiger, Philadelphia, 1945, p. 352).

Salt Intake and Peptic Ulcer

Q.—Has any research been done on the excessive intake of sodium chloride as a factor in the causation of peptic ulcer? I recently come across four cases of this complaint in which the patients were said to have an undue partiality for salt.

A.—From time to time work has been done on the possible relationship between salt intake and peptic ulcer. Apart from the irritant effect of large doses of salt frequently administered—a factor which seldom arises—the conclusion is that sodium chloride plays no part in the aetiology of peptic ulcer.

Extrasystoles

Q.—Are attacks of extrasystoles always due to sympathetic overaction? I have in mind a man of 42 who suffers from attacks of continued extrasystoles, sometimes passing on to auricular fibrillation. There is no history of rheumatism or venereal disease, and the heart is normal between attacks. These occur about twice weekly and last from two to three hours; they are induced by changes of temperature and also by pain, and are aggravated by cigarette-smoking.

A.—The description given is typical of frequent prolonged bouts of extrasystoles in a person with an otherwise normal cardiovascular system. In some such cases the only means of differentiating these attacks from auricular fibrillation is by an electrocardiogram taken during the phase of irregularity. These bouts are usually accentuated by infection, tobacco-smoking, fatigue, pain, etc. It is not necessarily due to overaction of the sympathetic nervous system, but is a functional condition of the myocardium, and, indeed, attacks in some people may be induced by overaction of the vagus. The prognosis is good and such patients may live to a ripe old age.

The following treatment may be tried in varying combinations: quinine 3 gr. (0.2 g.) three times a day, alone or combined with strychnine; potassium salts, such as potassium acetate 30 to 60 gr. (2 to 4 g.) four times a day, and potassium bromide 10 gr. (0.65 g.) three times a day; phenobarbitone $\frac{1}{2}$ gr. (32 mg.) three times a day. The patient should be reassured and told that the attacks are of no importance and that they may be ignored. If, however, attacks of this kind have been proved by electrocardiography to be due to auricular fibrillation the condition will probably become established unless preventable by quinine, and the outlook is correspondingly more serious. In this case digitalis (which may increase the incidence of extrasystoles) will have to be used for persistent fibrillation.

Precipitating or Delaying Menstruation

Q.—Can anything be done with safety to (a) precipitate, or (b) delay the onset of, a menstrual period? A woman who is to be married on June 12 had her last period on May 19; her cycle is irregular, with intervals of about three weeks.

A.—Injection of neostigmine, 1 mg. daily on three successive days, sometimes precipitates the onset of a period which is overdue, but it is not likely to bring one on prematurely. In the case in question the patient is already in the luteal phase of the cycle, so that the best hope of deferring menstruation is to give daily intramuscular injections of 10 mg. of progesterone, starting not less than three days before the expected onset of the next period—that is, about June 3. The injections will have to be continued so long as postponement of menstruation is desired, and the flow can be expected within 48 hours of suspension of treatment. Oral therapy with ethisterone is not usually powerful enough to defer a period, and, since continuation of injections is likely to be impracticable, there is much to be said for leaving well alone. This is particularly true in this case, because (c) if the patient's present cycle is a three-weekly one

the next period should begin about June 6 and should be finished, or nearly finished, by the time of the wedding; (b) the irregularity of menstruation makes it difficult to time any treatment designed to change the time of onset; (c) the excitement of marriage and preparation for it may well precipitate or postpone menstruation. Even if the dates of marriage and menstruation clash, it should be no great tragedy. Deferment of coitus for two or three days, when the initial emotional excitement of marriage has passed, may favour rather than hinder the early establishment of happy sexual relations.

Resistant Skin Condition

Q.—*Could you suggest diagnosis and treatment for an atrophic condition of the skin of the hands in a man aged 38? He is inclined to be over-conscientious in his work, which is of a sedentary nature, but has no definite neurotic traits. The skin is dry, cracked, and flaking, and the affection is limited to the back of the fingers and the web area between the fingers. The condition varies much in severity; exacerbations are heralded by the appearance of small white nodules deep in the surface of the skin. Two independent dermatologists have suggested a functional element, with no definite diagnosis, and prescribed phenobarbitone, but this has been ineffective.*

A.—The use of the term "atrophic" is probably inaccurate. It does not tally with the "white nodules"—by which is presumably meant the deep vesicles of pompholyx—or cracking and flaking of the webs between the fingers. It is unlikely that two dermatologists would suggest a functional disturbance for an affection that was atrophic. With such loose terminology it is difficult to suggest a diagnosis, but the condition is probably a constitutional eczema. The question of adjustment to environmental conditions at home and work may need further attention. Fractional doses of x rays and bandaging the fingers independently at night, with Lassar's paste as a local application, are suggested. Soap and water and unnecessary cleaning of the hands should be avoided, liquid paraffin being used for cleansing purposes. It is important to be certain that there are no contacts outside work which may be causing trouble, as gardening, photography, or other hobbies and occupations.

Coronary Occlusion and Local Heat Therapy

Q.—*A patient aged 50 had a coronary occlusion eleven months ago; he has recovered and is now back at office work. He suffers from an old lumbago and I would like to try infra-red rays—is there any contraindication?*

A.—If the patient is capable of a full day's work at his office his former coronary occlusion is no contraindication to infra-red ray treatment for his lumbago. His heart should be able to stand the increased circulation of blood induced by local application of heat to a small area, with the resulting vasodilatation and lowered peripheral resistance.

Sensitivity to Sulphonamides

Q.—*Is it possible to desensitize an individual who is hypersensitive to sulphonamides? A man aged 74 took prontosil for a cold in 1934; six months later he had prontosil again, but after taking two tablets in 48 hours swelling of the lips, tongue and soreness of the mouth developed. Six months later he tried again and with similar results. A fortnight ago, an incision of the gum for extraction of an unerupted tooth, a tablet of penicillin was inserted. Some degree of the same symptoms ensued, and it was found that 1 gr. (65 mg.) of sulphapyridine was combined with the penicillin. Can anything be done to enable him to take sulphonamide compounds?*

A.—Stomatitis and glossitis sometimes accompany the "drug fever" type of reaction to sulphonamide drugs. The occurrence of these symptoms as the sole evidence of hypersensitivity is uncommon, though it has been reported. It seems probable that glossitis of this type is not due to hypersensitivity in the narrow sense of the word; it has been suggested that it is related to an alteration in the bacterial flora of the mouth or to a conditioned vitamin deficiency. Desensitization to sulphonamides has been carried out, but the process is arduous for the patient and would certainly be unjustifiable at the age of 74 years. Re-sensitization must be made to penicillin when infections need control.

NOTES AND COMMENTS

Spread of Tuberculosis by Books.—Dr. R. HARDY (Kingston-upon-Hull) writes: Dr. T. Peirson (May 7, p. 832) is obviously dissatisfied with the answer given in "Any Questions?" (April 2, p. 601) to a correspondent's question on this subject. I want to refer him to the *Lancet* (1943, 1, 81), where editorial comment was made and a short review of the then available literature was given, both with reference to the tubercle bacillus in books. To recapitulate briefly, C. R. Smith (*Amer. Rev. Tuberc.*, 1942, 46, 549) specially studied the transmission of infection from books, papers, etc., and found that the bacillus was viable from 2 up to 15 weeks in the dark at room temperature, but only for a few days in room light. Printer's ink did not affect survival rates of the bacillus, which lived as long on printed as on plain paper. In paper made from wood pulp the pH value of 5-6 was below the optimum for cultivation of the tubercle bacillus; in other words the medium was too acid for growth and propagation. "Book quarantine"—storage of books for four weeks on a dry book-shelf—was advocated as being effective in the disinfection of naturally contaminated books. Smith's conclusion was that the risks in lending-libraries were not very great. McCartney (*Lancet*, 1925, 2, 212) had already expressed a similar view, regarding books as insignificant transmitters of infection relatively to other fomites. Well-worn books, especially when read by children or handled by infants, are potentially infective not only in regard to tubercle but to a variety of other infections. They should be (and invariably are) weeded out continually from public and other lending-libraries. The problem is less important by far as a public health problem than the potential transmission of infections from crockery, cutlery, glasses, etc., used communally in cafés and public houses, and should be viewed in that light. Greater risk of infection by tubercle (and "droplet" infection at that) may be incurred during a 3-hour cinema or theatre show on almost any winter evening than by perusal of the most dilapidated book from the library shelves. And in the case of books "terminal" disinfection of hands can at least be done by the more fastidious of bibliophiles.

Vaccine Lymph.—Dr. DAVID SACKS (London, W.9) writes: I was surprised to read (May 7, p. 818) of the methods of expulsion of vaccine lymph from capillary tubes. The methods suggested, both by the Ministry of Health and Dr. O. H. Bowen, seem to be rather cumbersome. My method consists of snapping off both ends of the capillary tube with a pair of scissors which have been passed through a flame, applying one open end to the patient's linear scratch and the other end to my lips. A slight expiration and presto! the lymph is expelled. I cannot see the point of using sterilized teats, hypodermic syringes, etc., for this very simple procedure. Is sterility desirable for the patient's or the physician's safety? My father has been practising this method for 30 or more years, and neither he nor I have had anything but excellent results. A complete vaccination, including the linear scratch, the lymph expulsion, and the application of a piece of strapping over the area takes two minutes by this method.

Absorption of Mercury.—Dr. MARIE C. STOPES (Dorking) writes: Concerning your reply to the question about the absorption of mercury by women using contraceptives containing it ("Any Questions?" May 14, p. 879), may I say that very many years ago when I first started my work I found that women were dangerously ill, some even died, because of using compounds of mercury as contraceptives? I therefore profoundly deplore the recent recurrence of a much advertised commercial product containing mercury, for, although it may not injure all women, it certainly injures some. Your last sentence, saying that the risk would be increased "in cases in which the remains of the contraceptive were not removed by douching," also grieves me, for douching after coitus is a deplorable habit with bad psychological as well as physiological results, and we find it best, after over 25 years' experience, to advise against all douching. It is never necessary if the right bland suppository is used.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Atitology, Westcent, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Britmedads, Westcent, London*. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra, Westcent, London*.

B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JUNE 11 1949

THE SECRETARY REPORTS

THE TOWN AND COUNTRY PLANNING ACT

After July 1, 1948, all development of land (unless specially exempted) will attract a development charge which will be assessed by and payable to the Central Land Board.

Development, for this purpose, includes building operations such as enlarging a house or the erection of a new house, and material change in the use of land or of buildings such as the use of a house as an office. In general, anyone who effects a change in any of these senses will need planning permission before proceeding, though certain minor operations and changes of use do not require permission. Information on whether planning permission is needed and forms of application, when required, may be obtained from the local council offices.

If development which requires planning permission is carried out without such permission, the new structure may be required to be pulled down or the change of use of land or building may have to be discontinued.

The amount of development charge payable is determined by the Central Land Board. This board has established regional offices throughout the country, the addresses of which can be obtained from the local council offices. Broadly, the development charge will be the difference between the value of the land or building for its existing use and its value with permission to carry out the development.

The general effect of the Act is to take away development value from the landowner and to provide compensation for those who under the scheme mentioned below are entitled to such compensation and who before June 30, 1949, submit claims for the loss of that development value. When all claims have been received and examined the global compensation sum of £300 million set aside by the Government will be the subject of a scheme of distribution which Parliament will be asked to approve. Payments from the fund will be made not later than June 30, 1953, in the form of negotiable Government stock. The claims for payment must be sent to the Central Land Board before June 30, 1949, on a special form—Form S.1—which may be obtained from the offices of any county, borough, urban, or rural district council. In the L.C.C. area the application form may be obtained from the County Hall, Westminster Bridge, London, S.E.1, or in the City of London from the Town Clerk's Office, 55-61, Moorgate, London, E.C.2.

No payment from the compensation fund can be made unless the development value is (a) more than £20 per acre and (b) more than one-tenth of the restricted value. The restricted value for this purpose is the market value of the interest in the land restricted to its existing use. The term "existing use" includes, among other things:

(a) the rebuilding, enlargement, improvement, or alteration of any building existing on July 1, 1948, so long as its size is not increased by more than 10%, or in the case of a house 1,750 cubic feet* if that be greater;

(b) the rebuilding, enlargement, improvement, or alteration (with similar permissible increase) of a building destroyed or demolished since Jan. 7, 1937;

(c) the use as two or more separate dwelling houses of any building used on July 1, 1948, as a single dwelling house;

(d) the change of use within certain classes of purpose (e.g., a grocer's shop to butcher's shop, a cinema to a theatre).

Exemptions

Certain changes of use are not regarded as development for the purposes of the Act where the new use is for a purpose of the same class as the existing use. One of the classes within

*This is the size of an average garage.

which such a change is exempt is prescribed by the Minister of Town and Country Planning as follows:

Class XVI.—Use (other than residentially) as a health centre, a school treatment centre, a clinic, a crèche, a day nursery or a dispensary, or use as a consulting-room or surgery unattached to the residence of the consultant or practitioner.

Other classes of interest to the profession are:

Class XV.—Use (other than for persons of unsound mind, mental defectives, or epileptic persons) as a convalescent home, a nursing-home, a sanatorium, or a hospital.

Class XVII.—Use as a hospital, home, or institution for persons of unsound mind, mental defectives, or epileptic persons.

It appears from this, for example, that the conversion to a health centre of a consulting-room or surgery unattached to a practitioner's residence would not be regarded as a material change of use incurring a development charge.

The Minister has expressed the opinion that the use by a professional man, whether a doctor or dentist, of one or two rooms in his private dwelling for the purpose of consultation with patients would not constitute a material change in the residential character of the existing use so long as the professional use remains ancillary to the main residential use, though the use of the same house wholly for professional purposes would be another matter.

While the use of one or two rooms in a doctor's house for surgery purposes does not constitute a change of use sufficiently material to attract a development charge, the conversion of a house into a nursing-home or guest-house may incur liability to a development charge.

Application for Compensation

Some owners who have no intention of doing anything to their property may regard it as unnecessary to apply for compensation. The view has been expressed that in such cases it would be wise to submit a claim if there is a potential development value. For example, a house situated in a main street may be worth double its value if converted into a shop.

The better view, perhaps, is that a medical practitioner who considers that his land (which includes the buildings on it) has a potentially higher value for use for a different purpose than it has for its existing use would be well advised to submit a claim for compensation before June 30, 1949.

To sum up, the State now owns the value of all development rights in land. A buyer of land who gets permission to develop will (subject to exceptions) have to pay a development charge to the State. It follows that he should not pay a development charge to the landowner as well as to the State by paying him more than the land is worth for its existing use. If the landowner has lost the development value of his land he may receive a compensation payment from the State. A person who buys land above existing use value and who fails to obtain planning permission for further development will be out of pocket on the deal. Most compulsory purchases—for example, by local authorities or others with statutory powers of compulsory acquisition—are, broadly speaking, to be at existing use value.

The provisions of the Act and the various regulations made under it are complicated, and many points of difficulty which will arise may later come before the courts for authoritative interpretation. In a summary within the limitation of this page it is only possible to deal with broad general principles. For the individual case, the best course for those who seek to claim compensation or who are in doubt about their position is to use the services of a qualified surveyor or other person professionally experienced in the valuation of land for the purpose of making their claims.

National Health Service

TERMS AND CONDITIONS OF SERVICE OF HOSPITAL MEDICAL AND DENTAL STAFF (ENGLAND AND WALES)

1. Consultants (Whole-time)

(a) Main Scale for Consultants, including Dental Consultants

- (1) Consultants appointed at age 32 or over (subject to (3) below):

£1,700 × £125-£2,075 × £150-£2,375 × £125-£2,750 per annum.

- (2) Consultants appointed at age 31 or earlier shall start at £1,550 or £1,400 respectively.

- (3) Consultants first appointed after age 32:

the board shall have discretion to fix the starting salary at any of the four next incremental points in the scale,

- (i) by reason of age, special experience, and qualifications, or

- (ii) by reason of age alone, where seniority has been lost because of service with H.M. Forces,

providing that the starting salary shall in no case be higher than the consultant would receive on age alone.

(b) Special Distinction Awards

Where a special distinction award is granted, the value attaching to it (£2,500, £1,500, or £500 per annum) will be paid as an element of remuneration additional to the main scale and will be superannuable.

2. Other Senior Officers (Whole-time)

(a) *Senior Hospital Medical Officers*—senior officers performing clinical duties who are not of consultant status but are not registrars; and

(b) *Senior Hospital Dental Officers*—senior officers performing clinical dental teaching duties in dental hospitals or departments who are not of consultant status but are not registrars:

£1,300 (at age 32) × £50-£1,750 per annum,

the position on this scale to be determined by age (subject to paragraph 12 (b) below).

(c) *Medical Superintendents and Deputy Medical Superintendents*—Medical superintendents and deputies will be paid a salary consisting of—

- (i) for that fraction of their time given to clinical work:

the same fraction of the whole-time salary of a consultant or senior hospital medical officer according to their grading,

- plus (ii) for that fraction of their time given to administrative work,

the same fraction of the appropriate rate for hospital administrative staff.

Where, however, a whole-time officer is engaged almost wholly in clinical work and gives only a small proportion of time to administrative duties, his appropriate clinical remuneration shall not be affected.

3. Registrar Grades (including Dental) (Whole-time)

(a) *Junior Registrar*: posts obtained normally not less than one year after registration as a medical or dental practitioner and held normally for one year only:

£670 per annum.

(b) *Registrar*: posts obtained normally not less than two years after registration as a medical or dental practitioner and held normally for two years:

£775 per annum in the first year;

£890 per annum in the second and any subsequent years.

(c) *Senior Registrar*: posts obtained normally not less than four years after registration as a medical or dental practitioner and held normally for three years:

£1,000 per annum in the first year;

£1,100 per annum in the second year;

£1,200 per annum in the third year;

£1,300 per annum in any subsequent years.

NOTES: As each grade of post demands a distinct level of ability and experience, holders of registrar posts shall not proceed from one grade to another by automatic promotion. A registrar in a lower grade will be considered on merit, along with other applicants, for a vacancy in a higher grade.

A Senior Registrar subsequently appointed to a Registrar post will be paid the higher salary appropriate to the Registrar grade (i.e., £890 per annum) whilst he holds the post in that grade.

4. Other Grades (Whole-time)

(a) House Officer (including Dental):

£350 per annum for the first post held;

£400 per annum for the second post held;

£450 per annum for the third and any subsequent post held;

with, in each case, a deduction at the rate of £100 per annum in respect of board and lodging and other services provided. Each post shall be tenable for six months.

The Minister will be prepared to authorize, in exceptional circumstances, salaries up to £50 per annum higher than the standard rates specified above where a post cannot be filled otherwise.

(b) *Junior Hospital Medical Officers*—officers who have held house appointments but who are not registrars, and who have less responsibility than other hospital officers of non-consultant status:

£700 (for an officer appointed not less than two years after registration as a medical practitioner) × £50-£1,000 per annum.

5. Part-time Appointments

(a) Part-time Consultant Appointments

The board shall assess in terms of hours per week what is the average amount of time required by an average practitioner to perform the duties attaching to the post. In assessing the average amount of time to perform the duties attached to the post the board shall take into account out-patient clinics, ward rounds, operating sessions, laboratory work, and so on in their hospitals, including occasional visits to outlying hospitals for consultation, diagnosis, or operative work. The board shall also include time given—e.g., as consultant adviser to the board on special branches of the service or by way of "pastoral visits" to outlying hospitals—and time necessarily required in travelling between home or private consulting-room (whichever is the nearer) and the hospital or hospitals served (unless the journey is one which the consultant would undertake irrespective of his work for the board). There shall be excluded from the computation any element of time for emergency calls by consultants to patients in the beds in their charge (except where any exceptionally heavy liability to recurring emergency work of this sort is anticipated), or for committee work, or for the care of private patients in pay-beds or as out-patients. There shall also be excluded time required for domiciliary consultations for which special fees are payable (see paragraph 8).

This aggregate number of hours per week shall be expressed as a number of notional "half-days" per week. The number of notional "half-days" shall be arrived at from the aggregate of hours so assessed, by dividing the total by 3½, the consultant being given the benefit of the marginal overlap, as follows:

No. of hours weekly	No. of notional half-days on which salary will be reckoned
Up to 3½	1
Over 3½ and up to 7	2
" 7 " " " " " 10½	3
" 10½ " " " " " 14	4
" 14 " " " " " 17½	5
" 17½ " " " " " 21	6
" 21 " " " " " 24½	7
" 24½ " " " " " 28	8
" 28 " " " " " "	9

B.D.H. two new therapeutic aids

'MYANESIN' Brand ELIXIR

to produce muscular relaxation in spastic conditions 'Myanesin' Elixir is indicated in cases of spastic hemiplegia and paraplegia of the lower limbs due to cerebral hæmorrhage, disseminated sclerosis and other upper motor neurone lesions. Striking recovery of voluntary movement with increase of range and improved co-ordination occurred in a series of hemiplegias and cerebral diplegias under 'Myanesin' Elixir medication. The administration of 'Myanesin' Elixir has proved a helpful measure in Parkinsonism.

METHIONINE B.D.H.

for the prevention and treatment of liver damage The power of the amino-acid methionine to correct a deficiency in cases of protein depletion, and to act prophylactically against hepatotoxic agents, led to its trial as a therapeutic measure. Indications for Methionine B.D.H. include the prophylaxis and treatment of hepatic cirrhosis, acute hepatitis, toxic hepatitis and the toxæmias of pregnancy. Methionine may prove a valuable routine prophylactic against hepatorenal damage in pregnancy.

Literature will be forwarded on request to the MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N.1
TELEPHONE: CLERKENWELL 3000 TELEGRAMS: TETRADOME TELEX LONDON
MynMthun E/1

48135H

A new treatment for insect bites and stings

The present tendency to ascribe the painful effects of insect bites and stings to the action of histamine has suggested the use of antihistamine therapy in alleviating the symptoms.

Encouraging results have been obtained with 'Anthisan' administered orally. Rapid reduction of the wheal formation and relief of painful symptoms have been experienced in the majority of cases.

Failure to respond to 'Anthisan' is an indication for the substitution of the more powerful antihistaminic, 'Phenergan'.

Some measure of relief can be secured by the local application of 'Anthisan' Cream.

'PHENERGAN' trade
mark
brand
promethazine hydrochloride

Oral: Containers of 100 and
500 x 0.025 Gm. tablets

'ANTHISAN' trade
mark
brand
mepyramine maleate

Oral: 0.05 Gm. & 0.10 Gm. tablets
in containers of 25, 100 & 500
Topical: Containers of 1 oz. and 1 lb.
2 per cent. cream



manufactured by

MAY & BAKER LTD

distributors: PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD., DAGENHAM

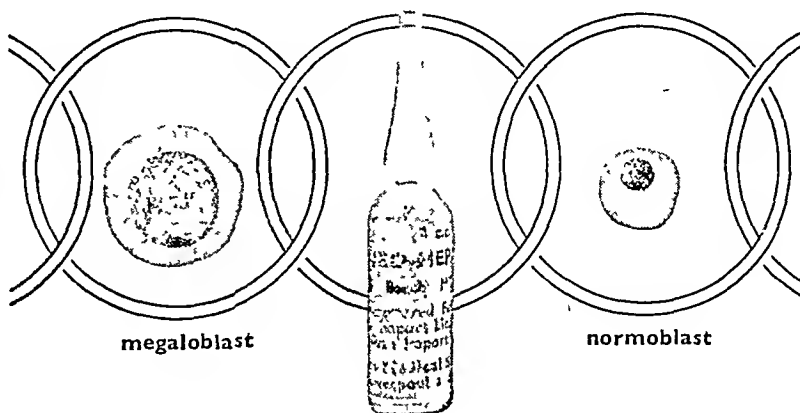
**B.M.A. EXHIBITION
HARROGATE**
June 27th—July 1st
see the **M&B** exhibit
on **STAND No. 66**

OUR MEDICAL INFORMATION DIVISION WILL BE PLEASED TO SEND
COPIES OF THE MEDICAL BOOKLETS 'ANTHISAN' AND 'PHENERGAN'
ON REQUEST

NEO-HEPATEX

An essential link

in the chain of chemical reactions
leading to normal erythropoiesis.



Within six to ten hours of the initial injection a remarkable change occurs in the megaloblastic marrow of pernicious anaemia. The nuclei of the megaloblasts become smaller and in 32 to 72 hours the megaloblastic picture has become normoblastic.

Neo-Hepatex is a non-toxic, highly frac-

tionated, proteolysed extract of liver containing 10 microgrammes of Vitamin B₁₂ per ml., estimated by a combined method of paper chromatography and microbiological assay, using *Lactobacillus lactis* Dorner. Each batch is controlled by clinical tests on hospital cases of true, uncomplicated Addisonian anaemia.

Detailed Literature
on request

Ampoules of 2 c.c. in
boxes of 3 and 25.

Rubber-capped bottles
of 10 c.c. and 25 c.c.

Made in England at The Evans Biological Institute

EVANS MEDICAL SUPPLIES LTD. LIVERPOOL AND LONDON

* 238-31/ET

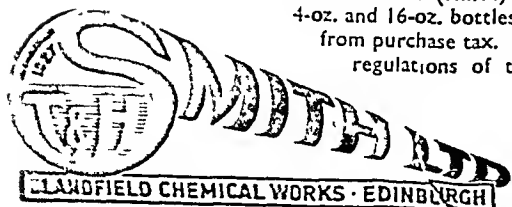
Introducing... ELIXIR METHADON

(preparation of dl-2-dimethylamino 4 :
4 diphenylheptane-5-one hydrochloride)

ELIXIR METHADON (SMITH) is a palatable preparation containing as its active ingredient 2.5 mgm. per fluid drachm of Methadon, the high potency synthetic analgesic. Methadon has proved effective in relieving a wide variety of painful conditions and administration as elixir has definite advantages.

DESCRIPTIVE LEAFLET ON REQUEST

Elixir Methadon (Smith) is available in 4-oz. and 16-oz. bottles and is exempt from purchase tax. It is within the regulations of the Dangerous Drugs Acts.



AND AT
LONDON &
GLASGOW

FEMERGIN

ERGOTAMINE TARTRATE B.P.

for the specific treatment of

THE MIGRAINE ATTACK

Relief from the excruciating pain is obtained in approximately 90 per cent. of attacks of true migraine by the subcutaneous injection of $\frac{1}{2}$ -1 ml. Femergin, given as early as possible in the attack. In mild cases 2-4 tablets taken sublingually may prove sufficient to abort the attack.



SANDOZ PRODUCTS LIMITED

13-1 Wigmore Street, London, W.1

The part-time salary shall be the following proportion of the whole-time salary appropriate to the consultant concerned:

$$\frac{\text{number of half-days}}{11} + \frac{\text{one-quarter of number of half-days}}{11}$$

or

$$\frac{\text{number of half-days}}{11} + \frac{\text{one-quarter of } (11 - \text{number of half-days})}{11}$$

whichever is the less, together with the same proportion of the value of any distinction award held by him, the total being subject to the maximum referred to in (d) below.

(b) Part-time Appointments as Senior Hospital Medical Officer or Senior Hospital Dental Officer

The above formula for arriving at part-time salaries shall be applied to all part-time appointments as Senior Hospital Medical Officer or Senior Hospital Dental Officer.

(c) Part-time Registrars

In the case of part-time appointments in the registrar grades, the number of notional half-days on which the salary is reckoned shall be arrived at as in (a) above. The part-time salary shall be the following proportion of the whole-time salary appropriate to the registrar concerned:

$$\frac{\text{number of half-days}}{11}$$

subject to the maximum referred to in (d) below.

(d) Maximum Remuneration for Part-time Appointments

The maximum remuneration for part-time appointments under (a) and (b) above shall be $9\frac{1}{2}$ elevenths of the whole-time remuneration (including the value of any distinction award) appropriate to the officer concerned; and for part-time appointments under (c) above shall be 9 elevenths of the whole-time salary appropriate to the officer concerned.

Where a practitioner holds part-time appointments with more than one board or hospital management committee which together do not constitute a whole-time appointment, this maximum shall apply to the aggregate remuneration from all the boards or committees concerned.

This maximum shall not, however, include payments made in respect of exceptional consultations performed for a board with whom the practitioner is not in contract, payments made in respect of work as locumtenent, and payments for domiciliary consultations, referred to in paragraph 8.

(e) In special circumstances a board, with the Minister's consent in each case, shall have discretion to offer a higher rate of part-time remuneration than that normally applicable.

6. Exceptional Consultations

Consultants who have no contract with the board, but who are called in exceptionally to hospitals or clinics for a special visit (e.g., because of their unusual experience or interest) shall be paid at the rate of 5 guineas per visit (including any operative work, etc.). This, however, shall not apply to retired consultants who hold honorary (unpaid) appointments in respect of exceptional calls on their services of this kind (see paragraph 15).

A general practitioner not on the staff of a hospital but called in exceptionally to render a specific service in emergency shall be paid at the rate of £2 per visit, unless the service rendered falls within his terms of service under Part IV of the Act.

7. Locum tenens Arrangements

Payment at the rate of 5 guineas per half-day shall be made to a locum engaged by a board during a consultant's temporary absence when it is impossible to arrange for his work to be adequately performed by other members of the board's staff within the terms of their contracts of service.

A locum engaged by a board or hospital management committee during the temporary absence in similar circumstances of a Senior Hospital Medical Officer, a Senior Hospital Dental Officer, or a general practitioner holding an appointment of the kind described in paragraph 10 (b) shall be paid at the rate of 3½ guineas per notional half-day.

8. Domiciliary Consultations

(a) No additional payment shall be made for domiciliary consultation by whole-time officers. Part-time officers shall be paid on the following basis:

Fee for consultation, 4 guineas, with an additional fee of

(1) 2 guineas where any operative procedure other than obstetric is undertaken or where the officer uses his own electrocardiograph or portable x-ray apparatus;

(2) 4 guineas for an obstetric operation;

the additional fee of 2 guineas or 4 guineas to be payable once only in respect of each patient for the current illness.

(b) Boards shall make payments, additional to the fees set out above and to the normal travelling and subsistence expenses, of 1 guinea for a journey to a place over 20 and up to 40 road miles distant, 2 guineas for a journey to a place over 40 and up to 60 road miles distant, and so on, with an additional guinea for every 20 miles.

(c) The maximum remuneration under this head (excluding travelling and subsistence allowances, additional mileage payment, and fees for the use of the officer's own apparatus) shall be 200 guineas in any quarter or 800 guineas in any year, whichever the officer prefers.

9. Clinical Consultants engaged in Teaching of Medical or Dental Students

1. (a) Holders of whole-time clinical posts in medical or dental schools, and

(b) Teachers (including part-time clinical professors or heads of university clinical departments) who devote a large portion of their time to university work,

shall hold honorary (unpaid) appointments with the appropriate hospital board or boards, but, like other consultants, shall receive from the boards payment of appropriate expenses for hospital work, and shall also be eligible for distinction awards. An officer under (b) above will receive that proportion of the value of a distinction award which corresponds to the proportion of the whole-time salary attaching to his teaching post.

2. Part-time Clinical Teaching Posts

Consultants performing teaching duties concomitantly with, or separately from, their clinical work shall be remunerated by hospital boards like other consultants (including distinction awards and expenses) in addition to any remuneration they may receive from the university or school in recognition of their teaching duties.

10. General Practitioners on the Staffs of Hospitals (Part-time)

(a) *General Practitioner Hospitals (Cottage Hospitals) Other than Maternity Hospitals*

Remuneration in respect of services rendered other than those paid for by the Executive Council: the hospital management committee shall create a staff fund by making a payment of £25 per annum for each bed (other than private pay-beds and maternity beds) occupied on the average in the hospital, the fund to be shared among the general practitioner staff as they may themselves determine.

(b) *Part-time Medical Officers at Convalescent Homes, General Practitioner Maternity Hospitals, or Other Types of Hospital Where no Other Rate is Appropriate*

£175 per annum per weekly "notional" "half-day" up to a maximum of £1,575 per annum, the "half-days" being assessed as in paragraph 5 (a). Where, however, the number of "notional" hours weekly is 2 or less the remuneration shall be determined as follows:

1 hour or less	...	...	...	£50 per annum
over 1 hour but not more than 2 hours	...	...	...	£100 per annum

11. General Dental Practitioners employed at Hospitals

£150 per annum per weekly "half-day" up to a maximum of £1,350 per annum, the "half-days" being assessed as in paragraph 5 (a).

12. Determination of Salaries Payable from July 5, 1948

(a) Consultants

Assuming there has been no break in service (other than one occasioned by war service or national service on call-up), the salary payable from July 5, 1948, shall be the salary which the officer would have been receiving on that date had the above system of remuneration been in operation since the date on which he first accepted a hospital staff appointment with full clinical responsibility. In the case of consultants who first accepted such an appointment after age 32, boards, in determining what their starting salaries at that time would have been, shall exercise their discretion as they would have exercised it had they been the appointing authority (see paragraph 1 (a) (3)).

(b) Senior Hospital Medical Officers and Senior Hospital Dental Officers

Boards or hospital management committees shall have discretion to decide at which point in the salary scale existing staff should start, provided that the starting salary shall in no case be higher than that which the officer would receive were his position on the scale determined by age alone.

(c) Medical Superintendents and Deputy Medical Superintendents

The initial salary shall be the sum of the appropriate fraction of the whole-time clinical salary as determined under paragraphs 2 (c) and 12 (a) or (b) and the appropriate fraction as determined under paragraph 2 (c) of the minimum of the relevant administrative salary scale.

(d) Junior Hospital Medical Officers

Existing staff who immediately before July 5, 1948, were receiving less than the minimum remuneration for the grade shall start at the minimum of the salary scale; and those who were receiving more than the minimum shall enter the scale at the salary they were receiving immediately before July 5, 1948, rounded off, at the discretion of the board or management committee, to the next incremental point in the new scale.

(e) Transferred Officers

Officers who were transferred under Section 68 of the National Health Service Act, 1946, and who immediately before July 5, 1948, were receiving salaries better than those now introduced, shall be entitled to retain their previous salary scale and conditions of service (including emoluments) on a personal basis for as long as they remain in the same appointment or another appointment of the same or greater responsibility as the one they held at the appointed day, but otherwise they shall conform to the new rates of remuneration and conditions of service on taking up a new appointment or on promotion: provided that travelling and subsistence allowances as set out in paragraph 19 shall be adopted for all officers irrespective of the allowances for which they may have been eligible before transfer.

13. Incremental Dates

In the case of officers holding appointments at July 4, 1948, the incremental date shall be July 5; in the case of new appointments or promotions, the date on which the new post was entered into; except that transferred officers who exercise the option under paragraph 12 (e) shall, so long as they retain their previous salary scale and conditions of service, also retain their previous incremental dates.

14. Private Practice and Retention of Fees

1. Private Practice

A whole-time officer shall not be entitled to undertake private practice. For this purpose "private practice" includes general practice under Part IV of the Act (except in respect of members of the hospital staff), and the diagnosis or treatment of patients by private arrangement under Section 5 (2) of the Act; but does not include work of the kind referred to in Category II below.

2. Retention of Fees

(i) Where services such as the rendering of medical reports on patients who are under observation or treatment, or the

examination, diagnosis, and rendering of reports on persons referred to hospitals for these purposes only, are not within the scope of the hospital and specialist services provided under Section 3 of the Act, they may be made available at hospitals or by members of hospital medical staffs on payment of appropriate charges, but only where in the opinion of the board or committee their provision would not interfere with other hospital activities or with the proper discharge of the hospital duties of the officer concerned. Where in the provision of such services hospital laboratory or radiological facilities are used, the charges made shall represent two elements: (a) payment for professional services and (b) payment of hospital costs. Where hospital laboratory or radiological facilities are not required, no charge shall be made for the use of hospital premises, payment being in respect of professional services only.

Whether the practitioner providing such services is a whole-time or a part-time officer, all charges in respect of professional services shall be retained by him or remitted to him by the board or committee according as the money is received by the practitioner himself or by the board or committee.

Where hospital laboratory or radiological facilities are used one-third of whatever payment is made for the item of service provided shall be remitted to or retained by the board or committee, in respect of hospital costs.

(ii) Where services of the kind referred to above are within the scope of the hospital and specialist services provided under Section 3 of the Act, they shall be performed by members of hospital medical staffs as part of their hospital duties and without charge.

The following Schedule illustrates the principles governing the distinction between work of this kind which is within the scope of the hospital service, and work of this kind which is not within the scope of the service and for which, therefore, charges will be made.

SCHEDULE

Category I: Work which is within the scope of the Hospital and Specialist Services provided under Section 3 of the Act

(a) Examination and diagnosis and the furnishing of any report reasonably required in connexion therewith on a person referred to the hospital and specialist service for this purpose from a medical source for a second medical opinion. Examples are:

(i) examination and report on a person referred by a general practitioner;

(ii) examination and report on a person referred by a medical board of the Ministry of Pensions;

(iii) examination and report on a person referred under the National Insurance (Industrial Injuries) Act, 1946, by a regional medical officer of the Ministry of National Insurance or by a medical board or medical appeal tribunal for the purposes of that Act;

(iv) examination and report on a person referred by a medical referee appointed under the Workmen's Compensation Act, 1925, or under a scheme certified under Section 31 of that Act;

(v) examination and report on a person referred by a medical recruiting board of the Ministry of Labour and National Service;

(vi) examination and report on a person referred by a medical interviewing committee set up by the Ministry of Health to advise disablement resettlement officers of the Ministry of Labour and National Service on the working capacity of disabled persons;

(vii) examinations and reports on members of H.M. Forces or their families referred by medical officers of His Majesty's Forces who are treating them;

(viii) examinations and reports on patients referred (in connexion with diagnosis or treatment) by medical officers of local education authorities or local health authorities. (N.B.—Reports required on employees by these authorities in their capacity as employers are included in Category II (a) (iv) below.)

(b) X-ray examination of any person resorting to or referred to a mass radiography unit, and the furnishing of a report, if required, of the result of such examination.

(c) Examinations and the furnishing of written reports on the mental or physical condition of offenders referred by courts under Sections 24 and 26 of the Criminal Justice Act, 1948.

(d) The furnishing of a report to a patient who is under observation or treatment at the hospital at the time when the report is asked for, or with his consent to an interested third party, when the information required can be given without a special examination of the patient by reference to hospital records or from knowledge acquired in the course of attendance on the patient. (N.B.—If a

special examination of the patient is required, or the information requested cannot be given readily from knowledge of the case, the work would fall within Category II below.)

The following are examples of reports or certificates which it would normally be possible to provide without special examination of the patient:

(i) progress reports required by the Ministry of Pensions on a pensioner who is under hospital observation or treatment,

(ii) reports required by employers (including Government Departments and local authorities) on employees who are under observation or treatment (e.g., reports required in connexion with sick leave, superannuation, or retirement questions, etc.) (Employees who are not under observation or treatment are referred to under Category I (a) (iv) below)

(iii) the "first" certificate of the cremation certificates required by relatives, where death took place in hospital (N.B.—The "first" certificate would normally be given by the practitioner who had attended the patient in hospital, and would not involve a special examination. For the "second" certificates see (a) (x) of Category II below.)

Category II: Work which is not within the scope of the Hospital and Specialist Services provided under Section 3 of the Act

(a) The following are examples of examinations, reports, etc., which, when they do not fulfil any of the conditions referred to in paragraphs (a), (b), (c), and (d) in Category I above, are outside the scope of the hospital and specialist service:

(i) any report on a patient not under observation or treatment at the hospital at the time the report is asked for, or any report involving special examination of the patient other than those in (a), (b), (c) of Category I,

(ii) examinations and reports for prospective emigrants—including x-ray examinations and blood tests,

(iii) examinations and reports on candidates for admission to training colleges for teachers,

(iv) examinations and reports required by employers (including Government Departments and local authorities) on employees or prospective employees (except employees or prospective employees of a board or hospital management committee at the hospital concerned) (N.B.—These would, therefore, normally be in Category II where the employees or prospective employees were not under hospital observation or treatment but were referred to hospitals or to members of hospital medical staffs specially for the purpose of examination and report)

(v) examinations and reports on private citizens in connexion with legal actions,

(vi) examinations and reports for coroners,

(vii) examinations required for life insurance purposes,

(viii) certificates required under the Blind Persons' Act,

(ix) attendance at court hearings as medical witnesses,

(x) the "second" certificate of the cremation certificates required by relatives, where the deceased had been under hospital observation or treatment (N.B.—The "second" certificate would not be given by the practitioner who had been attending the patient. For the "first" certificate see (d) (iii) of Category I)

(b) Other work in this category includes

(i) lectures given by members of hospital medical staffs to nurses, etc., or to the lay public,

(ii) services performed by members of hospital medical staffs for Government Departments as members of medical boards,

(iii) general practitioner services given by a hospital medical officer under Part IV of the Act to members of the hospital staff who are on his "list."

15. Retiring Age

When an officer reaches age 65 his regular contract shall come to an end, provided that.

(a) the board or hospital management committee may, with his consent, extend his contract of service (or offer a modified contract) for one year or any less period, and so from time to time until age 70, or

(b) in the case of a consultant the board may allow him an honorary contract as indicated in paragraph 6

These ages shall be reduced by five years in respect of practitioners who are "mental health officers" as defined in the National Health Service (Superannuation) Regulations, 1947

16. Tenure of Post

Where a consultant considers that his appointment is being unfairly terminated by a board, he shall be entitled to send a

full statement of the facts to the Minister, who will obtain the written views of the board concerned and place the case before a professional committee (consisting of representatives of the Ministry and representatives of the profession, under the chairmanship of the Chief Medical Officer) for their advice. The committee shall have discretion to interview both parties if they think fit. In the light of their advice the Minister may confirm the termination of services, or direct reinstatement, or arrange some third solution agreeable to the parties concerned, such as re-employment in a different post. This procedure shall be completed before the board's decision to terminate the consultant's services is carried into effect.

It is understood that where a local change of organization in the hospital and specialist services involves displacement or serious disturbance of a part-time consultant's services, the board recognizes that it has a moral obligation to render the greatest possible assistance to the consultant to obtain comparable work in another hospital.

17. Residential Appointments

The above rates of remuneration are inclusive. Where an officer is provided with board and lodging or accommodation by the hospital (i.e., the officer's main hospital) a charge shall be fixed by the hospital management committee (or board of governors) equal to the value of the services provided, except that the charge for house officers shall be at a fixed rate of £100 per annum (see paragraph 4 (a)). In the case of officers appointed by a regional hospital board, the charge shall be fixed by the hospital management committee subject to the approval of the board.

18. Leave

(a) Annual Holiday Leave

Officers in receipt of salaries of less than £1,000. At the rate of four calendar weeks per annum (in addition to statutory and general national holidays or days in lieu).

Officers in receipt of salaries of £1,000 or more. At the rate of six calendar weeks per annum (in addition to statutory and other general national holidays or days in lieu).

In the case of officers holding part-time appointments, leave entitlement shall be based not on the actual salary but on the corresponding whole-time salary rate.

Absence for such purposes as attendance at court shall not be taken into account for the purposes of annual leave.

The annual leave year shall run from April 1 to March 31, except in the case of house officers, whose leave period shall correspond to the period of tenure of the post. New entrants to the Service shall be entitled to annual leave proportionate to the completed months of service during the year of entry and thereafter on the normal scale, provided that, except in the case of house officers, no leave shall be taken until an officer has completed six months' service. An officer who enters the Service during the second half of the leave year shall be allowed to carry forward the leave to which he is entitled (on a proportionate basis) during that leave year and take it during the following year.

(b) Compassionate Leave

Special leave with pay shall be granted at the discretion of the appointing authority (i.e., board or management committee as appropriate) in cases of urgent domestic distress (e.g., bereavement). As a normal rule, the period of absence so authorized shall not exceed three days, but, since much may depend on individual circumstances, the authority shall have discretion, on general and humanitarian grounds, to extend the period in cases of special hardship up to a further three days—i.e., up to a maximum of six days in all.

(c) Leave for Volunteers for the Auxiliary Armed Forces

An officer who, with the consent of the appointing authority, volunteers for service with the Territorial and Auxiliary Forces shall be granted, in addition to his annual leave entitlement, one week's paid leave for camp, and shall be free to choose whether the second week should count as unpaid leave (not counting for increment) additional to his normal entitlement, or as part of his normal entitlement of annual leave with pay.

An officer posted to the Territorial Army or other Auxiliary Forces after compulsory whole-time training shall be granted

special leave without pay for the necessary training period, unless he prefers the period of absence to count in whole or in part against his annual leave entitlement. Special leave without pay granted in these circumstances shall count for increment.

(d) "Study" Leave, Conferences, etc.

(i) "Study" leave must be for the purposes of study (including research), teaching, examining, taking examinations, visiting clinics, or attending meetings or conferences of a wholly scientific or clinical character. Where study leave is granted with pay the officer must not undertake any remunerative work without the special permission of the leave-granting authority.

(ii) Subject to these conditions, study leave may be granted on the following basis:

A. For short periods of one or two days, but in exceptional cases up to a maximum of seven days:

1. Without pay or expenses—in the case of officers appointed by a regional hospital board, at the discretion of the board, unless authority has been delegated to the hospital management committee; in other cases at the discretion of the management committee or board of governors.

2. With pay but without expenses—at the discretion of the board unless authority has been delegated to a hospital management committee.

3. With pay and expenses—at the discretion of the board—subject to (iii) below.

B. For periods exceeding seven days but not exceeding thirteen weeks:

1. Without pay or expenses } at the discretion of

2. With pay but without expenses } the board.

3. With pay and expenses—at the discretion of the board, subject to (iii) below;

provided that:

(a) where an officer is employed by more than one board the leave must be approved by all the boards concerned;

(b) where leave with pay is granted for a period in excess of three weeks, half of the excess shall be counted against the officer's annual leave entitlement, the officer being allowed for this purpose to carry forward annual leave not exceeding three weeks in all from the immediately preceding leave year;

(c) not more than one period of paid leave shall be granted to one officer in any one leave year.

C. For periods exceeding 13 weeks:

1. Without pay or expenses—at the discretion of the board, provided that where an officer is employed by more than one board, the leave must be approved by all the boards concerned.

2. With pay but without expenses } to be referred to the

3. With pay and expenses } Ministry for decision.

(iii) Where study leave is granted for the purpose of sitting an examination, no expenses (fees, travelling, or subsistence) will be payable.

(e) Sick Leave

(1) Scale of Allowances

An officer absent from duty owing to illness, injury, or other disability shall be entitled to receive an allowance in accordance with the following scale:

During the first year of service:

One month's full pay and (after completing four months' service) two months' half pay.

During the second year of service:

Two months' full pay and two months' half pay.

During the third year of service:

Three months' full pay and three months' half pay.

During the fourth to sixth years of service:

Four months' full pay and four months' half pay.

During the seventh to tenth years of service:

Five months' full pay and five months' half pay.

After completing 10 years of service:

Six months' full pay and six months' half pay.

The board shall have discretion to extend the application of the foregoing scale in an exceptional case.

(2) Calculation of Allowance

(a) The rate of allowance and the period for which it is to be paid in respect of any period of absence due to illness shall be ascertained by deducting from the period of benefit appropriate to the officer's service on the first day of his absence the aggregate of the periods of absence due to illness during the twelve months immediately preceding the first day of absence.

(b) For the purpose of ascertaining the appropriate period of benefit under (1) above, all periods of service (without any break of twelve months) under any employing authority from whom hospitals have been transferred, any employing authority constituted under the National Health Service Act, or any local authority, or in the Civil Service or the teaching service, or on war service or on national service (on call up), or in any other service approved by the Minister for the purposes of Regulation 46 (4) of the National Health Service (Superannuation) Regulations, 1947, shall be aggregated.

(c) The allowance made to an officer during absence on sick leave when added to—

(i) the amount of sickness benefit receivable under the National Insurance Act, 1946;

(ii) the amount of injury benefit receivable under the National Insurance (Industrial Injuries) Act, 1946;

(iii) compensation payments under the Workmen's Compensation Acts where the right to compensation arises in respect of an accident sustained before July 5, 1948;

(iv) any element in compensation payments under the Employers' Liability Acts or under Common Law which is attributable to immediate loss of wages; and

(v) any amount received as a treatment allowance from the Ministry of Pensions;

shall not exceed the officer's normal monthly salary, and the sick-leave allowance shall be restricted accordingly where necessary.

(d) The benefits to be taken into account under (c) (i)-(v) above shall be those for the officer's own incapacity, including allowances for adult and child dependants.

(e) Where a married woman has exercised her option not to be insured under the National Insurance Act, no deduction shall be made from her normal sick-leave allowance during ordinary absence on sick leave, as she will not be receiving sickness benefit.

(f) For the purposes of this clause, twenty-six working days shall be deemed to be equivalent to "one month."

(3) Conditions

(a) An officer who is prevented by his illness from reporting for duty shall notify immediately the officer prescribed for this purpose by the employing authority. If his absence continues after the third day he shall submit forthwith a medical certificate as to the nature and probable duration of the illness. Thereafter medical certificates shall be submitted at intervals of seven days or at such longer intervals as in any case may be decided by the employing authority. On his returning to duty the officer shall submit a medical certificate of fitness if required.

(b) An officer entering a hospital or similar institution shall submit a medical certificate on entry and on discharge in substitution for periodical certificates.

(c) A case of a serious character, in which a period of sick leave on full pay in excess of the period of benefit under (1) above would, by relieving anxiety, materially assist a recovery of health, shall receive special consideration by the employing authority.

(d) An allowance shall not be paid in a case of accident due to active participation in sport as a profession nor in a case in which contributory negligence is proved, unless the employing authority by resolution decide otherwise.

(e) A period of absence due to injury sustained by an officer in the actual discharge of his duty and without his own default shall not be recorded for the purposes of this scheme.

(f) An officer who has received an allowance under this scheme in respect of a period of disability and recovers damages in respect of the disability shall advise the employing authority forthwith, and the employing authority may, if they consider it equitable, require the officer to refund a sum equal to the aggregate of the allowances paid to him during the period of disability or such part thereof as is deemed appropriate, but not exceeding the amount of the damages recovered, and in that event the period covered by the sum recovered shall not be recorded for the purposes of this scheme.

(g) The employing authority may at any time require an officer who is unable to perform his duties as a consequence of illness to submit to an examination by a medical practitioner nominated by the authority. Any expense incurred in connection with such examination shall be met by the authority.

(h) The provisions of this scheme shall cease to apply to an officer on the termination of his employment whether by reason of permanent ill-health or infirmity of mind or body or by reason of age, but without prejudice to the right of an officer whose employment is terminated by reason of permanent ill-health or infirmity to receive the period of notice provided by his contract of service.

(i) If it is reported to the employing authority that an officer has failed to observe the conditions of this scheme or has been guilty of conduct prejudicial to his recovery and the authority is satisfied that there is substance in the report, the payment of the allowance shall be suspended until the authority has made a decision thereon, provided that before making a decision the employing authority shall advise the officer of the terms of the report and shall afford him an opportunity of submitting his observations thereon and of appearing, or being represented, before the authority or its appropriate committee. If the employing authority decide that the officer has failed without reasonable excuse to observe the conditions of the scheme or has been guilty of conduct prejudicial to his recovery, then the officer shall forfeit his right to any further payment of allowance in respect of that period of absence.

(4) Contact with a Case of Notifiable Disease

This scheme shall not apply to an officer who is required to absent himself from duty following contact with a case of notifiable disease. In such a case the period of absence shall be regarded as special leave with full pay.

19. Expenses

(a) General

Travelling, subsistence, and other expenses shall be paid to meet actual disbursements of officers engaged in the service of the board and shall not be regarded as a source of emolument or reckoned as such for purposes of pension.

In preparing claims officers shall indicate adequately the nature of the expenses involved, claims shall be submitted normally at intervals of not more than one month, and as soon as possible after the end of the period to which the claim relates.

(b) Travelling Expenses

Travelling expenses shall be paid by the board for any journey in the board's service, provided that

(i) in the case of a whole time officer, expenses incurred in travelling between his place of residence and the hospital where his principal duties lie shall not be allowed except as indicated in (d) below,

(ii) in the case of a part-time officer, travelling between his private consulting-room or place of residence and any hospital where he is employed, whichever is the less, shall be regarded as a journey in the board's service, provided that no expenses shall be allowed for any such journey or part of such journey which would have been undertaken by the officer irrespective of his employment with the board,

(iii) expenses incurred in travelling from holiday leave to duty or vice versa shall not be allowed unless the officer was recalled for special reasons,

(iv) taxi or cab fares shall be payable only in cases of urgency or in other cases in which transport is reasonably

required and an adequate public service is not available, but where these conditions are not fulfilled an officer using a taxi or cab shall be entitled to claim the sum he would have been paid had he travelled by public service vehicle,

(v) an officer making an overnight journey by rail and engaging sleeping-car accommodation shall receive the cost, but any subsistence allowance payable to him for that night shall be reduced by one-third.

Rates

(1) Except where a private car is used, the sum paid shall not exceed the amount disbursed—e.g., if the practitioner is entitled to travel first class but in fact takes a third-class ticket he can only claim third-class fare.

(2) First-class fares shall be paid to whole-time officers with salaries of £760 and over, and to part-time officers of corresponding status.

(c) Car Allowances

Officers, whether whole-time or part time, shall be classified as "regular users" or "casual users" according to whether their annual official regular mileage is estimated to exceed 2,000 miles or not.

All regular users of motor-cars, of whatever horse-power, shall be paid an annual allowance of £52 and 3½d per mile. The annual allowance shall be paid by quarterly instalments in advance. The mileage allowance shall be paid monthly or quarterly. The annual allowance shall continue during absences on annual leave or sick leave or whilst the car is out of use being repaired or overhauled, except that where any one period of non use exceeds two months the sum of £4 6s 8d shall be deducted for each complete month after the first (e.g., if a car is out of use for 3½ months, £8 13s 4d should be deducted from the allowance).

If at the end of the year it is found that an officer who has been treated as a regular user has not completed 2,000 miles, he shall not be called upon to repay any part of the annual allowance. This does not preclude review and re-classification of any officer at any time where appropriate.

Casual users shall receive no annual allowance, but shall be paid 7½d a mile for the first 3,120 miles a year and 3½d a mile thereafter.

Where a "regular user" has contracts with more than one board which require him to make a claim to more than one board, the board with whom he has his main contract shall be responsible for paying the annual allowance of £52 and for verifying from time to time from the other boards concerned that the officer is still a regular user, all the boards concerned paying 3½d a mile for actual mileage in the claims appropriate to them.

If an officer uses a private motor vehicle in circumstances where travel by a public service would be appropriate, a mileage allowance of 1½d a mile shall be payable irrespective of the type of vehicle.

Where other officers, or members of an employing authority, are conveyed in the same vehicle on the business of the National Health Service, and where fares by a public service would otherwise be payable, an allowance of 4d a mile for each passenger shall be payable.

The "allowance year" for the purpose of car allowance shall be regarded as the year to March 31. In the first year in which an officer is authorized to use his car, a proportionate reduction of the 3,120 miles or adjustment of the annual allowance (as the case may be) shall be made.

In this paragraph and paragraph (b) above, "public service" refers to railways, steamships, omnibuses, and tramways.

(d) Payment of Mileage Allowances to Whole-time Officers for Journeys from Home to the Hospital where Principal Duties lie

(i) Where a whole-time officer travels from his home to the main hospital either before and/or after an official journey, travels direct from his home to the place visited, or returns direct from that place to his home, mileage allowance shall be payable for the whole distance travelled, subject to a maximum based on the return journey from the officer's main hospital to the place visited plus 20 miles.

I hereby accept the appointment mentioned in the letter to me dated from the secretary of the
Regional Hospital Board
Board of Governors of which the above is a copy, on the terms and subject to the conditions of service referred to in that letter and I undertake to commence my duties with the
Regional Hospital Board
Board of Governors on the
 Date..... (Signed)

FORM OF CONTRACT FOR PART-TIME CONSULTANTS OR SENIOR HOSPITAL MEDICAL OFFICERS OR SENIOR HOSPITAL DENTAL OFFICERS

Regional Hospital Board
Board of Governors

Date

Year

Appointment of

Regional Hospital Board
Board of Governors

I am instructed by the
 to offer you a part-time appointment from the as subject to the terms and conditions of service determined from time to time by the Minister of Health being at present those set out in the document dated June 7, 1949, attached to this letter.

The appointment is subject to the provisions of the National Health Service (Superannuation) Regulations, 1947 and 1948.

The duties attaching to the appointment are as follows:

1. [Regular clinics, etc., setting out hospital(s), days and times of duties.]

2. [Charge of beds at hospital(s) together with any cases in your charge occupying special accommodation under the proviso to Section 5 (1) of the National Health Service Act, 1946.]

3. Occasional duties arising on call at [If possible, specify.]

4. [Adviser to Regional Hospital Board in]

5. [Advisory ("pastoral") visits to the following hospitals:.....]

6. [.....]

7. So far as is consistent with the proper discharge of the above duties, any additional duties undertaken from time to time as substitute for other members of the staff(s) of the above hospital(s) during their temporary absence.

The average number of hours per week which the above duties are estimated to require is and the number of half-days for which payment will be made is accordingly

Your [commencing] salary [apart from the value of any distinction award which may be made to you*] will therefore be

[rising by annual increments of to Your incremental date will be]

If you agree to accept the appointment on the terms specified above, please sign the form of acceptance at the foot of the enclosed copy of this letter and return to me.

Yours faithfully,

Secretary.

I hereby accept the appointment mentioned in the letter to me dated from the secretary of the
Regional Hospital Board
Board of Governors of which the above is a copy, on the terms and subject to the conditions of service referred to in that letter and I undertake to commence my duties with the
Regional Hospital Board
Board of Governors on the

*To be inserted in consultants' contracts.

Domiciliary Consultants

In addition to the above duties, I undertake/do not undertake, in accordance with the conditions and rates of remuneration set out in paragraph 8 of the above-mentioned terms and conditions of service, to undertake domiciliary consultations during the following times and within the following areas:

Date (Signed)

1. The discussions with the medical and dental professions referred to in R.H.B. (49) 40/H.M.C. (49) 30/B.G. (49) 33 have now been completed and the proposals which accompanied that memorandum have been reviewed in the light of the further discussions and of comments received. The document enclosed with this memorandum sets out the terms and conditions of service of hospital medical and dental staff which will replace the interim arrangements now operative and will form the basis of new contracts of service which boards and committees will offer to existing staff, and of all new appointments until further notice. References below such as "Document, paragraph 10 (a)" are references to this enclosed document.

Offer of Contracts to Part-time Staff

2. Boards and committees should already have arranged (in accordance with paragraph 4 of R.H.B. (49) 24/H.M.C. (49) 16/B.G. (49) 18) to extend the provisional contract of all part-time members of the staff until July 4, 1949, and they should now as soon as possible notify each individual concerned of the duties they wish him to perform as from July 5, 1949, if they can by that date adjust details to suit the convenience of both boards (or committees) and practitioner. Where there is no time for this to be done and new contracts cannot be arranged by July 5, boards (or committees) should notify each individual concerned that they propose to extend his interim contract for a further specified period.

3. A part-time contract should not be offered to an officer who holds a whole-time appointment with another board or committee.

Offer of Appointments to Whole-time Staff

4. At the same time boards (and committees) should inform whole-time staff of the duties which they wish them to perform and of the new conditions of service with a view to arranging that the latter operate as from July 5 or as soon thereafter as is practicable. If the officer agrees to the new conditions there will be no further action for the board or committee to take apart from the readjustment of remuneration, etc., from July 5, 1948. A transferred officer who wishes to retain his previous salary scale and conditions of service (including emoluments) on a personal basis as provided for in paragraph 12 (e) of the new terms and conditions of service should be allowed to do so in connexion with any rearrangement of duties which the board (or committee) had included in their offer.

Honorary Appointments

5. An honorary (unpaid) appointment should involve a clear undertaking to render defined services.

Pro Forma Contracts

6. In offering to consultants, Senior Hospital Medical Officers and Senior Hospital Dental Officers new contracts of service on the basis of the enclosed terms and conditions of service, boards may find it useful to consider the suggested forms of contract attached to this memorandum. Variations will, of course, be required to suit individual circumstances. The suggested form has, however, been drawn up with the matters raised in discussion with the professions in mind, and the Minister expects the following points of principle to be observed in drawing up the contracts of consultants, Senior Hospital Medical Officers, and Senior Hospital Dental Officers.

(i) No period of tenure or period of notice should be specified in the contracts.

(ii) All consultants, S.H.M.O.s and S.H.D.O.s are expected, so far as is reasonable and practicable, to deputize for absent colleagues, when necessary in the interests of the Service without the need for the formal appointment of locum.

(iii) (a) There is nothing in the clauses in the pro forma contracts to interfere with the right of a pay-bed patient to make private arrangements under Section 5 (2) with a part-time practitioner, or with the latter's right to recover fees accordingly, or to entitle a patient who has made private arrangements under Section 5 (2) to elect later to pay an inclusive charge under Section 5 (1).

There will be circumstances in which a patient in a Section 5 bed as the private patient of a consultant requires services from another consultant (e.g., a whole-time consultant radiologist or anaesthetist) who is not permitted private practice. It is, therefore, necessary to provide in the contract of such whole-time consultants for treating patients in Section 5 beds who have not made private arrangements for that treatment under Section 5 (2), and in respect of duties at any hospital where the patients in Section 5 beds may need their care the acceptance of such a clause should be made a condition of a contract. The acceptance of such a clause will also enable a patient who has been referred to the whole-time consultant by his family doctor to arrange to be treated in a Section 5 pay-bed.

(b) In the case of both whole-time and part-time officers, the general duties undertaken by them include the duty of treating without any additional remuneration and without any right to recover private fees, patients in their charge who are occupying Section 5 accommodation under the proviso to Section 5 (1) of the Act.

(iv) Where the duties of whole-time officers necessitate their residence at, or within reasonable distance of, the hospital, an appropriate clause (as suggested in the pro forma contract) should be included in the contract.

(v) In offering contracts which include a clause relating to domiciliary consultations boards should aim at reconciling the needs of the domiciliary specialist service in the particular area with the wishes of the whole-time and part-time officers concerned, but they may find it necessary in certain areas to insist on the inclusion of an appropriate clause in the contract of service of a whole-time officer if that is the only way in which the service in that specialty can be provided.

7. Further points which bear on the suggested forms of contract are dealt with among the following notes, which are intended to guide boards and committees on the application and interpretation of the terms and conditions of service.

Senior Hospital Medical and Dental Officers (Document, paragraph 2 (a) and (b))

8. The term "Senior Hospital Medical (or Dental) Officer" is merely used for convenience in defining the grade, and will continue to be so used in official documents. It need not be adopted as a title describing individual officers holding the posts in this grade, and boards are free to use whatever terminology may be preferred—e.g., an anaesthetist holding a post in the senior hospital medical officer grade might be given the title of "Anaesthetist," a consultant in the same field being called a "Consultant Anaesthetist."

9. It is intended that Senior Hospital Medical and Dental Officers in non-teaching hospitals should be appointed and paid by Regional Hospital Boards, and a further note will be circulated about this.

Medical Superintendents (Document, paragraph 2 (c))

10. The objective of boards should be to reduce to a minimum the time given by medical staff to administrative duties, and to enable them to devote their energies to clinical work in their appropriate grade.

11. In computing salary rates boards may ignore any administrative duties of which they find it impracticable to relieve a medical superintendent where these duties occupy only a small proportion of the officer's time. The Minister will be prepared to advise boards or committees on any point of difficulty.

12. The appropriate rate for hospital administrative staff will be

(a) where the hospital is the only one administered by the hospital management committee, the salary scale for the secretary of the hospital management committee, and

(b) where the hospital is one of a group of two or more administered by the hospital management committee, the appropriate to an assistant secretary in charge of the hospital.

Registrars (Document, paragraph 3)

(a) Terminology

13. At present the different titles used in different hospitals to describe holders of "trainee specialist" posts give rise to confusion; in future, to avoid misunderstanding, the term "Senior Registrar," "Registrar," and "Junior Registrar" should be universally adopted for all purposes, including advertisements, in describing these posts as defined in the enclosed document and officers holding them. At the same time the title of other grades of officers at present using the term "Registrar" should be changed.

(b) Grading of Registrars

14. If they have not already done so, Regional Hospital Boards should ask their professional Review Committees to determine, after consultation with the medical committee of the hospitals concerned and the appropriate postgraduate deans or deans, the grade of post (i.e., Senior Registrar, Registrar, Junior Registrar) held from time to time since July 5, 1948, by "trainee specialists" (including holders of "supernumerary Class III posts under the scheme for postgraduate education of demobilized medical officers) in hospitals in their region. The Review Committee should make their recommendations to the Regional Board, who will then inform the Hospital Management Committees concerned.

15. In the case of teaching hospitals, the Board of Governors should ask the medical advisory committee, in consultation with the appropriate dean or deans, to make similar recommendations with regard to the corresponding posts and practitioners in the teaching hospital group.

(c) Retrospective Adjustment of Salaries (see paragraph 91 (below))

(d) Transitional Arrangements as regards "Supernumerary Registrar Posts"

16. Holders of Registrar posts supernumerary to establishments are expected, as soon as possible, to seek posts within a hospital's normal establishment if they need further hospital post in order to gain experience. To minimize hardship during the transitional period, however, Boards of Governors and Hospital Management Committees may retain men of accepted ability holding Class III posts under the scheme for postgraduate education of ex-Service officers for a further period of 12 months in "supernumerary" posts after the termination of their current appointment in cases where the latter is due to end on or before Sept. 30, 1949.

(e) Movement of Registrars between Specialties

17. A Registrar in general medicine or general surgery will, in some cases, after gaining the appropriate experience, wish to specialize in some other branch of medicine or surgery—e.g., radiology, paediatrics, pathology, ophthalmology, thoracic surgery. In such cases the post to which he is appointed in the new specialty will usually be the grade below that attained in general medicine or general surgery; where a Senior Registrar takes a Registrar post in this way he will, in accordance with the terms and conditions of service, be paid at the higher rate (i.e., £890 per annum) for a Registrar post as long as he holds a post of that grading; if subsequently he obtains a Senior Registrarship in the new specialty, he will commence at the salary for the first year of a Senior Registrar post (i.e., £1,000 per annum).

House Officers (Document, paragraph 4 (a))

18. Whatever period of tenure may have been customary in the past for House Officer posts, they should in future invariably be tenable for periods of six months. This should not prevent movement from one department of a hospital to another during the six months' period.

Junior Hospital Medical Officers (Document, paragraph 4 (b))

19. These are whole-time appointments only.

Part-time Appointments (Document, paragraph 5)**Consultants (Document, paragraph 5 (a))**

20. The following is an example of the application of paragraph 5 (a) of the document :

A physician divides his time as follows :

Work	Estimate of Time Required by an Average Practitioner	Total Weekly Time (in Hours)
2 out-patient clinics ..	2 hrs. weekly + 1 hour's travelling in 13 " " each case	4½
"Pastoral visits" to out-plying hospitals ..	One day of seven hours fortnightly, including travelling ..	3½
Irregular hospital visits	2 hours weekly, including travelling	2
Charge of beds ..	9 hours weekly—½ hour's travelling daily for 6 days	12
Adviser to board ..	8 hours monthly	2
	Total	24
		= 7 "half-days"

For this the physician would receive eight-elevenths of the appropriate whole-time remuneration—i.e.,

$$\frac{7}{11} + \frac{(11-7)}{44} = \frac{8}{11}$$

21. It will be noted that determination of the number of "notional half-days" does not involve calculation of the actual number of hours worked on any particular day or in any particular week by any particular consultant. The board are expected to make a pre-contract assessment of the duties attached to the post in terms of the time which should be taken by an average practitioner to perform those duties. It follows from this that there is no need for consultants to "clock in and out" so as to record the hours at which they arrive and depart, and that differences in the length of time taken by different consultants for exactly similar duties will not be reflected in their rates of remuneration. Where consultants are engaged in teaching duties concomitantly with their clinical work the pre-contract assessment of the time required by an average practitioner to perform the duties of the post will reflect the fact that the time required for a teaching ward round or out-patients' clinic, etc., would normally be greater than that required by an average practitioner engaged on clinical work alone—i.e., the board should not reduce the average time required for the work to correspond with the average time which would be required to do the ward round, etc., in a hospital where teaching is not carried on. The only factor in determining the "notional half-days" which will be directly related to the circumstances of the individual consultant is travelling time, which will depend in each case on the distance between the consultant's home or consulting-room and places of duty, and any other relative considerations. Time required for examinations and reports which fall within Category I in the Schedule to paragraph 14 of the document should also be taken into account in assessing the number of "notional half-days"; but time required for work which falls within Category II of that Schedule should, like all private patient work, be excluded.

22. It is clear that the time required for the performance of the duties of the post is not capable of meticulously exact assessment. The board should agree with the consultant concerned the number of "notional" half-days which as nearly as can be foreseen adequately expresses on the basis explained above the extent of the duties required of him, bearing in mind that the table relating the "number of hours weekly" to the "number of notional half-days" gives the consultant the benefit of marginal overlaps—i.e., there is no provision for payment for fractional half-days.

23. This pre-contract assessment of time should be subject to reconsideration at any time (at the instance of either board or practitioner); but if re-examination is called for in the light of experience it should still be remembered that the assessment is based on the time which would be reasonably required by an average practitioner and not necessarily on the time which is actually being taken by the individual.

24. The pre-contract assessment of travelling time will not be capable of precise computation; but it is really the same as that for which travelling expenses are payable, and occasional

comparison of time reckoned under paragraph 5 (a) of the document with the mileage allowed for expenses under paragraph 19 of the document would be sufficient to ensure a reasonable degree of accuracy.

Part-time Registrars (Document, paragraph 5 (c))

25. As a general rule all Senior Registrars, Registrars, and Junior Registrars will hold whole-time posts for a definite period. Occasionally a whole-time appointment might be divided between two or more hospitals; a true part-time registrar post might be suitable in the following cases:

(a) an officer who has obtained a part-time consultant appointment on the staff of a non-teaching hospital might retain a part-time appointment as senior registrar on the staff of a teaching hospital; and

(b) a practitioner in general practice whose object is ultimately to apply for a consultant appointment might, if he could not afford to give up his practice to take a whole-time appointment, hold a part-time post in a registrar grade, in order to gain the experience to equip himself to make such an application.

26. Posts in the registrar grades should normally, however, be reserved to practitioners who are training in a particular specialty with a view to attainment of consultant status. A general practitioner without such a specific ambition may be adequately catered for with a part-time "clinical assistantship" (see paragraph 43 (a) below).

Higher Rates of Part-time Remuneration (Document, paragraph 5 (e))

27. The Minister would be prepared to approve higher rates of remuneration only in cases where some special inducement was necessary to fill an essential appointment and where the difficulty could not be avoided in any other way—e.g., by combining the part-time appointment with appointments in other hospitals. This situation might arise in the case of an essential consultant appointment at a hospital in a small country town not warranting whole-time employment, where the duties could not be combined with similar duties in nearby hospitals, and where it would be difficult for the consultant to supplement his hospital appointment by private practice; but the circumstances of each case will be considered on their merits.

Exceptional Consultations (Document, paragraph 6)

28. It should very rarely be necessary for payments to be made to consultants for services of the kind referred to in this paragraph. The "exceptional consultation" is intended to be really exceptional. In particular, such payments should never be necessary in the case of consultants who are in contract with the board on whose behalf the exceptional consultation is undertaken; and in the case of consultants who are not in contract with the board the special payments should be necessary only where the consultations concerned are not the realization of an anticipated liability. The following notes explain more fully what is meant by this:

(a) Where the consultant is under contract with the board primarily on account of regular duties at a particular hospital or hospitals, his liability to be called occasionally to other hospitals should be allowed for in fixing the contract (on the lines of the entry "Irregular hospital visits" in the example given in paragraph 20 above), even though it is impossible to forecast the exact number of times his services will be called for. What is required is a rough assessment of his liability to be called upon.

(b) If a consultant's services for a board do not include regular duties at any hospital but he is called upon when required, his liability should be assessed in exactly the same way and expressed in terms of notional half-days per week to form the basis of a contract of service. (Alternatively, in appropriate circumstances an honorary appointment in respect of such occasional consultations might be acceptable to the consultant.)

(c) The same principle applies when a consultant has a contract for regular services with one board and is called in to the hospitals of another board when required. Any services of this kind known to be required from the consultant by the latter board should be dealt with as in (b) above.

(d) Where part-time appointments are offered which include (or even cover nothing more than) a liability to be called on for irregular visits, the appointments are subject to the normal maximum remuneration (9½ elevenths of the appropriate whole-time salary): and where the consultant holds appointments with more

57. For the purposes of the principle indicated at (a) under "Category I," the phrase "reference from a medical source" means reference from a medical or dental practitioner or practitioners (e.g., a medical board) who, having clinically examined a person, for any reason require a second opinion. It does not mean reference from a medical administrative officer who has not clinically examined the person referred.

58. The inclusion in "Category II" of general practitioner services given by a hospital medical officer under Part IV of the Act to members of the hospital staff who are on his "list" means that either a whole-time or part-time officer may undertake this work and retain the Executive Council fees payable. This is however subject to the general overriding condition that officers should not be allowed to undertake "Category II" work unless the amount of work involved is consistent with the proper discharge of their hospital duties. Where it is convenient for such services under Part IV of the Act to be performed by whole-time staff, it may therefore be necessary, in a large hospital, for several whole-time officers to divide the work between them, each applying to the Medical Practices Committee (through the Executive Council) for inclusion in the medical list and if his application is granted seeking the consent of the Executive Council to a limitation of his "list."

Retired Consultants (Document, paragraph 15)

59. There is nothing to prevent the offer to a consultant of 70 or over of an honorary appointment in respect of exceptional calls on his services, as indicated in paragraphs 6 and 15 of the terms and conditions of service.

60. In the past, the retiring age has varied from hospital to hospital and there will be consultants who, during the last few months, have retired at ages below 65 to the honorary consultant list. Officers who retired at an earlier age after July 5, 1948, should be offered re-employment in an active capacity until they reach retiring age.

61. Boards may also find it useful to offer re-employment in an active salaried capacity to officers who retired at ages below 65 before July 5, 1948, until such time as they reach retiring age, although they would have no obligation to do so; if there are such officers whom the boards cannot employ in an active capacity, they should be prepared to give honorary unpaid appointments as described in paragraph 6 to any who desire them.

62. In no case could any guarantee be given to reinstate the officer in his former post, because it may have been filled in the meantime.

63. Officers re-employed in these circumstances would not, of course, receive pay in respect of the period between retirement and reappointment, but upon reappointment in an active capacity the rate of pay should be as if there had been no break in service.

64. Where a retired consultant holds an honorary appointment, it enables him to treat private patients in Section 5 beds and he is not precluded from claiming travelling and subsistence expenses in the usual way in respect of the duties of his appointment.

65. If a retired consultant agrees to undertake to give domiciliary consultations under the board's scheme, the appropriate domiciliary consultation fees will be payable.

Tenure of Post (Document, paragraph 16)

66. No period of tenure should be specified in the contract of service of any officer except Registrars, House Officers, and certain types of "clinical assistantships," etc., arising under paragraph 43 of this memorandum. In the absence of any stipulation in the contract regarding notice of termination of appointment by either party, the board will be entitled to expect reasonable notice to be given to them by any officer who wishes to resign his appointment. The National Health Service (Appointment of Specialists) Regulations, 1948 (S.I. 1948, No. 1416) will be amended to remove the requirement that the duration of the appointment shall be stated in the advertisement.

67. Where whole-time or part-time consultants are displaced from their appointments as a result of, e.g., a change of use of particular premises or a review of hospital establishments, or where for similar reasons a part-time consultant's duties are seriously disturbed, the board should so far as practicable give the consultant or consultants concerned the opportunity of undertaking similar duties elsewhere. As was explained in a similar connexion in R.H.B. (49) 70/B.G. (49) 58, it will be more difficult for a Board of Governors than for a Regional Hospital Board to do this, as their administrative control extends over a much narrower field, but they should seek the co-operation of neighbouring Regional Hospital Boards in endeavouring to arrange for the offer of similar work.

Leave (Document, paragraph 18)

Annual Leave (Document, paragraph 18 (a))

68. An officer may be allowed to take, at any time up to Dec. 31, 1949, any balance of annual leave which may be due to him on the basis of the new terms and conditions of service in respect of the period to March 31, 1949.

69. Where an officer moves from one employing authority to another within the National Health Service, his service should be regarded as continuous for purposes of entitlement to annual leave, including the six months' qualifying period. The leave due under the second employing authority in the year in which the change takes place will therefore be the amount of leave due for the full year less any leave taken under the first authority.

70. In a year of transition from a salary of less than £1,000 to one of £1,000 or more, the leave entitlement for the year should be determined on a proportionate basis.

71. Saturday should be regarded as a full working day for purposes of annual leave.

72. Officers must notify the board or hospital management committee when they wish to take annual leave, and the granting of such leave will be subject to approved arrangements having been made for their work to be done during their absence.

"Study" Leave, Conferences, etc. (Document, paragraph 18 (d))

73. It will be appreciated that where, on the instructions of the board, officers undertake teaching or examining duties; attend meetings or conferences, or visit clinics, etc., no question of special leave arises and the officers should be regarded for all purposes, including the payment of expenses, as being on the service of the board.

74. When considering applications under the last sentence of paragraph 18 (d) (i) of the document for permission to undertake remunerative work during a period of leave with pay, boards or committees should give permission as regards fees for examining in medical or dental subjects.

75. A period of absence on study leave without pay may be allowed to count for purposes of increment at the discretion of the leave-granting authority. In general, an absence of this kind should be reckoned as incremental service where the purpose for which the leave is taken is directly connected with the officer's work and may be expected to increase his usefulness as a member of the staff of the National Health Service.

76. In cases where study leave has been granted with pay, travelling expenses and/or subsistence allowances may also be granted where in the opinion of the board it will be to the advantage of the Service to do so. Expenses may be granted wholly or in part. Regional Hospital Boards and Boards of Governors may combine to defray the whole or part of these expenses in an individual case.

77. While it is desired to give boards the maximum of discretion in the granting of study leave, it is necessary to secure a substantial measure of uniformity in the matter of defraying expenses. Boards will therefore be required, within their approved budgets, to limit their annual expenditure on all expenses granted in connexion with study leave (including for this purpose the expenses of officers who are teaching, attending meetings, etc., at the instruction of the board—see paragraph 73 above) to certain prescribed maxima. In the case

of Regional Hospital Boards (and covering also Hospital Management Committees in the region) these are as follows:

£1,200 Oxford, Cambridge.

£1,600 Newcastle, Leeds, Sheffield, Liverpool, Bristol, Wales

£2,000 Metropolitan regions, Manchester, Birmingham.

Each board of governors will be notified individually before July 5, 1949, of the maximum to which they will be required to adhere. The maximum will vary according to the size and circumstances of the hospital, but will in no case exceed £1,200, and in the case of undergraduate teaching hospitals will in no case be less than £800.

78. Where the expenditure of a board on expenses for the year 1949-50 is likely to exceed the maximum referred to above, and it is not possible to meet the additional cost from "free money" at the board's disposal, application should be made by the board for authority to increase the amount allocated within the budget for this purpose.

79. It is hoped at an early date, in the light of experience already gained in the Ministry, to give further guidance on the granting of study leave.

80. The study leave arrangements provided for in the terms and conditions of service and in this memorandum are provisional and will be subject to reconsideration when experience has been gained of their operation.

Sick Leave (Document, paragraph 18 (e))

81. The holding of an honorary (unpaid) appointment—e.g., by a specialist at a voluntary hospital prior to the appointed day—should be regarded as constituting service under an employing authority for the purposes of subparagraph (2) (b).

Special Extended Leave: Teaching Posts in Colonial Universities

82. It will be open to a regional hospital board or board of governors to allow consultants in their employment extended leave of absence without pay to enable them to take up teaching posts in Colonial universities, provided they undertake to return to the hospital service immediately on the termination of their Colonial employment. The period of leave granted for this purpose should in no case exceed three years. At the end of such leave the board should offer the consultant a new post not necessarily the one he held before his absence) or help him to find a post with another board; and the period of leave without pay should count for increment. The Minister will advise on the preservation of superannuation rights in such circumstances.

83. The Minister is at present considering allowing facilities for special leave without pay for other similar purposes, and boards will be advised in due course.

Expenses (Document, paragraph 19)

Subsistence Allowances (Document, paragraph 19 (f))

84. For the time being, any case in which the officer's absence exceeds, or is likely to exceed, 28 nights should be reported to the Ministry for determination of the reduced rate payable.

Expenses of Candidates for Appointment (Document, paragraph 19 (i))

85. Payment of the expenses of candidates other than those referred to in paragraph 19 (i) of the document should be governed by the normal rule—i.e., no subsistence should be paid, but the full cost of third-class railway fare or bus fare from their ordinary place of residence (in the case of candidates travelling from abroad, from the port of landing in this country) on the interview may be refunded if the expenditure, calculated on this basis, exceeds 5s.

Payment of Mileage Allowance to Whole-time Officers for Journeys from Home to Main Hospital (Document, paragraph 19 (d))

86. Mileage allowance for journeys between home and hospital will be payable where an official journey of the kind described in this paragraph is undertaken and also where a whole-time officer has a defined liability to undertake such journeys though in fact he may not receive a call to do so. In the case of a

whole-time officer liabilities of this sort should always be closely circumscribed and defined and there should be no question of an indefinite requirement to have the car available at the hospital on days other than those to which the liability is specifically related.

Secretarial Assistance

87. Questions have arisen from time to time about the payment of expenses to consultants in respect of secretarial services which they have provided for themselves at hospitals. A board of governors or hospital management committee may provide secretarial services at a hospital, on either a whole-time or part-time basis, for the benefit of medical staff, but neither a board nor a management committee has power to reimburse a practitioner for any part of the cost he incurs in engaging his own employee. It is for the board of governors or hospital management committee to decide how far they consider it necessary to provide such services.

Medical Examination on Appointment (Document, paragraph 20)

88. The Minister is discussing further with representatives of the profession the future application of the provisions of this paragraph to house officers, and further guidance will be given as soon as possible.

Retrospective Application

89. The intention is that so far as possible the whole of these terms of service should be applied with effect from July 5, 1948. Remuneration and detailed conditions of service are interdependent, and the application retrospectively of the former should ideally be accompanied by the application retrospectively of the latter.

90. It is clear that this ideal will not always be capable of realization. It is not always possible to give retrospective effect to new privileges or to withdraw retrospectively privileges already enjoyed. Boards are therefore allowed discretion in making adjustments of salary, item of service payments, expenses, etc., relating to the period July 5, 1948, to July 5, 1949, on the understanding that so far as practicable the general effect should be that which would have been achieved had these terms and conditions of service taken as a whole been in operation since the appointed day.

91. The following notes, which are not intended to be exhaustive, give guidance to boards and committees on the way in which their discretion might be exercised on certain questions which appear to the Minister likely to arise, and which are not dealt with elsewhere in this memorandum.

(i) General

Officers will be paid from July 5, 1948, in accordance with their recent grading by boards (except where different posts have been held by the same officer during the period). Where the salary already paid between July, 1948, and July, 1949, exceeds the salary (including any distinction award) to which the officer becomes entitled retrospectively, boards should not attempt to recover the excess. Where, however, whole-time officers have been entitled under their old conditions of service to retain or have remitted to them private fees, the amount of such fees earned by them during the period to which the retrospective application relates should be offset against any upward adjustment of remuneration.

Retrospective payments of salary will have to be made to officers who have retired, or to the estate of officers who have died, since July 5, 1948.

(ii) Distinction Awards (Document, paragraph 1 (b))

Retrospective payments will have to be recalculated for consultants who subsequently receive the initial distinction awards. Retrospective payment should not be withheld in the expectation of an early award except at the consultant's request.

(iii) Clinical Teachers holding a Distinction Award (Document, paragraphs 1 (b) and 9)

If the clinical teacher concerned holds an appointment of the kind described in paragraph 9 (i) of the document the amount of the award payable in his case (from July 5, 1948, or such later date as he first held the appointment) will be remitted by the Regional Hospital Board/Board of Governors concerned to the University or Medical or Dental School, who will include it as an element of his remuneration.

If he holds an appointment of the kind described in paragraph 9 (2) of the document he receives the appropriate value of the award from the Regional Hospital Board/Board of Governors.

(iv) *Medical Superintendents (Document, paragraph 2 (c))*

The new salary (composed of salary for clinical work and salary for administrative work) should be paid retrospectively according to the officer's grading in the clinical and administrative fields respectively since July 5, 1948 (except for transferred officers opting to keep their old salary and conditions of service).

(v) *Senior Registrars, Junior Registrars, and House Officers (Document, paragraphs 3 and 4 (a))*

The posts which an officer has held from time to time since July 5, 1948, should be reviewed and classified in accordance with the new grading. Remuneration should then be adjusted retrospectively, but where the salary paid during the interim period or any part of it exceeds the salary appropriate to the post as now graded, the overpayment need not be recovered. This applies to holders of "supernumerary posts" under the scheme for post-graduate education of ex-Service officers just as to holders of posts within hospitals' present establishments. Where holders of Class III posts under the postgraduate scheme for ex-Service officers have held posts which are now graded as House Officer posts, the Class III remuneration which they have received should therefore be allowed to stand.

In a small number of cases retrospective upward adjustment of salary will have to be regulated so as to avoid retrospective overpayment of Further Education and Training grants awarded by the Ministry of Education. The hospitals concerned will be notified individually at the earliest practicable moment of the action they should take in this matter.)

In applying retrospectively the new rates for House Officers the period since the date of registration during which posts in this grade have been held should be divided into six-monthly periods (irrespective of the period of tenure which in practice attached to the posts), the remuneration for the first six months after registration being calculated at the rate of £350 per annum, for the second six months at the rate of £400 per annum, and thereafter at the rate of £450 per annum.

(vi) *Blood Transfusion Staff Employed on a Sessional Basis*

For these staffs, the pre-appointed-day arrangements have continued in operation throughout the interim period. If boards have sufficient information to reassess their sessional work during the period in terms of a part-time contract the new salary rates may be applied on that basis. (Where the number of "notional" hours weekly is two or less, the provisions in paragraph 10 (b) of the document may be applied.)

(vii) *Payment for Exceptional Consultations (Document, paragraph 6)*

Exceptional visits to hospitals within the area of the employing board were not intended, in the interim period, to attract extra payment where the consultant was already earning the maximum of £1,600. If such visits have in fact been remunerated, then if the consultant was employed for nine or more half-days per week the payment made in respect of exceptional visits should be offset against the additional salary payment now due to adjust the interim salary to the higher rates.

Exceptional consultations which would attract payment under paragraph 6 of the document should be remunerated retrospectively at the new rate.

Where a consultant was being paid provisionally less than the maximum provisional rate of £1,600 per annum, or was being paid £1,600 but working less than nine half-days per week, and has been paid in addition for exceptional visits to hospitals within the area of the employing board; then, if the application of paragraph 5 (a) of the document would have enabled his liability to undertake those visits to be taken into account in the assessment of the number of notional half-days per week on which his salary was reckoned, and an adjustment of the number of half-days retrospectively on this basis is possible, the consultant should be paid retrospectively for the adjusted number of half-days, and the item of service payments which have been made for the exceptional visits offset against the upward adjustment of remuneration.

There was no provision in the interim arrangements for exceptional visit fees for general practitioners. Any *ad hoc* payments which have been made may be adjusted retrospectively where practicable to conform with the rate of payment now laid down.

Similar questions to the above may arise on the payment of locum fees during the interim period: if so, they should be dealt with in the same way.

(viii) *Domiciliary Consultations (Document, paragraph 8)*

Where whole-time officers have been paid for domiciliary visits, the payments need not be offset against any upward adjustment of salary.

Where, however, the interim rates of payment were more favourable to a consultant (whole-time or part-time) than the new rates (e.g., the 10 guineas payment for major operations), the overpayment should be offset against upward adjustment of other domiciliary service payments or of salary.

Where records have been kept of domiciliary consultations undertaken in excess of the maximum for which fees were payable during the interim period, payment for the consultations so recorded may now be made at the new rates, subject to the revised maximum.

(ix) *Retention of Fees (Document, paragraph 14)*

The Minister realizes that it will be impracticable to apply retrospectively the provisions of paragraph 14 of the document unless in particular circumstances records have been kept pending settlement in the light of these terms and conditions of service.

(x) *Residential Appointments (Document, paragraph 17)*

The basis of charge in place of a valued emolument should be retrospective to July 5, 1948.

(xi) *Study Leave (Document, paragraph 18 (d))*

Any expenses granted in connexion with study leave taken after July 5, 1949, which was authorized by the Minister before that date will count against the maximum referred to in paragraph 17 above.

(xii) *Sick Leave (Document, paragraph 18 (c))*

Where the new provisions are more generous than the old, the balance of pay may be paid in respect of sick leave taken during the interim period. Where under the old conditions payments have been made on a more generous basis there should be no recovery (or offset against retrospective adjustment of salary rates).

Retrospective payments should take into account deduction of National Insurance benefits payable.

(xiii) *Expenses (Document, paragraph 19)*

The higher rates of travelling allowances and expenses (and the conditions attaching to them) may be applied retrospectively so far as possible. Where detailed adjustment is impossible, settlement may be made by agreement between the board (or hospital management committee) and the officer concerned.

Recovery need not be made from officers who have received subsistence allowances during the interim period at higher rates than those to which they are now entitled.

(xiv) *Medical Examination on Appointment (Document, paragraph 20)*

These provisions should not be applied retrospectively: i.e., it is not intended that officers who obtained hospital appointments between July 5, 1948, and the date of receipt of this memorandum should now be required to undergo a medical examination.

THE RIGHT TO ARBITRATION

At a meeting of the General Medical Services Committee on June 2 the chairman, Dr. S. Wand, reported on a discussion which he and the Secretary had had at the Ministry of Health, the Minister himself being present, on the question of the remuneration of general practitioners in the Service. He said that the Minister had insisted that it was necessary, before he could make any decision, that he should know exactly what each doctor was receiving for each item of service in addition to the capitation fee. It appeared that the results of the inquiry which the Ministry was making into the actual earnings of general practitioners could not be completed and collated until the middle of July. The Minister had been informed that in the event of an unsatisfactory outcome the profession would desire recourse to arbitration, but the Minister had stated that such recourse must be subject to his consent in any given case.

Attention was called to Clause 12 of the amending Bill, which laid it down that there could be a determination of issues by arbitration only when the Minister agreed that the matter in question should be so referred. This meant that it would never be possible for the profession, having disagreed with the Minister on any major financial issue, to insist on arbitration, since the Minister's approval was always necessary.

Dr. Dain (Chairman of Council) said that until the amending Bill appeared it was assumed that they were entitled to take the Minister to arbitration on remuneration whenever they liked to do so. He felt that the profession must never allow itself to be in a position in which the Minister could refuse its

demand for arbitration. Higher Civil Servants were excluded because of their close contact with the State, but the profession was not in that position. The profession must stand on its right to demand arbitration on the remuneration question whenever it arose, and the Minister could do the same. He hoped that the Government would appreciate that this was a fundamental question to the profession and would be prepared to accept such an amendment.

The committee unanimously resolved that on the remuneration issue, should no agreement be reached, the right to have the matter determined by arbitration should be demanded, and that in the meantime in the various areas the profession should be informed of the position.

It was agreed to call an additional meeting of the committee on July 28, but should any fresh major development arise the committee would be recalled at once.

Other matters which came before the committee will be reported in a subsequent issue of the *Supplement*.

BRITISH MEDICAL ASSOCIATION

ANNUAL REPRESENTATIVE MEETING

MOTIONS AND AMENDMENTS FROM DIVISIONS AND BRANCHES

War Memorial

Amendment by HARROW: That this meeting totally opposes the action taken by the Council with regard to the choice of a fountain as a war memorial, as described in para. 6 of the Annual Report of Council; it requests that no further action should be taken by Council and suggests that the sum of £10,000 should be devoted to educational scholarships for the dependants of the fallen. (Similar motions by other Divisions.)

NATIONAL HEALTH SERVICE

Arbitration

Motion by READING: That this meeting advises the profession to resign from the National Health Service unless the Minister guarantees that in the event of disagreement between representatives of the profession and himself all matters shall be submitted to arbitration and that, in the event of disagreement on the betterment factor, this be submitted immediately to arbitration.

Motion by RICHMOND: That the right of arbitration must be an integral part of the Whitley Council machinery set up for the medical profession, and must be incorporated in the Amending Act.

Motion by KINGSTON-ON-THAMES: That as the Minister of Health has withdrawn the official assurances and undertakings, repeatedly given to the profession, on the question of arbitration in the event of a dispute, this Representative Body demands that effective action be taken forthwith to insist that arbitration machinery be set up, and that demands for arbitration by the profession shall not be subject to the Minister's veto.

Motion by KENSINGTON AND HAMMERSMITH: That this meeting regrets the delay in establishing the Whitley machinery on the question of doctors' remuneration, and expresses its strong conviction that Whitley machinery without the possibility of arbitration will be of little avail.

Motion by MID-ESSEX DIVISION: That the Minister's refusal to grant the right of appeal in disciplinary cases, or arbitration if the Whitley machinery breaks down, shows an autocratic attitude which the medical profession will not tolerate.

Overseas Visitors

Motion by GATESHEAD: That this meeting expresses strong disapproval of the position whereby any alien has free access to all medical services paid for by the British taxpayer, while such taxpayer is denied free medicine if he elects to make a private contract with his general practitioner.

The First Year of the Service

Motion by MARYLEBONE: That this meeting of representatives from all parts of the country regretfully records the fact that, during the first year of the National Health Service, the

Minister and the Ministry of Health have shown little or no desire for co-operation with the medical profession in its efforts to serve the public; that they have met the profession's suggestions with indifference and procrastinations; that they have been guilty of breach of faith; and that, particularly for these reasons, the Service is falling far below the standard the public were led to expect.

GENERAL MEDICAL SERVICES

Remuneration of General Practitioners

Motion by BUCKINGHAMSHIRE: That, unless negotiations result in a financial settlement satisfactory to the profession as a whole before Sept. 30, 1949, this meeting instructs the Council to advise mass resignation of the profession from the N.H.S.

Motion by BELFAST: That, owing to the unsatisfactory situation which has arisen, due to the indefinite postponement of discussion by the Ministry of Health of the reasonable and documented case put forward by the General Medical Services Committee for increasing the Central Pool by £16½ million, this meeting demands that further delay shall not be tolerated, and that the Association take immediate steps to organize a mass withdrawal from the Service.

Motion by KINGSTON-ON-THAMES: That, the present capitation rate never having been agreed to by the profession, the Representative Body demands that the contemplated improvements in remuneration shall have effect retrospective to the commencement of operation of the National Health Service Act.

Motion by BLACKPOOL AND FYLDE: That this meeting gives full support to the Conference of Local Medical Committees in seeking an adjustment of general practitioner remuneration on the basis of the report prepared by the General Medical Services Committee, and stresses the urgency of the matter in view of financial hardship which exists, particularly in certain parts of the area.

Motion by GREENWICH AND DEPTFORD: Para. 26. That this meeting deplores the Minister's attitude regarding the reconsideration of remuneration.

Vaccination and Immunization

Amendment by DERBY: That the fee for vaccination should be one guinea and that the fee for immunization should be 5s. for each injection.

Motion by GREENWICH AND DEPTFORD: That this meeting considers that the Minister's continued refusal to agree to the payments of fees for immunization and vaccination is indefensible.

Motion by GATESHEAD: That, until it be established that local authorities are responsible for the payment to practitioners of fees for the performance of vaccinations and immunizations, it is recommended that no reports of the performance of such services be rendered.

Provision of Medicines and Appliances for Private Patients

Motion by CHELSEA AND FULHAM: That the facilities of the pharmaceutical services should be free to private patients.

Medical Treatment of Overseas Visitors

Motion by KENSINGTON AND HAMMERSMITH: That extra money be put into the Central Pool in respect of foreign visitors who become entitled to treatment under the National Health Service.

Dental Haemorrhages

Amendment by CITY OF EDINBURGH: That treatment should not be refused in cases of dental haemorrhage, but that pressure should be continued to obtain a fee for such emergency service.

Motion by GATESHEAD: That in the event of his being called upon to deal with a dental haemorrhage a medical practitioner should be able, as a dentist is able, to claim suitable payment from the Dental Estimates Board.

Frivolous or Unjustified Emergency Calls

Motion by LINCOLN: That the B.M.A. take all steps to persuade the Minister of Health to set up a series of rules for patients comparable to those used under the National Health Insurance Act.

General

Motion by MID-ESSEX: That this meeting presses for a speedy settlement of a number of problems which have now been outstanding for nearly a year—namely, (1) The provision of health centres, (2) Payment for mileage in maternity cases, (3) Payment for urban mileage, (4) Payment for mileage in connexion with the examination and certification of persons of unsound mind, (5) Payment for vaccination and immunization, (6) Increase in payment for temporary residents.

Motion by TORQUAY: That this meeting congratulates Council on the vast volume of work contained in its Annual Report, but regrets that so little improvement in the terms of service under the National Health Service Act has accrued from it.

Superannuation

Motion by WEST DENBIGH AND FLINT: That superannuation should not be deducted on the cost of expensive drugs supplied by rural practitioners.

Motion by BLACKPOOL AND FYLDE: That this meeting requests the General Medical Services Committee to examine the whole question of superannuation, with particular reference to the lack of "cover" provided during the first 10 years of service.

Range of Service

Motion by GATESHEAD: That the Ministry of Health be requested to correct forthwith their misinterpretation of Regulation 6 (1) of Schedule 1 of the General Medical and Pharmaceutical Services Regulations.

References to Regional Medical Officers

Motion by GATESHEAD: That the attention of the Ministry concerned be drawn to the waste of doctors' time caused by the recent great number of unnecessary references to Regional Medical Officers.

Notice to Patients by Executive Councils

Motion by MARYLEBONE: That the attention of the Minister should be called to the fact that executive councils are giving insufficient notice to the patients of doctors resigning from medical lists.

Allocation of Patients

Motion by EAST KENT: That no patient shall be allocated to a practitioner from whose list he or she has previously been removed at the request of the practitioner concerned.

Doctors' Calls

Motion by WEST DENBIGH AND FLINT: That all messages should be sent to a doctor's house before 10 a.m., with the exception of emergencies, and that this instruction should be printed on the N.H.S. medical cards, as was done prior to July 5, 1948.

Form O.S.C.1

Motion by EAST KENT: That Form O.S.C.1 is redundant and should be abolished.

Purchase Tax

Motion by CHELSEA AND FULHAM: That there should be no purchase tax on drugs.

Travelling Expenses

Motion by LINCOLN: That doctors when travelling at the expense of the Ministry of Health should be allowed first-class fares.

Domiciliary Physiotherapy

Motion by TORQUAY: That as a matter of principle it should be within the power of the general practitioner to order domiciliary physiotherapy for patients when in the practitioner's opinion it is necessary.

CONSULTANTS AND SPECIALISTS

Motion by EAST KENT: That the democratically elected Consultants and Specialists Committee is the body which should represent its constituents, and there should be no representation of the Colleges as such on the Negotiating Committee.

Motion by EAST KENT: That it is essential that on all specialists committees non-teaching consultants and specialists should be represented equally with members of teaching hospital staffs, having regard to the large part they play in the Hospital Service.

Proposed Terms and Conditions of Service of Hospital Medical Staff

Motion by KINGSTON-ON-THAMES: That this Representative Body deplores the delay in offering final terms of service to consultants and specialists and demands that such terms be offered forthwith for their consideration.

Security of Tenure

Motion by KINGSTON-ON-THAMES: That the Representative Body protests most emphatically at the procedure, now developing in London, in the action of a few teaching hospitals giving notice of termination of appointments of consulting staffs at smaller hospitals which have been "designated" by the Minister of Health, and demands that Council take suitable action forthwith to end this practice.

Selection of Specialists: Senior Hospital Medical Officers

Motion by PRESTON: That this meeting deprecates the arbitrary action taken by the regional hospital boards in assessing the status of the medical staffs of hospitals.

Motion by READING: That this meeting views with concern the creation of a body of senior hospital officers, without right of appeal against their assessment to an independent tribunal.

Motion by GATESHEAD: That tuberculosis medical officers of standing and experience should be classified as specialists and not as senior hospital officers.

Motion by DERBY: (i) That an intermediate grade should be created between senior hospital medical officers and that of specialists, to include medical superintendents who are not already graded as specialists; (ii) that the salary of this grade range between £1,500 and £2,500.

(Further Motions and Amendments will appear in next week's Supplement)

Association Notices*Diary of Central Meetings**JUNE*

- 15 Wed. Coroners Acts Committee, 2 p.m.
- 16 Thurs. Dermatologists Group Committee, 11.30 a.m.
- 16 Thurs. Group of Dermatology Conference, 2 p.m.
- 21 Tues. Conference of Anaesthetists Group, 2 p.m.

Branch and Division Meetings to be Held

KENSINGTON AND HAMMERSMITH DIVISION.—At Kensington Town Hall, Tuesday, June 14, 8.30 p.m. Film: "The Sulphonamides." Members of Westminster and Holborn and Chelsea and Fulham Divisions and non-members in all three areas are invited to attend.

KENT BRANCH.—At Metropole Hotel, West Leas, Folkestone, Thursday, June 16, 12.15 p.m. Annual general meeting.

MACCLESFIELD AND EAST CHESHIRE DIVISION.—At Macclesfield General Infirmary, Sunday, June 12, 12 noon. Instruction of Representative to Annual Representative Meeting; consideration of proposed dissolution of Lancashire and Cheshire Branch and the formation of a "Merseyside" Branch and a "Manchester" or "Lancashire and East Cheshire" Branch.

MID-ESSEX DIVISION.—At Hoffmann Engineering Works, Chelmsford, Wednesday, June 15, 2.30 p.m. Dr. Alan Heard: "What is Industrial Medicine?" To be followed by a tour of the works.

ROCHDALE DIVISION.—At Rochdale Infirmary, Friday, June 10, 8 p.m., annual general meeting. Election of officers and instruction of representative.

SUSSEX BRANCH.—At Warnes Hotel, Worthing, Wednesday, June 15, 1 p.m., annual general meeting and luncheon.

VISITING THE U.S.A.

The Secretary of the Association will be glad to learn if any medical practitioner in this country expects to visit the United States of America during the last week of October.

LONDON SATURDAY JUNE 18 1949

THE SPLEEN AND SPLENECTOMY*

BY

RONALD BODLEY SCOTT, M.A., D.M., F.R.C.P.

Assistant Physician, St Bartholomew's Hospital; Physician, Woolwich Memorial and Surbiton General Hospitals

It is a melancholy reflection that Galen's only aphorism to remain in common currency after 1,800 years is his observation that the spleen was an organ full of mystery. Even to-day its functions in the healthy body remain in part mysterious and its structure matter for argument; but, if physiologists and anatomists still wrangle, the last ten years have enlarged the clinicians' understanding of the spleen in disease and have enabled them to define more exactly the indications for its removal. It is of these clinical aspects of disturbed splenic function and of the value of splenectomy in its correction that this paper treats. Our knowledge of these matters is built on the foundations laid by Frank (1916, 1917), Eppinger (1920), and Naegeli (1940), but its practical application is derived largely from the observations of American haematologists, and in particular of Doan and Dameshek.

Anatomy and Physiology

The spleen may be regarded as a vast lymph node in which, among other specialized circulatory arrangements, the lymph sinuses are replaced by venous sinuses. It consists of a medulla in which are set the Malpighian corpuscles, globular aggregations of lymphocytes disposed around a central arteriole; it is enclosed within a fibrous capsule and scaffolded by fibrous trabeculae with a feltwork of reticulin fibrils. The organ is contractile, and along the verges of the venous sinuses are arranged elements of the reticulo-endothelial system, histiocytes, and undifferentiated mesenchymal cells. The intimate vascular anatomy of the spleen is still uncertain: some believe that the circulation is entirely enclosed within vessels (Knisely, 1934-5, 1936); some that there is no continuity from artery to vein, but that arterial capillaries open into the sponge-work of the splenic pulp, which in turn drains into the venous sinuses (MacKenzie, Whipple, and Wintersteiner, 1941); and some that there is a double circulation, a closed system in whose walls are pores which allow escape into and return from the surrounding pulp (McNec, 1931).

Whatever the exact nature of the spleen's circulatory arrangements, the organ is well designed to play the part of a reservoir for blood cells, a function postulated 240 years ago by Leeuwenhoek (1708) and established by the well-known researches of Barcroft (1925). In foetal life the spleen is engaged in the genesis of blood cells, but, although some lymphocytes and monocytes are normally of splenic origin, in adult life it resumes haemopoietic

activity only in certain pathological states. Its large complement of reticulo-endothelial cells ensures the spleen's co-operation in the many complex, and often obscure, activities of this system.

These reservoir, haemopoietic, and reticulo-endothelial functions, although clearly of great importance in the body's economy, have not the clear-cut clinical significance of those of the next category. These are concerned with the regulation of the cellular composition of the circulating blood. Although there is no evidence that the spleen takes an active part in the destruction of red blood cells, its removal is followed by a decrease in urobilinogen excretion, which suggests that it removes effete erythrocytes from the circulation. After splenectomy the red blood cells become thinner and more resistant to hypotonic salt solutions, "target cells" appear, and Howell-Jolly bodies and Cabot's rings may be found (Singer, Miller, and Dameshek, 1941).

It may be concluded that the spleen normally increases the thickness of erythrocytes passing through it, that it forms a cemetery for defunct red blood cells, and that it exerts some control over the maturation of erythroblasts, particularly of that phase at which the nucleus is shed. Splenectomy is followed by an increase in the peripheral leucocyte and platelet counts. The former rises to between 15,000 and 20,000 per c.mm., and although the neutrophils commonly share in this increase it is mainly due to a lymphocytosis. The platelet count may reach 1,000,000 per c.mm. The explanation of neither phenomenon is certain: there is no evidence that leucocytes or platelets are normally destroyed by the spleen; the organ must either control delivery of these elements from the bone marrow or exert an inhibitory influence on their formation.

Indications for Splenectomy

This brief review of the spleen's functions must serve as an introduction to the subject of splenectomy. First, two general indications, unrelated to functional disturbance, may be dismissed. The necessity for operation in spontaneous or traumatic rupture is obvious: this gross surgical accident is seldom the concern of the physician, but it is well to recall the special liability to spontaneous rupture of the enlarged spleen in glandular fever (Attlee, 1932; King, 1941; Darley, Black, Smith, and Good, 1944; Davis, Macfee, Wright, and Allyn, 1945; Smith and Custer, 1946). Splenic tumours are almost invariably part of a neoplastic process systematized throughout the lympho-reticular tissue and thus do not constitute an indication for splenectomy; occasionally cysts may require excision.

*A lecture delivered to the Ulster Medical Society on March 3.

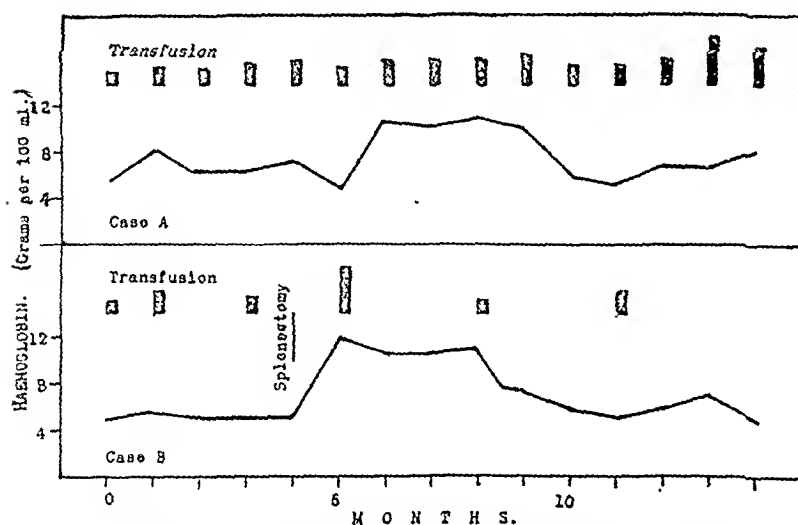


FIG. 1.—Transfusion requirements in identical twins with Mediterranean anaemia. The effect of splenectomy is shown in one. (After Govan, 1946.)

Of particular interest to the physician are the various disturbances which may be attributed to exalted splenic function. A resumption of haemopoietic activity occurs in several diffuse obliterative diseases of the bone marrow: it is seen in metastatic carcinoma, in osteosclerosis (Albers-Schönberg), and, particularly and most often, in myelosclerosis in which there is a replacement of normal blood-forming marrow by fibrous tissue and fine trabeculae of new bone. The spleen in this disorder undergoes myeloid transformation and may reach massive proportions; it is virtually the only haemopoietic tissue remaining, and for this reason its excision is strongly contraindicated. The diagnosis of this disease thus assumes some importance: in addition to splenomegaly, the features are anaemia of the leuco-erythroblastic type and a marrow of reduced cellularity on puncture; a trephine biopsy of the sternum may be required before the diagnosis is assured.

Exaltation of the reticulo-endothelial functions of the spleen provides no definite clinical syndrome; it is in its effect on the circulating blood that hypersplenism becomes

of great importance. This may result in anaemia, in thrombocytopenia, or in leucopenia, or in any combination of these changes.

Splenectomy in Anaemia

The value of splenectomy in some forms of haemolytic anaemia has long been appreciated, but the relation between splenic activity and the various haemolytic states is a matter of complexity. There is first a group of haemolytic anaemias in which the fundamental abnormality is a congenital and often inherited deformity of the red blood cell. The most common of these is familial acholuric jaundice, in which the erythrocytes have a shape approximating to the spherical. These spherocytes are retained selectively by the spleen and there destroyed in numbers often sufficient to lead to anaemia and haemolytic jaundice.

The spleen's activity in this disease must be regarded as normal but one which has a vicious effect on the organism because large numbers of the red blood cells, although functionally adequate, are mal-

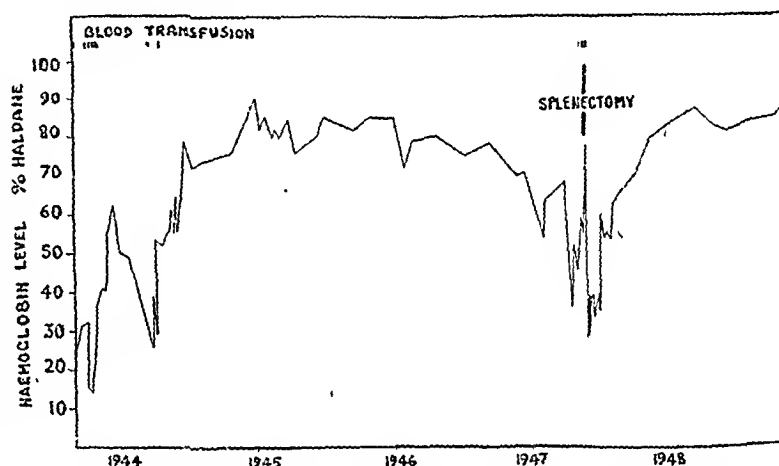


FIG. 3.—Haemolytic anaemia of unknown cause in a man aged 43.

formed and consequently are removed from the circulation. Splenectomy abolishes excessive haemolysis and usually reduces spherocytosis, for cells passing through the spleen are normally increased in thickness. In sickle-cell anaemia, which presents analogies with acholuric jaundice, splenectomy is curiously and notoriously ineffective. The third anaemia of this type—Mediterranean anaemia—occupies an intermediate position in this respect, and an interesting controlled experiment in which the spleen was removed from one of a pair of identical twins with this disease shows how beneficial the operation may be (Fig. 1) (Govan, 1946).

The second category of haemolytic anaemias is that in which some external factor is responsible for the destruction of red blood cells. This may be a recognizable toxic agent such as lead or one of the sulphonamide drugs, but the present discussion is concerned with those acute and chronic forms of acquired haemolytic anaemia in which no cause is evident. There is reason to believe that many are due to an antigen-antibody type of reaction: in some haemolysis can be demonstrated in the patient's serum (Dameshek and Schwartz, 1938, 1940);

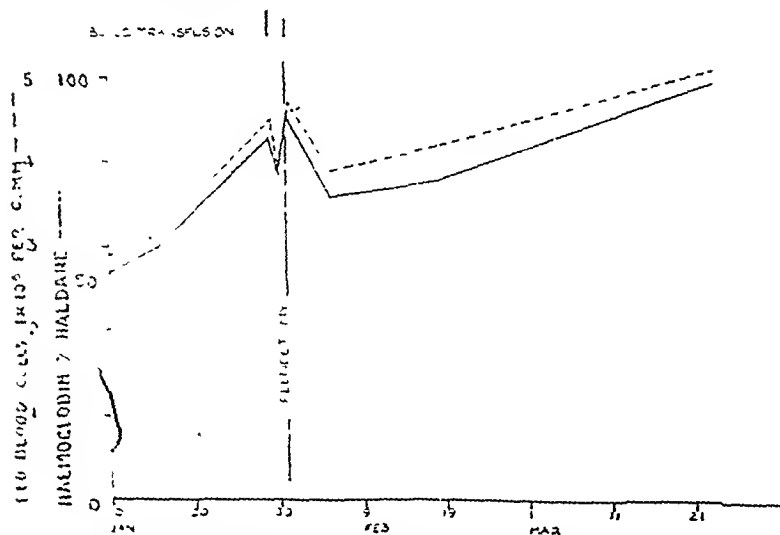


FIG. 2.—Acquired haemolytic anaemia of unknown causation in girl aged 18. Erythrocyte fragility 0.7-0.45% NaCl. Splenectomy: recovery.

in others the Coombs test provides indirect proof of its presence (Coombs, Mourant, and Race, 1945). Damage to the circulating erythrocytes, falling short of lysis, may be shown by spherocytosis and decrease in hypotonic resistance; in others inclusion bodies within the red blood cells are evidence that they have suffered injury (McFadzean and Davis, 1947). These cells may be adequate for the transport of oxygen, but they are removed and destroyed by the voracious and indiscriminating spleen.

In acquired haemolytic anaemia of this type, where the cause is unknown and therefore insusceptible of control, splenectomy must be recommended if the haemolytic process shows no sign of abating during a period of observation and blood transfusion. Removal of the spleen will remove the organ responsible for destroying damaged red blood cells, and it has been suggested that the haemolysis may be elaborated in the spleen itself. The effect of operation cannot be foretold: it may be dramatically efficacious; it may not influence the process at all; but the patient whose condition is deteriorating should always be given the chance. Figs. 2-5 show instances of this disease in which the result of splenectomy varied from complete and immediate remission to utter ineffectiveness.

The third group of haemolytic anaemias are those secondary to a splenomegaly which may be of almost any nature: there are records of this combination in lymphatic leukaemia (Marchal, Dany, and Grupper, 1934; Singer and Dameshek, 1941; Feldman and Yarvis, 1944), Hodgkin's disease (Holler and Paschke, 1927; Kwaszewska, 1931; Bensis and Gouttas, 1934; von Braitenberg, 1937-8; Slot, 1938; Stats, Rosenthal, and Wasserman, 1947), sarcoidosis (Crane and Zetlin, 1945), Gaucher's disease (Mandelbaum, Berger, and Lederer, 1942), kala-azar (Burchenal, Bowers, and Haedicke, 1947), and tuberculous splenomegaly (Engelbreth-Holm, 1938). In many instances the haemolytic anaemia has been cured by splenectomy. The cause of this form of haemolysis is uncertain: in some instances it seems likely that red blood cells have become sequestered in the labyrinthine pulp of a vast spleen, there undergoing lysis; it has been suggested that the enlarged spleen elaborates a lysis or produces in

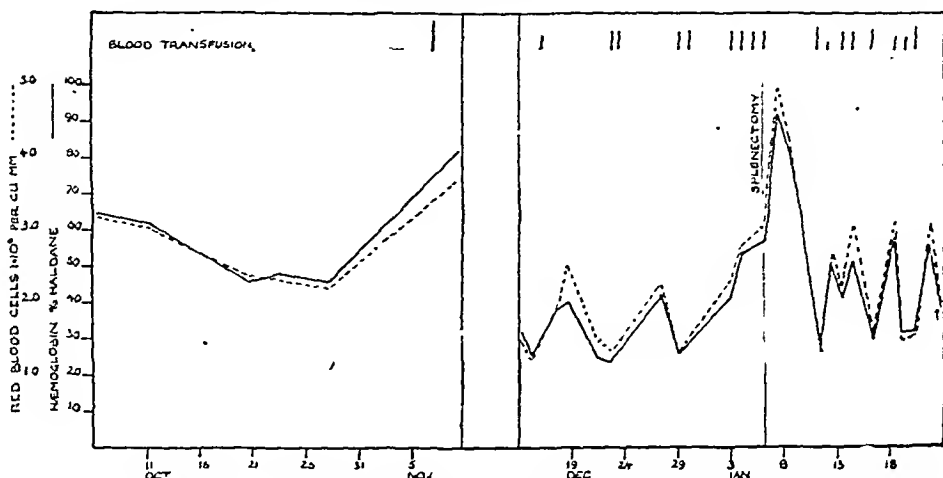


FIG. 4.—Acquired haemolytic anaemia of unknown cause in a woman aged 31. Erythrocyte fragility 0.5-0.45% NaCl. Failure of splenectomy.

greater measure its normal lysolecithin (Dameshek and Miller, 1943). Circumstances dictate the desirability of splenectomy: in a slowly progressive disorder in which the major disability is due to haemolytic anaemia it may well be justifiable; in a rapidly advancing leukaemia it would clearly be injudicious.

Figs. 6-8 illustrate instances of haemolytic anaemia associated with the splenomegaly of Hodgkin's disease, reticulosarcoma, and lymphatic leukaemia. In the first the patient presented with haemolytic anaemia and splenomegaly; splenectomy relieved all symptoms, but the excised organ showed the changes of Hodgkin's disease (Fig. 6). He remained in good health for 4½ years, when haemolytic anaemia recurred and he died from renal failure due to amyloidosis three months later. In this patient splenectomy resulted in nearly five years of normal existence. The anaemia in the second patient was of subacute evolution and the haemolytic process was controlled by splenectomy, although she died three months later from the underlying disease (Fig. 7). The patient with lymphatic leukaemia had four haemolytic episodes over a period of five years, the last proving fatal (Fig. 8); haemolysis was controlled in the first three by irradiation of the spleen and repeated blood transfusion. In the light of subsequent events splenectomy during the first episode might have been justifiable.

Splenectomy in Thrombocytopenia

Idiopathic thrombocytopenic purpura has long been recognized as a condition in which splenectomy is often

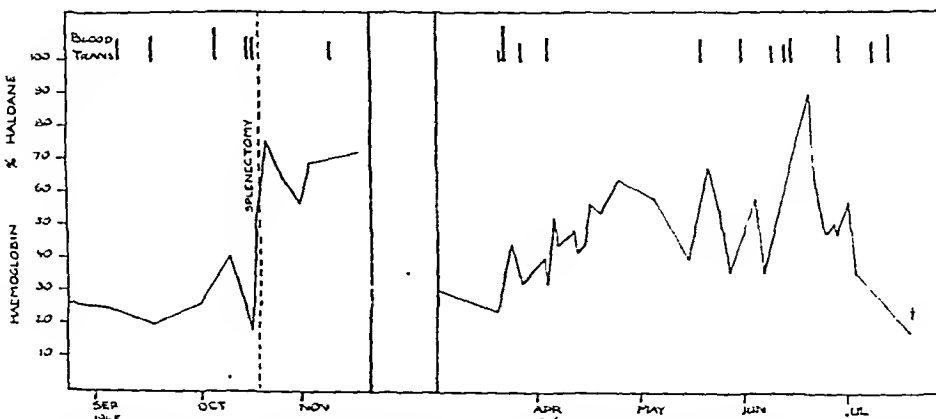


FIG. 5.—Acquired haemolytic anaemia of unknown cause in a woman aged 57. Erythrocyte fragility 0.55-0.45% NaCl. Splenectomy was followed by remission, but fatal relapse occurred.

followed by a rise in the platelet count and by relief of the haemorrhagic symptoms. The relation of thrombocytopenia to the haemorrhagic tendency is as yet an unsolved problem, but it is true to say that a reduction in platelets below 100,000 per c.mm. is usually attended by spontaneous haemorrhages, which as a rule cease when the platelet count rises to normal levels.

The part played by the spleen in idiopathic thrombocytopenic purpura has been the subject of much debate and there are still two opposed doctrines—the one holding that this organ is engaged in excessive destruction of platelets, the other that it exerts an inhibitory effect on platelet formation in the bone marrow. Injections into animals of extracts of spleens excised in this disease have an inconstant effect in inducing thrombocytopenia; the observations are inconclusive (Troland and Lee, 1938; Tocantins, 1939; Major and Weber, 1939; Pohle and Meyer, 1939; Hobson and Wits, 1940; Rose and Boyer, 1941). Histological evidence of excessive platelet destruction in the excised spleens is usually lacking, although there are claims to the contrary (Nickerson and Sunderland, 1937).

Thrombocytopenia may occur independently of the spleen's action: in acute leukaemia, aplastic anaemia, and carcinomatosis of bone it is secondary to changes in the bone marrow; it may be allergic in origin (Squier and Madison, 1937); it may be the result of idiosyncrasy to such drugs as "sedormid," gold, or arsphenamine. Precise diagnosis is clearly an essential preliminary to splenectomy. Examination of the bone marrow will exclude leukaemia and similar conditions. Schwartz (1945) has claimed that an increase in marrow eosinophils is associated with a particular tendency to spontaneous remission and has suggested that these cases have an allergic origin. His claims lack confirmation (Diggs and Hewlett, 1948), and the diagnosis of allergic thrombocytopenia must remain a matter of diffi-

culty; it is undoubtedly rare. A careful history will allow separation of the cases due to drug idiosyncrasy.

Bone marrow examination has a more positive value in the diagnosis of splenic thrombocytopenia: in this condition the megakaryocytes, the parent cells of the platelets, are plentiful, although it is uncertain whether they are more abundant than normal (Dameshek and Miller, 1946; Diggs and Hewlett, 1948). Although numerous, they are less mature than normal and show little or no evidence of active platelet formation. Within twenty-four hours of splenectomy coincident with the thrombocytosis in the blood, the megakaryocytes show a great increase in platelet formation and in maturity. These observations seem to indicate an inhibitory effect of the spleen on thrombocytopoiesis and to dispose of the hypothesis of excessive splenic destruction of platelets.

Granted the clinical picture of idiopathic thrombocytopenic purpura and the absence of other possible cause splenectomy is indicated when there is no sign of spontaneous remission and when the bone-marrow examination shows plentiful megakaryocytes but depressed platelet formation.

Two recent cases (Fig. 9) illustrate the satisfactory increase in platelet count that may be expected if these criteria are observed, but they stress another difficulty in the treatment of this disorder. Case 1 was relieved of all tendency to bleed and has remained well for over a year; in Case 2 there has been no change in the haemorrhagic state.

In addition to the familiar primary splenic thrombocytopenia, a similar condition may occur secondary to splenomegaly of many kinds: it has been noted, for example, in Hodgkin's disease, Gaucher's disease, congestive splenomegaly, and reticulosarcoma. The changes in the bone marrow are identical with those of the "primary" variety. In some instances the haemorrhagic state is of such intensity that it constitutes the main disability. In such circumstances it may be justifiable to recommend splenectomy, for it will often ensure additional months or years of comfortable existence, although it cannot of course influence the final outcome of the underlying disorder.

Fig. 10 shows the effect of splenectomy on the platelet count in two examples of this secondary type of hypersplenic thrombocytopenia. The cause of splenic enlargement was lymphoid follicular reticulosis and lymphoblastic reticulosarcoma respectively; a similar result has been obtained in a patient with Hodgkin's disease. In all three a disabling haemorrhagic state was satisfactorily controlled.

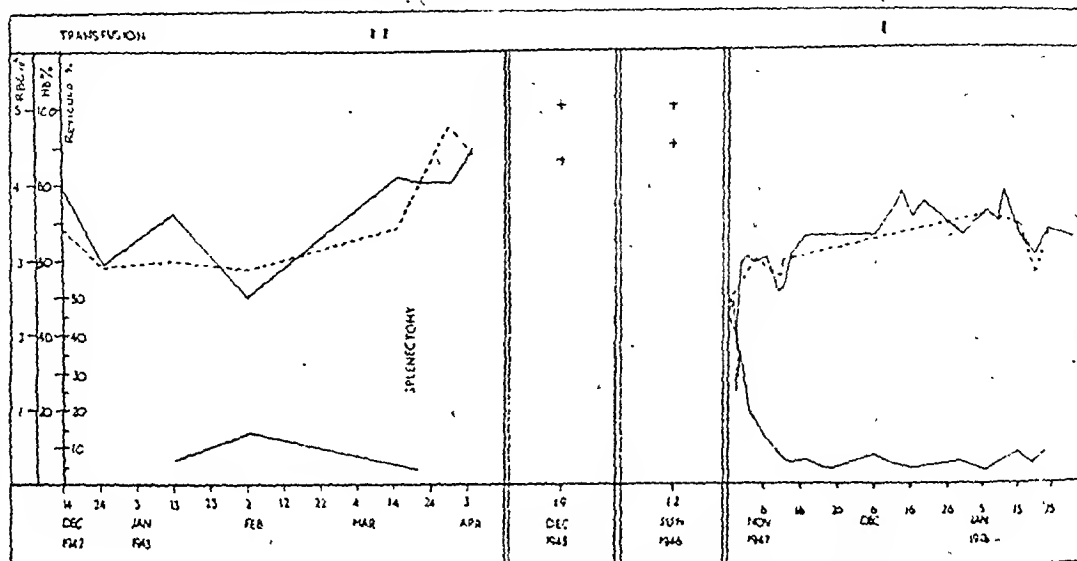


FIG. 6.—Hodgkin's disease with haemolytic anaemia in a boy aged 14.

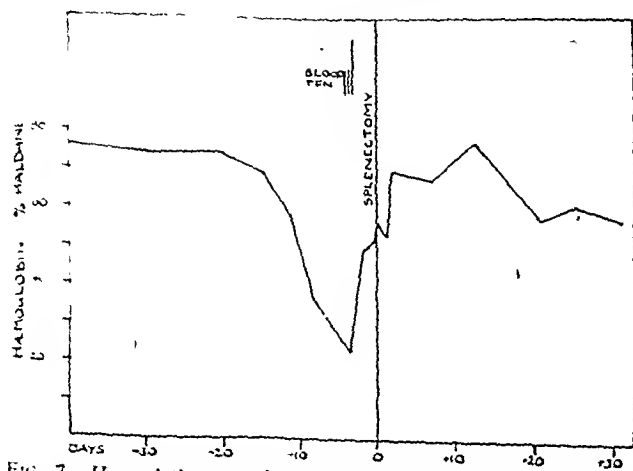


FIG. 7.—Haemolytic anaemia secondary to reticulosarcoma of the spleen in a woman aged 58. Splenectomy: remission.

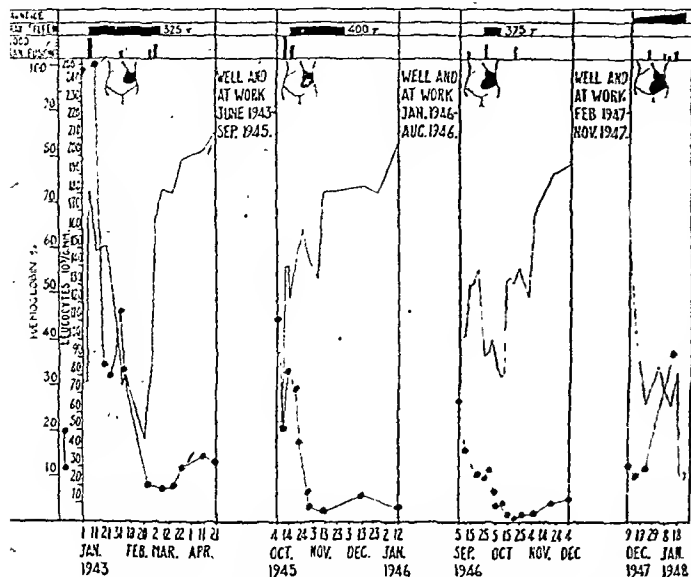


FIG. 8.—Haemolytic anaemia associated with chronic lymphoid leukaemia in a man aged 57.

In the past there has been tacit assumption that thrombocytopenia following medication with such drugs as gold, coarsphenamine, and the sulphonamides was due to a direct toxic effect on the bone marrow. The bleeding tendency usually disappears after the drug is withdrawn, but in two recently reported instances, one following gold Mettler, McBride, and Li, 1948) and one sulphathiazole (Farfel, 1944-5), it persisted and endangered life. In both, the bone marrow was found to contain megakaryocytes in normal or increased numbers, although they were inactive and less mature than normal; in both, splenectomy was followed by a rise in the platelet count to normal and by cessation of bleeding. It may be that removal of the physiological splenic inhibition of thrombopoiesis was enough to restore platelet formation to normal.

Splenectomy in Neutropenia

The effects of the spleen on the leucocytes are less well appreciated than those on the red blood cells and platelets. Rank (1916, 1917) noted a leucopenia in many patients with splenomegaly and the increase in white blood cells

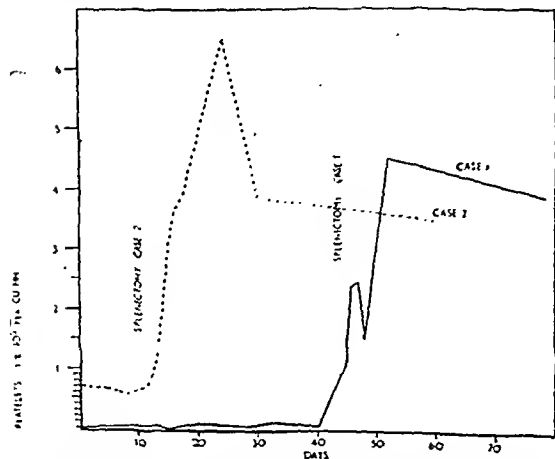
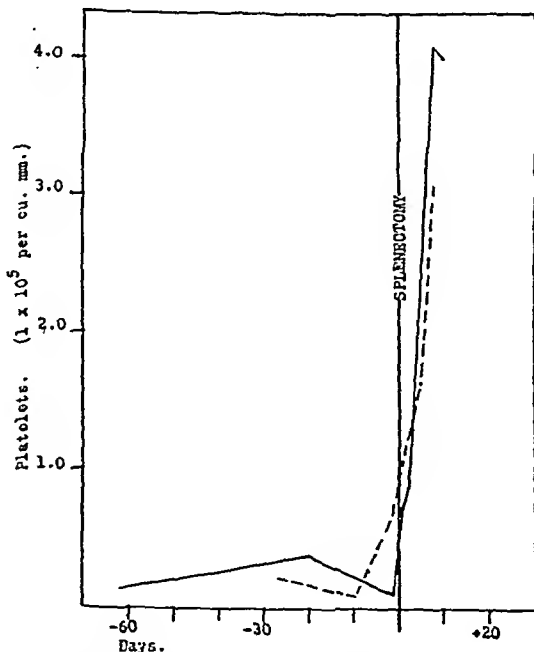


FIG. 9.—Effect of splenectomy in idiopathic thrombocytopenic purpura.

which followed splenectomy. He suggested that the spleen exerted a toxic effect on the bone marrow, which might result in aplasia when it became intense, and proposed the term "aleukia splenica" for the condition.

As in splenic thrombocytopenia, two forms of splenic neutropenia can be recognized. Although the first case was reported by Reissman (1938), Wiseman and Doan (1939, 1942) must be credited with recognition of the primary syndrome. This occurs most commonly in women between the ages of 30 and 60 years, and is manifest by chronic ill-health with recurrent skin and oral infections. The spleen is usually moderately, sometimes greatly, enlarged. Blood counts show persistent leucopenia, commonly varying between 1,000 and 2,000 per c.c.m., with less than 20% of neutrophils; in many there is a moderate thrombocytopenia. The bone marrow is of increased cellularity, and formation of granular cells is unduly active, although mature forms may be scanty.

In many instances splenectomy has been followed by restoration of a normal leucocyte count and disappearance of all symptoms (Muether, Moore, Stewart, and Brown, 1941; Auger, Jobin, and Larochelle, 1945; Langston, White, and Ashley, 1945; Rogers and Hall, 1945; Salzer, Ransohoff, and Blatt, 1945; Hepp and Mallarmé, 1946; Kinsey and Bingham, 1946; Lotz, 1947). In this disorder again there is controversy over the means by which the spleen exerts its effect. Some hold that there is excessive lysis of neutrophils in the organ (Wiseman and Doan, 1939; von Haam and Awny, 1948), describing phagocytosis of granular cells in sections and smears of the



Male, 33 yrs., Lymphoid Follicular Reticulosis: ---
Female, 52 yrs., Lymphoblastic Reticulosarcoma: —

FIG. 10.—Effect of splenectomy on platelet count in two cases of thrombocytopenic purpura due to secondary hypersplenism.

excised spleen. Many have reported non-specific hyperplasia of the organ without evidence of phagocytosis; perhaps the body of opinion favours the view that the spleen controls in some fashion the emission of granulocytes from the bone marrow (Engelbreth-Holm, 1938).

A recently reported instance, which can be matched by a personal experience, illustrates the need for caution (Hattersley, 1947). Both fulfilled all the diagnostic criteria of Wiseman and Doan, but in neither did splenectomy relieve the neutropenia or the tendency to infection.

Secondary splenic neutropenia as an isolated phenomenon is rarer than the analogous thrombocytopenia. It has been most often recorded in Felty's syndrome, wherein rheumatoid arthritis is associated with generalized lymphadenopathy and splenomegaly. Splenectomy has been advocated for this combination (Hanrahan and Miller, 1932; Craven, 1934), but, although the neutropenia is thereby relieved and general health may be improved, the arthritis is seldom affected (Steinberg, 1942). It is justifiable only when disabling symptoms can be attributed to the leucopenia. The operation has even been recommended for rheumatoid arthritis without splenomegaly or leucopenia; it has the support neither of logic nor of experience.

Splenectomy in Pancytopenia

It is not surprising to find that in some instances the action of the spleen is exerted not on one variety of blood cell but on all: in these patients there is anaemia, neutropenia, and thrombocytopenia. The syndrome has been given the title of "splenic pancytopenia" (Doan and Wright, 1946, 1947). Two distinct forms of anaemia are encountered in this disorder: in some it is frankly haemolytic, with jaundice, reticulocytosis, and urobilinuria; more often there is little unequivocal evidence of blood destruction, although the daily excretion of urobilinogen is usually above normal. The bone marrow in splenic pancytopenia is of increased cellularity: granulopoiesis is active and megakaryocytes are present in normal numbers, although thrombocytopoiesis is defective; erythropoiesis is normoblastic and unduly active in the haemolytic form of the disease, and in the non-haemolytic variety there is often a predominance of the less mature grades of normoblast, suggesting arrest of the normal process of maturation.

As with other hypersplenic syndromes, primary and secondary pancytopenia has been recognized. In most of the reported primary cases splenectomy has restored the blood to normal and the patient to health. The excised spleen is agreed by most observers to show no more than a non-specific hyperplasia. It is a rare disorder, but the following example is characteristic in all respects but the unhappy outcome.

A night watchman aged 55 was admitted with symptoms of anaemia and with splenomegaly. There was a normocytic anaemia with a haemoglobin level of 50% (Haldane); leucocytes numbered 2,000 per c.mm., of which 32% were neutrophils; platelets totalled 77,000 per c.mm. There was no evidence of excessive haemolysis. Sternal puncture showed a very active bone marrow. Splenectomy resulted in a rapid rise of leucocytes to 14,500 and of platelets to 368,000 per c.mm. The spleen showed a non-specific hyperplasia; the liver was normal at operation and on biopsy. Unfortunately he died on the tenth day after operation from a secondary haemorrhage from the wound.

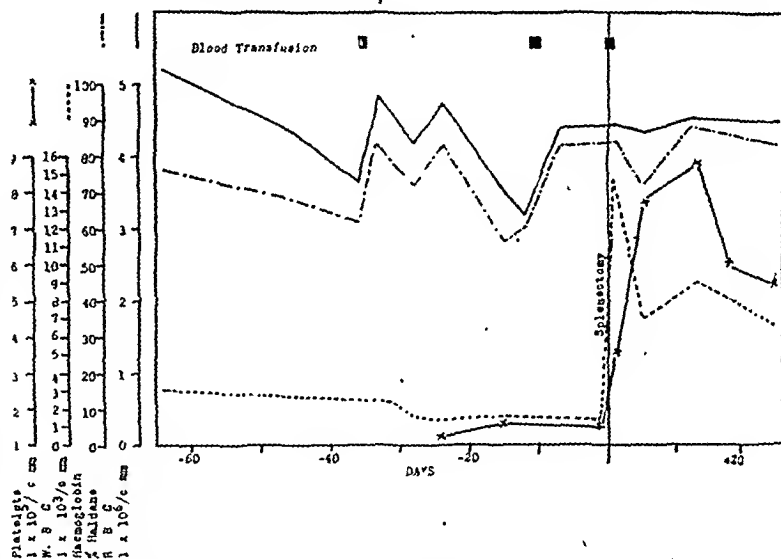


FIG. 11.—Splenectomy in secondary splenic pancytopenia in a woman aged 34. Reticulum-cell medullary reticulosis.

Secondary splenic pancytopenia is not uncommon in its minor grades: it is the rule in congestive splenomegaly and occurs with many other forms of splenic enlargement. It does not often justify splenectomy, although satisfactory results have been reported in Gaucher's disease (Mandelbaum, Berger, and Lederer, 1942). The blood changes in kala-azar can best be explained by secondary hypersplenism of this type (Cartwright, Chung, and Chang, 1948), and, although chemotherapy will usually effect a cure, cases resistant to treatment and sometimes associated with a haemolytic anaemia occur. Several recent reports have stressed the value of splenectomy in such patients (Burchenal, Bowers, and Haedicke, 1947; Morton and Cooke, 1948).

In some of the less common proliferative diseases of lympho-reticular tissue secondary splenic pancytopenia is a prominent feature. This is so in histiocytic medullary reticulosis (Bodley Scott and Robb-Smith, 1939), and in one instance a satisfactory remission of some months was secured by splenectomy (Asher, 1946). A recent example of a related condition has responded in like manner.

A married woman aged 34 was admitted with massive splenomegaly and moderate generalized lymphadenopathy. There was thrombocytopenia, neutropenia, and normocytic anaemia without evidence of undue haemolysis. The bone marrow was active. Remittent fever was present. An excised lymph node showed the changes of reticulum-cell medullary reticulosis. The radiotherapist was unwilling to treat her in view of the leucopenia. Splenectomy restored the blood picture to normal and relieved all symptoms. She remains well three months after the operation (Fig. 11).

This mechanism has recently been suggested as the explanation of the puzzling crises of acholuric jaundice (Dameshek and Bloom, 1948). It has long been known that in these "crises de déglobulisation" there is profound anaemia without reticulocytosis but accompanied by thrombocytopenia and leucopenia. The bone marrow may show changes suggesting an arrest of erythroblastic development while granular cells are prominent and megakaryocytes numerous but inactive. Splenectomy at this point is followed not only by rapid repair of the anaemia but by release of granular cells and platelets. The hypothesis that the enlarged spleen, as well as destroying the spherical red blood cells, is exerting a secondary inhibitory effect on bone-marrow function satisfactorily explains this puzzling phenomenon.

The indications for splenectomy in aplastic, or refractory, anaemia are relevant to the topic of splenic pancytopenia if it is allowed that the spleen normally exerts an inhibitory influence on haemopoiesis. The operation has been recommended from time to time for this disease and occasional successes have been recorded. It is the general experience that results are disappointing and the benefit only transient (van Beurden, 1935). The Italian haematologists have recognized an indolent form of aplastic anaemia which they term "progressive myeloid atrophy" (Ferrata, 1939a, 1939b; Cattaneo, 1942, 1946). Its distinction from other forms seems to depend on the speed of its evolution, but good results have been reported from splenectomy in some patients. Occasional examples are seen in which a haemolytic element is clearly present, and this constitutes an indication for operation; some would extend it to those whose bone marrow contains megakaryocytes, especially if they are inactive, and shows some evidence of erythroblastic regeneration (Estren and Dameshek, 1947).

Splenectomy in Congestive Splenomegaly

The problem of splenectomy in congestive splenomegaly (Banti's syndrome) is of a different order. Observations at the Presbyterian Hospital in New York have shown that the splenomegaly is here due to obstruction to the venous outflow from the organ (Whipple, 1937, 1945; Rousselot, 1940; Thompson, 1940). It is in fact synonymous with obstruction to, and hypertension in, the portal venous system, apart from occasional examples due to thrombosis of the splenic vein. In 70% the cause is cirrhosis of the liver; in the remainder various extrahepatic obstructive lesions are present. The main danger lies in the tendency to rupture of the dilated venous collaterals at the lower end of the oesophagus.

It has already been pointed out that secondary hypersplenism is common in congestive splenomegaly, but it is seldom of a degree to demand operation. Splenectomy is curative in thrombosis of the splenic vein, but where the obstruction is of the portal trunk or its branches within the liver this operation has little effect on portal hypertension. The improvement occasionally noted must be attributed to the relief of secondary hypersplenism, and perhaps to the removal of the splenic contribution to the portal blood flow, which is said to amount to 40% of the total. Splenectomy cannot be regarded as a rational or effective treatment for congestive splenomegaly, unless due to thrombosis of the splenic vein. The operations devised to by-pass the obstruction by shunting the venous flow via the splenic vein into the left renal vein, or by anastomosing the portal vein and the inferior vena cava, are more logical and more promising (Blakemore and Lord, 1945; Learmonth and Macpherson, 1948).

Conclusion

This review has attempted to show that, with the exception of two mechanical disturbances—rupture and thrombosis of the splenic vein—the indication for splenectomy is an imbalance of the delicately poised equilibrium between the haemopoietic functions of the bone marrow and the inhibitory and haemolytic activities of the spleen. This may arise from a primary splenic disorder or be secondary to many forms of splenomegaly; it may be due to hypoplasia of the bone marrow or to the production of malformed red blood cells; it may affect the erythrocytes, the granular cells, or the platelets, severally or concurrently. In every variety splenectomy may restore the blood to normal and the patient to health.

I am grateful to my colleagues at St. Bartholomew's Hospital for permission to refer to patients who have been under their care.

REFERENCES

- Asher, R. (1946). *Lancet*, 1, 650.
 Attile, W. (1932). *Ibid.*, 1, 291.
 Auger, C., Jobin, J. B., and Laroche, L. N. (1945). *Canad. med. Ass. J.*, 53, 335.
 Barcroft, J. (1925). *Lancet*, 1, 319.
 Benis, V., and Gouttas, A. (1934). *Sang.*, 8, 288.
 Blakemore, A. H., and Lord, J. W. (1945). *Ann. Surg.*, 122, 476.
 Burchenal, J. H., Bowers, R. F., and Haedicke, T. A. (1947). *Amer. J. trop. Med.*, 27, 699.
 Cartwright, G. E., Chung, H. L., and Chang, A. (1948). *Blood*, 3, 249.
 Cattaneo, A. (1942). *Haematologico*, 24, 995.
 — (1946). *Gazz. Osp. Clin.*, 67, 139.
 Coombs, R. R. A., Mourant, A. E., and Race, R. R. (1945). *Brit. J. exp. Path.*, 26, 255.
 Crane, A. R., and Zetlin, A. M. (1945). *Ann. intern. Med.*, 23, 882.
 Craven, E. B. (1934). *J. Amer. med. Ass.*, 102, 823.
 Dameshek, W., and Bloom, M. L. (1948). *Blood*, 3, 1381.
 — and Miller, E. B. (1943). *Arch. intern. Med.*, 72, 1.
 — (1946). *Blood*, 1, 27.
 — and Schwartz, S. O. (1938). *New. Engl. J. Med.*, 218, 75.
 — (1940). *Medicine*, 19, 231.
 Darley, W., Black, W. C., Smith, C., and Good, F. A. (1944). *Amer. J. med. Sci.*, 208, 381.
 Davis, J. S., Macfee, W., Wright, M., and Allyn, R. (1945). *Lancet*, 2, 72.
 Diggs, L. W., and Hewlett, J. S. (1948). *Blood*, 3, 1090.
 Doan, C. A., and Wright, C. S. (1946). *Ibid.*, 1, 10.
 — (1947). *J. Lab. clin. Med.*, 32, 1399.
 Engelbreth-Holm, J. (1938). *Amer. J. med. Sci.*, 195, 32.
 Eppinger, H. (1920). *Die Hepato-Lienalen Erkrankungen*. Berlin.
 Estren, S., and Dameshek, W. (1947). *Amer. J. Dis. Child.*, 73, 671.
 Farfel, B. (1944-5). *Texos St. J. Med.*, 40, 603.
 Feldman, F., and Yavris, J. J. (1944). *N.Y. St. J. Med.*, 44, 1693.
 Ferrata, A. (1939a). *Gazz. Osp. Clin.*, 60, 219.
 — (1939b). *Ibid.*, 60, 415.
 Frank, E. (1916). *Berl. klin. Wschr.*, 53, 555.
 — (1917). *Ibid.*, 54, 573.
 Govan, C. D. (1946). *J. Pediatr.*, 29, 504.
 Hanrahan, E. M., and Miller, S. R. (1932). *J. Amer. med. Ass.*, 99, 1247.
 Hattersley, P. G. (1947). *Blood*, 2, 227.
 Hepp, J., and Mallarmé, J. (1946). *Mém. Acad. Chir., Paris*, 72, 359.
 Hobson, F. C. G., and Witus, L. J. (1940). *British Medical Journal*, 1, 50.
 Holler, G., and Paschkis, K. (1927). *Wien. Arch. inn. Med.*, 14, 149.
 King, R. B. (1941). *New. Engl. J. Med.*, 224, 1058.
 Kinsey, H. I., and Bingham, J. R. (1946). *Canad. med. Ass. J.*, 55, 291.
 Knisely, M. H. (1934-5). *Proc. Soc. exp. Biol., N.Y.*, 32, 212.
 — (1936). *Annot. Rec.*, 65, 23.
 Kwaszewska, G. (1931). *Wien. klin. Wschr.*, 44, 684.
 Langston, W., White, O. A., and Ashley, J. D., jun. (1945). *Ann. intern. Med.*, 23, 667.
 Learmonth, J. R., and Macpherson, A. I. S. (1948). *Lancet*, 2, 882.
 Leeuwenhoek, A. van (1708). *Philos. Trans.*, 25, 2305.
 Lotz, K. (1947). *Med. Klin.*, 42, 274.
 McFadzean, A. J. S., and Davis, L. J. (1947). *Glasg. med. J.*, 28, 237.
 MacKenzie, D. W., jun., Whipple, A. O., and Wintersteiner, M. P. (1941). *Amer. J. Anat.*, 68, 397.
 McNece, J. W. (1931). *Trans. med. Soc. Lond.*, 54, 185.
 Major, R. H., and Weber, C. J. (1939). *J. Lab. clin. Med.*, 25, 10.
 Mandelbaum, H., Berger, L., and Lederer, M. (1942). *Ann. intern. Med.*, 16, 438.
 Marchal, G., Dany, H., and Grupper (1934). *Sang.*, 8, 847.
 Mettler, S. R., McBride, A., and Li, J. (1948). *Blood*, 3, 1105.
 Morton, T. C., and Cooke, J. N. C. (1948). *Lancet*, 2, 920.
 Muether, R. O., Moore, L. T., Stewart, J. W., and Broun, G. O. (1941). *J. Amer. med. Ass.*, 116, 2255.
 Naegeli, O. (1940). *Differential Diagnosis of Internal Diseases*. Chicago.
 Nickerson, D. A., and Sunderland, D. A. (1937). *Amer. J. Path.*, 13, 463.
 Pohle, F. J., and Meyer, O. O. (1939). *J. clin. Invest.*, 18, 537.
 Reissmann, K. (1938). *Med. Welt*, 12, 16.
 Rogers, H. M., and Hall, B. E. (1945). *Arch. intern. Med.*, 75, 192.
 Rose, H., jun., and Boyer, L. B. (1941). *J. clin. Invest.*, 20, 81.
 Rousselot, L. M. (1940). *Surgery*, 8, 34.
 Salzer, M., Ranschoff, J. L., and Blatt, H. (1945). *Ann. intern. Med.*, 22, 271.
 Schwartz, S. O. (1945). *Amer. J. med. Sci.*, 209, 579.
 Scott, R. B., and Robb-Smith, A. H. T. (1939). *Lancet*, 2, 194.
 Singer, K., and Dameshek, W. (1941). *Ann. intern. Med.*, 15, 544.
 — Miller, E. B., and Dameshek, W. (1941). *Amer. J. med. Sci.*, 202, 171.
 Slot, W. J. Bruins (1938). *Ned. Tijdschr. Geneesk.*, 82, 38.
 Smith, E. B., and Custer, R. P. (1946). *Blood*, 1, 317.
 Squier, T. L., and Madison, F. W. (1937). *J. Allergy*, 8, 143.
 Stals, D., Rosenthal, N., and Wassermann, L. R. (1947). *Amer. J. clin. Path.*, 17, 585.
 Steinberg, C. L. (1942). *Ann. intern. Med.*, 17, 26.
 Thompson, W. P. (1940). *Ibid.*, 14, 255.
 Tocantins, L. M. (1939). *Proc. Soc. exp. Biol., N.Y.*, 42, 485.
 Troland, C. E., and Lee, F. C. (1938). *J. Amer. med. Ass.*, 111, 221.
 Van Beurden, A. J. R. E. Scoonhoven (1935). *Folia haematol., Lpz.*, 53, 135.

- Von Braitenberg, H. (1937-8) *Frankfurt. Z. Path.*, 51, 515.
 Von Haam, E., and Awmy, A. J. (1948). *Amer. J. clin. Path.*, 18, 313.
 Whipple, A. O. (1937). *Surg. Gynec. Obstet.*, 64, 296.
 — (1945). *Ann. Surg.*, 122, 449.
 Wiseman, B. K., and Doan, C. A. (1939). *J. clin. Invest.*, 18, 473.
 — (1942). *Ann. intern. Med.*, 16, 1097.

AN OPERATION FOR THE TREATMENT OF STRESS INCONTINENCE

BY

WILFRED SHAW, M.D., F.R.C.S., F.R.C.O.G.

Surgeon in Charge, Obstetrical and Gynaecological Department, St. Bartholomew's Hospital; Gynaecologist, St. Andrew's Hospital, Dollis Hill

Although most cases of stress incontinence are seen in patients who have sustained injury during childbirth, the condition is by no means uncommon in nulliparae and even in young women. Clinically, in the average case the external meatus is patulous and the urethra is prolapsed downwards and forwards, with the result that the external meatus lies below and behind its normal situation.

Anatomical Considerations

Much work has been done by Curtis *et al.* (1939, 1942), and by Von Lüdinghausen (1932), Kalischer (1900), Andina and Hintzche (1946), in particular. The plain muscle sphincter round the internal meatus consists of two series of loops. In one of these, muscle fibres pass behind the internal meatus with the arms of the loops extending upwards and forwards. The other loop passes in front of the meatus with its arms extending posteriorly and with each arm being pierced by the ureter. There is a tendency to describe this sphincter muscle as the "lisso sphincter."

The striated muscle sphincter of the urethra, which is also known as the sphincter urethrae, the urogenital sphincter, and, more recently, as the "rhabdo sphincter," is much more complicated. Some of its fibres pass circularly round the urethra. Other fibres pass from an attachment to the back of the symphysis pubis area backwards to form a loop posteriorly round the urethra. A third group of fibres are looped in front of the urethra and then pass backwards laterally, to be attached to the lateral wall of the vagina. In another group the fibres are looped in front of the urethra to interlace between the urethra and vagina and subsequently merge into the vaginal wall.

There is some evidence that those cases of stress incontinence which develop after anterior colporrhaphy are caused by the division of the nerves which supply the urethral sphincter. My own view of the aetiology of stress incontinence is that most cases are due primarily to damage or to loss of tone of the condensation of endopelvic fascia which lies between the urethra and the anterior vaginal wall, which I have called the post-urethral ligament. This condensation consists of plain muscle tissue and is attached to the pubic rami on each side and to the neck of the bladder above. It forms a firm supporting shelf of tissue. The ligament cannot be displayed at operation except in cases of cystocele of slight degree; for if any form of prolapse of the anterior vaginal wall is well marked the tissues of the ligament are inconspicuous. It is because of this weakness of the ligament that the prolapse develops. In my view the main cause of stress incontinence is weakness of this ligament, although damage to the urethral sphincter or to its nerve supply is a contributory factor. The radiographic findings of downward displacement of the urethra and the neck of the bladder in cases of stress incontinence can be explained in this way.

Surgical Methods

Surgical treatment by the vaginal route has the object of forming a shelf of the para-urethral tissues beneath the urethra, and numerous modifications of this technique are employed. Kelly's method of introducing mattress sutures into the neck of the bladder gives moderately good results. It is well known that stress incontinence is usually cured if prolapse is treated by vaginal hysterectomy or by the modern modifications of the Fothergill operation.

It is also well known that the vaginal methods are not always successful, and various sling methods have been employed. Stoeckel's modification of Goebel's method in which longitudinal strips of rectus fascia were brought down behind the symphysis and sutured together below the urethra, did not give satisfactory results. I learnt this method in Vienna some years ago, but the clinical results were unsatisfactory. In 1942 Aldridge employed a method of bringing down transverse strips of fascia taken from the aponeurosis of the oblique abdominal muscles. Millin (1947) introduced a method whereby the operation is performed retropubically, and modifications have been described by Millin and Read (1948), Marshall (1948), and others. Studdiford (1944, 1945) has described modification of Aldridge's technique. These sling operations are being performed extensively at the present day, and good results are being reported.

In the latter part of 1947 it occurred to me that the problem could be approached in another way, and the idea behind the method which is described below is to replace the weakened post-urethral ligament by a strip of fascia lata taken from the thigh. A preliminary report has already been published (Shaw, 1949).

Selection of Clinical Material.—A very large number of patients suffering from stress incontinence attend the outpatient department of St. Bartholomew's Hospital. It is important to select cases with care, for urgency and frequency of micturition must be distinguished from stress incontinence. The patient should be made to cough when her bladder contains urine, and if the urine can be seen to be discharged from the meatus when the patient coughs stress incontinence is diagnosed. It is also important to exclude neurological causes, and in doubtful cases the patient is referred to a neurologist. Many of the patients have been operated upon on several previous occasions by the vaginal route, and these failures are considered to be particularly suitable for the operation.

Technique

Method of Obtaining the Fascial Strip

The patient lies on her left side with the right knee flexed. An incision 7 in. (17.5 cm.) long is made from the lateral epicondyle of the femur, and the fascia lata is exposed by dissecting the fatty tissues from the fascia. A strip of fascia lata is then taken, not less than 6 in. (15 cm.) and not more than 7 in. long. It is shaped so that it is 1½ in. (3.75 cm.) in diameter in the middle and decreases at each end to a diameter of ½ in. (0.8 cm.) (Fig. 1). The fascial strip is placed upon a gauze pad soaked in warm saline, and the cut edges of the fascia lata are brought together by means of three mattress sutures followed by a long continuous suture. The skin incision is closed with clips. As a general rule

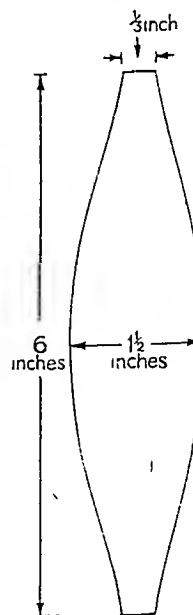


FIG. 1.—The strip of fascia taken from the fascia lata is 1½ in. broad in the middle, tapering to ½ in. at each end, and is 6 in. long.

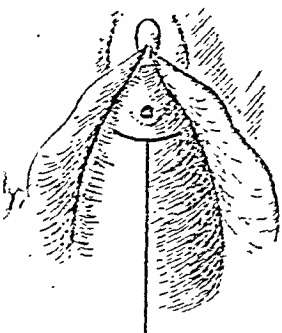


FIG. 2.—The incisions in the vaginal wall. A midline incision starts about $\frac{1}{4}$ in. away from the urethral meatus. An incision is made on each side from the meatal end of this incision.

there are only one or two small vessels to ligate, and the operation can be easily completed within ten minutes. In no case has there been infection of the wound or the development of a haematoma. Most patients complain of pain in the wound for two or three days after the operation, but no patient has complained of inconvenience of any sort after being up and about.

Dissection of the Urethra and Neck of the Bladder

The patient is placed in the lithotomy position and a Sims speculum is introduced into the vagina. In the group of cases operated upon the cervix could only rarely be pulled down as far as the vaginal orifice. Consequently the following procedure was adopted.

Lane's tissue forceps are placed on the anterior vaginal wall in the midline, about $\frac{1}{4}$ in. (0.3 cm.) above the meatus, and another Lane tissue forceps is attached to the anterior vaginal wall, again in the midline, as high as possible above the neck of the bladder. A midline incision is now made, extending from a point about $\frac{1}{4}$ in. above the meatus to the Lane tissue forceps placed on the upper part of the anterior vaginal wall (Fig. 2). On each side a lateral incision is then made at the end of the incision near the meatus, and the lateral incisions extended outwards towards the pubic rami.

The next step is to dissect away the two triangular flaps marked out by these incisions. The dissection must be made with a scalpel, except laterally, where the separation can be made with the help of a piece of gauze wrapped round the finger. If the correct plane of cleavage is reached it is rare for severe haemorrhage to be encountered. The haemorrhage can be controlled to some extent by injecting oxytocin into the tissues in the neighbourhood of the crura of the clitoris. The dissec-

tion exposes the urethra along the whole of its length together with the neck and base of the bladder (Fig. 3).

Fixation of the Fascial Strip to the Urethra

The fascial strip is now held transversely. The middle of the upper margin of the strip is then sutured to the ring of vaginal wall, $\frac{1}{4}$ in. thick, which remains around the external meatus (Fig. 4). It is customary to introduce three sutures. At no time is the sling sutured to the muscle tissue of the urethra itself. Next, the posterior edge of the sling is sutured to the neck of the bladder, to the upper margin of the post-urethral ligament, and in some cases to the vaginal wall as high up in the vagina as possible. This part of the operation is of fundamental importance, for it is intended that the sling shall support the urethra along the whole of its length, together with the neck of the bladder. If it is found possible to mobilize the bladder from the front of the cervix the upper edge of the sling is sutured to the cervix itself.

Attachment of the Lateral Ends of the Fascial Strip

Much preliminary work was carried out on the anatomy of the symphysis pubis area, and plaster models of the bones were made. It seemed that the most suitable inclination of the sling would be obtained if holes were drilled in the pubic bones just below the attachment of the adductor longus tendons. The method of suturing the ends of the sling to the rectus muscles above the pubis, following the course described by Price (1933), was discarded. The next question to consider was the method of approach to the bones. Initially, a curved incision was made through the skin of the mons with its convexity directed upwards to enclose the clitoris. It was found to be a simple matter to incise the soft tissues down to the level of the tendinous tissues attached to the bones; but haemorrhage was found to be troublesome, and it was necessary to divide the suspensory ligament of the clitoris. Nevertheless, an excellent approach is obtained by this method. There are, however, certain disadvantages. Complete haemostasis may be almost impossible, and it was found necessary to leave a small rubber drain when this incision was made. Another disadvantage is that the lymphatic drainage of the vulva is cut off so that the lower flap becomes swollen, and this happens particularly often in elderly patients.

Another method which was employed on one occasion was to make an arched incision below the clitoris through the tissues which lie internal to the labia minora. The exposure obtained is unsatisfactory, although the operation is relatively bloodless. This method of approach was not repeated.

A third method of approach is to make curved incisions on the outer side of the labia majora at a level which allows the drill-holes to be made just below the attachment of the adductor longus tendon. It is found in practice that there is much variation in the development and vascularity of the adductor muscles which are attached below the level of the adductor longus. The incision through these muscles should be made transversely. It is, however, by no means easy always to expose the pubic bone sufficiently medially to allow the drill-holes to be made near the symphysis pubis.

The fourth method of approach is to make the skin incisions on the inner sides of the labia majora. This method of approach is the one being practised at the moment. It has the obvious disadvantage that a considerable thickness of tissue must be cut through before the bone is exposed. It has, however, so many other advantages that it is the method which is recommended.

One of the most important parts of the operation is to open up the retropubic space on each side lateral to the urethra. It is possible to separate the pubo-coccygeus muscles from their attachment to the pubic bones with the finger, but the method should be regarded with disfavour. It is essential to cut through the pubo-coccygeus muscle near its anterior attachment with a scalpel. The scalpel should be introduced lateral to the urethra and a vertical incision about $\frac{1}{4}$ in. (1.25 cm.) long made through the pubo-coccygeus tendon. As the patient is lying in the lithotomy position there is no risk of injury to the bladder, and troublesome haemorrhage is rarely seen if a scalpel is used. A finger is now introduced through the scalpel incision and the retropubic space opened up. The

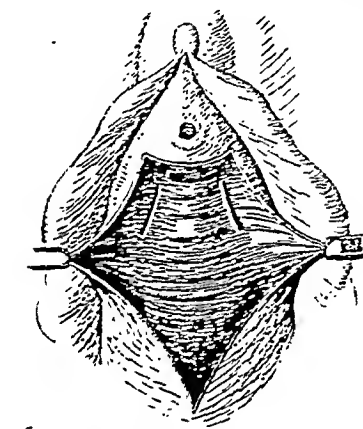


FIG. 3.—The lateral flaps are dissected away and the urethra and the neck of the bladder mobilized. The diagram shows the position of the incisions made through the pubo-coccygeus muscle on each side of the urethra.

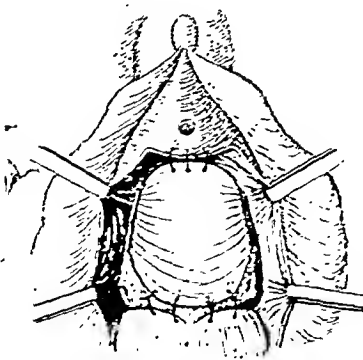


FIG. 4.—The fascial lata strip sutured into position. The upper margin of the strip is stitched to the circular ring of vaginal wall left near the meatus. The sutures are not passed through the muscle wall of the urethra. At the other side of the fascial lata strip the sutures are introduced between the fascial lata and the front of the cervix. If the bladder cannot be sufficiently mobilized this part of the fascial lata strip is stitched both to the post-urethral ligament and to the anterior vaginal wall.

vertical incision is then made through the skin of the labium majus. The incision through the skin is carried down until the tendinous and muscular tissues are reached. These latter tissues are cut through transversely until the bone is exposed. An assistant now introduces his finger into the retropubic space and a drill-hole is made through the pubic bone with a Hudson brace and drill. It is important to use a drill nearly $\frac{1}{2}$ in. in diameter. It is possible to determine with a fair amount of precision the degree to which the bone has been drilled, and the assistant says at once when the drill emerges into the retropubic space. There seems to be little risk of bladder injury if ordinary care is taken. A special pair of curved forceps is now introduced into the skin incision, passed through the drill-hole, and then made to appear through the incision in the pubo-coccygeus tendon. The appropriate end of the fascial sling is now introduced into the end of the forceps and the forceps withdrawn so that the end of the sling appears through the skin incision in the labium majus.

At this stage it is necessary to introduce a self-retaining catheter, because the external meatus is drawn upwards as soon as the other end of the sling is passed through the drill-hole of its appropriate side, after which there may be great difficulty in finding the external meatus.

The next step is to incise the pubo-coccygeus of the opposite side, to open up the retropubic space, to make a corresponding skin incision through the labium majus, and to make a drill-hole as before. The free end of the sling is now drawn through the drill-hole.

If the two ends of the sling are pulled outwards it can be seen how the broad supporting hammock of the sling draws up the urethra and also brings the urethra forwards towards the symphysis pubis (Fig. 5). The amount of tension required is relatively easy to determine, for the catheter in the urethra indicates the direction in which the urethra is lying.

The next stage of the operation is to repair the anterior vaginal wall. It may be necessary to excise redundant vaginal tissue, and it is not always easy to obtain good apposition in the area around the external meatus. The final steps of the operation consist in suturing the ends of the sling with catgut sutures to the tendinous tissues in the vicinity of

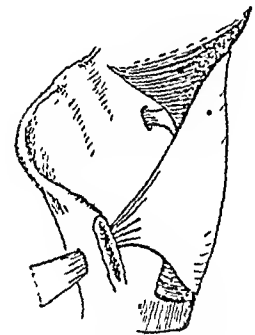


FIG. 5.—Showing the mode of action of the strip of fascia lata. It pulls the urethra and the neck of the bladder forwards and at the same time draws up the meatal end of the urethra.

the bore-holes. Subsequently the redundant ends of the sling are excised, the tissues exposed in each of the skin incisions impregnated with a powder of penicillin and sulphathiazole, and the skin incisions closed with catgut sutures.

Critical Analysis of the Technique

The method would probably not have been employed before the discovery of antibiotics and the sulphonamides, for the risk of the operation is clearly the development of osteomyelitis. Every effort has been taken to ensure asepsis. Penicillin powder is distributed liberally over raw surfaces before the incisions are closed, and all patients have been subjected to penicillin therapy prophylactically for three days after the completion of the operation. No case of osteomyelitis has developed. Nevertheless, probably because of failure to ensure complete haemostasis, three cases of mild suppuration in the pubic wounds arose. Unless haemostasis seems to be absolute a small rubber drain should always be introduced into the skin incision.

It may be argued that the fascial strip acts as a foreign body and may be a source of persistent sepsis if the area becomes infected. This has not happened. It may also be argued that the fascial strip becomes replaced by fibrous tissue so that in time the supporting effect of the sling is weakened. This has not happened in any case, although the first operation was performed more than a year ago.

Similar remarks apply to the other sling operations, for it is difficult to believe that the end of the fascial strip of the Aldridge operation receives any blood supply from its abdominal attachment. Moreover, there is good reason to believe that the tissues of the fascia lata sling act as an organizer to the replacing fibroblasts, which themselves become similar to the cells of tendinous tissue. In favourable cases the whole operation can be completed in forty-five minutes, and none of the patients has developed shock and in no case has there been severe bleeding.

Nevertheless, modifications have been tried. It was found to be an extremely simple procedure to expose the obturator foramen and to introduce the special curved forceps through the foramen to appear through the vaginal wound and this obturator approach was used in a series of cases. The theoretical advantage is that there is no risk of osteomyelitis in this method. The supporting angle of the sling is, however, unsatisfactory on theoretical grounds. In fifteen cases the obturator approach was made. In twelve cases complete cure of the stress incontinence was obtained, but in three cases the symptom was not completely relieved.

An obvious objection to my method is that a separate incision is made along the thigh. On the other hand, a scar along the thigh does not compare unfavourably with the abdominal scar of the Aldridge operation. To meet this objection slings of tantalum gauze were used in two cases. The end-results were extremely satisfactory, but it was found difficult to pass the ends of the tantalum gauze through the obturator foramen, and the method has not been repeated.

One of the great advantages of the operation is that there is no risk of injury either to the bladder or to the urethra, so that there has been no case of bladder or urethral fistula. Nor, indeed, has there been any haematuria in any of the cases. The wide hammock-like support of the fascia lata strip seems to be theoretically sound. Cases of persistent retention have not been seen, although two or three patients had difficulty in passing urine after being up and about. Experience has shown that it is necessary for the self-retaining catheter to be kept in the bladder for ten days after the operation, because patients have great difficulty in passing urine when they are in bed. Consequently it has been the routine practice to give patients sulphamerazine prophylactically. Some cases have developed cystitis, but in most instances the cystitis has cleared up fairly soon. The worst complication is urgency of micturition, which tends to persist in some cases for several months after the operation. Nevertheless, in only one or two cases have patients been distressed by this symptom.

Results

So far 51 cases have been operated upon. Unfortunately, one patient died. The case history is as follows.

The patient, aged 60, had been married for 44 years, and had had 11 children. She had complained of stress incontinence for four years. Her general condition was fairly good except that her blood pressure was 200/110. A fascial sling operation was performed on July 30, 1948, using the obturator foramen approach, without technical difficulty. It was noticed that the patient was abnormally quiet during the first few days after the operation. On Aug. 5 she became stuporous early in the morning, her tongue was furred, sugar was found in the urine, but Rothera's test was negative. Blood chemistry showed: blood urea 65 mg., blood chlorides 595 mg., and blood sugar 650 mg. per 100 ml. Rothera's test now became weakly positive. She was seen by a general physician and a neurologist, who formed the opinion that the coma was due to a cerebral vascular accident rather than to diabetes, in view of the very high sugar content and the disproportionately low ketosis. The patient died at 3 o'clock that afternoon. A

post-mortem examination was performed by Dr. H. I. Coombs. The signs were regarded as those of diabetes. The operation area was clean, without sepsis or haematoma and with no evidence of injury to the bladder or urethra. The patient would not have died if she had not been operated upon, but there is no reason to believe that the especial character of the operation was the dominant cause of the development of diabetic coma. This fatal case is not included in the series.

Of the other 50 cases, 15 have been operated upon by the obturator foramen approach for the attachment of the ends of the sling, and 35 have been operated upon using bore-holes through the pubic bones. Of the obturator foramen cases, three have not been completely cured of symptoms. The other cases of this group have been cured of their stress incontinence, but in view of the three partial failures the obturator foramen method has been abandoned. Nevertheless, 12 of the 15 cases can be regarded as completely cured, and the three cases that were not completely cured were greatly relieved. The tantalum-mesh cases belong to this group of 15. In both cases an excellent result was obtained, the patients being completely cured.

Of the 35 cases in which drill-holes have been made the results have been satisfactory. One patient, aged 60, developed a stroke six months after the operation, since when she has been incontinent, although at times before she had the stroke she was not completely free from stress incontinence. There is no doubt that this patient was a bad subject for operation, and it was always difficult to decide from the history whether she was suffering from stress incontinence, urgency, or frequency.

In one case the approach to the pubic bones was made by means of a curved incision below the clitoris. This led to the bore-holes being placed low down, and subsequently, although the urethra was well supported by the sling, a slight degree of cystocele developed above this level. Nevertheless, the patient was cured of stress incontinence although she suffered much from urgency. The case is of some interest because there is a tendency to maintain that failure to support the neck of the bladder is the cause of stress incontinence (Muellner, 1949). Except for the patient who subsequently developed a stroke, the 35 patients were all cured of stress incontinence. It was found that the younger patients were completely cured of all their urinary symptoms. The older patients, however, suffered from frequency and urgency for some time after the operation, although these symptoms gradually improved with time.

It is perhaps of some interest to record that the technical problem which caused most difficulty was to decide upon the best method of approach through the skin of the vulva to reach the pubic bones. Each method of approach that was tried had certain advantages, and it was only after very careful consideration that the incisions on the inner sides of the labia majora were selected as the most satisfactory.

In my view the operation should be regarded as an excellent method of treating stress incontinence, particularly in those patients in whom vaginal methods have failed. The technical difficulties are not very great and there seems to be no risk of injury either to the bladder or to the urethra. At first thought the operation of drilling holes in the pubic bones seems to be severe, but in practice it is simple to carry out. Preliminary work with models had shown that the correct inclination of the sling can be obtained only if the pubic bones are drilled. It was felt from the beginning that the inclination of the sling was not the best possible; the ends of the sling were brought through the obturator foramina, but as the first few patients operated upon in this way were relieved of their symptoms the method was employed for a small series of cases. The results, however, were not satisfactory in all cases and the method has been abandoned.

REFERENCES

- Aldridge, A. H. (1942). *Amer. J. Obstet. Gynec.* 44, 398.
Andina and Hintzsch (1946). Quoted in N. Neuweiler's *Lehrbuch der gynäkologischen Diagnostik*. Berne.
Curtis, A. H., et al. (1939). *Surg. Gynec. Obstet.*, 68, 161.
— et al. (1942). *Ibid.*, 74, 703.
Kalischer, O. (1900). *Urogenital Musculature*. S. Karger, Berlin.
Von Lüdinghausen, H. J. (1932). *Zeitschrift Anatomie*, 97, 757.
Marshall, C. M. (1948). *J. Obstet. Gynaec. Brit. Emp.*, 55, 126.
Millin, Terence (1947). *Retiro-Pubic Urinary Surgery*. Livingstone, Edinburgh.
— and Read, C. D. (1948). *Postgrad. med. J.*, 24, 3, 51.
Muellner, S. R. (1949). *Surg. Gynec. Obstet.*, 88, 257.
Price, P. B. (1933). *Arch. Surg.*, 26, 1043.
Suiddford, W. E. (1944). *Amer. J. Obstet. Gynec.*, 47, 764.
— (1945). *Ibid.*, 50, 119.
Shaw, Wilfred (1949). *Surg. Gynec. Obstet.*, 88, 11

STEATORRHOEA AND GLOSSITIS AFTER ILEOCOLOSTOMY

EFFECT OF SYNTHETIC VITAMINS OF B COMPLEX, AUTOLYSED YEAST, AND LIVER EXTRACT

BY

ALEXANDER BROWN, M.D., F.R.F.P.S., M.R.C.P.Ed.
Assistant, Muirhead Department of Medicine, and Physician to Out-patients, Royal Infirmary, Glasgow

Pantothenic acid and inositol have for many years been recognized as members of the vitamin B complex. The former has been shown to be an essential factor for many animal species, in some of which deficiency is associated with ectodermal defects, such as dermatitis and greyness of the hair, and with reduced alimentary motility. Inositol is a normal constituent of all animal and plant tissues. The little that is known of its role in animal nutrition suggests that it also is related to the maintenance of ectodermal tissues. The role of both these substances in human nutrition is still unknown.

The case is here described of a man who had an ileocolostomy performed for what was most probably regional ileitis. He later developed steatorrhea and signs of avitaminoses. His symptoms were predominantly alimentary, and the opportunity was taken to observe the effect on them of pantothenic acid and inositol as well as of other synthetic vitamins and vitamin preparations.

Case Report

The patient had apparently been healthy until September, 1935, when, at the age of 21, he developed pain in the right iliac fossa. Laparotomy revealed a swollen terminal ileum and dense adhesions in this region and around the caecum. The appendix was normal. Anastomosis was performed between the lower ileum and the first part of the transverse colon. The exact length of ileum by-passed in this procedure was not recorded, but from subsequent radiological examination it was estimated to be about 24–36 in. (61–91 cm.). He had no symptoms thereafter until about twelve months later he suffered from diarrhoea, nausea, vomiting, anorexia, and abdominal discomfort over a period of about two weeks. Six months afterwards he complained for the first time of a sore tongue, and his mouth felt raw where it was irritated by his dentures. During the next five years, although abdominal symptoms never amounted to more than occasional mild discomfort across the lower abdomen, the glossitis was constantly troublesome, relieved only by repeated injections of liver extract.

Clinical and Laboratory Findings.—When I first saw the patient on July 21, 1945, he was in good general health. His tongue, however, showed general atrophy of moderate degree and was a fiery red at the tip and edges. No significant abnormality was detected in the abdomen. Blood examination revealed: red cells, 4,230,000; haemoglobin, 11.8 g.%; M.C.V., 96 μ^3 ; M.C.H.C., 29%; white cells, 7,600. A test meal showed free HCl. The fat content of the faeces was 46% of dry matter, and balance experiments revealed that he absorbed only 67%

of a daily intake of 50 g. of fat. The glucose-tolerance curve was flat. Radiological examination of the bowel revealed an irregular pattern resembling that often seen in steatorrhea. The ileocolostomy was apparently functioning satisfactorily. The loop of bowel short-circuited by the operation was patent, but was the seat of very marked stasis.

Treatment and Subsequent Course

With his co-operation the patient was closely observed over a period of almost two years. Clinical trials were carried out with the following synthetic vitamins: calcium pantothenate, inositol, folic acid, nicotinic acid, riboflavin, and aneurin. The effects of yeast extract ("marmite") and of a highly purified liver extract ("anahaemin") were also observed. Details of this treatment and the results are presented in the Table.

When the investigation was begun sore tongue had been present without natural remission for over five years. It was then found that a highly purified liver extract was effective, given intramuscularly or by mouth. Yeast extract (marmite) produced similar results, with a threshold of effectiveness at about 4 g. a day. Five courses of oral calcium pantothenate were given, and on each occasion benefit occurred in four days and complete remission of the glossitis within a week. A more rapid effect was obtained with a single intramuscular dose. Inositol on one occasion had an action on the tongue similar to that of pantothenate. Weekly courses of nicotinic acid, of riboflavin, and of aneurin, seriatim and also simultaneously, were without benefit.

Before the investigation the patient suffered mild abdominal discomfort whenever oral symptoms improved. Throughout the investigation calcium pantothenate, which cured the sore tongue, was invariably associated with abdominal colic-like pain. This was so severe as to be incapacitating when a single dose of 100 mg. was given intramuscularly. Oral liver and marmite cured the sore tongue; abdominal pain previously present did not recur while they were being given. Parenteral liver treatment had an effect similar to that of oral pantothenate in aggravating or producing abdominal symptoms. On the occasion when inositol seemed to cure the sore tongue abdominal pain disappeared, but when abdominal pain was the only symptom it was not affected by inositol. Radiological examination of the alimentary tract at the height of abdominal symptoms after the administration of 100 mg. of pantothenate intramuscularly revealed pronounced duodenal spasm and an exceedingly active and irregular spastic small bowel. There was no chemical evidence that calcium pantothenate improved absorption of fat or glucose.

Results of Treatment

Pantothenic Acid.—The uniformity of the response to calcium pantothenate on six occasions during a prolonged period of observation is regarded as justifying the conclusion that it had an effect analogous to that of other known vitamins in their respective avitaminoses. The effects of pantothenate in this man were in some respects similar to those which have been attributed to the vitamin in animals. It had a rapid curative action on his abnormal buccal mucosa (ectodermal tissue) and it increased his intestinal motility. It did not, however, restore to normal the disordered intestinal motility or improve carbohydrate or fat absorption.

Inositol.—Inositol and pantothenic acid have been shown to be related biologically, and their similar actions on the glossitis are interesting in this respect. The fact that inositol did not induce abdominal pain is in keeping with the absence of any specific effect on alimentary motility in animals.

Folic Acid.—Glossitis was not present when folic acid was used effectively in the treatment of abdominal pain. The relation of folic acid to this symptom is obscure, but it is interesting to compare this effect with the beneficial action of the vitamin on the radiological appearances of the small bowel in cases of the sprue syndrome (Darby, 1947; Ferguson and Calder, 1948).

Date	Treatment*	Results	
		Glossitis	Abdominal Pain
1945			
July 21	Before starting treatment	+++	None
" 28	Nicotinic acid, 150 mg./day for 7 days	+++	Vague
Aug. 4	Aneurin, 18 mg./day for 7 days	+++	Vague
" 11	Riboflavin, 6 mg./day for 7 days	++++	None
" 18	Anahaemin, 2 ml. i.m. (single dose)	++++ Healed by Aug. 23; recurred within a week	None; then moderate severe almost daily for 7-8 days
Sept. 1	Nicotinic acid, 150 mg. daily for 7 days	+++	Remained mild
" 8	Aneurin, 18 mg. daily for 7 days Riboflavin, 6 mg. daily for 21 days	++++ Healed completely in 7 days	Mild; disappeared within 7 days and remained absent until December
" 29	Marmite, 4 g./day for 7 days	Still healed, but relapsed in 4 days	
Oct. 6	Anahaemin, 1 ml./day for 7 days	+++ Healed completely by 7th day	
" 13	Anahaemin, 0.5 ml./day for 7 days	Remained healed until Jan., 1946	None; vague in December
1946			
Jan. 12		+	Slight
" 19		+	Slight
" 26	Calcium pantothenate, 50 mg./day for 4 days	+++ Healed by 5th day; recurred by 10th day	Pain within 48 hours of 1st dose almost daily for 6 days; gradual lessened to 10th day
Feb. 7		+	Vague
" 9	Calcium pantothenate, 100 mg./day for 5 days	++++ Healed from 5th to 14th day; then recurred	Absent. Pain within 48 hours of 1st dose almost daily for 1 day; then less severe
" 23		+	Less severe
Mar. 2	Calcium pantothenate, 100 mg./day for 7 days	++++ Healed from 5th to 21st day; then recurred	Absent. Returned with 48 hours of 1st dose for 12 days almost daily
" 23		+	Less severe
" 30		+	Slight
Apr. 6	Calcium pantothenate, 100 mg. i.m. (single dose)	++++ Improved by 48 hours; almost complete remission for 10 days	None, but extreme within 24 hours; lasted days, then less severe
" 20	Nicotinic acid, 400 mg./day for 14 days	+++	Less severe; gradual diminished
May 4	Nicotinic acid, 50 mg. i.m. every 2nd day (3 doses)	No effect	Slight 2-3 a week
" 18	Calcium pantothenate, 100 mg./day until May 26	++++ Completely healed from May 25 to 28	Vague. Severe within hours of 1st dose; then almost daily
" 30	Calcium pantothenate, 75 mg. (single oral dose)	+	Pain disappeared 29th, but was severe within 6 hours of 1st dose
June 1	Inositol, 37.5 mg./day for 7 days	++ Slight improvement by June 8	Pain disappeared within 48 hours of 1st dose
" 8	Inositol, 75 mg./day for 7 days	+	
" 15	Calcium pantothenate, 100 mg./day for 7 days	+	Absent. Recurred with 3 days; then moderately severe almost daily
" 22	Anahaemin, 2 ml. i.m. (single dose)	Still healed; remained so till July	
Aug. 3	Inositol, 37.5 mg./day for 2 weeks	+++ Marked improvement by 7th day; healed by 14th	Still severe daily
" 10		+	
" 17	Inositol stopped	Healed	Vague
Sept.-Jan. 1947	Liver extract (i.m.) from time to time	Remained healed	Absent
Jan. 25	Folic acid, 15 mg./day for 2 weeks	Still healed	Rarely more than 2 or 3 without mild pain, which gradually increased in December
Feb. 8	Folic acid, 20 mg./day		Daily severe. Rapid improvement. Absent from 5th day apart from mild flatulence
" 15	Folic acid stopped		Flatulence disappeared
" 19			Pain returned. Occurred daily
" 22	Folic acid, 15 mg. i.m.		Complete relief for days; then severe before
Mar. 1	Inositol, 30 mg./day for 7 days		No relief
" 15	Folic acid, 20 mg./day		Complete relief from 4th day

* All treatment is oral unless other method of administration is specified.

In considering the effects of individual vitamins the possible biological interrelationships of inositol, pantothenic acid, and folic acid are important. Investigations on the role of folic acid and biotin were reviewed by Wright and Welch (1943), who confirmed the previous findings. It is evident that utilization of pantothenic acid depends on the availability of the other two substances, at least in the experimental animal; and pantothenic acid seems to induce intestinal synthesis of inositol (Woolley, 1942). The results of these investigations are of course not necessarily applicable to man, but they at least serve to indicate the probable complexity of the problem.

Yeast and Liver Extract.—The beneficial action of these two complex substances might at first sight be explained on the basis of their pantothenic acid content. This is by no means certain, since anahaemin is stated by the makers to contain only about 0.001 mg. per ml., and marmite only about 0.06 mg. per g. Thus 1 ml. of anahaemin per day orally (0.001 mg. of pantothenic acid) was rapidly curative, and 4 g. of marmite daily (0.24 mg. of pantothenic acid) allowed symptoms to recur. On one occasion 76 mg. of calcium pantothenate by mouth failed to cure the sore tongue, and on several occasions the administration of 100 mg. was no more effective than oral anahaemin or marmite, and the improvement was short-lived compared with the long remission which followed oral liver therapy. Finally, the effect of oral liver and of yeast extract on alimentary symptoms was different from that of calcium pantothenate. Admitting the possibility of coincidence and of natural fluctuations in the clinical state, it does seem probable that anahaemin and marmite were effective by virtue of a factor other than pantothenic acid or inositol. The minute amount of this active principle required recalls the activity of folic acid and of vitamin B₁₂ in Addisonian pernicious anaemia and in the sprue syndrome. In this case observations on folic acid did not reveal the scope of its action.

Whatever this active principle is, it seems probable that lack of pantothenic acid was responsible for the glossitis, and that administration of calcium pantothenate repaired this deficiency and stimulated bowel activity. Pantothenic acid deficiency was not responsible for the disordered bowel activity, and when this was stimulated pain resulted. As an alternative explanation it might be suggested that the administration of calcium pantothenate replaces one deficiency and at the same time aggravates other coexisting deficiencies in a manner analogous to the development of beriberi or ariboflavinosis in pellagrins treated with nicotinic acid (Sydenstricker, Sebrell, Cleckley, and Kruse, 1940).

Aetiology of the Defects

In the past, organic disease of the intestine, with or without operative intervention, has been reported in association with defective fat absorption, signs of deficiencies of vitamins of the B group, and macrocytic anaemia. In a review of the literature Barker and Hummel (1939) referred to 51 such cases. Steatorrhea is not a commonly recorded feature of regional ileitis. Bockus (1945), in reviewing this condition, made only passing reference to occasional avitaminoses and steatorrhea in the untreated case. Nor is steatorrhea a commonly recorded sequel to the operative treatment of this condition; but in stressing the need for a high protein diet and liberal intake of vitamins of the B complex in order to avoid the development of serious nutritional disorders Brown and Donald (1942) gave the impression that such conditions may be more common than is indicated by the available literature.

Conditions such as alimentary and peritoneal tuberculosis and extensive infiltration by lymphosarcoma or lymph-

adenoma may interfere with absorption in a mechanical fashion, but the occurrence of steatorrhea and deficiency states in association with local disease or stricture is not so readily explained. Whether the effects are due to reduction in the absorbing surfaces or whether there is in addition some other disturbance—e.g., in the bacterial flora—which might interfere with the requirement for optimal absorption is not known. In favour of some additional factor is the observation that massive resection of the intestine in man is compatible with survival and good health. Prioleau (1943) reported such an instance which followed the removal of about 12 feet (3.65 metres) of small bowel and 1 foot (30 cm.) of large bowel. Elman and Read (1945) reported extensive resection of the small bowel and the right half of the large bowel with subsequent gain in weight and normal alimentary function on an unrestricted diet. From a review of 257 cases in which over 6 feet (1.83 metres) of small intestine had been removed Haymond (1935) concluded that resection of over half (11 feet (3.35 metres) in the average individual) was likely to give poor results.

In the present case no bowel was removed and the extent of the disease was relatively small, yet some time after operation, when activity of the disease was no longer evident and when the previously abnormal portion of bowel was found to be patent, steatorrhea and avitaminoses were well established. It is impossible to be certain that the disease and the ileocolostomy and the subsequent illness were related as cause and effect, but in the past intestinal strictures have been found to cause similar disturbances, which on occasion have been cured by removal of the affected part. Barker and Hummel (1939) described the case of a man aged 56 who developed a megaloblastic anaemia and a sore tongue after ileocolostomy for "non-specific ileitis." The by-passed loop of small bowel and colon was left as an alternative channel for alimentary contents as in the present case.

The clinical and haematological features of sprue were described by Wintrobe (1942) in a patient in whom extensive resection of intestine had been performed. Temporary improvement occurred when at a later date a blind loop of bowel was removed. Watson, Cameron, and Wits (1948) mention the occurrence of megaloblastic anaemia without steatorrhea following ileo-ileostomy performed to by-pass a subacute obstruction from regional ileitis. The possibility again arises that in some instances at least a factor other than reduction in surface may contribute to the development of deficiencies. A possible mechanism in such circumstances is by the alteration in the bacterial flora. This raises the old idea of "intestinal toxæmia," but in a new form.

Horster (1935) was able to induce anaemia and hepatic damage in dogs by the production of strictures or blind pouches in the intestine, and to prevent these changes by the oral administration of trichlorcresol. In addition he made the interesting observation that intramuscular injection of liver extract ("campolon") was equally effective. Watson *et al.* (1948) showed that in rats the production of blind loops in the small bowel often resulted in macrocytic anaemia which responded to treatment with liver extract (anahaemin). The development of this anaemia appears to be in some way related to dilatation of the loop and stagnation of its contents.

Marrow smears made from rats with macrocytic anaemia showed normal or increased cellularity, with an increase in the proportion of earlier red cell precursors. Although none of these corresponded exactly to the megaloblasts of human pernicious anaemia, in some cells the arrangement of nuclear chromatin was looser than normal and there

was occasionally seen a nuclear pattern approaching that of the typical megaloblast. It is at least possible that in these animals and also in the cases discussed alimentary stasis in the loop led to an alteration in the bacterial flora of the intestine and disturbed the elaboration or utilization of essential vitamins. It is also possible that the liver extracts in experimental macrocytic anaemia, and yeast and liver extracts in the present case, had an effect analogous to that of folic acid and biotin, which have been shown to reverse many deficiencies produced in the experimental animal by sulphaguanidine or sulphasuxidine.

Summary

The case is described of a patient who developed steatorrhoea and persistent glossitis and stomatitis after ileocolostomy for probable regional ileitis. The oral manifestations of the case were controlled on separate occasions by calcium pantothenate given orally or intramuscularly, by inositol given orally, by yeast extract (marmite), and by oral or intramuscular administration of a highly refined liver extract (anahaemin).

Calcium pantothenate was effective against the glossitis but invariably aggravated abdominal symptoms, particularly when given intramuscularly. Anahaemin given parenterally produced abdominal pain in less degree. Given by mouth, anahaemin, marmite, and also inositol cured the sore tongue but did not provoke abdominal discomfort. Folic acid relieved the colic, but its action on the tongue could not be determined because glossitis was not present at this time. Neither fat absorption nor glucose absorption was improved by the administration of calcium pantothenate. Nicotinic acid, riboflavin, and aneurin had no effect on the glossitis or on the abdominal symptoms.

It is suggested that the action of the yeast and liver extracts was due not to their content of pantothenic acid but to the presence of some other factor or factors which restored existing deficiencies in a more balanced manner, leading to improvement in both oral and alimentary disturbances.

The possible mechanism of the development of the steatorrhoea and the associated avitaminoses is discussed, and it is suggested that alteration in alimentary flora and consequent reduction in the availability of essential factors may be at least partly responsible.

I am grateful to Professor L. J. Davis for his advice in the preparation of this paper; to British Drug Houses, Ltd., and the Marmite Food Extract Co., Ltd., for information regarding pantothenic acid content of anahaemin and marmite respectively; and also to Dr. F. Wrigley, Director of Medical Research, Roche Products, Ltd., for providing the calcium pantothenate and inositol used in this investigation.

REFERENCES

- Barker, W. H., and Hummel, L. E. (1939). *Bull. Johns Hopk. Hosp.*, 64, 215.
 Bockus, H. L. (1945). *J. Amer. med. Ass.*, 127, 449.
 Brown, P. W., and Donald, C. J., jun. (1942). *Amer. J. digest. Dis.*, 9, 87.
 Darby, W. J. (1947). *Vitamins and Hormones*, 5, 119.
 Elman, R., and Read, J. A. (1945). *J. Mo. med. Ass.*, 42, 145.
 Ferguson, J. W., and Calder, E. (1948). *Glasg. med. J.*, 29, 341.
 Haymond, H. E. (1935). *Surg. Gynec. Obstet.*, 61, 693.
 Horster, H. (1935). *Z. ges. exp. Med.*, 95, 514.
 Prioleau, W. H. (1943). *Trans. Sth. surg. Ass.*, 55, 84.
 Sydenstricker, V. P., Sebrell, W. H., Cleckley, H. M., and Kruse, H. D. (1940). *J. Amer. med. Ass.*, 114, 2437.
 Watson, G. M., Cameron, D. G., and Witts, L. J. (1948). *Lancet*, 2, 404.
 Wintrobe, M. M. (1944). *Clinical Haematology*. 1st ed., p. 317. Kimpton, London.
 Woolley, D. W. (1942). *J. exp. Med.*, 75, 277.
 Wright, L. D., and Welch, A. D. (1943). *Science*, 97, 426.

Since local health authorities are having difficulties in providing ambulance services, the Ministry of Health has asked hospital boards and management committees to review their arrangements for calling on ambulance services, to see whether fewer calls can be made. The greatest increase in calls has been for sitting cases taken by car to and from out-patient departments. The Ministry would like hospitals to hold clinics at times that fit in with the local bus services, and to arrange for out-patients living near together to attend for treatment at about the same time. The circular also points out that patients, even stretcher cases, can be comfortably conveyed long distances by rail instead of by ambulance or

THE PROGNOSIS OF CERTAIN HYSTERICAL SYMPTOMS

BY

A. BARHAM CARTER, M.D., M.R.C.P., D.P.M.

Physician to Ashford Hospital, Middlesex

Thirty years ago MacCurdy (1918), discussing the treatment of hysteria, said that any physician with enough sympathy, interest, and common sense could obtain good results in many of these cases. He was referring only to the immediate outcome, and it is now agreed that even without the above requisites most doctors can get rid of a hysterical symptom. The present psychiatric view is that this is not always desirable, nor does it really help the patient, as he or she remains ill-equipped to stand up to the future strains that life is bound to impose.

This report is a simple account of what has happened to a number of patients who showed clear-cut hysterical symptoms, who were treated in a rather superficial way, and who have been followed up from four to six years after discharge from hospital.

Material

One hundred cases presenting various types of hysterical symptom were selected from 212 consecutive cases labelled as hysteria. All were seen either as in-patients or as out-patients in two large civilian general hospitals from 1939 to 1943. The selected cases were followed up from four to six years, to the beginning of 1947.

The selection was made by taking only those cases showing clear-cut, isolated, and easily recognizable symptoms so that the symptomatological prognosis could not be mistaken. The cases not included showed a more diffuse and complicated symptomatology, often with objective and subjective disorders of sensation. Each of the selected cases showed one of the following symptoms: amnesia, aphonia, blindness, fits, paralysis, tremor, or vomiting, and the prognosis was very simply judged on the presence or absence or replacement of this symptom after a given time and on the rapidity and frequency of relapse, if any, during this time.

The follow-up was successful in 90 of these cases, the remaining 10 being untraced. The actual material for study is therefore 100 cases with immediate results and 90 with a follow-up.

Definition.—Hysteria is here used to describe a form of psychoneurosis in which an emotional problem has been wholly or partly avoided by the development of a physical symptom which in itself may be symbolic of the presumably unconscious motivation, thus differing from other

Table Showing Analysis of Cases and Results of Follow-up

Symptom	No. of Cases	Condition on Discharge		Follow-up Results, 1946 (4 to 6 Years after Discharge)				
		Rec'd	Not Impvd.	Well	Impvd.	Unchanged (at Work)	Worse	Not Trcd.
Amnesia ..	23	23	0	17	1	0	2	3
Aphonia ..	29	29	0	19	8	0	0	1
Blindness ..	3	3	0	3	0	0	0	0
Fits ..	6	2	4	2	0	0	1	2
Paralysis ..	23	18	5	18	0	1	2	1
Tremor ..	10	10	0	4	0	4	0	2
Vomiting ..	6	5	1	3	0	0	2	1
Total ..	100	90	10	66	9	8	7	10

psychoneuroses in which the symptoms are coloured by a fixed or diffuse anxiety or tension, and from malingering in which the motivation is conscious.

Analysis of Cases.—The accompanying Table gives a simple analysis of the cases according to the symptoms

The patients were from 16 to 40 years old; 60 were females and 30 were Service cases. Precipitating factors were present in every case; some were more dramatic than others and a few were fairly difficult to elicit. Loss of memory often coincided with the end of a leave period; loss of voice and loss of power with direct evidence of enemy action; tremor with the sudden realization of fear; and blindness with the sight of something unpleasant or of someone thought dead. Since only the prognosis of symptoms is being considered, no other analysis, such as of previous personality, of family, or of physique, has been attempted.

Treatment

It is generally agreed that if a hysterical symptom is to be removed it can best be done by suggestion, and the following methods were used:

(a) *Direct Suggestion*.—This involved the simple statement that a symptom will disappear and normal function return, followed by an examination and by a command to employ the previous non-functioning part. Alone this was of value only in cases of mild disability, such as aphonia, but was of considerable help as part of other methods of suggestion.

(b) *Indirect Suggestion*.—This implied the ignoring of symptoms such as fits or vomiting either completely or by pointing out that they were unimportant. One part of this method, not sufficiently realized by many, was to refrain from inquiry about the progress of a hysterical symptom.

(c) *Hypnosis*.—There is no need to describe the technique of this form of suggestion, which, although very effective at first, tends to be used less and less by the physician who continues to interest himself seriously in psychoneurosis. It has often been said that the theatrical atmosphere and the unfortunate history of hypnosis have a tendency to produce an unusual state of mind in the doctor practising it.

(d) *Suggestion under Thiopentone*.—This method was used in all severe cases of hysteria and will probably replace hypnosis as the method of choice in suggestion therapy, particularly in general hospitals. The technique of this therapy, although well known to psychiatrists who practise narco-analysis, may be of interest to those physicians who like to do their own psychiatric work so far as is possible.

The patient was usually seen the day before treatment, spoken to about his illness, and thoroughly examined. He was told that his condition was a genuine illness caused by some shock to his nervous system, and that this had caused his brain to lose its normal control over the part of the body affected. He was told that he would regain normal control of all his functions and be well again, that his case was in no way unusual, and that recovery would occur the next day with treatment.

The next day he was, if possible, removed to a single room. The thiopentone was prepared (0.5 g. in 10 ml.); 2 ml. was injected and the patient was told he was feeling drowsy and more relaxed. When he began to yawn or to snore slightly he was told that his ability to move or see or feel was returning, and that he was recovering rapidly. He was then given orders to move the limb and was shown the limb moving, and when normal function was established he was aroused and asked to say how it all happened. Not infrequently there was a rush of emotionally charged memory, with tears, shouts, and vivid descriptions.

The above forms of suggestion treatment were all followed by an important routine. No one was allowed to ask the patient how the affected part was, and full recovery was accepted as a *fait accompli*. Then the patient was given two or three interviews and his or her story was listened to sympathetically, with interest and without haste; and, indeed, more good seemed to come from listening than from talking, as patients often found a more satisfactory solution to their problems without further prompting. Environments often needed changing, but more frequently the patient's assessment of his environment was biased by his own feelings of self-importance, and a change in his approach to such problems was essential. The most difficult emotions

to deal with were resentment and self-pity, and encouragement and stimulation of morale were needed to make many of these people realize that what a man believes of himself is more important than what others think of him.

Analysis of Results

The results have been analysed in the same way as the cases, under the headings of each symptom (see Table).

Amnesia

All the 23 patients showing hysterical amnesia recovered their memory within seven days, 18 of them on the second day with the help of direct suggestion or mild hypnosis. The remaining six were reassured, and were allowed to move freely about the ward and recover gradually without any active intervention. Two cases remained amnesic after six days and were given suggestion under thiopentone with success.

The impression given to the physician was that many of these people had committed some social crime; 12 of the patients were young soldiers absent without leave and were avoiding the consequences of their action. The value of this particular symptom as a protection is obvious enough, and if the patient can be assured of his sanity and the return of his memory it is perhaps better to leave him alone until he feels consciously or unconsciously that he can face his environment. All these patients were men between the ages of 18 and 30 with no previous history of hysterical symptoms—an interesting and well-recognized sex incidence.

Follow-up.—Twenty of these patients were seen again from four to six years later, three being untraced. Of the 10 Service patients, five had been discharged from the Army as psychoneurotic and had received no punishment for their crimes; they had had no active psychotherapy except a sympathetic attitude and a course of training for civilian work. All were well and at work, although their attitude towards life remained mildly resentful. The other five Service patients had been retained in the Army, had fought in France and Germany (two with distinction), and eventually had been discharged well. They were all cheerful and at work, and were rather embarrassed at being reminded of their loss of memory. Of the 10 civilian cases, six had not relapsed, two had relapsed once, one more than once, and one was in a mental hospital suffering from schizophrenia. Of the two difficult cases that took a week to recover, one was the schizophrenic and the other had relapsed with amnesia and had developed a tremor as well.

Aphonia

These 29 patients, 20 of whom were women, all recovered their voices with direct suggestion and without very much difficulty. There was in every case a strong tendency to immediate relapse, but reinforcement of the suggestion dealt with this. A very simple technique was used. The patient was asked if she would like her voice back and was then requested to cough. She was informed that if she could cough she could speak, and the throat was examined firmly, often with the production of gagging and an inarticulate sound. This was gradually transformed into articulate speech by telling her to repeat simple words. Very little else was done for these patients, since the symptom was a minor one and not associated in this series with deep psychological disturbances. They all seemed reasonably well adapted to environment, and many were of the emotionally labile and sensitive type with a tendency to tremor and "nervousness." In 15 of the 20 women the aphonia had followed a catarrhal laryngitis.

Follow-up.—Nineteen of these cases had remained well, although they still confessed to nervousness and sweating and an unreasonable fear of difficult situations. Two had relapsed, with loss of voice persisting up to six weeks following sore throat and laryngitis. Seven cases were difficult to assess; these patients said that they always lost their voice if they became embarrassed, worried, or unhappy. They did not seem to be inconvenienced by this, and always regained it when the trouble had departed. The final impression obtained was that aphonia by itself is a symptom of only mild mental dissociation and has a good prognosis. One case was untraced.

Blindness

Only three cases of blindness were seen, and all in 1941. One was a battle casualty who had seen his best friend decapitated, one a woman who had seen her child burnt to death, and the third a woman whose husband, believed dead, had returned at a rather embarrassing moment. All were treated by hypnosis, recovered, and are now well and happy. A simple explanation was given to each one, but no other psychotherapy except an attempt at softening the blow and uncovering a feeling of guilt in the two women.

Fits

The six cases showing hysterical fits were more difficult to deal with. They were treated by indirect suggestion, no importance being attached to the attacks. When these recurred in the ward the patient was moved gently out of the way and allowed to lie on the floor. With this treatment the attacks became less frequent and less severe in every case, but only two lost the tendency completely. The remaining four replaced the true fits by "black-outs," attacks of vertigo, and "fainting attacks." These four cases seemed to have considerable instability, and were referred to a psychotherapist.

Follow-up.—The two who had improved most in hospital remained well; one committed suicide three years later after in-patient treatment in a mental hospital as a schizophrenic; one had remained partially well and was at work, but complained persistently of black-outs. Two were untraced.

Paralysis

Twenty-three cases of hysterical paralysis were treated by hypnosis before 1942 or thiopentone suggestion after 1942. The cases themselves were interesting because in every one the legs were affected, and in three the arms as well. In 10 cases all limbs were freely movable in bed by the patients' own efforts, but walking was impossible or very difficult.

Immediate treatment produced dramatic recovery in 15 cases. The remaining eight were treated again next day and the required result obtained in three of them. Five cases failed to respond, and every one of these had on admission the power to move the legs in bed combined with inability to walk or stand. These were referred to a psychotherapist. In all the recoveries an eventual sorting out of some of the mental conflicts was obtained without much trouble. The patient was told his memory for walking had now returned and had formerly been lost because of some worry, trouble, anxiety, or some situation of either real or imagined difficulty. The enormous confidence obtained from the removal of the symptoms seemed to help the patient to overcome any diffidence in his relations with the physician and to unburden himself of his deepest troubles. It was less easy to find a reasonable solution of his difficulties, although often it was sufficient to make a few suggestions and tell the patient he must choose the eventual path himself.

Follow-up.—Fourteen cases remained well without further trouble; three became well and had relapsed twice in three years but were now well. One case recovered after two injections of thiopentone, but is now paralysed again and refuses to see a doctor professionally, although she allows herself to be wheeled up by her elder sister for follow-up purposes. Of the five failures after thiopentone, one responded to a deep psychotherapeutic regime, one became an obsessional psychotic, two remained apparently unchanged, and one was untraced, so that 18 eventually made a good recovery.

Tremor

The 10 cases of hysterical tremor were very deceptive. They all recovered with suggestion under thiopentone: four relapsed in two or three days, but recovered again on repetition of the dose. All these patients were loud in their praise of the wonderful treatment, and discussed their difficulties almost with relish.

Follow-up.—Eight out of 10 were traced. Four of these relapsed within a year, and are still trembling away without much incapacity. None is willing to see a psychiatrist. The other four are well and earning their living. This is a very poor and rather humiliating follow-up after an apparently very successful beginning, and supports the psychiatric axiom, "Be wary of praise from a hysteric."

Vomiting

Six cases of hysterical vomiting, three of them in nurses, were encountered. The treatment of these was indirect suggestion—ignoring the seriousness of the symptom, giving no special diet except a full normal one, and assuring the patient that starvation would not occur. Questions about the patient's progress or the occurrence of vomiting were avoided, and a general "playing down" of the whole affair seemed to start the improvement. Five of these cases had lost their vomiting in a month and appeared well on discharge. The sixth patient continues to have the symptom intermittently and discharged herself from hospital.

Follow-up.—Three cases remained quite well, one developed an obsessional neurosis and remained a burden to her family in spite of analytical psychotherapy, and one was untraced. The sixth case was run to earth in a children's day nursery; she had apparently been to no fewer than seven hospitals with nearly every hysterical symptom imaginable. Her most recent experience had been a hysterical retention of urine treated by suprapubic cystotomy, of which she was very proud.

Discussion

The prognosis of neurosis is said to depend on the age, personality, and intelligence of the patient and on the duration, nature, and severity of the disorder. Certain of these factors are constant in this report: the age group was that of the young adult; the intelligence of each patient seemed not greatly above or below the average; and the nature and duration of the disorder were those of acute conversion hysteria. The variants are the personality of the patient and the severity of the disorder. This report is lacking in any adequate personality investigation, as if this is to be of value it must be done by a psychiatrist; the severity of the disorder is the only explored and known variant.

In a general study of recent hysterical states Kenned (1940) says that it is impossible to form an opinion about the future on the basis of symptomatology alone. Fortunately he also says: "Though often misleading until all the causative factors are known, the nature of the actual symptoms, apart from their general type, is of great prognostic value."

This tendency, in an estimation of the prognosis of hysteria, to discount the symptom and pay much greater attention to the previous personality and behaviour of the patient is supported by current psychiatric opinion, which rightly holds that the removal of the symptom cannot possibly affect the underlying personality that produced it. In fact, many psychiatrists condemn the formal removal of the disability, claiming that good psychotherapy will allow the patient to cast off his symptom without any direct reference to it.

The wider view of prognosis in conversion hysteria has been studied in military psychiatry both here and in America. Miller (1940) states that of all the severe neuroses conversion hysteria showed the highest percentage of men returning to duty rapidly, but assessment of relapse was impossible owing to difficulties of follow-up. A comprehensive survey of readjustment to civilian life was made in America in 1919 and 1924 on 830 cases of "war neurosis" (Medical Department of the U.S. Army, 1929) and in the 1919 survey the majority of hysterics were having difficulty in readjustment and little more than half were able to earn their own living. In 1924 this group showed a higher proportion of readaptation, 75% being at work.

A comprehensive survey of prognosis was made by Ros (1936), who analysed the results of the Cassel Hospital patients admitted from 1921 to 1933. Taking all the psychoneuroses, he finds that after one year 45% are well, after three years 40%, and after five years 34%. Unfortunately 60% were untraced in this sixth year follow-up, so that his recovery figures may be too low. Analysing cases of

hysteria alone, he found that at the end of four years out of 89 cases 43 were well, 23 improved, and 23 unchanged. No analysis according to symptomatology was made.

Luff and Garrod (1935) analysed the results in 500 cases of psychoneurosis treated at the Tavistock Clinic between 1928 and 1931. There were 75 cases of hysteria, and on discharge 13 were "much improved," 25 "improved," 17 "slightly improved," and 20 "not improved." After three years the figures read in the same order 17, 21, 6, and 16, the remaining 15 having relapsed. The "much improved" and "improved" groups are taken together to give a "relieved" figure of 50.6%, which after three years is the same as on discharge; these people were at work, and the "much improved" group would here be labelled "well."

This present report shows a higher symptomatic recovery rate than that obtained by other authorities, as 83% of patients were still at work for four to six years after discharge. This result has occurred in spite of inadequate psychotherapy, and the factors determining this outcome must be considered.

The selection of patients with a florid, clear-cut symptomatology and the comparative absence of cases of chronic hysteria in this series have probably improved the prognosis as a whole. Patients may also have come somewhat earlier and been more co-operative initially at a general as opposed to a psychiatric hospital, and the importance of an unusual precipitating factor such as aerial bombardment may not have been sufficiently stressed. These four considerations taken together form quite a weighty bias towards natural recovery. Moreover, although it is not always possible to know what standards are used by others in judging recovery or improvement in psychoneurotic patients the recovery or otherwise from a disabling symptom is easy to judge. Perhaps not even one out of the 66% who are here labelled well four to six years after treatment might be thought recovered at all in the psychiatric sense, although he or she is back at work, symptom-free and feeling well. Therefore this investigation of the prognosis of certain hysterical symptoms is not comparable with the results of others who have given statistics regarding the prognosis of psychoneurosis in general or in particular.

Relation of Particular Symptoms to Their Prognosis

Owing to the small number of cases and the numerical variation of each particular symptom only a suggestion of certain trends in prognosis is justified, and no one symptom can be labelled malignant or benign. Aphonia and amnesia seem to have an excellent immediate outcome—probably whatever treatment they receive within reason—and the result seems to be maintained in the follow-up. Paralysis showed a slightly less favourable result, but 18 out of 23 were well five years after leaving hospital, although these were not quite the same 18 that recovered immediately, as one of these relapsed and one of the early failures recovered after expert psychotherapeutic treatment elsewhere.

Tremor was the one symptom that supported the psychiatric theory that removal of a hysterical symptom is quite unrelated to improvement of the psychoneurotic illness itself. The immediate recovery of all 10 cases and the follow-up finding of only four well out of 10 speaks for itself.

Fits appear to be a more difficult immediate problem, as only two out of six recovered in hospital; these remained well.

Vomiting was more hopeful at first, five out of six stopping this symptom in hospital; only three of these were well five years later.

Blindness was found in only three cases, and these seem to have made an excellent recovery.

Conclusion

There is very little to add on recapitulation. The word "recovery" will never mean the same to a psychiatrist as to a physician, and one can only try to correlate physical and psychological terms. It would seem that an acute hysterical episode has not the rather grave prognosis that it is usually stated to have, and that it does not always need skilled psychotherapy or psycho-analysis to produce an apparent recovery. It is tempting to think of the hysterical personality in degrees of instability with differing thresholds of resistance, some people needing a more powerful stimulus than others to produce the reaction—rather like cerebral dysrhythmia and epilepsy in which the concept of differing grades of liability to produce clinical epilepsy is accepted. Perhaps the most stable of us would under sufficient stimulus produce a hysterical symptom in the same way that we would produce an epileptic fit if sufficient strength of electric current were passed through our brain. If so, there is at least the suggestion that in some cases of hysteria it is unnecessary to do more than relieve the symptom and discuss the patient's problem with sympathy, interest, and common sense.

Summary

One hundred cases of acute hysteria are analysed symptomatically, and the results of treatment by suggestion are recorded.

A follow-up four to six years later was successful in 90 of these cases, and the results of this are tabulated and discussed.

The suggestion is made that the outcome of such cases is better than is generally believed even although long, skilled, formal psychotherapy is not available.

REFERENCES

- Kennedy, A. (1940). *J. ment. Sci.*, 86, 938.
Luff, M. C., and Garrod, M. (1935). *British Medical Journal*, 2, 54.
MacCurdy, J. T. (1918). *War Neuroses*, Cambridge.
Medical Department of the U.S. Army in the World War (1929).
Vol. 10. U.S. Government Printing Office, Washington.
Miller, E. (1940). *The Neuroses in War*. Macmillan, London.
Ross, T. A. (1936). *Prognosis in the Neuroses*. Cambridge.

NUTRITIONAL MACROCYTIC ANAEMIA IN TEMPERATE ZONES

BY

J. RUBIE, M.D., M.R.C.P.

AND

C. D. CALNAN, M.A., M.B., B.Chir.

The nutritional anaemias may be divided into primary types, in which the dietary deficiency has been the main cause of the anaemia, and the secondary types, in which utilization by the body of a complete diet is defective, usually because of some organic disorder. Occasionally the anaemia may be due to combined causes.

Macrocytic anaemia resulting from nutritional deficiency is commonest in India, Malaya, and China; it also occurs frequently in Macedonia, where it presents some different features from the "tropical" variety. A nutritional macrocytic anaemia may, however, occur in temperate zones. Such a case occurring in England is here recorded.

Similar cases have been described in England, U.S.A., Canada, Holland, and Denmark (O'Hara and Grewal, 1927; Aykroyd, 1930; Kern, 1931; Ungley, 1933, 1938; Groen and Snapper, 1937; Alsted, 1939; Townsend and Begor, 1942; Watson and Castle, 1946). Most of the authors remark on the deficiency of protein in their patients' dietary. Evidence of the relation of animal protein to tropical nutritional macrocytic anaemia was provided by

Taylor and Chhuttani (1945) in a survey of anaemia in Indians.

Of the two cases in England reported by Ungley the first showed a slow and submaximal response to "marmite," while the second was successfully treated with "campolon" liver injections.

Case Report

A widow aged 56 had been employed as a factory hand, but had not worked for the eighteen months previous to admission to hospital on May 14, 1947. She came with a letter from her doctor, which stated: "She was investigated at another hospital a year ago with the ultimate diagnosis of pernicious anaemia, but refused treatment at the time and now turns up looking like death, as you can see. She has no one to look after her." A letter from another hospital in London stated that she had attended as an out-patient on May 7, 1946, and a blood examination then showed: red cells, 3,000,000; haemoglobin, 65%; colour index, 1.08; white cells, 6,210 (P. 54%, L. 42%, E. 2%, M. 2%).

On examination it was at once noticed that she was mentally subnormal, and no reliable history could be obtained. She was quite uncooperative, refused all food on the day of admission, and was very noisy during the first night in hospital. Her appearance was one of gross physical neglect; pediculi were present on the scalp and body, and numerous scratch marks and abrasions were found. There was no abnormal pigmentation of the back of the hands or of the face. She was of small stature and of thin, spare build. The mucous membranes were pale; there was no icteric tinge. The tongue was smooth and glazed and looked sore. The parotid and submaxillary salivary glands showed bilateral diffuse enlargement. There was no lymphadenopathy. The nails were normal. Pitting oedema of the legs was present. The chest showed signs of bronchitis, and the heart sounds were faint. The B.P. was 105/65. Examination of the abdomen revealed no ascites, and the spleen was not palpable. Her speech was slow.

She complained of numbness of the legs, but, so far as her mental state would allow, no sensory loss was found to pin-prick or light touch. There was no muscular weakness or dystonia. The abdominal reflexes were absent; the biceps-jerks were present on each side, the triceps-jerks, supinator-jerks, knee-jerks, and ankle-jerks were absent on both sides. There was no plantar response.

The social history was difficult to elicit, but the salient features were: her second husband had died about eighteen months previously, since when she had lived alone in one room. Her sole source of income was from the periodic sale of personal valuables. According to a friend who lived near by, her room was in gross disorder and her culinary arrangements were chaotic. Her meals were irregular in quantity and quality, and appeared to consist mostly of tea, bread, buns, etc. Exact details of diet were not obtainable. She had been in a mental hospital on two occasions during the 1939-45 war. There was evidence that her father, stepbrother, and daughter had also been in mental hospitals.

She was interviewed by a psychiatrist on Aug. 1, 1947, who reported: "She is in a state of mild mania. She admits having been a patient in Hanwell Mental Hospital twice. She has persecutory ideas about her late husband, whom she accused of putting her away. When her medical condition allows she should be transferred to an observation ward."

Laboratory Investigations.—A radiograph of the chest revealed signs of bronchitis. A blood count showed: red cells, 1,150,000; haemoglobin, 27%; colour index, 1.16; white cells, 4,900 (P. 51%, L. 45%, E. 2%, M. 2%). A film showed anisocytosis and poikilocytosis; P.C.V. 15%, M.C.V. 130 c.u., M.C.H.C. 25%; reticulocytes, less than 1%. Stools contained no ova, cysts, or pathogenic organisms. Sternal-marrow examination resulted as follows:

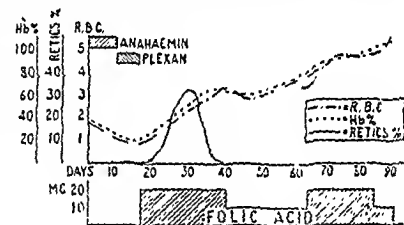
Report on Myelograms.—Before folic acid: Megaloblastic erythropoiesis. On ninth day of treatment: Considerable reversion to normoblastic erythropoiesis. Urine showed a faint trace of protein and a few leucocytes; it was sterile on culture. W.R. and Kahn negative. A fractional test meal showed free hydrochloric acid after histamine up to a concentration of 38 ml. of N 10 HCl after 1½ hours.

Myelograms

	Percentage of Nucleated Cells	
	Before Folic Acid	9th Day of Treatment
Polymorph. neutrophils	14.8	40.0
" eosinophils	0.8	3.0
Metamyelocytes	8.8	14.0
Giant metamyelocytes	11.8	0.7
Myelocytes: neutrophil	15.0	3.0
" eosinophil	1.2	—
Lymphocytes	7.4	3.5
Plasma cells	0.6	—
Late normoblasts	4.8	22.0
Intermediate normoblasts	1.2	8.2
Early	0.2	0.6
Late megaloblasts	10.6	5.0
Intermediate	18.2	—
Early	4.6	—
Total nucleated cells	126,000	—
Myeloid series/nucleated R.B.C.	1.3/1	1.7/1

Treatment.—"Anahaemin," 2 ml. daily intramuscularly, was started on May 23, and two "fersolate" tablets, two vitamin B tablets, and 50 mg. of ascorbic acid were given three times a day. On May 27 and 30 and June 2 the reticulocytes were less than 1% and anahaemin was replaced by "plexan" crude liver extract 4 ml. daily. On June 6 the red cells numbered 780,000, with less than 0.5% reticulocytes. In view of this fall it was decided not to continue with plexan, and folic acid, 20 mg. daily, was started on June 9. Next day her blood count showed 1,090,000 red cells and less than 1% reticulocytes.

Progress.—Following this treatment there was a rapid rise in the reticulocyte and red cell counts, as shown in the accompanying Graph. On July 12 there were 1,260,000 red cells; reticulocytes, 6%; nucleated red cells, 124 per 100 white cells. The stained film showed anisocytosis, poikilocytosis, and polychromasia. Clinical improvement proceeded rapidly with the haematological response to folic acid. The blood pressure rose to 120/70 and all reflexes were present, though sluggish, after 10 days' treatment. The patient soon began to eat voraciously and her skin lesions healed, but her mental state remained essentially unchanged, and it was eventually found necessary to transfer her to a mental observation ward.



Comment on the Case

Davies (1945) and Holmes (1945) have drawn attention to the incidence of oedema in anaemia, due to hypoproteinaemia, especially during the stage of recovery, when much protein is being used to form haemoglobin.

The presence of pitting oedema of both legs without ascites in this patient on admission to hospital was an expected accompaniment of the severe anaemia, low blood pressure, and poor nutritional state. However, it did not improve commensurately with the clinical and haematological improvement, and when it did subside it reappeared on two occasions. No adequate explanation could be found on the last occasion of its appearance, 67 days after the beginning of treatment and when the red cell count was rising: estimation of plasma proteins showed normal values. The patient was eating a full normal protein diet. No conclusion could be drawn about the relation between the oedema and the rate of haemoglobin formation. Unfortunately the relationship of hypoproteinaemia to recovery from anaemia was not realized at the time, and earlier plasma protein estimation was not carried out.

In Groen and Snapper's two cases oedema is not reported, and the plasma proteins were normal in one of them. In the cases described by Alsted, by Townsend and Begor, and by others, oedema and plasma protein values are not recorded.

Discussion

The special interest of this case lies in the failure to respond to large doses of active liver extract, both crude

and of the Dakin and West type, and, in contrast, the immediate response to folic acid. This feature distinguishes the case from the previously reported cases of nutritional megalocytic anaemia occurring in temperate zones.

The rapid response to folic acid has been stressed recently by Kemp (1947), and the maximal reticulocyte response of 28% on the fifth day is in agreement with his findings.

It is debatable whether or not our patient would have responded to anahaemin or plexan if these drugs had been continued for longer periods. In Kemp's cases, though the response to "hepatex" was slower than to folic acid, all had shown some improvement within 18 days, whereas in our case after intense therapy not only was there shown a reticulocyte count of less than 1% but the red cell count was falling and giving rise to serious anxiety.

Oral preparations of proteolysed liver were not tried, and hence it is hypothetical whether response would have been obtained. Watson and Castle (1946) recorded a case in Boston, U.S.A., of nutritional macrocytic anaemia in a woman aged 76 who responded to intravenous injections of 20 ml. daily of the supernatant from the suspension solution of liver extract (Lilly) after failure with the usual liver extract, and also *Lactobacillus casei* factor, but the amount of the latter was only 1.3 mg. daily. Davis and Davidson (1944) have successfully treated several cases of otherwise refractory macrocytic anaemia, but none of them showed such a prominent nutritional aetiological basis as in our case.

The precise role of folic acid cannot be stated with certainty, and the mechanism of liberation from its conjugate by a liberating factor, as postulated by Davidson and Girdwood (1947), has not been widely accepted. Our patient was apparently deficient in folic acid but not in Castle's haemopoietic factor.

Summary

Nutritional macrocytic anaemia may occur, though rarely, in temperate climates, and is associated with a deficiency of protein. Previously recorded cases are reviewed and a new case is reported.

There was an immediate response to folic acid after the failure of intensive liver therapy.

We wish to thank Dr. C. D. Coyle, medical superintendent of the Archway Group of Hospitals (Highgate Hospital), and Dr. A. L. Jacobs, the chief physician, for permission to publish this case; and Dr. J. M. Alston and his staff of the Archway Group Laboratory for the pathological investigations.

REFERENCES

- Alsted, G. (1934). *Acta med. scand.*, **82**, 288.
 — (1939). *Amer. J. med. Sci.*, **197**, 741.
 Aykroyd, W. R. (1930). *British Medical Journal*, **2**, 247.
 Davidson, L. S. P., and Girdwood, R. H. (1947). *Ibid.*, **1**, 587.
 Davies, T. (1945). *Ibid.*, **1**, 45.
 Davis, L. J., and Davidsoo, L. S. P. (1944). *Quart. J. Med.*, *n.s.*, **13**, 53.
 Groen, J., and Snapper, I. (1937). *Amer. J. med. Sci.*, **193**, 633.
 Holmes, E. G. (1945). *British Medical Journal*, **2**, 561.
 Kemp, T. A. (1947). *Lancet*, **2**, 350.
 Kern, R. A. (1931). *Ann. intern. Med.*, **5**, 729.
 O'Hara, D., and Grewal, J. S. (1927). *Boston med. surg. J.*, **197**, 129.
 Rhoads, C. P., and Miller, D. K. (1937). *Proc. Soc. exp. Biol.*, *N.Y.*, **36**, 654.
 Taylor, G. F., and Chhuttani, P. N. (1945). *British Medical Journal*, **1**, 800.
 Townsend, S. R., and Begor, F. B. (1942). *Canad. med. Ass. J.*, **47**, 352.
 Ungley, C. C. (1933). *Quart. J. Med.*, *n.s.*, **2**, 381.
 — (1938). *Lancet*, **1**, 925.
 Watson, J., and Castle, W. B. (1946). *Amer. J. med. Sci.*, **211**, 513.

Workers at the National Institute for Research in Dairying and at the Courtauld Institute of Biochemistry have investigated the widely recognized fact that cows, on "going out to grass" in the spring, often give an increase in milk greater than the amount ascribable to the extra nutrients ingested. From their preliminary results, which were published in *Nature* (1948, **162**, 845), they concluded that the galactopoietic effects of spring grass in lactating cows may be due to the presence in the grass of oestrogen.

STREPTOMYCIN IN FINGER INFECTIONS

BY

J. BRADLEY WATSON, M.B., B.S.

E. R. GRIFFITHS, M.B., B.S.

AND

L. W. PLEWES, M.A., M.D., F.R.C.S.

(From the Hand Infection Unit, Luton and Dunstable Hospital)

The use of penicillin in infections of the hand has been shown to reduce sepsis, pain, and time of healing (Florey and Williams, 1944; Grossmark and Plewes, 1945).

Streptomycin is as yet little known as a local therapeutic agent, and we have attempted to compare the results of treatment with this newer agent with those of penicillin. Two types of infection—pulp whitlows and paronychias—are used for comparison because these infections were more true to type than others and because the more serious types, such as deep palm infections, were admitted to hospital and given systemic penicillin. No case which required systemic chemotherapy of any kind has been included.

Principles of Technique.—All cases presented were incised by standard procedures under general anaesthesia and with the use of a tourniquet. Streptomycin (5,000 µg. per g.) or penicillin (1,000 units per g.) was applied as a cream. This was smeared on a vaselined gauze wick which remained *in situ* for two days. Dressings were carried out in a special "perspex" dressing-box under continuous ultra-violet irradiation—all the dressings of each day being done by the same dresser with "no touch" technique. They were changed at intervals of two days, the discharge being cultured each time. Streptomycin or penicillin was applied until culture revealed "no growth."

Bacteriology

The frequency with which various organisms are isolated from a wound depends to some extent on the bacteriological technique employed (Williams and Miles, 1945). In our cases it consisted in swabbing the affected site and seeding on blood-agar plates; these were incubated aerobically and examined the following day. A very small quantity of the cream used in treatment was included on the plate in the penicillin series, and a hole containing streptomycin, 500 µg. per ml., in the streptomycin series; in practice this gave a good indication of the sensitivity of the organism grown.

The term "coliform organism" is used to include all Gram-negative bacilli having the cultural appearances of *Bacterium coli*, *Pseudomonas pyocyanea*, or *Proteus*; the streptococci isolated were all reported as "haemolytic streptococci," but grouping was not carried out as a rule; a coagulase test was done on all the staphylococci isolated, and was positive in all cases on first culture (coagulase-

TABLE I

Organism	Pulp Infections		Paronychia	
	Penicillin Series (60 Cases)	Streptomycin Series (66 Cases)	Penicillin Series (49 Cases)	Streptomycin Series (74 Cases)
Staphylococci	53	64	42	64
Staphylococci and streptococci	1	1	2	5
Staphylococci and coliform	1	1	3	3
Streptococci	—	—	2	2
Coliform	—	—	—	—
Streptococci	—	2	11	2
Coliform	12	—	—	—

negative staphylococci and atypical Gram-positive cocci were isolated from a few cases later during treatment, but are not included in the tables).

Primary infection refers to the organism isolated on first culture; secondary infection to those isolated from a second or later sample, if different from the first.

The striking fall in incidence of secondary coliform infection following the use of streptomycin is shown in two unselected series of 500 consecutive swabs received from the hand-dressing unit (Table II); one was taken during the penicillin period and one during the streptomycin period.

TABLE II

	No. of Swabs	Coliform Organism Isolated	% Coliform Infection
Penicillin period ..	500	193	38.6
Streptomycin period ..	500	37	7.4

Observations

In Table III the results of treatment and secondary infection rate are tabulated. The secondary infection rate is greatly reduced in the streptomycin group, and the number of days to "no growth" is considerably lower, while the average number of days off work is lower for the streptomycin cases.

TABLE III

	% Secondary Infection	No. of Days to "No Growth"	No. of Days off Work
Pulp Infection:			
Penicillin (60 cases) ..	20	9.0	9.4
Streptomycin (66 cases) ..	3	7.4	5.4
Paronychia:			
Penicillin (49 cases) ..	22	6.7	5.2
Streptomycin (74 cases) ..	2.7	4.8	2.3

Streptomycin was not used for acute suppurative tenosynovitis, because of lack of knowledge of the behaviour of this antibiotic within endothelial-lined cavities. In addition to the nine cases reported in 1945 eight cases have been treated by repeated aspiration of the tendon sheath and replacement with penicillin, with excellent results.

Conclusions

Streptomycin is a better local agent in the treatment of pulp infections and paronychias than penicillin.

Its use has resulted in a decrease in the secondary infection rate—more rapid healing with consequent decrease in the time lost from work.

REFERENCES

- Florey, M. E., and Williams, R. E. D. (1944). *Lancet*, 1, 73.
 Grossmark, G. L., and Plewes, L. W. (1945). *British Medical Journal*, 1, 906.
 Williams, R. E. D., and Miles, A. A. (1945). *J. Path. Bact.*, 57, 27.

The Ministry of Health states that patients attending out-patient departments are often referred back to their general practitioners for the issue of certificates of incapacity for work required by the Ministry of National Insurance. This procedure, which accords with the notes appearing on the covers of pads of certificates provided by the Ministry of National Insurance, is an unnecessary burden on both the patient and the general practitioner, and also puts the latter in a difficult position, since the hospital, not himself, is responsible for the treatment. The Minister is therefore asking management committees and boards of governors to make available certificates of incapacity in the out-patient departments and in clinics. While the first (Med. 1) and final (Med. 2B) certificates must be signed by the doctor in attendance and must show the cause of incapacity, intermediate certificates may be signed by the authorized lay officers. A special certificate will not be provided, and Forms Med. 7 and 8 can be adapted from "in-patient" to "out-patient." Although these certificates contain neither the diagnosis nor the usual certification of incapacity for work, the doctor should be satisfied that the patient is in fact incapable of work. The hospital stamp should include the words "out-patient department."

Medical Memoranda

Perforated Gastric Ulcer Associated with Subcapsular Haemorrhage of Spleen

An unusual complication of a common acute surgical condition is recorded. No report of an analogous occurrence has been traced in the literature.

CASE HISTORY

A woman of 69 was admitted to hospital on April 16, 1947. Eleven hours previously she had been awakened by the sudden onset of severe abdominal pain which continued up to the time of admission as an agonizing upper abdominal ache. No vomiting had occurred, her bowels had opened the previous evening, and there was no disturbance of micturition. For forty years she had suffered from intermittent attacks of "indigestion" in the form of upper abdominal pain coming on two hours after food and relieved by alkalis and dieting. She had had no recent abdominal injury.

She was a fragile, anaemic-looking woman in obvious distress. Her temperature was 98° F. (36.7° C.), pulse 82, and respirations 28. The abdomen was rigid, moderately distended, and generally tender. Liver dullness was diminished; the epigastrium was the most painful area; and there was no radiation of pain to the shoulders or elsewhere. A diagnosis of perforated peptic ulcer was made.

At operation gas and yellowish effusion escaped through a midline epigastric incision. On the anterior surface of the stomach, midway between the lesser and the greater curvatures and one inch below the oesophageal level, was a large ulcer, which had perforated. The spleen was found to be friable and surrounded by blood and clot. The perforation was repaired with interrupted Lembert sutures and an omental patch. A transverse incision was made into the left rectus abdominis. The anterior splenic surface was friable and presented a raw appearance, as if the capsule had been destroyed, and it was bleeding profusely. The splenic pedicle felt normal and there was no thrombosis of its vessels. Splenectomy was performed, and after draining the splenic bed through a counter-incision in the flank the abdomen was closed in layers.

Continuous gastric suction and intravenous fluids were instituted post-operatively for thirty-six hours. She thereafter had a smooth convalescence. Three months later she wrote to say that she was well and free from "indigestion."

The spleen measured 10 × 6 × 2.5 cm. There was no macroscopic evidence of infarction. There was a diffuse subcapsular haemorrhage. Microscopically, extravasation of blood was seen beneath a necrotic capsule. The splenic vessels were sclerotic.

COMMENT

It is tempting to ascribe the capsular necrosis of the spleen to peptic digestion. But Price and Lee (1947) report that the spleen with its capsule intact is more resistant to peptic digestion than the seromuscular coat of the stomach, intestine, or gall-bladder. Accepting such experimental observations, one might postulate a subcapsular haemorrhage of the spleen before perforation of the gastric ulcer. In a frail person with some degenerative vascular changes a minor abdominal injury might well have escaped notice and caused such an "idiopathic" or "spontaneous" haemorrhage. In this connexion one of two cases of "spontaneous rupture of the apparently healthy spleen" described by Babson and Morgan (1946) is interesting. A man of 49 had a severe subcapsular haemorrhage and splenic rupture following operation for a perforated duodenal ulcer. The ulcer was sutured in the usual way, and five days later there was a sudden collapse and abdominal pain. After two days' conservative treatment the clinical signs suggested splenic rupture, and this diagnosis was confirmed at operation. A severe cough following the first

laparotomy was thought to be the traumatic factor, and the authors infer that an associated adhesive peritonitis might have been an additional aetiological factor in causing the haemorrhage. This patient, too, made a good recovery.

Whatever the cause of the haemorrhage in the present case it is quite certain that the acute perforation masked the accompanying condition. This coincidence emphasizes one of the dangers of the adoption of conservative treatment for perforated peptic ulcer—laparotomy alone can clinch the diagnosis and exclude other possibilities.

JOHN A. SHEPHERD, M.D., F.R.C.S.Ed.,
Lecturer in Surgery, University of Liverpool

REFERENCES

- Babson, W. W., and Morgan, P. (1946). *Amer. J. Surg.*, 72, 97.
Price, P. B., and Lee, T. F. (1947). *Surg. Gynec. Obstet.*, 84, 959

Abacterial Pyuria Producing Bilateral Ureteric Stenosis

Abacterial pyuria is well recognized as a clinical entity of unknown aetiology which should respond dramatically to injections of N.A.B. The usual clinical picture is one of painful micturition with pyuria and haematuria in a young adult male with no pyrexia. Cystoscopy reveals an angry red mucosa which is irritable and painful. The case here recorded satisfied these essential details but presented some peculiarities over a prolonged course of three years.

CASE REPORT

The patient first came under observation in May, 1945, for an attack of fever. She was then 16 and in good health otherwise, though she had had some frequency of micturition for a few weeks. The pyrexia ($100-103^{\circ}\text{F.}$: $37.8-39.4^{\circ}\text{C.}$) lasted for two to three weeks. The white cell count was normal and the Widal reaction negative. The urine showed traces of albumin and a frank thick pyuria with haematuria microscopically. No organisms could be detected on repeated culture. Efforts were made to demonstrate acid-fast bacilli, but failed. Guinea-pig inoculation on two occasions proved negative for Koch's infection. Investigation of the kidney and bladder by descending pyelography showed no abnormality.

She was given large doses of alkalis with sulphadiazine, and the pyuria was slowly reduced. Later therapeutic trials over the next three years revealed that alkalis alone had this effect. At this stage the urea concentration was over 3%, and the urea clearance was 80% of normal, with a blood urea of 21 mg. per 100 ml.

For the next two years the patient had occasional pyrexia with headache. The pyuria persisted with varying intensity. Cystoscopy in July, 1945, and September, 1946, showed intense cystitis with a few small vesicles in the region of trigone. At different times she was given N.A.B., mandelic acid, penicillin, pyridium, sulphadiazine, large doses of alkalis, and bladder lavage. She responded dramatically every time to N.A.B.: the thick pyuria was always reduced almost to insignificance but was never completely cured. She was given 0.3 g. of N.A.B. three times, twelve times, ten times, and twelve times in four different courses. There was no response to any other drug apart from the very slow response to alkalis.

Then after 2½ years of illness she felt pain in her right lumbar region, which persisted for a few months to be followed by pain in the left lumbar region radiating to the left thigh. Descending pyelography at this stage showed a complete absence of renal function on the right side with early hydronephrosis on the left and dilatation of the lower end of the left ureter. In January, 1948, suddenly and in two to three days all her symptoms of pain, frequency, local irritation, and the slight pyrexia with headache disappeared. At the same time the urine rapidly cleared up within a week, no treatment being given to her during this period. Descending pyelography was repeated (February, 1948) and showed still more advanced hydronephrosis on the left side with delayed excretion after

45 minutes, and there was also a kink in the left ureter. The urea concentration was 1.5%, urea clearance 23% of normal, and the blood urea 45 mg. per 100 ml.

The patient was then subjected to a left nephrostomy. The left kidney appeared normal, and the slightly dilated pelvis was drained through an indwelling catheter for six weeks. This allowed renal function to recover till the urea concentration was 2%. A radiograph taken after injecting sodium iodide through the nephrostomy tube showed the dilated lower end of the ureter with an obstruction at its opening in the bladder (see Fig.). After suprapubic cystostomy the stricture in the intravesical part of the left ureter was widely opened; the end of the right ureter was found to be entirely fibrosed and closed. Descending pyelography in August, 1948, three months after the second operation, showed a normal left urinary tract; the blood urea was then 30 mg. per 100 ml. with urea clearance 50% of normal.



(April, 1948) Sodium iodide injected through the nephrostomy tube (N). The dilated lower end of the left ureter is seen with stricture (S)

COMMENT

This case presented all the essential clinical features of abacterial pyuria: painful micturition, frank pyuria with haematuria microscopically, typical appearance on cystoscopy, excellent general health with no loss of weight, and a dramatic response to N.A.B. No organisms could be detected, guinea-pig inoculation was thrice negative, and at nephrostomy the kidney showed no abnormality. Additional features in this case which do not conform to the classical description were that the patient was a female; the protracted course was for over three years; the fact that complete cure was not achieved by N.A.B.; the slight pyrexia; and the ultimate development of bilateral ureteric stricture leading to destruction of the right kidney and commencing hydronephrosis on the left. The trigone of the bladder was intensely inflamed, and it is likely that the prolonged course of this inflammation led to fibrosis with stricture of both ureteric orifices.

I am grateful to Professors S. N. Mathur and K. S. Nigam for the surgical treatment of the case.

N. N. GUPTA, M.D.,

Physician, King George's Medical College, Lucknow, India.

The Housing Progress Summary presented to Parliament as a White Paper by the Minister of Health and the Secretary of State for Scotland shows that the number of permanent houses completed in Great Britain during April was 15,110, compared with 20,160 in March. This brings the number of permanent houses completed during the first four months of the year to 67,822, made up as follows: January, 15,897; February, 16,655; March, 20,160; April, 15,110. During April homes were provided by new building, repair of uninhabitable houses, conversion, and requisitioning for 16,587 families, compared with 21,626 in March. This brings the total number of families rehoused by these methods under the post-war programme to 938,644. Apart from requisitioned houses, the number of additional homes provided is 969,289.

Reviews

TRAITÉ DE MÉDECINE

Traité de Médecine. Volume VII. Maladies du Tube Digestif et de ses Annexes. (Pp. 1,063; illustrated. 2,300 francs.) Volume VIII. Maladies du Foie et du Pancréas. (Pp. 1,166; illustrated. 2,500 francs.) Volume XI. Maladies des Vaisseaux. (Pp. 545; illustrated. 1,400 francs.) Volume XIII. Maladies des Glandes Endocrines. (Pp. 1,119; illustrated. 2,600 francs.) Published under the direction of A. Lemerre and others. Paris: Masson et Cie. 1948.

The massive *Traité de Médecine* published by Masson moves slowly towards completion. The present volumes deal with diseases of the alimentary canal (VII), the liver and pancreas (VIII), the vessels (XI), and the endocrine glands (XIII).

It is a justifiable comment, intended in no way to be critical, that French medicine, like French culture in general, has always been self-sufficient. Much of the interest this work has for the British reader is derived from this fact. Here is a system of medicine which presents in singularly pure form French modes of thought and French practice, largely unadulterated by the influence of foreign notions. This is less true of some sections than of others, but it is well shown by a study of the authorities cited. A random selection of 400 consecutive references in Volume VIII shows that of the publications quoted 346 are French, 20 American, 14 German, 6 Swiss, 3 Scandinavian, and none British. In consequence the articles frequently reveal points of view at variance with opinion in this country and sometimes have a flavour which can only be described as outmoded.

Volume VII considers in great detail the disorders of the alimentary tract. Clinical descriptions, as is usual in French works, are of unsurpassable quality. But by one author the surgical treatment of carcinoma of the oesophagus is dismissed as "opération très meurtrière," though it is fully discussed in another section. The treatment of oesophageal peptic ulcer is granted but two or three lines, and only three pages are devoted to gastroscopy. Few physicians in this country would agree that an average of 200-300 ml. of blood is an adequate volume for transfusion in severe haematemesis. Nor would all endorse the opinion that peptic ulcer is an "ambulatory affection" not requiring a special dietetic régime.

In Volume VIII the more recent tests of liver function are given scant reference—the Takata-Ara test is mentioned, but there is no word of the thymol turbidity or the colloidal gold tests. The treatment of liver aspiration biopsy is cursory. Homologous serum jaundice is omitted, and there is no discussion of the dietetic factors in cirrhosis. The views expressed on "splenogenic cirrhosis," or Banti's syndrome, have been discarded in most other countries.

Volume XI, in discussing diseases of the vessels, follows more international lines. The description of hypertension is excellent and the author's judicial attitude to the value of sympathectomy most welcome. No mention is made of clearance tests in assessing renal function. In this disorder, as in others, no appreciation of the psychosomatic aspects of disease is evident. The article on idiopathic hypotension suggests, in fact, that the importance of psychological factors in bodily disease has gained little acceptance by the general physician in France.

The descriptions of the various syndromes due to disease of the endocrine glands follow the conventional pattern in Volume XIII. The reader will be interested to learn that thiouracil and the related drugs were discovered simultaneously in France and the United States, but puzzled when this therapeutic advance is dismissed briefly as "worthy of interest." Anorexia nervosa, as so often in Continental writings, is considered as a form of pituitary cachexia. Numerous syndromes are described which have not gained general recognition in this country: of these the most appealing is seasonal hyperorchidism, which is stated to claim most of its victims in the spring.

These comments are made solely to underline some of the discrepancies between English and French medical thought. The general excellence of this vast system of medicine is not in question. It is only to be expected that five years of German occupation and isolation from the main streams of medical

progress would show themselves by a turning inward of French views and a neglect of foreign opinion. For such a work to have been produced so soon after this experience says much for the resilience of French medicine, to which it forms a striking monument.

R. BODLEY SCOTT.

AVIATION MEDICINE

Médecine de l'Aviation. Bases Physiologiques et Pathologiques. By J. Malméjac. (Pp. 330; 79 illustrations. 1,200 francs.) Paris: Masson et Cie. 1948.

Aviation medicine received a great impetus in this country and the U.S.A. during the last war. Greater speeds and manoeuvrability of aircraft, rapid ascents and descents, high altitude flying, and lengthy missions have all subjected aircrews to great stress and strain. Much research undertaken in both countries has resulted in means being devised not only for selecting the right type for aircrew but also for ensuring their safety and maintaining them in a state of efficiency. Professor Malméjac's book, which treats the subject from the physiological and physio-pathological point of view, is based mostly on work undertaken by himself and French co-workers in his laboratory in the Faculty of Medicine of Algiers. Its main object is to collect together the essential physiological facts, which form the basis of aviation medicine. The book aims at being a guide to the medical officer in charge of flying personnel and also of use to the doctor consulted by patients undertaking a flight for the first time. It should not fail to stimulate the biologist studying the behaviour of man under specific conditions and the aeronautical engineer planning future developments.

The important sections are those concerning altitude and its attendant physical and chemical changes. The effects of cold, the problem of anoxia, and the expansion of gases under low pressure are fully discussed. Ideas are advanced for eliminating factors calculated to be prejudicial to the human organism. A chapter is devoted to some of the clinical problems encountered, such as fatigue and air-sickness. In the last chapter the medical selection of flying personnel is discussed, with special reference to psychological reactions. Little reference is made, however, to the vast amount of work carried out in this country and the U.S.A. This is no doubt due partly to the restricted circulation of the reports issued during the war years and partly to security measures imposed on the findings contained therein, but since the termination of hostilities much of this work has been published and is available for reference purposes. This book is nevertheless a useful contribution to the subject of aviation medicine and is worthy of a place in any reference library.

E. D. DALZIEL DICKSON.

HANDBOOK OF E.N.T. DISEASE

Ear, Nose, and Throat. Symptoms, Diagnosis, Treatment. By George D. Wolf, M.D. (Pp. 523; 149 illustrations, including 25 in colour. £3.) Philadelphia and London: J. B. Lippincott Company. 1948.

This book is "intended for Students, Teachers, and Practitioners." The author considers that a large proportion of diseases can be diagnosed correctly on the basis of a careful history and interpretation of the symptoms alone. He has therefore taken a novel line, and most of the 25 chapters deal with symptoms, their causes and treatment. Of the five parts, the first deals with the nose, throat, and larynx; the second with the ear. Parts 3 and 4 are devoted to diseases not usually found in books on this specialty: part 3 concerns the salivary glands, lacrimation, and miscellaneous complaints, while part 4 is on facial plastic surgery. These subjects are included because the author considers the domain of otolaryngology has been raided by other specialists. Part 5 discusses points related to otolaryngology—barotrauma, allergy, avitaminosis, and the antibiotics.

It is assumed throughout that the student is conversant with the examination of the various parts of the upper respiratory tract. The first chapter gives an account of emergencies. It describes epistaxis and foreign bodies in the ear, oesophagus, and air passages, but omits retro-pharyngeal abscess and abscess of the nasal septum. Too much attention is given to

plugging of the naso pharynx. There is a detailed description of tracheotomy and intubation. In the section on the treatment of cocaine poisoning it is curious to be told that "windows should be opened wide" and injections of caffeine given intravenously. Following chapters give instruction on headaches, vertigo, nasal obstruction, dyspnoea, and hoarseness. Lists of causes are drawn up, but there is no distinction between acute and chronic symptoms, and the student runs the risk of choosing a rare cause instead of a common one.

Several of the author's statements call for criticism. Thus "No tonsil and adenoid operation is complete unless the removal of all lateral and other hypertrophied lymphoid tissue is effected". Again, "Bilateral abductor paralysis is a rare disease"; and no mention is made of the urgent need for tracheotomy, but it is merely stated that various operations have been devised for the relief of this condition. It is suggested that direct laryngoscopy is taking the place of indirect examination. Laryngeal paralyses are dealt with very sketchily and an unfortunate substitution of abductor for adductor may lead the student to misunderstand the diagram. In the section on the ear the author is not enthusiastic about antibiotics. H. states that their use is of definite value when administered in the early stage of the infection. He suggests "silent" in place of "masked" mastoiditis. The indications for surgery are clear, and the operation is described with pictures. Voice and tuning-fork tests for deafness are advised though he holds the audio meter has advantages when litigation is at stake.

An excellent feature is a good bibliography at the end of each chapter. It is doubtful, however, if this work would appeal to the British teacher or student.

W. M. MOLLISON

CHILD PSYCHIATRY

Psychiatry for the Paediatrician. By Hale F. Shirley, M.D. (Pp 442. \$4.50 or 25s.) New York: The Commonwealth Fund. London: Geoffrey Cumberlege (Oxford University Press) 1948.

In this book the importance of correlating mental and bodily health is once more stressed. The author points out how often those who deal with children, even if adequately trained in paediatrics and child psychiatry, "wear a paediatric hat in the paediatric department and a psychiatric hat in the child-guidance clinic". He sets out, therefore, to survey the field of child psychiatry in simple, straightforward language which no paediatrician can fail to understand if he will take the trouble to study this admirable volume. The reader's only possible complaint will be that the work is so comprehensive and so well illustrated by descriptions of cases that it has become too large, and he will have difficulty in finding time to study its 435 pages with the attention they deserve. The ten chapters comprise a study of the basic concepts in child guidance in which the development of the child's personality is discussed, a practical and sane description of habit training, and a consideration of physical, intellectual, emotional, sexual, and environmental factors from the educational standpoint. The methods of investigation, diagnosis, and treatment are then explained, with a final summing-up under the title of "Mental Health in a Changing World". There is no attempt to categorize disease entities, which is always a mistake in child psychiatry, since the various tendencies and reactions have not had time to crystallize, but the emphasis throughout is on the child's adjustment to the various circumstances to which he is exposed from both inside and outside. After all, much the same attitude is desirable in the study of paediatrics, so this book is to be thoroughly recommended to all physicians dealing with the young. The production fully maintains the high standard we have come to expect of all Commonwealth Fund publications.

R. G. GORDON

In the second edition of *Practical Public Health Problems* by Sir William Savage, B.Sc., M.D. (pp 197, 14s., London: J. and A. Churchill, 1949), the author discusses mainly those subjects of which he is an acknowledged master—namely, water and milk supplies, their supervision, and the diseases spread by them, and the hygiene of the food industry, with particular reference to canned foods. Chapters on housing and disinfection are included, and there is a new section on the investigation of enteric outbreaks. These are all matters with medical implications in which the medical officer of health has to advise and control his sanitary staff. This authoritative volume will prove of interest to both.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Collected Papers: The Middlesex Hospital Medical School, 1946-48 (No price) London: H. K. Lewis 1949.

Textbook of Medical Treatment. Edited by D. M. Dunlop, B.A., M.D., F.R.C.P., and others. 5th ed. (Pp 999. 35s.) Edinburgh: E. and S. Livingstone 1949.

Atlas of Peripheral Nerve Injuries. By W. R. Lyons, Ph.D., and B. Woodhall, M.D. (Pp 339. 80s.) London: W. B. Saunders 1949.

Grow Up and Live. By E. Chesser. (Pp 295. 1s. 6d.) Harmondsworth: Penguin Books 1949.

Cardiovascular Disease in General Practice. By T. East, M.A., D.M., F.R.C.P. 3rd ed. (Pp 208. 15s.) London: H. K. Lewis 1949.

Proceedings of the International Congress on Population and World Resources: August 1948. (Pp 246. 10s. 6d.) London: H. K. Lewis 1949.

Surgery, Orthodox and Heterodox. By Sir W. H. Ogilvie, K.B.E., D.M., M.Ch., F.R.C.S. (Pp 241. 12s. 6d.) Oxford: Blackwell Publications 1948.

Medicine. By A. E. Clark-Kennedy, M.D., F.R.C.P. Vol. 2. (Pp 894. 25s.) Edinburgh: E. and S. Livingstone 1949.

Textbook of Medicine. Edited by Sir J. Conybeare, K.B.E., M.C., D.M., F.R.C.P. 9th ed. (Pp 875. 30s.) Edinburgh: E. and S. Livingstone 1949.

Cum Notitia. By D. A. Alexander, M.B., Ch.B. (Pp 395. 12s. 6d.) Bristol: John Wright 1949.

Marriage Crisis. By D. R. Mace. (Pp 141. 5s.) London: Delisle 1948.

Hindu Medicine. By H. R. Zimmer, Ph.D. (Pp 201. 5s.) Baltimore: The Johns Hopkins Press 1948.

Electrocardiography and Clinical Disorders of the Heart Beat. By Sir T. Lewis, F.R.S., M.D., D.Sc., LL.D., F.R.C.P. (Pp 285. 25s.) London: Shaw 1949.

Your Body and the Way it Works. By W. Cullis. (Pp 32. Library edition 3s. 6d., school edition 2s. 6d.) London: Allen and Unwin 1949.

Diseases of Children. Edited by D. Paterson, M.D., F.R.C.P., and A. Moncreiff, M.D., F.R.C.P. Vol. 2. 4th ed. (Pp 1,033. 40s.) London: Edward Arnold 1949.

Child Psychiatry. By L. Kanner, M.D. 2nd ed. (Pp 752. 45s.) Oxford: Blackwell 1948.

New Biology. Edited by L. M. Johnson and M. Abercrombie. (Pp 128. 1s. 6d.) Harmondsworth: Penguin Books 1949.

Science News II. Edited by J. L. Crammer. (Pp 159. 1s. 6d.) Harmondsworth: Penguin Books 1949.

Understand Your Child. By D. B. Hudson, M.B., Ch.B., D.P.H. (Pp 101. 5s.) London: Research Books 1949.

Medical Photography. By T. A. Longmore, Hon. F.S.R. 4th ed. (Pp 1,008. 50s.) London: Focal Press 1949.

Incompatibility in Prescriptions. By T. Stephenson, D.Sc., Ph.C., F.R.S. Ed. 5th ed. (Pp 62. 10s.) Edinburgh: 'The Prescriber' 1949.

The Young Student's Book of Child Care. By M. Lister. (Pp 132. 4s. 6d.) London: The National Association for Maternity and Child Welfare 1948.

Birth Control To-day. By M. C. Sopes, D.Sc. 9th ed. (Pp 242. 6s.) London: Alex. Moring 1948.

The British Journal Photographic Almanac 1949. (Pp 576. 7s. 6d.) London: Henry Greenwood 1949.

Athletic Injuries. By A. Thorndike, M.D. 3rd ed. (Pp 243. No price) London: Henry Kimpton 1948.

Individual Sports for Women. By D. S. Ainsworth and others. 2nd ed. (Pp 414. 21s.) London: W. B. Saunders 1949.

The Social Problems of an Industrial Civilisation. By E. Mayo. (Pp 148. 12s. 6d.) London: Routledge and Kegan Paul 1949.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JUNE 18 1949

COST AND ADMINISTRATION OF N.H.S.

The main conclusion of the Select Committee examining the administration of the Health Services is that it is yet too early to judge whether or not the National Health Services as a whole are being managed economically. It considers that there is room for review of their detailed working and of the remuneration and conditions of service of those engaged in providing the Services. The Committee observes that the public should recognize that abuse of the Health Services gravely endangers their maintenance and further expansion. The Committee accepts the evidence that earnings of some dentists are excessive and criticizes those responsible for framing the original estimate for supplementary ophthalmic services, observing that the fees paid are too high. The Committee also notes that there has been abuse of the Pharmaceutical Services and remarks that to avoid this the Health Departments should make such regulations as are practicable to prevent excessive or wasteful prescriptions. It recommends that administration of hospitals should be reviewed as soon as enough working experience is available and advocates the setting up of a uniform system of costing for the hospital services in England and Wales; in particular, the question should be considered of establishing an internal audit similar to that carried out by the Scottish Regional Boards. Its summary concludes thus: "The conception of a free, comprehensive Health Service can be made to work only with the good will and co-operation of all the parties in it. All branches of the Health Service are making great efforts to work the new machine efficiently. Nevertheless there are indications of difficulty in maintaining professional standards under the Health Service and there are delays and difficulties in obtaining treatment. These difficulties can be overcome only by constant supervision and the utmost endeavour on the part of all concerned—the Department, the professions, and the general public—to use the Service wisely. Only in this way is it possible to avoid waste and to make the best use of public funds."

The cost of administration amounts to only 2% of the total National Health bill, and at present it seems that the Executive Councils suffer from a shortage of suitable staff for the job. The Committee therefore considers that administrative costs and staff seem to be on a reasonable level, but recommends a review by the Ministry of Health when the Services have settled down, basing this observation, no doubt, upon the remark made by Sir William Douglas that he hoped that "the activities of the Ministry will diminish as the organizations which have been produced get down to it and deal with the actual provision of Health Services themselves."

The introduction to the Report draws attention to the unprecedented nature of the responsibilities created by the

scheme, a scheme which has to provide various benefits to nearly 50,000,000 people and administer over £350,000,000 out of public funds. In February of this year the Dental Services in England and Wales were costing the country £900,000 a week, and if the public demand for them did not come down the estimate for a full year would be over £45,000,000. It was stated in evidence that a dentist in Renfrewshire was, towards the end of last year, receiving between £1,300 and £1,400 gross a month. For 1949-50 it is estimated that 9,000 dentists will cost the country £30,904,000, as compared with £45,800,000 paid to over 19,000 general practitioners.

The Report refers to the "conflict of opinion on the critical issue of whether or not doctors are being paid in accordance with the recommendations of the Spens Report. . . . To bring them into line with present-day values the Department have added a percentage figure which doctors claim is inadequate." It was not within the province of the Committee to comment on this matter, but it considers that there is scope for review of the remuneration and conditions of service in the family practitioner services. In reply to a question put to him at the Committee, Mr. H. H. George, Accountant-General to the Ministry of Health, said that doctors in dense urban areas were much better off under the National Health Service than they were under N.H.I., but that those in what might be called a good-class practice were getting less. In reply to the question, "Do you think doctors are doing as well as the Spens Committee anticipated they should do?" he replied, "I think so, quite clearly." When questioned on the betterment factor, Mr. George said that the 20% increase on net remuneration was prescribed by the Government on the basis apparently that this represented the average increase in professional salaries. The Report states, "that in many areas patients now have to wait in queues for examination so that treatment is delayed and that in such areas doctors are seriously overworked." Because of this the Committee recommend that everything should be done to facilitate entry into the medical profession. We recall once more the words of Mr. Messer in the House of Commons that the situation cannot remain as it is. It is admitted that general practitioners are overworked, that the cost of living for the professional classes has nearly doubled since 1939, and that the Spens recommendations should be brought into line with the post-war value of money. It is therefore pertinent to ask how Mr. George arrives at the conclusion that "doctors are doing as well as the Spens Committee anticipated they should do." Comparison with what the dentists are earning, with their limited hours of work, less arduous training, and infinitely less responsibility, must make general practitioners feel with justice that they are the Cinderellas of the National Health Service. It should be pointed out that only the medical service is a guaranteed service, the medical profession having accepted collective responsibility for all patients coming into the scheme. The dental and ophthalmic services are not guaranteed, dentists and opticians being free to attend or not to any person who applies for treatment: patients cannot be allocated to them.

Fourteen Regional Hospital Boards in England and Wales and five in Scotland act as agents for the Ministry

of Health and the Department of Health for Scotland in the general administration of hospitals. Under these Boards there are 376 Hospital Management Committees in England and Wales and 84 Boards of Management in Scotland. In England and Wales the Management Committees submit their annual estimates to the Regional Boards, who, on this basis, submit Regional estimates for final approval by the Ministry. The teaching hospitals are under their own Boards of Governors and submit their estimates direct to the Ministry. In Scotland the teaching hospitals are under the Regional Hospital Boards, which control their Boards of Management through an internal audit staff which visits them and not only examines expenditure but also deals with questions of administration and the statistics of costing. This provides an efficiency as well as a financial audit, and so it is claimed gives the Scottish Regional Boards an added sense of responsibility for controlling expenditure. The evidence of hospital administrators makes interesting reading and shows that those responsible for it, at the moment much overworked, are still not clear what would make for greater efficiency. In the view of the chairman of a Regional Hospital Board it will take years before the system will run smoothly. He considered that "so far as possible the hospitals shall be left with such measure of independence as they can be left with, and for that reason it is necessary that you do decentralize the control of them into Hospital Management Committees and in fact to House Committees of individual hospitals, so that you keep as far as you can the individuality of hospitals." Another witness stressed that the effective financial control should lie with the Hospital Management Committee, and later in the discussion the chairman of a Regional Hospital Board remarked, "I would go so far as to say that the Regional Hospital Boards are not necessary." When it came to the question of the cuts in hospital expenditure recently demanded by the Minister of Health one of the English witnesses said he could not see how it would be possible to cut expenditure without interfering with the services to patients. The Minister has now modified the original plan so that beds may remain in use and urgent development proceed. There is much yet to be learned about the most efficient way of administering and financing the hospital services, and the Select Committee would seem to have been impressed by the way they manage these things in Scotland.

The above are but some of the points brought out by the Select Committee's investigation into the administration of the National Health Services now presented in a document of unusual interest, giving as it does in the Minutes of Evidence the actual experience of those responsible for the administration of the services at various levels. Although it was not for the Committee to comment on the terms of remuneration, yet it considered that the terms and conditions of service for those providing family practitioner services should be reviewed. In the meanwhile practitioners must wait until the Ministry of Health has collected its evidence before negotiations can begin on what the report describes as the critical issue of whether or not doctors are being paid in accordance with the recommendations of the Spens Report.

INDICATIONS FOR SPLENECTOMY

The indications for removing the spleen have never been clearly defined. In the past there has been some divergence of opinion on the efficacy of splenectomy in the treatment of a number of diseases. About traumatic or spontaneous rupture of the spleen there has never been any doubt: although difficulties in diagnosis often arise from the delay in onset of symptoms or from the absence of a clear history of trauma, when the diagnosis is established splenectomy is imperative to prevent death from haemorrhage. Splenectomy is also the treatment of choice for simple or hydatid cysts of the spleen. The uncertainty of the results of splenectomy in the treatment of other diseases has arisen from a lack of precise knowledge of the causes and effects of splenomegaly, and from a tendency to group together diverse pathological conditions under comprehensive terms like Banti's disease and von Jaksch's anaemia. In a recent lecture to the Ulster Medical Society, printed in the opening pages of this issue of the *Journal*, Dr. Ronald Bodley Scott has summarized the current views on splenic function in health and disease with special emphasis on the indications for splenectomy.

In the assessment of the value of splenectomy in disease the physiological or abnormal functions of the spleen in relation to the particular disease must be considered. In progressive occlusion of the bone-marrow by sclerosis or neoplastic invasion the spleen often takes over the function of red-cell formation, and splenectomy would be disastrous, since the only efficient source of haemopoiesis would be removed. Fortunately these conditions are usually readily recognized by the appearance of immature cells in the peripheral blood, by the sparse cellularity of marrow smears, and by radiological changes in the bones; but in myelofibrosis trephine biopsy of the marrow may be necessary to confirm the diagnosis.

In familial acholuric jaundice the primary abnormality lies in the red cells, which are more spherical and more fragile than normal. The spleen destroys these fragile spherocytes in large numbers, and splenectomy is a palliative, but uniformly successful, form of treatment in that it removes the main organ of red-cell destruction. Splenectomy also reduces the degree of spherocytosis, since red cells normally increase in thickness in passing through the spleen. The operation is not always so successful in Cooley's anaemia, and in sickle-cell anaemia, where the abnormality is also in the erythron, splenectomy is for reasons unknown quite ineffective. Acquired haemolytic icterus differs from the familial variety in that a circulating haemolysin causes the abnormal fragility and shape of the red cells.¹ It is not surprising that splenectomy has a varying amount of success in this disease, and the operation is indicated only in those patients whose anaemia persists or progresses in spite of repeated blood transfusion. It is important to bear in mind that excessive red-cell destruction may take place in a spleen which is enlarged from other disease. If the haemolytic anaemia is such

¹ Loutit, J. F., and Mellison, P. L., *J. Path. Bact.*, 1946, 58, 711.

² *Lancet*, 1899, 158, 529.

³ *J. clin. Invest.*, 1939, 18, 473.

⁴ Doan, C. A., and Wright, C. S., *Blood*, 1946, 1, 10.

⁵ Dameshek, W., and Bloom, M. L., *ibid.*, 1948, 3, 1381.

⁶ *Lancet*, 1938, 1, 1320.

cases is severe and the primary disorder chronic, splenectomy will help the patient, and Bodley Scott cites a patient with Hodgkin's disease who was restored to good health for five years following splenectomy.

A group of disorders in which splenectomy is of value is that which has become known as primary or functional hypersplenism. Accumulating clinical evidence suggests that excessive splenic action inhibits the production of red cells, granulocytes, and platelets by the bone marrow, and that the brunt of this inhibition may fall on any one of these functions or on all three simultaneously. The suggestion that splenomegaly from any cause might inhibit granulocyte formation was probably first made by Bauer in 1899,² but the significance of splenic neutropenia was not fully appreciated until Wiseman and Doan³ described the syndrome of splenomegaly, neutropenia, and sepsis occurring, as a rule, in middle-aged women. In these cases the proportion of granulocytes in the bone marrow is high, but mature forms are scanty. The changes in the spleen are non-specific. Splenectomy often leads to a complete cure, but in Felty's syndrome, where there is an associated polyarthritis, there is seldom any improvement in the joint affection. Thrombocytopenic purpura is an analogous condition, in which splenic inhibition affects the megakaryocytes. The bone-marrow smears show an abundance of megakaryocytes, but mature platelets are absent. Splenectomy is followed by an immediate increase in the platelets, but the purpuric tendency does not always improve so rapidly. It must be remembered that thrombocytopenia may also arise from drug allergy, leukaemia, and other infiltrations of bone marrow; the criterion for splenectomy in thrombocytopenia should, therefore, be the finding of *abundant immature megakaryocytes in the marrow*. In splenic pancytopenia the associated anaemia may be haemolytic or non-haemolytic. The bone marrow is highly cellular, and splenectomy usually cures.⁴ Neutropenia, thrombocytopenia, and anaemia often occur when the spleen is enlarged in other diseases, such as leukaemia, lymphadenoma, and kala-azar. In these cases, which are sometimes referred to as secondary hypersplenism, it is probable that the spleen exerts the same inhibitory effect as in primary hypersplenism: for example, the anhaemopoietic crises of acholuric jaundice might be attributed to secondary hypersplenism.⁵ It is possible that those cases of secondary hypersplenism in which the symptoms of bone-marrow inhibition predominate will benefit from splenectomy. It is clear that in selecting patients for operation it is essential to differentiate between the symptoms of hypersplenism and those of the primary disorder.

Banti's syndrome has sometimes been regarded as a condition amenable to treatment by splenomegaly, but Howells⁶ showed that there was no increased expectancy of life after splenectomy. Views on Banti's disease have altered considerably in recent years. It is known that the majority of cases are due to hepatic cirrhosis, and others follow portal hypertension caused by other conditions. It is better to use the term "congestive splenomegaly," and to try to find the precise cause in each case. In congestive splenomegaly due to hepatic cirrhosis splenectomy is indicated only when the symptoms of hypersplenism—anaemia, leucopenia, or thrombocytopenia—predominate over those

of portal hypertension. In the relief of portal hypertension splenectomy is far inferior to operations designed to shunt venous return from the portal to the systemic channels. When congestive splenomegaly arises from thrombosis of the splenic vein it is cured by removal of the spleen, a fact which might well account for some of the earlier enthusiastic reports on the value of splenectomy in Banti's disease. The indications for splenectomy are becoming clearer and the need for judicious selection of cases is apparent. Each case must be considered individually and the function of the spleen carefully assessed in relation to the patient's disease.

THE SORE TONGUE

Soreness of the tongue is a symptom shared by a number of diseases patently due to, or accompanied by, nutritional defects. It is common in sprue and other forms of steatorrhoea, in pellagra, in Addisonian pernicious anaemia, in chronic hypochromic anaemia, in cirrhosis of the liver, and after the administration of folic acid antagonists. Although a sore tongue and a suspected or proved deficiency of one of the B group of vitamins links these disorders, the pattern of ectodermal change varies in the different diseases, and only glossitis is common to all. A careful anatomical study would be valuable, for it is important to know whether the changes are similar in all these varieties of glossitis. A few examples will show the varied pictures encountered: in steatorrhoea, stomatitis accompanies glossitis, though this is rare in pernicious anaemia; in the latter and in hypochromic anaemia there is often prematurely white hair, but the second of these is associated with angular stomatitis and with changes in the nails and hypopharyngeal mucosa which are not observed in the first. Again, deficiency of riboflavin is recognized as the cause of a syndrome in which angular stomatitis, corneal vascularization, and a scaly desquamation in the naso-labial folds and the perincum are combined with a sore, "magenta-coloured" tongue. Stomatitis and glossitis are also familiar signs in nicotinic acid deficiency.

The relation between these various syndromes is unsettled, but two recent papers by Dr. Alexander Brown, one of which was published in the *Journal* of April 23 (p. 704) and the other which appears in this issue, contribute to our understanding of the problem, while underlining its complexity. He has observed seven patients with Addisonian pernicious anaemia in whom sore tongue was a feature. In four of these glossitis made its appearance while the anaemia was effectively controlled by liver extract—an observation proving that sore tongue is not necessarily related to deficiency of the anti-pernicious-anaemia principle of liver. Calcium pantothenate cured the glossitis in these patients; in the two to whom it was administered nicotinic acid was ineffective. In one patient, receiving full doses of liver extract, stomatitis and glossitis were relieved by nicotinic acid, but when the symptoms recurred nicotinic acid was only partially effective, and the condition was cured after riboflavin was added; in a second relapse riboflavin was again curative after calcium pantothenate had proved ineffective. In one untreated case sore tongue was not relieved by calcium pantothenate, nicotinamide, or riboflavin, though folic acid and, later, liver extract were completely effective. The seventh patient, while receiving full doses of liver extract for a relapse of her anaemia, developed the typical syndrome of riboflavin deficiency; she recovered rapidly when this vitamin was administered. In his second paper Dr. Brown reports the case of a patient in whom steatorrhoea, persistent glossitis, and stomatitis followed the

operation of ileocolostomy for what was probably regional ileitis. This patient was observed over a period of two years, and it was possible to prove that on separate occasions the oral symptoms were controlled by calcium pantothenate, by inositol, by yeast extract ("marmite"), and by intramuscular injection of a refined liver extract ("anahaemin").

The significance of these observations cannot yet be fully assessed. Dr. Brown suggests that in the patient with ileocolostomy sore tongue was due to pantothenic acid deficiency; this appears to be true also of at least four of his patients with pernicious anaemia. Perhaps a metabolic system should be visualized which may break down at different levels. The anti-pernicious-anaemia principle of liver corrects the fault in most cases, but in some pantothenic acid, or the closely related inositol, is required.

PLAGUE IN CALCUTTA

A few weeks ago Professor S. C. Seal of the All-India Institute of Hygiene and Public Health warned his colleagues at the Calcutta Medical Club that the present outbreak of plague in India might assume epidemic proportions. Plague reappeared in Calcutta fourteen months ago and exactly fifty years after the beginning of the last pandemic. The disease seemed virtually to have disappeared from the city for the last twenty years. During this period imported cases were occasionally reported, but there had never been anything resembling the epidemic which began on April 17, 1898. Curiously enough, the first case of plague to be diagnosed in Calcutta in 1948 appeared on the same date, April 17, and in the same Colootola area. Later, 11 cases were shown to have occurred previously, and of these patients 8 had died. Subsequently there was a much larger incidence of milder cases.

Altogether in 1948, 276 suspected cases of plague were notified in Calcutta. Of these only 173 were clinically accepted as cases of plague, including 35 cases confirmed bacteriologically. There were 23 deaths, giving a fatality rate of 13.3%, and the peak of the outbreak was in the last week of April. About 5,000 rats were examined in April and May, 1948, and 19 showed evidence of plague infection¹; of these, 7 were *R. rattus* and 12 *R. norvegicus*. The organisms in most instances, however, were scanty, and the same feature was observed in human cases.

In 1949 the first cases began to appear towards the end of February—a little earlier than in 1948. The total number of suspected cases recorded up to May 23 was 265, of which as many as 240 cases had been accepted clinically, while in 70 or more the diagnosis of plague had been confirmed bacteriologically. Thus the number of cases has already exceeded the total for last year. Among the 265 notifications there were several septicaemic cases, and 16 were of the pneumonic type with 15 deaths. In this group of 16 only five cases were available for bacteriological examination, and in four of them *P. pestis* was identified; the last patient received streptomycin before material for examination could be collected and is the only one to have recovered. In the whole series there have been 52 deaths, the fatality rate thus being 19.6% as against 13.3% in 1948. Even if the pneumonic cases are excluded the fatality rate works out at 14.75% in spite of treatment with streptomycin and sulphonamides. Infected rats have also been more widely distributed than last year. Among 8,000 rats examined in recent months 32 were found to be infected, including 8 live rats. Already eleven wards of the city of Calcutta besides the Dum Dum and Howrah city areas are involved in the outbreak. In

contrast to the findings last year the number of organisms in the spleen and in lymph-node smears has been much larger, and in fact blood smears have also revealed *P. pestis*. Another difference noted this year is that the incidence of the disease has not yet begun to decline. In brief, over the last five months in Calcutta there has been a geographical extension of the disease to different parts of the city and suburbs, a higher incidence of cases, and greater virulence, as evidenced by the occurrence of some pneumonic and septicaemic cases and an increased fatality rate. It may be added that plague has reappeared not only in Calcutta but also in many other towns and cities of India where the disease has been either absent or quiescent for many years.

These trends provide disturbing evidence of some change which, if it continues, may set the stage for a major epidemic of plague. Calcutta had 239 deaths from plague in 1898 and 2,029 deaths in 1899. The following year there were 8,275 deaths in Calcutta and 13,285 in Bombay.² The experience of the last two years does not show the same steeply rising incidence, but it is clearly wise for the public health authorities to warn local medical practitioners, as they have done, of the possibility that plague may again become a major problem. The last few deaths from plague in Bengal and Calcutta were in 1925, and since then a new generation of doctors has grown up with few opportunities of studying the clinical effects and epidemiology of *P. pestis*. Fortunately much more is known now about prevention and treatment than was the case at the beginning of the century.

THE ELECTRONIC BRAIN

During the past two years a mechanical brain has been developed at Manchester University by Professor F. C. Williams, of the Department of Electrotechnics, to meet the requirements of two of the university mathematicians, Professor M. H. A. Newman and Mr. A. W. Turing. The machine includes 1,000 wireless valves, which are able to retain for long periods electrical charges representing numbers. It is similar to, but in some respects different from, machines in this country and the U.S.A. in employing the electronic method of storing information. This mechanism affords the machine a "memory" which lasts until it has been cleared of its charges. It can "recall" how far it has progressed in its calculation in order to supply the next step, and is able to "choose" between two alternatives at a great number of points in an extensive chain of calculations. The valves, like nerve cells, not only store the messages they receive, but can be inhibited from action, can be arranged to transmit messages in response to impulses from one or several other valves, and may be prevented from transmitting if the impulses fail to arrive.

The speed of the apparatus is several thousand times faster than that of the human brain. It can answer a simple problem under a second, and in half an hour is able to solve a calculation that would employ a mathematician for several months. It has just completed, in the space of a few weeks, a problem stated in the seventeenth century and that was in the last stages of its solution.¹

An analogy between the human brain and its present electronic equivalent was made by Professor Jefferson in his Listerian Oration. The machine's "memory" may rely on the same mechanism as that of man, but extensive damage to the human brain can occur without great loss of memory, whereas partial destruction of the machine is accompanied by a comparable loss of function. But we understand further developments of the machine may make

¹ Seal, S. C., and Lal, R. B. *Ind. med. Gaz.*, 1948, 83, 145.

² *Ibid.*, 1948 83, 137.

¹ *The Times*, June 11, 1949.

it in this respect comparable with the brain. Further, the machine answers only set problems, and its method of reply is pre-set by an intelligent staff who supply it with the appropriate questions. It cannot, of course, as Professor Jefferson points out, create its own ideas and the language to express them: it will attempt the insoluble until stopped by the operator; it has no opinions, no creative thinking, and no emotions. "We feel, perhaps," Jefferson said, "that we are being pushed, gently not roughly pushed, to accept the great likeness between the actions of electronic machines and those of the nervous system"; but he pointed out that advances had been made by observation of the living thing itself, and stressed again and again in his fascinating oration that we accept likeness to mechanism only as analogy and not as identity. The living nerve cell and the nervous impulses had no counterpart: "They are not exactly like anything except themselves." Again, speaking of the brain, he observed that "however its functions may be mimicked by machines it remains itself and is unique in nature." The emphasis on the uniqueness of the thing in nature is important, for, as Jefferson observed, the ill-informed may be tempted to go to great lengths of fantasy. It had been a hard task to dissuade man from reading into animals the qualities of the human mind; he saw the new and greater danger threatening—that of anthropomorphizing the machine.

DOCTORS TAKE THE RORSCHACH TEST

Any data bearing on temperamental fitness for a medical career will be studied with interest by those who are concerned with the selection of medical students. The Rorschach ink-blot test, which has undoubted usefulness in the assessment of some aspects of temperament, is familiar to psychiatrists as an aid to the study of personality and to differential diagnosis. But it has not, up to the present at least, found much application in the field of occupational psychology. In a recent article Schachter¹ has described the results obtained when the test was given to 20 doctors practising in Marseilles. The subjects were mostly young, and six of them were women. The aims were, first, to obtain control records from a group of highly educated normal individuals, and, secondly, to discover how a medical training might affect performance of the test. Although the study was not primarily concerned with vocational fitness, the findings may be of some interest to those who aspire to select personalities specially suited to the vicissitudes of a medical career.

The outcome of Schachter's inquiry was by no means unflattering to the medical men and women who offered themselves as subjects. According to the accepted code of Rorschach interpretation, they were found in general to possess a practical type of intelligence, a somewhat extraverted personality, and a good capacity for adaptation. It is hardly surprising that some of the ink-blots were interpreted as anatomical designs, which the author attributes, reasonably enough, to special training rather than to the rigid interests of the hypochondriacal. An interesting point was that no fewer than eight of the subjects offered occasional responses based exclusively on the colour of the designs. This is a type of response commonly encountered in the records of abnormal individuals and is conventionally held to indicate crude impulsive traits. It is possible that this interpretation will require revision in the light of Schachter's findings. On the whole, however, the patterns of response obtained were characteristic of any normal and well-educated group, and the special features noted are too slight to be of value for vocational selection. More details about the type of work done by the subjects would have

been interesting, and also about the success and satisfaction which each had attained in his professional career.

It is to be hoped that the limited character of Schachter's study will not deter other Rorschach workers from following up the topic which he has begun to explore. A large-scale Rorschach study of medical students followed up for a number of years after qualification would be of great help in assessing the prognostic value of the test. There is to-day an urgent and understandable demand for quick methods in judging personality. But it is not always realized that long and laborious research must be undertaken before any test method can be trusted to give reliable indications of temperamental fitness. There is at present no weapon in the psychologist's armoury that enables him to attack with any confidence that most difficult problem of temperamental fitness for a career in medicine.

DR. ELLIOTT P. JOSLIN

The medical profession of Britain will wish to join us in saluting Dr. Elliott P. Joslin on the occasion of his 80th birthday, which he reached on June 6. For the past 50 years Dr. Joslin has been studying the problems of diabetes and has won a world-wide reputation as an authority on this disease. In recognition of this the British Medical Association this year added his name to its distinguished list of foreign corresponding members. Diabetics all over the world owe him a great debt, for in the pre- and the post-insulin days he has been unflagging in his efforts to evolve a rational treatment of this disease. Not only that, but he has been a great educative force, and, charmingly characteristic of the man, he has conferred medals on those who have survived with their disease for varying lengths of time. At Brussels last week he presented such a medal to Dr. R. D. Lawrence, who for 29 years has led an active professional life as an expert in diabetes, and was among the first, we understand, to receive insulin in this country.

Dr. Joslin started practising medicine in Boston in 1895 and taught in the Harvard Medical School, beginning as assistant in physiological chemistry in 1898 and ending as clinical professor of medicine from 1922 to 1937. In 1943 he was presented by the American Medical Association with its Distinguished Services Medal and Award. In the words of the *New York Times*, "the thousands of patients who have passed through the Joslin Institute in Boston will join physicians in wishing Dr. Joslin more years of activity."

BIRTHDAY HONOURS

Among the Birthday Honours to medical men—a full list appears elsewhere in this issue—we note in particular the knighthood bestowed upon Mr. H. S. Souttar. Mr. Souttar for many years gave freely of his time and energy to the British Medical Association. Apart from serving on its various committees, he was from 1934 to 1937 chairman of the Representative Body and from 1939 to 1943 chairman of Council. He was chairman of the Medical Planning Commission set up by the B.M.A. early in the war, the draft interim report of which was published in 1942. He created, we believe, a record in then becoming also president of the B.M.A., in 1945. His colleagues in the Association and the profession at large will be gratified to see his many services to the medical profession thus fitly recognized. The B.M.A., too, will welcome the bestowal of the C.B.E. on Professor R. M. F. Picken, who for several years was a member of Council and chairman of the Public Health Committee, and of the O.B.E. on Dr. Noel Waterfield, who for many years has been a member of Council and is also chairman of its Ethical Committee.

¹ *Acta neurol. psychiat. belg.*, 1948, 48, 22.

MEDICAL ABSTRACTING

CONFERENCE HELD BY UNESCO

Soon after Unesco had been established as one of the specialized agencies of the United Nations its Department of Natural Sciences began to consider the problem of abstracting in medicine and biology. During the past two and a half years it has held meetings composed of representatives of non-profit-making abstracting agencies, and its activities have been jointly sponsored by the World Health Organization. The first full meeting of the Committee on Medical and Biological Abstracting and Indexing set up by Unesco met in Paris a fortnight ago under the chairmanship of Dr. Hugh Clegg, Editor, *British Medical Journal*.

The meeting was opened by the director-general, Monsieur J. TORRES BODET, who said that the word "abstract" nevertheless represented something very concrete. Behind the condensed analysis, the initials, and the abbreviations was hidden a useful effort of thought. After the second world war communications between the greater part of Europe and other continents had been cut for nearly five years; a real desire had made itself felt to know what had been done. Earlier there had been much praiseworthy initiative, and international co-operation had existed in the sphere of medicine and biology. But at the end of the war there was urgent need for an immediate and more embracing effort than there had been in the past. Unesco took this question up without delay, even when it was only a preparatory commission. Since then, for more than three years it had not ceased to encourage co-operation between the abstracting services in medicine and biology. What had already been achieved was by no means negligible, even if it only indicated the direction for future progress. First of all it was important to gather together experts on the subject from various countries; jointly they sought for a solution of common problems, and tried to resolve any conflicting interests there might be between different publications. As the committee included only non-profit-making agencies in order to make their services available at a low price, the whole scientific world became its beneficiaries. As one of the aims of the committee was to avoid duplication of effort the director-general applauded the decision of the World Health Organization not to enter the field of abstracting without prior consultation with the Committee for Co-ordination of Abstracting in the Medical and Biological Sciences. The results already obtained were only clearing the way. It was good to encourage and co-ordinate, but what was important now was to make such co-operation more effective. The committee would have an important part to play in the International Conference on Scientific Abstracting to be held by Unesco on June 20. If this conference decided to set up an international bureau for co-ordination of scientific abstracting this committee would, he hoped, be an active element in it. But in considering this they would not forget the immediate tasks of the present session, such as the decision to prepare a complete list of medico-biological journals, to standardize nomenclature and abbreviations, and to plan abstracting so that nothing would be missed from medico-biological literature. Many problems were presented by the choice of publications for abstracting, by editing, by the principles of classification, and by the gradual formation of a scientific polyglot vocabulary. It was necessary to bring to this work not only expert knowledge but the spirit of consideration and tolerance. In their field he was convinced that the committee would surmount their difficulties and thus contribute to the progress of science and international understanding.

Statements were then made by Dr. N. HOWARD JONES, director of Library and Reference Services of WHO, and by Professor F. VERZAR, on behalf of the Food and Agriculture Organization, both of them expressing the interest of their agencies in the subject and aims of the committee. The meeting was then addressed by the director of the Department of Natural Sciences, Professor P. AUGER, who observed that Unesco intended to carry on the work begun in the field of abstracting, and was conscious of the size of this task owing to the fact that some 50,000 scientific periodicals were now being published in the world. Unesco had under consideration the setting up of a small permanent body to put into effect the resolutions passed by this and other committees, and the com-

mittee he was addressing would have to consider whether it would merge itself into a larger bureau on scientific abstracting, a matter which would come up for discussion a fortnight later. One of the problems of this committee was to consider how it should co-ordinate its work with the bigger conference.

Background

Dr. CLEGG, chairman of the committee, for the benefit of those present for the first time, then gave an account of some of the work that had been done since 1946. Towards the end of the war the British Medical Association had decided to start a medical abstracting service as soon as conditions permitted, and had learned that a similar idea had occurred to a group of scientists in Amsterdam, who, under the general title of *Excerpta Medica*, intended to publish a series of abstracting journals in the English language. It was this bilateral effort and the possible duplication of time and effort that might arise from it that had determined Unesco to set up a co-ordinating committee: in this Dr. I. M. Zhukova had claimed an important part. Other groups then became interested in the project, and in particular the National Research Council in Washington had expressed its opinion that Unesco had "a unique opportunity to perform a useful function in the international aspects of science by (a) assisting biological and medical abstracting services to accomplish a full coverage in biology and medicine; (b) elimination of wasteful duplication; and (c) publication at reasonable prices." The National Research Council thought that these objectives could be reached by non-profit-making enterprises.

The Interim Committee passed a number of resolutions. One of these was to the effect that the duplication of specialist abstracting journals was undesirable, and another was that a comprehensive abstracting service in the sense of abstracting all articles of all journals was neither possible nor desirable. The abstracting services represented in the Interim Committee undertook to see how far they could collaborate by the exchange of abstracts and by avoiding duplication of abstracting sections.

There had been two opposite points of view on how best to co-ordinate the work of abstracting. One of these was that one international abstracting service for biology and medicine should be set up, and the other that existing agencies should continue in being and attempt to correlate their work. Dr. Clegg thought it would be impossible to realize the ambitious scheme of setting up one international agency, and it would be much better first to attempt to secure agreement on small details of importance to those editing, publishing, and using abstracting journals. There was, for example, the question of adopting a common method of abbreviating titles of periodicals, and the Interim Committee had passed a resolution in favour of the method used by the *World List of Scientific Periodicals*. There was at the moment no uniformity in the method of abbreviating titles. Similarly there was no uniformity in arranging the bibliographical entry to an abstract. There was also confusion in the use of symbols and abbreviations.

Dr. Clegg concluded by suggesting that at the end of its deliberations the committee might suggest that Unesco should provide instruments useful for all abstracting agencies. Those that seemed to be feasible were: (1) A polyglot glossary for the medical and biological sciences. (2) A published list of existing medico-biological journals and their abbreviations. (3) A handbook of internationally accepted abbreviations and symbols.

Towards Co-ordination

Professor M. W. WOERDEMAN, editor-in-chief of *Excerpta Medica*, in a short paper on the co-ordination of the work of abstracting services, pointed out that in medicine there were groups of readers whose requirements differed greatly, owing to increasing specialization and the consequent narrowing of interest on the part of the reader. It would not be possible to satisfy the many divergent interests by a single abstracting service. When a scientific article was of interest to more than one group of readers it might be preferable to have it abstracted by different experts, who alone would know the special interests of their particular group. Any attempt to centralize abstracting work would lead to this being overlooked. He did not think

that the overlapping of fields of interest of different abstracting organizations was necessarily a bad thing. There should be avoidance of overlapping in the preparation rather than in the publication of abstracts. For the less well-known languages the various abstracting agencies might jointly use the services of common offices in the countries of these languages. Co-ordination of work would be facilitated by joint agreement on the arrangement of the details of an abstract, nomenclature, abbreviations, classification, and indexing, and also on the instructions to be given to abstracters.

Arrangement of Abstract Entry

On one of the points referred to by Professor Woerdeman—the arrangement of bibliographical information in abstracting journals—Dr. ISABELLA LEITCH, director of the Commonwealth Bureau of Animal Nutrition, read a paper which was accompanied by a printed document showing the wide variety of usage in various abstracting journals. She considered that the bibliographical information should be set out in this order: (1) author's name; (2) the place where the work was done; (3) the full title of the paper; (4) a translation, not necessarily literal, of the title; (5) the name of the journal, year of publication, volume, part number, first and last pages of the paper.

In a discussion on this Dr. G. M. FINDLAY said the evidence presented to the Royal Society Conference on Scientific Information showed that most journals placed the title of the paper first in order. But the committee voted heavily in favour of the order suggested by Dr. Leitch, whose paper also pertinently referred to the sins of omission and commission of editors and authors, all of which had a bearing upon the problems of abstracting and indexing.

The User's Viewpoint

Mrs. EILEEN R. CUNNINGHAM, of the Medical Library Association of the U.S.A., gave a helpful analysis of the results of a questionnaire sent to medical librarians in North America and elsewhere. A very large majority of librarians were in favour of standardizing the form of bibliographical data, and advocated that the author's name should come first. They stressed the importance of promptness of publication both of abstracts and of indexes. As users they expressed a preference for the informative as against the indicative type of abstract.

The point of view of the user was also cogently expressed by Professor P. LÉPINE, a research worker in the Institut Pasteur of Paris. His paper was based on his own experience and on an inquiry made among his colleagues. Professor Lépine urged that there should be speedy publication; the users he had consulted would prefer a short abstract to be published quickly rather than a long abstract which would appear some months after the publication of the original article abstracted. From what he said it seemed clear that research workers needed a quick reference system, and one speaker suggested that the needs of these were in this respect different from those of the practising physician or surgeon, who required full information on which he might have solely to depend because of his distance from a good library or his ignorance of the language of the original article. Professor Lépine stressed the need for classification under clear subject-headings and for cross-references in the same journal to abstracts bearing on the same subject. He and his colleagues agreed with Dr. Leitch and the librarians in preferring that the author's name should come first in the bibliographical entry, and that this should be followed by the full title of the work in the original language. He laid special stress on the preparation of annual author and subject indexes to facilitate bibliographical research. To simplify the task of the user he considered it would be advantageous if a standardized method of arrangement of abstracts could be adopted by abstracting journals throughout the world. He advocated standardization of abbreviations and symbols used for metric units, chemical formulae, etc., and also adoption of the metric system in all scientific publications.

Dr. MARGUERITE LWOFF read an interesting paper on abbreviations, contractions, and symbols used in the medical and biological sciences. She differentiated between those accepted internationally and those peculiar to different countries, especially in the Anglo-Saxon world. Dr. Lwoff pointed out that

even with accepted international standards authors and editors used many variations. She gave as an example the abbreviations for the cubic centimetre, given variously as c.c., c.cm., and what she regarded as the illogical substitution of ml. In her view cm³ was the only correct and logical usage, but she realized she was fighting a losing battle against ml. She noted with regret that even French writers employed gr. as a contraction for gramme. Her recommendations that only recognized abbreviations should be employed, that the metric system should be generally adopted, and that local abbreviations should be avoided were endorsed by the committee.

Editing and Informing

Dr. G. M. FINDLAY, editor of *Abstracts of World Medicine*, gave the committee an interesting survey of the work already done by the Royal Society Conference on Scientific Information, and then went on to discuss abstracting from the point of view of the editor. He drew attention to the difficulty there was in finding out what medical and biological journals were actually being published in different parts of the world and to the difficulty, because of currency and other obstacles, even of obtaining those known to be published. Again, there was the problem of finding abstracters expert in a certain subject and also having a knowledge of the less common languages. An undesirable feature was the publication of the same article in more than one journal. Many of his observations bore out what Dr. Leitch had said about the faults of authors and editors. For example, tables were often presented in such a way that the reader could not deduce results of statistical significance and they did not always agree with what was in the text. The varying position of the contents list in journals increased the labour of those who had to select papers for abstracting. Dr. Findlay also criticized the number of different proprietary names for the same drug and the lack of uniformity in chemical terminology. References to previous literature were often incomplete or incorrect and the nomenclature of diseases was still in a chaotic state. He urged that a full list of medical and biological journals should be published and should be brought up to date at six-monthly intervals. He urged, too, that there should be full facility for the free interchange of medical and biological journals between different countries. The committee agreed with these views, and in general with his disapproval of the use of authors' abstracts. But it was pointed out that one of the strongest arguments in favour of authors' abstracts was the existence of the valuable journal *Biological Abstracts* edited by Dr. J. E. Flynn, who relied upon these very largely in the compilation of his useful periodical.

Dr. CHARLES WILCOCKS, director of the Bureau of Hygiene and Tropical Diseases, London, then gave an interesting talk on the use of the abstracting organization as an information service. He considered that accuracy rather than promptness should be the first consideration of the editor of an abstracting journal and that continuity of interest could be maintained only by continuity of editing. He described how the *Tropical Diseases Bulletin* and the *Bulletin of Hygiene* had evolved in response to needs, and how his bureau exchanged services with many other institutions. As examples of the invisible export of information he instanced the facts that his bureau provided a professor of industrial medicine with all the titles and articles on his subject, and extended a similar service to the Medical Research Council on toxicology.

Conclusion

The committee ended its three and a half days' conference by forwarding proposals to Unesco and making some recommendations which it is hoped will in time be adopted by abstracting organizations. It asked Unesco to publish a list of medico-biological journals with the system of abbreviations adopted by the *World List*. It also recommended that in such a list there should appear opposite the journal titles symbols to indicate which abstracting organizations included them in their survey. It asked Unesco to collect information on abbreviations and symbols used in medico-biological literature, and, having done this, to consider publication in a form suitable for use by abstracting services, editors, and scientists. It adopted the proposal made by Dr. Leitch for the method of arranging the

bibliographical entry to an abstract; urged that Unesco should continue its effort to promote the free interchange of medical and biological journals among different countries; advocated the universal use of the metric system for weights and measures and the centigrade system for recording temperatures in medical and biological communications; and advised the setting up of local advisory abstracting committees composed of editors and other representatives of abstracting agencies. It also recommended that editors of medical and biological journals should adopt greater uniformity in terms and greater precision in the papers appearing in their journals.

Those taking part in the conference were: Dr. H. Clegg; Dr. E. J. Crane, *Chemical Abstracts* (U.S.A.); Mrs. E. R. Cunningham, Medical Library Association (U.S.A.); Dr. G. M. Findlay, *Abstracts of World Medicine*; Dr. J. E. Flynn, *Biological Abstracts* (U.S.A.); Sir Herbert Howard, Commonwealth Agricultural Bureaux; Professor L. Justin-Besaogoo, Association de l'Enseignement Médical des Hôpitaux (France); Dr. L. Lampitt, *British Abstracts*; Dr. I. Leitch, Commonwealth Bureau of Animal Nutrition; Dr. M. Lwoff, *Bulletin de l'Institut Pasteur* (France); Dr. H. R. Viets, American Medical Association; Dr. Charles Wilcocks, Bureau of Hygiene and Tropical Diseases, London; Professor M. W. Woerdeman, *Excerpta Medica* (Netherlands). Also present as observers were: Dr. N. Howard Jones, Director of Library and Reference Services, WHO; Professor F. Verzar, University of Basle, for FAO; Dr. S. V. Larkey, Welch Medical Library, representing the Army Medical Library (U.S.A.); Dr. P. Lépine, Institut Pasteur (France); Professor R. V. Talice, Faculty of Medicine, University of Montevideo (Uruguay); Dr. A. Hann, International Federation for Documentation; and Mde. Duprat, of the Bibliothèque Nationale de Paris.

MEDICAL BIRTHDAY HONOURS

The names of the following members of the medical profession were included in a Birthday Honours List published in *Supplements to the London Gazette* on June 9:

K.B.E. (Military Division)

NEIL CANTLIE, C.B., M.C., M.B., F.R.C.S., Lieutenant-General, late R.A.M.C. Honorary Physician to the King. Director-General, Army Medical Services.

Knighthood

ARTHUR MARCELLUS DE SILVA, C.B.E., F.R.C.S., Member of the Public Service Commission, Colombo, Ceylon.

JOSEPH FRANCIS ENGLEDEU PRIDEAUX, C.B.E., M.R.C.S., L.R.C.P., Director-General of Medical Services, Ministry of Pensions.

HENRY SESSIONS SOUTTAR, C.B.E., D.M., M.Ch., F.R.C.S., Consulting Surgeon, London Hospital. Past-President of the British Medical Association.

C.B. (Military Division)

FREDERICK JOHN MURPHY, C.B.E., M.B., B.Ch., D.P.H., Air Vice-Marshal, R.A.F. Honorary Surgeon to the King.

KENNETH ALEXANDER MACDONALD TOMORY, O.B.E., M.B., Ch.B., Major-General, late R.A.M.C. Honorary Physician to the King.

C.M.G.

CHARLES NORMAN ATKINS, M.B., Ch.B., D.P.H., City Health Officer for Hobart, Tasmania.

CHARLES HERBERT HAMPSHIRE, M.B., B.S., F.R.I.C., Ph.C., Secretary, British Pharmacopoeia Commission.

JAMES GRANT SMITH TURNER, M.B., Ch.B., D.P.H., D.T.M., Colonial Medical Service. Director of Medical Services, Gold Coast.

C.B.E. (Military Division)

DAVID FETTES, O.B.E., F.R.C.S.Ed., Brigadier, late R.A.M.C. Honorary Surgeon to the King.

JAMES HAMILTON, M.B., Ch.B., Surgeon Captain, R.N.

C.B.E. (Civil Division)

CHARLES WORTHAM BROOK, Ph.D., M.R.C.S., L.R.C.P. For political and public services.

FRANCIS HENRY KNEHILL GREEN, M.D., F.R.C.P., Assistant Secretary, Medical Research Council.

THOMAS KEITH LYLE, M.D., M.Ch., F.R.C.S., M.R.C.P., Civil Consultant in Ophthalmology to the Royal Air Force.

ALEXANDER FLEMING WILKIE MILLAR, M.D., Chairman, Scottish Medical Practices Committee.

RALPH MONTGOMERY FULLARTON PICKEN, M.B., Ch.B., D.P.H., Provost and Mansel Talbot Professor of Preventive Medicine, Welsh National School of Medicine.

THOMAS EDMUND ALEXANDER STOWELL, M.D., F.R.C.S. For services to industrial medicine.

O.B.E. (Military Division)

WILLIAM VINCENT BEACH, F.R.C.S.Ed., Surgeon Commander, R.N. EDWARD ALEXANDER RICE, M.B., B.Ch., Wing Commander, R.A.F.

O.B.E. (Civil Division)

ALBERT WILLIAM JOHN CRAFT, M.R.C.S., L.R.C.P., Principal Medical Officer, Ministry of Pensions.

KIRIKANKANANGE JUSTIN DE SILVA, L.M.S., J.P. For public services in Moratuwa, Ceylon.

JOSEPH ELLUL, M.D., F.R.C.O.G., Professor of Midwifery and Gynaecology, Malta.

JOSEPH HUBERT FERNANDO JAYASURIYA, F.R.C.S., Senior Surgeon, General Hospital, Colombo, Ceylon.

ALEXANDRA MARGARET ANNE JOY, M.B., B.Ch., for services as medical practitioner in the isolated area of Lake Grace, Western Australia.

THOMAS PERCY REES, M.D., M.R.C.P., D.P.M., Medical Superintendent, Warlingham Park Mental Hospital, Surrey.

ARUMUGAM VISWALINGAM, L.M.S., lately Ophthalmic Specialist, Malayan Medical Service.

NOEL EVERARD WATERFIELD, M.B., F.R.C.S., County Director, Surrey Branch, British Red Cross Society.

EDWARD MILNS BANBRIDGE WEST, B.M., B.Ch., Chief Officer, African Affairs Department, Southern Rhodesia.

WALTER GERALD WICKREMASINGHE, M.R.C.S., L.R.C.P., Acting Director of Medical and Sanitary Services, Ceylon.

GERALD RICHARD COURTENAY WILSON, M.R.C.S., L.R.C.P., Acting Senior Medical Officer, Tanganyika.

Honorary O.B.E. (Civil Division)

HO KO TSUN, Medical Officer in charge of the Eastern Chinese Public Dispensary, Hong Kong.

M.B.E. (Military Division)

ROBINA MARY DUNCAN MORRELL, M.B., B.S., Major, R.A.M.C.

M.B.E. (Civil Division)

MAURICE PENNEFATHER BROWNE, M.R.C.S., L.R.C.P., D.T.M.&H., Colonial Medical Service, Medical Officer, Gold Coast.

JOHN MINTO FITTON, M.B., F.R.C.S., Orthopaedic Surgeon, Mauritius.

ARTHUR GEORGE TEASDALE MATTHEWS, Medical Officer at His Majesty's Agency and Consulate at Muscat, Arabia.

WILLIAM GEORGE ROSE, L.R.C.P.&S.Ed., Medical Officer for Eastern Districts, Southern Rhodesia.

The following appointments also appeared in the Honours List: *Order of Merit*, Sir Robert Robinson, M.A., LL.D., D.Sc., President of the Royal Society since 1945. *D.B.E.*, Miss Harriette Chick, C.B.E., D.Sc., for services to the study of nutrition. *O.B.E.*, David Garnet Davey, M.Sc., Ph.D., and Francis Leslie Rose, Ph.D., F.R.I.C., for their services in the discovery of paludrine and antrycide.

LADY TATA MEMORIAL TRUST

INTERNATIONAL AWARDS FOR RESEARCH IN BLOOD DISEASES

The trustees of the Lady Tata Memorial Fund announce that, on the recommendation of the Scientific Advisory Committee in London, they have made the following awards for research in blood diseases, with special reference to leukaemia, in the academic year beginning on Oct. 1, 1949. *Grants for research expenses and assistance*: Dr. Marcel Claude Bessis (France), for work in Paris; Dr. Jörgen Bichel (Denmark), for work at Aarhus, Denmark; Dr. Pierre Cazal (France), for work at Montpellier; Dr. Johannes Clemmensen (Denmark), for work in Copenhagen; Dr. Endrev Kelemen (Hungary), for work at Szeged; Dr. Jagdish Chandra Mehta (India), for work at Agra; Professor Charles Oberling (France), for work in Paris; Dr. Edith Paterson (Great Britain), for work at Manchester; Dr. Günther Schallack (Germany), for work at Münster; Professor Edoardo Storti (Italy), for work at Pavia. *Scholarships*: Dr. Pascou Atanasiu (Rumania), for work in Paris; Dr. Claus Frederick Muok Plum (Denmark), for work in Copenhagen.

Nova et Vetera

A COLOURFUL VICTORIAN

The memory of all but the very greatest surgeons is necessarily brief. Their achievements, like that of actors and musicians, flow into the general ocean of culture and, like ripples, are soon lost to vision. The achievements of even the greatest surgeons cannot be transmitted intact to the generations that follow, as can that of the poet or the sculptor. Nevertheless, though their work has no lasting memorial, their deeds become an integral part of social history. Their age cannot be represented by the social historian unless he understands what certain of them have sought to do, have done, and have failed to do.

We have perhaps hardly reached the stage at which a social history of the nineteenth century can be constructed on scientific lines, but in due course the historian will need a few sample lives of surgeons of the period. Dr. Flack¹ has produced a most readable and exactly documented account of a very typical surgical figure of the period. It is worth immediate note that during Lawson Tait's active years the Listerian antiseptic system began to be displaced by aseptic methods. Much of Lawson Tait's combativeness found outlet in opposing Listerian methods for reasons partly good but partly irrational and indeed nonsensical. Nevertheless, as Dr. Flack most interestingly shows, Tait, a blind prophet, was quite unconsciously adumbrating asepsis.

Seeking a word for Lawson Tait, none comes better than the journalistic neologism "colourful." His life was so full of tints—varied, lively, and often crude—that Dr. Flack has difficulty in enumerating them all. Tait, in fact, would make a good hero for a novel or melodrama, for his were passions so violent, instincts so valid, skill so transcending, skin so thick, and emotions so strong that his character shows up with peculiar vividness against the humdrum background of Victorian provincial life. It cannot be denied that he has influenced deeply the science and art of surgery as well as the general development of medical practice. Specifically, he did more than any man to establish gynaecology as a specialism, he founded the Medical Defence Union, he introduced many improvements in surgical technique, he raised the standard and status of the provincial consultant, he set a new standard of case-recording, he started asepsis on its victorious way, and he was one of the first to see the need for the special training of the surgeon as artist and craftsman.

These are among the achievements of a man whose life was effectively ended before he was 50. But it is much more pleasant to read about this turbulent genius in the well-written narrative of Dr. Flack than it must have been to live and work smoothly with him through the years. This is a type of surgeon that could have existed only in the medical atmosphere of the later nineteenth century. None of us will see his kind again. Any who would like to know what sort of men surgeons were in those days cannot do better than turn to Dr. Flack's lively and often exciting pages.

CHARLES SINGER.

¹ *Lawson Tait, 1845-1899.* By I. Harvey Flack, M.D. (Pp 148; illustrated. 17s 6d) London: William Heinemann Medical Books 1949.

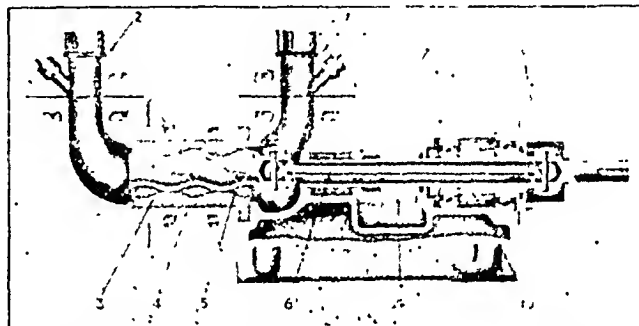
The twenty-first annual meeting of the Medical Insurance Agency was held on June 1. The report of the committee of management for 1948 recorded another successful and busy year. Grants to the principal medical and dental charities were sanctioned amounting in all (by use of the covenant system) to close upon £14,000. Progress in all branches of the Agency's business in 1948 was marked, though the figures for new life business were somewhat below the total for 1947. A branch office was set up in Leeds in the autumn of 1948, and another branch has recently been opened in Manchester. The full impact of the National Health Service upon the needs of the medical profession has not yet been felt; but the special facilities which the Agency is now able to negotiate for loans towards the purchase of houses, cars, or equipment have already been taken advantage of widely and have replaced loans for the purchase of practices. Lord Horder, Sir Henry Tidy, Dr. Alfred Cox, Dr. James Fenton, Mr. A. M. A. Moorc, and Mr. R. W. Raven were re-elected to the committee for three years; Dr. Oliver Scott was elected to replace the late Dr. Bone. Dr. James Fenton was re-elected chairman and Dr. Henry Robinson honorary secretary.

Preparations and Appliances

A NEW SURGICAL SUCTION PUMP

Mr. DAVID AIKEN, surgical chief assistant, Royal Hospital, Sheffield, writes: The methods employed for producing suction have included water-pumps (the least efficient), steam pumps, and electric pumps of reciprocating or rotary type. The latter have enjoyed the greatest popularity, but it is not certain that those available were the best for theatre work. We have investigated several industrial pumps, and one of these, the Mono pump, was found to outclass the modern surgical suction pump on account of its reliability, simple design, easy maintenance, and low initial cost.

The apparatus (see illustration) is of such sturdy construction that material accidentally aspirated into the pump does no harm



Sectional arrangement of the Mono pump, embodying (1) suction branch; (3) stator; (5) rotor; (10) universal drive from the main shaft.

and causes no loss of the normal vacuum of 28-30 in. (71-76 cm.) of mercury. Complicated valves to prevent aspiration into the pump are therefore eliminated and, furthermore, the nurse no longer dreads the consequences of allowing the collecting-bottle to overflow during operations or when cleaning out the tubing. Long delays for repairs are obviated and irritating failure of the suction during operations no longer occurs.

A single rotor, rolling in a fixed stator, constitutes the mechanism of the Mono pump. The stator, which is normally of rubber, is in the form of a double internal helix; the rotor is also of helical design, but with a single scroll and with half the pitch of the stator, producing a uniform and positive displacement.

This original and simple principle has produced a pump which embodies a single rotating element without valves, gearing, or lubricators; therefore maintenance charges are reduced to a minimum and skilled attention becomes unnecessary. The rubber stator may require replacement after 4,000 hours' continuous working, but it costs only nine shillings and can be quickly and easily fitted.

The size or capacity of the pump is governed by the number of theatres to be supplied with suction. For theatre work one large unit is neither as economical nor as reliable as numerous small units, and therefore it is recommended that each theatre be equipped with a separate unit. Mono pumps A2 and A2 L, with a displacement of 150 and 300 gallons (680 and 1,360 litres) per hour respectively, will be found the most useful sizes. The A2 L provides a most vigorous suction because of the large minute-displacement. For simplicity, for noise elimination, and in order to lessen the likelihood of igniting the explosive anaesthetics, the operating theatre should be kept free of any electrical equipment that can be placed in an adjoining room without inconvenience to the operator or his staff. This especially applies to suction pumps, which should be installed in a near-by room or basement and connected to the theatre by pipes.

For the past eight months two Mono pumps have been used in each of our busy theatres; they have given every satisfaction and required no attention whatsoever.

I wish to thank Messrs. Mono Pumps, Ltd., Mono House, 67, Clerkenwell Road, London, E.C.1, makers of the pump, for their help.

Correspondence

Cancer of the Cervix

SIR,—In his very interesting article (June 4, p. 978) on the incidence of cancer of the uterine cervix Mr. R. G. Maliphant says, "In spite of the efforts expended in educating the public on cancer, etc." I shall be greatly interested to hear where in the British Isles this effort has been made. It seems to me that the only method by which the public can be instructed concerning the symptoms of cancer, and at the same time fear of the disease allayed, is to train a very large number of lay people who would instruct small groups of other lay people.

At one time I had hoped that such an experimental scheme would be undertaken by the British Empire Cancer Campaign in a limited area, but this is now very improbable, because it appears that certain members of the campaign consider that lay people should only be instructed by qualified medical practitioners. Apart from the impossibility of finding enough doctors with sufficient time to instruct millions of people, it is difficult to see how it would be possible to prevent the lay audieees from passing on the information received from the doctor to other lay people, which is precisely the point to which objection has been taken.

In the second paragraph of Mr. Maliphant's article there seems to be some confusion of thought concerning time and the stage of the disease. Surely it is probable that all malignant growths of the cervix give rise to bleeding approximately at the same time after the onset of the disease, but in the case of rapidly growing undifferentiated tumours the disease has already reached stage IV, whereas the slow-growing differentiated tumour is still stage I. Whether it is true to say that "early cervical cancer is usually symptomless" depends on a definition of "early." In a series of 839 cases of cancer of the cervix it was found that 34.5% of the patients had noticed irregular bleeding for more than three months before going to see a doctor and, included in these, 33.7% waited more than six months and 14.9% over twelve months. There is therefore plenty of scope for lay education if somebody can be found to undertake the job.—I am, etc.,

London, W.1.

MALCOLM DONALDSON.

SIR,—The excellent paper on the incidence of cancer of the uterine cervix by Mr. R. G. Maliphant (June 4, p. 978) prompts me to plead for two aspects of health education which I submit have neither won the response of the public nor have had the attention paid to them which their individual importance merits.

1. The attendance at post-natal clinics is, in my experience, poor. Those who do attend once seldom come up for examination again. The ravages of child-bearing—and I am sure the morbidity is greater than we care to admit—may well be glossed over, or may not be manifest when a patient is examined four or six weeks after confinement. I would like to see health propaganda concentrating on a second and much later examination at, say, six or nine months.

2. Mr. Maliphant has shown that in the series investigated 34.7% occurred in the age group 45–54. The encouragement to women to undergo gynaecological examination at the menopaual years would evidently show up early stages of cancer which in a relatively short time might well have been classified as beyond hope.

Finally, Sir, I would stress the fact that the gynaecological and even general examination undertaken at these two "danger periods" would establish not only the incidence of this particularly insidious cancer but the concomitant varieties which in their train bring the same tragic result.—I am, etc.,

Princes Risborough, Bucks.

F. H. M. DUMMER.

Infective Hepatitis and Portal Cirrhosis

SIR,—The paper by Major K. Damodaran (June 11, p. 1032) contains a general statement on the "unreliability of liver-function tests in estimating the severity of infective hepatitis" which hardly appears to be justified by the facts given. This statement would appear to depend upon a single fatal case of

hepatitis with negative flocculation tests and a normal serum alkaline phosphatase.

Now it is well recognized that neither of these procedures are really liver-function tests in the strict sense, but merely indications of a certain type of disturbed liver metabolism. They are of particular value in the differential diagnosis of jaundice and are frequently of value in hepatitis, but it has never been claimed that they are specifically related to liver-cell damage. The serum alkaline phosphatase is often normal in infective hepatitis, and about 7% of cases have negative flocculation tests throughout.

It is, therefore, obviously unwise to depend entirely on tests of this type in attempting to assess the severity of cases of hepatitis. For this purpose one would also need to estimate serum bilirubin, albumin, and globulin, and to examine the urine for excess of urobilinogen. I have never seen a patient dying of hepatic disease with normal values for all these tests, and would suggest that Major Damodaran should try a more suitable battery of tests before dismissing them as useless for his purpose.—I am, etc.,

London, S.W.1.

N. F. MACLAGAN.

Perforations of the Oesophagus and of the Rectum

SIR,—The communications by Mr. Leslie J. Temple and Mr. J. D. T. Jones (May 28, pp. 935 and 933) on these injuries are timely and useful. I doubt if the risks of oesophageal instrumentation are yet sufficiently appreciated; only a few months ago yet another case came under my notice. It is a great satisfaction and encouragement to me to read of the successful management of some of these erstwhile tragedies, for when they were regarded to be almost invariably fatal I enunciated what I considered reasonable principles for their treatment. These rules were detailed in my George Halliburton Hume Lectures in 1943 and were set out in the brochure on *Injuries and Diseases of the Oesophagus* published in 1946.

It is distressing to read of the rectal injuries following the administration of enema. I note that the booz nozzle is blamed, but the lack of appreciation of the direction of the anal canal, the paucity of lubricant, and the neglect of the significance of the production of pain are the real factors.

In the year 1904 it fell to my lot to use for the first time the second of the aerosigmoidoscopes imported into this country, but from lack of training and experience in its use my attempts were *mal à propos* and the pelvic colon was perforated in two places, with fatal consequence. I have often referred to that accident and have many times exhibited the specimen, and in my presidential address in 1926 to the Subsection (as it then was) of Proctology of the Royal Society of Medicine the case was reported in full.¹

Hermann Strauss, who devised and introduced the aerosigmoidoscope to the profession, laid it down as imperative that as soon as the extremity of the instrument had negotiated the anal canal further advance must only be carried out under the guidance of the eye. If that was always regarded as the golden rule, accidents would be very infrequent.—I am, etc.,

Taplow, Bucks.

G. GREY TURNER.

REFERENCE

¹ *Proc. R. Soc. Med.*, 1926, 19 (Sect. Surg.), 27.

Treatment of Perforations of the Oesophagus

SIR,—In his article on perforations of the oesophagus (May 28, p. 935) Mr. Leslie J. Temple allows me credit for demonstrating that endoscopy perforations of the pharynx and oesophagus in the cricoid region could be successfully treated by suture. I had hoped that I had done more than this and had also argued a convincing case for the adoption of *immediate* suture to *all* such injuries as the treatment of choice. For that reason I regard as most unfortunate his qualified advocacy of an initially expectant attitude towards suspected perforations of the cervical oesophagus.

I fear that some readers may overlook the fact that the perforation in his case so treated was not associated with surgical emphysema and therefore not actually proven clinically to extend through all coats of the oesophageal wall, however definite it may have seemed at oesophagoscopy. The circumstances, therefore, are different from those obtaining in the average perforation after

the development of cervical emphysema. In other words, extravasation is already occurring by the time the diagnosis is made. To treat this type of case conservatively in the first instance, relying on intensive chemotherapy to prevent or limit infection instead of resorting to immediate suture, is in my opinion strongly to be deprecated for the following reasons.

(1) Clinically it is extremely difficult to distinguish between uncomplicated surgical emphysema in the neck and emphysema with superadded cellulitis. It must be appreciated also that under the influence of gravity infection may spread rapidly downwards behind the oesophagus into the posterior mediastinum before the lateral parts of the neck are seriously involved. The result is that the clinician who embarks on conservative treatment may well be deluded for two or three days into believing that the condition is under control by chemotherapy when in fact a dangerous mediastinitis has already become established.

(2) While suture of the pharyngo-oesophageal wall within a few hours of the perforation is technically easy and a very satisfactory closure is obtained, it is quite otherwise once infection has occurred. The tissues then become oedematous and friable, and stitches tear out, so that surgical repair is no longer feasible and drainage alone can be performed.

Many patients, perhaps the majority, with post-cricoid endoscopy perforations will undoubtedly recover under conservative treatment, but there are equally certainly others who can only be saved by operation. I know of no means by which one can predict the outcome of expectant treatment with confidence, and therefore I maintain that the only safe course is to operate on all cases without delay, at a time when the ideal of immediate suture can still be practised. Under this scheme admittedly some patients will be submitted to an unnecessary intervention, but as the operation is a relatively simple one, unlikely to carry any intrinsic operative mortality, no serious objection can be supported on this ground.

A further advantage of immediate operation is the peace of mind and certainty of recovery that it brings—a state of affairs that contrasts strikingly with the anxieties, complications, and doubts associated with an expectant regime. I have treated two gastroscopy perforations by immediate suture, and the post-operative convalescence has been astonishingly smooth and uneventful; so much so indeed that in the second case we were actually able to proceed to a partial gastrectomy for his gastric ulcer four days later.—I am, etc.,

London, W.1.

J. C. GOLIGHER.

Continuous Irrigation in Prostatectomy

SIR,—The letter of Mr. H. D. Moore about continuous irrigation after prostatectomy (May 28, p. 958) prompts me to draw the attention of your readers to a most satisfactory two-way irrigating catheter invented by Mr. E. G. Tuckwell. For those wishing to make use of a two-way catheter after the Millin type prostatectomy the Tuckwell catheter will prove extremely satisfactory; it is manufactured by A. W. Hawkins and Co., Ltd., 15, New Cavendish Street, W.1, and was described in the *Lancet* (1946, 2, 94).—I am, etc.,

Radlett, Herts.

REGINALD S. MURLEY.

London Lock Hospital

SIR,—It is inconceivable that, following the discovery of streptomycin, or, indeed, of any drug that was found to have a beneficial result in the treatment of tuberculosis, the Brompton Hospital, for instance, should promptly be closed and the patients transferred to local clinics and the care of tuberculosis officers just because the disease could be more rapidly cured or arrested.

This, however, is precisely what has been suggested to the North-West Metropolitan Regional Hospital Board in the case of the London Lock Hospital (*Journal*, May 28, p. 948). There appears to be so much confusion in the minds of many doctors as well as the laity that the modern improved methods of treatment of venereal diseases require only routine diagnosis and treatment, and that these can be carried out in out-patient departments. It is frequently presumed that painful complications can always be avoided.

As one who has had the honour of serving the Lock Hospital for over twenty-five years, it has been possible to observe the different types of case and the methods of treatment that have indeed radically changed. Twenty-five years ago the

majority of female patients were admitted either because they were destitute and had little chance of obtaining work while ill or because they came from a distance and had no opportunity for treatment near their homes. These groups may be considered as having occupied "hostel" rather than "hospital" beds. The necessity for the provision of beds for this class of patient has practically disappeared, as they can be rapidly rendered non-infective, and then can at once obtain work if they wish, as the demand for female labour exceeds the supply.

In 1923, however, there was a group of patients who are similarly with us to-day. They are men and women who have extension of their diseases causing pain and disability, and those on whom varying methods of treatment (some new and some old) require to be tried out under the direct observation of the specialist who has seen them in the out-patient department. It is of paramount importance for the retention of the confidence of the patient and for the most efficient treatment that he or she remain under the direct care of the same consultant both in the out-patient and in-patient departments. Careful clinical research is often only possible when the patient can be admitted into hospital.

Nowadays what is really required is a small number of hospital beds staffed by experienced specialists who are responsible for both the in-patient and out-patient care. This is the present policy of the medical staff of the London Lock Hospital.—I am, etc.,

London, W.1

G. M. SANDES.

Resectable Carcinoma of the Stomach

SIR,—Cancer is now second in command of the "men of death" in England and Wales, Scotland, Northern Ireland, and Eire, and in the United States of America. All the home countries show an almost steadily increasing mortality from cancer from 1937 to 1946. Comparing 1937 with 1946, England and Wales (per 1,000 of the population) show an increase of 0.14, Scotland 0.23, Northern Ireland 0.12, and Eire 0.10. In round numbers, in England and Wales the annual deaths from cancer were 70,000 for the years 1940-2. The figures for the last completed triad of years, 1944-6 (74,000 annual deaths), are still more alarming.

The stomach is the commonest seat for the primary growth in the male, and runs a close second in females to mammary cancer. Against gastric carcinoma physiotherapy, including x rays and radium, and the most modern therapeutics are of no avail. Can surgical intervention be of any definite aid? Harnett¹ states that, of 1,405 patients with cancer of the stomach treated in the London hospitals in 1938-9, only 56 (4.03%) survived for five years. Pack and Livingstone² contend that, if every patient with cancer of the stomach were to enter the best surgical clinic in the world, about 95% would be dead of the disease within 18 months.

But there is another and a less depressing side to the question. In 1937 Professor John Morley³ stated that of 58 gastrectomies for malignant disease of the stomach one was alive and well 13½ years after the operation, but in 1949⁴ he reported that of 110 survivors from resection five were alive and well after 20 years and one after 11 years. In the Mayo Clinic⁵ between the years 1907-39, 2,772 cases of gastric carcinoma were subjected to resection. Of these, 2,342 survived the operation and were thus given a chance of cure. Of this group 28.9% lived for five years or longer, 20.4% lived for ten years or longer, 15.2% lived for fifteen years or longer, and 6.3% lived for twenty-five years or longer.

The following three cases are briefly abstracted from a fuller report as successful examples of resection, and with a view to contradicting statements made in a recent surgical textbook: (1) that the examination of the gastric juice by test meal is usually valueless, for by the time free hydrochloric acid is absent the disease will be inoperable, and (2) that the presence of a palpable tumour is a late sign and usually indicative of advanced disease too late for resection.

Case 1.—A man aged 30 years. Admitted to the Royal City of Dublin Hospital on March 11, 1906. Profoundly anaemic, gastric contents contained no free hydrochloric acid; the faeces had latent blood. There was a palpable tumour in the epigastrium. Operation (Jameson Johnston) on April 3, 1906; tumour excised and posterior gastro-enterostomy performed. Discharged May 30, 1906.

A letter from him on Aug. 28, 1948, states: "I am happy to let you know I am very well at present, can eat and work very well and do all the work which I have to do." Specimen sent to pathological department, Trinity College, was reported as a typical pyloric carcinoma.

Case 2.—A man aged 51. Admitted to hospital Feb. 2, 1934, with shortness of breath, lightness in head, and weakness of legs. On palpation, a large mass was felt in the left hypochondrium and epigastrium. Blood (Dr. Harvey): Hb 51%; R.B.C. 3,250,000 per c.mm.; W.B.C. 47,220 per c.mm. (polymorphs 95%). Fractional test meal: No free hydrochloric acid. X-ray examination (Dr. Hardman): "Large carcinomatous growth involving the posterior and probably the anterior wall of the stomach in pars media. Gross filling defect coincides with a palpable tumour." Operation (Mr. Seton Pringle) on March 2, 1934: "Stomach was found to have a large fungating carcinoma involving extensively the posterior wall of the stomach. Partial gastrectomy performed with removal of two-thirds of the stomach; end-to-end anastomosis made (Polya I)." Blood count on March 8, 1934 (Dr. Harvey): W.B.C. 9,160 per c.mm. Discharged on March 12, 1934. A slight touch of bronchitis brought him to the extern department in October, 1948. Report on a barium meal administered on Oct. 21, 1948, 14½ years after his operation (Dr. Hardman): "The opaque meal demonstrated a gastric sac about half the size of a normal stomach. It emptied freely through the anastomosis, and there was nothing to suggest any recurrence of the carcinoma."

Case 3.—A man aged 67. Admitted on May 31, 1934, complaining of soreness and wind in the stomach, loss of appetite, weakness, pallor, and wasting. Examination of abdomen negative. Fractional test meal: No free hydrochloric acid. Faeces positive for occult blood. X-ray report (Dr. Hardman): "There is a well-defined and extensive filling defect involving both the lesser and greater curvatures in the upper part of the stomach, but not so high as the fundus. The lower half of the stomach is normal radiologically, and there is no gastric stasis. X-ray appearances justify a positive diagnosis of carcinoma, and the growth is probably above the level of the costal margin and therefore not palpable." Operation on June 9, 1934: Mr. Pringle removed a large portion of the stomach; posterior gastro-enterostomy was performed. Discharged in very good form on July 30, 1934, two months after his operation. He attended the extern department of the hospital frequently for bronchitis, and Dr. Hardman on May 11, 1944, gave the following report after a barium meal: "The remaining gastric sac is small, but there is no gross filling defect involving either curvature which would justify a diagnosis of recurrence." He is now at least 82 years of age. The specimens in Cases 2 and 3 were sent to the pathological department, Trinity College, Dublin, where Professor O'Meara reported that they were both adenocarcinomas.

It is hoped that the publication of the above cases may do something to minimize the pessimistic view held by many physicians and surgeons of the almost hopelessness of a radical cure in gastric carcinoma. If we physicians can recognize gastric carcinoma before secondaries form, resection offers a reasonable prospect of complete recovery.—I am, etc.,

Dublin.

ALFRED R. PARSONS.

REFERENCES

- ¹ *Brit. J. Surg.*, 1947, 34, 379.
- ² *Amer. J. Surg.*, 1939, 45, 167.
- ³ *British Medical Journal*, 1937, 2, 949.
- ⁴ *Ibid.*, 1949, 1, 772.
- ⁵ Walters, W., and Berkson, J., *Collected Papers Mayo Clinic*, 1947, 39, 20.

Partial Gastrectomy

SIR,—I have found Mr. John Hosford's paper entitled "Some Aspects of Partial Gastrectomy" (May 28, p. 929) most interesting and highly instructive, and his analysis of the various techniques with their respective percentages of excellent, satisfactory, or bad results is exactly what is wanted by the younger surgeon of to-day, for he is by no means rarely left with some doubt in his mind which of the various techniques to follow. For the average surgeon, carefully selecting his ulcer patients for operative treatment, it takes a relatively long time to collect and to follow up a sufficiently large number of cases upon which to base his own definite opinions, and Mr. Hosford ably fulfils this want.

Mr. Hosford does not state if he is, as a result of this investigation, going in future to favour any one type of gastrectomy, or perhaps, feeling as he does that it really matters very little, he has no fixed views on the subject. It would also be very instructive to learn if Mr. Hosford encountered any instance of post-gastrectomy anastomotic ulcers in the present series under discussion. It would appear that the figure of 5% is too high for a properly performed partial gastrectomy. As regards the antecolic anastomosis with the afferent loop to the

greater curvature, I had always understood this was the one type of anastomosis which gave rise to more post-operative vomiting than any other, and I note there are only six cases in this category.

Mr. Hosford's over-all mortality of 0.5% is exceedingly low, covering as it does a considerable period prior to the introduction of penicillin, which for the bad-risk chesty patient does seem to decrease the incidence of post-operative complications. It is a figure which can hardly be bettered.—I am, etc.,

Barnsley, Yorkshire.

ANDREW G. BUTTERS.

Diaphragmatic Hernia and Anaemia

SIR,—The paper by Professor A. D. Codounis (May 7, p. 805) on diaphragmatic hernia associated with anaemia is of special interest to me, as I have under my care a boy aged 7, weighing 3 stone 3½ lb. (20.5 kg.), with the following history.

According to his mother, he has been pale and apathetic since infancy; following an influenza-like illness three months ago these symptoms have been more marked. He has at no other time suffered from chest or gastro-intestinal symptoms and has always eaten a normal mixed diet. There is no family history of anaemia.

I first saw him about six weeks ago, when, apart from the extreme pallor, there were no abnormal physical signs. He was admitted to hospital, and special investigations revealed haemoglobin 35% (Sahl), red blood cells 2.96 million per c.mm., colour index 0.6, mean cell volume 50 c.µ, white cell count normal, red cell average thickness 1.1 µ, fragility normal. Chest radiography was undertaken by Dr. Stanley Nowell, who reported on a straight film: "There is an opacity lying behind and to the right side of the heart shadow, which extends upwards to the lower border of the hilum and contains a fluid level. Examination on swallowing barium shows that the opacity is a large gastric hernia through the mid-portion of the diaphragm, the oesophagus entering the stomach below its upper border on the medial side and one inch (2.5 cm.) above the diaphragm."

Stool examinations revealed the presence of occult blood in some specimens, and an alcohol-histamine fractional test meal gave a normal curve for gastric acidity.

The child was treated with full doses of iron, and a blood picture two weeks after the original one showed a rise in the haemoglobin to 58%, red blood cells 3.74 million per c.mm., and colour index 0.8. Re-examination of the chest after the radiological report had been seen showed very slight diminution of air-entry at the right base behind (easily missed, as in this case). Drinking half a pint of water failed to make the signs more definite.

I consider that the anaemia, in this case at least, is due to compression, probably intermittent, of the gastric veins as they pass through the defect in the diaphragm. This would give rise to venous congestion and oozing of blood into the herniated portion of stomach. Long-continued chronic blood loss may eventually result in marrow exhaustion and an aplastic type of anaemia. May not this be the explanation of the macrocytic phase in Professor Codounis's case?—I am, etc.,

Wrexham, Denbigh.

P. R. C. EVANS.

Dystocia after Amputation of Cervix

SIR,—Your correspondents have, I think, proved one of the points of my memorandum: that dystocia may follow amputation of the cervix (if, indeed, this point were ever in doubt). With respect, however, I suggest that Dr. George W. Kosmak (May 7, p. 823) has missed the main point, which was that untoward results of frequently performed operations should be recorded. The amputation of the cervix to which I referred is that which is an integral part of the Manchester operation for prolapse, carried out daily by most gynaecologists. The Sturmdorf procedure is well known and used in this country, though many prefer Bonney's amputation, of which the former is a modification. Neither, however, is so commonly used, nor could replace, the guillotine amputation, the importance of which former generations of Manchester gynaecologists have shown in the treatment of prolapse.—I am, etc.,

Manchester, 3.

W. CALVERT.

Persistent Amnesia

SIR,—In their interesting article on amnesia (May 28, p. 938) Drs. R. E. Hemphill and J. R. Stuart state they are not aware that electric convulsion therapy has been applied before in the treatment of this condition. They are in doubt as to whether

genuine psychological amnesia persisting for years has ever occurred. Please allow me a word about an unidentified man whose loss of memory baffled many psychiatrists during and after the North African campaign.

This man was first seen on May 8, 1943, at a front-line New Zealand field ambulance (214). He had no identity papers, but papers from a torn diary indicated he had a recent emotional upset. He was evacuated to a New Zealand base hospital as a case of hysterical stupor due to "the effects of battle stresses on an overwrought mind." He was mute and unresponsive, required to be spoon-fed, and had gross tremors of the right arm and shaking of head. Following intravenous barbiturate treatment his tremors disappeared and the stuporous state subsided, but a complete amnesia for his personal life remained. He was transferred to a British psychiatric hospital (41 General), where hypnosis, narco-analysis, and electric convulsion treatments were given on several occasions without benefit. He was an intelligent man (matrix S.G.1.) who worked extremely well in the ward and showed no sign of abnormality apart from amnesia for his personal life. His photograph was circulated in New Zealand and British papers without result, and he was eventually evacuated to the United Kingdom as an unidentified British subject. Six months ago he was reported to be working in the North of England. Loss of identity still persisted—I am, etc.,

Dublin

F. McLAUGHLIN.

Dried Plasma for Domiciliary Midwifery

SIR,—It is assumed by Dr. C. T. H. Whiteside (June 4, p. 1005) that a transfusion of plasma may be a life-saving measure in cases of retained placenta with post-partum haemorrhage, the placenta being removed later in hospital. Undoubtedly many patients do not die under this regime, but it should never be condoned on that account.

I do not wish to discuss the possible dangers of plasma transfusion, the superiority of whole blood in cases of recent haemorrhage, or the efficient organization of obstetric "flying squads" and regional blood transfusion services, which will often allow transfusion to be given in the home at very short notice. I wish merely to reiterate that the correct treatment of the abnormal third stage of labour is the removal of the placenta without delay. This will usually involve a manual removal, which requires no special equipment beyond sterile elbow-length gloves (or gloves and a sterile gown), and is truly a life-saving operation if performed before the patient is *in extremis*. It is not sufficiently realized that a retained placenta may produce shock out of all proportion to the blood loss, and the rapid improvement in condition following delivery of the placenta must be seen to be believed. If every placenta were out within two hours there would be few, if any, maternal deaths in the third stage of labour.

Every obstetrician who has worked with "flying squads" must have marvelled at the readiness of practitioners to undertake difficult forceps extractions under relatively deep anaesthesia and at their obvious reluctance to remove a placenta—an operation often done under 0.2 or 0.3 g. of thiopentone. I believe the explanation lies in the fact that experience of the former can be gradually acquired in practice, both as an onlooker and through the medium of easy cases. The first time the hand is plunged into the uterus in search of the placenta is an awful experience, and one that is best encountered in the helpful atmosphere of a training hospital. Until domiciliary obstetrics is largely performed by those with post-graduate training, so long will there be a greater demand for plasma than for sterile gloves.—I am, etc.,

Birmingham, 15.

W. G. MILLS.

Care of the Elderly

SIR,—It is a complete fallacy, in my experience, to say that an elderly patient is of necessity more troublesome to a doctor than a young one, and that, were he compelled to reduce his list of N.H.S. patients, a doctor would naturally try to get rid of his elderly patients.

So far as I am concerned, patients between the ages of 70 and 90 (and older if needs be) are always accepted. By the time they have reached the age of 70 many have steered with a fair degree of safety between the Scylla of carcinoma and the

Charybdis of cardiovascular disease. Furthermore, they are no longer harassed with the phobias and obsessions which often perplex and confuse the minds of the young and middle-aged. Added to that, old people have a great fear of being sent to bed, and therefore do not summon the doctor for trifles. "Folks die in bed," they so often say, half humorously and half pathetically.

To those who have an innate sympathy and love for those who have passed through the fires of life, the care of old people is often its own reward. Unfortunately this is not always the case, even among members of their own families, to whom they are frequently a nuisance, and sometimes a source of discord between husband and wife.

Old people cling to their own home, even if it is a single room, and if only a little domestic assistance could be procured for them to keep such rooms clean and to do a little simple cooking and their shopping many of these old people could carry on. They would also be relieved of that sense of complete isolation which many of them must feel, and this occasional intercourse with other human beings would save them from falling into oddities of behaviour.

Unfortunately many old ladies living alone seem to be impregnated with an aroma of paraffin oil, which follows them wherever they go; this is a very potent testimony to the dangers to which they expose themselves and to scanty meals cooked over a small oil-lamp. It is scarcely surprising that so many old people seem to live on bread and jam, and suffer from avitaminosis (see *Journal* of May 14, p. 863). Under present economic and rationing conditions many of them can scarcely do otherwise.—I am, etc.,

Hove Sussex

G. L. DAVIES.

Anthisan Poisoning

SIR,—I wish to report a rather unusual case. A child aged 21 months accidentally swallowed six 100-mg. tablets of pyranisamine maleate ("anthisan"). Approximately two hours after the child had taken the tablets she lost consciousness. This was accompanied by a profuse catarrhal discharge from the upper respiratory tract and epileptiform convulsions. Gastric lavage and continuous administration of oxygen had no effect on the child's condition. She died three-quarters of an hour after the onset of loss of consciousness. Post-mortem examination revealed general toxic changes throughout the body.

I consider this case worthy of note, as there does not appear to have been a similar one reported.—I am, etc.,

Morley, Yorks.

MAURICE TOBIAS.

POINTS FROM LETTERS

Adoption of Children

MISS ANNE ASHLEY writes from the Edinburgh Council of Social Service: The case referred to by Dr. G. G. Jones (May 21, p. 912) is not an isolated one. The fact that such cases do arise is among the reasons why such very great care is needed not only in arranging adoptions but in encouraging a child's mother or relatives to assume that it can be suitably provided for in this way. It is not only children who are legally adopted who may be in a most unhappy position if they prove afterwards to be unsuited physically or mentally, or if the adopters have not sufficient stability to maintain their attitude of responsibility and affection towards the child whenever difficulties arise; there are also children whose unfitness becomes apparent before the adoption goes through, but who have already been taken into the care of the prospective adopters and are accordingly handed back by them. In the meantime the mother and her relatives, having handed over the child, will have been encouraged to assume that it is provided for for life, and are likely to be far less prepared to rise to the responsibility, which is still theirs, for the child's proper care than if they had been encouraged to accept this primary obligation from the beginning. Many social workers can look back on most difficult cases of this kind.

The Struggle to Survive

DR. W. P. MURRAY (Edinburgh, 12) writes: Your review of *Reproduction and Survival* (June 4, p. 991) contains the words "... the salmon that, after spawning, rapidly ages and dies ..." This may be true of the eel, but it simply is not true of the salmon. When Professor F. J. Browne was in Aberdeen did he never hear of the thousands of "well-mended kelts" that returned to the sea from the Dee?

Obituary

JOHN HENDERSON, M.D., F.R.F.P.S.

Dr. John Henderson died in Glasgow on June 1 at the age of 72. Apart from the first world war, when he served in the R.A.M.C. at home, in Salonika, and in France, his whole medical life had been spent in Glasgow.

After studying at Glasgow University he graduated M.B., Ch.B. in 1898. He proceeded M.D., with commendation, in 1901 and became a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow in 1910. Already on the junior staff of the Royal Infirmary, he was appointed four years later, at a very early age, physician in charge of wards. These two interests, the Faculty and the Royal Infirmary, were always to take first place in a life that as the years passed become more and more crowded with duties. It was fitting that his services to the Faculty should have been recognized by his election to the presidency in 1937, the year in which he retired from the staff of the Royal Infirmary.

In the wards of the Infirmary there was full scope for Henderson's abilities as a teacher, and there is little doubt that in the years between the wars there was no more popular "chief." He had a natural kindness which endeared him to students, who soon learnt that "Jock" Henderson had an interest in their careers which extended beyond his work as a clinical teacher. Student societies gained his ready support, and even after qualification a student would find himself remembered by some detailed recollection which gave him a sense of personal interest. Contacts with students became even closer when Henderson was appointed assistant to the Muirhead professor of medicine, and then later professor of medicine to St. Mungo's College. In this latter appointment he attracted large numbers to his class. Many American students who attended the Scottish Colleges during the late 'twenties could testify to the soundness of his teaching, and they found something essentially native and salty in this forthright bluff Scot. It was natural that a revision of the students' manual of that time, "Wheeler and Jack," should be placed in his hands. Even the more pedantic student who would affect to frown on this "potted" textbook and declare his preference for some more imposing work as examinations drew near turned to this concise and practical *vade mecum*, which, like its reviser, avoided the frills and stuck to the essentials.

In common with so many others of his generation, Dr. Henderson did not restrict himself to medical affairs. He took a lively interest in the life of the city, and was long connected with one of the ancient Incorporations—the Barbers—of which he was Deacon in 1933, an honour not often conferred on a member of the medical profession and a physician at that. His warm interest in all human activities secured for him an unusually large circle of friends, and his skill at golf and at the bridge table made him a congenial host. A keen churchman, he was, at the time of his death, the senior elder of Lansdowne Church. He was always an active member of the British Medical Association, serving on the Council from 1931 to 1937. He was honorary secretary of the Glasgow and West of Scotland Branch in 1929–32 and president of the Branch in 1934–6. He was also chairman of the Glasgow Division in 1935–6. He gave valuable service to the Medical Planning Commission in 1940, and earlier had been active on a number of central committees.

It no doubt comes naturally to some men to be "givers," and their generosity both in love and in service is well

repaid at life's twilight. John Henderson was one of these men, and his later years were made the happier by the great number of his fellow-citizens, patients, and students who regarded him with an affection often denied to the more austere. Unsparing of himself, it was quite in character that he should have continued teaching medicine to dental students up till almost a week before his death.

He is survived by his widow, a daughter, and a son who is a member of the profession.

Dr. NORMAN GRELLIER, who died at the age of 62 on May 27 after a brief illness, was one of the leading radiologists in Hastings. Born at Epsom in 1886, of Huguenot stock, he was educated at Epsom College and at Charing Cross and the Royal Dental Hospitals, qualifying in dentistry in 1910 and going on to take the conjoint diploma in 1915. He served in the R.A.M.C. in the 1914–18 war, being awarded the Military Cross at the Battle of Passchendaele. During the recent war Dr. Grellier again joined the R.A.M.C., and served as a radiologist from 1941 to the end of the war. On returning to England in 1918 he was appointed dental surgeon to the City of London Police, and was also a demonstrator in dental surgery and later assistant dental surgeon at the Royal Dental Hospital. At Guy's Hospital he later studied medical radiology and electrology, taking the Cambridge diploma in 1924. Then he and his twin brother gave up dentistry and in 1926 settled in St. Leonards, where they had practised as radiologists ever since. Dr. Grellier was honorary radiologist to the Royal East Sussex Hospital, the Hastings Municipal Hospital, and the Eversfield Chest Hospital. Dr. Grellier was chairman of the Hastings Division of the British Medical Association in 1938–9. Up to the time of his death he was president of the East Sussex Medico-Chirurgical Society, and he was a member of the British Institute of Radiology and of the Faculty of Radiology.

He had been master of the Worshipful Company of Tilers and Bricklayers, one of the ancient City companies, a director of the French Hospital, and a fellow of the Huguenot Society of London. He was a freemason and had passed through the chair of the Huguenot Lodge of London. Dr. Grellier's hobbies were model engineering and flying, and he had recently taken up gliding. He and his twin brother, Dr. Bernard Grellier, had never been parted except during war service. They practised together in dentistry and later in radiology, shared the same interests, and had the same outlook in life. Neither was married, and they had always lived together.

Dr. JOHN CURTIS WEBB, who was well known as a radiologist in Cheltenham, died at his home there on May 23 at the age of 80. He was educated at Cheltenham College and Clare College, Cambridge, and was later a student at King's College Hospital, London. He qualified in 1893 and graduated M.B., B.Ch. in 1896. He was house accoucheur at King's College Hospital and subsequently in practice for some years in South Kensington. During the 1914–18 war he served in the R.A.M.C. as a radiologist with the rank of major. He was in charge of the radiological department of No. 7 Stationary Hospital at Boulogne and for his services there he was mentioned in dispatches. He was also awarded the Order of St. John of Jerusalem and the Cruz Vermeilha of Portugal. After the war Dr. Curtis Webb was appointed honorary radiologist to the Gloucester Royal Infirmary, and he served in the same capacity at the Children's Hospital and the General and Eye Hospitals at Cheltenham. While in practice in Cheltenham he made several contributions to the literature on electrotherapy, radiology, and radiotherapy. He retired in 1933 but continued to take an active part in the political life of Cheltenham, and during the recent war he did a great deal locally for the Red Cross.

The Services

Air Commodores Abraham B. Briscoe and Christopher Thomas O'Neill, O.B.E., R.A.F., have been appointed Honorary Physicians to the King in succession to Air Vice-Marshal Sir Alan Filmer Rook, K.B.E., C.B., and Thomas McClurkin, R.A.F., respectively, who have vacated the appointments on retirement from the R.A.F.

Medico-Legal

SECRET ADMINISTRATION OF SEDATIVE

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

The Salisbury county court had recently to decide whether a patient has a remedy against a doctor who administers a drug without the patient's consent.¹ Dr. W. J. Drummond sued a woman patient for £17 6s. 6d., professional fees for attendance on her in a Salisbury nursing-home for four months. She counter-claimed for £500 general and £101 4s. special damages.

The patient complained that at the time she was admitted to the home the doctor had said that it would not be necessary to detain her there for more than a few days, but that he had prolonged her stay by causing to be administered to her in her soup and in meat extract secret doses of phenobarbitone, which she had refused to take in the ordinary way. She had found one day an undissolved pellet, and twice every day from then onwards she had hidden the soup and poured it away. She had been nervous and frightened that this would be discovered and the drug put into other food instead. She had lost confidence in doctors and nurses, and as a psychological and physical consequence of the secret administration of the drug her stay had been prolonged for sixteen weeks. She said on cross-examination that she had not packed up and left, because she had had nowhere to go.

Dr. Drummond said in evidence that before she had gone into the nursing-home she had taken phenobarbitone in half-grain (32-mg.) tablets on his prescription. She was a nervous and hysterical patient, and he had prescribed the drug because he had to do something to soothe her. After hearing a broadcast about stolen drugs and their dangers she had refused to take any more. She was beginning to behave in such a childish way and was getting into such a nervous state that he had considered that the simplest way was to ask the matron to give her the drug in her meat extract. In that dose it could not harm a child.

Judge A. H. Armstrong, in a reserved judgment, said the doctor had committed a breach of contract. Where a patient expressly refused to take a particular drug there could not possibly be any implied authority to give it. The doctor could accept the refusal or he could withdraw from the case. He was satisfied that the drug as administered could not have any physical ill effects, but the discovery of the secret administration would be very annoying and distressing to any person. The effect on this patient, who was to the doctor's knowledge unstable emotionally and psychologically, must have been greater than it would have been on a normal person. He gave judgment in favour of the doctor on his claim for fees with costs, but awarded the patient ten guineas on her counter-claim, also with costs.

Presumably to administer a drug without a person's knowledge is a common assault, but if no ill effects were caused the damages could not be more than nominal unless the court desired to make them exemplary. The assault might also constitute a trivial criminal offence. It would not come under the special provisions of the Offences against the Person Act against the administration of a noxious thing.

¹ *Southern Daily Echo*, March 3, 1949.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

A Professorship of Human Ecology in the University is to be established from Oct. 1, with Arthur Leslie Banks, M.D., F.R.C.P., D.P.H., Principal Medical Officer of the Ministry of Health, as the first occupier of the Chair.

Dr. Banks is principal medical officer at the Ministry of Health for the East Anglian, N.W. Metropolitan, and N.E. Metropolitan Hospital Regions, and he has published work on the "National Health Service," "The Care of the Infirm and Long-stay Patient," and "Euthanasia." Qualifying at the Middlesex Hospital in 1926, he graduated with the London degree in 1927 and proceeded M.D. in 1931. He was elected F.R.C.P. in 1948. He is a barrister-at-law of Lincoln's Inn. Cambridge University conferred the honorary degree of M.A. on him in 1946.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended May 28.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever ..	39	5	16	2	1	40	2	13	2	2
Deaths	—	—	—	—	—	—	—	—	—	—
Diphtheria	100	14	23	3	3	151	24	35	14	7
Deaths	1	—	—	—	1	2	—	—	1	—
Dysentery	85	4	40	—	—	122	14	43	3	1
Deaths	—	—	—	—	—	—	—	—	—	—
Encephalitis lethargica, acute	2	—	1	—	—	2	—	1	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Erysipelas	—	—	22	11	3	—	—	28	11	2
Deaths	—	—	—	—	—	—	—	—	—	—
Infective enteritis or diarrhoea under 2 years	—	—	—	—	—	—	—	—	—	—
Deaths	19	4	2	43	—	45	3	13	26	—
Measles*	9,583	953	597	239	180	13,468	1,134	210	139	73
Deaths†	—	—	—	—	—	—	—	—	—	1
Ophthalmia neonatorum	50	7	7	—	—	56	4	12	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Paratyphoid fever	8	—	1(B)	—	—	5	2	2(B)	1(B)	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	485	30	5	4	6	579	37	3	7	—
Deaths (from influenza)‡	10	2	—	1	—	3	—	1	—	—
Pneumonia, primary	156	28	165	37	8	163	26	184	41	8
Deaths	—	—	—	—	—	—	—	—	—	—
Polio-encephalitis, acute	1	—	—	—	—	1	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Poliomyelitis, acute	19	1	1	—	1	20	2	2	5	—
Deaths§	—	—	—	—	—	1	1	—	—	—
Puerperal fever	—	—	7	—	—	—	1	7	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Puerperal pyrexia|| .. ..	102	11	2	—	3	92	13	13	3	—
Deaths	—	—	—	—	—	—	—	—	—	—
Relapsing fever	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever	1,233	80	189	75	25	1,216	98	276	47	23
Deaths†	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	4	—	—	3	—	9	—	—	6	—
Deaths	1	1	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	1	—	—	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—

Infant mortality rate (per 1,000 live births)	—	—	—	—	—	—	—	—	—	—
Deaths (excluding stillbirths)	4,330	631	592	179	111	4,145	658	568	202	104
Annual death rate (per 1,000 persons living)	—	—	11.9	11.1	—	—	—	11.5	12.6	—
Live births	7,930	1269	1024	341	273	8,281	1383	972	449	254
Annual rate per 1,000 persons living ..	—	—	20.5	21.1	—	—	—	19.6	28.1	—
Stillbirths	220	23	32	—	—	224	33	38	—	—
Rate per 1,000 total births (including stillborn) ..	—	—	30	—	—	—	—	38	—	—

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Smallpox

The date of onset in the last case of smallpox notified in England and Wales was May 16. This patient, an unvaccinated close contact, had been admitted to hospital on May 7 as a precaution. After this interval of a month it is assumed that the country is again free from smallpox.

Typhoid Fever

Three cases of typhoid fever, with onset at the end of May, have been notified from Fulham M.B., and the disease is suspected in three other patients. The source of infection is under investigation.

Paratyphoid Fever

Fifteen cases of Vi-phage Type 3A paratyphoid infection have been notified in Tyneside. The vehicle of infection is believed to have been a confection manufactured in Jarrow and consumed about the middle of May. The patients resided in four different sanitary districts. The circumstances suggest that the outbreak was self-limiting, and further cases are not expected.

Discussion of Table

In *England and Wales* there were increases in the notifications of measles 1,105, scarlet fever 125, acute pneumonia 44, and dysentery 30. There was a decrease in the incidence of whooping-cough 213.

The largest increases in the notifications of measles were Kent 383, Surrey 137, and Yorkshire West Riding 92, the largest decreases were London 152, Middlesex 77, and Nottinghamshire 62.

A small rise in the incidence of scarlet fever occurred throughout the country, but the only increase of any size was in Yorkshire West Riding 41. The largest change in the notifications of whooping-cough was a decrease of 46 in Lancashire.

There was an increase of 7 in the notifications of diphtheria in Lancashire, the largest returns during the week were Lancashire 25, London 14, and Warwickshire 10. These three areas accounted for one-half of the total notifications of diphtheria.

The increase in the incidence of dysentery was due to an outbreak affecting 30 persons in Yorkshire West Riding, Leeds C.B. The only other large centre of infection was Lancashire 16 (Oldham C.B. 12).

In *Scotland* there were increases in the notifications of measles 117, scarlet fever 52, and dysentery 21. There were decreases in the incidence of whooping cough 38 and acute primary pneumonia 32. Notifications of dysentery came principally from Glasgow 21, Edinburgh 7, and Dundee 6.

In *Eire* increases were reported in the notifications of measles 45 and scarlet fever 19. There was a decrease of 45 in the incidence of whooping-cough.

In *Northern Ireland* only small changes were recorded. Notifications of measles increased in Belfast C.B. 23 and decreased in Co. Down 18. The incidence of whooping cough increased in Belfast C.B. 13, but decreased in most other areas.

Week Ending June 4

Notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,242, whooping-cough 2,178, diphtheria 93, measles 9,773, acute pneumonia 493, cerebrospinal fever 27, acute poliomyelitis 13, dysentery 99, paratyphoid 7, and typhoid 4.

Medical News

Royal Victorian Chain

On the occasion of his Majesty's birthday the King has conferred the Royal Victorian Chain on Sir John Weir in recognition of long and distinguished personal services. The Royal Victorian Chain is not a part of the Royal Victorian Order, of which Sir John Weir was created a Knight Grand Cross. King Edward VII instituted the Chain in 1902 "as a personal decoration for royal personages and a few eminent British subjects." There have been only eighteen holders of the Chain, the last on whom it was bestowed being Dr Fisher, Archbishop of Canterbury.

Peckham Health Centre Appeal

Peckham Health Centre is appealing for funds, and Lord Nuffield, a former president of the centre, has offered £5,000 to be paid when a similar sum has been raised from other subscribers.

Medical Librarians

The medical section of the Library Association, which now has 120 members, held a conversazione at the National Institute for Medical Research, Hampstead, on June 10, to enable its members to meet Dr Sanford V. Larkey, president of the (American) Medical Library Association and librarian of the William H. Welch Medical Library, Johns Hopkins University, Dr Henry R. Viets, honorary librarian of the Boston Medical Library and president of the American Association of the History of Medicine, and Miss Mildred Naylor, an officer of the Medical Library Association. Both Dr Larkey and Dr Viets came to Europe to attend the Unesco conference on abstracting and indexing which was held recently in Paris (See p. 1091). Dr Larkey extended to those present a cordial invitation to the next annual meeting of the Medical Library Association, which will be held in Boston in June, 1950. Dr Viets reminded the meeting that the foundation of the association had been due principally to the initiative of William Osler, and that a similar attempt by him in Britain had culminated in the creation in October, 1947, of the medical section of the Library Association. Miss Naylor described her association's scheme for the exchange of duplicate medical literature, nearly 100,000 items were distributed in 1948, compared with 240 when the scheme began nearly fifty years ago.

British Cardiac Society

The thirteenth annual meeting of the British Cardiac Society was held at Newcastle, Co. Down, N. Ireland, on June 2, under the chairmanship of Dr S. Boyd Campbell. At the morning session there was a debate on rheumatic heart disease, with special reference to the pathology of rheumatic carditis and the rheumatic heart in pregnancy. In the afternoon, short communications arranged by the honorary secretary, Dr K. Shurley Smith, included papers on ventricular septal defects, isolated (Fiedler's) myocarditis, non-rheumatic interstitial myocarditis, diagnostic problems in congenital heart disease, and radiology of heart failure due to cardiac intarction, and there was a demonstration of a portable apparatus for the treatment of peripheral arterial disease by intermittent venous occlusion.

Directory of Convalescent Homes

The Convalescent Homes Committee of King Edward's Hospital Fund for London has found it necessary, owing to the very large number of alterations arising from the establishment of the National Health Service, to reprint the Directory of Convalescent Homes in its entirety. All communications concerning the directory should be addressed to the secretary to the committee, Mr R. E. Peers, at 10, Old Jewry, London, E.C.2.

International Health Bulletin

The Health Bureau of the League of Red Cross Societies has just published the first issue of a new quarterly, the *International Health Bulletin*. This new journal will appear in English and French, and a Spanish edition is planned. It is intended to keep the National Red Cross Societies, and particularly their medical members, informed about recent advances in the medical and public health fields. This first number includes articles by Dr Brock Chisholm, General Director of WHO, and by Dr Carl J. Pothof, the medical director of the American Red Cross. There are a number of long abstracts from medical journals, the majority of them relating to problems of special interest to the Red Cross.

Manchester Golfers

The Annual Competition of the Manchester and District Medical Golfers' Association was held at Mere, Cheshire, on May 25. There were 87 competitors. The Challenge Cup was won by Dr T. N. Hart (Bolton), with a net score of 74. The captain's second prize was awarded to Dr K. S. Daber (Bowdon), with a net return of 74. Dr D. C. Racker (Manchester) received the Walter Gold Medal for the best gross score of 76, and the Walter Silver Medal was won by Dr C. W. P. Magahy (Prestwich) for the best gross score of 86 from among those with handicaps of ten and upwards. Club prizes were also won by Dr H. J. Wade (Manchester) and Dr M. L. Thomson (Manchester).

COMING EVENTS

Albert Howard Foundation Lecture

The Albert Howard Foundation Lecture will be delivered, under the auspices of the Albert Howard Foundation of Organic Husbandry, at the Royal Society of Arts, 6, John Adam Street, London, W.C., by Dr A. Guthrie Badenoch on Tuesday, June 21, at 5 p.m., with Professor Wilfrid D. Newcomb in the chair. His subject is "Minerals in Nutrition," and a discussion will follow. The lecture is open to non-members and no tickets are required.

Birmingham Region Consultants

A general meeting of all consultants and specialists in the Birmingham Region will take place on Saturday, June 25, at 2.15 p.m. at Nuffield House, Queen Elizabeth Hospital, Birmingham.

Oxford Graduates' Medical Club

The summer dinner of the Oxford Graduates' Medical Club will be held in Brasenose College, Oxford, on Friday, July 15, when the chair will be taken by Professor A. D. Gardner. Lounge suits will be worn. The accommodation is restricted and no guests can be allowed. All Oxford graduates who are medically qualified are members of the club. Tickets will be issued in return for an application card with 30s., the cost of the dinner including wine, sent to Mr. E. G. Tuckwell, M.Ch., F.R.C.S., 73, Harley Street, London, W.1.

Lecture on Analgesia for Obstetrics

A combined meeting of the North of England Society of Anaesthetists and the Newcastle-upon-Tyne Obstetrical and Gynaecological Society will be held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, on Friday, July 1, at 7.30 p.m., when Dr. Robert A. Hingston, of Baltimore, will deliver a lecture on "Analgesia for Obstetrics."

Cancer Course at Cambridge

A course for general practitioners on the diagnosis and treatment of cancer will be held at Addenbrooke's Hospital, Cambridge, from Monday, July 11, to Friday, July 22. Eleven half-day sessions will consist of lectures and demonstrations. The number attending the course is limited to 30. Details may be obtained from the secretary, the Medical School, the Naval Hut, Downing College, Cambridge.

International Conference on Audiology

The second meeting of the International Conference on Audiology will be held in London immediately before the Fourth International Congress of Otolaryngology. Meetings will be held on Friday, July 15, and Saturday, July 16, at the Royal Society of Medicine, 1, Wimpole Street, London, W.1, at 9.30 a.m. and 2.30 p.m., under the presidency of Professor Gunnar Holmgren, of Stockholm, with Professor H. C. Huizinga, of Groningen, as secretary, and an international committee, which includes Drs. Norton Canfield and E. P. Fowler, jun. (U.S.A.), Professor E. Luscher (Switzerland), and Mr. C. S. Hallpike (England). The purpose of the conference is to further the investigation, prevention, and alleviation of deafness by means of modern instrumental, educational, and sociological methods. An important part of the programme will be the study of the problems connected with the provision and standardization, upon an international basis, of audiometers and hearing-aids. The provisional programme is: *Friday morning*: Committee meetings. *Friday afternoon*: Papers on various aspects of audiology. *Saturday all day*: A survey of the work in the field of audiology carried out in England during recent years. Papers will be read by otologists, physicists, and by representatives of the Ministries of Health and Education. There will also be a demonstration of instruments developed and sponsored by the Medical Research Council and Ministries of Health and Education, including hearing-aids, group hearing-aids for use in schools for the deaf, pure-tone and other audiometers. The conference is open to all otologists.

Westminster Medical School Centenary

The centenary celebrations of the Westminster Medical School will be held at Church House, Great Smith Street, London, S.W., on Wednesday, July 13, at 3 p.m., when the Earl of Athlone, Chancellor of the University of London, will open the proceedings. Academic dress will be worn.

Education of Maladjusted Children

The Second International Congress for the Education of Maladjusted Children will be held at Amsterdam on July 18-22. The following subjects will be discussed: (a) sensory defectiveness; (b) feeble-mindedness; (c) "difficult" children; (d) one-sided aptitudes. Particulars may be obtained from the Secretariat, Museum Flat, Weteringplantsoen 2 C., Amsterdam, Holland.

Exhibition of Medical Photography

The Medical Group of the Royal Photographic Society is holding an exhibition of medical photography at the society's house, 16, Princes Gate, London, S.W., from July 4 to 16. Sir Cecil Wakeley will formally open the exhibition at 6.30 p.m. on July 4. It will be open from 10 a.m. to 5 p.m. and admission is free.

SOCIETIES AND LECTURES**Saturday**

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.—At Queen Mary's Hospital for Children, Carshalton Beeches, Surrey, June 18, 2.30 p.m., clinical meeting.

Monday

EDINBURGH UNIVERSITY.—At Physiology Lecture Theatre, University New Buildings, Teviot Place Edinburgh, June 20, 5 p.m., "The Early Days of the Edinburgh Medical School," by Dr. Douglas Guthrie.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., June 20, 5 p.m., "Injuries of the Bladder, Foreign Bodies in the Bladder," by Mr. J. G. Sandrey.

PHARMACEUTICAL SOCIETY (ROCHDALE AND DISTRICT BRANCH).—At "The Carlton," Great George Street, Rochdale, June 20, 8 p.m., "The New Formulary," by Mr. A. G. Fishburn, Ph.C., F.R.I.C. Members of the Rochdale Division of the B.M.A. are invited to attend the meeting.

Tuesday

ALBERT HOWARD FOUNDATION OF ORGANIC HUSBANDRY.—At Royal Society of Arts, 6, John Adam Street, London, W.C., June 21, 5 p.m., "Minerals in Nutrition," Albert Howard Foundation Lecture by Dr. A. Guthrie Badenoch. A discussion will follow.

CHADWICK TRUST.—At 26, Portland Place, London, W., June 21, 2.30 p.m., "Evolution of Industrial Work for Women and Young Persons and its Effect on the National Health," Chadwick Public Lecture by Dr. Sibyl Horner.

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Anatomy Lecture Theatre, University New Buildings, June 21, 5 p.m., "Pneumoconiosis," by Dr. E. R. Boland.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—June 21, 5 p.m., "Varicose Eczema, Ulceration, Etc.," by Mr. A. K. Monro.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., June 21, (1) 11 a.m., "Treatment of Gonorrhoea and its Complications," by Dr. A. H. Harkness; (2) 5 p.m., "Calculous Disease of the Bladder and Urethra," by Mr. F. R. Kilpatrick.

Wednesday

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., June 22, (1) 11 a.m., "Ocular Manifestations of V.D.," by Dr. A. H. Harkness; (2) 5 p.m., "Marion's Disease (Bladder Neck Obstruction) and Vesical Diverticula," by Mr. W. K. Irwin.

Thursday

GUY'S HOSPITAL MEDICAL SCHOOL, London Bridge, S.E.—June 23, 5 p.m., "Thomas Addison—Pioneer of Endocrinology," Addison Lecture by Sir Henry Dale, O.M., F.R.S.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., June 23, (1) 11 a.m., "Chancroid," by Dr. W. N. Mascall; (2) 5 p.m., "The Aetiology, Pathology, and Symptoms of Benign Enlargement of the Prostate, with Indications for Treatment," by Mr. F. J. F. Barrington.

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., June 23, 4.45 p.m., "Some Aspects of Nitrogen Metabolism in the Mammal," by Dr. J. S. Bach.

MEDICO-LEGAL SOCIETY.—At 26, Portland Place, London, W., June 23, 8 p.m., (1) annual general meeting; (2) "The Legal and Economic Status of Women," by Mrs. Florence Earneley, J.P., B.A.

NORTH-EAST METROPOLITAN REGIONAL TUBERCULOSIS SOCIETY.—At "The Harps" Sanatorium, Snakes Lane, Woodford Green, Essex, June 23, 2.30 p.m., "The Assessment of Collapse Therapy in Pulmonary Tuberculosis," by Dr. Philip Ellman.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—June 23, 4.30 p.m., "Psychiatry," lecture-demonstration by Dr. D. Curran.

Friday

CAMBRIDGE MEDICAL SOCIETY.—At Addenbrooke's Hospital, Cambridge, June 24, 2.30 p.m., "Some Problems in Connexion with Injuries to the Knee," by Mr. T. J. Fairbank.

ROYAL SANITARY INSTITUTE.—At Town Hall, West Hartlepool, June 24, 10 a.m., Discussions: "Post-war Legislation and its Effect on Local Health Authorities," to be opened by David T. Jones, M.P.; "Neighbourhood Planning," to be opened by J. Stanley Miles, A.M.I.C.E.

WESTMINSTER HOSPITAL SCHOOL OF MEDICINE, Meyerstein Lecture Theatre, Horseferry Road, London, S.W.—June 24, 5.30 p.m., clinico-pathological meeting, "Haemolytic Anaemia," by Drs. J. G. Humble and R. H. Trinick.

BIRTHS, MARRIAGES, AND DEATHS**BIRTHS**

Farey.—On June 6, 1949, to Mary (née Maish, M.B., B.S.), wife of A. Leonard Farey, a daughter.

Fleming.—On May 22, 1949, at the General Hospital, Newcastle-upon-Tyne, to Margaret (née Primrose Walker), M.A., M.B., Ch.B., and John Mansell Fleming, 25, Roseworth Avenue, Gosforth, a son.

Rutter.—On June 7, 1949, to Norrie, wife of Timothy E. Rutter, F.R.C.S.Ed., of Penwithen, Gerrans, Portscatho, Cornwall, a brother for Timothy and Michael.

Uhma.—On June 5, 1949, at Hammersmith Hospital, London, W., to Halina (née Dabrowska), wife of Dr. C. Uhma, a daughter—Joanna.

DEATHS

Anderson.—On June 5, 1949, at 35, Richmond Hill Road, Edgbaston, Birmingham, Robert Anderson, M.D., late of Erdington, aged 82.

Cowan.—On June 9, 1949, at 15, West Parade, Lincoln, Alistair Forbes Cowan, F.R.C.S.Ed., formerly of Edinburgh, aged 62.

Easterbrook.—On June 5, 1949, at Murrayfield Private Hotel, Edinburgh, Charles Cromhall Easterbrook, M.D., F.R.C.P.Ed., in his 83rd year.

Ferrier.—On June 8, 1949, at 22, Moor Road, Swanage, Dorset, David Hynd Ferrier, M.D., late of Luton, Beds, aged 74.

Gibson.—On June 4, 1949, at "The Gables," New Brighton Road, Emsworth, Hants, Henry Wilkes Gibson, M.B., in his 82nd year.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Lupus Erythematosus

Q.—Is there any evidence that lupus erythematosus has a metabolic origin, as, according to Canadian trials, vitamin E in large doses has influenced the process favourably? Has this finding been confirmed? Also, has the vitamin-B group been tried, and, if so, with what success? Finally, in the dietary management of this complaint has it been noticed that any type of food is of special value or harm?

A.—There is some evidence that acute lupus erythematosus, which is a serious systemic disease, is a separate entity from chronic fixed lupus erythematosus, though it is a fact that on occasion an acute phase is superimposed upon the chronic disease. The cause of lupus erythematosus remains obscure. The very occasional finding of an organism in the blood stream in acute lupus erythematosus, and the occasional resolution of the chronic type following treatment of a focus of infection, have left the impression that the disease is commonly infective or toxic, but the evidence is not very convincing. The condition would seem to be an essential disease of the blood vascular system with an unusual pathology. Vitamin E has been advocated in North America, more particularly for the acute cases, but success has not attended its use in this country. The dosage recommended is 300 mg daily of mixed tocopherols, a preparation containing mixed tocopherols in 30-mg capsules is obtainable.

Foods appear to play no part in this disease, and vitamin-B therapy in ordinary dosage has not proved of any particular value.

Inhalation of Propylene Glycol

Q.—I am employing propylene glycol as a solvent for sodium penicillin salt, and am using the solution, in aerosol form, for the mass treatment of chronic chest diseases in children attending on open air day school. The children are exposed to the aerosol for two hours every school day, and it is intended to continue this treatment for six months to a year or more in each case. Is the prolonged inhalation of propylene glycol vapour likely to have any untoward effects?

A.—Robertson and his colleagues (*J Pharmacol*, 1947, 91, 52) exposed rats and monkeys to continuous high concentrations of propylene glycol vapour for periods of 12 to 18 months. The general condition of the animals, their growth rates, blood counts, and the results of urine examination and kidney function tests did not differ essentially from control groups, nor were any macroscopical or microscopical changes noted at necropsy. These results, together with the absence of any reported ill effects in patients exposed to the vapour, make it unlikely that the regimen suggested will cause any trouble. The children should, of course, be kept under close medical supervision.

Penicillin-Sulphathiazole Snuff

Q.—The use of penicillin and sulphathiazole powder as a snuff has proved effective in aborting colds and in preventing the long period of "snuffles" which so often follows a cold. In using the preparation in this way, is there any danger of producing resistant organisms?

A.—The most common secondary bacterial invader of the common cold (which may be presumed to be due to a virus) is the pneumococcus. It seems possible that the pneumococcus and other organisms play some part in the persistent discharge or "snuffles" which is a common sequel to the cold. Penicillin-sulphathiazole snuff is usually given in a high enough concentration to eliminate organisms, and therefore the risk of breeding resistant strains would be very small. The organism which most readily develops penicillin-resistance is the staphylococcus, and this of course is present in the anterior nares of 40 to 50% of the population. It is doubtful if the staphylococcus plays

much part in catarrhal infections of the upper respiratory tract, but frequent applications of penicillin to the nose might lead to an increase in the proportion of penicillin-resistant staphylococci, and, since the nose is the natural reservoir of the staphylococcus, this might in turn lead to an increase in the incidence of staphylococcal infections with penicillin resistant strains.

Protecting Skin from Mineral Oils

Q.—Would you recommend a suitable preparation for application to the hands and forearms before starting work to ensure protection from dermatitis in petrol-oil and diesel-oil workers?

A.—There is no preparation which, by its application to the skin before work, will "ensure protection from dermatitis." Barrier preparations are only one of the several measures needed for protection against occupational dermatitis, and, where the skin hazard is mineral oil, barrier preparations are not as useful as suitable skin cleansers. Many cleansers are effective in removing oil from the skin, but some of these will also, particularly with prolonged use, remove the skin fat. A neutral sulphonated castor oil (98%) with a wetting agent (2%) is generally recommended to cleanse the skin of mineral oil.

Sterilizing Gum-elastic Catheters

Q.—Can you recommend an efficient method, suitable for general practice, of sterilizing and transporting gum-elastic catheters?

A.—The most convenient way of sterilizing and transporting gum-elastic catheters is by the formalin vapour method. A glass or metal tube with a rubber stopper that is hollow, so that formalin tablets can be inserted into it, is obtainable at most instrument-makers. There is a disadvantage, however, in retaining catheters in such a receptacle for too long moisture tends to collect on the inner surface, as well as some fine dust from the tablets. The catheter should therefore be inserted in the receptacle only a few hours before transport.

Painful Breasts due to Stilboestrol

Q.—A patient suffering from pruritus has found that an ointment containing stilboestrol gave great relief, but after using it for some months the breasts became painful and tender. She is now using the ointment without the stilboestrol. Although it is four months since she used the original preparation, the breasts are still sore, but not swollen or enlarged. Can relief be obtained in this case, and is there any reason to fear that the condition will become malignant?

A.—Stilboestrol even in small amounts is readily absorbed through the skin and could give rise to painful and tender breasts. These effects, however, are not likely to persist for four months after discontinuing treatment, unless some other oestrogen was substituted for the stilboestrol. It may be that the occurrence of symptoms produced a natural anxiety over the possibility of the development of cancer, and the persistence of discomfort is now the result of over anxiety alone. There is no reason to believe that the present treatment or the continued discomfort implies an increased risk of carcinoma, and if a competent medical attendant has failed to find clinical evidence of organic disease probably all that is necessary is a well fitting brassiere and, above all, a comfortable frame of mind.

Sal Volatile and Eau-de-Cologne

Q.—(a) Would you indicate the therapeutic value, if any, of sal volatile? (b) A sufferer from migraine with possible chronic sinusitis, gets partial or complete relief from inhalation of eau-de-Cologne. Can this be attributed to some intracerebral action, or must it relieve only by action on the nose and sinuses?

A.—(a) Spirit of sal volatile contains ammonium carbonate and strong solution of ammonia. When smelt, so that it irritates the mucous membrane of the nose, sensory impulses travel to the medullary centres, stimulating respiration and the vasomotor centre. A discharge of sympathetic impulses quickens the heart and raises the blood pressure.

(b) It is very unlikely that the effect of eau-de-Cologne is due to an intracerebral action, but it is not impossible. Eau-de-Cologne is composed mostly of alcohol with a number of

volatile oils, and it may be that when it is inhaled a certain concentration of alcohol and these oils is formed in the blood and that this affects the blood-flow through the head, so relieving the migraine. It is difficult to understand what action there could be on the nose and sinuses which would take away an attack.

Treatment of Chronic Brucellosis

Q.—In the answer to a question on persistent symptoms after brucella infection (Feb. 5, 1949, p. 254) you suggest simultaneous administration of streptomycin and sulphadiazine. Can you give me references for details of dosage?

A.—The following papers contain details of the dosage of streptomycin and sulphadiazine used in the treatment of chronic brucellosis: Eisle and McCollough, *J. Amer. med. Ass.*, 1947, 135, 1053; Pulaski and Amspacher, *New Engl. J. Med.*, 1947, 237, 419; Spink, *Ann. intern. Med.*, 1948, 29, 238; Scowen and Garrod, *British Medical Journal*, 1948, 2, 1099.

It seems likely that aureomycin will displace the combination of streptomycin and sulphadiazine in the treatment of this infection, and details may be found in Bryer, Schoenbach, Chandler, Bliss, and Long (*J. Amer. med. Ass.*, 1948, 138, 117) and Spink, Hall, Schaffer, and Braude (*ibid.*, 138, 1145). The immediate results of treatment with aureomycin in a case of *Br. abortus* infection were also recorded in the *Journal* of June 11 at p. 1037.

Subconjunctival Haemorrhage in a Baby

Q.—At birth a baby had a bilateral symmetrical haemorrhage, presumably subconjunctival, encircling both corneae. Now, a month later, the condition is clearing in the left eye, but little if any change is seen in the right eye. Is any treatment indicated? Can the mother be reassured that the condition is only temporary, and that in course of time it will resolve completely?

A.—The diagnosis of subconjunctival haemorrhage is probably correct. Its appearance in both eyes and persistence for a month in one eye are rather unusual. The prognosis depends on the diagnosis in this case, and it is impossible to be dogmatic without actually seeing the baby. On the whole, it is probably safe to assume that the condition is temporary and will resolve completely.

Effects of Chemical Contraceptives

Q.—Have any investigations been undertaken to show the part played by chemical contraceptives in the causation of abortion and foetal abnormalities? Surely an injured spermatozoon must occasionally fertilize an ovum and give rise to an abortion or to the birth of a deformed infant?

A.—The possibility that chemical contraceptives may have such an effect has been considered and discussed for many years, but so far there is no reliable evidence to support the theory that this risk exists. As the first effect of spermicidal agents is on the motility of spermatozoa, it seems unlikely that a spermatozoon which is damaged would ever reach the ovum. Moreover, it has not yet been established that a high proportion of abnormally developed spermatozoa in the semen is related to the incidence of abortion and foetal malformation, although many writers have suggested it, and it seems a reasonable possibility.

Cephalin-Cholesterol Flocculation Test

Q.—Would you kindly let me know details of the procedure for extracting cephalin from dried sheep's brain? Would you also tell me how to carry out the cephalin-cholesterol flocculation test?

A.—The preparation of cephalin from sheep's brain and its use for the cephalin-cholesterol flocculation test have been described by Hanger (*J. clin. Invest.*, 1939, 28, 261).

Preparation of Cephalin.—Sheep brains are dehydrated by three extractions with acetone and the dry tissue powder is three times extracted with ether (free from peroxides). The ether extracts are concentrated *in vacuo* and the crude cephalin is precipitated by the addition of four volumes of absolute alcohol. The resulting precipitate is dissolved in the minimum amount of ether, and the accompanying cerebroside impurities are precipitated by chilling and removed by centrifugation. The supernatant ether solution is again precipitated with four volumes of absolute alcohol, chilled, and the precipitate is filtered, washed with alcohol and acetone, and

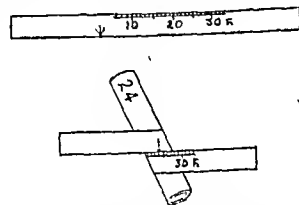
desiccated. The cephalin preparation is a brown powdery material containing traces of other lipids. These, however, do not take part in the reaction.

Technique for Flocculation Test.—A stock solution is prepared by dissolving 100 mg. of sheep-brain cephalin and 300 mg. of cholesterol in 8 ml. of ether. This solution can be kept many months without deterioration in a well-stoppered container. An emulsion of a cephalin-cholesterol complex may be prepared by adding (slowly and with stirring) 1 ml. of the stock ether solution to 35 ml. of freshly distilled water warmed to 65° to 70° C. and then heating slowly to boiling. The mixture is allowed to simmer until the final volume is reduced to 30 ml. During the heating all coarse granular clumps are dispersed to a stable, milky, translucent emulsion and all traces of ether are driven off. After allowing it to cool to room temperature the preparation is ready for testing, which consists in adding 1 ml. of the emulsion to a test tube (preferably a centrifuge tube) containing 0.2 ml. of the patient's serum diluted with 4 ml. of normal (0.85%) saline. After being thoroughly shaken and stoppered with cotton, the tube is allowed to stand undisturbed at room temperature. At the end of 24 and 48 hours the amount of flocculation and precipitation that has taken place is noted. With normal human sera the emulsion remains as a stable homogeneous suspension, but with sera from patients with diffuse hepatitis the lipid material tends to flocculate and precipitate to the bottom of the tube. A reaction recorded as + + + + indicates a complete precipitation, leaving the supernatant liquid water-clear. Gradations of the reaction between negative and + + + + are designated + or ++, or + + +. No test should be regarded as negative until 48 hours have elapsed without flocculation having occurred.

NOTES AND COMMENTS

Safe Dose of Acetylsalicylic Acid.—Dr. A. PINEY (London, W.) writes: In "Any Questions?" (April 23, p. 735) there is rather too sweeping an indictment of prolonged treatment with acetylsalicylic acid, inasmuch as menaphthone is mentioned as the only available method of counteracting the effect of a large dose on the prothrombin level. Szues has shown (and his observations have now been extensively confirmed) that the addition of calcium succinate greatly reduces (or abolishes) this effect (*Ohio St. med. J.*, 1947, 43, 1035). Thus 120 gr. (8 g.) of acetylsalicylic acid for ten days causes a fall of about 20% in blood prothrombin, and the addition of 90 gr. (6 g.) of calcium succinate to the daily dose prevents the fall. For prolonged treatment such a mixture is obviously more satisfactory than is preliminary administration of menaphthone.

Grading of Catheters.—Mr. J. A. CARR (Ashton-on-Ribble, Preston) writes: Your answer ("Any Questions?" May 14, p. 879) on the grading of catheters properly advocates the use of the Charrière scale, and draws attention to the failings of the characteristically English scale which . . . "follows no rule, but its numbers are generally about two less than the American" (Keyes, E. L., and Ferguson, R. S., *Urology*, 1936). A difficulty arises in applying catheter scales, which as you point out are of diameter, to instruments which are not circular in cross section. These instruments should be given the grade of the catheter which has the same circumference, for that is what the urethral mucosa has to accommodate. Some time ago I devised a measuring strip for the purpose of checking the grading of urethral instruments. In the illustration there is an accurate reproduction of the measuring strip, and a sketch showing its method of use. The scale is drawn by making the distance from the point of the arrow to the graduations (at the opposite edge of the strip) equal to the circumference of a catheter of the same grading—e.g., a distance of 3.14 cm. in the case of 30F.



All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: Aitology, Westcent, London. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: Britmedads, Westcent, London. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association, TELEPHONE: EUSTON 2111. TELEGRAMS: Medisecra, Westcent, London.

B.M.A. SCOTTISH OFFICE: 7, Drumshough Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JUNE 18 1949

THE SECRETARY REPORTS



MINISTRY'S TERMS FOR HOSPITAL STAFFS

The terms and conditions of service of hospital medical and dental staff, and the Ministry's explanatory memorandum (*Supplement*, June 11, p. 314), represent the limit to which the Joint Committee has been able to secure concessions by negotiation.

During the next few weeks consultants and specialists will have an opportunity of discussing the terms at meetings. A number of the more important issues are discussed below, including a comparison between the representations made by the Joint Committee and the reactions of the Ministry as embodied in the final terms of service.

Senior Hospital Medical Officers

The Joint Committee has expressed the view that no proper distinction can be drawn between junior specialists and full specialists. A practitioner is either a specialist or not, and it is a matter for regret that the Ministry should have suggested to Review Committees that so-called junior specialists should be graded as senior hospital medical officers. The Joint Committee therefore asked that a system of appeal should be established by which a practitioner not satisfied with his grading can secure a review of his assessment by a committee other than the one which made the first assessment. Further, the Joint Committee sought an assurance that no specialist subsequently appointed would be graded as a senior hospital medical officer and that no additional appointments would be made to this grade except in such limited field as may be agreed between the Ministry and the Joint Committee.

The Ministry proposes that senior practitioners performing clinical duties who are not of consultant status and are not registrars be appointed to the senior hospital medical officer grade, but that the term need not be adopted as a title describing individual officers holding the posts in this grade. Boards are free to use whatever terminology is preferred—e.g., an anaesthetist holding a post in the senior hospital medical officer grade might be given the title of "anaesthetist"—a specialist in the same field being called a "consultant anaesthetist."

On the question of appeal, the Ministry has agreed that aggrieved practitioners shall have a right of appeal to the Review Committee, the committee being enlarged for the purpose by the addition of two members—one nominated by the appropriate Royal College, and one drawn from the Review Committee of an adjoining hospital region.

Security of Tenure

The Joint Committee has sought to secure adequate safeguards for consultants and specialists holding appointments in the hospital service and has put forward the following proposals on security of tenure.

Where the appropriate committee of a board proposes to recommend to the board the termination of a specialist's contract, the board, before considering the matter, should refer it to a central professional committee for examination, the board being directed thereafter to proceed or not to proceed with the termination of the contract of the practitioner in question in the light of the findings of the central professional committee.

The central professional committee should consist of the Chief Medical Officer of the Ministry as chairman, two registered medical practitioners selected by him, and three specialists nominated *ad hoc* by the Joint Committee. The chairman should not have a casting vote.

An aggrieved specialist should have the right to appear personally before the central professional committee, and to have the assistance of a professional colleague if he so desires.

The Joint Committee considers that the following provision should be included in Paragraph 14 and embodied in the contract as part of the terms of service:

In conformity with the assurance given by the Minister of Health that existing hospital staffs would be taken over at the appointed day, and that after the review of the specialist services boards will offer new appointments to their staffs either in their existing or in other hospitals, security of tenure of the number of sessions of specialists rendering part-time service shall be maintained. Where the number of sessions performed by a specialist at any one hospital is substantially curtailed through no fault of the specialist, the regional hospital board (or board of governors either directly or in conjunction with the regional hospital board) shall be responsible for providing alternative sessions in another hospital in the region. Where the board is unable to do so the Minister shall assume responsibility for offering a suitable alternative post under another board. The same procedure shall apply to new entrants.

Medical superintendents and senior hospital medical officers should have the same security of tenure in their appointments as specialists.

The Ministry proposals do not go as far as those put forward above. In effect they provide that, where a consultant considers that his appointment has been unfairly terminated by a board, he shall be entitled to send a full statement of the facts to the Minister, who will obtain the written views of the board concerned and put the case before a professional committee (consisting of representatives of the Ministry and of the profession, under the chairmanship of the Chief Medical Officer) for its advice. The committee will have discretion to interview both parties if it thinks fit. In the light of its advice the Minister may confirm the termination of services or direct reinstatement, or arrange some third solution agreeable to the parties concerned, such as re-employment in a different post.

Although it is envisaged that this procedure will be completed before the board's decision is put into effect, the machinery of dismissal with its implied stigma is put into operation before the consultant has had an opportunity of stating his case to the appeal body.

The terms include a paragraph to the effect that, where a change of organization in the hospital and specialist services involves displacement or serious disturbance of a part-time consultant's services, the board has a moral obligation to "render the greatest possible assistance" to the consultant to obtain comparable work in another hospital.

Medical Superintendents

The Joint Committee considers that rates of remuneration for medical superintendents should not be prejudiced by considerations of policy on what should be the appropriate form of hospital administration in the future. Therefore the remuneration attached to hospital appointments in the field of medical administration should be appropriate to the status and qualifications of a medical practitioner.

The Joint Committee accordingly recommended:

(i) that where a medical superintendent is classified as a specialist he should be remunerated as a specialist whatever the proportion of time spent on administration;

(ii) that a medical superintendent not classified as a specialist should be on a salary scale of £1,500 to £2,500, according to the size and character of the hospital and the duties involved.

The Ministry proposes that a medical superintendent be paid a salary consisting of a fraction of the whole salary of a consultant or senior hospital medical officer according to his grading in respect of the time given to clinical work and a fraction of the appropriate rate for hospital administrative staff for the time given to administrative work.

The Ministry has, however, conceded the point that when a whole-time officer is engaged almost wholly on clinical work, and gives only a small proportion of time to administrative duties, his appropriate clinical remuneration shall not be affected.

Part-time Consultant Appointments

In general, the Ministry has accepted the Joint Committee's proposals for calculating the remuneration of part-time specialists, and in the explanatory memorandum points out that boards are expected to make a pre-contract assessment of the duties attached to the post in terms of the time which should be taken by an average practitioner to perform the duties. There will therefore be no need for consultants to "clock in and out."

It is recognized that consultants engaged in teaching duties will require more time in undertaking a session than a non-teacher, and this factor will be taken into account in assessing the number of notional half-days. Arrangements will be made for the pre-contract assessment to be reviewed from time to time.

Part-time Registrars

Part-time appointments in the registrar grades will be calculated on a number of notional half-days.

This is a new point which did not appear in the provisional terms.

Maximum Remuneration for Part-time Appointments

It is proposed that the maximum remuneration for part-time specialists shall be $\frac{9}{11}$ of the whole-time remuneration appropriate to the officer concerned and for registrars $\frac{9}{11}$ of the whole-time salary.

Exceptional Consultations

The Joint Committee has urged that payments for exceptional consultations should be on a sessional basis at the rate appropriate to the seniority of the specialist concerned—i.e., at the same rate as for the specialists' contractual duties. But the Ministry has adhered to its original proposal that payment should be at the rate of 5 guineas a visit, any operative work being included.

Domiciliary Consultations

The Ministry has agreed to the Joint Committee's suggestion that the title "domiciliary visit" should be changed to "domiciliary consultation." This change is important because it makes a distinction between consultations at the request of a general practitioner and domiciliary visits for the purpose of routine treatment such as are carried out by tuberculosis officers.

The Joint Committee considered that whole-time specialists should not in principle undertake domiciliary consultations except (a) where there is no part-time specialist available or (b) where the character of the specialty is such as to necessitate the attendance of a whole-time specialist. The Ministry proposes that whole-time officers should undertake domiciliary work but that their liability in this field should be clearly defined and limited and should not be additional to normal whole-time commitments but part of them. Whole-time specialists will not receive additional payments for domiciliary consultations. The terms of service provide for domiciliary consultations to be undertaken by senior hospital medical officers.

The Ministry has not given effect to the Joint Committee's proposal for an increase in the travelling and subsistence allowances or for the removal of the ceiling of remuneration for domiciliary consultations, but specialists undertaking this work are given the option of having the maximum calculated as 200 guineas in any one quarter or 800 guineas in any one year.

Clinical Consultants Teaching Medical Students

The Joint Committee has pressed for a national agreement for the payment of clinical teaching to be negotiated and promulgated before contracts are offered. The Ministry proposes that whole-time clinical consultants engaged in teaching shall hold honorary unpaid appointments with the appropriate hospital board and shall receive from the board appropriate expenses for hospital work. They will also be eligible for distinction awards. Part-time specialists who teach will be remunerated by hospital boards (including distinction awards and expenses) in addition to any remuneration they may receive from the university or teaching school for teaching duties.

Clinical Consultants Engaged in Teaching (Document, paragraph 9)

The University Grants Committee in making grants to universities will have regard to the following salary rates (operating from April 1, 1949) for holders of whole-time clinical posts in medical and dental schools:

Professors: Within the range of £2,250 to £2,750.

Lecturers: £600 to a maximum within the range of £1,500 to £2,000 (or £2,500 for posts carrying special responsibility).

Readers: Within the range of £1,500 to £2,000 (or £2,500 for posts carrying special responsibility).

Boards will pay no remuneration whatsoever to holders of these posts or to clinical professors, heads of university departments, etc., who devote a large part of their time to university work. (In cases of doubt the university or school should be asked whether they regard the clinical teacher as coming under paragraph 9 (1) or 9 (2) of the Terms of Service.) These officers will hold honorary unpaid appointments with the board and will thereby be eligible for distinction awards. Where an award is granted, the board will pay over to the university or medical or dental school the value of the award (or, in the case of holders of part-time teaching appointments, the appropriate proportion of the value) so that the university or school may include this in the remuneration they pay to the teachers. This remuneration is not superannuable under the National Health Service Superannuation Scheme.

The Joint Committee considers these proposals to be inadequate, and have urged that discussions on a national level should be held as soon as possible.

Determination of Salaries Payable from July 5, 1948

The salaries of consultants, payable from July 5, 1948, will be the salary which the officer would have been receiving on that date had the proposed system of remuneration been in operation since the date on which he first accepted a hospital staff appointment with full clinical responsibility.

It is stated that there must have been no break of service, but the Ministry has agreed with the Joint Committee's contention that war service or national service on call-up will not constitute a break for this purpose.

In the case of senior hospital medical officers, boards have discretion to decide at which point in the salary scale existing staff should start provided that the starting salary shall in no case be higher than that which the officer would receive were his position on the scale determined by age alone. Officers who were transferred under Section 68 of the National Health Service Act and who, immediately before July 5, 1948, were receiving salaries better than those now introduced will be entitled to receive their previous salary scale and conditions of service on a personal basis for so long as they remain in the same appointment, or another appointment of the same or greater responsibility, as the one they held at the appointed day.

Car Allowance

The Joint Committee made a number of recommendations for improvement of the travelling allowances. These recommendations are not reflected in the final terms.

Are the Terms Acceptable?

Only the more important points in the final terms have been referred to above, and the comparisons drawn between the recommendations of the Joint Committee and the Ministry's final terms are not a substitute for the two documents published last week. The task before consultants and specialists is clear. It is for each individually to decide whether the terms are sufficiently acceptable to justify consultants and specialists signing the permanent contracts offered to them. The Joint Committee is seeking the views of its constituent bodies on this issue and will meet on July 5 to decide the character of the advice to be given to the profession. The Central Consultants and Specialists Committee, before expressing its view, will have before it the opinions of the various regional committees. In the meantime, specialists are again advised not to sign permanent contracts until the Central Committee has met and expressed its view.

A NON-MERCURIAL FUNGICIDE FOR TINEA PEDIS

The summer season brings an increase in the number of cases of epidermophytoses of the feet (athlete's foot) and similar mycotic infections of the axillæ and perineal regions. MYCIL is a non-mercurial fungicide, evolved in the laboratories of The British Drug Houses Ltd., which is strongly inhibitive to the growth of the causative organisms of tinea pedis.

MYCIL is issued both as an ointment and as a powder. Clinical results confirm the effectiveness of the combined application.

MYCIL Dusting Powder is particularly useful as a preventive against re-infection when clinical cure has been obtained.

MYCIL

TRADE MARK

ointment
Containers of 1½ oz

DUSTING POWDER
Sprinkler drums

Literature will be forwarded on application

MEDICAL DEPARTMENT

THE BRITISH DRUG HOUSES LTD. LONDON N.1

TELEPHONE: CLERKENWELL 3000

TELEGRAMS: TETRADOME TELEY LONDON

MYCE 9



LACTALUMINA damps down acidity

Lactalumina, a 6% colloidal dispersion of aluminium hydroxide, although palatable damps down excess gastric acidity without the excitation of appetite or the stimulation of "rebound" hydrochloric acid. Disturbance of systemic acid base equilibrium is avoided. Lactalumina is the preparation of choice in the long term treatment of peptic ulcer.



THE CROOKES LABORATORIES LIMITED · PARK ROYAL · WIMBORNE · DORSET

N.W. 10

LAWS OF MEDICINE

Bell's Law

*"The anterior roots of
the spinal nerves are
motor, and the posterior
roots are sensory"*



This illustration, drawn by Bell himself, is taken from his book on the study of nerves, published in 1816. SIR CHARLES BELL (1774-1842) was equally eminent as a surgeon and an anatomist. He was Surgeon to the Middlesex Hospital from 1815 until 1835, when he was appointed to the Chair of Surgery in Edinburgh.

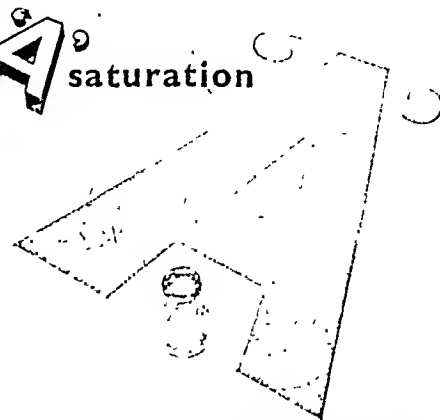
TO BELL and other great pioneers of the nineteenth century, we owe the beginning of modern knowledge of anatomy and physiology. More recent and even more spectacular is the advance attained in therapeutics since the introduction of synthetic compounds.

In this and every other branch of drug manufacture, the Boots organisation is constantly active to meet the needs of modern therapy. Behind its great resources for research and production there is a long tradition of service to the medical profession.

BOOTS PURE DRUG CO. LTD.
NOTTINGHAM ENGLAND



P-4

for swift **A** saturation

Intolerance, or prejudice against fat-rich foods must ultimately result in a marked deficiency of vitamin A. Too often this deficiency goes undetected until such symptoms as dry, scaly eruptions, poor dark adaptation or general susceptibility to infection bring the sufferer to your surgery. Rapid vitamin A saturation can normally be achieved by giving 'Prepalin' orally in capsule form. In exceptional cases, however, 'Prepalin' may be given by intramuscular injection. Even infants tolerate 'Prepalin' by mouth perfectly well, and 'Prepalin' Liquid given regularly in the early years is a wise precaution against the disorders of growth that characterise avitaminosis A.

PREPALIN

CAPSULES: Each capsule contains 24,000 i.u. of vitamin A.
In bottles of 25 and tins of 100.

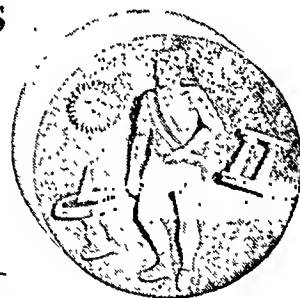
LIQUID: 72,000 i.u. per cc. In 8 cc. bottles.

1 cc. AMPOULES: 100,000 i.u. 6 x 1 cc. 12 x 1 cc.



GLAXO LABORATORIES LTD., GREENFORD, MIDDX. BYRON 3434

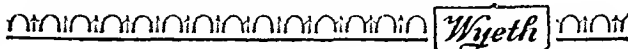
TEMPORIS ARS MEDICINA FERE EST (OVID)



The art of medicine is generally a question of time. With the peptic ulcer patient, as is well known, the rate of healing is determined by the ulcer's freedom from irritation. By rapidly buffering excess acid and at the same time avoiding acid rebound, 'ALUDROX,' a suspension of 5.6% colloidal aluminium hydroxide in gel form, ensures rest for the ulcer. Pain is relieved and time taken for healing reduced to a minimum.

ALUDROX
Aluminium hydroxide gel

JOHN WYETH & BROTHER LIMITED
Clifton House, Euston Road, London, N.W.1
BEPLEX - ENDRINE - PETROLAGAR - PLASTULES



National Health Service

FACTORY MEDICAL SERVICES

Factory inspectors have recently investigated the medical services in different kinds of factories in Britain for the Ministry of Labour. The inquiry was carried out on the suggestion of a subcommittee of the Industrial Health Advisory Committee.

The inquiry shows that out of 243,769 factories in Britain 4,499 have definite arrangements for some kind of medical services other than statutory examinations of young persons. General medical supervision is provided in 2,525 factories, supervision of first-aid and ambulance-room services in 2,511, and in 2,274 factories particular groups of workers—e.g., those subject to special health risks—are given a periodical medical examination.

A periodical medical examination of all workers is given at the factory in 229 instances, and at the doctor's surgery in 18. New entrants and applicants are examined in 1,558 factories and at the doctor's surgery in 225. At 1,159 factories there is provision at the factory for examining workers returning after illness, and at 141 at the doctor's surgery.

Group Medical Services

The inquiry shows that there appear to be only three schemes of group medical services for small independent factories as distinct from factories run by large or closely associated concerns. These are at the trading estates at Slough, Bridgend, and Hillington. The Slough scheme covers 113 factories, of which 33 employ fewer than 26 workers; the Bridgend scheme covers 39 factories, of which 15 employ fewer than 26 workers; and the Hillington scheme covers 126 factories, of which 69 employ fewer than 26 workers.

Extra Supervision

Inspectors were asked whether in their districts there are any industries which predominantly stand out as having factories with arrangements for medical supervision beyond legally compulsory medical examinations. Most of the replies were negative, but it seems that the following did fall into that category: dockyards and other factories occupied by the Admiralty, Royal Ordnance factories, the aircraft industry, shipbuilding, iron and steel manufacture, the metal tube industry, the chemical industry (particularly at factories occupied by Imperial Chemical Industries), the tobacco and cigarette industry, electric cable and large electrical manufacturing undertakings, and cotton spinning.

Factory Doctors

Whole-time service is given by 53 doctors who hold appointments as "appointed factory doctors," and 586 who are not "appointed factory doctors." Of appointed factory doctors doing part-time work, 94 do a substantial amount (more than 12 hours a week on the average), 245 between three and 12 hours a week, and 1,397 three hours a week or less; of those not appointed factory doctors, the numbers are respectively 111, 406, and 584.

REVIEW COMMITTEES

Enlarged to Hear Appeals

When review committees of regional boards hear appeals from practitioners who disagree with their grading they will be enlarged by the addition of two members—one nominated by the appropriate Royal College according to the speciality of the practitioner, and one drawn from the review committee of an adjoining hospital region. This decision is a result of discussions between the Ministry and the Joint Committee. Similarly, the Ministry requests that boards of governors will arrange that when cases are reconsidered the committee which originally reviewed them shall be enlarged by the addition of two members drawn from the medical staff committee of another teaching

hospital, one of whom should be of the speciality of the practitioner whose grading is under review.

Further Appeal

Practitioners whose appeals were considered by a reviewing committee identical with the committee which first graded them will be given a further fortnight in which to lodge an appeal, so that it can be referred to the enlarged committee.

Limitation of Appeals

The Ministry has cancelled the proviso that remuneration at a higher rate as a consequence of any regrading on appeal shall be applicable from the date of regrading only, and not retrospectively, where the regrading is completed after July 5 next. Instead, no appeal lodged with a regional hospital board or board of governors after July 4, 1949, or more than 14 days after the notification of grading to the practitioner, whichever is the later, will be considered. Any practitioner whose appeal is out of time, and who subsequently obtains a consultant post upon the recommendation of an advisory appointments committee constituted under the National Health Service (Appointment of Specialists) Regulations, 1948, will not be able to claim retrospective adjustment of salary at the higher rate from July 5, 1948.

HOSPITAL EYE SERVICE

The Minister has decided that reversible frames and frosted and Chevasse lenses may be supplied under the National Health Service without charge to the patient. Laminated safety lenses may be supplied under the Service, but the patient is normally required to contribute part of the cost.

Glasses may be repaired, except when the damage is due to carelessness, free of charge under the hospital eye service. This condition applies also to those glasses for which the patient has contributed part of the cost.

HOSPITAL BUDGETS

BEDS NOT TO BE CLOSED

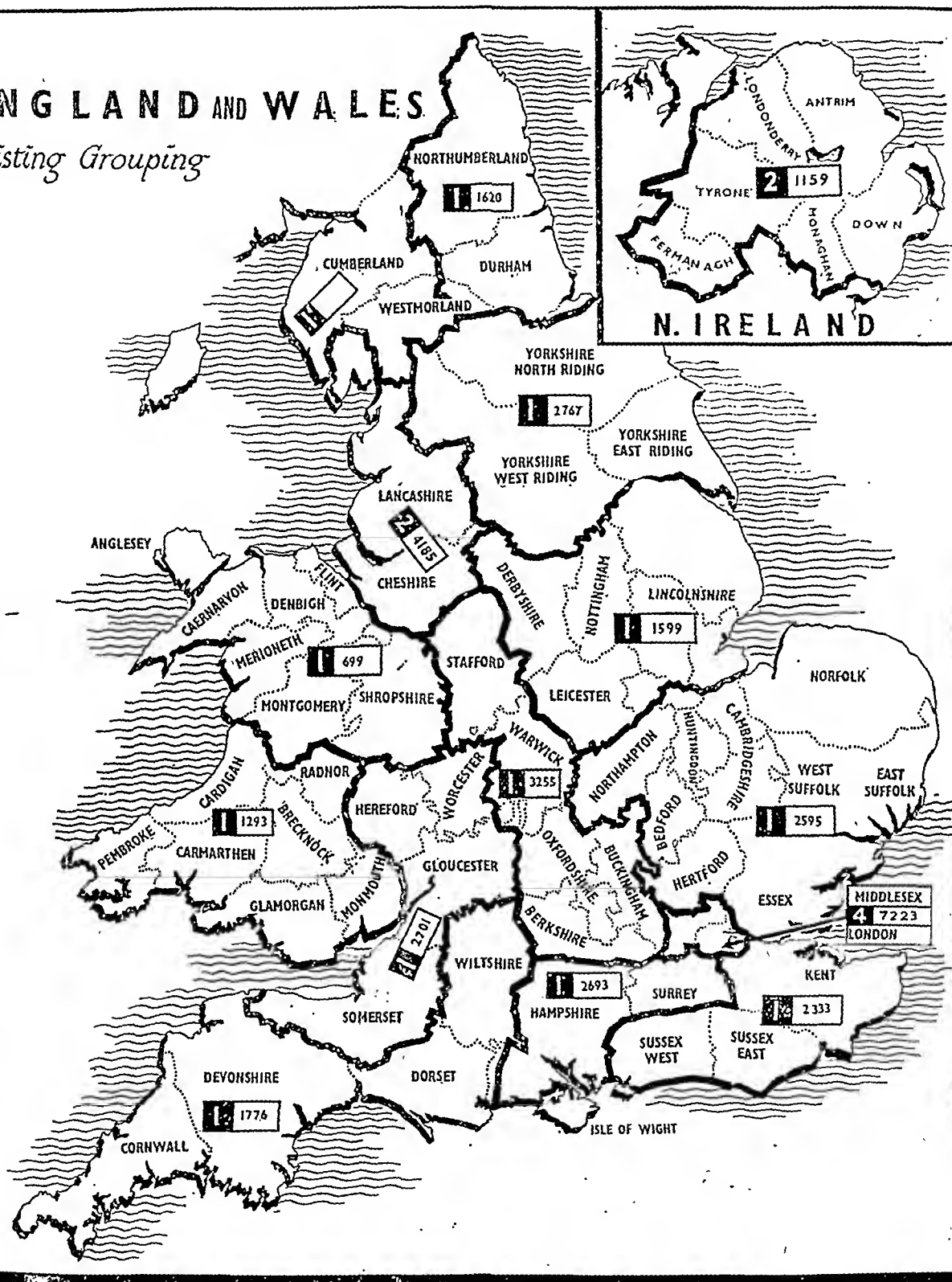
The Minister of Health has sent a letter to hospital boards emphasizing that economies should not result in the closing of beds or the reduction of other services essential to the care and welfare of patients. In certain special cases it may be necessary to provide for expenditure on development now in hand involving the opening of additional beds, recruitment of staff, and the provision of other essential services which in the view of the boards are required in the interests of the patients.

The Minister relies on the boards in preparing revised estimates to exercise close financial vigilance and to budget only for services which they are satisfied must be brought into operation during the current financial year. Estimates should be based on the assumption that existing services are to be maintained; they should provide for developments in progress, opening unstaffed beds, and allow for recommended wage increases.

HOSPITAL ENDOWMENTS FUND

The Minister has made regulations (S.I. No. 482, 1949) which provide that, after the discharge out of the Hospital Endowments Fund of certain liabilities transferred to the Minister of Health by the N.H.S. Act, 1946, the balance of the fund will be apportioned between regional hospital boards and hospital management committees by reference to the number of beds in the hospitals which they control. The income of the fund is to be distributed to the boards and committees proportionately to their shares.

ENGLAND AND WALES

Existing Grouping

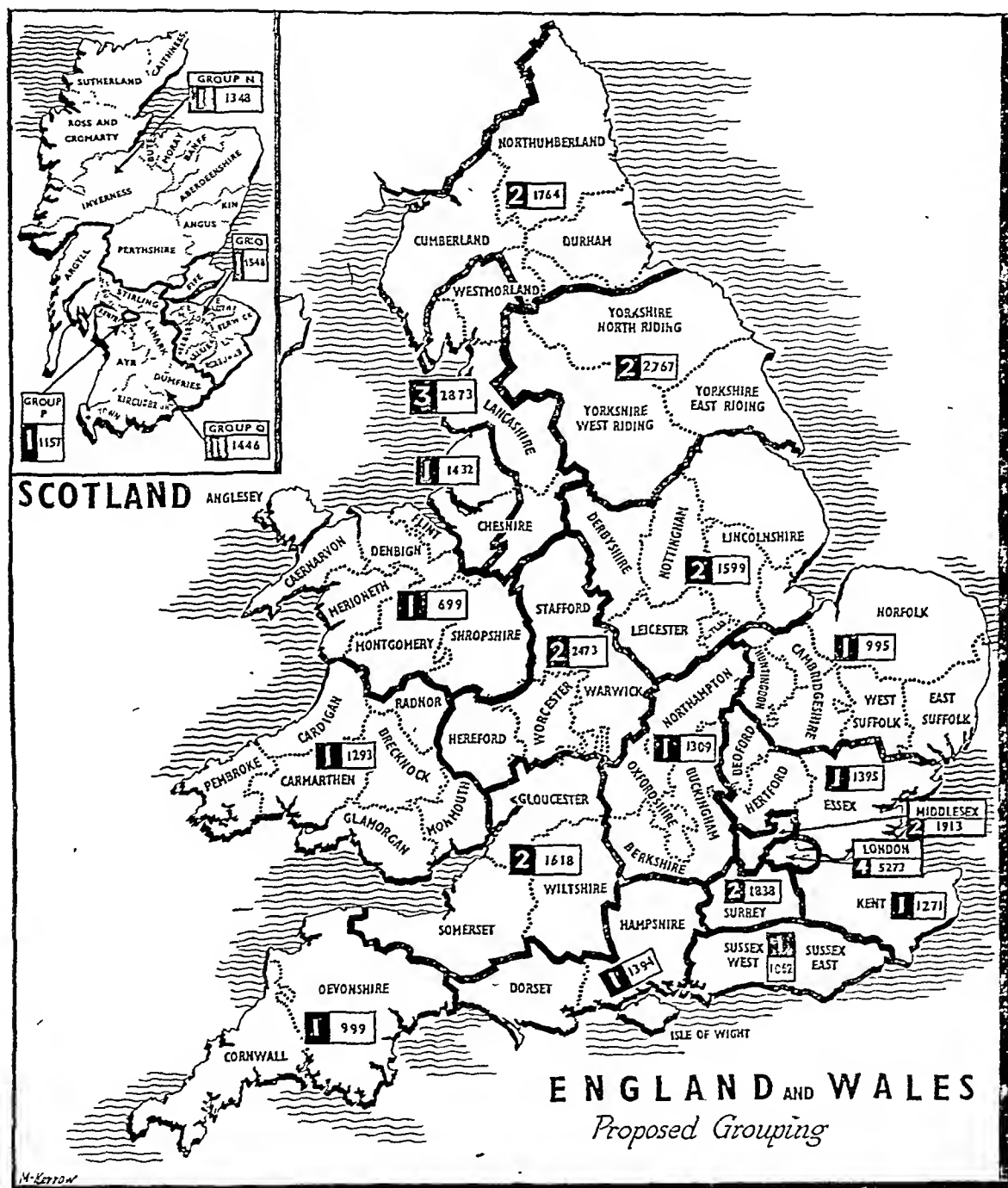
ELECTION TO COUNCIL

GROUPING OF BRANCHES AND DIVISIONS

The Council's recommended plan for the grouping of Branches and Divisions for the election of 37 members to Council was published in the *Supplement* of May 28 (p. 293). These maps illustrate the grouping as it is at present, and as it is proposed. The figures in white show the number of members to be elected; the figures in black the approximate number of electors. The proposed changes are shown on separate maps for England

and Wales. In the Lancashire and Cheshire and Isle of Man group a line on the map shows a suggested subdivision, but it will rest with the Lancashire and Cheshire Branch to suggest the precise areas (Supplementary Annual Report of Council).

The existing grouping for the direct election of four members to Council by members of the Branches in Scotland is retained.



Under the proposal submitted by the Council the representatives in the Representative Body of the constituencies in Scotland will elect two members to Council in substitution for the existing arrangement under which Groups N and O, and P and Q, respectively elect one member each. The groups in Scotland are shown on the map lettered as they are at present. Similarly, the representatives of Welsh constituencies will continue to elect one member to Council.

At present Northern Ireland elects two members to Council, one by the direct method and one by the representatives of

constituencies. Under the proposed new plan the Northern Ireland Branch will elect two members to Council by the direct method.

Consequent on the increase in the number of members to be directly elected to Council, the procedure under which the representatives in the Representative Body of constituencies in England elect eight members to Council will be discontinued. Further, the number of members of Council to be elected by the Representative Body as a whole will be increased from eight to ten.

GENERAL MEDICAL SERVICES COMMITTEE

Questions of remuneration and of Whitley machinery and arbitration occupied the early part of the meeting on June 2, which was reported in the *Supplement* of June 11 (p. 328). The assessment of payment for temporary residents was then considered. The Remuneration Subcommittee had found that the old method of adjustment as between one area and another no longer justified the labour involved, and recommended that a direct payment be made in respect of every temporary resident, the charge—a direct one on the central fund—to be 15s. for each ordinary "temporary," and, provisionally, 2s. 6d. for each resident in a convalescent home.

The total amount paid out for temporary residents in England and Wales during the first quarter of the present year was £62,298, and for Scotland something like £10,000. A member said that in Blackpool during the same period the number was 4,256, so that evidently a considerable sum of money was involved. Discussion took place on the definition of "temporary resident" and of "treatment." Was the giving of a certificate "treatment"? Dr. Jope said that any person who resided within an area for a period exceeding 24 hours should be regarded as a temporary resident; if the residence was for less than that time the case would constitute an emergency.

The matter was referred again to the Remuneration Subcommittee for action along the lines of the discussion.

Foreign Visitors

Asked whether any steps had been taken to secure safeguards concerning foreign visitors who benefited from the Service during their stay in this country, Dr. Wand, the chairman, explained that the Ministry's view was that, while at any particular moment a certain number of foreign visitors might be in this country participating in the benefits of the Service, it was probable that a corresponding number of British people were abroad, and were therefore outside the responsibility of the practitioner on whose list they were. It was also pointed out that it was much easier to get on the list than off the list.

It was reported that Professor Bradford Hill had agreed to undertake a statistical inquiry for one full year as from Oct. 1 into the work done by general practitioners. Professor Hill had at first expressed himself as doubtful concerning the value of the inquiry if it involved a comparison with pre-war N.H.I. figures covering less than half the population. He had been informed that the purpose of the inquiry was to discover how much work practitioners were now doing and to assess the case for improvement of remuneration on the basis of the number of items of service rendered. He had consented to undertake the task on the understanding that comparisons with the earlier period could not be justified.

The chairman said that the Ministry realized the importance of the problem of inflation of doctors' lists, particularly the cumulative effect of inflation when patients had gone on to lists in two different areas, and a careful check would be made in areas where this was known to occur. It had been promised that the possibility of a central register in line with the census to be taken in 1951 would be looked into.

Position of General-Practitioner Specialists

Dr. Talbot Rogers, in presenting the minutes of a sub-committee which had been considering the position of general-practitioner specialists said that the results of the reviewing boards were far worse than he had expected. To all intents and purposes hardly any general practitioners had been placed in the ranks of specialists. Not only that, but quite a large proportion of the younger people, and some of the older ones, who were doing only specialist work and were regarded by their colleagues in hospital as specialists, and in most cases would in private practice be recognized as such, had been classified as senior hospital medical officers.

The Secretary (Dr. Charles Hill) said that the Joint Committee under Sir Lionel Whitby's chairmanship had been pressing for a proper appeal machinery. The standards of grading varied enormously in different areas, and trouble was blowing up all over the country, not only with regard to general-practitioner specialists but with regard to provincial hospital officers, who had always been regarded as specialists and had

now been graded senior hospital medical officers. It had now been agreed that in future no appointment of senior hospital medical officer should be made except in a very limited field, and the definition of that field was being prepared at the moment.

The committee decided, in view of the widespread dissatisfaction throughout the country, to ask for a proper appeal machinery consisting of a committee none of whose members were concerned with the original assessment.

General Practitioners on Staffs of Cottage Hospitals

An important matter was brought before the committee by Dr. Howie Wood, who produced a form of contract with a cottage hospital in the course of which it was stated that in so far as a general practitioner provided general medical services to a patient on his own domiciliary list he was already remunerated for the work he did in hospital, and in order to provide remuneration for hospital work done for other doctors' patients the hospital management committee had set up a staff fund equal to £25 per occupied bed. This was for assisting at operations and writing up case notes for patients other than the practitioner's own. The sum mentioned was considered to be inadequate in itself and also in comparison with the payment of general practitioners attending convalescent homes. There was an implication in the contract that attendance at the surgeon's behest was part of the general practitioner's duty.

The committee was fully in sympathy with the protest made, and noted this question as one to be dealt with as soon as the present negotiations on remuneration were concluded.

Partnerships and the Inducements Fund

Dr. Katharine Harrower asked the committee to express the opinion that, in the case of partners, inducement payments should be directly related to the work done and not modified by any relationship existing between the partners. She instanced a case in which a husband and wife were in partnership with a third practitioner, and the Ministry assessed the husband and wife together as representing 1½ x, whereas the third practitioner represented 1 x. It was a very short step from this to the cutting down of payments in any partnership, say of father and son.

Dr. Harrower was asked to prepare a short memorandum on this subject so that the matter could be pursued with the Ministry.

Other Business

A report was made on a number of matters which had been discussed with the Ministry of Health. These included the treatment of merchant seamen, mileage payments for maternity cases, emergency claims where calls were frivolous or unjustified, and the question of telephone charges. With regard to this last it was mentioned that the Scottish Department had stated that it was prepared to make some contribution when charges were excessive.

It was reported that a deputation had been received from the National Conference of Friendly Societies to discuss the question of the issue of medical certificates of incapacity to voluntary members of the societies who were not entitled to sickness benefit under the National Insurance Act. These people had to ask their doctors for private certificates. Many doctors gave them gratuitously, but it was a hardship when the persons concerned were required to pay a fee, for the weekly payments were often only a matter of a few shillings.

The committee viewed the request sympathetically, and was of opinion that in such circumstances doctors should not charge for a *pro forma* certificate.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-Country Borough Councils.—Dartford, WallSEND.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.



IT IS A FORTUNATE HEAD THAT NEVER ACHED

For providing quick and lasting relief from headache of whatever origin, Veganin* Tablets are especially useful because they do not prevent the patient from continuing his usual occupation. Veganin does not cause drowsiness; it merely obliterates the pain and quiets the nervous manifestations. Veganin is a compound of minimal doses of codeine, phenacetin and acetylsalicylic acid. The synergistic effect of these drugs of related action provides safe analgesic, antipyretic and antispasmodic medication, because the full force of the individual drug is obtained without its accessory manifestations. There is no likelihood of after-effects or habit formation.

Each tablet—118 grs—contains w/w
Acid Acetylsalicyl. 32.68%, Phenacet.
32.68%, Codeine 0.99%, Excipient ad
100.00%



*TRADE MARK REG.

William R WARNER *and Co. Ltd.*

P O W E R R O A D , L O N D O N W . 4

DOES MEAT MATTER?



We may as well face it. Meat looks like being very scarce for a long time. A meat-hungry public wonders—Does this matter?

We are by tradition and inclination a meat-eating race. Many of us—too many—have acquired the habit of relying mainly on meat for our protein. But so far as nutrition is concerned all experience shows that it is possible for mothers to bear fine children,

for children to grow, for adults to lead full and healthy lives without meat *provided* the diet is well chosen.

Bemax is a useful preparation for patients requiring generous protein intake. Though of cereal origin, its amino acid content ranks it as a source of first-class protein. Moreover its protein content is higher than that of most other common foods. Bemax actually, weight for weight, supplies more protein than does lean beef, and its essential amino-acid analysis renders it of equal protein value with beef.

* * * * *

The recommended daily ounce of Bemax will give one and a half times as much protein as the weekly meat ration (taken as steak). *All this and vitamins, too!*

Vitamins Limited
Upper Mall, London, W.6



'AVLON'

PENICILLIN PREPARATIONS

● **LOZENGES OF PENICILLIN** Each lozenge contains 500 units either of the Calcium (B.P.) in containers of 25 and 500, or Crystalline Potassium Salt of Penicillin in containers of 20 and 500.

● **CRYSTALLINE PENICILLIN WITH 'SULPHAMEZATHINE' (STERILIZED)** Containing 5,000 units of Crystalline Potassium Penicillin per gramme. In bottles of 25 grammes.

● **OINTMENT OF PENICILLIN, B.P.** Containing 500 units of the Calcium Salt of Penicillin per gramme. In tubes of 5 grammes.

● **'AVLOPROCIL'** Brand of Procaine-Penicillin Oily injection. In vials of 10 c.c. singly and in boxes of 5.

● **CRYSTALLINE PENICILLIN WITH SULPHANILAMIDE (STERILIZED)** Containing 5,000 units of Crystalline Potassium Penicillin per gramme. In bottles of 25 grammes.

● **PENICILLIN OINTMENT FOR THE EYE, B.P.** Containing 1,000 units of the Calcium Salt of Penicillin per gramme. In tubes of 5 grammes.

IMPERIAL CHEMICAL (PHARMACEUTICALS) LTD.

A subsidiary company of Imperial Chemical Industries Ltd.
WILMSLOW, MANCHESTER



Ph.383

SUMMER DIARRHOEA and FOOD POISONING

R KAYLENE

Kaylene (Colloidal Kaolin 100%) detoxicates the gastro-intestinal contents and adds bulk and firmness to the faeces. It is protective and sedative to irritated and inflamed mucous membranes.

Samples and literature on request

KAYLENE



LIMITED

Sole Distributors: **ADSORBENTS, LTD.,**
WATERLOO ROAD, LONDON, N.W.2

Why 'Ribena' in Blood Dyscrasias?

Because it is established that vitamin C is an important factor in the proper utilisation of iron by the body, and that, in the treatment of iron-deficiency anaemias, an optimal intake of vitamin C is important. Because, too, clinical experience has proved its value as an adjunct in nutritional anaemias, as also in haemorrhagic states. More specific information will be gladly supplied on request.

Ribena is the pure undiluted juice of fresh ripe blackcurrants with sugar, in the form of a delicious syrup. Being freed from all cellular structure of the fruit, it will not upset the most delicate stomach. It is particularly rich in natural vitamin C (not less than 20 mgm. per fluid ounce) and associated factors.

Ribena
(RIBES NIGRA)

BLACKCURRANT SYRUP

H. W. CARTER & CO., Ltd. (Dept. 6...)
The Royal Forest Factory, Coleford, Glos

*Eire.—Inquiries should be addressed to Proprietaries (Eire) Ltd.,
17/22, Parkgate Street, Dublin.*

SCOTTISH G.M.S. SUBCOMMITTEE

A proposal to introduce in Scotland the *Formulary* recently announced by Mr. Bevan as applying to England and Wales was considered by the General Medical Services Subcommittee (Scotland) at a meeting at B.M.A. House, Edinburgh, on May 26. Dr. W. M. Knox presided.

The Department of Health for Scotland pointed out that if the committee approved of the Department's issuing the *Formulary* to practitioners in Scotland they would also send out an accompanying letter explaining the position.

The opinion was expressed that practitioners already made use of their own formulae and it would be to the advantage of the profession to use the national one. It was not so much a question of whether the *Formulary* should be used but rather whether it should be issued. The covering letter made it abundantly clear that there was no intention of introducing compulsion.

The opinion was also expressed that the introduction of the *Formulary* would lead to a general deterioration of the high standard of prescribing which existed in Scotland and to some lazy-mindedness.

The committee agreed to the Department's proposal to issue the *Formulary* together with the covering note.

Filling Vacancies

After discussion the subcommittee indicated its readiness to take part in a meeting with representatives of the Department of Health and the Scottish Association of Executive Councils suggested by the latter body with a view to reducing to a minimum the delay which is taking place in connexion with the filling of vacancies on the medical list of an executive council on the death or retirement of a practitioner. It was decided to transmit to the Department of Health a suggestion that the joint meeting, if held, might take into consideration that where in the filling of a vacancy the local medical committee, executive council, and the Medical Practices Committee are in agreement, in the interests of a general speeding up, there should be no appeal to the Secretary of State. Where there was difference of opinion in any of these bodies, however, appeals should be allowable.

Other Business

The committee received a report on discussions with representatives of Scottish Local Authorities on the question of which services are covered by the fees payable to general practitioners under the National Health scheme. The subcommittee decided to take up with the Department of Health the position of general practitioners under the Service in respect of the domiciliary treatment of venereal diseases.

The committee rejected a proposal by the Department of Health and the pharmacists that, in future, prescription forms should be in duplicate or triplicate. It was admitted that the pharmacists had made out a case for the keeping of a record for their own purposes, but the view was taken that the time was inopportune to ask the practitioner to undertake what is not for his purposes an essential duty.

Constitution of Committee

In connexion with the constitution of the General Medical Services Subcommittee (Scotland) it was decided to recommend to the parent committee that in future each local medical committee in Scotland should have at least one representative on the subcommittee. On a vote it was agreed that the Scottish representatives on the Central General Medical Services Committee should continue to be appointed on an area basis and not by the General Medical Services (Scotland) Subcommittee.

Dangerous Drugs Act: Withdrawal of Authority

The Home Office announces that Dr. Alexander Watt (Peterhead) is no longer authorized to be in possession of or to prescribe those drugs to which the Dangerous Drugs Regulations apply.

WHITLEY MACHINERY AND PUBLIC
HEALTH SALARIES

A meeting of the Public Health Committee of the Association was held on June 3, Dr. James Fenton presiding. An explanation was given of the position with regard to Whitley machinery and arbitration, similar to that which had been made on the previous day to the General Medical Services Committee (Supplement, June 11, p. 328). Under Clause 12 of the amending Bill it appeared that resort to arbitration was possible only with the consent of the Minister. Other types of procedure regarding suitable means of settlement were discussed. The chairman said that a close watch was being kept on the situation from every aspect—that of public health officers as well as general practitioners and consultants and specialists.

The committee considered a letter which had been received from a county medical officer of health suggesting that the Association itself should make known to individual members of local authorities the relevant details of the present dispute with local authorities' associations concerning salaries. This correspondent had found that some members of local authorities thought they were acting in good faith in advertising posts (in the local press, the medical journals being closed to them) at a higher salary than had hitherto obtained. The view of the committee, however, was that it could not approach individual members of local authorities, and that it was the duty of each medical officer of health to explain the position to his council or committee, as, indeed, had been done in the case of the correspondent concerned.

It was reported that a communication had been addressed to the professors of public health at all teaching centres with a view to making the Association's policy known to all successful D.P.H. candidates. Replies had been received from most of the professors testifying their full agreement with the B.M.A. policy and in some cases giving names of candidates so that the Association could communicate direct with them.

Active steps were also being taken to counter any demand by local authorities to employ general practitioners on a sessional basis for the purpose of undertaking duties normally carried out by a whole-time medical officer. When it came to the notice of the head office that a local authority was contemplating such a step, the local Division was informed and requested to advise practitioners in the area against the acceptance of such employment. In the Metropolitan Counties Branch a special appeal had been addressed to all general practitioners, and a letter on this subject had also been sent to all local units of the Association throughout the country.

Fees for Part-time Work

The secretary of the committee (Dr. Kelynack) gave a verbal report of a meeting with representatives of local authorities' associations at the Ministry of Health on May 31 concerning the minimum fees to be paid for part-time work. She said that it was the first time that all these various matters had been assembled in one document. General agreement had been reached on the minimum fees as recommended by the Association for certain services. It was not possible to give a full report as negotiations were still continuing, a further meeting having been arranged for June 20.

The committee expressed its satisfaction with the interim report.

It was reported that on May 4 a meeting of the Askwith Advisory Committee which had been called could not proceed because the County Councils Association, supported by the Urban and Rural District Councils Associations, had refused to take part on the ground that the action of the B.M.A. in refusing public health authority advertisements implied a repudiation of the Askwith Agreement. The Association of Municipal Corporations and the London County Council were represented, and the absence of representatives of the other bodies was generally regarded as highly discourteous. The matter had been reported to the Minister by the independent chairman of the Advisory Committee.

It was reported from the Society of Medical Officers of Health that the council of that body had considered the basis upon which public health service members should contribute to the funds of the British Medical Guild. The society considered

that a levy should be made on the basis of £x for those with salaries of £1,500 and over, by £y for those with salaries of between £1,000 and £1,500, and £z for those with salaries of under £1,000, and that the question of the appropriate contributions to be made should be considered by the General Purposes Committee of the society, when recommendations would be sent to the Association.

ROLE OF THE DIVISIONS IN THE MEDICO-POLITICAL WORK OF THE ASSOCIATION

The Organization Committee has prepared the following memorandum :

The Association has been described as a federation of local medical societies, each having its own administration and rules. Each local unit has autonomy within the limits imposed by the articles and by-laws of the Association, but is linked to others and with the central executive.

The Division provides the means for carrying out locally the main objects of the Association—the promotion of the medical and allied sciences and the maintenance of the honour and interests of the profession. It is to the Division that the individual member should look for help and advice and for the opportunity of meeting his colleagues.

The activities of Divisions can be grouped under four heads : scientific, social, medico-political, and ethical. During the past decade, but chiefly since the end of the war, most Divisions have been preoccupied with medical politics, and the proportion of meetings held to discuss political matters has been unduly high, often at the expense of scientific meetings. It is to be hoped that the balance will be restored, because experience shows that scientific and social occasions attract as a rule larger attendances, and that where the main activity of the Division is political its work tends to pass into the hands of the few who are interested, with harmful effect both to the Division and to the Association as a whole.

Nevertheless, it is important that the Division should continue to foster interest and to take part in medico-political work. Only by this means can the individual member be given the opportunity of criticizing, and through his representative on the Representative Body of shaping, the policy of the Association.

The Representative Body is the parliament of the Association. Once every year it meets to review in detail all the manifold activities of the many committees which, on behalf of the Council, watch over the interests of the profession. It is the responsibility of the Division executive, not only to provide the occasion for discussion of the Council's annual report, but to make every member of the Division feel that his co-operation is needed in order that his representative may attend the Annual Meeting with full knowledge of the views of those he represents.

Two changes likely to affect the position of the Division in relation to medico-political work have followed the introduction of 100% service and the co-ordination of the hospital, public health, and general medical services in a single administrative structure under the National Health Service Act. In the first place more emphasis is placed on negotiation at a national level, the field of local negotiation in which the Division or Branch could conduct its own affairs being correspondingly narrowed. Secondly, special machinery has been extended or devised to deal with terms and conditions of service in the three main fields of practice.

Local Action

While it is true that the field of local political work has been narrowed, much remains. In all questions affecting private practice or services outside the scope of the Act it is still the responsibility of the Division to secure the implementation of Association policy in its area. A review of the work of the Private Practice Committee in recent months will show many examples of questions which can be best dealt with by local units within centrally determined policy. Two instances will suffice to illustrate this point.

The Commissioner of Police for a northern county recently circulated former police surgeons and others and attempted to impose

obligations which were quite unacceptable. This matter has been satisfactorily adjusted by the Branch with the minimum of guidance from headquarters. The Branch arranged a conference of secretaries of Divisions in the county to meet the Commissioner, who has agreed to correct the impression caused, by a further letter in a form agreed by the Branch.

The Prison Commission, with the help of the Ministry of Health, is attempting to form local panels of general practitioners who may be called upon to certify persons on remand where the mental condition and need for detention are in question. A fee is offered which is quite inadequate and at variance with Association policy. Clearly the use of local machinery is necessary in order to warn doctors requested to accept these terms that by so doing they will prejudice the outcome of central negotiations.

Thus the Divisions have a two-way function in local political activity. They may take the initiative when questions arise locally in the first instance, calling on the branch or Headquarters for help, if need be ; or they may act as a link between centre and periphery and inform members where individual action or co-operation is required.

In another sphere, closely related to medical politics, the role of the Division is very important. This is in promoting and maintaining good relations between the local profession on the one hand and local government, local institutions, and the lay public on the other. The B.M.A. is now generally accepted as the representative body of the medical profession, but this has not happened fortuitously, and if this position is to be maintained in local communities constant vigilance and action by the Division will be necessary. Good public relations are a necessary condition of success in the medico-political field and are by no means limited to organized press publicity.

The second factor likely to affect the part played by Divisions in medical politics is the establishment of special negotiating machinery for general practitioners and consultants. Committees are now established with autonomy in their respective fields, linked to the Association centrally but with no corresponding link between local organizations. The argument that this situation is not new and that the General Medical Services Committee is only the Insurance Acts Committee under another name is unconvincing. A new situation has arisen through the introduction of a 100% service and through the establishment of similar machinery to represent consultants and specialists. The G.M.S. Committee and the Central Consultants Committee are empowered to act independently in all questions affecting practitioners taking part in the Health Service. Under these circumstances it would seem at first sight that, in a large part of the medico-political field, the local units of the Association must stand aside in order to avoid the dangers of divided counsels and duplication of responsibility. Closer examination of the position shows, however, that for the Division it is a change rather than an abdication of function.

Link in the Profession

Though there is usually cross-representation between the local medical committees and regional consultants committees, making them nominally representative of the whole profession in their areas, these areas are so different and the main interests of the two committees so divergent that in fact they are as separate and distinct as the right and left hands of the medical body-politic. It is for the Division to form the link and to preserve the unity of the profession locally. The Division, because its area is designed to enable members to meet, can attain a much closer contact between its members and its executive than a county or regional committee can have with its constituents. In the latter case the relationship is purely formal, and, once the committee has been elected, formation of policy must remain mainly in the hands of the executive. In the Division, on the other hand, there is opportunity for free criticism and discussion.

Some Divisions, in order to increase facilities for discussion, have formed still smaller units—study groups—and there are clearly advantages in arranging Division areas so that members can meet without having to travel long distances. The proposal that the areas of Divisions and Branches should be revised to conform to the areas of executive councils or regional hospital boards should be resisted.

Fortunately for the sake of the unity of the profession the members of local medical committees and regional consultants committees are usually leading members of the

profession in their areas and as such often bold office in their Divisions; thus there can be a two-way exchange of information, and co-operation is assured. Passive acceptance of this situation, however, is not enough, and an important aim of the Division should be to secure that the Association is adequately represented on these committees.

Another important aspect of the work of the Division in the medico-political field is the education and introduction to medical politics of the younger members, many of whom feel that their interests are not fully understood by their senior colleagues in established practice. The L.M.C. is remote from the assistant, and the consultants committee is far removed from the hospital resident, but both should feel that they can speak and vote at Division meetings and that their views are welcome. Those who are interested in political work can aspire to membership of the executive or office in the Division as a first step towards membership of one of the representative committees or the Representative Body of the Association.

Clearly the role of the Division in providing a meeting-ground for doctors in all branches of practice and a common forum for the expression of medico-political opinion will be, if anything, more important in the future than in the past.

HEARD AT HEADQUARTERS

Silent Eloquence

Many people have expressed themselves forcibly from time to time about the new Health Act, but hardly to the extent of the deaf and dumb speaker of whom Sir Allen Daley spoke the other day. In explaining the Act to a company of deaf and dumb he dislocated three of his fingers.

B.M.A. Films

A feature of the recent Conference of Honorary Secretaries was a film show. The Association is aiming to become, through its film library and bureau, the primary authority on medical films in this country. It is not merely a question of bringing together films which have a medical interest, but of developing a method of presenting medical subjects. To that end a script is being prepared by the Film Committee for a specimen film for potential film producers illustrating how best such a film may be made. A viewing-room at Headquarters, a B.M.A. film caption for attachment to Association films, and arrangements with a film laboratory for the tiling, editing, and conversion of films are other activities on foot.

Not for Nothing

An ophthalmic medical practitioner tells us that he has received the following letter about one of his patients: "I understand you examined my daughter's eyes, well I am not satisfied with the report you gave her, do you know much about eyes as you say she has one lazy eye, do you not know of a cure for such an eye, if you do not, I will have to take my daughter to one who does know, and will attempt to put it right, and I will see that we don't pay national insurance for nothing."

One Mosquito

One would like to have the comments of a Ross Institute investigator on a statement made by Lord Winstar, the late Governor of Cyprus, at a meeting of the Royal Empire Society. Lord Winstar painted an idyllic picture of Cyprus (in every respect except the political) and referred in particular to its immunity from malaria. The island has been scourged by malaria for generations, and there used to be districts where malaria affected the entire population. But now the place has been cleaned up and not a case remains, as Drs. Shelley and Aziz recorded recently in this *Journal*. Lord Winstar then said that during his governorship an investigator came out from the Ross Institute to see what had been done about the malaria-carrying mosquito, and he was able to find only one on the whole island. "And I am absolutely certain," added his lordship, "that he brought it out with him!"

Questions Answered

Emergency Fee

Q.—*I was summoned by the local police to appear of the station to identify a girl brought to them with "loss of memory." I went and identified the patient and took her home. As for payment, the officer in charge of the station said that, since I was a National Health Service doctor, no "certificate" could be issued to me and that I therefore would receive no payment from the police. Is this kind of activity part of my duty under the N.H.S.? If not, to whom do I apply for remuneration?*

A.—Where a practitioner is asked to attend a patient as a result of an accident or other emergency he is entitled to claim an emergency fee from the executive council if the patient is not on his list. The only exception is where a fee under the Road Traffic Act can be claimed. The police are responsible for a fee only where an examination or report is undertaken at their request.

Dental Haemorrhages

Q.—*During the past few weeks I have been called out on several occasions to arrest haemorrhage after dental extractions. On whom does this responsibility lie—the dentist or the doctor?*

A.—The arrest of dental haemorrhage is the responsibility of the dental surgeon who undertook the extraction. When the dentist is not immediately available the patient often calls upon his normal medical attendant. In the Ministry's view this service forms part of the practitioner's normal obligations to his patients, but the Association is disputing this interpretation and is pressing for an appropriate fee to be paid when the general practitioner is called out.

Patient on Public List

Q.—*A few weeks ago I received a request to visit a patient who, although actually on my register of insured persons, had some time previously moved to a district in which I have not undertaken to visit State patients. I explained this on the phone, and was informed that the patient was aware of this, but was anxious that I should continue to attend the family as private patients. I visited the patient for several days. I am aware that I should be at liberty to refuse to visit the patient and instruct them to call in a doctor who attends State patients in their particular district, but am I at liberty to charge a visiting fee, notwithstanding the fact that they were at the time on my list of State patients?*

A.—As the patient concerned is included on your public list you are debarred by the regulations from receiving any fee in respect of medical attendance or treatment given.

HONG KONG AND CHINA BRANCH

The Branch has about 175 members, of whom about 6/7 are in Hong Kong and the rest in China. Seventeen meetings have been held in Hong Kong since the war, at which members have read papers, films have been shown, and laboratory and clinical demonstrations have been arranged. The Branch owns a library in the centre of the town and has recently purchased some 50 new books.

Each month the honorary secretary, Dr. D. W. Gould, makes a précis of the proceedings of the Branch Council, which is circulated to all members both in Hong Kong and China, and he includes with it information on any matters of general interest which have arisen during the month.

The Branch Council is active and effective. Forty-five members of the Branch in Hong Kong are Chinese, and the Branch co-operates closely with the Hong Kong Branch of the Chinese Medical Association.

Most of the members in China itself are medical missionaries. It appears that the Communists are allowing medical missionaries to continue their work in the areas so far conquered, provided the missionaries confine themselves to medicine and abstain from religious or political activity.

British Medical Association

ONE HUNDRED AND SEVENTEENTH ANNUAL MEETING, HARROGATE, JUNE 24 TO JULY 1, 1949

President-Elect: C. W. CURTIS BAIN, M.C., D.M., F.R.C.P., Senior Physician, Harrogate General Hospital.
Local General Secretary: D. D. PAYNE, M.D., D.P.H. } B.M.A. Office, Royal Baths, Harrogate.
Executive Officer: G. A. PECK, B.Sc. }
Local Science Secretary: J. V. WILSON, M.D., M.R.C.P., Department of Pathology, Harrogate General Hospital.

PROGRAMME

SCIENTIFIC SECTIONS

The following Sections will meet on Four Days:

MEDICINE

President: Professor R. E. TUNBRIDGE, O.B.E., M.Sc., M.D., F.R.C.P. (Leeds).

Vice-Presidents: Professor H. W. FULLERTON, M.D., F.R.C.P. (Aberdeen); R. R. BOMFORD, D.M., F.R.C.P. (London); Professor A. P. THOMSON, M.C., M.D., F.R.C.P. (Birmingham).

Hon. Secretaries: T. G. REAH, M.D., M.R.C.P., 4, Spring Grove, Harrogate; J. L. LOVIBOND, M.D., F.R.C.P., 81, Harley Street, W.1.

Official Reporter: Dr. K. M. A. PERRY.

Meeting-place: Harrogate Hydro.

Tuesday, June 28.—10 a.m., *Discussion*: Diabetes Mellitus. To be opened by Dr. R. D. LAWRENCE (London), followed by Professor R. E. TUNBRIDGE (Leeds), Insulin and Diet; Mr. H. H. FOURACRE BARNES (London) and Dr. CHARLES ROLLAND (Edinburgh), Pregnancy Aspects; Mr. D. A. HALL, Ph.D. (Leeds), Rapid Blood Sugar Estimations; Dr. R. G. PALEY (Leeds), Skin Complications of Insulin Injections; and Dr. A. J. BALLANTYNE (Glasgow), Ocular Complications. Dr. E. P. JOSLIN (Boston, U.S.A.) will be present and take part in the discussion.

Wednesday, June 29 (Combined Meeting with Section of Surgery).—10 a.m., *Discussion*: Treatment of Peptic Ulcers. To be introduced and summarized by Sir HENRY COHEN (Liverpool). Opening paper by the late Mr. A. HEDLEY VISICK (York) to be read by Dr. C. N. PULVERTAFT (York), followed by Dr. RICHARD DOLL (London), Sociological Aspects; and Mr. A. D. BEATTIE (Leicester), Surgical Aspect.

Thursday, June 30.—10 a.m., *Papers*: (1) Streptomycin, by Dr. GEOFFREY MARSHALL (London); (2) Radioactive Substances in Clinical Medicine, by Dr. RUSSELL FRASER (London); (3) Anticoagulants, by Professor H. W. FULLERTON (Aberdeen).

Friday, July 1.—10 a.m., *Discussion*: Cirrhosis of the Liver. To be opened by Dr. N. H. MARTIN (London), Aetiology and Pathology, followed by Dr. N. H. K. HAGGIE (London), Alcohol in Cirrhosis; Mr. J. E. RICHARDSON (London), Surgical Aspects; and Dr. E. R. CULLINAN (London), Clinical Aspects and Summary. *Paper*: Salicylate Therapy in Acute Rheumatism, by Dr. G. WATKINSON (Leeds).

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. *Demonstration*: The Role of Surgery in Rheumatism. "Movement is Life" (Lucas-Championnière).

OBSTETRICS AND GYNAECOLOGY

President: Professor A. M. CLAYE, M.D., F.R.C.S., F.R.C.O.G. (Leeds).

Vice-Presidents: GLADYS KAY, M.D. (Harrogate); Professor T. N. A. JEFFCOATE, M.D., F.R.C.S.Ed., F.R.C.O.G. (Liverpool); ARNOLD L. WALKER, M.B., F.R.C.S., F.R.C.O.G. (London).

Hon. Secretaries: C. RUTHERFORD MORISON, M.D., M.R.C.O.G., 2, Lancaster Road, Harrogate; Miss JOSEPHINE BARNES, D.M., F.R.C.S., M.R.C.P., M.R.C.O.G., 7, Wimpole Street, W.1.

Official Reporter: Dr. D. GORDON LENNON.

Meeting-place: Prince of Wales Hotel.

Tuesday, June 28.—10 a.m., *Discussion*: Breech Presentation and its Management. To be opened by Mr. R. NEWTON (Manchester), followed by Mr. C. M. MARSHALL (Liverpool), Mr. B. L. JEFFRESON (Leeds), and Dr. J. LOVSET (Norway).

Wednesday, June 29 (Combined Meeting with Section of Radiology).—10 a.m., *Discussion*: The Value of X-ray in

Assessing Disproportion. To be opened jointly by Professor CHASSAR MOIR (Oxford) and Dr. J. BLAIR HARTLEY (Manchester), followed by Miss MEAVE KENNY (London) and Dr. S. JOSEPHS (Newcastle-upon-Tyne).

Thursday, June 30 (Combined Meeting with Section of Dermatology).—10 a.m., *Discussion*: Pruritus Vulvae. To be opened by Professor T. N. A. JEFFCOATE (Liverpool) and Dr. G. A. GRANT PETERKIN (Edinburgh), followed by Dr. ELIZABETH HUNT (London) and Dr. C. J. MACKINLAY (Glasgow).

Friday, July 1.—10 a.m., *Discussion*: Functional Uterine Haemorrhage. To be opened by Mr. V. B. GREEN-ARMYtage (London), followed by Dr. P. M. F. BISHOP (London) and Dr. T. N. MACGREGOR (Edinburgh).

PATHOLOGY AND BACTERIOLOGY

President: Professor R. J. V. PULVERTAFT, O.B.E., M.D., F.R.C.P. (London).

Vice-Presidents: Professor T. F. HEWER, M.D., F.R.C.P. (Bristol); J. G. GREENFIELD, M.D., F.R.C.P. (London); A. H. T. ROBB-SMITH, M.D., M.R.C.P. (Oxford).

Hon. Secretaries: J. V. WILSON, M.D., M.R.C.P., Harrogate General Hospital, Harrogate; Professor H. A. MAGNUS, M.D., Department of Pathology, King's College Hospital, Denmark Hill, S.E.5.

Official Reporter: Professor ROBERT CRUICKSHANK.

Meeting-place: Grand Hotel.

Tuesday, June 28.—9.45 a.m., *Opening of Pathological Museum, Royal Bath Hospital, Cornwall Road*, by Professor M. J. STEWART, LL.D., F.R.C.P., F.R.F.P.S., F.F.R. (Leeds). 10 a.m., *Discussion*: The Laboratory Diagnosis and Prevention of Whooping-cough. To be opened by Professor R. CRUICKSHANK (London), followed by Dr. W. C. COCKBURN (London), and Dr. D. G. EVANS (Manchester). 12 noon, *Discussion*: The Care and Treatment of Laboratory Animals. To be opened by Dr. JEAN VINTNER (Technical Secretary, U.F.A.W.), followed by Professor A. N. WORDEN (Chief Biochemist to the Animal Health Trust).

Wednesday, June 29 (Combined Meeting with Section of Tropical Medicine).—10 a.m., *Discussion*: Fat Metabolism and the Sprue Syndrome. To be opened jointly by Professor A. C. FRAZER (Birmingham) and Dr. DOUGLAS BLACK (Manchester), followed by Dr. K. D. KEELE (London) and Dr. A. W. D. LEISHMAN (Sheffield). During the discussion Sir PHILIP MANSON-BAHR will show lantern slides illustrating the lesions of the tongue in sprue.

Thursday, June 30.—10 a.m., *Discussion*: Chemotherapy in the Treatment of Malignant Disease. To be opened by Professor E. C. DODDS (London), followed by Sir STANFORD CADE (London), Professor A. HADDOW (London), and Professor F. DICKENS (London).

Friday, July 1.—10 a.m., *Papers*: (1) The Pathological Anatomy of Hypersensitivity Reactions in Man, by Professor HILDING BERGSTRAND (Stockholm), (2) Temporal Arthritis, by Dr. C. V. HARRISON (London), (3) Vascular Changes in Diabetes, with Particular Reference to Retinal and Renal Changes, by Dr. N. ASHLON (London).

RADIOLOGY

President: J. L. A. GROUT, F.R.C.S.Ed., D.M.R.E., F.F.R. (Sheffield).

Vice-Presidents: C. G. HITCHCOCK, M.R.C.S., L.R.C.P. (Harrogate); J. ALEX. THOMSON, M.B., Ch.B., D.M.R.E. (Harrogate); Professor BRIAN W. WINDEYER, F.R.C.S.Ed., D.M.R.E., F.F.R. (London).

Hon. Secretaries: C. N. PULVERTAF, M.B., B.Ch., D.M.R.E., York County Hospital, York; JOHN R. NUTTALL, M.D., F.F.R., D.M.R., Radium Department, General Infirmary, Leeds.

Official Reporter: Mr. COOPER.

Tuesday, June 28. Meeting-place: Queen Hotel (Therapeutic Meeting).—10 a.m., *Discussion:* The Scope and Limitation of Radiotherapy. To be opened jointly by Dr. J. S. FULTON (Liverpool) and Dr. CHESTER WILLIAMS (Bradford).

Wednesday, June 29. Meeting-place: Prince of Wales Hotel (Combined Meeting with Section of Obstetrics and Gynaecology).—10 a.m., *Discussion:* The Value of X-ray in Assessing Disproportion. To be opened jointly by Professor CHASSAR MOIR (Oxford) and Dr. J. BLAIR HARTLEY (Manchester), followed by Miss MEAVE KENNY (London) and Dr. S. JOSEPHS (Newcastle-upon-Tyne).

Wednesday, June 29. Meeting-place: Prince of Wales Hotel (Therapeutic Meeting).—10 a.m., *Discussion:* Radiotherapy in Spondylitis Ankylopoietica and Osteoarthritis. To be opened by Dr. E. L. GWENDOLEN HILTON (London), followed by Dr. MARGARET D. SNELLING (London) and Dr. L. JANET MALLENDER (Leeds).

Thursday, June 30. Meeting-place: Majestic Hotel (Combined Meeting with Section of Cardiology).—10 a.m., *Discussion:* Angiocardiography. To be opened jointly by Dr. FRANCES GARDNER (London), Interpretation of Normal Angiocardiograms; of those seen in Cases of Cyanotic Heart Disease, and in Aortitis and Aortic Aneurysm; and Dr. J. WILKIE (Sheffield), Technical Considerations; Demonstration of Angiocardiograms. Followed by Dr. K. D. KEELE (London), Angiocardiograms in Acyanotic Heart Disease; Dr. T. H. HILLS (London), Angiocardiograms in Cyanotic Heart Disease; and Dr. F. JACKSON (London), Present Trends in North American Clinics.

Friday, July 1. Meeting-place: Queen Hotel (Diagnostic Meeting).—10 a.m., *Discussion:* Radiology of Joints. To be opened by Dr. E. DUFF GRAY (Manchester), followed by Dr. P. H. WHITTAKER (Liverpool) and Dr. J. B. KING (Edinburgh).

SURGERY

President: T. V. PEARCE, M.D., F.R.C.S. (Harrogate).

Vice-Presidents: H. HAMILTON STEWART, F.R.C.S. (Bradford); IAN J. FRASER, D.S.O., O.B.E., F.R.C.S. (Belfast); Sir CECIL P. G. WAKELEY, F.R.C.S., F.R.A.C.S., F.R.S.Ed. (London).

Hon. Secretaries: GORDON N. BAILEY, M.A., M.B., F.R.C.S., 2, Lancaster Road, Harrogate; RODNEY SMITH, M.S., F.R.C.S., 6, Devonshire Place, W.1.

Official Reporter: Professor IAN AIRD.

Tuesday, June 28. Meeting-place: Majestic Hotel.—10 a.m., *Discussion:* Prostatic Obstruction. To be opened by Mr. H. HAMILTON STEWART (Bradford), followed by Mr. WILSON HEY (Manchester), Mr. ASHTON MILLER (Bristol), and Mr. JOHN SWINNEY (Newcastle-upon-Tyne).

Wednesday, June 29 (Combined Meeting with Section of Medicine). Meeting-place: Harrogate Hydro.—10 a.m., *Discussion:* Treatment of Peptic Ulcers. To be introduced and summarized by Sir HENRY COHEN (Liverpool). Opening Paper by the late Mr. A. HEDLEY VISICK (York) to be read by Dr. C. N. PULVERTAF (York), followed by Dr. RICHARD DOLL (London), Sociological Aspects; and Mr. A. D. BEATTIE (Leicester), Surgical Aspect.

Thursday, June 30 (Combined Meeting with Section of Neurology and Psychiatry). Meeting-place: Majestic Hotel.—10 a.m., *Discussion:* The Treatment, After-Treatment, and Sequelae of Closed Injuries to the Head. To be opened by Professor NORMAN MCMISH DOTT (Edinburgh), followed by Dr. W. RITCHIE RUSSELL (Oxford), Rehabilitation after Head Injury; and Dr. E. STENGEL (Chichester), Psychiatric Aspects of Head Injury. 2.30 p.m., *Occasional Paper:* The Mechanism of Speech and the Repair of a Cleft Palate, by Mr. MICHAEL OLDFIELD (Leeds), illustrated by coloured film and drawings.

Friday, July 1. Meeting-place: Majestic Hotel.—10 a.m., *Discussion:* Pain in the Right Iliac Fossa. To be opened by Dr. A. FULLERTON (Batley), followed by Professor D. CHAMBERLAIN (Leeds), Mr. R. K. BOWES (London), and Mr. G. H. MACNAO (London).

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. Demonstration: The Role of Surgery in Rheumatism. "Movement is Life" (Lucas-Championnière).

The following Sections will meet on Two Days:

ANAESTHETICS

President: Professor R. R. MACINTOSH, D.M., F.R.C.S.Ed., D.A. (Oxford).

Vice-Presidents: B. L. S. MURTAGH, M.B., Ch.B., F.F.A.R.C.S., D.A. (Birmingham); H. B. WILSON, M.B., Ch.B., D.P.H., F.F.A.R.C.S., D.A. (Aberdeen); GEOFFREY ORGANE, M.D., F.F.A.R.C.S., D.A. (Londoo).

Hon. Secretaries: W. M. JONES, M.B., B.S., D.A., 4, South Drive, Harrogate; J. ALFRED LEE, M.R.C.S., L.R.C.P., F.F.A.R.C.S., D.A., 73, Kiog's Road, Westcliff-oo-Sea.

Official Reporter: Dr. W. W. MUSHIN.

Meeting-place: Queen Hotel.

Wednesday, June 29.—10 a.m., Discussion: Post-operative Pulmonary Complications. To be opened jointly by Dr. H. J. V. MORTON (Uxbridge) and Dr. E. M. BUZZARD (Oxford), followed by Mr. DONALD BARLOW (London), Dr. DONALD TEARE (London), and Dr. JOAN MILLAR (Newcastle-upon-Tyne).

Thursday, June 30.—10 a.m., Discussion: Deotal Anaesthesia. To be opened by Dr. W. S. MCCONNELL (London), followed by Dr. STEPHEN COFFIN (London) and Dr. FREDA BANNISTER (Chester). 11.15 a.m., *Discussion:* The Use of Continuous Caudal and Peridural Analgesia in Obstetrics, Surgery, and Therapeutics. To be opened by Dr. ROBERT A. HINGSON (Johns Hopkins, Baltimore). (Note.—This discussion may be continued at 2.30 p.m.)

ANATOMY AND PHYSIOLOGY

President: Professor JOHN KIRK, M.B., Ch.B., F.R.C.S.Ed. (London).

Vice-Presidents: Professor A. HEMINGWAY, M.Sc., M.B., Ch.B. (Leeds); Professor FRANCIS DAVIES, M.D. (Sheffield); Professor C. McLAREN WEST, M.C., M.B., B.Ch. (Cardiff).

Hon. Secretaries: E. J. FIELD, M.D., M.S., Department of Anatomy, University of Bristol; R. J. SCOTHORNE, B.Sc., M.B., Ch.B., Anatomy Department, School of Medicine, Leeds, 2.

Official Reporters: Professor A. HEMINGWAY and Dr. E. J. FIELD.

Note: On Tuesday, June 28, *Physiology* and *Anatomy* will meet as separate Sections, but there will be a united meeting on Wednesday, June 29.

Physiology—Tuesday, June 28. Meeting-place: Cairn Hydro.—10 a.m., *Symposium* on the Control of Activity in the Gastro-intestinal Tract. *Speakers:* Professor R. A. GREGORY (Liverpool), Motility of the Small Intestine in Relation to Feeding; Dr. A. A. HARPER (Manchester), The Control of Gastric and Pancreatic Secretion; Dr. R. E. DAVIES (Sheffield), Secretory Mechanisms and Their Control; Dr. J. N. HUNT (London), Studies of Gastric Motility.

Anatomy—Tuesday, June 28. Meeting-place: Prince of Wales Hotel.—10 a.m., *Symposium* on Muscle Structure and Function. *Speakers:* Professor W. E. LE GROS CLARK (Oxford), The Vascularization of Muscle, with Special Reference to Ischaemic Necrosis and Reparative Processes; Dr. R. BARER (Oxford), The Organization of the Muscle Fibre; Dr. R. E. M. BOWDEN (London), Some Aspects of Deoervation and Re-innervation of Human Voluntary Muscle; Mr. W. F. FLOYD (London), Clinical Value of Electro-myographic Studies; and Professor W. T. ASTBURY (Leeds), The Muscle as a Molecular Machine.

Wednesday, June 29. Meeting-place: Cairn Hydro.—10 a.m., *Symposium* on the Anatomy and Physiology of the Skin. *Speakers:* Professor H. BARCROFT (London), Factors Regulating Blood Flow in the Skin; Dr. C. A. KEELE (London), The Control of Sweating; Dr. R. E. BILLINGHAM (Birmingham), The Anatomical Basis of Epidermal Pigmentation in Man; and Dr. G. WEDDELL (Oxford), The Pattern of Cutaneous Innervation.

CARDIOLOGY

President: Sir JOHN PARKINSON, M.D., F.R.C.P. (London).

Vice-Presidents: JOHN R. H. TOWERS, M.D., F.R.C.P. (Leeds); Professor J. CRIGHTON BRAMWELL, M.D., F.R.C.P. (Manchester); D. EVAN BEDFORD, M.D., F.R.C.P. (London).

Hon. Secretaries: D. R. CAMERON, M.D., M.R.C.P., 14, Clifton, York; GRAHAM W. HAYWARD, M.D., F.R.C.P., St. Bartholomew's Hospital, E.C.1.

Official Reporter: Dr. PAUL WOOD.

Meeting-place: Majestic Hotel.

Thursday, June 30 (Combined Meeting with Section of Radiology).—10 a.m., *Discussion:* Angiocardiography. To be opened jointly by Dr. FRANCES GARONER (London), Interpretation of Normal Angiocardiograms; of those seen in Cases of Cyanotic Heart Disease, and in Aortitis and Aortic Aneurysm; and Dr. J. WILKIE (Sheffield), Technical Considerations: Demonstration of Angiocardiograms. Followed by Dr. K. D. KEELE (London), Angiocardiograms in Acyanotic Heart Disease; Dr. T. H. HILLS (London), Angiocardiograms in Cyanotic Heart Disease; and Dr. F. JACKSON (London), Present Trends in North American Clinics.

Friday, July 1.—10 a.m., Simulation of Heart Disease by Other Conditions. To be opened by Dr. RAE GILCHRIST (Edinburgh), followed by (a) Simulation by Pulmonary Conditions, by Dr. J. CLIFFORD HOYLE (London); (b) Simulation by Gastro-intestinal Conditions, by Dr. S. W. PATTERSON (Ruthin Castle); (c) Simulation by Psychoneuroses, by Dr. WILLIAM PHILLIPS (Cardiff). 12 noon, *Discussion:* The Treatment of Obstinate Heart Failure. To be opened by Dr. D. EVAN BEOFORD (London).

CHILD HEALTH

President: Professor C. W. VINING, M.D., F.R.C.P., D.P.H. (Leeds).

Vice-Presidents: Professor R. S. ILLINGWORTH, M.D., F.R.C.P., D.P.H., D.C.H. (Sheffield); A. A. E. NEWTH, M.B., B.S., D.P.H. (Nottingham); Professor W. S. M. CRAIG, M.D., F.R.C.P.Ed., F.R.S.Ed. (Leeds).

Hon. Secretaries: L. J. PROSSER, M.B., Ch.B., D.C.H., 11, Ripon Road, Harrogate; T. COLVER, M.D., M.R.C.P., 4, Claremont Place, Sheffield, 10.

Official Reporter: Professor W. S. CRAIG.

Meeting-place: Grand Hotel.

Wednesday, June 29.—10 a.m., *Discussion:* Common Feeding Difficulties in Infancy. To be opened by Professor R. S. ILLINGWORTH (Sheffield), followed by Dr. FRANCES CHARLOTTE NAISH (York), Dr. STANLEY G. GRAHAM (Glasgow), and Dr. JEAN MACKINTOSH (Birmingham). *Discussion:* Domiciliary Care of the Premature Child. To be opened by Dr. F. J. W. MILLER (Newcastle-upon-Tyne).

Thursday, June 30 (Combined Meeting with Section of Preventive Medicine).—10 a.m., *Discussion:* Behaviour Difficulties in Childhood. To be opened by Dr. MILDRED CREAK (London), followed by Professor C. W. VINING (Leeds) and Dr. W. S. MACDONALD (Leeds). 3 p.m., Demonstration of Cases and Radiographs of Tuberculosis in Childhood, at Scotton Banks Sanatorium, by Dr. VINCENT RYAN (Knaresborough).

DERMATOLOGY

President: J. T. INGRAM, M.D., F.R.C.P. (Leeds).

Vice-Presidents: BRIAN F. RUSSELL, M.D., M.R.C.P., D.P.H. (London); P. B. MUMFORD, M.D., F.R.C.P. (Manchester); GEOFFREY HODGSON, M.B.E., M.D. (Cardiff).

Hon. Secretaries: S. T. ANNING, M.D., M.R.C.P., 5a, Shaw Lane, Leeds, 6; H. J. WALLACE, M.D., M.R.C.P., 80, Harley Street, W.1.

Official Reporter: Dr. J. T. INGRAM.

Thursday, June 30. *Meeting-place:* Prince of Wales Hotel (Combined Meeting with Section of Obstetrics and Gynaecology).—10 a.m., *Discussion:* Pruritus Vulvae. To be opened by Professor T. N. A. JEFFCOATE (Liverpool) and Dr. G. A. GRANT PETERKIN (Edinburgh), followed by Dr. ELIZABETH HUNT (London).

Friday, July 1. *Meeting-place:* Majestic Hotel.—10 a.m., *Discussion:* Psoriasis. To be opened by Dr. H. W. BARBER (London), followed by Dr. BRIAN F. RUSSELL (London) and Dr. J. H. TWISTON DAVIES (Manchester). *Occasional Paper:* The Uses and Abuses of Chemotherapy in Dermatology, by Dr. F. F. HELLIER (Leeds). 2.30 p.m., Clinical Meeting at Royal Bath Hospital.

NEUROLOGY AND PSYCHIATRY

President: W. RUSSELL BRAIN, D.M., F.R.C.P. (London).

Vice-Presidents: W. R. HENDERSON, O.B.E., M.B., Ch.B., F.R.C.S. (Leeds); DAVID ROBERTSON, M.D. (York); R. G. GORDON, M.D., F.R.C.P.Ed. (Bath).

Hon. Secretaries: JAMES VALENTINE, M.B., Ch.B., D.P.M., Scalebor Park, Burley-in-Wharfedale, near Leeds, Yorks; HELEN E. DIMSOALE, M.D., F.R.C.P., 41, Devonshire Street, Portland Place, London, W.1.

Official Reporters: Dr. W. RITCHIE-RUSSELL (June 30 only) and Dr. PURDON MARTIN.

Meeting-place: Majestic Hotel.

Wednesday, June 29.—10 a.m., *Discussion:* Intractable Pain. To be opened jointly by Dr. J. PURDON MARTIN (London) and Mr. WYLIE MCKISSOCK (London), followed by Dr. E. B. STRAUSS (London), Psychiatric Aspect; and Dr. ANDREW WILSON (London), Pharmacological Aspect.

Thursday, June 30 (Combined Meeting with Section of Surgery).—10 a.m., *Discussion:* The Treatment, After-Treatment, and Sequelae of Closed Injuries to the Head. To be opened by Professor NORMAN McOMISH DOTT (Edinburgh), followed by Dr. W. RITCHIE RUSSELL (Oxford), Rehabilitation after Head Injury; and Dr. E. STENGEL (London), Psychiatric Aspects of Head Injury.

OCCUPATIONAL HEALTH

President: Professor R. E. LANE, M.D., F.R.C.P. (Manchester).

Vice-Presidents: Professor G. P. CROWOEN, O.B.E., D.Sc., M.R.C.P. (London); F. S. COOKSEY, O.B.E., M.D., D.Phys.M. (London); W. BLOOD, M.R.C.S., L.R.C.P., D.I.H. (London).

Hon. Secretaries: CHARLES CRESOE, M.R.C.S., Wits End, Fixby Road, Huddersfield; R. S. F. SCHILLING, M.D., D.P.H., Department of Occupational Health, University of Manchester, Manchester, 13.

Official Reporter: Dr. R. S. F. SCHILLING.

Meeting-place: Majestic Hotel.

Wednesday, June 29.—10 a.m., *Discussion:* The Development of a Comprehensive Medical Service for Industry. To be opened by Dr. DONALD STEWART (Birmingham), followed by Dr. STUART LAIOLAW (Glasgow) and Dr. N. J. COCHRAN (Burton-upon-Trent).

Thursday, June 30.—10 a.m., *Discussion:* Tuberculosis and Occupation. (1) Tuberculosis in the Boot and Shoe Trade, by Dr. ALICE STEWART (Harrow-on-the-Hill); (2) Mass Radiography in Industry, by Dr. W. POINTON DICK (Denham); (3) Rehabilitation and Resettlement, by Dr. F. R. G. HEAF (London).

OPHTHALMOLOGY

President: JAMES FISON, M.D. (Harrogate).

Vice-Presidents: JOHN MARSHALL, M.C., M.B., Ch.B., D.O.M.S. (Glasgow); N. P. R. GALLOWAY, M.B., Ch.B., D.O. (Nottingham); A. B. NUTT, M.B., B.S. (Sheffield).

Hon. Secretaries: JANE A. M. SHEPHERD, M.B., Ch.B., D.O.M.S., 39, Harlow Oval, Harrogate; P. D. TREVOR-ROPER, M.B., B.Ch., F.R.C.S., D.O.M.S., 126, Harley Street, W.1.

Official Reporter: Mr. J. H. DOGGART.

Meeting-place: Masonic Hall, Harrogate.

Thursday, June 30.—10 a.m., *Discussion:* Ophthalmology in Relation to Diseases of the Skin. To be opened by Mr. J. H. DOGGART (London), followed by Dr. ALICE CARLTON (Oxford) and Dr. I. B. SNEOON (Sheffield). Afternoon, *Occasional Papers:* (1) Scleromalacia Perforans, by Mr. H. V. INGRAM (Newcastle-upon-Tyne); (2) Angiomatosis Retinae, by Mr. A. G. CROSS (London); (3) Watery Eye, by Mr. JOHN MARSHALL (Glasgow).

Friday, July 1.—10 a.m., *Occasional Papers:* (1) Toxoplasmosis, by Mr. A. B. NUTT (Sheffield); (2) Practical Ophthalmology in Spain and Holland in 1948, by Mr. JOHN FOSTER (Leeds).

ORTHOPAEDICS

President: R. BROOMHEAD, M.B., F.R.C.S. (Leeds).

Vice-Presidents: C. GORDON IRWIN, M.B., F.R.C.S.Ed. (Newcastle-upon-Tyne); H. JACKSON BURROWS, M.D., F.R.C.S., F.R.A.C.S. (London); F. W. HOLDSWORTH, M.B., M.Ch., F.R.C.S. (Sheffield).

Hon. Secretaries: IAN LAWSON DICK, M.B., Ch.M., F.R.C.S.Ed., 2, Walmer Villas, Manningham Lane, Bradford; J. P. CAMPBELL, M.B., Ch.B., F.R.C.S.Ed., 1, Tavistock Avenue, Mapperley Park, Nottingham.

Official Reporter: Mr. NORMAN CAPENER.

Meeting-place: Majestic Hotel.

Tuesday, June 28.—10 a.m., *Discussions*: (1) Closed Fractures of the Shaft of the Radius and Ulna. To be opened by Mr. E. MERVYN EVANS (Birmingham), followed by Mr. F. W. HOLDSWORTH (Sheffield) and Mr. IAN LAWSON DICK (Bradford). 11.30 a.m., (2) Upper Limb Pain due to Lesions of the Thoracic Outlet. To be opened by Professor LAMBERT ROGERS (Cardiff).

Wednesday, June 29 (Combined Meeting with Section of Rheumatology).—10 a.m., (1) The Structure and Functions of the Synovial Membrane, by Professor D. V. DAVIES (London); followed by The Varieties of Pathological Reactions Encountered in Human Synovial Tissues, by Dr. D. H. COLLINS (Leeds). (2) Partial Denervation of the Hip-Joint in Osteoarthritis, illustrated by film, by Mr. H. PETTY (Leeds); followed by Indications for Vitallium Mould Arthroplasty of the Hip and Survey of End-results, by Mr. R. BROOMHEAD (Leeds). (3) Physical Treatment of Arthritis. To be opened by Dr. H. F. TURNEY (London).

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. *Demonstration*: The Role of Surgery in Rheumatism. "Movement is Life" (Lucas-Championnière).

OTO-RHINO-LARYNGOLOGY

President: A. B. PAVEY SMITH, M.C., M.B., F.R.C.S. (Harrogate).

Vice-Presidents: W. I. DAGGETT, M.B., B.Ch., F.R.C.S. (London); R. GARNETT PASSE, F.R.C.S., D.L.O. (London); GEORGE SEED, M.B., Ch.B., F.R.C.S., D.L.O. (Leeds).

Hon. Secretaries: J. E. REES, M.R.C.S., L.R.C.P., D.L.O., 10, York Place, Harrogate; H. S. SHARP, M.B., B.Ch., F.R.C.S., 149, Harley Street, W.1.

Official Reporter: Mr. NORMAN JORY.

Meeting-place: Cairn Hydro.

Thursday, June 30.—10 a.m., *Discussion*: Nasal Allergy. To be opened by Mr. R. R. SIMPSON (Hull), followed by Professor R. B. HUNTER (Dundee), Mr. J. GERIE (Aberdeen), Dr. N. SOUTHWELL (London), and Dr. H. H. MOLL (Leeds).

Friday, July 1.—10 a.m., *Discussion*: Acute Respiratory Obstruction in Infants and Young Children. To be opened by Mr. G. E. ARCHER (Manchester), followed by Dr. MARY J. WILMERS (London), Mr. J. H. OTTY (Bradford), and Dr. E. C. BENN (Leeds).

PREVENTIVE MEDICINE

President: Professor R. H. PARRY, M.D., F.R.C.P., D.P.H. (Bristol).

Vice-Presidents: D. D. PAYNE, M.D., D.P.H. (Harrogate); C. FRASER BROCKINGTON, M.A., M.D., D.P.H. (Wakefield); R. H. H. JOLLY, M.D., D.P.H. (Wolverhampton).

Hon. Secretaries: HUGH O. M. BRYANT, M.B., Ch.B., D.P.H., Health Department, Municipal Offices, Harrogate; H. J. TRENCHARD, M.B., Ch.B., M.R.C.P., Chest Clinic, 53, Greenhill Crescent, Harrow, Middlesex.

Official Reporter: Dr. G. HAMILTON HOGBEN.

Meeting-place: Grand Hotel.

Thursday, June 30 (Combined Meeting with Section of Child Health).—10 a.m., *Discussion*: Behaviour Difficulties in Childhood. To be opened by Dr. MILDRED CREAK (London), followed by Professor C. W. VINING (Leeds), Dr. H. C. CAMERON (London), Dr. A. A. E. NEWTH (Nottingham), and Dr. W. S. MACDONALD (Leeds).

Friday, July 1.—10 a.m., *Discussion*: Marriage and Pregnancy in Relation to Tuberculosis. To be opened by Dr. F. A. H. SIMMONS (South Mimms), followed by Dr. R. C. COHEN (Baintree) and Dr. JEAN HALLUM (Birmingham). *Occasional Paper*: Recent Developments in Influenza, by Dr. C. H. ANDREWES (Hampstead).

RHEUMATOLOGY

President: W. YEOMAN, M.D. (Harrogate).

Vice-Presidents: G. NORMAN MYERS, M.Sc., M.D., F.R.C.P. (Cambridge); G. D. KERSLEY, M.D., F.R.C.P. (Bath); H. F. TURNEY, D.M., M.R.C.P. (London).

Hon. Secretaries: D. N. ROSS, M.D., F.R.F.P.S., Royal Bath Hospital, Harrogate; DORIS M. BAKER, M.D., M.R.C.P., 9, Upper Wimpole Street, W.1.

Official Reporter: Mr. COOPER.

Meeting-place: Majestic Hotel.

Tuesday, June 28.—10 a.m., *Discussion*: (1) Rheumatoid Arthritis in the Young. To be opened by Dr. B. E. SCHLESINGER (London), followed by Professor W. S. M. CRAIG (Leeds) and Dr. DONALD WILSON (Bognor Regis). (2) *Clinical Lecture-Demonstration*. To be opened by Sir HENRY COHEN (Liverpool), followed by Dr. L. C. HILL (Bath).

Wednesday, June 29 (Combined Meeting with Section of Orthopaedics).—10 a.m., (1) The Structure and Functions of the Synovial Membrane, by Professor D. V. DAVIES (London); followed by The Varieties of Pathological Reactions Encountered in Human Synovial Tissues, by Dr. D. H. COLLINS (Leeds). (2) Partial Denervation of the Hip-joint in Osteoarthritis, illustrated by film, by Mr. H. PETTY (Leeds); followed by Indications for Vitallium Mould Arthroplasty of the Hip and Survey of End-results, by Mr. R. BROOMHEAD (Leeds). (3) Physical Treatment of Arthritis. To be opened by Dr. H. F. TURNEY (London).

Thursday, June 30, and Friday, July 1.—2.30 p.m., Royal Bath Hospital. *Demonstration*: The Role of Surgery in Rheumatism. "Movement is Life" (Lucas-Championnière). 3.30 p.m., Report on Proceedings of International Congress of Rheumatology at New York, by Dr. G. D. KERSLEY (Bath).

TROPICAL MEDICINE

President: G. W. M. FENDLAY, C.B.E., M.D., F.R.C.P. (London).

Vice-Presidents: Professor B. G. MAEGRAITH, M.B., B.S., (Liverpool); Colonel H. E. SHORTT, C.I.E., M.D., D.T.M., I.M.S. (Ret.) (London); J. BALFOUR KIRK, C.M.G., F.R.C.P., D.P.H., D.T.M.&H. (London).

Hon. Secretaries: B. CLIVE NICHOLSON, M.D., M.R.C.P., D.P.H., 24, Swan Road, Harrogate; CLEMENT C. CHESTERMAN, O.B.E., M.D., M.R.C.P., D.T.M.&H., 7, Parsifal Road, N.W.6.

Official Reporters: Dr. F. HAWKING and Dr. DOUGLAS BLACK.

Meeting-place: Grand Hotel.

Tuesday, June 28.—10 a.m., *Discussion*: Tropical Diseases as Aftermath of War. To be opened by Air Vice-Marshal T. C. ST. C. MORTON (R.A.F.), followed by Dr. A. R. D. ADAMS (Liverpool), Dr. J. P. CAPLAN (London), Sir GORDON COVELL (London), Professor G. J. STEFANOPOULOU (Pasteur Institute, Paris), and Dr. F. HAWKING (London). During the discussion Professor H. E. SHORTT (London) will show lantern slides depicting the exoerythrocytic cycle of the malarian parasite.

Wednesday, June 29 (Combined Meeting with Section of Pathology and Bacteriology).—10 a.m., *Discussion*: Fat Metabolism and the Sprue Syndrome. To be opened jointly by Professor A. C. FRAZER (Birmingham) and Dr. DOUGLAS BLACK (Manchester), followed by Dr. K. D. KEELE (London) and Dr. A. W. D. LEISHMAN (Sheffield).

HOTEL AND LODGING ACCOMMODATION

Accommodation in Harrogate during the time of the B.M.A. Annual Meeting is now extremely limited, and members who have not made their reservations should do so at once. (For list of hotels, see *Supplement*, April 23, p. 243.)

REGULATIONS REGARDING DRESS

Robes with hoods are to be worn at: the Official Religious Service, Tuesday, June 28, at 3 p.m.; the President's Address, Tuesday, June 28, at 8.30 p.m.; the President's Reception, Tuesday, June 28, at 9.30 p.m.; the Mayor's Reception, Wednesday, June 29, at 8.30 p.m.; the Roman Catholic Service, Thursday, June 30, at 3 p.m.

Robes may be hired from Messrs. Ede and Ravenscroft, Ltd., 93, Chancery Lane, W.C.2, and should be sent direct to the hotel or other accommodation in which the hirer is resident and not to the Reception Office.

Evening Dress (Tails or Dinner Jacket) with Decorations is to be worn at the President's Reception, Civic Reception, and Annual Dinner. Dress is optional for the Representatives' Dinner.

REGISTRATION FEE, AT ANNUAL MEETINGS

The expenditure arising in connexion with the Annual Meetings has in the past been met from a guarantee fund raised by the local profession, supplemented by a grant from the Council of the Association. The Council considers that the time has come when the proportion of the expenses falling upon the local profession should be minimized. With this object in view the Council, while continuing the central grant, has decided that members attending the Annual Meeting (other than members of the Representative Body and overseas visitors) should be asked to pay a fee of one guinea towards the expenses of the meeting. The fee of one guinea will be payable when members register at the Reception Office, Sun Pavilion, Harrogate.

OFFICIAL RELIGIOUS SERVICE

The Official Religious Service will be held in St. Peter's Church, Harrogate, on Tuesday, June 28, and the sermon will be given by His Grace the Archbishop of York. The service will be broadcast in the Northern Programme, and the church is likely to be full. It has therefore been decided to issue tickets for the Procession, for which academic dress is required. It will then be possible to ascertain how many seats will be available for wives and friends. Application for tickets, which will admit to the robing-room at the Royal Hall, can be made on the enclosed form. The tickets themselves will be issued at the Reception Office, Sun Pavilion, from 2 p.m. on Monday, June 27. Members of Council and Representatives will be able to obtain their tickets for robing at the A.R.M. Inquiry Office, Royal Hall, from Friday, June 24. Should the number of members intending to take part in the procession be less than the seating accommodation at the church, additional tickets for admission to the church will be issued on Tuesday morning in order of application. Those receiving them must be in their seats by 2.30 p.m. Those taking part in the procession should reach the Royal Hall by 2 p.m., as all the congregation must be seated before the broadcast begins at 3 p.m.

EXCURSION PROGRAMME

Excursions to places of interest in the neighbourhood of Harrogate are likely to prove a great attraction to the doctors and their wives attending the Annual Meeting. Arrangements for transport and refreshments have already had to be made and the numbers fixed for each excursion. In order to avoid disappointment those wishing to take part in any of the excursions* should therefore fill in the enclosed form and send it, with the appropriate payment, to the Executive Officer, B.M.A. Office, Royal Baths, Harrogate, Yorks. Cheques should be made payable to "The British Medical Association" and crossed. Excursions 6, 24, and 27 are fully booked.

Applications will be acknowledged at once, but the reserved tickets will be collected at the Reception Office, Sun Pavilion, Harrogate, at any time after 2 p.m. on Monday, June 27, except in the case of Representatives and Members of Council, whose tickets will be issued at the A.R.M. Inquiry Office, Royal Hall, Harrogate, between June 24 and 27.

TICKETS

Tickets for functions other than excursions may not be reserved in advance but will be obtained at the Reception Office, Sun Pavilion, Valley Gardens, at the time of the meeting, as in former years.

Tickets for entertainments and receptions to be held on Tuesday and Wednesday will be issued at the Reception Office from Monday, June 27, at 2 p.m.

Tickets for functions on Thursday and Friday will not be obtainable before Wednesday morning.

Note: Representatives and Members of Council should apply at the A.R.M. Inquiry Office, Royal Hall, for tickets up to Wednesday evening.

Tickets for Ladies' Functions will be issued at the Ladies' Club, Prospect Hotel, from Friday, June 24.

BADGES

Members will not be admitted to the Scientific Sections unless wearing badges. They should therefore make a point

**The short morning and evening excursions may also be booked at the time of the meeting at Harrogate.*

of being at the Reception Office, Sun Pavilion, Valley Gardens, by 9.45 a.m. on the first day of their attendance at the Annual Meeting in order to register and obtain their handbook, badge, registration card, and tickets.

Officers of Scientific Sections should inquire for special badges at the Reception Office.

LUNCHEON RESERVATIONS

Non-resident members attending the Scientific Sections are invited to write to the hotel concerned, if they wish to reserve their luncheon in advance. Luncheon reservations may also be made at the hotel before 10.30 a.m. on the day in question.

SPORTS FACILITIES

Golf.—All particulars about the Golf Competitions may be obtained from the Golf Secretary, Reception Office, Sun Pavilion, Valley Gardens, and from the Ladies' Golf Secretary, Ladies' Club, Prospect Hotel.

Other Sports.—Facilities for tennis, putting, miniature golf, bowls, riding, and boating are also available.

Bridge.—Arrangements have also been made for bridge to be played at the Stray Bridge Club, 11, South Park Road, at certain times.

CAR PARKS

Windscreens labels can be obtained by members at the Reception Office, Sun Pavilion, Valley Gardens.

By kind permission of the Director, the Grand Hotel Car Park, Cornwall Road, will be available for the use of members attending the Reception Office and Exhibition.

Municipal car parks are available at: Harlow Moor Drive, Valley Drive, Princes Square, Railway Station, "Belvedere," Victoria Avenue, and the Royal Hall.

TIME-TABLE OF MEETING*Key*

R.—events available for members of Representative Body and Ladies accompanying them.

L.—events primarily arranged for Ladies.

U.—events for all Members and Ladies accompanying them.

*—Academic Robes should be worn.

Friday, June 24

9.00 a.m.—A.R.M. Inquiry Office open—Royal Hall.

9.30 a.m.—Ladies' Club open for registration—Prospect Hotel.

10.00 a.m.—Annual Representative Meeting—Royal Hall.

11.00 a.m.—Civic Welcome to Representatives—Royal Hall.

L. Orchestra and coffee—Lounge Hall, Royal Baths.

12.30 for 1.00 p.m.—Lunch to Overseas B.M.A. Representatives—Queen Hotel.

2.30 to 5.30 p.m.—L. Excursion to Harewood Park and Gardens (by gracious permission of H.R.H. the Princess Royal and the Earl of Harewood). Ticket 6s., including tea.

5.30 to 6.15 p.m.—R. Tour of Royal Baths.

8.00 to 10.00 p.m.—R. Coach tour to Brimham Rocks. Ticket 5s.

R. Coach tour to Fewston and Moors. Ticket 4s.

R. Theatre.

Saturday, June 25

9.00 a.m.—A.R.M. Inquiry Office open—Royal Hall.

9.30 a.m.—Annual Representative Meeting—Royal Hall.

9.30 a.m.—Ladies' Club open—Prospect Hotel.

11.00 a.m.—L. Orchestra and coffee—Lounge Hall, Royal Baths.

2.00 to 5.30 p.m.—L. Excursion to Ripon and Fountains Abbey. Ticket 10s., including tea.

L. Excursion to Aldborough (by kind permission of Lady Lawson Tancred). Ticket 8s. 6d., including tea.

5.30 to 6.15 p.m.—R. Tour of Royal Baths.

6.00 p.m.—Press Cocktail Party—Fountain Court, Royal Baths.

7.00 for 7.30 p.m.—Glasgow Graduate's Dinner—Hotel Majestic.

8.00 to 10.00 p.m.—R. Coach tour to Ripley Castle (by kind permission of Sir William and Lady Ingilby). Ticket 2s. 6d.

R. Coach tour to Plompton Rocks and Spofforth Castle. Ticket 3s. 6d.

R. Dancing.

R. Theatre.

Sunday, June 26

- R. Church Services.
 10.00 a.m.—R. Tour of Royal Baths.
 R. Golf.
 R. Tennis.
 10.30 a.m. to 6.30 p.m.—R. Excursion to Rievaulx Abbey and Byland Abbey. Ticket 22s., including lunch and tea.
 R. Excursion to Richmond and Wensleydale. Ticket 20s., including lunch and tea.
 2.00 to 5.30 p.m.—R. Excursion to Burnsall and Appletreewick. Ticket 10s., including tea.
 R. Excursion to Ripon and Fountains Abbey. Ticket 10s., including tea.
 8.00 p.m.—Operatic Celebrity Concert—Royal Hall.

Monday, June 27

- 9.00 a.m.—Council Meeting—Council Room, Municipal Offices.
 9.00 a.m.—A.R.M. Inquiry Office open—Royal Hall.
 9.30 a.m.—Ladies' Club open—Prospect Hotel.
 10.00 a.m.—Annual Representative Meeting—Royal Hall.
 10.00 a.m. to 12.45 p.m.—L. Visit to Temple Newsam. Ticket 7s. 6d., including coffee.
 10.00 a.m. to 6.00 p.m.—L. Visit to York. Ticket 16s., including lunch and tea.
 11.00 a.m.—L. Tour of Royal Baths.
 L. Orchestra and coffee—Lounge Hall, Royal Baths.
 2.00 p.m.—Reception Room open for registration—Sun Pavilion, Valley Gardens.
 2.00 to 5.30 p.m.—L. Excursion to Ilkley and Bolton Abbey. Ticket 10s., including tea.
 5.30 to 6.15 p.m.—L. Tour of Royal Baths.
 7.00 for 7.30 p.m.—R. Representatives' Dinner—Grand Hotel. Ticket 10s. 6d., excluding wine.
 9.00 p.m.—U. Annual General Meeting—Grand Hotel Ballroom.

Tuesday, June 28

- 9.00 a.m.—Official opening of Exhibition by President—Sun Pavilion, Valley Gardens.
 9.00 a.m.—Reception Room open for registrations—Sun Pavilion, Valley Gardens.
 9.30 a.m. to 12 noon.—Annual Representative Meeting—Royal Hall (if still in session).
 9.30 a.m.—Ladies' Club open—Prospect Hotel.
 9.45 a.m.—Opening of Pathological Museum by Professor M. J. Stewart, LL.D., F.R.C.P., F.R.F.P.S., F.F.R., at Royal Bath Hospital (Laboratory), Cornwall Road.
 9.30 a.m. to 1.00 p.m.—L. Visit to Listers Mills, Manningham, Bradford (by kind permission of the Directors). Ticket 7s. 6d.
 10.00 a.m.—Scientific Sections.
 10.00 a.m. to 12.45 p.m.—L. Visit to Ripley Castle (by kind permission of Sir William and Lady Ingilby). Ticket 2s. 6d.
 11.00 a.m.—L. Orchestra and coffee—Lounge Hall, Royal Baths.
 2.00 p.m.—Members will robe in Royal Hall for official Religious Service, and procession will be formed.
 2.30 p.m.—Procession leaves Royal Hall for St. Peter's Church.
 3.00 p.m.—U*. Official Religious Service, St. Peter's Church. The service will be conducted by the Vicar of St. Peter's Church, and the Sermon will be given by His Grace the Archbishop of York. It will be broadcast in the B.B.C. Northern Programme.
 3.15 to 5.30 p.m.—L. Coach tour to Fewston and Washburndale. Ticket 7s. 6d., including tea.
 5.00 p.m.—U. B.M.A. Films—Grand Hotel Ballroom.
 5.30 to 6.15 p.m.—U. Tour of Royal Baths.
 5.45 p.m.—British Council Reception for Overseas and Foreign Delegates—Queen Hotel.
 6.00 p.m.—Medical Women's Federation Sherry Party—Fountain Court, Royal Baths. Open to all Medical Women (by invitation of Harrogate Members of M.W.F.).
 8.30 p.m.—U*. Adjourned Annual General Meeting and President's Address—Royal Hall (limited to 1,300).
 9.30 p.m.—U*. President's Reception—Lounge Hall, Royal Baths (limited to 600).

Wednesday, June 29

- 9.00 a.m.—Council Meeting—Council Room, Municipal Offices.
 9.00 a.m.—Reception Room open—Sun Pavilion, Valley Gardens.
 9.00 a.m.—Exhibition open—Sun Pavilion, Valley Gardens.
 9.30 a.m.—Ladies' Club open—Prospect Hotel.
 9.30 a.m.—Pathological Museum open—Royal Bath Hospital, Cornwall Road.
 10.00 a.m.—Scientific Sections.
 10.00 a.m.—L. Notts Ladies' Challenge Cup Golf Competition—Starbeck Golf Course.

- 10.00 a.m.—U. Childe and Leinster Cup Golf Competition—Oakdale Golf Course.
 10.00 a.m. to 12.45 p.m.—L. Visit to Knaresborough Market. Ticket 3s. 6d., including coffee.
 10.30 a.m. to 6.00 p.m.—L. Visit to Fountains Abbey and Ripon (Tea by kind invitation of the Mayor and Corporation). Ticket 13s., including lunch and tea.
 10.30 a.m. to 6.00 p.m.—L. Visit to York (tea by kind invitation of the Lord Mayor and Corporation). Ticket 13s., including lunch and tea.
 11.00 a.m.—L. Tour of Royal Baths.
 Orchestra and coffee—Lounge Hall, Royal Baths.
 2.00 to 6.00 p.m.—U. Visit to Ripon (tea by kind invitation of the Mayor and Corporation). Ticket 5s.
 2.00 to 6.00 p.m.—U. Visit to York (tea by kind invitation of the Lord Mayor and Corporation). Ticket 7s. 6d.
 2.00 to 6.00 p.m.—U. Excursion to Byland Abbey and Coxwold. Ticket 12s., including tea.
 2.00 to 6.00 p.m.—U. Excursion to Haworth (Brook Country) (tea by kind invitation of Drs. J. E. Baird, M. P. Fitzgerald, and W. J. McCracken). Ticket 10s.
 2.30 p.m.—Overseas Conference—Council Room, Municipal Offices.
 5.30 p.m.—U. Tour of Royal Baths.
 5.30 p.m.—Empire Medical Advisory Bureau Cocktail Party for Overseas and Foreign Delegates—Lounge Hall, Royal Baths.
 8.30 p.m.—U*. Civic Reception—Royal Hall.

Thursday, June 30

- 9.00 a.m.—Reception Room open—Sun Pavilion, Valley Gardens.
 9.00 a.m.—Exhibition open—Sun Pavilion, Valley Gardens.
 9.30 a.m.—Ladies' Club open—Prospect Hotel.
 9.30 a.m.—Pathological Museum open—Royal Bath Hospital, Cornwall Road.
 10.00 a.m.—Scientific Sections.
 10.00 a.m.—Treasurer's Cup Golf Competition—Pannal Golf Course.
 10.00 a.m. to 12.30 p.m.—L. Visit to Ripon Market. Ticket 5s. 6d., including coffee.
 11.00 a.m.—L. Orchestra and coffee—Lounge Hall, Royal Baths.
 1.00 p.m.—Irish Graduates' Lunch—Granby Hotel.
 2.00 to 5.30 p.m.—U. Visit to Temple Newsam. Ticket 9s. 6d., including tea.
 U. Visit to Harewood Park and Gardens (by gracious permission of H.R.H. the Princess Royal and the Earl of Harewood). Ticket 6s., including tea.
 U. Visit to Fountains Abbey and Ripon (by kind permission of Commander and Lady Doris Vyner). Ticket 10s., including tea.
 2.30 p.m.—U. Demonstration and tour—Royal Bath Hospital, Cornwall Road (limited to 50).
 3.00 p.m.—*. Benediction in St. Robert's Church, Robert Street. The Sermon will be preached by the Right Rev. H. J. Poskitt, M.A., D.D., Bishop of Leeds.
 4.00 p.m.—U. Division Garden Party—Hotel Majestic (limited to 500).
 5.00 p.m.—U. B.M.A. Films—Grand Hotel Ballroom.
 7.30 for 8.00 p.m.—Annual Dinner—Hotel Majestic (limited to 420). Ticket 35s., including wines.
 Theatre.
 Bridge.

Friday, July 1

- 8.30 a.m.—Annual Breakfast of the Medical Prayer Union—Harrogate Hydro (limited to 100).
 9.00 a.m.—Reception Room open—Sun Pavilion, Valley Gardens.
 9.00 a.m.—Exhibition open—Sun Pavilion, Valley Gardens.
 9.30 a.m.—Ladies' Club open—Prospect Hotel.
 9.30 a.m.—Pathological Museum open—Royal Bath Hospital, Cornwall Road.
 10.00 a.m.—Scientific Sections.
 11.00 a.m.—Tour of Royal Baths.
 Orchestra and coffee—Lounge Hall, Royal Baths.
 2.00 to 6.00 p.m.—U. Visit to York. Ticket 10s., including tea.
 U. Coach tour to Brimham Rocks. Ticket 8s. 6d., including tea.
 2.30 p.m.—Demonstration and tour—Royal Bath Hospital, Cornwall Road (limited to 50).
 5.30 to 6.15 p.m.—U. Tour of Royal Baths.
 8.30 p.m.—Popular Lecture by "The Radio Doctor"—Royal Hall.

BRITISH MEDICAL ASSOCIATION

ANNUAL REPRESENTATIVE MEETING

MOTIONS AND AMENDMENTS FROM DIVISIONS AND BRANCHES

CONSULTANTS AND SPECIALISTS

Domiciliary Visits in Nursing-homes

Motion by BRISTOL: That this meeting regrets that the Minister of Health has set up regulations which make a patient in a nursing-home both private and Service at the same time, and demands that this anomaly be resolved by allowing for all N.H.S. patients in nursing-homes either domiciliary visits by specialists or the charging of fees by their general practitioners.

Motion by CITY OF EDINBURGH: That the recommendation of the committee in relation to domiciliary visits in nursing-homes (para. 71 of Annual Report) should be extended to include all urgent medical or surgical or other cases.

Economy in Hospital Management

Motion by MID-ESSEX DIVISION: That economy in hospital management be effected, first, by a reduction in the administrative costs.

Domiciliary Consultations

Motion by CHELSEA AND FULHAM: That a list of specialists willing to undertake domiciliary consultations should be circulated to general practitioners without further delay.

Proposed Terms and Conditions of Service of Hospital Medical Staff

Motion by CLEVELAND: That all grades of practitioners be paid in retrospect when final terms are agreed and that a no detriment clause be added.

Selection of Specialists

Motion by SOUTH-WEST WALES: That this meeting instructs the Council to take immediate steps to urge the Minister of Health so to amend the Acts or regulations that regional grading committees shall by statute consult the medical practitioners of all classes, general practitioner or otherwise, on the merits of individual applicants for grading.

Motion by SOUTH-WEST WALES: That this meeting instructs the Council to take immediate steps to urge the Minister of Health so to amend the Act that specialists dissatisfied by the decisions of regional grading committees may have the right of appeal to independent appeal tribunals.

Motion by CLEVELAND: That this meeting strongly refutes the suggestion contained in the Regional Hospital Board's circular (49) 70 that the profession has agreed that in the case of regrading on appeal it will be satisfied that payment at the higher grade shall be applied from the date of regrading only.

PRIVATE PRACTICE

Allowances to Medical Witnesses in Criminal Cases

Motion by SOUTH-EAST ESSEX: That (with reference to para. 83 of the Annual Report of Council), in the opinion of this meeting, regulations under which maximum allowances are quoted, but not minimum, lead to inequalities of remuneration for similar services and are most unsatisfactory; and that the Council be pressed to approach the Home Office with a view to a fixed scale of fees being laid down.

Fees for First-aid Lectures

Motion by MARYLEBONE: That with reference to para. 85 of Council's Report the attention of the British Red Cross Society, the St. John Ambulance Association, and the Home Office be called to Minute 89 passed at the A.R.M. at Cambridge regarding fees for first-aid lectures and examinations, etc.

Reports to Insurance Companies

Motion by GATESHEAD: That this meeting reaffirms the resolution of the A.R.M., 1937, with regard to the payment for reports to insurance companies furnished after the death of patients who have been accepted for insurance without medical examination.

Routine Medical Examination of Nurses

Motion by DERBY: That Council be instructed to press for the payment of fees to practitioners engaged in the routine medical examination of nurses.

Midwives Act—Fees for Attendances and Post-natal Examinations

Amendment by DERBY: That the period during which claims for fees under the Midwives Act may be submitted be extended to six months.

Institutional Maternity Services

Motion by NORWICH: That this meeting urges that steps be taken to ensure that local authorities may run institutional maternity services independently of the regional hospital boards, to which general practitioners shall have access.

Position of the School Medical Officer

Motion by BRISTOL: That a school medical officer should send any child he considers to need hospital treatment to the family doctor; he should not, except in case of urgency, send the child to any particular hospital or to any particular consultant, the choice of which is the proper province of the family doctor in conjunction with the parents.

MEDICAL ETHICS

Motion by KENSINGTON AND HAMMERSMITH: That the pamphlet on Medical Ethics be issued not only to those newly qualified practitioners, but also to all overseas practitioners who have arrived into the country during the last ten years, and also be made available to all others who wish to apply for it.

ORGANIZATION

Constitution of Central Council of the Association

Amendment by GLOUCESTERSHIRE: That Section 124 of Council's Annual Report and Section (viii) of Appendix IV to that Report be referred back to Council for further consideration.

Amendment by BOURNEMOUTH: That the proposals for the reconstitution of the Council be referred back for further consideration.

Amendment by BRADFORD: That instead of 10 members of Council being elected by the Representative Body and 37 direct as proposed by the Council, 47 should be elected direct and none by the Representative Body.

Amendment by BOURNEMOUTH: That the Representative Body approve the principle that the number of members of Council directly elected by members in the Branches and Divisions of the Association in Great Britain and Northern Ireland should be increased, provided that in so doing the number of members of Council elected by the Representative Body is not diminished.

Amendment by WINCHESTER: That the Representative Body approve the principle that the number of members of Council directly elected by members in the Branches and Divisions of the Association in Great Britain and Northern Ireland should be increased; that members should be elected by reconstituted Branches, and should be responsible to their Branch.

Amendment by WINCHESTER: That the number of members of Council elected by Branches in Great Britain and Northern Ireland should be increased from 37 to 53.

Amendment by BURY: That the number of members of the Council elected by Branches should not be fewer than 42, and that these 42 or more be distributed among groups according to membership and strength.

Grouping for Direct Election of 37 Members of Council

Amendment by EAST YORKSHIRE: That the Representative Body gives provisional approval to the plan submitted by the Council for the grouping for election of 37 members of Council, but refers the matter for further consideration by the Council, in order that anomalies in the grouping may be reviewed.

Amendment by BOURNEMOUTH: That the Dorset and West Hants Branch be grouped with the Wiltshire, Somerset, and Gloucestershire Branches.

Election of Members of Council by Representative Body

Amendment by WINCHESTER That the direct election of members by the Representative Body should be discontinued. Instead, Council may co-opt up to six members of the Association who are of proved experience and knowledge in the medico-political field, and not representing any given area, and that the chairmen of the Scottish, Welsh and Northern Ireland Committees should be members of the Council.

Amendment by PLYMOUTH That only eight members of Council be elected by the Representative Body as a whole.

Members Ex officio of the Council

Motion: That the following Recommendation of the Council be adopted—That the following cease to be members, *ex officio* of the Council: (a) Immediate Past Chairman of Representative Body, (b) Deputy Chairman of Representative Body, and (c) Immediate Past-Treasurer.

Amendment by WINCHESTER That the recommendation be adopted, subject to the addition of the following words: "President-Elect and the Immediate Past President."

Motion by BURY That the term of membership of the *ex-officio* members of Council be limited to three years.

Overseas Members of Council

Amendment by WINCHESTER That the number of members elected by Branches of the Association not in Great Britain or Northern Ireland should be reduced from eight to one—viz., the chairman of the Colonies and Dependencies Committee.

Service Members on the Council

Amendment by WINCHESTER That the present arrangement under which three members of the Council are elected to represent respectively the Royal Naval Medical Service, the Army Medical Service, and the Royal Air Force Medical Service be discontinued, and that the chairman of the Armed Forces Committee be a member of the Council.

Representation of Public Health Service on the Council

Amendment by WINCHESTER That the existing arrangement under which two members of Council are elected by Public Health Service members be discontinued, and that the chairman of the Public Health Committee be a member of the Council.

Representation of Women Members on the Council

Amendment by WINCHESTER That the present arrangement under which women members of the Association elect one member to the Council be discontinued.

The "Six-year Rule"

Amendment by DERBY That membership to the Council for those members elected by Group Branches or Divisions should be for a period of three years.

Agenda of Representative Meetings

Motion by MARYLEBONE That with reference to para 205 of the Council's report Representatives whose motions and amendments have been "grouped" or "held covered" shall be given at least 48 hours' notice in writing, and on the day of the Representative Meeting shall be given the opportunity to meet for discussion in an adjacent room to decide on the proposer of motion, who would be allowed to speak to 10 minutes and reply for 10 minutes, other speakers being limited to 5 minutes. No resolution "grouped" or "held covered" should be taken until one hour after the meeting starts.

Motion by WINCHESTER That Divisions shall submit their resolutions initially to Branch Councils, who, whilst having no power of veto, shall discuss these, correlate them, and forward to an Agenda Committee of the Representative Body. Notwithstanding this, a Division shall always retain the power of forwarding a resolution direct to the Representative Body if dissatisfied with the action of the Branch Council.

Motion by MID-CHESHIRE That the Representatives of the A.R.M. strongly urge the early institution of a "steering committee" for the agenda at Representative Meetings.

Regional Organization

Motion by Winchester: That the primary duty of each Regional Secretary shall be to his Region. He shall pay regular visits to Divisions and be available, in liaison with Divisional Secretaries, for consultation with and visits to individual members, but he shall have access to all central committees.

Position of Autonomous Bodies

Motion by BOURNEMOUTH That the Council be asked to appoint a special committee to consider and report on the situation created by the formation of autonomous bodies within the Association and their relationship to the Representative Body.

Amendment by BROMLEY That so long as the General Medical Services Committee and the Central Consultants and Specialists Committee are autonomous, the Representative Body can no longer be considered to be the Body that formulates the policy of the B.M.A.

That this situation strikes at the whole structure of the Association, and that steps should be taken to remedy it.

Organization of the Association in the Dominions, Colonies, and Dependencies

Motion by MARYLEBONE and PLYMOUTH That a Special Committee be appointed to consider the B.M.A. Overseas organization, including the Dominions, Colonies, and Dependencies, and to ascertain the feelings of all sections of their medical practitioners and others interested.

Quorum of Representative Meetings

Motion by READING: That this meeting considers that the quorum of the Representative Body should be reduced from one half to one quarter of the members elected to attend.

Duties of Representatives

Motion by LOTHIAN: That this meeting, being aware of the confusion which exists as to the duties of a representative, affirms its belief that representatives should be guided by Divisional opinion, but at the same time should be free to make decisions in the light of debates, and requests the Council to make this clear in the Annual Handbook.

Expenses of Representatives Attending Representative Meetings

Motion by SOUTHAMPTON That in the event of the Council's recommendation in para 116 of the Annual Report of Council being carried (*re* subscription), the expenses of Representatives attending Representative Meetings be defrayed by the Association.

Recognition of Outstanding Services

Motion by GREENWICH and DEPTFORD That this meeting recommends that the Council consider ways in which Divisions could honour members who have rendered outstanding services on their behalf.

NATIONAL FORMULARY

Motion by HENDON. That the Representative Body is of opinion that, while a National Formulary is desirable, early steps should be taken to improve the contents and scope of the existing National Formulary so that it will prove to be of real value to those engaged in the science and art of medicine and to the public at large.

AMENDING BILL

Motion by HENDON That in the opinion of the Representative Body the Minister of Health is primarily guilty of a breach of faith in failing to redeem his promise to provide Compulsory Arbitration for the ultimate settlement of any dispute relating to the remuneration of public practitioners, and secondly of introducing an amending Bill without affording the representatives of the profession a prior opportunity to peruse and comment on its provisions.

Motion by BRIGHTON That this meeting is of opinion that arbitration provided for in the amending Bill should be under Whitley Council, and not as set out in Section 12 of the Bill.

Motion by CLEVELAND: That the profession *insist* on the right to arbitrate from the findings of the Whitely Council.

Motion by BRIGHTON: That this meeting registers its profound dissatisfaction at the Minister's breach of faith in not honouring his undertaking to consult the medical profession before presenting the amending Bill to Parliament.

LAY CONTROL OF MEDICINE

Motion by BISHOP AUCKLAND: That this meeting views with great alarm the threatened lay control of Medicine and recommends that appropriate action be taken.

REMUNERATION OF GENERAL PRACTITIONERS

Motion by BRIGHTON: In view of the failure of the Minister to give a satisfactory reply to the profession's reasoned case for an increase in remuneration, based upon the betterment factor, the Council be instructed to ask local medical committees to invite general practitioners to place their resignations at the disposal of such committees, unless terms acceptable to the majority of the profession are received before Sept. 30, 1949.

Motion by CAMBERWELL: That subject to the receipt of extra grants from the Treasury, this Meeting agrees that the capitation fee for the first 1,000 patients should be raised.

Motion by WEMBLEY: That this Meeting considers that the amount of the capitation fee is not equitable throughout the country and should be made uniform irrespective of area and irrespective of other payments such as mileage and dispensing.

Motion by CLEVELAND: That this meeting wishes strongly to support any action the Council should decide to take under para. 178 of the Report of Council.

TEMPORARY RESIDENTS

Motion by HEXHAM: That the fee of 15s. for attending residents is totally inadequate and compares unfavourably with the pre-1938 P.A.C. remuneration. As this especially affects doctors practising in seaside and holiday resorts where the patients only call in medical aid in cases of severe disability, it is considered that the fee for temporary residents should be not less than one guinea.

BASIC SALARIES

Motion by HENDON: That the Council be instructed to represent to the Ministry of Health that all basic salaries granted by executive councils should be a primary charge on the central pool.

VACCINATION AND IMMUNIZATION

Motion by HENDON: That this meeting is definitely of opinion that immunization and vaccination should fall outside the scope of the contract for public practitioners and be made the subject of separate remuneration both for the services and the reports involved.

PROVISION OF MEDICINES AND APPLIANCES FOR PRIVATE PATIENTS

Motion by HENDON: That disappointment and resentment be expressed by the Representative Body at the failure of the Minister to include in the amending Bill provision for the free supply of medicines and scheduled appliances to private patients.

GENERAL PRACTITIONERS AND SPECIAL DEPARTMENTS OF HOSPITALS

Motion by EAST HERTS: That the maintenance of pathological and radiological facilities for general practitioners without the intervention of a consultant in a hospital out-patient department is essential.

MEDICAL SERVICES COMMITTEE PROCEDURE

Motion by HENDON: That the Council be urged to make early representations to the Minister to have the regulations relating to the procedure of the medical services committees amended to bring them into line with those applicable to Northern Ireland, whereby a defendant doctor appearing before a medical service committee may have, if he so desires, services of a paid advocate or solicitor.

GENERAL PRACTITIONERS AND HOSPITAL WORK

Motion by MID-CHESHIRE: That this meeting protest strongly against the steady exclusion of general practitioners from work in hospitals.

Motion by EAST HERTS: That the apparent policy of the regional boards to eliminate general practitioners from hospital work is to be deprecated.

DECISIONS OF MEDICAL PRACTICES COMMITTEE

Motion by LIVERPOOL: That wherever the decision of the medical practices committee differs from that of the local executive committee, the medical practices committee should furnish in writing to the said executive committee the reasons for its decision.

EMERGENCY DISPENSING

Motion by WEMBLEY: That this meeting considers that the payment of 2s. 6d. per 100 patients for emergency dispensing is ludicrous and quite inadequate; that steps should be taken immediately in England and Wales to adopt the procedure E.C.10A as in Scotland.

MEDICAL ADVISORY COMMITTEES

Motion by NEWCASTLE-UPON-TYNE: That as medical representation on boards and committees of the National Health Service is inadequate, the Association be instructed to press for either direct representation of appropriate sections of the profession on these boards and committees or that medical practitioners be appointed to boards and committees after consultation and in agreement with such sections of the profession.

A B.M.A. CAR BADGE

Motion by HENDON: That the Representative Body compliments the Council on the design of a car badge prepared in response to the appropriate resolution last year and restates its view that the badge should be made available forthwith to members of the Association.

Motion by CITY: That this meeting considers the sign "Doctor" on motor-cars is now unnecessary and undesirable.

MEDICAL OFFICERS OF APPROVED SCHOOLS

Motion by NEWCASTLE-UPON-TYNE: That this meeting considers that the rate of salary offered to medical officers of approved schools is totally inadequate considering the nature and amount of work entailed and that this present arrangement should not be accepted.

DOCTORS' CARS

Motion by NEWCASTLE-UPON-TYNE: That this meeting is not satisfied that the profession receives a sufficient measure of priority in the delivery of new cars.

SALARIES IN THE PUBLIC HEALTH SERVICE

Motion by WEMBLEY: That this meeting considers that the attention of the profession as a whole should be drawn to the undesirability of medical practitioners accepting service with local authorities on a sessional basis which would tend to enable such authorities to carry out their public health work and thus ignore the British Medical Association's conditions of service for whole-time public health officers.

MEMBERSHIP SUBSCRIPTION

Amendment by CARDIFF: That the subscription of medical officers in the public health service who receive no income tax allowances in respect thereof should remain as at present.

Motion by SOUTH ESSEX: That this meeting requests Council to introduce a scheme whereby a member can commute his annual subscription to a lump sum life subscription.

ENTRIES IN TELEPHONE DIRECTORIES

Amendment by CLEVELAND: That this meeting does not agree with para. 119 of the report since the addition of the specialty

is the only method of distinction where names are similar, as occurs in this area.

MEDICAL PRACTITIONERS HANDBOOK

Motion by HENDON: That this meeting urges the Council to take steps for the preparation and early issue of a Newly Qualified Practitioners Handbook.

APATHY OF THE PROFESSION

Motion by BRIGHTON: That the Annual Representative Meeting views with profound regret the apparent apathy in the profession, and instructs the Council to use the editorials of the *British Medical Journal* as much as possible to rouse members of the profession to realize their responsibilities in the outcome of the present conflict.

MEMBER OF U.S. ARMY AIR FORCE MEDICAL CORPS

Motion by Metropolitan Counties Branch: That all members of the United States Army Air Force Medical Corps be elected honorary members of the Association for the term of their service in the United Kingdom.

PAYMENT OF MILEAGE TO MEMBERS ATTENDING MEETINGS

Motion by LANARKSHIRE: That it be remitted to the Council to consider the question of introducing the payment of mileage at the usually accepted rates to members attending B.M.A. committees of Divisions and Branches and also certain central committees where the payment of a mileage grant could be regarded as both appropriate and equitable.

HEALTH CENTRES

Motion by HENDON: That the Representative Body is of opinion that a doctor practising in and from a health centre should not be obliged to enter into partnership with any or all of his colleagues who may be similarly placed.

Motion by CITY: That this meeting whilst approving in principle the idea of health centres views with alarm the attitude of local health authorities in attempting to obtain the acquiescence of local practitioners in the establishment of such centres without definite terms of service being previously laid down and calls upon the Council to open immediate discussions with the Minister of Health.

OTHER MOTIONS BY DIVISIONS AND BRANCHES

Motion by TORQUAY: Believing that decisions backed by the Association as a whole must carry greater weight with the Minister and with the public than decisions of individual groups and with a view to maintaining the unity of the profession, an opportunity should be given to the Groups to correlate their views one with another and with the policy of the Association as a whole before any decisions on policy are made known to the Minister or the Press.

Motion by TORQUAY: That, in order that the Association should become a potent instrument in obtaining satisfaction, the Council should bend all their energies in the coming year to arming the Association with the necessary power to enforce their demands.

Motion by BRADFORD: That in the opinion of this meeting the only organization which can protect the interests of the general practitioner is one holding the certificate of the Registrar of Friendly Societies.

Motion by BRONLEY: That the meetings of the Representative Body should be recorded verbatim as in *Hansard*, and should be available for reference.

Motion by LANARKSHIRE: That in view of the introduction of the National Health Service and the possibility of war in the future, the interests of practitioners called for service with the Forces be safeguarded by the following measures:

(a) Where service pay is less than the net income, earned under the National Health Service, the difference to be made up from the total sum available for payment of practitioners under the National Health Service.

(b) That on return from service, a practitioner's income be maintained for a period of eighteen months at the gross rate earned prior to service.

Correction

In the form of contract for whole-time consultants or S.H.M.O.s (*Supplement*, June 11, p. 320) the Ministry mistakenly included an asterisk after the words "their temporary absence."

PRACTICE OF ORTHOPTICS

The Council of the Faculty of Ophthalmologists has issued a memorandum on orthoptics. The report was originally drafted by the Orthoptic Board and has been modified by the Council of the Faculty. It has been sent to the Ministry of Health and the British Optical Association.

The memorandum, here slightly abridged, begins by distinguishing two classes of people doing orthoptic work.

(1) *Orthoptists*, who are medical auxiliaries and hold the Diploma of the Orthoptic Board (D.B.O.). Their training and work are under the direction of recognized medically qualified ophthalmologists.

The course of training occupies two years (full-time) and is carried out in orthoptic schools recognized by the Orthoptic Board. Holders of the diploma are entitled to practise orthoptics, but they must abide by the ethical rules of the British Orthoptic Board, which forbid those who hold the diploma to prescribe glasses or to treat cases other than those referred to them by recognized ophthalmologists. These orthoptists work in orthoptic departments of ophthalmic hospitals, in ophthalmic departments of general hospitals, at school ophthalmic clinics, or in private practice. They are mostly women. There are about 241 orthoptists holding the D.B.O. practising in this country. The examination for the diploma was started in 1935.

(2) *Ophthalmic opticians who have special knowledge of orthoptics* are for the most part those who hold the Diploma of Orthoptics (D.Orth.), which is granted by the British Optical Association (B.O.A.). Their training and work are not under the direction of the medical profession.

The examination for the D.Orth. is open to members of the B.O.A. or to holders of any qualification in refraction or optometry approved by the Council of the B.O.A. There is no prescribed course for the D.Orth., but nearly all those who take the examination study at either the Refraction "Hospital" London or at the Manchester College of Technology. (They usually attend only once a week for a year.) These optician-orthoptists work for large firms of opticians, or on their own, in which case orthoptics is usually a sideline, their main work being refraction. There are about 250 ophthalmic opticians in this country who hold this diploma. The examination for the D.Orth. started in 1939.

At present there is a shortage of orthoptists, partly because fewer were trained during the war, and partly because of the increased demand for orthoptic work. More students are now being trained. When the school ophthalmic clinics come under the Hospital Service more orthoptists will probably be required. It is estimated that some 600 orthoptists will soon be needed in the final Ophthalmic Service. The memorandum assumes that the staff of all National Health Ophthalmic Clinics will consist of one or more of the following: ophthalmic surgeon, refractionist, orthoptist, and dispensing optician.

The limited practical training available for the candidates for the D.Orth. has been considered. The amount of properly selected clinical material available for teaching is negligible compared with what is available through the orthoptic schools attached to hospitals. Optician-orthoptists are handicapped in their work by lack of opportunity of association with ophthalmic surgeons. The authors of the memorandum consider that, since the ophthalmic surgeon is ultimately responsible for the patient, if holders of the D.Orth. are to be employed in the Health Service as orthoptists they should be so only after they have had the opportunity of working with ophthalmic surgeons and of undergoing a course of training in the recognized orthoptic school of a hospital.

DOMICILIARY SPECIALIST SERVICES

A woman confined in a private maternity home may be visited by an obstetrician or her baby by a paediatrician under the domiciliary specialist service in an emergency. The Minister has decided that such cases fall within the scope of the specialist domiciliary service when specialist attention is needed and when medical considerations make it impossible for the patient to be removed to hospital.

Correspondence

Trainee Specialists

SIR,—You have had a number of letters recently regarding the proposed terms of service for trainee specialists, but we should like the views described below to be given some further publicity.

We are concerned that in the proposed terms of service no allowance has been made for seniority lost due to service with H.M. Forces. We understand that the Spens Committee was guided, among other principles, by the principle that placing on the scale should have regard to age. The committee's report was accepted in principle by the Ministry of Health, but in the proposed terms of the Ministry of Health no allowance has been made for the ex-Service trainee specialist who, after one to six years in the Services and at a considerably older age, will receive a salary appropriate to a much younger person qualified for a short time—e.g., a Class II post holder will receive £700 on the Spens scale (£775 on the Ministry of Health scale). This is thought by the Spens Committee to be adequate for a person aged 26. This salary spells dire hardship for an ex-Service trainee of, say, the age of 30, for which age the Spens Committee regard £1,100 as being essential to avoid hardship.

To avoid serious injustice we submit that in arriving at the appropriate salary on this scale for trainee specialists allowance should be made for the number of years served in H.M. Forces. This principle has already been conceded in the case of specialists, where the conditions are exactly comparable. The scales are fair to the newly qualified trainee, they are fair to the specialists, they must also be fair to the ex-Service trainee specialist.

Since July 5, 1948, many ex-Service registrars have had their posts converted into a permanent hospital appointment. We submit that all holders of registrarships held under the further-education scheme should qualify for retrospective payment to July 5, 1948.

We appreciate that it would be difficult for individual hospitals to meet all these requirements out of their present estimates. We submit, therefore, that central action on the part of the Ministry of Health should be taken in all these individual cases until the situation has rectified itself.—We are, etc.,

J. G. HOWELLS.
J. T. HUTCHINSON.
D. V. MARTIN.
D. S. MACPHAIL.

P. SAINSBURY.
R. F. HOBSON.
E. J. ANTHONY.

SIR,—I have been waiting for some time for a protest to be made in your columns about the remuneration for trainee specialists which has been proposed by the Minister. I appear to have waited so far in vain.

The salary proposed by the Spens Committee for a Grade III trainee specialist was £600 p.a. (living out). Mr. Bevan proposes that this should now be £670 p.a.—an increase, even when the Government superannuation contribution has been added, of only about 20.5% to allow for the betterment factor. At a time when Ministry of Labour figures show that the average wage-earner is getting 120% or more than he did in 1939 the young trainee specialist is to get 20.5% more than the Spens Report said he should have got in that year. In other words, the working-class betterment factor is to be 120 or more; the betterment factor of a registrar is to be 20.5. This makes complete nonsense of the Spens Report.

Furthermore, while it is bad enough for the overworked general practitioner to get only 34% gross, it is still worse for the registrar, often with a wife and family to support. The latter gets a betterment of only 20.5% net and is far nearer the subsistence level. Many of these people, whose only sin is that they love their work and wish to take a higher qualification in it, are living on the verge of bankruptcy, with an ever-increasing overdraft to distract them from their work.

So far, however, the British Medical Association has done absolutely nothing to remedy this state of affairs and to remove this gross injustice, or if action has been taken it has been done behind closed doors. Let us therefore demand with a united

voice that the strongest protest be made to the Ministry in order that this arrant piece of injustice may be removed at the earliest opportunity. It is high time that the Minister was told with no uncertain voice that "what is sauce for the gander is sauce for the goose."—I am, etc.,

Poole, Dorset.

A. ARNAUD REID.

Terms for Consultants

SIR,—I believe the comments on the proposed terms of service for hospital staffs (*Supplement*, March 19, p. 147) are misleading in regard to superannuation. They suggest that the employer's 8% contribution is to be deducted from a betterment factor of 20%—in other words, that it may be considered as a part of the employee's remuneration, as it is a payment made on his behalf. This is not so. Also it is clear that superannuation and betterment are separate problems: it is unfortunate that they have arisen simultaneously.

The employer's 8% superannuation contribution is not made on behalf of the employee: it is made by the employer, and he receives benefit from it. It gives him the right to retire an employee who, though he has given long and faithful service, has ceased to be useful through old age or infirmity. The pension avoids hard feelings and recriminations. Similarly the employer, by having paid superannuation contributions, can feel that he has honourably discharged his responsibilities to the widow and family of a deceased employee. Where there is no scheme to which he can contribute the employer himself has an obligation to provide a pension for his ex-employee.

Of course the employee also has a duty to provide for his old age and for his family in event of infirmity or death. Responsibility in this matter of pension is divided between employer and employee. The fact is recognized and regularized in superannuation schemes.

Your suggestion is tantamount to supposing that, if a man earning £1,080 p.a. entered a (similar) superannuation scheme, his salary would be reduced by £80 p.a. to cover the employer's contribution.

There are only two explanations of the proposed terms: either the remuneration is being reduced to meet the Government's superannuation contribution, or the Minister is offering us a betterment factor of 11%.—I am, etc.,

Preston.

J. A. CARR.

Specialist Grading

SIR,—The main line of demarcation in the grading of specialists should be between (1) men whose income is solely derived from consultant practice, and (2) men whose income is partly derived from general practice, although also engaged in some specialty. The first group could be divided into two categories, giving the following classification:

1. *Staff Specialist*.—Doing consultant work only; holding a postgraduate qualification; having been in consultant practice at least five years.

2. *Associate Specialist*.—Doing consultant work only; holding a postgraduate qualification; having been in consultant practice less than five years. Automatic promotion to staff specialist after completing five years of consultant practice.

3. *Senior Hospital Medical Officer*.—Engaged in general practice but doing some specialist work; postgraduate qualification not essential; promotion to associate specialist when he fulfils the necessary criteria.

The remuneration of the first two groups should be at a considerably higher level than for the S.H.M.O. group, as the latter can rely chiefly or partly on income from general practice.

Precise definitions such as the above should be agreed with the Ministry before appeals are due to be heard by the Appeals Committees.—I am, etc.,

Blackpool.

R. E. HORSFALL.

SIR,—Mr. R. L. Newell (*Proceedings of Council*, *Supplement*, May 21, p. 283) stated that grading committees decided entirely on the basis of a man's qualifications. My personal experience refutes his assertion and supports the views and warnings put forward by the Secretary (*Supplement*, May 14, p. 269) with regard to the senior hospital medical officer grade.

I am over 12 years qualified, and in January last I filled up a form sent to me for specialist grading. Having heard nothing

meanwhile, I recently obtained a personal interview with my regional board and was then told that, of the people who by postgraduate degrees, experience, etc., were of specialist standard, not more than 50% would be graded full specialist, and of the people of assistant specialist standard the majority would be graded as senior hospital officers. Furthermore, at this interview I was enlightened as to the reason for this policy. The object was to save money by down-grading as many people as possible.

When I tried to find out, at the interview and subsequently, who or what body had the privilege of deciding my grading and future I was met by a smoke-screen. The decisions are apparently being carried out in secrecy behind closed doors. The secrecy is not quite complete, because some people in a position to "work behind the scenes" or "in the know" have already been told that they will be graded full specialists.—I am, etc.,

M.D., M.R.C.P

Disparity in Incomes

SIR,—I enclose a cutting from the *Sunday Express* of April 17 quoting figures for the West Ham area which, if correct, should be more forcibly brought to the notice of the public. Analysis reveals the following average incomes during the first nine months of the Health Service: Doctors, £736, dentists, £2,942; chemists, £2,413.

Such figures show a sorry state of affairs the G.P.—the very hub of the Service—finds himself the poor man of the show. His more fortunate colleagues can "shut shop" and forget their patients and customers during their leisure hours, and feel satisfied that they receive payment for what they have actually done during working hours.

Fundamentally, the medical practitioner should be the highest paid of the professions in the Service. His training is longer and more exacting, and he carries by far the greatest responsibility. Unfortunately he has had no business experience and now finds himself sadly lacking in the fight for financial existence, without which he cannot hope to maintain his professional dignity.—I am, etc.,

Wallasey, Cheshire.

THOS. H. H. GREEN.

Allowances for Professional Witnesses

SIR,—There will be many of your readers who have been annoyed to find that they are not eligible for payment of a professional-witness allowance for attending the Criminal Courts to give professional evidence in accordance with the scales recently defined in the Witnesses Allowances Regulations, 1948 (Statutory Instrument No. 1909 (L.23)), as published in the *Supplement*, Sept. 25, 1948 (p. 129).

The reason for this refusal by the Courts to pay such witness fees is that the Home Office issued a circular on Aug. 26, 1948, to all Clerks of the Peace, Clerks of Assize, and Clerks to Justices, giving guidance in the implementation of the Witnesses Allowances Regulations which came into operation on Sept. 13, 1948. This circular stated that professional witnesses' allowances should not be paid to salaried officers who did not lose remuneration by reason of attending court, with the result that professional-witness fees have been refused to many doctors working in whole-time salaried posts (in hospitals and other public health services, etc.), to their great indignation.

My Society was concerned about this position and took Counsel's opinion with regard to the validity of the Home Office circular, which, unlike the regulations, had not statutory force. Counsel advised that paragraphs 2 and 5 of the Home Office circular appeared to be conflicting.

The Home Office appear to concede in paragraph 2 that a witness specifically called in, because of his expert and professional qualification, may be given an appropriate allowance. In paragraph 5 they exclude salaried officers without giving any indication that the court ought to take into consideration whether or not the giving of evidence may fairly be regarded as incidental to the officer's ordinary duties, and whether trouble or loss of time has been occasioned.

The Society made representation to the Home Office requesting that the circular should be revised, but was informed that the Home Secretary would not be prepared to depart from the statement in his circular that professional-witness allowances should not be paid to salaried officers. It was accordingly

decided to seek the ruling of a High Court judge on the proper construction of the "Costs in Criminal Cases Act, 1906," and the "Witnesses Allowances Regulations, 1948," on the following grounds.

Subject to the regulations, there may be allowed such sums as appear to the court reasonably sufficient to compensate the witness for the expenses, trouble, or loss of time properly incurred in or incidental to the giving of evidence. It is the duty of the Taxing Officer to "ascertain the amount" of costs which the court has directed to be paid out of public funds. In the ordinary way the Taxing Officer ascertains the amount without reference to the court, and he has been guided by the instructions contained in the Home Office circular. Accordingly, the refusal by a Taxing Officer of an appropriate allowance to a hospital doctor who was salaried and lost no remuneration by attending court, on the grounds that such an allowance conflicted with the directions in the Home Office circular, was recently challenged, and it was contended that the particular witness had not been compensated for trouble or loss of time which attendance at court necessarily involved.

An application for the reconsideration of the fees to be allowed in this case and for a ruling on the principle to be applied was heard by Mr. Justice Devlin in Chambers. It was argued that paragraph 5 of the Home Office circular was too narrow, as, if the doctor had been an ordinary general practitioner, he would have incurred the expense of having to employ the services of another doctor to attend to his patients during the time he was absent at court, or, if he did not adopt this course, he would have to see his patients in time which he might otherwise have devoted to leisure.

Mr. Justice Devlin agreed with this contention and stated that he would direct the Clerk of Assize that the directions in paragraph 5 of the Home Office circular (*re* professional-witness fees to salaried officers) were too narrow, and the mere fact that a practising doctor does not lose income is not sufficient to reduce him to the status of an ordinary witness. He further stated that it was for the Clerk of Assize to assess what amount should be paid for the trouble and loss of time.

It is suggested, therefore, that salaried doctors who find themselves in a similar position of having been refused a professional-witness allowance in accordance with the scale described in the Witnesses Allowances Regulations, 1948, should argue the point whenever it arises, and should appeal to the judge or chairman of the court if the Taxing Officer refuses the appropriate allowance, making use of the opinion expressed by Mr. Justice Devlin as described above.

This legal ruling will be brought to the notice of the Home Office, and it is hoped that the offending paragraph in the circular will be revised.—I am, etc.,

ALISTAIR FRENCH,
Secretary, The Medical Protection Society

Letter from a Division Chairman

SIR,—The letter (*Supplement*, April 30, p. 253) deploring the poor attendances at B.M.A. meetings suggests: "The fourth explanation, and the most reasonable, was that a condition of complete and profound apathy pervaded the bulk of the doctors." But it fails to consider the causes of the apathy. *What are they?*

In my opinion the apathy is due to the belief that whatever resolutions may be passed at the meeting, or in London, no appreciable alteration would be effected. And again *why?* To go back only a short period, it had been said that there were not enough doctors to work the health service, yet when about half voted in its favour the other half were officially advised to join. *Why?* Because those at Headquarters knew that, whatever a local practitioner had signed, few would hesitate to break their word if it were to their financial advantage to do so. One practitioner could not trust another local practitioner to keep his word and not to take advantage of him.

Put shortly, there is a complete lack of confidence. We have been told that ballots were secret to avoid victimization. If a cause is worth while it is worth being made a victim in an endeavour to uphold it. Did the early Christian martyrs complain there was no secret ballot?

The lack of confidence is engendered by lack of truth and experience of the way the Protection of Practices Scheme was

not kept. Privately it was reported that one practitioner in Kent had acquired over 400 panel patients from an absentee practitioner; yet he did not pay into the scheme a single shilling for private cases. Are we really going to believe he had none? But in the official report these facts were not published, nor was his name. Yet public morality is formed by public opinion. The number of unethical and immoral acts that are passed by is prodigious.

Let us face it, there is no faith, for professional, like public, morality is at a low ebb. Until this is altered, there will be apathy. As Sir Stafford Cripps has said, this is more a moral than an economic crisis.—I am, etc.,

Pettswood, Kent

G. C. MILNER.

Senior Hospital Medical Officer

SIR.—The letter from "Mens Sara" (*Supplement*, April 30, p. 260) raises very important points to all young members of the profession on the specialist side—that is, the point of grading, status, and tenure of a post. In the past, when experience was adequate, one obtained an appointment, and if one's ability was worthy the post was permanent. Such is my own lot as radiologist to two hospitals, where I have handled the work with commendation, and salary increment, since appointment. Now the grade of senior hospital medical officer, which did not exist when one entered the Service, is brought forward as a blind alley with meagre salary increments and no visible chance of rapid upgrading. The alternative, non-acceptance, means unemployment—or country-wide "touting" with no settled domicile.

At a recent meeting it was stated that nobody could be accepted as a specialist without two points: (a) Five years' experience in the specialty, and (b) attaining the age of 32—this despite provision for a specialist below 32 in the proposals. We were informed that these were basic grading tenets.

In my own case I have nine months to wait. Whilst it would be aggravating, in view of a dentist's age not being applicable but only ability being the arbiter, it is more than this owing to the strong likelihood that such grading may persist, after one has officially "qualified"; and the amount of responsibility demanded remain constant. Such grading may attach to the post and affect future holders.

The B.M.A. should demand endorsement of a resolution passed at the meeting which I mentioned. It was to the effect that all gradings of senior hospital medical officer should be subject by legislation to yearly review, with a view to the earliest possible upgrading, and that the ranking should not be used as a means of employing cheap specialized labour. The point is vital. At present the seniors are not involved. Apart from to-day's junior ranks being to-morrow's seniors, once this is established its future revocation will be nearly impossible. The slogan should be, as with the T.U.C., "The rate for the job"—especially when one has no other consulting income.—I am, etc.,

BELOW AGE.

SIR.—I am gravely disturbed by the letter from Dr. Stephen Krauss (*Supplement*, May 7, p. 266) on the above topic. His point of view is all the more alarming as "quite a number of colleagues . . . hold these views." In my submission the suggestion that senior hospital officers should be made eligible for distinction awards is completely defeatist in its approach, and is moreover foredoomed to failure.

It appears clear that a considerable number of hospital medical officers who have in the past been regarded as specialists by their colleagues are in danger of being placed in this grading. Surely they should not fight for better remuneration within this grading, but for the right of a really effective appeal against the decision of the Assessment Committee.—I am, etc.,

Birmingham.

F. A. BLEADEN.

Importance of the G.P.

SIR.—It is well that general practitioners should insist on adequate remuneration, for the labourer should be worthy of his hire—should be, although the present form of payment hardly encourages the development of the best kind of service.

But there are other matters even more important than pay which demand consideration by the profession and the public.

I refer to the dignity of and respect for the general practitioner, and for this reason I am distressed at the provision not permitting him to order an arch support, an abdominal belt, and some other simple things for his patients, but must direct the patient to the hospital.

There are other restrictions of the general practitioner's activities which I think are not in the interests of doctor or patient. No facilities have been granted him to have simple pathological and x-ray examinations done at his request without the intervention of the hospital physician or surgeon. I am sure it is all wrong and an insult to a branch of the profession which in Germany produced Koch and here gave us Sir James Mackenzie, to mention only two names.

The importance of the general practitioner—the title of an article I wrote for the *West London Medical Journal*, a copy of which I sent to the Minister of Health—must be recognized if a really satisfactory medical service is our aim. The general practitioner, as I suggested in a memorandum submitted to the conference of universities and Royal Colleges met to consider alterations in the students' medical curriculum, must be trained to play his part.—I am, etc.,

London, W.8

HAROLD H. SANGUINETTI.

Health Centres

SIR.—There has been much discussion over the establishment of so-called health centres under the National Health scheme. I recall that, when the introduction of a National Health Service was advocated, much play was made with the advantages which would accrue from the pursuit and practice of preventive medicine. We were told that under such a scheme the general practitioner would be encouraged to spend much of his time in educating the people in the prevention of illness and in the attainment of positive [sic] health. In what directions have they been so encouraged, what new efforts in the prevention of disease have been initiated? I have heard of none.

On the contrary, local authorities are being enjoined—and some are planning—to erect polyclinics for the treatment of disease. In one of the larger Midland towns plans are afoot for the erection of so-called health centres which are designed to replace the surgeries now provided by the general practitioners. In other words, not health centres but centres for ill-health are being envisaged. The disadvantages of such centralization are too obvious to need elaboration.

My own conception of a health centre—by no means original—is that it is a place devoted, among other things, to:

- (a) The education of the public in all matters relating to the health and well-being of a community—for example, food, housing (including lighting and ventilation), clothing, exercise, work and fatigue, mental and physical rehabilitation.
- (b) Child and mother welfare.
- (c) Mental health.
- (d) The prevention and treatment of endemic diseases, whether communicable or not—e.g., rheumatism, syphilis, tuberculosis, poliomyelitis, diphtheria, and the like.
- (e) The prevention and control of epidemic disease.
- (f) Demography.
- (g) Research.

For a large town only one such centre would be necessary. It should have a central location, be of first-class architectural design, and should exhibit the highest available standards of construction, hygiene, and aesthetics; in fact, it should be a centre of which the community could be as proud as of the town hall, and might form part of a civic centre.

But such a grand design has been allowed to give place to numerous little treatment centres which will afford the public no greater speed or efficiency of treatment except in one or two directions—e.g., x rays and minor surgery. It remains to be seen whether, indeed, general practitioners will avail themselves of these centres, as they will be free to employ them or not as the convenience of their practices directs. It is not unlikely that some of these buildings may come to be white elephants erected and run most uneconomically to the greater glory of no one, except perhaps of the nephelococcygeans who plan them.

There is another consideration: is it expedient that a local or regional public body should acquire a vested interest in ill-health? This will undoubtedly occur if working space in these treatment centres is rented to general practitioners, much in

the same way as landlords in Harley Street have come to demand increasingly exorbitant rentals of specialists. *Caveat emptor!*—I am, etc.,

Elton, Notts.

V. L. FERGUSON.

To Stop Frivolous Calls

SIR,—May I make a suggestion to cut down the cost of the N.H.S.? My idea is that each patient should get free of charge from his local executive council a book of, say, 20 tickets to last a certain period, say six months. Each ticket would represent a service from his doctor, and would be collected by the doctor at each visit or consultation. At the end of each month these tickets would be returned by the practitioner to the local executive council. If the patient exceeds his quota of tickets then he can purchase more at a nominal fee, say 1s. each. By this means no doctor can be accused of making money out of the scheme and it will stop frivolous calls on the doctor's time.—I am, etc.,

Hove, Sussex.

PAUL E. R. KIRBY.

Transfer of Specialists

SIR,—On so many occasions has the Minister of Health broken faith with the professions undertaking service under the Health Act that it is somewhat unusual to find him for once attempting to keep it. What is rather disturbing, however, is to find that in order to maintain this faith the Minister finds it necessary to break the law.

The Ministry of Health has informed hospital boards (we are told) that the Minister has a moral obligation for seeing that displaced members of hospital staffs are given, as far as is practicable, the opportunity of undertaking similar duties elsewhere. Quite apart from the fact that it, being a *moral obligation*, must be somewhat outside the Minister's usual line of country, a perusal of the regulations (which have all the force of law) dealing with the making of hospital appointments reveals that no appointment of a specialist may be made except in accordance with those regulations. Statutory Instrument No. 1416, 1948, sets out the manner by which all specialist appointments shall be made, and para. 8 thereof lays it down that in no other manner may such appointments be made.

Now it would seem that the Minister, putting himself above the law which he himself has made by virtue of the powers vested in him under the Act, has informed hospital boards that they should make appointments in a manner other than that prescribed by the regulations—viz., merely by finding alternative employment for those whose jobs cease to exist for any reason. I suggest that he does not possess the authority to issue such a directive, the terms of which aim to override the provisions of the regulations already laid before Parliament, and I suggest further that no hospital board has any power to act contrary to those regulations, no matter what its master may direct it to do.

The regulations clearly state that they will apply "on the occasion of each vacancy in an office, which for this purpose includes a new office which the board propose to fill." If a specialist's services are dispensed with because the office which he has formerly held ceases to exist he is indeed unfortunate, and it would appear that the Minister really wishes to prevent any such injustice or hardship from arising, but it is equally clear that no hospital board possesses the authority to appoint that specialist to another office without going through the procedure laid down in the regulations cited above, which means advertising the vacancy and setting up the appointments advisory committee, etc. Any appointment made other than in the manner prescribed is liable to be declared invalid in the courts and set aside.

At present every specialist appointment in the country exists under a certain title. The sudden imposition of common ownership of hospitals has not implied necessarily an interchangeability or transferability of the incumbents of specific appointments. The physician in charge of cardiac department in Hospital X, engaged for that purpose and under that title, is not necessarily bound to render services in other hospitals under the same regional board, although there have been recently some appointments which have stipulated that the incumbent's services may be required from time to time in other institutions under the board's control.

Even in the latter case the original appointment is made principally to one hospital, and visits from time to time to other institutions are of a nature subsidiary to the principal appointment. Should that principal appointment cease to exist, could the specialist concerned still be deemed to be in the employ of the hospital board? And could he be transferred to another hospital in the service of the board? It is my suggestion that he could not. It is my further suggestion that such subsidiary duties which arose by virtue of his holding the principal appointment would no longer be open to him, and that they would thereupon require to be carried out by some other specialist still in the employ of the board. Of course much would depend upon the exact nature of the contract which the "displaced" specialist had entered into in the first place.

Take as an example the post of surgeon to the (fictitious) Town of Nod Hospital. That is the appointment which a particular man is assumed to hold. Incidental to this, and because he holds it, he also visits once a week a small cottage hospital near by. The board decides to close the Town of Nod Hospital and make it into a purely orthopaedic centre, appointing to it an orthopaedic surgeon from somewhere else. The general surgeon finds his services are dispensed with, for there are no longer any general surgical beds there.

Several points arise. First, what is his future position at the small cottage hospital near by? He had never actually been appointed to it as a surgeon, his single weekly session there being regarded merely as part of his duties at the main hospital, and being consequential upon his holding that appointment. That, however, is the least important point.

Suppose that, in accordance with the Minister's recent directive to hospital boards, the board offers that specialist an appointment as surgeon at the City of Blanktown Hospital (also fictitious), would such an offer be *intra vires* the regional board, or would the board have to advertise a vacancy on the staff of the City of Blanktown Hospital and then hope that the surgeon in question would be selected to fill it? Could the difficulty be got over by the board's effecting a union between the two hospitals at Nod and Blanktown and regarding them thereafter as one hospital simply divided into two parts, one consisting of the "general" and the other of the "orthopaedic" part of the same hospital?

It might be argued that such a union would validate the transfer on the grounds that the specialist was merely changing the venue of his department within the same single administrative unit—the same hospital, now departmentally divided but still administratively a single hospital. But while such an argument might well validate the transfer in these circumstances it is extremely difficult to find grounds to validate the transfer of a specialist to an altogether different hospital simply in order that he should suffer no hardship because his former office had ceased to exist. The Minister's desire to prevent hardship is one thing. Compliance with the law is another.

To put a man on to the staff of a hospital of which staff he is not at present a member must surely be interpreted as "filling a vacancy," even if that vacancy is being specially created for the express purpose of being filled by that particular man. If this be accepted as a reasonable argument then the regulations cited above must apply in every such case, and it therefore become *ultra vires* any regional board to carry out the undertaking given by the Minister regarding the re-employment of displaced specialists. For the Minister's undertaking to be possible some amendment becomes necessary to the regulations concerned. Failing this amendment the suggestion is offered that any appointments made not in accordance with the terms of the regulations will be invalid, liable to be set aside by the courts; and, moreover, any remuneration paid out by way of salaries in respect of such appointments might even be regarded as the wrongful application of public money.

It is indeed unfair that a specialist be dispensed with because of some matter of policy affecting the office which he holds and may have held for many years, but it is more important that a constant vigilance be maintained to see that both the Minister and his stooges on regional boards and other committees carry out their duties under the Act and administer it strictly in accordance with its provisions and the provisions of the regulations and orders made under it. It may well be that I am in error in my interpretation of the regulations in question, but it appears to me that, before accepting the Minister's general offer of alternative appointment "wherever practicable," the B.M.A. should take advice as to whether it is within the authority of regional boards to act on this Ministerial directive, and if my own suggestions are correct then the sooner an amendment to

regulations to cover such cases is made the better it will be for all concerned. I do not think the question is just academic—I am, etc.,

Penzance Cornwall

GEOFFREY MYERS

POINTS FROM LETTERS

Supply of Glasses

Mr S BLACK, Director, Information Bureau, Association of Optical Practitioners, writes: I think Dr Coke Harvey's letter (*Supplement*, May 7, p 267) on the difficulty of Mr X in getting his spectacles repaired requires some explanation. The N.H.S. regulations demand that a re-examination of the eyes is necessary before a repair can be carried out if more than two years have elapsed since the last test. The reason for this regulation is to discourage patients from allowing too long to elapse between examinations and because it is cheaper in many cases to supply a new frame rather than to patch up an old frame after several years' use. Mr X had four alternative ways open to him to obtain an examination of his eyes. Through the Health Service he could have consulted an ophthalmic medical practitioner, or an ophthalmic optician; or he could have had his eyes examined at an eye hospital, or lastly he could visit an ophthalmologist privately. Apparently Mr X took the last course, and therefore he was not entitled to obtain free spectacles. Health Service spectacles cannot be supplied to a private prescription. If a patient brings a private prescription and insists on having spectacles through the scheme, the optician has to inform him that his only way to do this is to have his eyes examined through the Health Service, when any necessary spectacles can be supplied.

Comparative Incomes

A C E writes: It is indeed surprising to see the apparent apathy of the profession to the cavalier treatment it is receiving from the Minister. I am one of the "haves" with a gross income of over £3,000, but I really wonder how some of our colleagues are managing to pay overheads, let alone live. I was very shocked recently to see our local executive council's position for the first nine months of the N.H.S. Translated into yearly averages it is as follows, in round figures of payments. Average gross payments per doctor, £1,600, per dentist, £4,550, per optician, £3,200, per chemist, £3,000. My dental and optician friends tell me they feel the net income to be 50% of gross income, making £2,275 and £1,600, respectively, while two chemists were unwilling to pass an opinion as they said overheads were covered by other lines. Assuming a doctor's overheads to be 33½%, the average net income is just over £1,050. I read in a daily paper of May 20 that "Mr Bevan's aim is to give the average efficient dentist a net income of not less than £1,788 per annum," so that surely in fairness the average efficient doctor should be worth at least £2,000 per annum net, and this should be tied to the average number of patients per doctor. Incidentally, in many areas the capitation fee was less than 17s last year, and it is surely time we demanded, not asked for, 30s per head at least for the first 2,200 patients and 20s for any others up to a maximum of 3,500.

Association Notices

Diary of Central Meetings

JUNE

- 21 Tues Conference of Anaesthetists Group, 2 p.m.
- 21 Tues World Medical Association—Ladies' Committee, 4.30 p.m.

JULY

- 7 Thurs Joint Committee on Association of the General Practitioner with Hospitals, 2 p.m.
- 7 Thurs Radiologists Group Committee, 2 p.m.

Branch and Division Meetings to be Held

- OXFORD DIVISION—Wednesday, June 22, Visit to the Atomic Energy Research Establishment, Harwell.
- ROCHDALE DIVISION—At Rochdale Infirmary, Sunday, June 19, 6 p.m., annual general meeting. Consideration of Annual Report of Council, election of officers for 1949-50, instruction of Representative to A.R.M. (Meeting adjourned from June 10).
- SURREY BRANCH—At Town Hall, Castlefield Road, Reigate, Wednesday, June 22, 2.30 p.m. Annual meeting. Presidential address by Dr L. J. Barford "Towards a Better Understanding of Rheumatism." Visits to Redhill Aerodrome, Fuller's Earth Works, Redhill, and Mullard's Radio Research Works, Redhill.

Meetings of Branches and Divisions

NORTH OF ENGLAND BRANCH

A spring conference of scientific meetings was held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, during February and March.

The spring meeting held on Feb. 24 was well attended and consisted in a demonstration by Dr C. N. Armstrong on Simmonds's disease.

Several cases were shown and the disease was discussed in detail. Mr C. Gordon Irwin then delivered an entertaining and instructive lecture on his recent American tour.

The second meeting, on March 10, consisted in a demonstration by Mr J. D. Rose of excellent lantern slides and cases dealing with various forms of ulceration and gangrene. This was followed by a lecture on "Medical and Veterinary Science" by Mr W. Lyle Stewart, who dealt in some detail with the condition of swayback in sheep and other dietary deficiencies, as well as some infective disorders of common interest to the medical profession and veterinary surgeons.

The last meeting was held on March 31, and over 200 doctors and students were present. The whole evening was devoted to a discussion of obstetrical problems and was arranged by Professor E. Farquhar Murray. Mr Stabler gave an interesting and practical account of what to do until the arrival of the flying squad. Dr William Hunter showed a film in support of his description of the care of the perineum during labour, and Mr Linton Smith discussed threatened abortion and described the experiences in the past few years at the Newcastle General Hospital. Professor E. Farquhar Murray discussed the present position of midwifery. The meeting ended with a description by Mr Harvey Evers of the third stage of labour and its complications, and was made particularly interesting by the many historical references.

CHelsea and Fulham Division

A meeting of the Chelsea and Fulham Division was held on May 20, with the Kensington and Hammersmith, Westminster and Holborn, and Wandsworth Divisions as guests. The chairman, Dr R. Nelson Ford, introduced Dr Ronald Gibson, Hon. Secretary of Winchester Division.

Dr Gibson said that Winchester felt strongly that now as never before there must be a strong B.M.A. with every part of it closely knit to the other. After looking into the constitution of the B.M.A. it was decided to draw up a memorandum for submission to other Divisions, and when suggestions and revisions were received on the memorandum their own views had been "sunk" to agree with those of the majority.

After the majority views had been received a revised memorandum had been issued, from this a further revised memorandum had been made, and it was deemed that the subject was so important that a special representative meeting should be called. The main points for discussion were the Secretariat and Representative Body (the two units which link up the Council with the periphery), and the Constitution of Council.

The present Council, which consisted of one-third of its members directly representing the Divisions and two-thirds not directly representing the Divisions, was not considered democratic. It was thought that the correct proportion was at least two-thirds to be directly represented and one-third not directly represented.

It was felt that the Secretariat were able and very hard-working men but were not sufficiently in contact with the periphery. The Secretariat must go out to the periphery and not wait in Headquarters for people to come up and contact them. Winchester suggested that these Regional Secretaries should be free from as much committee work as possible so as to have time to meet individual members.

Something must be done to strengthen the Representative Body and make more effective the discussion of resolutions which came before it. The Winchester scheme, which had had a reasonable amount of support, was that the Divisions should first of all put up their resolutions to Branch Councils, and they should go from the Branch to an Agenda Committee. Winchester suggested that the Divisions should submit their resolutions, and if not satisfied with the action of the Branch Council could retain the power to send them direct to the Representative Body, the object being to strengthen the B.M.A. and bring each unit as near as possible.

Dr L. Potter, Assistant Secretary, B.M.A., said that it had been for many years the policy of the Council to decentralize so far as possible, and a great deal of controversy had gone on as to whether a Secretary should be resident in a Region. He was of the opinion that he would be of far more use if he were in close contact with work at Headquarters. All Secretaries had access to all Committees, but even so it was difficult to keep abreast of the manifold activities. Regional offices were being set up.

Dr Gorsky emphasized that he was in sympathy with the reorganization of the whole organization, but that Dr Gibson's idea of strengthening the B.M.A. was to revolutionize the Representative Body.

Dr C. Watney Roe asked the meeting to bear in mind the instructions given to their representatives on March 18 to press for at least two-thirds direct representation on the Council and the cessation of elections by the R.B. Now that the Council were also Trustees of the British Medical Guild this was doubly important.

The chairman, Dr Ford, suggested that an age limit for membership might be imposed.

Dr Milligan, chairman of Westminster Division, proposed a vote of thanks to Dr Gibson.

WANDSWORTH DIVISION

At the annual meeting of the Wandsworth Division, held on May 31, the following appointments were made for the year 1949-50: chairman, Dr H. Alexander; vice-chairman, Dr D. W. Jackman; hon. treasurer, Dr R. J. Saunders; hon. secretary, Dr T. J. Lee; assistant hon. secretaries, Dr C. J. Grosch and Dr G. R. Boyes; representatives to A.R.M., Dr Alexander, Dr G. R. Boyes, Dr Grosch, and Dr T. J. Lee; representatives on Branch Council, Dr Cornick, Dr Jackman, Dr D. Billig, Dr J. G. H. McNabb, and the hon. secretaries *ex officio*.



BRITISH MEDICAL JOURNAL

LONDON SATURDAY JUNE 25 1949

THE MIND OF MECHANICAL MAN*

BY

GEOFFREY JEFFERSON, C.B.E., F.R.S., M.S., F.R.C.S.

Professor of Neurosurgery, University of Manchester

Brain-Mind Relationship

No better example could be found of man's characteristic desire for knowledge beyond, and far beyond, the limits of the authentic scientific discoveries of his own day than his wish to understand in complete detail the relationship between brain and mind—the one so finite, the other so amorphous and elusive. It is a subject which at present awakes a renewed interest, because we are invaded by the physicists and mathematicians—an invasion by no means unwelcome; bringing as it does new suggestions for analogy and comparison. We feel perhaps that we are being pushed, gently not roughly pushed, to accept the great likeness between the actions of electronic machines and those of the nervous system. At the same time we may misunderstand this invitation, and go beyond it to too ready an affirmation that there is identity. We should be wise to examine the nature of this concept and to see how far the electro-physicists share with us a common road. Medicine is placed by these suggestions in a familiar predicament: I refer to the dangers of our being unintentionally misled by pure science. Medical history furnishes many examples, such as the planetary and chemical theories of disease that were the outcome of the Scientific Renaissance. We are the same people as our ancestors and prone to their mistakes. We should reflect that if we go too far and too fast no one will deride us more unashamedly than the scientists who have tempted us.

Discussion of mind-brain relations is, I know well, premature, but I suspect that it always will be premature, taking heart from a quotation that I shall make from Hughlings Jackson—not one of his best-known passages—because it may have been thought to be a sad lapse on his part. I believe it myself to be both true and useful, and so I repeat it.

"It is a favourite popular delusion that the scientific inquirer is under a sort of moral obligation to abstain from going beyond the generalization of the observed facts, which is absurdly called 'Baconian induction.' But anyone who is practically acquainted with scientific work is aware that those who refuse to go beyond fact rarely get as far as fact; and anyone who has studied the history of science knows that almost every great step therein has been made by the 'anticipation of Nature'—that is, by the invention of hypotheses which, though not verifiable, often had very little foundation to start with."

He concludes by saying that even erroneous theories can do useful service temporarily. He was no doubt thinking of his own early clinical researches on local epilepsy, the

theory of which necessitated crisp localization of motor function, although when first he proposed it the physiological world could not as yet support him. Had he waited for certainty he would never have got near it as early as he did.

So Jackson binted, and Darwin in comparable words agreed with him. In more recent times K. J. W. Craik rightly drew attention to the real method of scientists, which is to see whether some idea can be substantiated by experiment. They begin without bothering their heads about rigid definitions of what they are doing. Robert Boyle was not interested in making a law but in finding out what happened when gases were compressed. The results happened to be generalizable in a formula. It is the philosophers who insist on logistic definitions which are the more perfect the more they leave out of the vast realms of human striving and usefulness. The so-called Laws of Science had generally no very tidy beginnings. They are no more than science recollected in tranquillity, and not the conscious aim of the eponymous makers of the crucial and revelatory experiments. It may be that the poet who tries to crystallize a moving experience into an immortal line is using his wits in a very similar manner. We must beware of making science too rigid, self-conscious, and pontifical. A. N. Whitehead confessed to me once that he found that he had escaped from the certainty and dogma of the ecclesiastics only in the end to find that the scientists, from whom he had expected an elastic and liberal outlook, were the same people in a different setting. I am encouraged, therefore, to proceed in the hope that, although we shall not arrive at certainty, we may discover some illumination on the way.

Ancient Automata

Before we glance at the new vistas of mechanization opening before us, let us spare a few moments to look at the past, where we shall find that the possibility of building automata has been one of man's dreams since the days of the Trojan horse—a simile more metaphorical than strictly accurate. In the seventeenth century, that era of scientific awakening, there was great interest in possible replicas of animals and men. Florent Schuyt, in 1664, gives several instances, such as the wooden pigeon of Archytas of Tarentum which flew through the air, suspended by counterweights. There was a wooden eagle, that of Regiomontanus, that showed an Emperor the way to Nuremberg, and a flying fly by the same maker. There was an earthen head that spoke; but, above all, a marvellous iron statue that knelt before the Emperor of

*The Lister Oration delivered at the Royal College of Surgeons of England on June 9, 1949.

Morocco and presented him with a request for a pardon for the man who had made him. There were even greater marvels, such as that incomparable statue the Venus of Daedalus, that had quicksilver in its veins and seemed to be alive, and "an infinity of other similar automata, moving and even speaking machines which Coelius Rodiginus mentions in his book on antiquities, and Kircher and many others describe." Gafford, in 1629, had written of statues of men and women which moved and spoke and played musical instruments, birds that flew and sang, lions that leaped, and a thousand other marvels of the inventions of man which astonished the people.

That most of the foregoing examples were no more than fables, or huge exaggerations of a grain of truth, we may be very sure. But there was some foundation for them in the many marvels which the traveller might see with his own eyes at that day, or soon after, such as the water gardens of Tivoli and Pratolino, at Saint Germain-en-Laye, at Fontainebleau, at Augsburg and Salzburg. Water- or wind-power and clockwork were the only sources of energy available, but they caused movement in some pretty toys, and although the figures moved clumsily, yet move they did. As the traveller approached a grotto, for instance, and as he stood admiring, he pressed unwittingly a lever hidden beneath a stone, causing Neptune to come forward with his trident raised to defend a water-nymph, whilst the bathing Diana withdrew among the reeds.

If such wonders had already been constructed for the pleasure of noblemen and the entertainment of their guests, how much more perfectly might not the serious scientist contrive a cunning replica of a living thing. As only too often happens, to conceive it possible was as good as its conversion into fact. It could be, therefore it was. I am sure that that is our own temptation.

Descartes's Postulation

The first convincing postulation of mechanical perfection was of course that of Descartes, who believed that animals, though live things because their hearts were hot (Galen's idea), were entirely reflex in their complicated actions, doing all that they did because their construction compelled them. They had no souls, no minds, and therefore no free will. He expressed himself in a manner which could scarcely be bettered as a fair exposition, up to that moment, of the problem of automata. His views are very apposite to the present day, which has become more Cartesian than it realizes. It should, he thought, be perfectly possible to construct an automaton that would behave not only like an animal but, in so far as he was an animal, like a man, because the organs of man and animal were in the main the same. There was an eventual difference: he saw plainly that it reposed in the highest qualities of man's mind and soul.

Descartes made the point, and a basic one it is, that a parrot repeated only what it had been taught and only a fragment of that; it never used words to express its own thoughts. If, he goes on to say, on the one hand one had a machine that had the shape and appearance of a monkey or other animal without a reasoning soul (i.e., without a human mind) there would be no means of knowing which was the counterfeit. On the other hand, if there was a machine that appeared to be a man, and imitated his actions so far as it would be possible to do so, we should always have two very certain means of recognizing the deceit. First, the machine could not use words as we do to declare our thoughts to others. Secondly, although like some animals they might show more industry than we do, and do some things better than we, yet they would

act without knowledge of what they were about simply by the arrangement of their organs, their mechanisms, each particularly designed for each particular action (cp. Karel Capek's *Robots*). Descartes concluded: "From which comes that it is morally impossible that there be enough diversity in a machine for it to be able to act in all the occurrences of life in the same way that our reason would cause us to act. By these means we can recognize the difference between man and beasts." He could even conceive a machine that might speak and, if touched in one spot, might ask what one wanted—if touched in another that it would cry out that it hurt, and similar things. But he could not conceive of an automaton of sufficient diversity to respond to the sense of all that could be said in its presence. It would fail because it had no mind.

Apart from this difference—a vital one indeed—the body seemed undeniably to be a sum of mechanisms. It was so crystal-clear to Borelli and the new scientists that both animal and human bodies were nothing more than a collection of pumps, reservoirs, bellows, fires, cooling and heating systems, tubes, conduits, kitchens, girders, levers, pulleys and ropes, that there was little left to marvel at. Let the vulgar gape, let the devout feel gratitude to God—it was all very plain to the scientist of that age. It was not plain as they thought. Time has shown that hidden in the materials of which this body is composed are all kinds of biochemical ingenuities. It is a chemical engine such as would have astonished the mechanics. Give a man, take the simplest of all examples, a beautifully efficient set of aluminium bones in place of his original skeleton and he will die of some unpleasant blood disease because bones are living organs as well as props.

There certainly are things to marvel at, and no small wonders they are. One is the truly extraordinary efficiency of the living organism as judged by weight, energy output and fuel consumption by comparison with any machine whatever; another is its ability to carry on with its own feed-back controls for decades, without adjustment or repair. In the long run, of course, scientific method made great use of the mechanical likenesses that so impressed the savants of the scientific Renaissance. A great service had been done by destroying mystery and by discrediting Platonic and Aristotelian essences and humours. Most of our advances have been made by use of technical methods common both to machines and to living things. But all our advances have depended on observation of the thing itself, accepting likeness to mechanism only as analogy and not as identity.

I fancy that no one will disagree in summary of the foregoing that, however like the various processes are to other things in physical nature, however amenable they are to examination as physico-chemical processes, they remain unmistakably themselves. We shall reach the same conclusion about the brain—that, however its functions may be mimicked by machines, it remains itself and is unique in Nature. Descartes solved the difficulty by making mind supernatural, placing an immaterial mind independent of organism in the pineal. This was the age-old refuge of those faced with the inexplicable in Nature, as we still see in primitive peoples and in the superstitious. We may well doubt to-day whether a supernatural agency is the basis of mental process. But it was doubted in Lister's time. In 1870 T. H. Huxley reluctantly concluded: "I can find no intelligible ground for refusing to say that the properties of protoplasm result from the nature and disposition of its molecules . . . and if so, it must be true, in the same sense and to the same extent, that the thoughts to which I am now giving utterance, and your thoughts regarding them,

are the expression of molecular changes in the matter of life which is the source of our other vital phenomena."

The passage of time which has led us to accept so much has done little to make this conclusion either less true or much more acceptable than it was to Huxley himself. To admit it seems to confess to a certain ordinariness about mind, an ordinariness to which the richness and plasticity of its powers seem to give the lie and in revenge to demand a stupendous physical explanation. And there is something more. Since no thinking man can be unaware of his fellows and of the political scene he will find that the concept of thinking like machines lends itself to certain political dogmas inimical to man's happiness. Furthermore, it erodes religious beliefs that have been mainstays of social conduct and have brought happiness and serenity of mind to many. These possibilities would have leaped to the forefront of Joseph Lister's mind as they do to mine. But I hope to show that we can take courage.

Modern Automata

Ingenuity of invention at the present time confronts our more sophisticated eyes with models as seductive as were the cruder automata of old. By means of electric motors, thermo-couples, photo-electric cells, radio tubes, sound receptors, and electrical resistances variable to moisture it should be possible to construct a simple animal such as a tortoise (as Grey Walter ingeniously proposed) that would show by its movements that it disliked bright lights, cold, and damp, and be apparently frightened by loud noises, moving towards or away from such stimuli as its receptors were capable of responding to. In a favourable situation the behaviour of such a toy could appear to be very lifelike—so much so that a good demonstrator might cause the credulous to exclaim "This is indeed a tortoise." I imagine, however, that another tortoise would quickly find it a puzzling companion and a disappointing mate.

It is the infinite variety of the behaviour of the world of animals that confuses us. The stage is too vast, the cast too numerous, the qualities of their performances too varied. We should not show any hesitation in attributing conscious mental processes to animals to-day. Greatly though information has increased, the field study of animals in their natural state is with difficulty pursued over long periods, so that we have but short chapters from their lives, and some are too shy, too evasive, or too episodic in their sojourns to allow of continuous recording. We should find great difficulty in grading animal minds. Such knowledge as we have is enough to teach us that even among creatures of the same genera there are great differences in the cleverness of individuals. There are not only clever dogs and dull ones, but clever hens and stupid hens, attractive hens (to the cock) and plain ones, and, for all we know, clever and lovely flies, clever elephants, clever snakes and fish, with dull-witted brothers and ugly sisters. Obstinacy, no doubt, varies in the mule.

At what level in the animal scale something that can be called mind appears for the first time we do not know. J. Z. Young's experiments show that even an octopus can learn, be so puzzled by problems set it as to be made what we might be allowed to call neurotic. That this could happen to monkeys we already knew from ingenious experiment, and now the reproduction of bewilderment that paralyses action in such low forms of life is singularly interesting. The child, confused by its teachers and unable to grasp the logic of its lessons, is but a more complex example of the puzzled octopus. It seems to me likely that the number of synapses in a nervous system is the key to the possible variations in its behaviour. Provided that the

neurones are not too numerous and consequently the synaptic patterns of alternative routes for impulses not too varied, it is not difficult to imagine that some, though not all except the simplest, animal behaviour is the result of a pattern of reflexes, much more complicated, it is true, than the plain push-button-and-answer of some spinal reflexes.

But neither animals nor men can be explained by studying nervous mechanics in isolation, so complicated are they by endocrines, so coloured is thought by emotion. Sex hormones introduce peculiarities of behaviour often as inexplicable as they are impressive (as in migratory fish). We should not have any real idea how to make a model electronic salmon however simple relatively its nervous system is, whilst birds would be as far beyond us again. I can see that, although a good deal of instruction might be got from varying the proportion of, say, photo-electric cells, thermo-couples, and sound-receivers perhaps above and below the range of human hearing to see how variations affected the antics of a model, it remains uncertain how far we should be truly enlightened on the obscurities of animal behaviour. Olfaction, which plays so large a part in some creatures, would be particularly difficult to mimic. So would the effects of satisfaction of appetites of all kinds and of fatigue—such important influences.

When all is said—and much more could be said on both sides—we emerge with the conviction that, although much can be properly explained by conditioned reflexes and determinism (in which idea mechanism lurks in the background), there is a fringe left over in which free will may act (i.e., choice not rigidly bound to individual precedent), a fringe that becomes larger and larger the more complex the nervous system. Both views are correct in their own spheres; neither is wholly correct for everything. I accept here the emendation of Niels Bohr, who sees this as the counterpart of the impossibility of fully describing the electron either as a point or as a wave. It is either, according to how it is examined or in what circumstances. This paradox the mathematicians call the Law of Complementarity, and are not afraid to regard the same thing as true in two different guises. We may do well to follow their example.

The Nervous Impulse

The electronic computing machine works as a logical system, making a choice between "yes" and "no" at a great number of points in a vast chain, with the speed of electricity. Because it uses wireless valves, wired circuits, mercury tubes, condensers, and all the paraphernalia of electricity it works thousands of times faster than can the human brain. Before we proceed further in considering machines we must see how far we can go in saying that our own nervous system is electrical. We shall see that it is not so, in the layman's meaning of the term, but the electrical processes that accompany its actions afford problems of absorbing interest. The fastest known nerve impulses in mammalian nerve or spinal cord travel at about 140 metres per second, the slowest anything down to 0.3 metre per second. What their speed may be in the brain we do not know, but very likely perhaps it does not differ much from these figures. The passage of impulses through single synapses is known by the work of Lorente de N6 and others to cause a delay of 0.75 millisecond. Such delays, and there are sure to be many in the cortex, impose a certain additional slowness on nervous actions.

The flashing speed of thought which so much impresses us is, it seems, a rather slow affair, but in view of the short distances that impulses have to travel in the brain the rate is fast enough to appear instantaneous to us. It is true

that, although the electrical current cannot itself be slowed down from its normal 1,000 ft. per microsecond, it is possible to slow down the arrival of an impulse by devices such as delay systems, and especially by the trigger systems, in which each component excites the next, at a rate that can be made inferior to conduction in nerve. There is, it seems, no limit to the slowing which could be imposed, down even to 1 foot an hour. This would entail complex apparatus. For many years nothing recognizably the counterpart of such systems could be found in the structure of the nerve fibre, but there are those who believe now that the retardation is at the nodes of Ranvier, with high-speed leaps between each node (the "saltatory theory" of conduction). Significantly, nodes of Ranvier have been found in the tracts of the spinal cord.

It remains an anomaly that the speed of the nervous impulse is usually slower in the bare fibres of non-medullated than in medullated nerve, as if the nerve sheath increased the speed. To the surgeon the results of nerve injuries and the long delay in recovery seemed to negative completely the electrical nature of the impulse. It certainly would be impossible if we thought of electrical currents flowing along plain copper wires. But the delay in recovery is accounted for equally well in either view on the ground that the passage of the impulse requires a perfect conductory system, which, unlike copper wire, takes time to repair. Physiological conduction demands more than anatomical continuity, the axons must be a certain size and the sheath a certain thickness, as Young shows, and it is conceivable that the sheath needs to acquire certain physical properties proper for polarization. Whichever way one looks at it the speed of the nervous impulse presents us with a problem in electricity as a biological fact that is so special as to be unique.

Lastly, although electronic methods permit of much more local, more individual questioning of elements in the nervous system, we must not overlook the chemical agencies which transmission demands and from which nerve cells derive their energy. It seems very plain that if the nervous system is examined by electrical methods answers must be obtained in terms of electricity. But if it is examined in terms of chemistry, as Sir Henry Dale and G. L. Brown have done, the same thing now appears as a wonderfully implemented electro-chemical machine. There may be other methods of investigation still to be discovered.

It would probably be wrong to say that electrical methods are more delicate than chemical, yet it is certainly much easier to render an account of nervous actions and to represent the results of understandable diagrams by the former than by the latter means. A one-sided view is only too easily acquired, but let the artificers remember chemistry, for metabolic disorders can block transmission—the "invisible lesions" of clinical neurology of which Sir Charles Symonds has written. The recollection that chemical agencies and enzyme actions are no doubt eventually explicable in physical terms does not entirely remove the force of this reminder.

Calculating Machines

These lines of thought, however elementary, seemed to me a necessary prologue before we come to consider systems which have a purely electronic structure. We shall be right in concluding that it does not greatly matter what the nervous impulse really is, except that, vastly multiplied, it is part of a communication system, a self-controlled information system (self-controlled because of its integrating feed-backs), and could therefore be compared with man-

made systems in these classes. Such systems happen to be a peculiarly rich development of our own times. But we shall be quite wrong if we approach the subject on any other terms except those of analogy.

To be just, nothing more than analogy is claimed by most of their constructors (some, like Professor Williams, do not go so far even as that), but there is a grave danger that those not so well informed will go to great lengths of fantasy. If we see that some nervous tissues behave like some electronic circuits we must all the time remember that the resemblance is with fragments of the nervous system and not with the whole integrated nervous system of man. It is only right when we do so that we recollect something else, that we cannot be sure that the highest intellectual processes are still carried out in the same way. Something quite different, as yet undiscovered, may happen in those final processes of brain activity that results in what we call, for convenience, mind.

The histological pattern of the human cortex leaves us with a host of questions unanswered. We may be in the familiar position that I sketched in earlier passages of stretching our knowledge to cover something to which it does not apply. Abstract thinking may not be a matter of neurone mechanics as we know them at lower levels. But let us proceed for the moment by supposing that the system remains the same throughout—and a large assumption it is—and that it is for the moment comparable with something of a different material composition but with a similar plan. The mechanisms of calculating machines are outside the province of neurologist or surgeon, and I have to rely upon and gratefully acknowledge the assistance of Professor F. C. Williams, professor of electro-technics in my own university, and the information gleaned from Dr. Wiener, of Boston, in his entertaining book on the new science that he has christened "Cybernetics" (1948).

Computing machines use very many fewer "neurones" than has the brain. One may compare the 10,000,000,000 cells of Adrian's estimate with the 20,000 valves of the first big American machine ENIAC at Princeton, and the 1,000 of Professor Williams's newer and more efficient experimental and most ingenious instrument in Manchester. McCulloch, of Chicago, was reported as saying that a model that contained valves and wiring anything approaching in number the neurones in the human nervous system would require a building the size of the Empire State Building to house it and the complete electrical output of Niagara Falls to run it. Calculating machines certainly consume great quantities of electricity and generate considerable heat. It is probable that McCulloch's estimate is lavish because the brain almost certainly sends out and receives the same message through several fibres and cells so that we have more nervous tissue than we need and more certainly, than we use if the meagre effects of excisions from some areas mean what we think they mean.

Wherein do any analogies lie? They lie in certain likenesses between wireless valves and nerve cells in this way, that the valves can be so wired as to store messages, to show the Sherringtonian principles of "convergence" and "divergence," can be inhibited from action, and may be arranged so as only to transmit a message (a symbol in terms of electricity) if they are receiving impulses from one or several other valves and not to transmit if other excitations fail to come in. The likeness between such an arrangement and that of the impulses arriving in a nerve cell through its dendrites and the behaviour of neurone pools is so close as to convince us that in these actions some nervous tissues with simple patterns behave extremely like

some electronic circuits.* It gives additional support to the belief that human tissues behave according to some physical laws discoverable elsewhere in Nature, without surrendering their own individuality. This is a belief old enough to be both useful and respectable.

The fact that calculating machines can be made to store electrical charges representing numbers for long periods of time suggests that there is "memory" in the machine, which must in fact "remember" how far it has got with a calculation in order to be able to proceed, just as we do ourselves. It must also "remember" all the data and the procedure leading to solution. It retains its "memory" until it is cleared of its charges. Using electronic instead of nervous impulses it can carry out calculations with such great rapidity that it will solve a simple calculation in milliseconds, and in an hour one that would employ a mathematician several months. We are invited to consider that the memory that the machine has in the form of stored charges is perhaps the same as memory in man or in animal, as a "charge" in a cell or a group of those millions of cells whose individual uses we do not know.

All that one is entitled to say is that it could be something of that kind, but that the electrical machine offers no proof that it is so. We might guess so much without a machine, nor does it tell us what the nature of the "charge" in a nerve cell is, except to assume that it is electrical (for which there is no present justification). Damage to large parts of the human brain, entailing vast cell losses, can occur without serious loss of memory, and that is not true of calculating machines so far, though so large a one might be imagined that parts of it might be rendered inoperative without total loss of function. It can be urged, and it is cogent argument against the machine, that it can answer only problems given to it, and, furthermore, that the method it employs is one prearranged by its operator. The "facilities" are provided and can be arranged in any order by "programming" without rebuilding.

It may be objected that the second argument is equally true of man; our difficulty is in his case that we have not seen the blue-print from which he was constructed, and that we have been baffled by our attempts to reconstruct it. The first objection can be met by the counter proposition that man himself answers only such propositions as are put to him by his environment, and takes us back indeed to Aristotle's "Nihil est in mente quod non," etc.; that our minds are built by education and experience data, processed by the machine, our brain. But the calculating machine which man makes himself throws no light on this problem; it only appears to do so.

There is another analogy of which Wiener has made interesting use. It is this: that computing machines with complicated circuits may develop spontaneous functional faults in which the operation circles endlessly in a closed loop instead of proceeding in the way intended. This is a not uncommon "disease" of electronic computing machines. It can be cured by cutting off the current, by shaking the machine, or by putting into it a "shock" charge. Wiener makes much of the likeness between this functional machine-illness and the methods employed in curing obsessional diseases in man (sleep or narcosis, leucotomy or E.C.T.). The likeness stands or falls on the acceptance of Moniz's suggestion, and it is no more, than an obsession is a chain reaction in neurone mechanisms by which a dominant idea blocks the normal functioning of mind and behaviour. It is a good analogy, but it neither proves nor disproves the theory that obsessions are in fact exactly of

that kind. They are certainly vastly more complicated than the abnormal "circulation disease" in a calculating machine. I repeat that it is again only analogy, but it is one which the impulsive may much too easily accept as ambivalent proof of identity, simple and diagrammatic.

Wiener made the suggestion that the searching process in automatic telephone exchanges, by which unoccupied circuits are looked for by the electrical equivalents of incoming number combinations, is very likely the counterpart of what happens in the nervous system. This may be true, but the alternative pathways in the cord and brain are so great that "engaged" signals will be rare. "Previous engagement" might, however, account for the failure of some messages to reach consciousness, or explain in different language our inability to do several things at the same time. Comparisons with the scanning processes of television may yet prove instructive. Ideas such as these remind us that we do not need to accept exact similarity for us to look with renewed interest at old problems. They remind us how far we have advanced since we could be satisfied by comparing the nervous system with a hand-operated telephone exchange.

Thinking

The activity of the nerve cells in the grey matter even of an isolated segment of the spinal cord can be demonstrated by electronic detectors. The activity is greater when the cord is in continuity with the brain and falls to a minimum when the roots are divided. Of the vast stream of sense data that pour into our nervous systems we are aware of few and we name still fewer. For it is the fact that even percepts are wordless. Only by necessity do we put a vocabulary to what we touch, see, taste, and smell, and to such sounds as we hear that are not themselves words. We look at a landscape, at the rich carving and majestic architecture of a cathedral, listen to the development of harmonies in a symphony, or admire special skill in games and find ourselves woefully lacking in ability to describe our percepts. Words, as we very rightly say, fail us either to describe the plain facts of these experiences or to impart to others our feelings. Gesture at times speaks more tellingly than tongues.

From these plain truths has arisen the profession of the critic, who has himself to learn and to teach the public to accept a conventional paraphrase, sometimes taking refuge in describing painting in terms of music and vice versa. The variety of the visual and general perceptual scene alone is too great for those frail instruments—words—and it is because of this that literature flourishes. But without using words, though richer in the variety of our experience and with words only just below the surface, our minds are not very dissimilar from those of animals, and it is not difficult to conjecture that a Trappist existence might, for a brief period, be not unpleasant. The development of this theme would take me too far, but it is necessary for us to bear it in mind in considering mechanism and thinking. Granted that much that goes on in our heads is wordless (for if it is not, then we must concede words, an internal vocabulary, to animals), we certainly require words for conceptual thinking as well as for expression. It is here that there is the sudden and mysterious leap from the highest animal to man, and it is in the speech areas of the dominant hemisphere rather than in the pineal that Descartes should have put the soul, the highest intellectual faculties.

It is almost boring to repeat that it is because he has a vocabulary that man's intellectual progress has been made possible—by the day-by-day record of how far he has gone in his pilgrimage towards finite knowledge, that journey

*I am obliged to my colleague, Professor Schlapp, for deductions which he drew chiefly from the Cambridge machine and for other wise comments.

without an end. We remember more, that language is not static, but that neologisms continually mark our progress not only in general ideas but in science. We use to-day scores of scientific terms that men who lived as recently as Priestley, Lavoisier, and Darwin would not understand. It is not enough, therefore, to build a machine that could use words (if that were possible), it would have to be able to create concepts and to *find for itself* suitable words in which to express additions to knowledge that it brought about. Otherwise it would be no more than a cleverer parrot, an improvement on the typewriting monkeys which would accidentally in the course of centuries write *Hamlet*. A machine might solve problems in logic, since logic and mathematics are much the same thing. In fact some measures to that end are on foot in my university's department of philosophy. If the machine typewrites its answers, the cry may rise that it has learned to write, when in fact it would be doing no more than telegraphic systems do already.

Nor must we overlook the limitations of the machines. They need very intelligent staffs to feed them with the right problems, and they will attempt the insoluble and continue to it until the current is switched off. Their great advantage is their speed compared with a human mind, and I have given reasons for that. But, it may be asked, is that so very much more marvellous than the crane that can lift so much more than can a man or than an automobile that can move so much quicker?

The great difference in favour of the calculating machine as compared with the crane, and I willingly allow it, is that the means employed are basically so similar to some single nervous lay-outs. As I have said, the schism arises over the use of words and lies above all in the machines' lack of opinions, of creative thinking in verbal concepts. I shall be surprised, indeed, if that gap is bridged, for even supposing that electrical charges could be made to represent words, what then? I cannot see that anything but jargon would result. Not until a machine can write a sonnet or compose a concerto because of thoughts and emotions felt, and not by the chance fall of symbols, could we agree that machine equals brain—that is, not only write it but know that it had written it. No mechanism could feel (and not merely artificially signal, an easy contrivance) pleasure at its successes, grief when its valves fuse, be warmed by flattery, be made miserable by its mistakes, be charmed by sex, be angry or depressed when it cannot get what it wants.

Conclusion

I conclude, therefore, that although electronic apparatus can probably parallel some of the simpler activities of nerve and spinal cord, for we can already see the parallelism between mechanical feed-backs and Sherringtonian integration, and may yet assist us in understanding better the transmission of the special senses, it still does not take us over the blank wall that confronts us when we come to explore thinking, the ultimate in mind. Nor do I believe that it will do so. I am quite sure that the extreme variety, flexibility, and complexity of nervous mechanisms are greatly underestimated by the physicists, who naturally omit everything unfavourable to a point of view. What I fear is that a great many airy theories will arise in the attempt to persuade us against our better judgment. We have had a hard task to dissuade man from reading qualities of human mind into animals. I see a new and greater danger threatening—that of anthropomorphizing the machine. When we hear it said that wireless valves think, we may despair of language. As well say that the cells in the spinal cord below a transverse lesion "think," a heresy that Marshall Hall destroyed 100 years ago. I venture

to predict that the day will never dawn when the gracious premises of the Royal Society have to be turned into garages to house the new Fellows.

I end by ranging myself with the humanist Shakespeare rather than the mechanists, recalling Hamlet's lines: "What a piece of work is a man! How noble in reason! how infinite in faculty; in form, in moving, how express and admirable! in action, how like an angel! in apprehension, how like a god! the beauty of the world! the paragon of animals!" In that conclusion, if not always in my approach to it, I feel confident that I should have won the approval of that bold experimenter and noble character in whose remembrance this oration was founded.

THE USE IN CHILDREN OF PROCAINE PENICILLIN WITH ALUMINIUM MONOSTEARATE

BY

JOHN L. EMERY, M.D., D.C.H.

Clinical Pathologist; Lecturer in Pathology, University of Sheffield

L. M. ROSE, B.M., M.R.C.P.

Resident Clinical Assistant, Hospital Unit

SHEILA M. STEWART, B.Sc.

Bacteriologist; Demonstrator in Bacteriology, University of Sheffield

AND

E. J. WAYNE, M.D., F.R.C.P.

*Professor in Pharmacology, University of Sheffield;
Physician, Children's Hospital*

(From the Children's Hospital, Sheffield)

Frequent intramuscular injections of penicillin preparations to children often cause much pain and unhappiness. There have been many attempts to prolong the therapeutic action of a single injection by using penicillin added to bases relatively insoluble in water. Such preparations are based on the premise that a single injection will introduce into the body a depot of penicillin which will be released slowly, thus achieving a therapeutic concentration in the blood over a prolonged period.

Procaine penicillin G, described by Salivar, Hedger, and Brown (1948) and Sullivan, Symmes, Miller, and Rhodhamel (1948), is a relatively insoluble equimolecular combination of procaine together with the sodium or potassium salts of penicillin G. It is usually prepared as a suspension in a base of refined sesame or arachis oil. The clinical value of procaine penicillin has been described by Herrell, Nichols, and Heilman (1947) and Boger, Orritt, Israel, and Flippin (1948). In adults it is claimed that adequate blood levels can be demonstrated up to 24 hours after one injection of 300,000 units. Similar levels were found after single daily injections in children by Carson, Gerstung, and Mazur (1949). That blood levels in children 24 hours after a single injection may be variable has been shown by Emery, Stewart, and Stone (1949). It is realized, however, that procaine penicillin has considerable advantages over previous preparations.

Buckwater and Dickenson (1947) described a new vehicle for the intramuscular administration of penicillin, in which penicillin salts are suspended in peanut oil combined with aluminium stearate. It would seem that the aluminium ester

produces a unimolecular envelope to the penicillin particles, to some extent preventing solution of the penicillin. (This preparation is not to be confused with the aluminium salt of penicillin, the experimental activity of which was reported by Reid (1947).)

Thomas, Lyons, Romansky, Rein, and Kitchen (1948) studied the effect of a single injection of various penicillin salts in a peanut-oil medium together with 2% (w/v) of aluminium monostearate. They found that the absorption of penicillin from the peanut-oil preparation containing aluminium stearate was delayed as compared with the absorption from the same salts in peanut oil alone or in peanut oil with wax. A single intramuscular injection of procaine penicillin in peanut oil with aluminium monostearate resulted in blood concentrations being maintained over a longer period than after a single injection of similar preparations of sodium or aluminium penicillin. It was further observed that the smaller the size of the individual particles of the preparation the greater the prolongation. The greatest prolongation was when 95% of the particles were under 5μ in diameter.

Similar observations on the importance of particulate size have been made with respect to suspensions of procaine penicillin by Dowling *et al.* (1947) and Welch, Hirsh, Taggart, and Smith (1947). Clinical trials of procaine penicillin in an oil and aluminium monostearate gel have confirmed the production of prolonged blood levels. Robinson, Hirsh, Milloff, and Dowling (1948) found that the majority of their patients had assayable blood levels after 24 hours, while one-third had assayable levels after 48 hours.

This paper records an investigation of penicillin levels in the blood of children following the injection of a preparation of procaine penicillin in arachis oil with 2% (w/v) aluminium stearate.

Method

Dosage was graded according to age. Children over the age of 5 were given the usual adult dose of 300,000 units, which is 1 ml. of the emulsion. Children from 1 to 4 years old were given 150,000 units (0.5 ml.). Under the age of 1 year, some were given 75,000 units and others 150,000 units. Injections were made into the vastus lateralis.

Penicillin serum levels were estimated by the capillary-tube method described by Fleming (1943), using whole blood inoculated with Richard's strain of *Streptococcus pyogenes*. The serum used for assay was from capillary blood collected in Wright's capsules. Control specimens were taken before the injection of penicillin. Daily specimens of blood were taken from all patients for 48 hours; in some it was not possible to continue taking specimens beyond this time. In seven out-patients injections were repeated at the end of 48 hours, and in 11 ambulatory children injections were given daily for three days. In 11 in-patients the serum levels were obtained at one, three, and six hours after the first injection to assay the rapidity of absorption.

The particulate size of the procaine penicillin in the suspension of each bottle used was estimated by direct measurement under the microscope. Over 95% of the particles of the preparation were below 5μ in diameter, which agreed with the claim made by the makers (Imperial Chemical (Pharmaceuticals), Ltd., Manchester).

Note on Technique of Injection.—The chief disadvantage of this preparation is the difficulty of drawing the suspension into the syringe. A wide serum needle can be used. A more economical method is to pump air into the bottle, using a No. 1 Record needle, thus causing the pressure in the bottle to fill the syringe. If the injection is made at

right-angles to the skin and muscle there is a tendency for the material to leak back along the needle track, particularly if the muscle is held tense. This back leak is almost entirely eliminated by making an oblique injection.

Results

The serum penicillin levels obtained in 11 patients one, three, six, and 24 hours after the injection of procaine penicillin with 2% aluminium stearate are given in Table I.

TABLE I—Serum Penicillin Levels in 11 Children in Bed During the 24 Hours Following the Injection of Procaine Penicillin in 2% Aluminium Stearate

Serum Penicillin Level (u./ml.)	Hours after Injection			
	1	3	6	24
4	..	1		
2	..	2	1	
1	..	3	2	1
0.75	..	2	2	
0.50	..	3	3	3
0.25	..		3	5
0.12	..			2

Dose of penicillin: 0-1 year, 75,000 units; 1-4 years, 150,000 units; 5-12 years, 300,000 units. The figures give the number of patients showing the tabulated levels at the time intervals.

In all patients the serum level was 0.5 u./ml. or higher at one hour and three hours. At six hours the concentration fell a little, but the minimum level was 0.25 u./ml., and at 24 hours the minimum level was 0.12 u./ml.

An analysis of the daily serum penicillin levels in 66 children of varying ages, following the injection of the aluminium procaine penicillin, is given in Table II. All

TABLE II—Analysis of the Serum Penicillin Levels in 66 Children after the Injection of Procaine Penicillin with 2% Aluminium Stearate

Age Group in Years	Dose of Penicillin (Units)	In- or Out-Patients	No. of Patients	No. of Cases Giving Serum Penicillin Levels of 0.06 u./ml. or Over			
				24 Hours	48 Hours	72 Hours	96 Hours
0-1	75,000 150,000	Mixed ..	8 6	8 6	8 3 of 3	4 of 4 2 of 2	2 of 2 —
1-4	150,000 150,000 300,000	1 P O P O P	14 11 1	14 10 1	11 of 11 9 of 10 1	7 of 10 1	7 of 7 1
5-13	300,000 300,000	1 P O P	21 5	21 5	16 of 16 4 of 4	11 of 11 1 of 1	5 of 12
0-13	As above	O P 1 P	8 3	Reinjection after 48 hours		8 3 of 3	5 of 5 3 of 3

the children under 1 year old gave a serum level of 0.06 u./ml. or over at the end of 48 hours after the injection. Four of five receiving the smaller dose of 75,000 units had a level of 0.06 u./ml. or over at 72 hours.

All the 14 in-patients aged 1-4 who were given 150,000 units had a level at least 0.12 u./ml. at 24 hours and 0.06 u./ml. at 48 hours, and seven of these followed to the end of a fourth day showed levels of 0.06 u./ml. Of 11 out-patients aged 1-4 given 150,000 units, all except one had levels of 0.06 u./ml. or over at 24 and 48 hours after injection. One child aged 4 was given 300,000 units, and he still had a level of 0.06 u./ml. at the end of four days, when he was discharged.

All the 26 patients aged 5 to 13 given 300,000 units had levels of at least 0.06 u./ml. at 24 hours, as did all 20 examined at 48 hours; 12 of 15 examined at the end of three days showed similar levels. Five of 12 patients of this group showed a level of 0.06 u./ml. after four days.

Eight patients given injections on alternate days maintained levels of at least 0.06 u./ml.

The blood penicillin levels of 11 children who received a daily injection of procaine penicillin with aluminium stearate are given in Table III. In the great majority the levels were above 0.12 u./ml. throughout.

TABLE III.—Serum Penicillin Levels in 11 Ambulant Children given Once-daily Injections of Procaine Penicillin with 2% Aluminium Stearate

Serum Penicillin Levels (u./ml.)	Control	No. of Patients Showing Tabulated Levels at the End of		
		1 Day	2 Days	3 Days
4		1		
2			1	
1		1		2
0.75			2	1
0.5			1	4
0.25		5	3	3
0.12		2	3	1
0.06		2	1	
0.03				
Nil	11			

Dose of penicillin: 0-4 years, 150,000 units; 5-12 years, 300,000 units.

No child showed a general reaction to the injection. One parent stated that her child had walked with a limp for 12 hours afterwards, but on examination we could find no localized swelling or tenderness.

Discussion

This investigation was concerned primarily with serum penicillin levels obtained after the injection of procaine penicillin with aluminium stearate, and no attempt has been made to assess accurately the therapeutic value of the preparation; the clinical results, however, were satisfactory.

The high serum penicillin levels obtained during the first three hours after injection suggest that there is more rapid absorption at this period than later. This is possibly due to absorption before the formation of an inflammatory barrier and to the immediate absorption of any free penicillin already present in the preparation.

The results we have obtained with the preparation are considerably better than those obtained with procaine penicillin without aluminium stearate, and agree very well with the findings of Thomas *et al.* (1948) and Robinson *et al.* (1948) in adults. In the doses we have used a level of at least 0.06 u./ml. was obtained after 48 hours in all but one out-patient. Furthermore, a level of at least 0.06 u./ml. was found in 20 of 22 patients whose blood was examined at the end of three days.

From the results we have obtained it would seem theoretically reasonable to give injections on alternate days, and in the eight children in which this was carried out a level of 0.06 u./ml. or over was maintained. Eleven children were, however, given daily injections to ascertain if there was a summation effect and if it was possible to maintain high levels of penicillin in the blood by this means. Daily injections were carried out for three days, as it was thought that from the persistence of levels in ambulant children for three days only a maximum level would be reached by the end of three days and no higher levels could be reasonably expected later. The results shown in Table III indicate that daily injections not only provide a satisfactory level but give a summation effect. It is clear that the blood penicillin levels are maintained in the great majority of cases above 0.1 u./ml., a level which is bacteriostatic for almost all pathogens other than those showing particular resistance, such as particular strains of staphylococci.

A disadvantage of the preparation is its oily nature, which makes it rather more difficult to administer than aqueous preparations of penicillin. There is also the possibility of sensitization, and possibly a skin test with the preparation

may have to precede treatment. We have not seen any reaction, but we have not given the preparation to any child continuously over a very long period. The possibility of the effects of absorbed procaine after conversion to para-aminobenzoic acid interfering with the action of sulphonamides is largely theoretical and extremely difficult to prove. Carson, Gerstung, and Mazur (1949) could obtain no conclusive evidence on this point when using the earlier simple procaine penicillin, in which the rate of absorption is much greater than in this suspension with aluminium stearate.

This preparation of penicillin seems to have advantages over all previous preparations that have been marketed. It gives an almost painless injection site, minimal local and no general reaction, and in our experience an almost stable concentration of penicillin in the blood for at least 48 hours; and one is confronted with the unusual prospect of deciding at what daily intervals injections should be given.

Summary

Blood penicillin levels have been followed in 66 children of varying ages given graded doses of procaine penicillin in arachis oil with 2% aluminium stearate in which over 95% of the particles were below 5 μ in diameter.

The doses given were 75,000 units (0.25 ml.) and 150,000 units (0.5 ml.) to children under 1 year, 150,000 units to children aged 1-4 years, and 300,000 units (1 ml.) to older children.

There is a rapid initial absorption of penicillin, giving a level above 0.2 u./ml. by the end of the first hour, and this level is maintained for at least three hours.

In all but one case a blood penicillin level of 0.06 u./ml. or more was maintained for at least 48 hours after injection.

Children given daily and alternate daily injections maintain a continual penicillin level in the blood, the daily injection producing higher levels than the alternate daily injection.

We conclude that procaine penicillin in arachis oil with 2% aluminium stearate is a suitable preparation for the daily injection of penicillin.

We would like to thank Dr. T. Colver, whose patients were used in these estimations, our nursing and medical colleagues for their co-operation, and Miss Dorothy Lee for laboratory technical assistance. The penicillin preparation was kindly supplied by Imperial Chemical (Pharmaceuticals), Ltd., Manchester.

REFERENCES

- Boger, W. P., Oritt, J. E., Israel, H. L., and Flippin, H. F. (1948). *Amer. J. med. Sci.*, 215, 250.
 Buckwater and Dickenson (1947). Quoted by Thomas *et al.* (1948).
 Carson, M. J., Gerstung, R. B., and Mazur, H. A. (1949). *J. Pediat.*, 34, 41.
 Dowling, H. F., Romansky, M. J., Welch, H., Robinson, J. A., Chandler, V. L., Zeller, W. W., and Hirsh, H. L. (1947). Presented at the Meeting of Syphilis Study Section, Sept. 24, Washington, D.C.
 Emery, J. L., Stewart, S. M., and Stone, D. G. H. (1949). *British Medical Journal*, 1, 845.
 Fleming, A. (1943). *Lancet*, 2, 434.
 Herrell, W. E., Nichols, D. R., and Heilman, F. R. (1947). *Proc. Mayo Clin.*, 22, 567.
 Reid, R. D. (1947). *Proc. Soc. exp. Biol., N.Y.*, 66, 650.
 Robinson, J. A., Hirsh, H. L., Milloff, B., and Dowling, H. F. (1948). *J. Lab. clin. Med.*, 33, 1232.
 Salivar, C. J., Hedger, F. H., and Brown, E. V. (1948). *J. Amer. chem. Soc.*, 70, 1287.
 Sullivan, N. P., Symmes, A. T., Miller, H. C., and Rhodehamel, H. W. (1948). *Science*, 107, 169.
 Thomas, E. W., Lyons, R. H., Romansky, M. J., Rein, C. R., and Kitchen, D. K. (1948). *J. Amer. med. Ass.*, 137, 1517.
 Welch, H., Hirsh, H. L., Taggart, S. R., and Smith, G. H. (1947). Presented at the Meeting of Syphilis Study Section, Sept. 24, Washington, D.C.

According to a report (B.U.P.) the war in China has led to a great increase in the price of menthol. The stock of this substance in Hong Kong is said to be practically exhausted, and it is almost impossible to obtain more from the interior of China under present conditions. During the war, when Far Eastern supplies were cut off, Brazil developed the production of menthol, which is derived from peppermint oil, but this year's output is estimated to be less than 100 tons, and the United States alone uses between 250 and 300 tons a year.

INJURIES TO THE SUPERIOR LONGITUDINAL SINUS

BY

G. B. BARKER, M.B., B.Ch., D.P.M.

Late Assistant, E.M.S. Neurosurgical Unit

During the six months following D Day, 1944, a considerable number of cases of head injury were received at an E.M.S. neurosurgical unit. These presented every type of injury, with varied signs and symptoms, but among them were a number of injuries which had involved the superior longitudinal sinus (S.L.S.) to a varying degree. These were an interesting group, and 11 of the 26 cases seen were selected for study as presenting fairly clear-cut examples of the S.L.S. syndrome without the complicating factors of other injuries. As a group these cases did very well, and this study is directed with special reference to their follow-up over the last four years.

Anatomy

The S.L.S. begins in the anterior fossa of the skull, at the crista galli, where it communicates with the veins of the nasal cavity or with the angular veins. It runs longitudinally backwards over the convex surface of the cerebrum, as far back as the level of the internal occipital protuberance, and then curves laterally, usually to the right, to form the transverse sinus. Its anatomy has been investigated by Sargent (1910-11), who describes several features of importance. It receives the superior cerebral veins from the mesial surface and from the upper half of each cerebral cortex. The veins from the lower half drain into the Sylvian system and there is an inconstant but adequate anastomosis between the two systems, so that the occlusion of one set of veins is not necessarily accompanied by blockage of the venous outflow from the area which it drains. The upper set of cortical veins group together to form four main channels—the frontal, pre-central, post-central, and occipital veins.

The S.L.S. is accompanied on each side by three main venous channels or lacunae—the frontal receiving the frontal cortical veins, the parietal receiving the pre- and post-central veins, and the occipital receiving the occipital cortical veins. These lacunae vary in size, but Sargent reports one case in which the parietal lacuna on each side measured 15 cm. in length and 2.5 cm. in breadth at its widest part.

The cortical veins terminate in two main ways. Either they run beneath the lateral lacunae and empty into them by means of openings in their floor, the blood then draining through a number of openings into the S.L.S., or they run completely beneath the floor of the lacunae and open direct into the S.L.S.

Injury

Gordon Holmes and Sargent (1915) reported over 70 cases of injury to the S.L.S. from wounds without infection, and discussed the possible pathology of the symptoms in the light of this anatomical knowledge. The present paper deals with a far smaller group, but one which has been followed up for a considerable period. The data have been accumulated from our own notes and from the field medical cards that accompanied the cases. Work was carried out under pressure and the notes are therefore not always as full as one might wish.

Of the 11 patients five were wounded while under shell or mortar fire, two suffered from bomb blast, one from a bullet wound, and one from some bridging equipment

falling on his head. In two cases the history was unobtainable. Four patients retained consciousness and were able to give good and coherent histories. Loss of consciousness in the others varied from ten minutes to four days, but with the exception of this last case and one other the period of unconsciousness was brief, and retrograde and post-traumatic amnesia was very short.

The injury was described as a "lacerated wound" in six of the 11 cases, and these included three cases in which consciousness was retained. Two cases had protruding brain substance and two had penetrating wounds.

Subsequent x-ray examination revealed the presence of a bony depression in the region of the S.L.S. in seven cases; three others had severe bony injury with in-driven bone fragments, and in only one case was there no evidence of bony injury.

Gordon Holmes and Sargent described three main types of wound which correspond to those from which our own cases suffered: (1) superficial tangential laceration with no evidence of fracture; (2) bony depression with compression of the S.L.S. or of the lacunae, without injury to its walls; and (3) penetrating or in-and-out wounds, with the entrance and exit wounds on opposite sides of the midline and close to it.

Operation

It is not necessary to give detailed reports of each operation, but treatment varied from simple excision of the wound edges to a more elaborate operation involving removal of damaged bone, brain tissue, and foreign bodies. In all cases, except one in which a drain was left *in situ* for two days, the wounds were closed in two layers with closure of the dura. Full courses of penicillin and sulpathiazole were given as a routine.

In the description of the operation specific mention of the S.L.S. was made in five cases. In each case the impression gained was that the sinus remained patent, which corresponds to the description given by Gordon Holmes and Sargent, whose series of cases was larger and who had the opportunity of performing post-mortem examinations in some cases. At necropsy they usually found a thrombus of the S.L.S., but in view of the presence of trabeculae within its walls they thought that probably the whole lumen was not obstructed. They also described a case in which injury lay to one side of the midline, with thrombosis limited to the lateral lacunae beneath it.

The superficial cortical veins which enter the sinus in the region of the wound were found to be swollen and firm, and could not be emptied by pressure. The area of cortex drained by these veins was swollen and firm, with flattened convolutions.

Examination

Of the 11 cases five had signs involving both lower limbs only, four had involvement of both lower limbs and one upper limb, and two had involvement of all four limbs.

Motor Symptoms.—There was a loss of power in all cases, varying from a slight diminution to complete paralysis. The distribution of the weakness was constant in that in the lower limbs the distal segments were affected to a greater degree than the proximal, and in the upper limbs the opposite was the case. A typical case was that in which there was no movement of either leg below the knee, although power at the hips was such that both legs could be raised from the bed. In another case there was a complete paralysis of both lower limbs, with paralysis of the right upper arm; and in a third case there was a paralysis of both legs, with reduction of power, complete in the left upper limb and affecting all the joints of the right upper limb, particularly the shoulder.

All cases showed an increase in tone varying from a slight degree to a marked spasticity. This rigidity was typical again in that it appeared in each case almost immediately, was maximal at the start, and then showed a progressive improvement *pari passu* with recovery of function. As would be expected in this clinical picture of a spastic paresis, the reflexes in the affected limbs were increased, the plantar responses were extensor in seven cases, and there was ankle clonus in at least four.

Sensory Symptoms.—Only two cases showed no sensory impairment; the others showed, typically, impairment of postural sensibility and loss of tactile discrimination and localization. Subjective numbness and paraesthesia also occurred in two cases. There was loss of postural sensibility in eight cases; in seven of these it was the toes that were affected, in three the fingers, and in one case all the joints of one arm. The duration of the symptoms depended on the degree of injury.

In one case with a depression of the inner table just to the left of the midline for a distance of about 0.5 cm. symptoms consisted of impairment of joint sense in the toes of both feet and some diminution to light touch and pin-prick on the right side below the ankle and on the left on the outer border of the foot. At operation it was found that a small bone fragment had pierced the dura and was embedded in the top of the sensory cortex. It was removed, and eight days later there was gross diminution to light touch over both feet and loss of joint sense in the toes and fingers of both limbs. Joint sense at the knees appeared normal. Four days later sensory symptoms were normal except for slight diminution to light touch over the outer border of the left foot, and after a period of re-education in walking the patient appeared quite normal, with no physical signs. In more severe cases, however, loss of postural sensibility in the toes remained to add to the difficulty experienced in walking.

Lumbar Puncture.—This was performed in six cases, but only as a post-operative measure. The pressure was raised to above normal limits in only two cases, and in these it fell to normal within three and 14 days. This latter case, in fact, had a penetrating wound in the right mid-parietal region with in-driven bone fragments, and was the most severe case of cerebral injury in the series.

Urinary Disturbance.—Only two cases had any urinary trouble; one had a very mild degree of incontinence lasting a few days, and the other had a more prolonged period lasting several weeks.

Epileptic Attacks.—One case had a single focal epileptic attack which lasted for about 15 minutes on the day after injury and consisted mainly of flexion movements limited to the right fingers and arm. None of the cases have had any epileptic attacks for the four years for which they have been followed up.

Follow-up

Ten cases have been successfully followed up over the last four years. The only case lost sight of was one with very mild symptoms following a simple scalp laceration, and he was symptom-free six months after his injury. All the others had bony injury of varying degrees, and only two of these appear to be quite free from symptoms. One wrote in May, 1948, that he was "very well and quite normal in every way." The other has spent some time in prison for petty larceny and is considered physically fit by the authorities.

Thus while only two patients can be considered quite fit, seven of the 11 are able to earn their own living in some kind of work. One has a light job, five days a week, as a battery attendant. He is quite active, but one foot requires a

calliper splint and the other, he writes, "gets stuck occasionally." He also suffers from headaches and is rather forgetful. He had a scalp laceration in the right parietal region running over the vertex and there was a small in-driven metal foreign body that was removed without trouble. His condition now appears to be stationary.

Another man has his own small business as a book-seller. He had a severe injury with a midline laceration and a depressed comminuted fracture with penetration of the dura. His recovery was slow but steady; he can now walk unaided, but finds it difficult to tackle inclines owing to some spasticity of his foot. He also complains that if he puts his left foot down suddenly he gets a sharp pain as if he had trodden on a spike.

Another man has a sedentary job as an electrical-instrument maker, and yet another has a like job with the Ministry of Supply. The former stated in January, 1947, that he could get about alone, but that he needed a stick in wet or slippery weather. He could move his toes freely up and down, but had not got normal easy movement in his ankle or knee.

Of the four who are still incapacitated two had penetrating wounds and two had severe depressed comminuted fractures. They differ from the others only in degree, their disability being due to an inability to walk unaided owing to weakness and spasticity of the lower limbs. One of these cases (Case 6) may here be summarized, as it well illustrates the march of events.

Report of Typical Case

Aug. 14, 1944.—Patient wounded by mortar bomb. Deep laceration of scalp, no obvious fracture. Comatose.

Aug. 15.—Conscious; dysphasic; responds to name and to pin-prick. Right arm, complete spastic paralysis. Legs: complete spastic paralysis, left more spastic than right; ankle clonus; extensor plantars.

Aug. 16.—Conscious; dysphasic. Right arm, spastic paralysis. Legs: complete spastic paralysis; extensor plantars. X-ray report: "An oval depressed fracture with much comminution of the depressed portion lying up alongside the midline in the mid-parietal region on the left side. From the lower part of the 5-cm. depression a fissured fracture runs downward on, I think, the left side of the skull to terminate in the roof of the orbit. Not much separation of the edges." **Operation:**—Removal of damaged bone together with fragments that had penetrated the dura and brain. Clot and necrotic brain sucked away and wound closed.

Sept. 6.—Very mild nominal dysphasia. Gives a clear account of his injury. Right arm: tone flaccid, with some finger movements and rotation of the elbow only. Posture sense impaired in the fingers. Legs: power good on the left except for dorsiflexion of the foot, which cannot be performed; on the right he can draw his leg up but cannot move the toes and cannot raise his leg off the bed; tone flaccid; ankle clonus; plantars equivocal.

Sept. 23.—Alert. Movements of right fingers, elbow, and shoulder returning. Movement improved in right leg.

Sept. 1, 1945.—Walking, but a tendency to fall.

Feb. 12, 1948.—Right arm: floppier than left; full range of active and passive movements, but these are slower and weaker than normal. Gripping of right hand is slow, and opening of hand is associated with flexion of wrist. No discrete finger movements possible. Falling away of outstretched right fingers, and wrist. Legs: both legs "floppy," right more than left; he cannot evert his right foot and weakness of eversion of the left. Plantars extensor. Bilateral knee and ankle clonus. Loss of position sense in toes and inner three fingers of right hand and diminution of tactile discrimination at the ulnar border of right hand and wrist. He is reported as being a co-operative man who is learning to use his weak hand well and hopes to get placed eventually in a carpenter's shop.

In this case it was a full year before the patient was able to walk. The fact that he made such a good recovery was largely due to his own determination, reflected in his desire to perform work that required the use of his injured hand.

Discussion

A study of this series reveals that there is little to be added to the critical study of a series of similar cases made by Gordon Holmes and Sargent after the 1914-18 war.

The syndrome consists of a spastic paresis of characteristic distribution affecting one or more limbs and associated with cortical sensory loss in the same region. This clinical picture is the result of injuries in the region of the superior longitudinal sinus, and is remarkable particularly for the rapid, in fact, almost instantaneous, onset of the spasticity which accompanies the paralysis. This is especially emphasized in the present group of cases, for, owing to the rapidity with which cases were evacuated in this war, they were often in the hands of a neurosurgical team a few hours after injury. In addition, the injuries themselves were not of great severity in some cases, and consciousness was retained and a clear account of the injury and its effects could be obtained.

One man, for example, stated that a mortar bomb fell five yards (4.57 metres) away from him on the other side of a wall and that he was struck by fragments. He fell to his knees and could not get up. He was flown to England and was in a neurosurgical unit within eight hours. On examination he showed a very typical picture with no movement of either leg below the knee, although he could raise both legs off the bed. There was hyperaesthesia to light touch and pin-prick on the left leg below the knee and on the dorsum of the right foot. Reflexes were brisk and equal and there was ankle clonus with indefinite plantar responses. Loss of position sense occurred in the toes of both feet. X-ray examination revealed a metal foreign body situated just above the midline at the midpoint between theinion and nasion. Beneath there was a depression of the inner table for a distance of about 3 cm., the most marked depression measuring about 4 mm. The depressed bone was rongeured away, leaving a bone defect down the centre of which was running the longitudinal sinus, which appeared patent. He made a good recovery from the operation, and twelve days later the first flicker of returning power in the right toes was noted. His progress was slow, but a month later he was able to walk with assistance. His right foot recovered by the end of six months, but his left foot made no progress and was eventually fitted with a calliper. Two years later he was working and reported only occasional periods when his right toes "got stuck."

Another man sustained a tangential scalp wound while attacking a house. He fell down, but did not lose consciousness, and was able to crawl to cover. His complaint at that time was that his legs "felt heavy." The fingers of his right hand were also affected, and he complained later of transient attacks of blindness. The scalp wound ran from the left post-parietal region across the vertex to the right parietal region with depression of both tables extending across the mid-parietal region, the maximal depression being directly over the longitudinal sinus. This man made a steady recovery to full health.

These two cases illustrate the following points: (1) a relatively mild injury with no loss of consciousness; (2) the immediate onset of weakness and spasticity in the lower limbs; (3) the presence of bony depression in the immediate region of the longitudinal sinus; and (4) the slow and steady recovery over a long period, although in the second of these cases the depressed fracture was not elevated.

According to Gordon Holmes and Sargent the most striking pathological feature of these injuries is the firm swollen cortical veins which cannot be emptied by pressure, and the oedema of the area of cortex that they drain. Microscopically, there is oedema of the affected area, which is more prominent in the white than in the grey matter.

Minute haemorrhages occur in the grey and white matter chiefly in proximity to the wound. The nerve cells in the affected areas show pronounced changes and are greatly swollen and in advanced chromatolysis.

It is thought that this clinical picture results from the situation of the longitudinal sinus near the site of the injury. The sinus undergoes some degree of thrombosis which causes the oedema and produces the associated pathological changes in the cerebral cortex.

Thrombosis is the natural response of a large vessel of this type to trauma in its vicinity, and it is possible that it occurs independently of changes in the cortex. For although the sinus was only specifically mentioned at operation in five of these cases, the impression gained was that it remained patent owing to the presence of trabeculae within its lumen.

Lumbar puncture was not performed before operation, but the pressure was not consistently high when it was done post-operatively. Headache was not a common symptom, and in fact only one man complained of it specifically. Neither did any case show changes in the optic fundi compatible with a persistently raised C.S.F. pressure, although this would depend to some extent on the site of the thrombus within the sinus.

Wounds of varying severity in this situation cause similar symptoms, differing from each other only in degree. For example, Case 1 sustained a scalp wound with no bony injury. Symptoms were limited to a slight loss of power and some subjective numbness in the left foot which passed off in five days. In the cases previously cited the symptoms persisted over years.

None of these cases showed the initial period of flaccidity which usually occurs in cases of cerebral damage, whether due to trauma or to vascular catastrophe, and which is thought to be due to shock. This persists normally in such cases for a period of about 10 days, and only then does spasticity begin to appear. Indeed, the very feature of these cases is the immediate appearance of spasticity.

Case 11 is interesting in this respect. This man sustained a penetrating injury close to the midline in the left parietal region. He presented a rather mixed picture of right hemiplegia, with a spastic paresis of the lower limbs. He had a right focal epileptic attack on the day following injury confined to his hand and arm. Operation involved removal of damaged brain tissue and of in-driven bone fragments in the left parietal region. He made a good recovery from a severe operation, and two days afterwards showed the following signs: complete flaccid paralysis of the right arm, and a flaccid paralysis of both legs, complete on the right and almost complete on the left. He showed, in addition, loss of joint sense of the ankles and toes and an extensor plantar response.

Eleven days after operation the following signs were observed: slight spasticity of the right upper limb with some movement now possible at the elbow and slight dorsiflexion and palmar flexion at the wrist. Grip good, but some difficulty in extension of the fourth and fifth fingers. In the lower limbs tone was increased on both sides, right slightly more than left. Power was improving in the left leg, which could be held off the bed and flexed at the knee; dorsiflexion and plantar flexion were just present and he could move the toes slightly on this side. On the right, paralysis persisted except for slight movement at the hip. Ankle clonus was ill-sustained and the right plantar was extensor. Three years later he was able to get about with the aid of sticks in wet and slippery weather and was earning his living. He considered that improvement was still continuing.

This case showed a stage of flaccidity occurring after operation, but eleven days later the picture of spasticity had again become apparent. It does seem, therefore, that the site of the injury in close proximity to the superior longitudinal sinus is responsible for this clinical picture; but

this does not explain why spasticity occurs at once, and indeed its occurrence is so immediate that it must be related directly to the injury rather than to the secondary pathological changes following a sinus thrombosis. In cases where operative procedure was necessarily severe a stage of shock and flaccid paresis did appear, but ten days or so after operation spasticity had again appeared, often together with the first signs of recovery.

Recovery begins early and continues for a considerable time—several years at least. Its degree depends upon the degree of injury, and if this is severe spasticity and weakness remain and recovery depends upon how much this can be overcome by re-education in walking and the use of appliances. The main difficulty that these patients experience is the negotiation of uneven surfaces and inclines that require the presence of unimpaired postural sensibility in the toes and the ability to dorsiflex and plantar-flex the foot accurately. In the early stages of recovery the gait may be likened to that of a patient suffering from Little's disease, but most cases appear to progress enough to afford adequate movement at the hips and knees, and the residual disability is confined in these cases to the feet and ankles.

Furthermore, although the series is small, the presence of other symptoms often associated with cranial injury do not seem to be of common occurrence—that is, such symptoms as headache, dizziness, or epileptiform attacks.

Summary

A series of cases of injury in the region of the superior longitudinal sinus is presented.

The clinical picture is described and the pathology briefly discussed.

Particular attention has been paid to the clinical progress of the cases and their condition up to four years after injury.

The very early occurrence of spasticity after the injury is also emphasized.

I should like to thank Mr. Wylie McKissock for permission to study and follow up these cases, and Dr. J. E. S. Lloyd for permission to publish this paper. I should also like to thank Miss Montgomery for her help in contacting the cases.

BIBLIOGRAPHY

- Bailey, O. T., and Hass, G. M. (1937). *Brain*, 60, 293.
 Beevor, C. E. (1907). *Ibid.*, 30, 403.
 Burger, H. (1924). *Acta oto-laryng.*, *Stockh.*, 6, 4.
 Goetsch, O. (1936). *Brain*, 59, 135.
 Holmes, G., and Sargent, P. (1915). *British Medical Journal*, 2, 493.
 Langworthy, H. G. (1916). *Ann. Otol., etc.*, *St. Louis*, 25, 554.
 Sargent, P. (1910-11). *J. Anat.*, *Lond.*, 45, 69.
 Symonds, C. P. (1937). *Brain*, 60, 531.
 Walshe, I. M. R. (1914-15). *Ibid.*, 37, 269.
 — (1919). *Ibid.*, 42, 1.

Under the National Insurance (Overlapping Benefits) Provisional Regulations, 1948, certain reductions are made in the rate of benefit payable to in-patients who are maintained free of charge in hospital. These provisions have thrown into relief the question of the extent to which hospitals should provide their patients with the non-medical necessities of life and with minor luxuries. There are certain articles which the Minister considers should be provided as a matter of course for all patients who do not prefer to provide their own—such things as soap, tooth paste or powder, razor blades, sanitary towels or their equivalent, the services of a barber, a reasonable supply of notepaper on request, and a selection of newspapers and magazines in the wards (though not an individual issue). Other articles may be supplied to patients on loan—e.g., towels, hairbrushes and combs, and, where necessary, night and day clothing. It is not easy to distinguish between essentials of this kind and minor luxuries. In other words, between what should be provided at the expense of the Exchequer and what may be provided from the commiserate free money, and the Minister leaves committees to exercise their discretion in determining this issue. He considers that hospitals should not provide as a charge on patients such things as cosmetics, permanent waving, postage stamps, etc. Where patients remain in hospital for long periods, the range of articles to be provided at the Exchequer cost should be somewhat

A CASE OF BILATERAL PHAEOCHROMOCYTOMA

BY

T. M. REID, F.R.C.S.Ed.
Honorary Surgeon

AND

R. SALM, M.D., L.R.C.P.&S.Ed.
Pathologist

Camborne-Redruth Miners' and General Hospital

Phaeochromocytomata are rare enough to warrant the recording of an additional case.

Case Report

The patient, a married woman aged 40, was admitted in October, 1946, complaining of generalized throbbing headaches for the past ten years. These were present by day and by night, but had increased in severity during the past two years. Sometimes after exertion or on stooping the headaches became very severe, spreading from the temporal and infraorbital regions to the vertex and occiput. These attacks lasted for two to three minutes, but the patient emphasized that she was never completely free from headaches. On moderate exertion she soon became breathless and suffered from palpitations. Weakness and loss of weight had increased, particularly during the three weeks before her admission. Her past history had been uneventful. Her family history was very interesting.

Her father died at 46 of Addison's disease, though its cause (atrophy, tuberculous infection, chromaffinoma) is debatable. Of six other siblings, one brother died at 28 of diabetes, while one sister died at 29 of an obscure bone disease. She was apparently healthy up to the age of 14, when she started to "shrink." At the time of her death her body was about the size of a child of 4. The condition was regarded as that of an "achondroplastic dwarf."

Physical Examination.—The patient looked very much older than her age. Pigmentations were not present on skin or mucous membranes. There were visible arterial pulsations in the anterior cervical triangles and in the suprasternal notch, and the apex beat was forcible. The pulse was regular, but there was a tachycardia of 140. The blood pressure was raised to 227/128. The blood urea was 65 mg. per 100 ml. Hyaline casts were constantly found in the urinary sediment, and a moderately large tumour which did not move with respiration could be felt in the right lower abdomen. Both fundi of the eyes showed sparse, scattered, superficial retinal haemorrhages of moderate size in the paracentral areas. One vein below the left optic disk appeared to be compressed by the overlying artery.

X-ray Examination.—The ascending pyelogram showed that the right kidney corresponded to the tumour felt by abdominal palpation and was found to be rotated forward, outward, and displaced downwards. Both kidneys were secreting. The left kidney was normal in appearance and position. Above the right kidney there was a dense shadow, and a new growth of the right adrenal gland was thought to be most likely.

A presumptive diagnosis of chromaffinoma of the right adrenal gland was made and operation was decided upon. Under N₂O-ether anaesthesia the right lumbar region was explored and a large adrenal tumour removed. During the operation it was noted that both pupils became maximally dilated as soon as the tumour was handled. Post-operatively the patient was immediately treated for shock, adrenaline was given, but in spite of this she did not rally and death occurred within 24 hours.

At necropsy the left adrenal gland appeared to be also grossly enlarged, weighing 40 g. In parts the usual shape of an adrenal gland was still recognizable, but a large round tumour mass occupied the central portion of the gland. On sectioning, normal yellow cortical tissue was only sporadically recognizable. For the greater part the whole organ and round mass consisted of soft yellowish or dark brown jelly-like material. The right

adrenal gland, removed at operation, weighed 325 g and consisted of two distinct masses, held together by a flat, broad pedicle. The smaller of the two, still resembling in shape an adrenal gland, measured $6\frac{1}{2}$ by 4 by $3\frac{1}{2}$ cm. The larger mass was oval, measuring $10\frac{1}{2}$ cm across and $7\frac{1}{2}$ cm in width. The tumour was surrounded by a thin fibrous capsule and was moderately firm. On sectioning the cut surfaces were whitish or yellowish brown in colour, but there were many areas of haemorrhagic infiltration as well as areas of cystic degeneration.

Microscopically both tumours appeared to be composed of strands and masses of fairly large somewhat pleomorphic cells possessing an oval or round vesicular nucleus displaying a delicate chromatin network and exhibiting a distinct nucleolus surrounded by a fair rim of basophil cytoplasm, and often forming syncytium-like complexes. They were supported by scanty stroma and often surrounded blood sinusoids. At the periphery the tumour cells occasionally resembled normal adrenal medullary tissue. They stained dark brown after fixation in potassium bichromate solution. The diagnosis was chromaffinoma.

Discussion

Phaeochromocytoma, or chromaffinoma, is a comparatively rare tumour. Up to 1946 about 176 had been recorded, of which only 47 showed hormonal activity (Calkins and Howard, 1947). Among these there were 16 bilateral growths (Mackeith, 1944), so that the present case is probably the 17th*. Every year several new cases are recorded (Espersen and Dahl-Iversen, 1946; Washington *et al.*, 1946; Blacklock *et al.*, 1947; Brunschwig, 1947; Goldenberg *et al.*, 1947; Gutmann, 1947; Kipke, 1947; Mandl, 1947; Schneider, 1947; Spalding, 1947). The symptoms, though essentially those of hypertension due to an excess of adrenaline production, may vary, and some authors distinguish four clinical groups: (1) paroxysmal hypertension, (2) persistent hypertension, (3) asymptomatic, and (4) malignant. A fifth and very rare manifestation is Addison's disease due to compression of the adrenal cortex by the new growth. In addition to the signs and symptoms of hypertension, including haemorrhages in the eyes and partial or complete compression of the retinal veins by their corresponding arteries, anaemia, loss of weight, lassitude, insomnia, fibrillation, and hyperglycaemia and glycosuria have been observed.

Chromaffin tumours may arise from chromaffin tissue throughout the body, but do not appear to give rise to clinical symptoms unless situated in or in close proximity to the adrenal glands (Mackeith, 1944).

Apart from the history and abdominal palpation, x-ray examination is of help in diagnosis. Tomography revealed the presence of a growth in one case (Mandl, 1947). Perirenal insufflation of air is recommended by several authors. A rise of the serum potassium during hypertensive paroxysms was described by Blacklock *et al.* (1947), while others found an increased content of adrenaline during the attacks (Beer *et al.*, 1937; Strombeck and Hedberg, 1939).

Recently two new tests have been devised which may prove most helpful in diagnosing the condition. Goldenberg *et al.* (1947) postulated that in a case in which hypertension is due to an increased amount of adrenaline it will be abolished or significantly decreased by the intravenous administration of adrenolytic compounds. But if hypertension is due to any other cause it will persist. The two adrenolytic benzodioxanes they employed (933 F, piperidylmethyl benzodioxane; and 1164 F, 2,4-dimethyl-piperidylmethyl benzodioxane) were injected in a dosage of 0.2-0.25 mg per kg of body weight, and proved their assumption on sight. The injections were followed by a fall in blood

pressure of about 50 mm, which effect lasted for about 15 minutes—a reaction which proved to be specific for an increase of adrenaline in the circulation.

The second test was developed by Roth and Kvale (1945), based on experiments by Hyman and Mencher (1943), who also claim that their test is specific for the condition. The intravenous injection of 0.025-0.05 mg of histamine in 0.025-0.05 ml of saline into patients suffering from a chromaffinoma was followed immediately by a rise in blood pressure of about 100 mm or more, accompanied by the subjective sensations of a typical attack of hypertension. Though one might be tempted to explain this phenomenon as the reaction of the body to a vasodilator, this is apparently not the mechanism, as dilatation of vessels as such does not produce a similar reaction. Hyman and Mencher's theory is that the drug exerts an immediate action on the tumour cells, causing them to shed their hormone into the blood stream.

Up to date no medical treatment of the condition is available, unless the observation by Espersen and Dahl-Iversen (1946) can be corroborated. They treated one of their cases pre-operatively with methylthiouracil, which resulted in complete disappearance of the paroxysmal attacks of hypertension.

The new growth has been attacked over 50 times, and in many cases successfully, by surgical intervention. The most critical period is the first 24 hours after operation. Many substances have been advocated to combat the ensuing shock, of which adrenaline in large doses proved the most successful (Biskind *et al.*, 1941).

Calkins and Howard (1947) described the first two cases of familial bilateral phaeochromocytoma, occurring in a woman and her niece. They were of the opinion that there is every likelihood that the mother of the latter also died of the same disease. A remarkable incidence of goitre was shown to exist in this family. In this connexion it may be stressed that the family of our patient also showed evidence of endocrine imbalance, but none of its members suffered from thyrotoxicosis.

We gratefully acknowledge our indebtedness to our colleagues, Drs Hale, Hair, and Heath, for permission to make use of their case notes.

REFERENCES

- Beer, E., King, F. H., and Prinzmetal, M. (1937) *Ann Surg.* 106, 85.
- Biskind, G. R., Meyer, M. A., and Beadner, S. A. (1941) *J. clin. Endocrinol.* 1, 113.
- Blacklock, J. W. S., Ferguson, J. W., Mack, W. S., Schaffar, J., and Symington, T. (1947) *Brit J Surg.* 35, 179.
- Brunschwig, A. (1947) *J. Amer. med. Ass.* 134, 253.
- Calkins, E., and Howard, J. E. (1947) *J. clin. Endocrinol.* 7, 475.
- Espersen, T., and Dahl-Iversen, E. (1946) *Acta chir. scand.* 94, 271.
- Goldenberg, M., Snyder, C. H., and Aronow, H., jun. (1947) *J. Amer. med. Ass.* 135, 971.
- Gutmann, D. (1947) *British Medical Journal* 1, 563.
- Hyman, A., and Mencher, W. H. (1943) *J. Urol.* 49, 755.
- Kipke, G. F. (1947) *Arch. Path.* 44, 113.
- Mackeith, R. (1944) *Brit. Heart J.* 6, 1.
- Mandl, F. (1947) *Wien. klin. Wschr.* 59, 11.
- Roth, G. M., and Kvale, W. F. (1945) *Amer. J. Sci.* 210, 655.
- Schneider, H. O. (1947) *Northw. Med. Seattle* 46, 216.
- Spalding, J. M. K. (1947) *British Medical Journal* 1, 564.
- Strombeck, J. P., and Hedberg, T. P. (1939) *Acta chir. scand.* 82, 177.
- Washington, E. L., Callahan, W. P., jun., and Edwards, F. W. (1946) *J. clin. Endocrinol.* 6, 638.

The Minister of Health is considering the question of the recruitment and training of matrons and assistant matrons in homes for old or infirm people provided by local authorities and voluntary organizations under the National Assistance Act, 1948. The Ministry announces that the National Old People's Welfare Committee will hold a course on Sept. 11-17 for training existing staff and with a view to selecting suitable matrons with whom future students might be placed for training. Inquiries should be made before July 5 to the secretary, National Old People's Welfare Committee, 26 Bedford Square, London, W.C.1.

*A further case of bilateral chromaffinoma, occurring in a child was demonstrated by Dr H. S. Beer at a meeting of the Association of Clinical Pathologists held at St. Mary's Hospital on Jan. 23 and 24, 1945.

SPONTANEOUS CIRCUMRENAL HAEMATOMA

A REVIEW AND REPORT OF TWO CASES

BY

K. WHITTLE MARTIN, F.R.C.S.

Resident Surgical Officer and Surgical Registrar, Worthing Hospital

The term "spontaneous circumrenal haematoma" is self-explanatory and excludes, by definition, cases of traumatic origin. The condition is said to be a rare one, though I have had to deal with two cases in the past nine years. These two cases and a short review of the subject are thought to be worth publishing, as no mention is made of the condition in most of the standard surgical textbooks, and no description of it had appeared in any English journal until that of Heritage in 1934. The condition is referred to by Hamilton Bailey (1944) and in American papers under the title of spontaneous perirenal haematoma. At risk of seeming pedantic, however, the Graeco-Roman bastardy of the word "perirenal" should condemn it. The condition is probably not as rare as the literature would suggest; it may possibly be the underlying lesion in such labels as "retroperitoneal sarcoma" and "retroperitoneal haematoma of obscure aetiology."

Case 1

A youth aged 18 was suddenly taken ill at sea with abdominal pain and vomiting on Nov. 14, 1945. There was no history of trauma. Next morning his condition was worse. He had a furred tongue and a weak thready pulse of 130; his temperature was 103° F. (39.4° C.). There was extreme tenderness and rigidity in the right loin and right iliac fossa. Examination of the urine, including centrifugalization and microscopy, was negative.

A diagnosis of retrocaecal appendicitis with generalized peritonitis was made; he was shipped ashore and admitted to the Calvary Hospital, Hobart, Tasmania. He was seen by two surgeons, who agreed with the diagnosis, and immediate operation was undertaken.

At operation the appendix was normal, but a large retroperitoneal haematoma, which appeared to surround the kidney, was found in the right paracolic gutter. The incision was extended and the swelling was being explored further when the anaesthetist reported that the patient was in *extremis* and the abdomen had to be quickly closed. He was given a blood transfusion of 4 pints (2.2 litres) and his condition improved considerably. Ten hours after the first operation the wound was reopened. This approach, rather than a lumbar incision, was chosen to enable the presence of a left kidney and its condition to be ascertained. The ascending colon was mobilized, and after mopping out blood clot a transperitoneal nephrectomy was carried out. After this operation he made a rapid and uninterrupted recovery.

Pathological Report.—"The kidney is lobulated, resembling the foetal type, with dilated pelvis and calices. No visible inflammatory reaction in the pelvic cavity. A haemorrhagic area over the hilum shows only a layer of tissue between the pelvis and the exterior. Sections show widespread interstitial nephritis, with areas of small round-cell infiltration scattered through the renal tissue. At the site of haemorrhage there is complete replacement of the renal tissue by inflammatory scar tissue."

Pyelograms, taken two and six months after operation, showed a large left kidney and large pelvis with good secretion. Now, three years after, the patient is perfectly fit and still serving as a regular officer in one of the armed Forces.

Comment.—The points of interest are: (1) this was a case of spontaneous circumrenal haemorrhage, probably secondary to a congenital hydronephrosis in a foetal-type kidney;

(2) it presented as an acute surgical emergency, and was diagnosed by three surgeons as acute appendicitis with generalized peritonitis; (3) the urine contained no red blood cells; and (4) uninterrupted recovery followed nephrectomy.

Case 2

A man aged 35 was admitted to Worthing Hospital on June 21, 1948, complaining of abdominal pain and backache for 24 hours. The pain seemed to come from the right loin and was maximal in the right iliac fossa. There had been no vomiting and no central pain, but his abdomen felt distended. Bowels and micturition were normal. He had had amoebic dysentery in 1942, with recurrences in March and September, 1943. There was no history of recent trauma.

On examination he was obviously ill and in pain. His temperature was 100° F. (37.8° C.), and pulse 92. The tongue was furred. Localized tenderness and guarding were present in the right iliac fossa, over McBurney's point and extending up into the loin. There was guarding of the lumbar muscles, but no abdominal rigidity. Considerable meteorism was noted. The liver was not enlarged, and neither kidney was palpable. Peristaltic sounds were normal. Rectal examination revealed no tenderness. The heart sounds were normal. The blood pressure was 150/95. An occasional leucocyte and some ammonium urate crystals were found in the urine, the pH of which was 6. No red blood cells or casts were seen. There was no growth on culture for 24 hours. A blood count showed: haemoglobin, 80%; red cells, 3,610,000; colour index, 1.11; white cells, 14,800 (90% polymorphs); blood urea, 46 mg. per 100 ml. Amoebae were not seen in one specimen of faeces. Two hours later his condition was worse and operation was advised. The pre-operative diagnosis was retrocaecal appendicitis, ? amoebic perityphilitis.

Operation.—Through a right paramedian incision I found that the caecum was ballooned and the small bowel distended with gas. The appendix was normal. A large retroperitoneal haematoma involved the posterior aspect of the caecum and ascending colon. It filled the right paracolic gutter, extended over the brim of the pelvis, and seemed to originate from the kidney, which was large but smooth. There was no evidence of amoebic colitis. The abdomen was closed. The anaesthetist noted that the blood pressure was 180/100. This hypertension persisted post-operatively.

Post-operative Course.—This was marked by progressive vomiting and abdominal distension. His blood pressure remained high. He developed a classical adynamic or neurogenic ileus, which failed to respond to continuous gastric suction and intravenous therapy. His condition slowly but inexorably deteriorated until death supervened on the eleventh post-operative day.

Necropsy.—A large unorganized clot surrounded the right kidney and stripped up the peritoneum. Both kidneys and suprarenals appeared normal. There was no evidence of active amoebic disease, and the liver was normal.

Microscopical Report (Dr. Standish).—"There is no microscopical evidence of haemorrhage in the suprarenals, and their vessels show no evidence of either endarteritis or polyarteritis nodosa. The surrounding blood clot shows a very early stage of organization, but no inflammatory change. There is no evidence of the cause of the haemorrhage either in the suprarenal or in the clot itself."

Comment.—(1) The hypertension found at operation and afterwards was an interesting phenomenon and one which has not, so far as can be ascertained, been noted before in the literature. The patient's general practitioner, Dr. Shepherd, told me that he had found the blood pressure normal at several previous examinations. The cause of this is presumably compression of the renal parenchyma by the clot, and is analogous to the hypertension produced experimentally by Page (1939) and Graef and Page (1940). These workers were able to produce a sustained hypertension in dogs from perinephric scarring by silk or from compression of the kidneys by wrapping "cellophane" round them.

(2) The cause of death was adynamic ileus, due again, presumably, to irritation of the aortico-renal plexus by clot. I was satisfied at necropsy that there was no mechanical obstruction to the second part of the duodenum by the haematoma itself—an explanation which had been suggested. Some degree of meteorism is, of course, common after nephrectomy. It is my impression that a greater degree of ileus is found after a right nephrectomy than after a left; but this is only an impression, and I am not aware that the matter has been investigated.

Discussion

Aetiology

Polkey and Vynalek (1933), of Chicago, have written the fullest review of the literature up to 1933 and collected 178 cases, mostly from Continental writers. They suggested that "sudden renal congestion" might explain some of the spontaneous cases in which no cause was discovered. In experiments on dogs they ligated the renal vein with silk thread and found subcapsular haemorrhage in 33%, extracapsular haematoma in 42.8%, and some degree of parenchymal haemorrhage in 100%.

I have found a further 13 cases reported in the literature in the last 15 years. The pre-operative or clinical diagnoses of these cases, together with those of my own two, and the stated causes and results of treatment, are shown in the accompanying Table.

Spontaneous circumrenal haematoma must be regarded as a symptom-complex or complication and not as a disease entity. It follows that the lesions responsible for it are numerous. They fall into three main groups—renal, extra-renal, and the blood dyscrasias.

Group 1: Lesions of the Kidney and Suprarenal Gland.—A lesion of the kidney or suprarenal accounts for about 60% of cases. Nearly every lesion affecting these organs has been reported—renal and suprarenal cysts and tumours, chronic nephritis, hydronephrosis, aneurysm of the renal artery, lithiasis, tuberculosis, and thrombosis of the renal vein. Usually the haemorrhage is the precipitating symptom, with no previous history pointing to renal disease. Thus in one of Heritage's cases it was only with difficulty and after microscopical examination that "ghost cells" of a haemorrhagic and necrosed neoplasm were found in the clot.

Group 2: Extrarenal Retroperitoneal Lesions.—Included in this group are such differing conditions as perinephritis, arteriosclerosis, aneurysm of the abdominal aorta, and hypertension. One case was associated with periaarteritis nodosa.

Group 3: The Blood Dyscrasias.—Haemophilia, polycythaemia, leukaemia, scurvy, thrombocytopenic purpura, and Hodgkin's disease have all been reported.

Clinical Course

Clinically one must distinguish between the acute and the chronic form of the disease. The acute form is by far the more common. The onset is sudden and dramatic and presents as an acute surgical abdomen. There may be no history suggesting renal disease. The classical findings

are the triad of pain, a renal tumour, and signs of internal haemorrhage (Lenk, 1909), but these are seldom all present. The muscular rigidity usually precludes the palpation of a renal tumour in the acute form of the disease. Pyrexia is due to blood absorption, and pressure on the renal parenchyma may cause albuminuria or hypertension. Later, increasing abdominal distension, vomiting, and prostration confuse diagnosis and suggest the perforation of an abdominal viscus. In fact, the haematoma may perforate the peritoneum and give a clinical picture very similar to that of a "ruptured ectopic," but in a male.

A more insidious form of the disease occurs with a sense of fullness or discomfort in the affected loin. Here there is time for investigation. A renal tumour can as a rule be felt and the diagnosis is usually hydronephrosis or hypernephroma. Careful study of pyelograms, as Ekman (1946) has pointed out, will show displacement of the kidney: the direction of displacement may indicate the location of the source of the haemorrhage.

The only reported cases in which correct pre-operative diagnoses were made are described by Cibert, Vachon, and Cavailher (1942). In all these cases a tender tumour in the loin was present. The cases were of the insidious or chronic form and they all presented a similar physical sign, not previously described in the literature. This consisted of a lumbar ecchymosis, which in time tracked down to the scrotum. This ecchymosis, when present with a tumour in the loin and in the absence of trauma, is pathognomonic of spontaneous circumrenal haematoma.

Treatment

Where the condition is suspected emergency intravenous pyelography should be undertaken. It is essential to confirm the presence, and preferably the normality, of the opposite kidney. To quote the words of Cibert, Vachon, and Cavailher. "La conclusion, exprimée par tous les auteurs, découle de cette constatation: l'opération s'impose." Non-operative treatment was uniformly fatal in every published case, except one. It must be accepted, however, that the diagnosis is usually made with certainty only at operation or post mortem. Nevertheless, operation should be advised as soon as the necessary resuscitation has been undertaken, for three reasons: (1) to arrest haemorrhage and save life; (2) to prevent the side-effects of a large haematoma—meteorism, ileus, hypertension, sepsis, and possible rupture into the general peritoneal cavity; and (3) to explore what may well prove to be a malignant condition of the kidney or suprarenal gland.

In theory it might occasionally be possible, in the extra-renal type of haematoma, to clear out the clot and ligate the bleeding vessel. According to the literature this never seems to have been done. If the haematoma appears to have originated from the kidney, nephrectomy should be carried out. If bilateral renal disease is suspected or proved it might be wiser to rest content with packing or drainage. If both kidneys appear normal and no cause is apparent the best results seem to follow nephrectomy.

As the Table shows, seven out of 15 cases were subjected to nephrectomy without a death.

Table showing Cases Reported in the Last 15 Years

Author	Sex and Age	Clinical Diagnosis	Cause	Treatment	Result
Polkey and Vynalek (1933)	F. 39	Ovarian cyst	Unknown	Drainage	Recovery
Heritage (1934)	M. 51	P.D.U.	Neoplasm	Packing	
"	M. 65	P.D.U.	Suprarenal neoplasm	Laparotomy	Death
"	M. 41	Acute cholecystitis	Unknown	Drainage	
Carver (1939)	M. 43	Hydronephrosis	Hydronephrosis	Nephrectomy	Recovery
"	M. 47	"	Hypertension	Nil	Death
Elmer and Wyngarden (1939)	F. 46	Hypernephroma	Unknown	Nephrectomy	Recovery
Oaro and Todd (1941)	F. 51	Retroperitoneal cyst	"	"	"
Cibert, Vachon and Cavailher (1942)	M. 61	Circumrenal haematoma	"	"	"
"	M. 58	"	Suprarenal cyst	"	"
Ekman (1946)	M. 75	"	Chronic nephritis	Expectant	"
"	M. 48	Appendicitis	Unknown	Laparotomy	"
"	M. 73	Hypernephroma	Hypernephroma	Nephrectomy	"
Martin	M. 18	General peritonitis	Hydronephrosis	"	"
"	M. 35	Appendicitis	Unknown	Laparotomy	Death

Summary

The condition of spontaneous circumrenal haematoma is described, with two personal case histories.

Though rare the condition is an important one to bear in mind, as it may enter into the differential diagnosis of the acute abdomen and if treated expectantly is nearly always fatal.

The aetiology and clinical course are discussed. An acute and a chronic form can be distinguished.

Treatment should consist in surgical intervention and, in most cases, nephrectomy

REFERENCES

- Bailey, Hamilton (1944) *Emergency Surgery*, Bristol.
 Carver, James (1939). *Proc. roy. Soc.*, 32, 547.
 Cibert, J., Vachon, A., and Cavalier, H. (1942). *J. Urol. med. chi* 50, 65.
 Daro, A. F., and Todd, M. C. (1941). *Amer. J. Obstet. Gynec.*, 42, 140.
 Ekman, Hans (1946). *Acta chir. scand.*, 93, 531.
 Elmer, R. F., and Wyngarden, C. B. (1939). *Amer. J. Surg.*, 43, 764.
 Grac, I., and Page, I. H. (1940). *Amer. J. Path.*, 16, 211.
 Heritage, Kenneth (1934). *Proc. roy. Soc.*, 27, 1105.
 Lenk, R. (1909). *Disch. Z. Chir.*, 102, 222.
 Page I. H. (1939). *Science*, 89, 273.
 Polkey, H. J., and Vynalck, W. J. (1933). *Arch. Surg., Chicago*, 26, 196.

APLASTIC ANAEMIA FOLLOWING NEOARSPHENAMINE

BY

F. DUDLEY HART, M.D., M.R.C.P.

Assistant Physician, Westminster Hospital

AND

J. G. HUMBLE, M.R.C.S., L.R.C.P.

Haematologist, Westminster Hospital

Aplastic anaemia is a well-recognized but rare complication of organic arsenical therapy. Wintrobe (1946) states that fewer than 100 cases have been reported in the literature, also that less than one-half of the cases described showed complete aplasia of the marrow. Recovery after complete aplasia has been recorded, however (Wintrobe, 1946). The case described below, which exhibited anaemia, leucopenia, thrombocytopenia, and a completely aplastic marrow on sternal puncture, seems to fall into this class and to be worthy of record.

Case Report

The patient, a man aged 52, contracted primary syphilis and gonorrhoea abroad in June, 1946. He received 37 injections of neoarsphenamine and 37 of bismuth during the next nine months.

He noticed nothing abnormal until April, 1947, when he had a severe epistaxis lasting 16 hours. The red blood cells numbered less than one million. Injections were stopped, but a month later further severe nose-bleeding occurred, with the appearance of petechiae and "papules" on the arms and legs. His haemoglobin was 30%; colour index, 1; red blood cells, 1,500,000 per c.mm.; white blood cells, 3,000 per c.mm. (L. 78, M. 1%, P. 21%); platelets, 25,000 per c.cm.; coagulation time, 14 minutes. Wassermann reaction and Kahn test were negative. The spleen was never palpated.

He was treated with iron, a fresh blood transfusion, and 10 ml. of pentnucleotide every 12 hours. He received altogether some 6 pints (3.4 litres) of fresh blood. Four days later a blood count showed: red cells, 1,670,000 per c.mm.; haemoglobin, 30%; colour index, 0.9; bleeding time, 3½ minutes; coagulation time, 6 minutes; leucocytes, 2,000 per c.mm. (L. 73, N. 2%, E. 3%, P. 22%).

He then returned to England, and during the voyage was given 1 ml. of "hepatab" daily, 45 gr. (3 g.) of iron and 45 mg. of folic acid thrice daily. On his return he stated that he did not feel very ill, but became giddy

and tired on the least exertion. Up to this time he had had 11 blood transfusions in all, the last being on May 19. No further epistaxis had occurred, but he had noticed some oozing of blood from his gums and he found that he bruised easily and "came out in little red spots." Previous illnesses and family history revealed nothing relevant.

He was admitted to hospital under our care on May 31. He was a very co-operative man, very pale, and obviously grossly anaemic. His skin was sallow and sunburnt. There was pronounced foetor oris; his teeth were in a bad condition, with much dental sepsis; the gums were soft and spongy, with pus oozing from them. The tongue was furred but moist. No bismuth line was present. No glands were palpable and no petechiae or bruises were seen. Over his legs and feet the skin was scaly, pigmented, and ulcerated. The blood pressure was 120/60. A soft systolic murmur was present over all areas in the praecordium. The capillary resistance test was strongly positive in three minutes at a pressure of 90 mm. Hg. Nothing abnormal was detected in the chest apart from an occasional rhonchus at the bases. The spleen was not palpable.

The pupils reacted normally to light and to accommodation. Ophthalmoscopy showed normal optic disks. No exudates were seen, though multiple large haemorrhages were present in both retinæ. The central nervous system was otherwise normal.

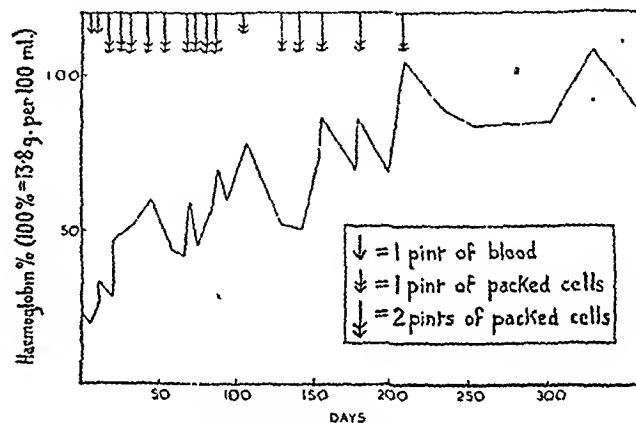


Chart showing haemoglobin findings

The diagnosis of aplastic anaemia due to arsenical therapy was made. The haemoglobin findings are shown in the accompanying graph. Radiographs of lungs and tibiae were negative. The B.M.R. was 4%.

The patient was kept in hospital until Sept. 16, when he was discharged home. During this time his haemoglobin rose from 20% to 104%. A total of 2 pints (1.14 litres) of whole blood and 29 pints (16.5 litres) of packed red cells was given over this period. He did not react adversely to any transfusion, and over the whole period made slow but steady improvement. Penicillin was administered, 40,000 units four-hourly, for the first month, the dosage gradually being reduced over the following three months to 100,000 units twice daily. Liver extract was given by injection (hepalon) 2 ml. daily at the onset, being reduced to twice a week after two months. He also received pyridoxin 100 mg. daily, ferrous sulphate 10 gr. (0.65 g.) thrice daily, two multivitamin tablets thrice daily, and folic acid tablets (15 mg.) daily.

On Oct. 2, 14, and 27 he was readmitted for the transfusion of 2 pints (1.14 litres) of packed cells on each occasion. The condition of the skin of the feet and legs greatly improved, and the capillary resistance test, still positive on Oct. 14, became negative after this time.

Two further pints of packed cells were given on Nov. 20 and Dec. 18. It was apparent at this time that he was making steady progress, and that he was beginning to pick up on his own. He was last seen on May 31, 1948, when he was in excellent general condition. The Wassermann reaction and Kahn test were negative. Our last report, received from abroad in October, 1948, was that he was in perfect general health and had received no further treatment.

Haematological Findings.—On June 2, 1947, these were as follows: haemoglobin, 22% (3.03 g.%); red cells, 1,210,000

per cmm.; colour index, 0.9; white cells 900 per cmm (lymphocytes 80% and neutrophil polymorphs 20%, approximately). No red cell abnormalities were noted. On June 3 the bleeding time was longer than 10 minutes the clotting time (venous blood) 11 minutes, the prothrombin time 11 seconds (normal, 8 seconds); blood platelets 3 400 per cmm., reticulocytes were not found. The blood was Group O (IV) Rhesus positive.

Table showing Results of Sternal Punctures

Date	June 7 1947	Aug 16 1947	May 21 1948
Total nucleated count	3,400 per cmm	10,200 per cmm	25,000 per cmm
Myeloblasts	—	0.4%	1.2%
Proerythrocytes	1 seen in 3 films	0.6%	0.8%
Neutrophils	—	6.8%	9.2%
Neutrophilic metamyelocytes	—	1.3%	6.6%
Neutrophils, segmented	Present	15.0%	24.2%
Eosinophils	—	1.1%	0.3%
Eosinophilic metamyelocytes	—	1.0%	0.6%
Basophils	—	—	0.2%
Lymphocytes	Present	32.6%	29.0%
Monocytes	—	3.2%	2.0%
Megakaryocytes	—	0.2%	Present—mature forms found
Haemocytoblasts	—	1.3%	0.2%
Normoblasts, basophil	1 seen in 3 films	6.8%	0.2%
Normoblasts, polychromat	—	21.0%	19.6%
Normoblasts, orthochromat	—	6.7%	1.0%
Myeloid erythroblast ratio	—	1.16	1.67
Mitellaneous cells	—	0.4%	0.4%
Naked eye	A fatty fluid	A fatty fluid	Marrow particles very evident

The sternal puncture findings are presented in the accompanying Table. They show a progressive return of cellularity from a condition of almost complete aplasia.

Haematological Progress.—The neutropenia persisted until May 18, 1948, when for the first time the neutrophil polymorphs amounted to more than 2 000 per cmm. Reticulocytes were not found in any numbers until Feb. 2, 1948, when they totalled 5% of 3,800,000 red blood cells per cmm (190,000 per cmm). The platelet count did not rise to normal figures until after Feb. 24, 1948, when it was 40 000 per cmm. On May 21 1948, the platelet count was normal.

Discussion

It is of interest to note that the last cell series to recover completely in the circulating blood was that of the neutrophil polymorphonuclears. Neutropenia persisted from April 1947, to May, 1948—a period of 13 months. Reticulocytes did not appear until after nine months of treatment, and platelets returned to normal only after a full 12 months. The capillary resistance test remained positive for seven months. It was felt that, of all the therapeutic agents given, penicillin and blood transfusions were the most important. The former totalled some 35 mega units, administered over a four-months period. The condition of the mouth and legs gave cause for anxiety in the early months, but about the end of the sixth month of the disease a gradual improvement became apparent.

Summary

A case of aplastic anaemia following neoarsphenamine administration is described. Depression was present in all marrow elements—a condition of almost complete aplasia. Recovery was complete after 13 months.

REFERENCE

Wintrobe, M. M. (1946) *Clinical Hematology*. Kimpton, London.

The Ministry of Health states that hospitals may provide clothing for those "up" patients unable to provide it themselves and who are not obtaining it from other sources such as voluntary organizations. They would normally be long stay ambulant patients. The patients may, retain this clothing after discharge from hospital if the hospital is satisfied that the patients need clothing and are unable to obtain it from their own resources and without help.

HISTAMINE HEADACHE*

BY

M. ESZÉNYI-HALASY, M.D.

(From the Neurological Department of Szent Istvan Hospital, Budapest)

Headache is the most frequent complaint encountered in medical practice. It presents no diagnostic problem; the diagnosis is made by the sufferer. But the doctor must know the cause if he is to treat the patient efficiently.

Table I classifies the forms of headache that I have treated. The present paper is concerned mainly with the type of headache due to histamine, as described by Horton in 1941.

TABLE I—Results of Treatment by Histamine

	Histamine 1 cc 1% solution	Atropine	Psychic Headache	Relaxation Headache	Neuritic Headache	Headache associated with hypertension	Headache with Organic Disease	Total	Controls with Neuralgia
Complete cure	29	2	2	2	1	1	2	40	10
Considerable improvement	8	2	2	1	1	1	1	16	10
Some improvement	2	2	2	0	0	0	0	11	11
No change	1	2	2	0	1	0	1	13	13
Total	45	8	8	3	3	3	10	80	40

Clinical Features and Aetiology

Vallery-Radot in 1925, Brickner-Riley in 1935, and Money in 1939 described cases of atypical migraine which seem to be similar to the histamine headache described by Horton. It was Horton, however, who first described the syndrome, made the aetiology clear, produced the same symptoms experimentally, and outlined the method of treatment.

The characteristic symptoms of histamine headache, the frequency of which is shown in Table II, are as follows: it occurs in paroxysms, is unilateral, and is confined to a circumscribed area; on the same side there is congestion of the nasal mucous membrane, attacks frequently come on at night, and the patient often rises in the morning with headache. It is neither hereditary nor familial, has no connexion with menstruation or ocular disturbances, and is unassociated with vomiting. The condition is resistant to all treatment. In these patients headache produced by the injection of histamine is of the same type as occurs spontaneously.

As to the aetiology, it must be presumed that the accumulation of histamine produces an upset in cell metabolism. This accumulation is the result either of overproduction of histamine or of the inhibition of the destructive factor. It is also possible that individual hypersensitivity plays a part in cases in which the production of histamine is normal. According to Horton, in histamine headache the symptoms are caused by dilatation and constriction of the external and common carotid arteries. On the other hand, Wolff, Schumacher, Clark, Butler, Shuterland, and Pickering have proved, on the evidence of many cases, that the internal carotid is responsible for the quality and the intensity of histamine headache, and that the dilatation of the external carotid is of decisive importance in migraine. They demonstrated with photographs, taken during headache produced by the injection of histamine: (1) the amplitude of intracranial pulsation (which is increased); (2) the

*A paper read at the International Congress of Medicine held at Budapest in September 1949.

TABLE II.—*Typical Symptoms of Histamine Headache*

	Histamine Headache	Migraine	Psychical Headache	"Relaxation" Headache	Alcoholic Headache	Headache Associated with Hypertension	Headache with Organic Basis	Total	Controls without Headache
No. of cases	45	8	8	3	3	3	10	80	10
Age	16-60	24-36	20-32	28-59	36-41	49-57	24-37		
Duration	2 months-10 yrs	2-10 years	1 month-1 year	1-6 years	1-2 years	1-2 years	3 months-1 year		
Unilateral	26	5	2	1	1	1	3		
Localized	11	3	6	2	2	2	3		
Generalized	8						4		
Temporal	8	5	2	1		1	2		
Frontal	12	3		2	1		4		
Parietal	14								
Occipital	7								
Vertebral	4								
Paroxysmal	19	8					2		
Nocturnal	16								
Diurnal	29								
Stationary	10		8	3	2	2			
Watering of eyes	12								
Constriction of nasal mucous membrane	16								
Vomiting	2	5			2				

arterial blood pressure; (3) the pressure of the cerebrospinal fluid, and (4) the degree of pulsation in the temporal artery.

Increase in the intracranial pressure reduces the pain in histamine headache by providing counter-pressure to the dilated arteries, signifying that the dilatation of these arteries plays a part in the production of this type of headache. In migraine, however, this procedure has no influence on the headache, a fact which implies that dilatation of the extracerebral arteries is the basis of the condition.

Horton noted that repeated administration of the same dose of histamine could produce a progressively diminishing headache, that is to say, the tolerance of the patient for histamine had increased. These observations led him to try desensitization. The term "desensitization" is used here in its widest sense. The desensitization is non-specific because specific hypersensitivity is not the aetiological factor and there are symptoms of neither hypersensitivity nor of allergy. But the favourable effect of a long course of small doses demonstrates that the therapeutic effect is in the nature of a desensitization.

It is accepted that, although differing greatly from adrenaline and the choline derivatives in nature and origin histamine will probably take its place with them among the most important hormones in animal life. Dale and de Krogh have explained the role of histamine in capillary vasodilatation and the regulation of blood pressure. Later, in 1947, Emmelin and Feldberg observed that histamine was a physiological antagonist of adrenaline. So far as we know, histamine is a breakdown product of tissue proteins, which produce an acid of which histamine (β -iminazolyethylamine) is the amine. The release of this amine occurs in shock due to anaphylaxis, trauma, and other causes. The liberation of histamine may be local.

An interesting question confronts us: Why should a symmetrical system respond with pain which is asymmetrical, unilateral, and localized? It must be presumed that some unknown mechanism makes this possible. The resistance of the arteries to histamine may become less in a circumscribed region and the dilatant effect produced at this point, or some arterial lesion in this area may bring about a local liberation of histamine.

Treatment

In the neurological department of the Szent István Hospital, under Professor Lehoczy, I have treated 90 patients with histamine. They had headache of long duration—between two months and 30 years—which was resistant to all treatment and made them incapable of any work. I have followed up the cases for six months, either by personal contact or by correspondence.

I first gave each patient a test dose of 0.3 mg. of histamine subcutaneously. The local reaction appeared in the form of a red urticarial weal with a surrounding areola of vasodilatation. After several seconds flushing of the face, neck, and chest, and tachycardia occurred; a few minutes later a localized headache began in the usual site. This reaction could be reproduced exactly in all cases of histamine headache. In atypical cases a stronger dose of histamine was necessary to produce the same reaction. In ten control cases not suffering from headache the injection caused a feeble reaction or no response at all, in two cases resulting in only a mild headache, which disappeared in a few minutes.

The symptoms generally continued for from ten minutes to three or four hours. The next day I began desensitization with an injection of 0.1 mg. of histamine subcutaneously, and continued the treatment on the following day according to the reaction to the preceding dose. If the headache, tachycardia, and rise in blood pressure were too severe I reduced the dose. Tolerance increased after the first three or four injections, and I therefore progressively increased the daily dose to 0.2 mg. There are recorded in the literature intradermal and intravenous treatments with various solutions of histamine in extremely high dosage for periods of two to three months, but with my method I obtained the same results in less time (Table I).

Case Reports

The following cases illustrate the course of treatment.

Case 1.—A woman aged 48, suffering from headache for thirty years, which was always confined to the frontal region on the right side. She had had several courses of treatment without result. After x-ray examination the headache was attributed to osteitis of the frontal bone. The patient came to me in a state of depression and was unable to work because of the very severe headache. After the first four injections the headache ceased. She received ten further injections. Five months after the treatment was finished the headache had not returned.

Case 2.—A woman of 24, suffering for six years from headache which was becoming more and more severe. It was always situated in the right temporal region and on the crown. She had to get up five or six times during the night because of the headache. The attacks often occurred during the daytime, and were accompanied by nasal obstruction and watering of the eyes. At the site of the subcutaneous injection there was a local reaction. One or two minutes afterwards she experienced a headache corresponding exactly to her spontaneous attacks. After ten injections she could leave hospital. She has since informed me that she no longer suffers from headache.

Case 3.—A woman aged 49 had had headache since the birth of her son, who is now 28. This was not precisely the type of headache associated with histamine. The pain was stationary and made her incapable of work. She tried several treatments in vain and was driven to ideas of suicide. After the first five

injections she had no more headache. She received one injection a day during the next two weeks, and her previous complaints—loss of appetite, depression, fatigue and vertigo—all disappeared. She now does hard work on the land in extreme heat. She receives one injection a week and is free of symptoms.

Case 4.—A man aged 59 suffered for six years from headache in the frontal and occipital regions. The attacks began when he had finished his hard mental work and left for his week-end rest. This is headache of the "relaxation" type, such as is experienced by a priest on a Monday and by students after an examination. Haemoconcentration reduces the volume of blood, and the relaxed arterial walls are not able to resist the dilatant effect of histamine. After seven injections the patient was free of symptoms for six weeks. He was taking small doses of ergotamine tartrate during this period. The headaches then recurred, but twenty further injections completely cured him.

Comment

I have never observed any severe side-effects. The injection of histamine influences the blood pressure and the pulse for only a few minutes. I have therefore used this therapy in heart disease, hypertension, and hypotension. Palpitations occurred in the first days of treatment, but diminished during the course of desensitization. Several patients experienced a metallic or acid taste in the mouth shortly after injection, one patient had diarrhoea which lasted a week, and vomiting occurred after the first two injections administered to a patient with hyperchlorhydria. But, despite these disagreeable secondary effects, I have on more than one occasion heard the patient say, "I am a new man."

The important point of this therapy is that the patient is completely relieved of his pain at the end of treatment and requires no other remedies. I have reached the conclusion that treatment by histamine is worth while in all cases of frequent headaches of long duration.

Summary

The clinical features and possible pathogenesis of headache due to histamine are discussed. A course of treatment by injections of histamine is described. Details are given of four patients so treated.

Medical Memoranda

Unusual Case of Coronary Thrombosis

There is both clinical and pathological evidence that thrombosis occurs at the site of a previous sclerotic or atheromatous area in a coronary vessel. The event that initiates the thrombosis is, however, very variable, and in many instances may not be apparent. The following case is interesting in view of the dramatic nature of the immediate cause of the infarction.

CASE REPORT

A man aged 49 was seen at Professor Robert Platt's outpatient clinic and gave the following history. He had known for some years that he was abnormally sensitive to a wasp-sting, as he had previously developed severe generalized angioneurotic oedema immediately following a sting. Some months ago he had again been stung on the ankle and within ten minutes felt extremely ill, vomited, and had a sudden attack of diarrhoea. He perspired profusely and had agonizing precordial pain, as though there were a tight band around the chest. Simultaneously he developed severe angioneurotic oedema of the face and had a rigor. The next day the symptoms had subsided except for the precordial pain, which lasted for a further two days before disappearing; there was some fever at this time and he complained of shortness of breath. Seven weeks later he had no complaints except slight

residual dyspnoea. Physical examination revealed no abnormalities; the blood pressure was within normal limits.

A clinical diagnosis of myocardial infarction was made. This was confirmed by electrocardiography, which showed sharp inversion of the T waves in the limb Lead I and in the unipolar precordial Leads V4 and V6, the changes being typical of anterior myocardial infarction.

COMMENT

This would seem to be a case of coronary thrombosis which was precipitated by a severe immediate allergic reaction following a wasp-sting. Numerous cases have been reported previously in which thrombosis, followed by conditions causing shock and sudden fall of blood pressure. Boas (1942), in a review of immediate causes of cardiac infarction, mentions non-penetrating chest injuries, effort, emotion, allergy, cold, infectious disease, operation, and haemorrhage. Among cases classed as due to allergy, one occurred during serum sickness a week after an injection of tetanus antitoxin; one occurred six hours after an intravenous injection of typhoid vaccine; and another developed symptoms of coronary insufficiency after prophylactic pollen injections for hay-fever. Lockhart (1939) reports another case of coronary thrombosis, proved at necropsy, which occurred three hours after an intravenous injection of typhoid vaccine, death taking place one hour later.

Although no records are available of blood-pressure readings during the acute phase of the illness, it is well known that a severe anaphylactic reaction may cause a sudden fall in arterial blood pressure. Such a fall in blood pressure may have precipitated infarction in the case reported.

M. D. MILNE, M.B., M.R.C.P.,
Chief Assistant, Medical Professional
Unit, Royal Infirmary, Manchester.

REFERENCES

- Boas, E. P. (1942). *Amer. Heart J.*, 23, 1.
Lockhart, R. J. (1939). *Brit. J. Derm.*, 51, 318.

A Case of Curling's Ulcer

In 1842 Thomas Curling described an acute ulcer in the second part of the duodenum as a complication of extensive cutaneous burns or scalds. He stated that the ulcer was situated opposite the ampulla of Vater, and described it as small, clean-cut, and deep. Following this description cases of this condition were reported from many places in Britain, on the Continent, and in America. It was suggested that toxins were excreted in the bile, apparently on the supposition that the bile is secreted with such force as to impinge on the opposite wall of the duodenum and ignoring the fact that it is secreted only when food is in the duodenum. A more reasonable hypothesis is an infected embolus from the burnt area, though why infarction should always occur in the same area is not explained.

More recently cases have only rarely been reported. Some textbooks continue to give an adequate description of the condition, others make no mention of it, while some cast a varying degree of doubt over its very existence. Ross (1925), for example, states that "its occurrence is practically unknown and grave doubt has been cast on the statement" (of the occurrence of this complication of burns). The following case is reported to show that such an ulcer does occur, and that it is a complication of burns. It may be objected that the scalds were neither very extensive nor very severe, but an ulcer due to any other cause at the age of 6 years and in the second part of the duodenum is more improbable.

CASE REPORT

On Aug. 26, 1947, a Chinese boy aged 6 years was admitted to the District Hospital, Ipoh, with second-degree scalds from hot water on the lower part of the back of the trunk, the

perineum, and the thighs. There was a moderate degree of shock on admission. His general condition improved with suitable measures, and the scalds were cleansed and then dressed with sulphanilamide cream, and sulphanilamide tablets were given by mouth. During the next three days he had a temperature ranging between 99° and 100° F. (37.2° and 37.8° C.) and a pulse rate which on the evening of Aug. 27 suddenly rose from 90 per minute to 140. There was no vomiting or tenderness in the abdomen. The bowels did not move. The next day the bowels moved, but no blood was noticed in the stool. The pulse still remained around 130, and it was noticed that the child was a little restless. On Aug. 30, in the forenoon, he suddenly passed a very large amount of dark-coloured blood per rectum and a little later vomited a small amount of dark-coloured blood. His general condition deteriorated rapidly, and in spite of measures to replace fluid loss he died the same night.

It is now evident that the haemorrhage must have started insidiously on the evening of Aug. 27, approximately 30 hours after the injury; its insidious onset and progress passed unnoticed until the occurrence of the large melaena and haematemesis, which only then drew attention to the fact that haemorrhage was occurring somewhere high up in the intestinal tract, probably in the duodenum.

At necropsy the intestine was found to be full of blood clot, the organs were pale and exsanguinated, and an acute ulcer was present in the second part of the duodenum 2.5 cm. proximal to the ampulla of Vater on the postero-medial wall. The ulcer was circular, about 1.5 cm. in diameter, with shelving walls, and extended down to the muscular coat; in the floor of the ulcer a small eroded artery was found from which apparently the haemorrhage had come.

Curling's ulcer is probably more common than is realized; it is fair to assume that not all the cases diagnosed will be reported, and it will be diagnosed only in the event of haemorrhage, perforation, or necropsy, and presumably these do not occur in every case.

Our thanks are due to the Director, Medical Services, Federation of Malaya, and the Director, Institute for Medical Research, Kuala Lumpur, for permission to publish this case report.

L. W. JAYESURIA, L.M.S.,
Medical Officer, District Hospital, Ipoh.

A. T. H. MARSDEN, M.D.,
Acting Pathologist, I.M.R. Branch Laboratory, Ipoh.

REFERENCES

- Curling, T. B. (1842). *Med.-chir. Trans.*, 25, 260.
Ross, J. M. (1925). *Post Mortem Appearances*, p. 24. London.

A Case of Arteriovenous Aneurysm

The following case of arteriovenous aneurysm between the ascending aorta and the superior vena cava is described because of the rarity of this condition.

CASE HISTORY

A Chinese labourer aged 42 was admitted to the General Hospital, Singapore, on Aug. 22, 1947. The history given was that on the previous day at about 7 a.m., while carrying a bucket of water, he felt a sudden pain over the front of the neck; this was followed by swelling of the neck, duskiness of the face, and difficulty in breathing.

He looked very ill and presented a dramatic picture—sitting up in bed, gasping for breath, hardly able to talk, dusky over the face, neck, shoulders, and upper half of the thorax, with some swelling and induration of the soft tissues over these areas. A marked continuous thrill was felt immediately above the inner third of the right clavicle. Percussion did not reveal any enlargement of the heart. The sounds were rapid and regular, with accentuation of the second aortic. A continuous loud machinery murmur with systolic accentuation was heard over the heart and all over the chest anteriorly; it was loudest over the area of the thrill in the right supraclavicular region. This murmur disappeared when firm digital pressure was applied

over the area of the thrill. The blood pressure on the right side was 130/70, on the left side 126/70. Examination of the lungs showed some diminution of breath sounds over the right side. The inguinal lymph nodes were enlarged. There were no genital scars. No abnormality was discovered in the abdomen or the nervous system.

A diagnosis of arteriovenous aneurysm between the aorta and superior vena cava was made. Death ensued after three hours. As he was dying the dusky appearance of his face faded away.

Necropsy.—The heart was normal in size, with post-mortem clots in all the chambers. The muscle was reddish brown in colour and firm. The valves were normal and competent. Pearly-white linear scars of syphilis were present at the root of the aorta and along the arch. At the junction of the ascending and transverse portions of the arch was an aneurysmal dilatation, the sac of which measured 8 cm. in diameter, with an inlet 4 cm. in diameter (Fig. 1); it was adherent to the upper lobe of the right lung. The sac had ruptured into the upper portion of the superior vena cava (Fig. 2). All the large veins of the neck were greatly dilated. Other organs showed congestion.

COMMENT

This is a typical case of spontaneous arteriovenous aneurysm within the thorax. The perforation occurred suddenly during exertion and was followed soon after by evidence of obstruction of the superior vena cava. The thrill and murmur were characteristic of an arteriovenous communication. The heart showed no evidence of enlargement, as the aneurysm did not involve the aortic ring. The aetiological factor was syphilis. Out of the 23,000 necropsies performed during the last twenty years in the Department of Pathology, Singapore, this is the first case of a thoracic arteriovenous aneurysm.

I am indebted to Dr. T. Balasingham for the necropsy report.

T. J. DANARAJ, L.M.S.



FIG. 1.—A, Aneurysmal sac. B, Left ventricle.



FIG. 2.—A, Opening into superior vena cava. B, Aneurysmal sac. C, Right auricle.

Reviews

THE NATIONAL HEALTH SERVICE

The National Health Service By Charles Hill, M.A., M.D., D.P.H., and John Woodcock (Pp 432 16s) London Christopher Johnson 1949

This is a most welcome and opportune book which could have been produced only by people thoroughly immersed in all the complexities inherent in the new national service. It is no mere catalogue of references to clauses in the Act and regulations. In many instances the authors discuss objectively the intentions of the regulation under discussion, when these are not too clear, and the way in which the regulation is likely to work. They have also done their best under great difficulties, to bring the book right up to date. In the last two chapters they discuss the Amending Bill (now on its way through Parliament) and give the latest proposals of the Minister on how he intends to apply the findings of the Specialists' Spens Committee. There are many valuable appendices providing full particulars of the various boards, councils, and committees which are responsible for making the system work.

I think the best test of a book of this kind is whether its index is full and intelligible. I have subjected it to many trials, from which it has emerged with credit. To give just one example, I have never been clear who is responsible for choosing the doctor for the children of a family. The index referred me to page 33, where I found that this duty devolves on the mother if the children are under 16.

In spite of the speed at which much of the book has necessarily been written there are no signs of haste in its production. It is a handsome volume, well bound, and the type is excellent. All concerned with it can be heartily congratulated. It is, indeed, as described on the cover, "a book which no one working in this vast field, whether as doctor or layman, can afford to be without." To these I would add people like me who are interested observers. I prophesy many future editions of "Hill and Woodcock."

A Cox

RESPIRATORY FUNCTION TESTS

L'Exploration de la Fonction Respiratoire By Jacques Arnaud, Pierre Tulou, and Robert Méngot. Preface by E. Rist (Pp 318 54 figures 425 francs) Paris Masson et Cie 1947

The authors first review the physiology of respiration and accepted tests of respiratory function, including bronchspirometry, and then describe a method of investigation of the function of the two lungs separately which they use as an aid in the selection of cases for collapse therapy in pulmonary tuberculosis. The 200 pages dealing with the review of physiology and accepted procedures present nothing new and are somewhat pedestrian.

The account of their own method is, however, of considerable interest. The technique consists of the occlusion of the two main bronchi in turn by an inflatable balloon on the end of a narrow catheter. They introduce the catheter under local anaesthesia through the nose, pass it blindly, if possible, through the larynx, and place the balloon in the selected main bronchus under fluoroscopic control. The patient is then placed on a couch, the anterior nares are occluded, and respirations are recorded with an ordinary Benedict-Roth recording spirometer. A first tracing is taken giving the tidal air, the vital capacity, and the oxygen-consumption for both lungs together. The balloon is then inflated to occlude one main bronchus, and the tidal air and vital capacity of the opposite lung are recorded. The authors found that in subjects whose lungs were not grossly abnormal the sum of the vital capacities of the two lungs taken separately in this way did not differ greatly from the total vital capacity. They usually included in their test a period of exercise with the legs. In patients whose pulmonary function was grossly impaired and in whom the worse lung was being examined extreme respiratory distress and asphyxia on inflating the balloon brought the test to an immediate conclusion. In cases with less severe diminution of function of the lung under examination respiration proved possible at rest, but with the added oxygen requirement of exercise the bronchial occlusion had to be terminated. In cases where dysfunction was less

severe the authors assessed the relative functions of the two lungs by their vital capacities. They claim that the investigation is technically simpler than bronchspirometry, though they admit that bronchspirometry makes possible a measurement of the relative oxygen uptake and carbon dioxide output of the two lungs which cannot be done by their method. They claim, moreover, that in the proper selection of cases of pulmonary tuberculosis for surgical treatment, unilateral bronchial occlusion mimics a state of affairs which may occur transiently after a thoracoplasty—namely, complete loss of function of the lung on the side operated upon—and that this consideration enhances the practical value of their test. Their investigation, of patients who have received collapse therapy confirm the bronchspirometric finding that a pneumothorax which has been complicated by pleural effusion and subsequent pleural thickening results in extremely severe diminution of pulmonary function, usually more than that produced by a selective apical thoracoplasty.

This account of the author's own work will be of interest to all who are concerned with methods of investigating the function of the two lungs separately.

J G SCADDING

TEACHING HEALTH

Health Teaching in Schools By Ruth E. Grout, M.P.H., Ph.D. (Pp 320 £1) Philadelphia and London W. B. Saunders Company 1948

Positive health is the modern slogan. This means that people must know how to keep well before they contract disease. Obviously such knowledge cannot be acquired too young so health must be taught in the schools. In the "classical" school-subjects teachers know how and when to impart knowledge, having regard to the understanding and learning capacity of the children under their charge, but it is doubtful if many know how to do this in respect of health. Too often knowledge is imparted too early or too late. In this book the teacher will find first the general principles of what should be taught and then how and when the material should be transmitted to the children at various ages. Several illustrative aids which may be used are described, and various agencies outside the school whose work can illustrate and reinforce the instruction are listed. On the whole the presentation is well balanced sex being dealt with in its appropriate place, though it may be argued that more might be done in training a healthy mind as well as a healthy body. It is true that certain social and individual adjustments are referred to, but children are capable of absorbing more than this.

Many people in this country may find this book too American, both in presentation and in matter but there is too little literature on this subject to allow the teacher who is really anxious to shoulder his responsibilities to neglect the present volume, which is well set out, methodical, and not too long.

R G GORDON

CLINICAL CHEMISTRY

Clinical Chemistry in Practical Medicine By C. P. Sewart, M.Sc. (Dunhelm), Ph.D. (Edin.), and D. M. Dunlop, M.D., F.R.C.P. Third edition (Pp 324 17s 6d) Edinburgh E and S Livingstone 1949

The appearance of the third edition of this book since 1931 indicates its value to those interested in medical biochemistry. It provides a readable account of the principles underlying the biochemical tests in common use and a useful guide to their interpretation. The section on renal function tests is particularly well done, those on basal metabolic rate, carbohydrate metabolism, gastric and hepatic function tests, and other investigations follow conventional lines to give an adequate though brief account of these subjects. The chapter labelled "Miscellaneous" is perhaps too short to be of real value, it discusses acid and alkaline phosphatases on one page and vitamin and nutritional deficiencies in five pages. A few omissions were noted, such as the insulin test meal. The preference for "Van den Bergh units" rather than mg. bilirubin per 100 ml. of serum is to be regretted, and the authors do not make clear their opinion as to the significance of lactic acid in gastric contents. The appendix on technical methods is also somewhat brief, at all events from the laboratory worker's point of view.

A minor drawback to the book is the complete absence of references, an undesirable limitation in a growing subject of

this type. In fairness to the authors it should be noted that the work is intended for "the practitioner, house-physician, and senior student," but even those persons might occasionally feel the need to refer to a larger volume or to original papers on some special subject. It is suggested that this point might be considered in future editions.

N. F. MACLAGAN.

SLIT-LAMP MICROSCOPY

Ocular Signs in Slit-lamp Microscopy. By James Hamilton Doggart, M.A., M.D., F.R.C.S. (Pp. 112; 93 illustrations; of which 85 are in colour. 21s.) London: Henry Kimpton. 1949.

English ophthalmic literature has need of a small compact survey of the practical essentials of the slit-lamp biomicroscopy of the eye. The early works of Harrison Butler and the English translation of Koby's work are quite out of date and now out of print. For the advanced worker larger treatises are available, although none has originated in this country: the five-volumed *Atlas* of the French Ophthalmological Society published before the war is admirable, Berliner's two-volumed *Atlas* (New York) is good, and Vogt's monumental work (three volumes) is superb. But the junior postgraduate student has had no guide within his compass until the book under review appeared. The subject-matter includes all the essential techniques and the appearances of the normal, deformed and diseased eye. It is simply expressed in very readable form, not over-laden with detail, and comprehensively and beautifully illustrated with many original pictures; it contains a useful bibliography. The publishers have done their job well.

STEWART DUKE-ELDER.

OBSTETRICS FOR MIDWIVES

A Textbook for Midwives. By Wilfred Shaw, M.D., F.R.C.S., F.R.C.O.G. (Pp. 689; 223 illustrations. 12s. 6d.) London: J. and A. Churchill, Ltd. 1948.

Wilfred Shaw has already set a high standard as a writer of textbooks and his reputation will certainly be enhanced by this new book for midwives. It is clear that in preparing the work he has had in mind what he himself calls "the serious student," and particularly the nurse who is preparing herself for the Teachers' Diploma. Realizing, however, that the nurse may be deficient in her knowledge of basic sciences, he has included sections on certain aspects of physiology, chemistry, and physics: he discusses, for example, osmotic pressure, dialysis, crystalloids and colloids, adsorption, and the mechanisms of cell division. He has thoughtfully added a glossary of the more difficult technical terms used throughout the book.

In the main subject-matter there is little to criticize and much to praise. The teaching is similar to that presented in the author's well-known textbook on obstetrics for medical students, though he has necessarily modified certain aspects to make it suitable from the point of view of the midwife. As with Shaw's other textbooks, this one contains numerous and carefully chosen illustrations, many of which are reproductions or redrawings of the illustrations in standard German textbooks.

The concluding chapters take the form of short sections on cancer of the uterus and breast; definitions and statistics; a short history of the development of midwifery; the Central Midwives' Board and the local supervising authority; the midwife-doctor relationship and the future of midwifery.

This book can be thoroughly recommended to the more advanced midwife. The style of writing is simple and clear and a full explanation is given—when explanation is possible.—of the whys and wherefores of obstetric practice.

J. CHASSAR MOIR.

Zinc Ions in Ear, Nose, and Throat Work. by A. R. Friel, M.D., F.R.C.S.I. (pp. 60; 41 illustrations; 5s. 6d.; Bristol: John Wright and Sons, 1948), is a small book that sets out in detail the methods of performing zinc ionization as a curative treatment of chronic middle-ear suppuration, hay fever, asthma, and vasomotor rhinitis. In a preliminary chapter the author recites the history of the origin of this treatment, instituted by Dr. Ledue, and with the help of many clear illustrations explains the electrical principles involved. Zinc electrolysis is also advocated for destruction of tissues, including bone and nasal polypi. The value of the thesis would be enhanced if it included results of the therapy. The clear illustrations will be of great help to those who intend to use this treatment.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

On the Contributions of Hugh Owen Thomas, Sir Robert Jones, and John Ridlon to Modern Orthopedic Surgery. By H. W. Orr, M.D. (Pp. 253. 25s.) Oxford: Blackwell Scientific Publications. 1949.

Sham on Vivisection. Edited by G. H. Bowker. (Pp. 65. 5s.) London: George Allen and Unwin. 1949.

Dentistry in Public Health. Edited by W. J. Pelton, B.S., D.D.S., M.S.P.H., and J. M. Wisan, D.D.S., M.S.P.H. (Pp. 363. 27s. 6d.) London: W. B. Saunders. 1949.

Population Trends and Policies. By W. D. Borrie, M.A. (Pp. 263. 21s.) London: George G. Harrap. 1948.

No Place to Hide. By D. Bradcly. (Pp. 191. 7s. 6d.) London: Hodder and Stoughton. 1949.

The British Encyclopaedia of Medical Practice: Medical Progress 1949, and Cumulative Supplement 1949. (Pp. 409 and 423; 32s. 6d. and 27s. 6d.; combined price 50s.) London: Butterworth. 1949.

Immobilization. By P. Reggi. (Pp. 326. No price.) Buenos Aires: Lopez and Etchegoyen. 1948.

Surgical Technique. By A. V. Partipilo, M.D., F.A.C.S. (Pp. 676. 75s.) London: Henry Kimpton. 1949.

Conférences Cliniques de Médecine Infantile. By H. Grenet. 3rd ed. (Pp. 275. No price.) Paris: Vigot. 1949.

The Mind in Action. By E. Berne. (Pp. 348. 15s.) London: Lehmann. 1949.

Skin Diseases in General Practice. By F. R. Bettley, T.D., M.D., F.R.C.P. (Pp. 260. 21s.) London: Eyre and Spottiswoode. 1949.

Proceedings of the University of Otago Medical School, 1949. Edited by J. B. Dawson, K.B.E., M.D., F.R.C.S., F.R.C.O.G. No. 26. (Pp. 208. No price.)

Neuroradiology. By A. Orley, M.D., F.F.R., D.M.R.&E. (Pp. 421. 63s.) Oxford: Blackwell. 1949.

Mathematical Biophysics. By N. Rashevsky. (Pp. 669. 42s.) London: Cambridge University Press. 1948.

Pathology. Edited by W. A. D. Anderson, M.A., M.D., F.A.C.P. (Pp. 1,453. 75s.) London: Kimpton. 1948.

Tuberculosis in History. By S. L. Cummins, C.B., C.M.G., LL.D., M.D. (Pp. 205. 21s.) London: Baillière, Tindall and Cox. 1949.

The Natzweiler Trial. Edited by A. M. Webb, M.A., F.R.S.A. Vol. 5. War Crimes Trials. (Pp. 233. 18s.) London: William Hodge. 1949.

Mostly Memories. By W. Guy, LL.D., F.R.C.S., L.R.C.P., L.D.S., F.R.S.Ed. (Pp. 360. 15s.) Edinburgh: C. J. Cousland. 1948.

Psychiatry. By W. C. Menninger, M.D. (Pp. 138. 11s. 6d.) London: Geoffrey Cumberlege. 1948.

Age is Opportunity. Issued by the National Old People's Welfare Committee. (Pp. 118. 2s. 6d.) London: National Council of Social Service. 1949.

Cybernetics. By N. Wiener. (Pp. 194. 18s.) London: Chapman and Hall. 1948.

Über die Nierentuberkulose im Kindesalter. By R. W. Müller. (Pp. 49. M. 6.30.) Stuttgart: Georg Thieme. 1948.

Die Pathologisch-Anatomischen Grundlagen der Allergie. By W. Eickhoff. (Pp. 95. M. 8.40.) Stuttgart: Georg Thieme. 1948.

Funktionelle Dünndarmdiagnostik im Röntgenbild. By W. Naumann. (Pp. 96. M. 9.60.) Stuttgart: Georg Thieme. 1948.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JUNE 25 1949

A POPULATION POLICY

There are few more complex problems than the future of the population of this country, and it is hardly a matter for surprise that in taking stock of it the Royal Commission on Population has spent five years and rather more than £200,000—a very great part of which sum was the cost of special statistical surveys. The task of the Commission was "to examine the facts relating to the present population trends in Great Britain, to investigate the causes of these trends and to consider their probable consequences; to consider what measures, if any, should be taken in the national interest to influence the future trend of population; and to make recommendations." In its work it has been assisted by three scientific committees: statistics, presided over by Sir Alexander Carr-Saunders; economics, presided over by Sir Hubert Henderson (the Chairman of the Commission after the resignation of Lord Simon); and biological and medical, presided over by Professor A. W. M. Ellis. The many reports and papers that these committees have submitted to the Commission will themselves soon be published in a series of volumes, including the results of the sample family census taken in 1946. The Report of the Commission itself,¹ published this week, surveys these detailed studies from a broader standpoint, summarizing them in simple form or quoting the results it needs in the development of its arguments. It has thus produced a readable as well as a highly important document.

Historically we know little of the population of Great Britain before the eighteenth century, though there can be little doubt that it grew very slowly. The seven million estimated, with reasonable reliability, to be the total number in 1700, had increased to 10½ million at the first census in 1801 and to 37 million a hundred years later (with close upon 50 million to-day). Such a rapid rate of growth had inevitably to come to an end, either through the Malthusian checks of famine and disease or by some other means. Already one of the most densely populated countries of the world, with some 600 persons to the square mile, we should have been faced with disaster by a continuation on any such scale. As everyone knows, the correcting factor came with the fall in fertility that began about 1870. Taking the two ends of the time scale, the special questions included at the census of 1911 show that married women born in 1840-60 produced, on the average, a family of five to six children; for women married in 1925-9 the family census of 1946 gives only a fraction over two children for their completed families. Of the Victorian group 20% had families of two or less, 33% had families of eight or more; the corresponding figures for women married in 1925 are 67% with no, one, or two children, 2.3% with eight or more. That phenomenon, coupled with greatly reduced rates of mortality at nearly

every age, is the salient fact in the modern history of our population.

It has been argued by some that unnatural and unhealthy ways of living have reduced our reproductive capacity, though the improvement in standards of health to-day might well be expected to have quite the reverse effect. However that may be, the Commission accepts the views of its medical committee that no physiological or biological factor would prevent married couples having larger families to-day if they wished. They do not wish; or, in other words, deliberate birth control is the significant feature, and from this adjustment to modern life it is neither likely nor desirable that there should be any return. There has been, however, during the course of the Commission's work, a particularly interesting check to the fall in the number of births, and, indeed, in the later years of the war and in the post-war years a very large increase. Some decline in these larger numbers has, however, been apparent recently, and it is likely that the increase is a temporary feature due to younger marriage and also to the fact that the average size of family has, at least for the time being, ceased to decline. For the past twenty years it has been comparatively stable at 2.2 children, and there is some evidence that the very small family is no longer as fashionable as it was in the early 1920's. This present number, however, is calculated to be about 6% below what is needed for the replacement of the population (a much less pessimistic figure than that based in pre-war years upon net reproduction rates).

What then of the future? We now enter to some extent upon the realm of uncertainty; but it is well to realize that it is only to some extent, that apart from immigration the stage is in some respects already set. Thus inexorably from the present age distribution of the population it follows that, immigration apart, the number of young adults (15-39) must fall over the next fifteen years: in 1947, of every 100 persons 28 were aged 0-19 and 30 aged 20-39; and clearly 28 cannot fully replace 30. At the same time the number of old people (over 65) must grow steadily for the next thirty years even if no appreciable fall in mortality takes place, which with the present advances in medical knowledge is clearly most unlikely. In 1891, 7% of the population were of ages 60 and above; in 1947 it was 15%. The final group upon which we can speak with some certainty is the population of working age, which will remain at about its present absolute size for at least the next thirty years though it will come to form a smaller proportion of the total. If we turn to the unknown, there is a possibility, as already suggested, that the one-child or two-children families may become less common. On the other hand, in completed families of to-day one in five have four or more children, so there is room for further shrinkage here. If, however, average family size remains as in the period of stability in the early 1930's, the population will reach a maximum in about 1977 and thereafter begin a slow decline. If, on the other hand, there is a further reduction in family size—and not necessarily a very large one—then the decline of annual births will become rapid, and well before the end of the present century the numbers of children and young adults will be falling rapidly.

¹ Report of Royal Commission on Population, H.M.S.O. Cmd. 7695 p. 259.

but the reason why it could not happen illuminates the difference between the brain and a machine. Jefferson points out the inadequacy of words to express many of our experiences, especially our feelings. But these are the very stuff of which poetry is made. The poet, unlike the abstract thinker, uses words not for their definitive but for their associative power, to create in his hearer by means of images, ideas, and even rhythms the feelings he has himself experienced. He succeeds in so far as he thus expresses the inexpressible. But what evidence is there that feelings can be identified, not merely correlated, with electrical rhythms which could be induced in a machine?

There is an undeniable danger in the facile acceptance of materialism, for the materialist finds values and ethics an insoluble problem. If the mind is ultimately mechanical, what is the source of its standards of right and wrong? These can be only the result of individual and social conditioning and can have no more than personal validity. Individuals differ, States conflict with one another, and it is useless to appeal to the evolutionary process. That knows neither higher nor lower: it has produced the tapeworm as well as man, and issued impartially to each its approval-certificate of survival. If man prefers complexity and richness of experience, this is just human prejudice: the tapeworm is all for the simple life and adaptation to environment. It is illuminating to see how a machine may be expected to deal with an ethical problem. An electrical calculating machine can perform in a few hours a calculation which would take a mathematician many months. How, then, are the machine's results to be checked? Wiener, to whose book *Cybernetics* Jefferson alludes, explains that this is done by setting three machines the same problem and, if they do not all agree on the answer, accepting the verdict of the majority. Inevitably in the world of machines ethics is decided by the majority. This generation, at least, knows where that doctrine leads—to tyranny, the concentration camp, the gas chamber, and the cremation oven.

Whitehead, in *Science and the Modern World*, has pointed out that science arose in opposition to current mediaeval ideas, which were rationalistic. Science, with its emphasis on brute fact, "has remained predominantly an anti-rationalistic movement based upon a naive faith." The danger of rationalism lies in its systematizing tendency, which ties up the loose ends of thought. But the main facts of a science may be equally consistent with several theories: it is often the details that are decisive. It was a few minute discrepancies between the Newtonian theory and certain astronomical observations that led to its supersession by the theory of relativity. Theorizing about the body-mind relationship is premature. Many years of work lie ahead before the decisive details will be uncovered. This work needs to be done in the spirit of science and not of rationalism. When we think about the mind it is with the mind that we do this, and the mind must surely be greater than its own ideas about itself. If we fail to recognize this, we may suffer the fate of the inhabitants of Butler's *Erewhon* and be enslaved by machines, not, however, because of their intrinsic force but because, like Narcissus, we have fallen into the power of our own reflection.

PROCAINE PENICILLIN

The use of "depot" or "repository" preparations is by far the most satisfactory of the many methods devised for prolonging the action of penicillin with the object of reducing the discomfort of multiple injections. The disadvantages of the oil and wax preparation described by Romansky and Rittman¹ in 1944 have now been overcome by the discovery by Salivar, Hedger, and Brown² of an insoluble salt of procaine and penicillin which is slowly absorbed from the site of injection. Recent papers appearing in this country confirm the favourable results obtained by workers in the U.S.A. Trials in adults of procaine penicillin suspended in arachis oil (300,000 units per millilitre), reported by Jones and Shooter³ and Young, Andrews and Montgomery,⁴ have shown that in over half the cases therapeutic blood-penicillin levels were present 24 hours after a single injection of 300,000 units. When the oily suspension of procaine penicillin is combined with aluminium stearate, absorption is further prolonged, and 24 hours after a dose of 300,000 units the blood penicillin is still at a therapeutic level.⁴

The value of these preparations in paediatric practice is due not only to their prolonged action but also to the complete absence of pain on injection. Experience of their use at the Sheffield Children's Hospital has confirmed the results obtained in adults. Using the oily suspension of procaine penicillin in doses graded according to age, Emery, Stewart, and Stone, whose report was published in the *Journal* of May 14 (p. 845), found that blood levels were too variable for reliance to be placed on once-daily injections—only 29 out of 50 cases having a blood-penicillin level of 0.03 units per ml. or over after 24 hours. Wilson, Farquhar, and Lewis⁵ obtained similar results in older children, but found that blood levels were higher in infants up to 15 days old.

Elsewhere in this issue Drs. J. L. Emery and L. M. Rose, Miss S. M. Stewart, and Professor E. J. Wayne report on the use in children of procaine penicillin in oil combined with aluminium stearate. They used a preparation in which over 95% of the particles were below 5 μ in diameter. Sixty-six children were given intramuscular injections in doses graded according to age: those under 1 year were given either 75,000 or 150,000 units, children aged 1 to 4 received 150,000 units, while older children were given the full adult dose of 300,000 units. All except one had blood-penicillin levels of 0.06 units per ml. or over at 24 and 48 hours. In eleven children daily injections maintained a high continuous level in the blood. Undesirable reactions were absent. These authors conclude that procaine penicillin in oil with aluminium stearate is a suitable preparation for once-daily injection. Owing to slow absorption it might be expected that the blood penicillin would not rise quickly, but in many cases surprisingly high initial levels have been recorded.⁴ Young, Andrews, and Montgomery,⁴ for example, state that four hours after an injection of 300,000 units blood levels as high as 4 units per ml. may be found. In order to test the hypothesis that renal excretion of procaine penicillin was slower than that of sodium penicillin, Barnett and his co-workers⁶ measured the renal clearance rate in infants and children of sodium and procaine penicillin, but failed to demonstrate any significant difference. It thus appears that the action of these substances is due only to delayed absorption. These preliminary reports indicate that the addition of procaine penicillin to the preparations available is another step forward in penicillin therapy, and further reports of its use, especially in those cases needing prolonged treatment, will be awaited with interest.

¹ *Science*, 1944, 100, 196.

² *J. Amer. chem. Soc.*, 1948, 70, 1287.

³ *British Medical Journal* 1948, 2, 933.

⁴ *Lancet*, 1949, 1, 863.

⁵ *Ibid.*, 1949, 1, 866.

⁶ *Pediatrics* 1949, 3, 418.

PHAECHROMOCYTOMA

Adrenaline-producing tumours of the adrenal medulla, the phaeochromocytomata, are a rare but often notable cause of hypertension. The literature contains accounts of nearly 200 patients with such tumours, of whom 64 have been operated on with 12 deaths. Mr. T. M. Reid and Dr. R. Salm report a further case in this issue of the *Journal*. The commonly described symptoms are those referable to the sudden outpouring of adrenaline into the blood stream in response to postural changes, exercise, pressure on the abdomen, straining at stool, or emotional disturbances such as anger or fear. This release of adrenaline causes a rapid rise in blood pressure to very high levels, usually accompanied by severe headache. Other symptoms not unlike those associated with functional nervous disorders also commonly occur, such as anxiety, weakness, dizziness, sweating, nausea, vomiting, and dilatation of the pupils. These attacks are typically of short duration, and when clear cut are sufficiently unusual to lead frequently to the right diagnosis. But if attacks are long continued they may result in a more persistent hypertension, with renal damage, cardio-vascular disturbance, papilloedema, and other retinal changes, which may make the diagnosis from malignant hypertension difficult—especially in the small proportion of cases in which a history suggesting paroxysmal hypertension may be absent.

Recently several functional tests have been introduced which aid considerably the recognition of hypertension due to over-production of adrenaline from such a tumour. Roth and Kvale¹ have shown that small doses of histamine (0.05 mg.) injected intravenously will stimulate a paroxysm of hypertension in cases of phaeochromocytoma, with a systolic pressure even as high as 300 mm. Hg. But less extreme rises may occur which can be difficult to interpret. Since histamine-sensitive individuals may react with a moderate rise. Believing the histamine test unreliable, Guarneri and Evans² suggested the use of "methylol" (acetyl- β -methylcholine chloride), which they found in one case of phaeochromocytoma caused a short, sharp rise in blood pressure—the normal response being a slight fall. There has as yet been insufficient experience with this test. Both tests have the definite disadvantage that the results of an unduly sharp hypertensive response may be serious. For this reason the use of the new anti-adrenaline compounds will probably be more satisfactory. Goldenberg, Snyder, and Aranow³ have demonstrated that in cases of phaeochromocytoma intravenous benzodioxane in doses of 0.25 mg. per kg. of body weight causes a drop in blood pressure lasting about 15 minutes. In one of their cases a tumour was removed, and subsequently a fall in blood pressure was still found after injection of benzodioxane. This was interpreted as evidence of the presence of further adrenaline-producing tissue, and at a second operation another phaeochromocytoma was removed.

More recently Spear and Griswold⁴ have used a different adrenolytic compound, dibenamine, for the same purpose. Given by slow intravenous injection in doses of 7 mg. per kg. body weight, this also causes a pronounced fall in blood pressure to normal levels. Its action is much more prolonged than that of benzodioxane, and for 24 hours after injection it will prevent further spontaneous attacks and will also prevent the rise of blood pressure ordinarily provoked by histamine. Because of this more prolonged action dibenamine is likely to be of great value not only in diagnosis but also in the pre-operative preparation of patients, for the main causes of the high operative mortality

are the rapid outpouring of adrenaline during manipulation of the tumour and the subsequent shock resulting from sudden diminution of the supply of adrenaline after its removal.

BENIGN PROSTATIC HYPERTROPHY

Study of the aetiology of benign prostatic hypertrophy has been hampered by the fact that many of its characteristics are peculiar to man; it occurs in only one other animal—the dog—and so far it has been impossible to produce hypertrophy experimentally. The common and reasonable view is that the hypertrophy results from some endocrine disturbance occurring in the fourth or fifth decade of life, which is perhaps comparable to the climacteric. In a review of the subject Huggins¹ concludes that it is the dog the process of enlargement—a cystic hyperplasia—is governed by two factors—time and testicular secretion. In man the lesion is composed of multiple spheroidal nodules made up of epithelium, muscle, and fibroblasts. Histologically these nodules are benign tumours, an observation which is supported by their type of respiration.² In the mouse, guinea-pig, and monkey the prostate has two separately functioning parts.³ From evidence based on embryological research⁴ and the response of the prostate to oestrogen administration Huggins considers that the human prostate has two different functional areas. The spheroidal nodules are seen only in the medullary region. Since the prostate does not become enlarged in early life, presumably the stimulus to enlargement acts over a long period. The lesion does not occur in castrates, and it is therefore reasonable to suppose that the stimulus is testicular in origin. In dogs with an established hypertrophy castration causes a shrinkage but not complete disappearance of the lesion. Huggins studied the effects of orchidectomy in men suffering from benign prostatic hypertrophy and noted relief of the obstructive symptoms, with diminution in the size of the gland but not disappearance of the spheroidal nodules. He also treated a series of cases with oestrogen in doses sufficient to cause breast growth. The changes produced were those of mild injury to the epithelial cells of the acini in the medullary portion of the gland: the cortical area was unaffected. These observations serve to confirm the importance of androgen in the aetiology of benign prostatic hypertrophy.

AN "EYE BANK" ESTABLISHED

That corneal-graft surgery now has many applications in the treatment of blindness due to injury or disease of the cornea was the opinion of ophthalmologists from many countries who were present at the recent Congress of the Ophthalmological Society of the United Kingdom. It was indicated that the fashion of the graft is changing and that the partial graft is returning to favour. This type of graft does not penetrate the entire thickness of the cornea, and there is, therefore, no risk of iris adhesion to the corneal section, with consequent formation of opacities in the graft. Many successful grafts have been performed in this country, but surgeons have had to contend with considerable difficulties. Living grafts are scarce and, like hospital beds, may not be available just when they are required. The infrequency of the operations makes it difficult to arrange for postgraduate tuition at short notice.

¹ *Amer. J. med. Sci.*, 1945, 210, 653.

² *Amer. J. Med.*, 1948, 4, 806.

³ *J. Amer. med. Ass.*, 1947, 135, 971.

⁴ *New Engl. J. Med.*, 1948, 239, 716.

¹ *Bull. N.Y. Acad. Med.*, 1947, 23, 696.

² Barron, E. S. G., and Huggins, C., *J. Urol.*, 1944, 51, 630.

³ Walker, G., *Bull. Johns Hopk. Hosp.*, 1910, 21, 182.

⁴ van Wageningen, G., *Anat. Rec.*, 1936, 68, 411.

⁵ Lowsley, O. S., *Amer. J. Anat.*, 1912, 13, 299.

Donor grafts can now be preserved in oil or vapour in an "eye bank," and are suitable for use up to three days after removal from the living or cadaver eye. Some authorities claim better results with preserved grafts. As the scope of the operation widens, the demand for instruction in technique from home and overseas increases, and an adequate supply of donor grafts for treatment and post-graduate instruction has become essential. Not long ago a letter was published in the *Journal* (Dec. 4, 1948, p. 999) from an Australian doctor who deplored the absence of an eye bank in this country. Now, to meet the need, the South-east Metropolitan Regional Hospital Board has established a corneo-plastic unit and eye bank in conjunction with the plastic centre at East Grinstead. With the co-operation of ophthalmic surgeons in the region, and with assistance from other sources, a supply of donor grafts will be preserved. This will provide increased opportunities for treatment and improved facilities for instruction and study.

The resources of this unit, however, will not be entirely limited to corneal-graft surgery; they will also be available for the special cases which are the joint problem of ophthalmologists and plastic surgeons. Such cases include severe injuries of the lids and orbit, resulting in complicated lacrimal obstructions or paralyses of extra-ocular muscles. The surgical treatment of the various forms of ptosis, congenital abnormalities of the lids, and the lacrimal apparatus, new forms of enucleation with implantation, and the applications of modern prostheses are all examples of subjects for clinical research. Thus, a combined team of ophthalmologists and plastic surgeons, aided by the facilities of a modern plastic unit, will bring special interest and experience to bear on these problems. The South-east Metropolitan Regional Hospital Board is to be congratulated for sponsoring the formation of such a unit, which is a welcome addition to the resources of British ophthalmologists and an asset in the treatment of blindness in this country.

PAIN IN PHANTOM LIMBS

A phantom limb is a natural consequence of amputation and is experienced by the majority of patients. It is a painful phantom, however, is a rarer condition. In Henderson and Smyth's¹ series of 300 patients of military age only 4% had painful phantoms, though others have reported a higher incidence than this, possibly on account of the age and other special features of patients whom they were studying. Henderson and Smyth excluded from their detailed study of the symptoms of phantom limbs that various epiphenomena may occur; in some patients there was a "neuroma sensation," which resulted from the mechanical stimulation of neuroma in the stump and consisted of instantaneous sensation of pins and needles referred to the peripheral distribution of the divided nerves. In a minority of cases only there were complaints of pain, distorted attitudes of the phantom, and involuntary spasmodic movements, all of which the authors considered were of psychological origin. This view of the cause of pain in phantom limbs is not universally held, and the pain is often considered to be of peripheral origin.

Many methods of relieving the pain have been tried, including local excisions of the neuroma, sympathectomy, posterior rhizotomy, chordotomy, and even excision of areas of the parietal cortex.² In a preliminary report which was published in the *Journal* of June 1949,³ Dr. W.

Ritchie Russell suggested a much simpler procedure than these operations; it has been successful in seven cases, several of them of long standing. The method was introduced for three reasons: first, the observation that in the normal limb nerve endings in the skin are rendered insensitive by occupations which entail repeated minor traumata or prolonged firm pressure on the skin; secondly, that conduction in a mixed nerve is easily interrupted by repeated pressure without the production of any spontaneous pain; and, thirdly, on the assumption that regenerating nerve fibres in an amputation stump are likely to be no less vulnerable to minor trauma or pressure than normal nerves and nerve endings. The practical application of this reasoning was to percuss the neuromata into a state of "chronic concussion." As this can be a somewhat painful process at the onset, a local anaesthetic may be injected into the stump or a sphygmomanometer cuff may be applied to the stump and inflated to over 200 mm. Hg, which renders the tender scars and neuromata less sensitive after two to three minutes. Percussion is carried out by gentle hammering with a small wooden mallet or mechanical vibrator and continued with increasing vigour for about ten minutes. It is advisable to use a wooden applicator to transmit the blows of the mallet to the neuromata. At first treatment must be repeated at least twice a day, but in some cases once daily was sufficient; as Dr. Ritchie Russell puts it, "The patient soon learns to knock away his phantom pain whenever it becomes troublesome."

This is a refreshingly simple method conceived on sound physiological principles if the major hypothesis is accepted that pain in phantom limbs is of peripheral origin. If the method should prove successful in a large number of cases it would serve as additional proof for this hypothesis, though it would still be difficult to explain the failure in some cases of division of sensory nerves and posterior roots to relieve the painful phantom.

VISCOUNT ADDISON

Viscount Addison attained his 80th birthday on June 19, and will have the good wishes of the profession in continuing a career that has been fruitful in both medicine and politics. He was the first whole-time lecturer in anatomy at St. Bartholomew's Hospital, and later held the chair in that subject at University College, Sheffield, subsequently serving as examiner for the Universities of Cambridge and London. In 1910 he was elected to Parliament as the Labour member for the Hoxton division, and soon after the outbreak of the first world war he was transferred to the Ministry of Munitions, where he served under Mr. Lloyd George, and in 1916 succeeded him as Minister. In 1919 Dr. Addison, as he then was, became the first Minister of Health when the new Ministry was established. The only other medical man to have held that office is Mr. Walter Elliot. In 1929 he was returned as Labour member for Swindon, and was Minister of Agriculture in 1930-1. In 1937 he was raised to the peerage—the fifth medical man to be made a peer—and when the National Government was dissolved in 1945 he received a viscounty. He has been Leader of the Labour Party in the House of Lords since 1940.

Dr. J. H. Sheldon, F.R.C.P., will deliver the F. E. Williams Lecture before the Royal College of Physicians of London, Pall Mall East, S.W., on Tuesday, July 12, at 5 p.m. His subject is "The Role of the Aged in Modern Society."

¹ *J. Neuro. Neurosurg. Psychiat.*, 1948, 11, 88.

² Falconer, M. A., and Lindsay, J. S. B., *Brit. J. Surg.*, 1946, 33, 301.

³ De Guierrez-Mahoney, C. G., *J. Neurosurg.*, 1944, 1, 156.

A NOTE ON ELECTRIC AUTOMATIC COMPUTING MACHINES

BY

M. H. A. NEWMAN, F.R.S.
Manchester University

Although these devices are sometimes called "electronic" or "mechanical brains," they are designed for one specific purpose, the rapid performance of large pieces of numerical computation. To enable them to do this they are provided with a storage which holds numbers and instructions in a form suitable for triggering off various kinds of activities in the machine. The usual method is first to code the number or instruction as a row of 0's and 1's (by using binary instead of decimal notation in the case of numbers). A large number of stations, say a quarter of a million, are provided in the machine, each of which can be in one or other of two states, called "0" and "1," and a coded number or instruction is set up accordingly on a row of perhaps 40 of these stations. The earlier electronic machines, such as ENIAC, used a pair of radio valves for each station, but this led to a large expenditure of power in running the machine, and other methods have since been invented. The Manchester machine, referred to by Professor Jefferson in his Lister Oration, uses Professor Williams's storage, in which each station is a charged spot on the coating of a cathode-ray tube, large or small for 1 or 0. One tube holds about 2,500 spots. It is likely that all such machines will have a large magnetic storage as a secondary resource. This form of storage is very stable, and requires no power supply for its maintenance once the material is written in, but it is less accessible than electrical storage.

The machine operates by carrying out the instructions one after another, each instruction having some such form as "multiply this row by that row" or "copy this row into that." If it were necessary to put an instruction into the machine for each of the many millions of operations involved in a big computation it would obviously take as long to write in the instructions as to do the computations by hand. The feature that enables the machine, like a properly trained human computer, to work from a short table of instructions is its power of choosing which instruction to perform next, on the basis of the results of work already done, and hence to use the same instruction over and over again.

The speed of the machine is of the order of 1 millisecon. per elementary operation, a typical elementary operation being the addition or multiplication together of two numbers of 40 digits (in the scale of 2, =12 in the scale of 10). This is perhaps 10,000 times the speed of a human computer working with a desk calculating machine, without allowing for resting time.

This takes no account of the time required to get the problem coded for the machine, but it appears that this is a less formidable problem than was at first supposed, and may become very rapid when standard small routines have been worked out which can be tied together to make large ones. This is a matter on which a rapid increase of information may be hoped for now that machines are actually beginning to come into operation.

The variety of computing problems that can be handled by machines of this kind, by setting up a suitable table of instructions on them, is very great, including the approximate solution of partial differential equations, problems involving large integers (e.g., searching for primes), and questions in more abstract parts of mathematics. Indeed, convincing arguments have been given by Turing for the view that these are "universal" computing machines, in the sense that any well-defined piece of computation whatever could be done on them from a single table of instructions, given sufficient time and a large enough storage for numbers and instructions. In this they differ from such a machine as the ENIAC, which, though very flexible, is limited to a certain (large) repertory of possible assignments.

The expression "piece of computation" has a wider connotation than might at first be supposed, since many pieces of work which have at first sight nothing to do with arithmetic can be "coded" so as to consist of arithmetic operations. For example, the playing of a legally correct game of bridge, poker, or chess can certainly be so coded, and in this sense the machine could play these games. (Whether it could be made to play a good game is a different question.) It is no doubt the possibility of such non-mathematical applications that has led to these machines being brought into discussions on the thinking potentialities of machines, and to the suggestion that the human brain is itself a network of units of this general type. There is evidently a danger here that extravagant powers will be credited to these devices, and conclusions drawn too rapidly about biological analogues; but some caution is also necessary in coming to final conclusions in the opposite direction, on the basis of our knowledge of the behaviour of a small pilot model of this very new kind of machine, designed for a sharply limited purpose, which has been in rather halting action for a few months. The first question that will have to be asked is not "Can all kinds of thought, logical, poetical, reflective, be imitated by machines?" but "Can anything that can be called 'thought' be so imitated and, if so, how much?" The most promising line here will be to work within mathematics itself, to see how far the work of instruction-table making can be gradually transferred from the mathematician to the machine. The work of modern mathematical logicians gives us a good idea where the barrier is likely to be found, but this is too deep a question to pursue further in this note.



The "Mechanical Brain." The section on the left contains the control circuit, in the middle rack of which is a cathode-ray tube screen with (below) the control desk. The racks on the right-centre of the picture provide the "memory" section. Nearer the camera are racks for calculating circuits. The machine is "fed" at the control desk and the answer is read on the cathode-ray tube screen. For this illustration we are indebted to the Electrical Engineering Laboratories, Manchester University.

CARE OF ELDERLY PATIENTS

LONDON REGIONAL CONFERENCE

The need for co-operative effort in dealing with infirmity in old age was discussed at a conference in London on June 1 attended by over 200 representatives of local authorities in the Metropolitan area, the Ministry of Health, three regional hospital boards, and fourteen grouped hospital management committees, the King Edward's Hospital Fund, and certain voluntary organizations. The convening body was the Regional Advisory Committee for Old People's Welfare, under the auspices of the London Council of Social Service. The conference was presided over by Mr. FRED MESSER, M.P., and Miss D. RAMSEY, respectively chairman and secretary of the National Old People's Welfare Committee.

Limitations and Achievements of a Geriatric Unit

Dr. T. H. HOWELL, who is in charge of the geriatric unit at St. John's Hospital, Battersea, described the growth of geriatric clinics, and referred in particular to the clinic associated with University College Hospital. Another centre was in Liverpool, where a gloomy "chronic" hospital had been changed into a centre of cheerfulness and "re-ablement." His own unit at Battersea arose out of a determination to treat by every possible means chronic arthritic conditions in the old. As a result a number of people who formerly were regarded as hopeless wrecks were relieved of pain and eventually made fit to leave hospital. The trouble was that in solving a medical problem a new medico-social problem had been disclosed, for it often happened that there was no home to which these old men and women could return. In one London hospital 17% of these patients were up and about, needing little or no treatment, but they could not be discharged because there was nowhere for them to go.

At first he had been depressed by the growing waiting-list for admission to beds, but this was met in part by the setting up of an out-patient department combined with the follow-up of patients who had been discharged. This out-patient department had become so popular that a special session had to be set apart for people coming from a distance. The out-patients went through their exercises and their occupational therapy, and received their medicine, and a fair number of them who had been waiting for beds improved to such an extent that their names were taken off the waiting-list.

Some patients suffering from bronchitis were taken into hospital for a short time to enable them to get over the worst of the winter season, and then they resumed their out-patient attendances. In this and other ways a turnover was obtained which had been undreamt-of previously in a "chronic" hospital. There was nothing more heartbreaking for the general practitioner than the problem of the old person who needed more attention than the doctor could possibly secure for him. The geriatric unit had relieved that situation; it had also wiped out the motto, "Keep them in bed and keep them quiet," substituting, "Get them up and keep them interested." That was not enough, and the motto for the future must be, "Catch them quick and treat them early." The only reason why there were not more of these geriatric units was because there were not enough doctors and nurses to run them.

One great necessity, said Dr. Howell, was a half-way house for the accommodation of old people who were not well enough for an independent life in their own homes and not ill enough for hospital. Formerly many such patients would have had to enter public assistance institutions, of which, reasonably, they had a great dread. It was true that some public assistance institutions were like barracks, but others were comparable with old people's homes; he had seen some which he would not mind living in himself. It had been possible in some cases to humanize these institutions, and he saw no reason why this should not be done in all of them.

Long-stay Annexes and Home Care

Dr. E. B. BROOKE, medical superintendent, St. Helier Hospital, Carshalton, reminded the conference of the ageing of the population. One person in seven was over 60, and in twenty years' time it would be one person in five. While he still believed

whole-heartedly in the scheme set out by the British Medical Association for a co-ordinated service for old people, he was now pessimistic about the realization of the ideal in its entirety in the measurable future. The scheme proposed that after patients had received every possible "re-ablement," those who still required care and maintenance but not active medical treatment should be moved into long-stay annexes, which would be homely and comfortable for them, and would release hospital beds for other patients. These long-stay annexes, upon which the scheme hinged, he viewed with some misgiving. He doubted whether it would be possible to start enough of them, and he thought some workable alternative should be proposed.

The alternative which he suggested was home care backed by every support the hospital could afford short of admission to its beds. The problem in a nutshell was, "Too many patients in search of too few staffed hospital beds." The obvious solution appeared to be more staffed beds, or, failing that, the use of the available beds to the best economic advantage by providing a turnover of patients and long-stay annexes for cases that might otherwise silt up this steady flow. He mentioned the case of eight old men who had all been in hospital for just over three years until recently, when they were transferred to rather more homely accommodation. Their eight beds in that period could have been used by between 400 and 500 surgical cases. Out-patient facilities, with transport, could keep many patients out of hospital.

At St. Helier's, when the problem was first tackled, there were empty pavilion wards in a near-by hospital which might have been used as a long-stay annexe but it was not possible to staff them. He then realized that the only solution was by out-patient and home care so far as this could be provided. It must be remembered that the elderly patient, the geriatric patient, and the chronic patient were not synonymous terms. Old people, like others, included "acutes" and "chronics." In the later decades obviously a larger number were not able to return to full activity. There was an understandable apprehension lest the admission of old people to hospital should steadily worsen an already bad situation. The majority must be left at home, and there must be reproduced for them so far as possible the facilities available for the more fortunate few who had gained admission.

Hospital Priorities

Meanwhile, said Dr. Brooke, efforts must be concentrated on the individual cases which demanded admission to hospital most urgently on the grounds of medical and social necessity. The following were admitted to the short waiting-list for hospital beds:

- (a) Those with a reasonable chance of "re-ablement" which would not be available to them other than by in-patient treatment;
- (b) Elderly patients who needed the added comfort of hospital in the terminal stages of their illness when they would otherwise die under distressing conditions at home;
- (c) Old people whose admission was necessary for the benefit of the younger generation (a category which required careful scrutiny).

Other priorities, though not necessarily on such a short-term basis, were: (1) patients who were entirely alone in the house at night; (2) patients with double incontinence; and (3) old people who were restless and possibly confused in their senility.

In hospital there were facilities for diagnosis and treatment, nursing care, medico-social advice and information, a bed with clean linen, and warmth and food. The assessment of elderly patients recommended for admission should be undertaken, as in the case of tuberculous patients, at a domiciliary consultation or by transporting the patient to the out-patient department. The family doctor would find that for the patient at home many amenities were available through the resources of statutory and voluntary bodies.

The home help service had made immense strides recently. It had developed certain specialized types—the night home help, the male help, often useful in attending certain male cases, even the help who was colloquially called, the "popper-in." A domiciliary laundry service would be of great value. Perhaps the medical officer of health could obtain authority to provide laundry facilities for certain specified types of patients. He also looked forward to a combination of the school meals service and an old people's meals service. He agreed with

Dr. Howell that the great need was for a half-way house for patients neither fully ambulant nor bedfast.

During the past eight months at St. Helier's they had dealt with 203 elderly patients (two women to every man) either by direct admission or by home care or some alternative arrangement. The main problem had been solved for all but 33 of these patients. These 33 were on the current list, but they were not merely a list, they were a "phantom ward." Officers of the hospital made a round among them, and the patients' relatives knew that they could communicate with the hospital at any time by telephone and that any call would have an immediate response.

Home Helps

In the general discussion that followed it was suggested that home helps or home nursing services in one form or another were saving the hospitals the care of many chronic cases and enabling them to direct their activities more economically, therefore a certain amount of money which at present went to the hospitals might well be transferred to these agencies. Mr. R. A. STAMP, chairman of the Health and Hospital Services Committee of the L.C.C., said that the home help service was comparatively new. Some borough councils were active in this respect, others were not. Home helps were doing a lot of the work that the National Health Service Act intended that the hospitals should do. If the four regional hospital boards which covered the metropolis, as well as the voluntary bodies with which his council had contractual arrangements, would be prepared to work out a scheme for dealing with the position, with the Minister of Health brought into the discussions, it might be of very great advantage. It seemed necessary to have some reallocation of financial assistance as well as a redefinition of responsibility.

Mrs. E. WIGLEY, of the British Red Cross Society, described the home visiting work done by that organization. Mrs. A. V. HILL spoke of the great handicap under which those responsible for homes for old people laboured, in that while they started with the more or less able-bodied the inmates became progressively more infirm and feeble and unable to perform slight services for others or even to look after themselves.

Mr. FRED MESSER, M.P., in closing the conference, said that there seemed to be a case for closer co-operation all round. It was remarkable that hostels were available for discharged prisoners but not in any number for old people, an indication that in society fear was a more powerful motive than duty or affection.

INTERNATIONAL HOSPITAL FEDERATION

FIRST POST-WAR CONGRESS

The International Hospital Federation held its first post-war Congress in Amsterdam and Groningen from May 30 to June 4. It was attended by 353 members and their friends from Australia, Belgium, Denmark, Egypt, France, Italy, Norway, Portugal, Sweden, Switzerland, and the United States.

Dr. René Sand, of Belgium, the president, who opened the Congress, was supported by Jonkheer Røell, representing H.M. the Queen of Holland, Patroness of the Congress, Mr. A. M. Joekes, Minister of Social Service, Mr. d'Ailly, Burgomaster of Amsterdam, Dr. Van den Berg, Deputy-Director of WHO, and members of the Dutch Hospital Association.

"The Vocation, Aim, and Task of Hospitals" was discussed by three speakers—Dr. E. Hoelen, medical director, Miss M. Stenvers, matron, and Mr. A. M. Spiering, chaplain—selected by the Dutch Hospital Association. There followed a paper on "The Influence of Economic and Social Changes on Hospital Administration" by Professor F. Pulcher, of Genoa. Then came a paper on "Modern Trends in Nursing Training and Nursing Practice" by Mrs. B. A. Bennett, chairman of the Nursing Service Committee of the International Council of Nurses. The discussion on this subject was opened by Dame Katherine Watt, chief nursing adviser of the Ministry of Health.

The third day was devoted to the discussion of two papers: "The Training of Hospital Administrators," by Mr. George Bugbee, executive secretary of the American Hospital Association, and "Personnel Management in Relation to Hospital

Service," by Mr. H. N. Appelbe, personnel manager of St. Thomas's Hospital.

The second stage of the Congress, at Groningen, began with an outstanding address on "Modern Tendencies in Hospital Design, Construction, and Equipment" by Mr. Hugo van Huyck, technical counsellor of the Antwerp Public Assistance Board. Then Dr. Van der Leen, of Holland, gave a paper on "Hospital Budgets and Budgetary Control," and Mr. S. Clayton Fryers opened the discussion on this theme.

The final paper was by Dr. Charles T. Maitland, of the Ministry of Health, who spoke on "The Regional Planning of Hospital and Health Facilities." Here a full and interesting discussion was opened by Sir Ernest Rock Carling and Dr. Vane Hoge, of the United States Public Health Service.

Plans for the Future

The success of the Congress was due in no small measure to the skill with which Dr. René Sand guided its deliberations. The numbers present and the high standard of most of the formal addresses showed how generally welcome was the idea of reviving in this form the pre-war meetings which the former International Hospital Association arranged biannually. They began at Atlantic City in 1929 and continued at Vienna, Knockesurmer, Rome, and Paris in 1937. The Toronto conference of 1939 had to be abandoned, but the American Hospital Association has invited the Federation to hold its next congress in Atlantic City in 1951. For next year a study tour in Scandinavia is proposed. Although the generosity of the Americans in inviting the next congress to the birthplace of the old association was highly appreciated, the proposal provoked a good deal of misgiving in the General Assembly at Groningen in view of the difficulties of exchange which many European countries are experiencing. Members are to send their views to the Provisional Executive Committee before any irrevocable decision on the venue of the next congress is made.

It was hoped to have agreed the constitution of the new Federation at Amsterdam, but this proved to be impossible, and the existing Executive Committee was left in charge. One of the stalwarts of the old International Hospital Association, Dr. O. Binswanger, president of the Swiss Hospital Association, was elected vice-president of the Federation.

Some searching questions about the Federation's financial prospects were put at the final Assembly. The modest £5,000 a year needed ought not to be a major problem. Anyone interested in hospitals can become a member of the I.H.F. for 30s. a year, and out of all the many thousands of hospital workers in the world it ought not to be difficult to finance the Federation by individual subscriptions if Governments prove reluctant to contribute their share. Further information about the Federation can be obtained from Captain J. E. Stone, King Edward's Hospital Fund for London, 10, Old Jewry, London, E.C.2.

HARVEIAN SOCIETY DINNER

THE ARCHBISHOP OF CANTERBURY ON DOCTORS

The Buckston-Browne-Gray-Hill Dinner of the Harveian Society was held in the library of the Royal College of Surgeons on June 16 under the presidency of Dr. Desmond Macmanus. The health of the Society was proposed by the Archbishop of Canterbury, who said that his study of the history of the Society (founded in 1831) was not really a stimulus to oratory. At the time it was founded he noticed they were preoccupied with the problems of renal dropsy, the automatic reflexes of the spinal cord, and the discovery of the parasite of itch. They were also interested then in auscultation, and had only just succeeded in carrying the matter a stage further than Hippocrates did 2,000 years before. But now the advice and knowledge that the medical profession could offer and had was one of the astonishing wonders of modern times. "By your art," he said, "you have increased the expectation of life." Old people, it appeared, could go on living inordinately, and he wondered whether the medical profession in this respect had benefited mankind. "Are there," he asked, "enough young people to carry the burden of the old?" He hoped, however, that nothing would ever persuade the medical

profession to desert its cause of saving human life and to yield to the persuasion of those in favour of euthanasia. Nature be said, was a most ingenious person, and as fast as one disease was overcome Nature seemed to be able to put up another. "There is an active, intelligent adversary trying to defeat you." The advances in medicine made for increasing specialization. Every day the medical man tended to know more and more about less and less. To be an expert on a portion of a person made the specialist less capable of dealing with him as a human being. He was in favour of the old type of form master who taught the boy everything, and so, drawing this parallel, he was in favour of the general practitioner as someone who could treat the whole human being and refer to the expert only when he wanted an expert piece of knowledge or advice. Nowadays no science could live to itself. All sciences ran into each other. The atomic sciences were now becoming involved in ethics. Art, so he understood, could play an active part in healing. Religion also had a part to play in the healing of body and mind. Religion and medicine were beginning to understand they were necessary to each other, and he referred to the work already done by doctors and parsons together in the sphere of spiritual healing.

In response, Dr. Macmanus, the President of the Society, said that every third year it had a general practitioner in the chair. In the library in which they were dining there was on one side a bust of Harvey and on the other a bronze of Buckston Browne. Dr. Macmanus went on to draw an interesting picture of the conditions of travel in Harvey's day, noting that then, when travel was by horseback, a man had time and leisure to think, to write, and to read. In proposing the toasts of the guests Dr. R. P. K. Coe said that a parson had described the Archbishop of Canterbury to him as "a human bloke." Responding for the guests in appropriate and witty speeches were Vice-Admiral Sir Thomas Troubridge and Mr. Russell Vick, K.C. Among the distinguished gathering present were Sir Henry Dale, O.M., and Sir Alexander Fleming, F.R.S.

Preparations and Appliances

CONTINUOUS SUCTION: A NEW HYDRODYNAMIC METHOD

Mr. J. A. CARR, F.R.C.S., of the Preston Royal Infirmary, writes: Continuous suction has an established position in the treatment of gastro-intestinal cases, especially during the post-operative period, and in cases of intestinal obstruction. The

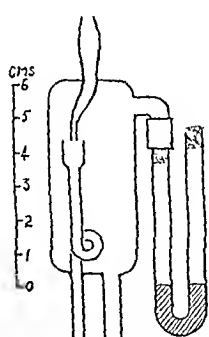


FIG. 1.—Special drip chamber with manometer.

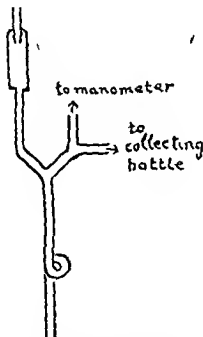


FIG. 2.—Basic diagram.

method here described seems to have some advantages over older hydrodynamic methods.

Principle.—A fluid of low surface tension runs from a reservoir, at a rate controlled by a screw clip, to a dripper from which the drops enter a long tube, where the formation of a series of columns of fluid separated by air is assured by a loop. The weight of these columns causes them to descend and to

draw the interspersing air with them. If the apparatus is closed to the exterior a progressive reduction in pressure occurs, and this is used to aspirate the gastro-intestinal contents from the patient to a collecting-bottle. A mercury manometer indicates the fall in pressure, and the amount of mercury is so adjusted that when the reduction in pressure is equal to about 4 cm. of mercury all the mercury has been brought into one side of the manometer and air bubbles through. A reduction in pressure of 4 cm. of mercury is adequate for aspiration; a greater reduction produces an undesirable variation in the rate of the drip. Although this apparatus bears a superficial resemblance to Sprengel's pump it differs from it in that the pressure reduction is determined by the combined length of the columns of fluid and not by the pressure of the supply.

Apparatus.—An open-topped reservoir of 500-ml. capacity is used. The fluid is 25% spirit in water and is coloured with ink. The special drip chamber (Fig. 1) may be obtained from Messrs. Brady and Martin, Ltd., of Northumberland Road, Newcastle-upon-Tyne, 1, or the equivalent may be assembled from drip connexions, Y tubes, etc. (Fig. 2). The manometer, which is separate, has a bore of not less than 4 mm., or bubbling will not occur, and has a cotton-wool plug at each end to make the bubbling quiescent and to prevent loss of mercury. The descending tube should have a bore of about 2 mm.—translucent plastic tubing is better than rubber—and should be about 150 cm. long. There is no need for its end to be submerged. The coloured fluid is collected in a bottle and is used to refill the reservoir over and over again. The bottle to take the fluid from the patient has a capacity of about 500 ml. Care is taken to make all the bungs and connexions airtight, and to see that the cotton-wool plugs in the manometer are dry.

Use.—When the apparatus has been set up (Fig. 3) the fluid is allowed to drip through quickly until air is bubbling through the mercury. The airtightness of the apparatus is then tested by occluding the tube to the patient and stopping the drip. Leakage is shown by a gradual fall in the mercury level, and should be traced and prevented. The flow is then adjusted to about 30 drops a minutes, and is maintained at that rate.

Comparison With Other Methods.—Wangenstein's bottles and siphonage with an air trap have two particular disadvantages: first, the time at which they will require attention cannot be predicted; secondly, this attention is somewhat complicated. The new method works in the manner of a simple drip for infusion and needs the same attention. Satisfactory working in all cases depends on care in the original assembling of the apparatus.

This apparatus has been in routine use in the wards of the Preston Royal Infirmary for the past six months, and has proved both satisfactory and popular.

I would like to express my thanks to the numerous members of the staff of the Infirmary who have co-operated with me in the construction and use of this apparatus.



FIG. 3.—Assembled apparatus.

Owing to the difficulty of pricing the 170,000,000 prescriptions a year being issued under the National Health Service, the Ministry of Health has decided that from June onwards those with a net ingredient cost of 5s. and over (including prescriptions carrying special fees and D.D.A. and urgent fees) will be priced in full, while of those with a net ingredient cost of under 5s., 20% will be priced in full each month, the chemist being paid for the other 80% at his own average cost for the 20% fully priced. At present prescriptions with a net ingredient cost of over 2s. 6d. are fully priced, and 25% of those under 2s. 6d. The change has been made necessary because of lack of staff and accommodation, but the Minister is trying to increase the number of staff employed on this job.

Correspondence

Ogilvie's Syndrome

SIR,—Five cases of intestinal ileus due to sympathetic deprivation have now been described in the *Journal*. Both in Ogilvie's original case and in the later cases^{1,2} the interfering lesion was malignant invasion of the posterior abdominal wall. Although "Ogilvie's syndrome" has not been precisely defined, it is suggested that the essential feature is the production of intestinal ileus by sympathetic involvement rather than the malignant nature of the causative lesion. The following case is therefore suggested as an example of the condition, although the "invasion" of the posterior abdominal wall was due to a haemorrhagic, and not a neoplastic, process.

The patient, a man of 60 years, was submitted to herniotomy for a right inguinal hernia of two years' duration. The operation was performed under spinal anaesthesia. An indirect sac was found and excised. Immediate post-operative progress was uneventful, but on the fifth day he commenced vomiting copiously, and this continued with rapid deterioration of his general condition until death occurred 11 days after operation. During this time the patient was constipated, but passed much rectal flatus. Blood urea on the day preceding death was 364 mg. per 100 ml.

Post-mortem Findings.—The body was that of a very obese man, with a barrel-shaped chest and severe finger clubbing. The heart showed moderate left ventricular hypertrophy. The lungs showed terminal congestion and oedema superimposed on chronic bronchitis and emphysema. The pleural cavities were almost obliterated by old fibrous adhesions. A large extravasation of blood was present under the peritoneum throughout the lower half of the right anterior abdominal wall, spreading round into the posterior abdominal wall and also projecting downwards into the right side of the pelvis and passing upwards to form a large retroperitoneal haematoma 6 in. by 1.5 in. (15 by 3.75 cm.) in front of the right psoas sheath. The operation site appeared to be normal, there being no collection of blood in the subcutaneous, fascial, or muscular layers. The stomach showed slight congestion. The small intestine showed great dilatation of its entire length, with the exception of the terminal 6 in. (15 cm.) of ileum, which was involved in the extravasation into the posterior abdominal wall but which showed no organic obstruction. The colon showed moderate dilatation down to the lower sigmoid portion, the distension being gaseous, with only a small amount of faeces present. No twisting, bands, masses, stricture or faecal collections were present to account for organic obstruction.

This case occurred in June, 1947, before Ogilvie's syndrome was described. At this time the ileus was attributed to interference with the nerve supply to the intestine, but it was not decided whether this was due to sympathetic involvement by the haematoma of the posterior abdominal wall or to local interference with the nerves of the terminal part of the ileum which were directly involved in the extravasation. In view of the viability of the affected portion of gut and the absence of apparent interference with local blood supply it may be considered unlikely that the local nerves would have suffered selective mechanical damage, and it is now thought more probable that the "invasion" of the posterior abdominal wall by the haematoma might have been responsible for the ileus by a similar mechanism to that described by Ogilvie. Unfortunately no detailed dissection of the abdominal autonomic system was performed.—I am, etc.,

L. M. GERLIS.

Grimby.

REFERENCES

- ¹ *British Medical Journal*, 1948, 2, 671.
- ² Dunlop, J. A., *ibid.*, 1949, 1, 890.
- ³ Handley, R. S., *ibid.*, 1949, 1, 891.

Research in Renal Disease

SIR,—Writing as an obstetrician with a keen interest in renal problems, I wish to add to the support already given to Dr. Osman's major thesis (May 21, p. 910). Specializing in clinical nephrology is in general justified, (1) by the vastness of the subject and of its literature, and (2) by the wide prevalence and often serious character of renal disorder.

In my own particular field I have long been concerned with the renal changes of pregnancy, but despite extensive reading

and consultation with others I still lack final answers to many of my questions in the fields of renal anatomy, physiology, pathology, and so on. This experience, which I must share with many others, is in part due to the fact that there are few with sufficiently full time for the renal work, and in part to the fact that many gaps still remain in our knowledge which are all too slowly being closed by research.

An improvement can readily be made and maintained if knowledge is synthesized and further research encouraged in such a centre as, I imagine, Dr. Osman envisages. Then the lonely furrow which he himself has ploughed for so many years will be joined by several new ones, and the consequent harvest should be great. With all due deference I should like to suggest that the three Royal Colleges could find in the synthesis of knowledge about the kidney, and encouragement of research on the problems presented by it, a very worthy field for a joint effort. The synthesis of existing knowledge, as a beginning, could result in the production of a very much-needed book, in which the artificial separation of the three aspects of the subjects could be overcome in the ultimate interest of the patient. The encouragement of research would be a longer-term policy, but the initial consideration of it could be undertaken without much delay.—I am, etc.,

London, W.1.

JOHN SOPHIAN.

Death following Neostigmine

SIR,—In the cases described by Professor R. R. Macintosh (May 14, p. 852) and Dr. J. Clutton-Brock (June 4, p. 1007), though it was a mixture of neostigmine and atropine which was injected, death appears to have been attributed exclusively to the neostigmine. The atropine is presumably incorporated in such injections to diminish the cardiac and other untoward effects of the neostigmine. In fact, however, it is quite likely to do the reverse, and we feel that this should be pointed out.

Though we have no experience of intravenous atropine there is no doubt from numerous controlled experiments on healthy people that the primary effect of a subcutaneous dose of atropine sulphate (0.5 mg. per 50 kg. b/w) is to slow the pulse, sometimes very markedly, by what we have always supposed to be medullary (cardiac vagus centre) stimulation. This effect is well known to pharmacologists. It appears quickly and is at its maximum about 10–15 minutes after the injection. The pulse rate then either returns to normal and remains there, or it may rise significantly above normal for a variable period. The rise above normal is, of course, due to the peripheral blocking effect of the drug on the muscarinic action of the acetylcholine liberated by the tonic activity of the cardiac vagus : this effect, with the dose used, is usually slight.

Thus atropine administered subcutaneously first increases the effect of the cardiac vagus ; this action either ceases or, more likely, is masked by the subsequently established anti-acetylcholine effect of the drug. Though there is considerable individual variation in the degree of response in such experiments there can be no doubt about the sequence of events.

It therefore seems likely that a similar primary vagus stimulation with secondary partial vagus blocking may occur when atropine is given intravenously and that the primary effect in these circumstances would begin almost at once. If such central stimulation does occur on intravenous injection of atropine, then, clearly, its effects will be markedly potentiated by neostigmine. This would also apply to any central action of atropine tending to increase the tone of bronchiolar muscle. Hence atropine, administered simultaneously with neostigmine, far from preventing the unwanted effects of the latter drug may, at first, anyhow, be more likely to increase them. This may have been an important factor in causing death in the two cases cited.

Apart, however, from the possibility of such a potentiation of the effects of neostigmine arising from the central action of atropine, the peripheral anti-acetylcholine effects of therapeutic doses of atropine take some twenty or thirty minutes to be fully established. It is, therefore, not to be expected that the unwanted cardiac and bronchial action of neostigmine would be prevented by giving the atropine along with it. The importance of this point is increased by the known liability of both tubocurarine and neostigmine to produce bronchoconstriction by peripheral mechanisms.

The simultaneous intravenous administration of atropine and neostigmine would thus seem to be contraindicated on two grounds: first, that the atropine is likely by its central action to produce an immediate potentiation of the cardiac, and perhaps bronchiolar, effects of the neostigmine; and, secondly, that even if the atropine does not do this it is unlikely to produce an immediate antagonism of the unwanted peripheral effects of the other drug.—We are, etc.,

W. A. BAIN.
J. L. BROADBENT.

Leeds.

Paediatrics and Family Practice

SIR,—In the letter from Drs. S. D. M. Court and F. J. W. Miller (June 4, p. 1006) I note the sentence: "We are now trying to discover the amount and kind of disease in children encountered by practitioners in different kinds of practice, and Dr. Naish could probably help us on this point straight away." I would like to assure them at once that if there is any information in my notes that would be of use to them it is at their disposal. In addition, I am wondering what they mean by "different kinds of practice."

It is obvious, easy, and therefore usual, to classify practices according to the patients or to the milieu—uneducated/educated, rural/urban, etc. I grow more and more convinced that it is just as important to classify practices according to the outlook of the doctor. Whether by training, by temperament, or by the influence of individual teachers, doctors are as a rule definitely orientated either toward the maintenance of health or toward the cure of disease, and in a very short time they impose something of their own outlook on the practice they run. The one extreme, where feckless parents call one in in frantic alarm to see cases of late disease, is not merely an uneducated practice, but an "uneducated-curative" practice. The other extreme, where responsible parents cope themselves with minor ailments and call one early when they are puzzled, is an "educated-preventive" practice.

I am uncertain in what order to place the two mediate items in this classification. During the war, however, I had charge of some evacuees from the East End of London who were obliged to occupy condemned premises and to rear their babies in the most unpromising circumstances. They did it extremely well, and produced some of the most careful and accurate records of home test-feeding I have ever seen. What "kind of practice" would Drs. Court and Miller consider these slum evacuees to constitute? In my nomenclature they would be an "uneducated-preventive" practice; and they lead me to think that possibly better results are to be expected from that than from an "educated-curative" practice.

To Dr. Rosefield's query in the same issue (June 4, p. 1006) about the regular attendance of children over one year, I would reply that possibly he is asking too much. I have only advised my mothers to bring the older children for examination about once in six months, and so far I have found them on the whole willing and able to do that. I must admit, however, that my experience of this problem is not nearly so long as his.—I am, etc.,

York

F. CHARLOTTE NAISH.

Diathermy Prong Forceps

SIR,—Mr. Wilson H. Hey (May 21, p. 911), during his long and distinguished career, has rendered surgery a great service.

He has been an inspiration to many surgeons, who owe him much for the benefit they have derived from his stimulating ideas and the example of his surgical skill. My debt is greater than most, for he has been my teacher, colleague, and friend; I shall never cease to be grateful for the privilege of my association with him.

One of his most outstanding contributions to surgery has been his constant advocacy of diathermy for sealing vessels during operations. The diathermy haemostat has not been widely used because no person published its advantages until I did so in 1944.¹ Our American colleagues who were over here during the war were so intrigued by the instrument I used that they persuaded me to make the idea more widely known; since when I have had requests from all over the world for reprints of my paper.

With regard to the specially designed diathermy haemostat, I have found in practice that it is neither as satisfactory nor as sound mechanically as the home-made instrument which I described. I base this conclusion on the following points:

1. In the home-made instrument the lead lies neatly and unobtrusively in the palm of the hand and there is no danger of its catching on the towels, etc., or hindering the movement of the fingers; it is completely under control.

2. (a) In the specially designed instrument the lead is connected to the periphery, where it acts as a constant obstruction to manipulation of the instrument and movement of the fingers. (b) On account of the protuberance of the attachment the patient is exposed to the danger of accidental burns. (c) The lead being attached at the extremity of the instrument it can exert a powerful leverage which tends to restrict manoeuvrability, usually at a moment when slickness is all-important. (d) The lead attachment screw sometimes works loose during sterilization or whilst in use, and might conceivably get lost in the patient's abdominal cavity.

With regard to the insulating tape used in the home-made instrument, this is only one layer deep and is not used to bind the junction to the haemostat but only to cover the bare wire to prevent damage to the surgeon's gloves. The insulating tape is prevented from becoming unstuck by overwinding with a length of cord or silk (any material will cover the junction equally well).

The question of sterility was raised by a colleague of mine some time ago and we made the following tests. After boiling we had cultures made of washings taken from beneath the tape. We found that in no case were any organisms grown in spite of our having smeared the depths of the tape with cultures of staphylococci, streptococci, and the spore-bearing bacilli. Fifteen cultures in all were made. For me this is proof that boiling is a satisfactory method of sterilization.

It is my earnest hope that this correspondence will encourage surgeons to test my diathermy instrument and those described by Mr. Wilson Hey (June 21, 1947, p. 897) and Mr. A. Wilfrid Adams (April 9, p. 631). When they have tried out the respective instruments it would be interesting to have their views. Only in this way can the greatest advancements in surgery be achieved.—I am, etc.,

Sheffield, 1

DAVID AIKEN.

REFERENCE

¹ *Lancet*, 1944, 2, 212.

Reliability of Laboratory Tests

SIR,—In your annotation on the reliability of laboratory tests (April 30, p. 766) you close with the statement, "If the results of any test are to be of value to the clinician, then the test must be able to detect differences smaller than those which are of clinical significance. It seems that not all laboratory tests meet this requirement, for some of them demand more skill than an average laboratory technician possesses." A close perusal of your remarks and of the paper by Biggs and MacMillan fails to reveal any foundation for such a statement regarding medical laboratory technicians in this country.

The systematic training received by medical laboratory technicians in this country and America was admirably compared and described by Whitehead (*Lancet*, 1949, 1, 113), together with a summary of the requirements for the diploma of the Institute of Medical Laboratory Technology. Although these requirements are approved and recognized by the majority of pathologists and employing bodies as a means of ensuring a reasonable standard of competence, unfortunately a few pathologists and official bodies appear to consider these requirements too ambitious.

In view of these facts, one feels that an explanation or some amplification of your concluding paragraph, quoted above, will remove any suspicions of an ill-conceived or biased review.—I am, etc.,

Stanmore, Middlesex.

R. J. BROMFIELD.

** No criticism of the work or training of laboratory technicians was intended in the annotation from which Mr. Bromfield quotes the final sentence. The point we wished to emphasize was that the reliability of the results of laboratory tests could be ensured by the use of methods which give the best results in the hands of the average laboratory worker.—ED., *B.M.J.*

Dried Plasma for Domiciliary Midwifery

SIR,—I have read with interest Dr. C. T. H. Whiteside's letter (June 4, p. 1005) on the above, and I feel that I must strike a note of warning. I agree that facilities for resuscitation of patients suffering from post-partum haemorrhage are important, but I feel very strongly that the use of dried plasma will do much more harm than good.

For some years now I have avoided the use of plasma, primarily because I have so often seen it fail. Apart from the dangers of jaundice, which an increasing volume of literature has shown to be very real, the fact is that plasma fails to resuscitate these patients. The woman who has lost blood in the third stage of labour requires above everything oxygen to maintain the integrity of the vital centres in the medulla, and this plasma cannot give her. It will increase the blood volume and perhaps produce a temporary improvement in the circulation, but this is only temporary and rather spurious, and again and again I have seen a secondary collapse from which it has been impossible to rescue the patient.

At a recent meeting of the Edinburgh Obstetrical Society Professor Kellar said that the use of plasma had been given up entirely at the Simpson Memorial Hospital and that in several of the cases on which it had been used unsuccessfully post-mortem examination had revealed suprarenal haemorrhages. Whilst a direct cause and effect association could not be substantiated, none the less, plasma had been entirely replaced by saline and whole blood.

In almost all parts of the country to-day "flying squads" are available in one form or another, with the resources of blood banks behind them, so that in any case where it is necessary it should be possible to undertake transfusion of blood in a comparatively short time, and the patient's condition in the meantime can be maintained if necessary with intravenous saline injections. This, unlike plasma, carries a negligible risk of infection and, moreover, again unlike plasma, is rapidly cleared from the circulation to make way for subsequent blood transfusion. The use of morphine also in these cases will help to delay the development of shock and tide the patient over until blood is available.

May I suggest, therefore, that Dr. Whiteside will find that his results will be much better if instead of plasma in his special bag he will carry two pints of normal saline and will make use where necessary of the emergency services in his area.—I am, etc.,

J. A. CHALMERS.

Surgery at the Front

SIR,—I have read the obituary of Mr. Owen W. Richards (May 21, p. 915), and I think you will find in the records that the first abdominal and chest unit in the forward area was opened by the 26th Field Ambulance, 8 Division, at Bac St. Maur, north-west of Merville, in early September, 1915.

In the winter of 1914-15 I suggested to our C.O., Lieut.-Col. A. Milne Thomson, C.M.G., that the abdominal cases were dying of haemorrhage, and that if operated upon in the forward area results would be better. He gave me permission to perform necropsies, which demonstrated that haemorrhage from the small mesenteric vessels was the chief trouble, in many cases only a small part of the bowel being perforated. First it was suggested that the necessary sterile materials should be sent forward in drums from No. 6 C.C.S., Merville, or the advanced depot of medical stores, as we had not space available in a mobile unit to transport autoclaves, etc. In January, 1915, by permission, I called at the War Office, and on explaining our difficulties was issued with various instruments. In early September, 1915, our unit was moved to a factory in Bac St. Maur, where, besides opening our usual dressing station, etc., Col. Skinner, D.D.M.S. 3rd Corps, ordered us to prepare for an operating unit.

The main weaving shed of the factory had central heating, electric light, and much machinery in it; a portion sufficient for 30 beds was sectioned off by green hessian canvas. An operating room was prepared in a corner of the next shed near a large window. Lieut. J. Fraser, later Sir John Fraser, was attached to us as surgeon, and four nursing sisters also, one a regular. Shortly afterwards Lieut. Fraser was sent to another area and Lieut. Sampson (now a Birmingham surgeon) took his place. This factory was about 5,000 yards from the

front trench, and I believe Col. Skinner had some difficulty in persuading higher authority to allow sisters so near the front.

The abdominal and chest cases were admitted from the whole Corps area, and when fit to move were transported by barge (specially equipped) to St. Omer and the sea. In spite of absence of blood transfusion successful results were obtained at first in 27%, then up to 47%, of all cases operated upon. In February, 1916, the factory was heavily shelled—glass and debris flying in the operating room where an operation was being performed. Of the only three officers of the unit available Lieut. Samson was operating, I (acting O.C.) was assisting, and Lieut. Henry was giving the anaesthetic, so it was fortunate that Col. Skinner was visiting at the time and could at once arrange for the urgent evacuation of the movable cases to a farm 300 yards away. Later, the whole unit moved with the 8th Division to another area. Probably this experience resulted in the higher command not allowing nurses so far forward at a later date. Great praise and thanks were given to the unit for the way in which all ranks carried on the work of the special ward, and for the way in which the movable cases were evacuated, by the A.D.M.S., the D.D.M.S., and the D.M.S. 1st Army. Lieut. Samson received the M.C., and the regular sister in charge of the ward and the operating theatre sister received the R.R.C.

Among the interesting cases were the following: one forehead-and-aft penetrating bullet wound of the abdomen, not injuring the bowel and with practically no bleeding; the other a 10-in. (25-cm.) accidental bayonet wound of the abdominal wall, through and through but not entering the peritoneal cavity.—I am, etc.,

Menton, France.

E. ALDERSON.

Women War Captives in Russia

SIR,—With reference to the article entitled "Women War Captives in Russia" by Dr. R. F. A. Dean (April 23, p. 691) concerning the conditions of life of German women in labour camps in the U.S.S.R., I should like to add a few remarks from my own experience.

As a member of the Polish underground army I was deported to Russia in April, 1945, and I stayed in various camps until November, 1947. I found myself among prisoners of war of many nationalities, as well as in camps with a majority of German civilians. I can fully support the evidence given by the said German women, but I should like to point out that no definite and general conclusions can be drawn from such evidence as to conditions prevailing in Russian camps. These conditions vary considerably, not only according to different geographical and local circumstances, but, above all, they depend on the attitude of the Soviet authorities towards the given group of prisoners at the given moment. The German women described in your article were lucky to find themselves in mild circumstances. They estimate the number of deaths in transport on their way to Russia as 2% to 2½% only. This percentage can be increased twenty-fold and still remain true: in the summer of 1945 I personally took part in a medical examination of a group of about 1,000 Estonians who came to Stalinogorsk Camp on their way from East Prussia to central Russia. They had walked about 800 miles, and the death rate among them was over 50%.—I am, etc.,

Wembley, Middlesex.

MIECZYSLAW PESZCZYNSKI.

Threatened Abortion Simulating Ectopic Gestation

SIR,—The following case is reported to illustrate how regurgitation of blood into the Fallopian tubes in threatened abortion may simulate ectopic gestation.

A patient, aged 23, para 2, was admitted to hospital on April 20, 1949, complaining of lower abdominal pain following seven weeks' amenorrhoea, the last menstrual period being on Feb. 22, 1949. The periods had previously been quite regular and of normal amount. On March 7 she had a slight show of dark blood lasting one day, and another show lasting three days immediately prior to admission. The lower abdominal pains, which were mainly in the left iliac fossa, had been present on and off for one month, and she described them as period pains which had now become severe. There had been no vomiting or dysuria.

Abdominal palpation showed generalized tenderness in the lower abdomen, with well-marked guarding in the left iliac fossa. Per vaginam some dark blood was visible, the cervical os was closed,

and movements of the cervix caused severe pain. Bimanual examination of the uterus, which was difficult because of extreme tenderness, showed the uterus to be only slightly enlarged. The right fornix was normal, and on palpation of the left fornix the presence of a small mass was suggested; this was too painful to be accurately defined. Her temperature was 98.4° F. (36.9° C.); pulse 80, blood pressure 120/70. There were no abnormalities in the urine. In view of the history, her lower abdominal pain, and the marked tenderness on vaginal examination, it was decided she was a case of left tubal gestation, and laparotomy was performed on April 20. On opening the abdomen, the uterus appeared to be about 8-10 weeks pregnant; no ectopic pregnancy could be found, but about 2 oz. (57 ml.) of altered blood was noticed in the pouch of Douglas. Careful inspection of the left Fallopian tube showed it to be not enlarged, injected, or swollen, but of a beaded appearance and dark blue in colour due to the lumen being intermittently distended with blood. On milking the tube about 2-3 ml. of dark blood oozed from the abdominal ostium. The right tube appeared normal, but on milking it towards the abdominal ostium two or three drops of dark blood were also produced. The ovaries appeared normal. The pouch of Douglas was mopped out and a normal appendix removed before closing the abdomen.

The patient had a slight loss of blood per vaginam the day following operation, but convalescence was otherwise uneventful. There has been no recurrence of her abdominal pain, and the pregnancy is continuing satisfactory to date.

I consider this patient to be a case of threatened abortion with regurgitation of blood into the Fallopian tubes, causing distension of the lumen and hence producing symptoms and physical signs identical with an early ectopic gestation.—I am, etc.,

Stoke-on-Trent.

H. D. FREETH.

Breast-feeding

SIR,—The modern decline in breast-feeding is commonly attributed either to the ignorance or to the apathy of the family doctor. Many of us, who frequently condone the action of the distraught or unwilling mother in "putting the baby on the bottle," feel that our argument for breast-feeding lacks conviction, knowing the high incidence of breast infection. In recent years breast-feeding has undoubtedly carried with it a considerable hazard to health. In spite of penicillin and sulphonamide therapy breast abscess still occurs too frequently, and we are certainly ignorant of how it does occur.

It was with this problem in mind that I read Dr. F. Charlotte Naish's admirable book, *Breast Feeding*. In discussing mastitis and its prevention, Dr. Naish (pp. 63 and 127) refers to the value to be derived from the study of dairying methods. It appears doubtful, however, whether Dr. Naish and her farmer's wife are referring to the same disease process. The "milk fever" of the dairy farmer has no relation to mastitis, and, to the best of my knowledge, the blood-calcium depletion seen by the veterinary surgeon in "milk fever" has no counterpart in medical practice. The validity of Dr. Naish's deductions is therefore in question, however successful she has been empirically. Dr. Naish has done a notable service in showing what can be done in general practice. It is admiration for her work that has prompted me to point out this flaw in its excellence.—I am, etc.,

Thornton, Fife.

JAMES B. FLEMING.

"Cord Round the Neck"

SIR,—Further to my letter in the *Journal* of May 4, 1946 (p. 701), I have again observed this abnormality in the same multipara with the history of two stillbirths.

The patient (7-para) was delivered on Nov. 4, 1944, by forceps under chloroform of a stillborn female, death being caused by torsion of the cord. On March 29, 1946, she delivered naturally a stillborn male; again death was caused by the cord round the neck. On Sept. 21, 1947, she gave birth to a live-born male child without this abnormality. On June 3, 1949, a stillborn female child was born naturally with the cord round the neck. Again the child had been strangulated.

I venture to suggest that delay in the second stage associated with foetal distress may be attributable to cord round the neck, and, where suspected, should be treated by early caesarean section to ensure a live child.

My thanks are due to Dr. Archibald Neville McLellan for help with this patient.

—I am, etc.,

Harthill, Lanarkshire.

S. H. P. McLAUCHLAN.

Fatal Myelitis after Antirabic Vaccine

SIR,—Dr. I. Ansell (Aug. 14, 1948, p. 338), describing a fatal case of myelitis after antirabic vaccine, concludes that "antirabic treatment should be given only when the correct indications are present. A healthy dog should be kept under observation for the usual ten days before treatment is begun, except possibly in cases of severe bites on the face."

As far as I am aware, it is still the practice in most centres responsible for treating persons bitten by dogs and other animals not to wait until the disease declares itself in the dog before commencing treatment, for the reason that, although the virus is believed to reach the brain via the nerves, the time it takes to do so varies over wide limits (days, weeks, or months). Consequently it seems to me that as this rate of travel of the virus can only be guessed at in the majority of cases the withholding of treatment for some days may amount to jeopardizing the life of the patient, who has no chance of surviving once the disease does develop.

Since the incidence of neuromuscular accidents following antirabic vaccine is one in many thousands and the mortality from all types about 25%, I cannot help feeling that Dr. Ansell's conclusion is likely to be misleading, and almost comparable to advising a patient not to undergo what might prove to be a life-saving operation merely because one person in many thousands dies unexpectedly during the induction of the anaesthetic.

I would welcome your opinion on this point, which I feel is important, because so few practitioners have a clear idea of what should best be done in bites from animals. Rabies is a disease in which one cannot afford to take a chance.—I am, etc.,

Hong Kong.

E. F. DUCK.

Thiosenicarbazone

SIR,—The letter from Dr. L. Fish (June 4, p. 1005), together with your note following it, is timely. Perhaps the readers would be interested to hear that a whole day was devoted to the chemotherapy of tuberculosis at the recent Congress of Internal Medicine at Wiesbaden, which I attended. The treatment of pulmonary disease by thiosenicarbazone held an extremely prominent place in the papers and discussions, which were initiated by Professor Domagk from the pharmacological aspect and Professor Heilmeyer from the pathological aspect.

Apart from the general work on this group of substances (which are directly derived from sulphonamides), the only reference I know to its use has been in a lecture given in New York in June, 1948, by Dr. D'Arcy Hart.

The Germans place these drugs—mainly one which they call "T.B.1"—midway between streptomycin and para-aminosalicylic acid in their chemotherapeutic efficiency, and it would seem that very much work is needed to be done in this country on the subject if our armamentarium in the treatment of tuberculosis is to be completed. It is proposed shortly to do a small clinical trial with thiosenicarbazone if arrangements for its supply can be adequately made, and this will be the subject of a future communication.—I am, etc.,

London, S.E.12.

M. M. NAGLEY.

Routine Medical Examinations

SIR,—With reference to Dr. R. Frank Guymer's letter on routine medical examinations (June 4, p. 1007) and the application of Pulheems to industry, I am sure Dr. Guymer would be interested to know that we have been applying this system at Messrs. Taylor Woods, Ltd., Hosiery Factory, Enniskillen, for two years. In conjunction with the personnel department a series of profiles for the various jobs have been made.

We find that the system is almost an essential, as some of the jobs are very highly skilled and long periods of training necessary. We believe it has helped to avoid labour turnover and absenteeism. Three hundred and fifty potential employees have been examined up to the present. This number we consider insufficient, but when the 500 is reached we hope to have some figures to substantiate our belief in this system as applied to industry.—I am, etc.,

Enniskillen, Co. Fermanagh.

HAROLD K. ARMSTRONG.

Marriage Guidance by Doctors

SIR,—At the Conference on Marriage Guidance held recently at Scarborough I urged the training of doctors in sex problems, and, as rather garbled versions of my remarks have appeared in the Press, may I restate the position, and suggest a possible solution?

A recent annotation in the *Lancet*¹ commented on the lack of sex education given to medical students to-day. It is a fact that in most medical schools no teaching whatever is given on the technique of sex, on contraception, on abnormal psychology, on pre-marital advice, or on marriage guidance. The student's general training is based on disease of organs and not on dysfunction of the individual—still less so when it affects two individuals composing the single entity of a marriage.

Most doctors who have acquired any knowledge of sex by the time they graduate do so not by any organized instruction on the subject but by private enterprise. When patients seek advice on these subjects the doctor is in a dilemma, because not only is his knowledge inadequate, but, worse still, he may have inhibitions about the subject. As a result it is not surprising that Stallworthy and Green-Armytage² can quote 4-5% of all cases attending sterility clinics as being *virgo intacta*—a figure which I can confirm from my own clinic.

The following other examples are illustrative of inadequate or wrong advice:

(1) A woman was referred for leucorrhoea. I removed a foul object, which proved to be an unrolled washable condom. She explained that she had been advised at another hospital not to have more children. The R.S.O. said her own doctor would advise, who in turn suggested that her husband go to the chemist and he would advise. The chemist merely handed over the sheath, and, not knowing what to do with it, this pathetic couple decided that the vagina was the correct place in which to put it.

(2) In two cases referred on account of sterility each patient had had curettage under anaesthesia elsewhere, without the gynaecologist realizing that she was *virgo intacta* and that he was the first to rupture the hymen. After suitable advice each became pregnant.

(3) In several other cases girls requesting pre-marital examination had been told elsewhere to have excision of the hymen. Seeking a second opinion before risking an anaesthetic and operation, I was consulted and advised digital self-dilatation, which in a period of about 10 days produced an adequate result. Such advice as these girls had previously received might be tragic—and yet it is a common happening to those who know of the ignorance and general reluctance of doctors to deal with these problems adequately.

It is realized that not all doctors are temperamentally suited for this type of work. Nevertheless all medical students should be given sufficient basic training to enable them to recognize the nature of the problems which may confront them later, and know where to send such people, even though they themselves may never wish to undertake treatment. The present overcrowding of surgeries deters even those few who are interested from dealing with such cases.

The answer to this problem must be provided in special centres at which such work could be undertaken by those fitted for it, and training centres for doctors also established there in circumstances where the time available per case would be adequate. This would also overcome the ethical problem of a doctor who does marriage guidance work being accused of poaching on his colleagues' patients if he sees them at his own surgery. It also leads to the conclusion that doctors in charge of such centres should have special training in marriage counselling, organized and approved by a body of established authority. Such a body would appear to be the National Marriage Guidance Council, which has already worked out a technique of training and has the experience in this field of work to appreciate the difficulties. Most emphatically the organization of training at and staffing of such centres is not a function for a hospital board, local authority, or government department; it is highly delicate work, requiring special qualities in both the training and personality of the doctor.

The problem is an urgent one, and I would urge the immediate calling together of a conference of interested parties, perhaps under the auspices of the National Marriage Guidance Council, to study the possible solutions.—I am, etc.,

BERNARD SANDLER.

Manchester, 8.

REFERENCES

¹ *Lancet*, 1949, 1, 744.

² Stallworthy, J. (1943). *J. Obstet. Gynaec. Brit. Emp.* 55, 172.

London Lock Hospital

SIR,—We must all join with your correspondent, Dr. Raymond Oliver (June 4, p. 1004), in regretting the possible disappearance of the London Lock Hospital in its present form. Apart from his letter, the medical press has seen a number of letters and editorial articles to the same effect since the North-West Metropolitan Regional Hospital Board made public recently the recommendation that it has under consideration to transfer the buildings of the Lock Hospital to the West End Hospital for Diseases of the Nervous System.

Such "change of user" of hospital premises will no doubt take place not infrequently throughout the country as the regional boards consolidate and co-ordinate their hospital services; these changes are inevitable with the declining demand for some types of hospital and the maintained or even increasing demand for other types. It is a great social gain that modern therapy has made in-patient treatment in venereology less necessary than hitherto, though it is sad to see as a consequence the need for famous institutions in their old forms pass away; we find this sad just as our great-grandfathers found the inevitable disappearance of the sailing ship and the stage coach equally sad and equally difficult to accept.

Venereology is not the only branch of medicine to find to-day less need for beds; there has been a similar sudden collapse in the demand for fever-hospital beds. Whilst the fever hospitals are now turning over a high percentage of their beds to other work, we may spare a pang of regret for the practitioners of this branch whose field of future work and interest has so suddenly contracted.

In regretting the changes necessary in some institutions do not let us forget the pressing need of those for whom a demand continues and who may have less resources than before to meet it. That the needs of the West End Hospital for Diseases of the Nervous System have been under consideration by the North-West Metropolitan Regional Hospital Board has been made public. Little attention has been paid in the medical press to the serious position of this hospital and its work. Before the last war this hospital for organic diseases of the nervous system was working in central London to the limit of its capacity in neurology and neurosurgery, for the practice of which there are certainly not too many beds in London. The hospital was divided into two parts—out-patients in Welbeck Street and in-patients in Regent's Park—and its war risks may have been thought to have been minimized by such "dispersal." However, in 1940 its out-patient premises received a direct hit, with severe damage, loss of life, and injuries to members of its staff. It has not been possible to repair this damage since, and only a small portion of the out-patient department is now working (still to capacity). The in-patient department, standing isolated in Regent's Park, was totally destroyed in 1944 by a flying bomb, with heavy loss of life among patients and staff, and it has not since been rebuilt. The demand for this hospital's work has nevertheless continued unabated, and the work has had to be carried out under very difficult conditions—for example, in beds borrowed from other hospitals.

Whilst we may shed a tear for the Lock Hospital, whose needs have lessened, what must our feelings be for the West End Hospital, whose tragic damage, in the opinion of a Ministry of Health architect, was relatively greater than that of any other hospital in London? If the Lock Hospital buildings are used to meet such a necessity, then those with an affection for this hospital should be consoled by the realization that the buildings will be serving a purpose as high and as valuable as heretofore.—I am, etc.,

London, W.1.

T. ROWLAND HILL.

POINTS FROM LETTERS

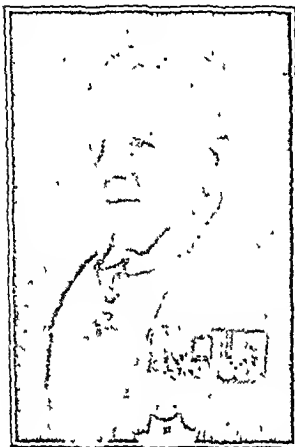
Treatment of Varicose Veins

Dr. J. W. HAUGHTON (Truro) writes: I was very glad to see Dr. R. Simpson Harvey's letter (June 4, p. 1005). I had a large number of cases (over 200) when I was surgeon at the Falmouth Military Hospital during the first war. I found, if I emptied the vein by elevating the limb, applied a light tourniquet at the upper end, injected a large amount of sclerosing fluid and gently forced it into the vein, that I got best results.

Obituary

SIR JAMES PURVES-STEWART, K.C.M.G., C.B.,
M.D., F.R.C.P.

Sir James Purves-Stewart, the well-known neurologist, died at his home in London on June 14 at the age of 79. The son of Mr. John Stewart, J.P., of Edinburgh, he was educated at the Royal High School of the city. He won many medals and prizes as a medical student at Edinburgh University, and graduated M.B., C.M., with first-class honours, in 1894. After holding resident posts in the Royal Infirmary his unusual ability led to his appointment as assistant, first to the professor of physiology and later to the professor of medicine. Stewart, as he was then, began at this early



(Elliott and Fry, Ltd)

date to publish papers on various subjects, including one on the superficial anatomy of the nerves. A happily successful guess in 1895 about the location of a cerebellar tumour encouraged him, so he recounted in the preface to one of his books, to launch into the great stream of neurology. After proceeding M.D. in 1897 he left Edinburgh for London, where he was for two years a resident house-physician at the National Hospital for Nervous Diseases. At Edinburgh he had acquired a sound knowledge of physio-

logy and medicine. At Queen Square he began to build on this foundation a specialized experience of neurology.

As physician to the Imperial Yeomanry Field Hospital, Stewart was mentioned in dispatches for his services in the South African campaign of 1900-1. When this war was over he visited the medical schools at Jena and Frankfurt. Returning to London, he was appointed honorary assistant physician to the Westminster Hospital. There he resumed teaching, first in pharmacology and therapeutics, later as lecturer on his chosen specialty of diseases of the nervous system. Soon afterwards he became known beyond the bounds of the Westminster Hospital with the publication in 1906 of his book *The Diagnosis of Nervous Diseases*. In the preface to the first edition he wrote: "It is seldom in medicine that we meet with diseases in their typical forms, at least as described in textbooks. More often we have to deal with patients who exhibit signs and symptoms common to several diseases. The present volume approaches the subject of diagnosis of nervous diseases from the clinical standpoint. . . ." This book was made up chiefly of lectures given to students and graduates, with reprints of articles in various journals and many illustrations. It broke new ground and was so well received that a second edition was called for in 1909 and a third by 1911. Each edition was freshened with new material and illustrations. French, German, Spanish, and even Arabic translations were called for. During the recent war, while in the U.S.A., he persuaded the well-known Boston neurologist, Dr. H. R. Viets, to help him in revising the book. Together they worked on it throughout each day for three weeks. The result of this thorough revision was sent to England by ship and through an accident of war was unfortunately lost for ever in the Atlantic Ocean.

During the 1914-18 war Stewart served in Malta, Gallipoli, Salonika, and Egypt. He was consulting physician to the Forces in the Mediterranean and Near East theatres. He was three times mentioned in dispatches, and was awarded the C.B. in 1916 and created K.C.M.G. in 1918. In 1927 he published a work on *Intracranial Tumours*, in which he recorded his experience of 253 cases, of which 121 came to necropsy. He confined his notes entirely to his own observations, and gave no reference to the work of other clinicians. This particular book was later translated into Russian. Sir James Purves-Stewart was also responsible for the neurological volume in the "Oxford Medicine" series, and for twenty-six years he wrote the section on nervous diseases for the *Medical Annual*. Apart from his work at the Westminster Hospital he was honorary physician to the West End Hospital for Nervous Diseases, the Royal National Orthopaedic Hospital, the Central London Throat and Ear Hospital, and the King Edward VII Convalescent Home for Officers at Osborne.

In 1930 Purves-Stewart was intimately concerned with the report of the discovery by Miss Kathleen Chevassut of a virus in the cerebrospinal fluid of cases of disseminated sclerosis. Purves-Stewart gave his own account of the investigations, which had been going on for two years in the Westminster Hospital laboratories. He claimed that the "virus," *Spherula insularis*, was found in 176 of 189 cases of disseminated sclerosis. He also stated that he had treated patients with a vaccine and that improvement had taken place in 40 out of 70 of these cases. He pointed out, however, the fact that patients with this disease often had spontaneous remission. Later he published another paper, in collaboration with Braxton Hicks and Hocking, describing inoculation experiments on animals. These studies created much interest but were sharply criticized. So important would the discovery have been, if confirmed, that offers were made by the Medical Research Council and the Halley Stewart Trust to defray the cost of repetition of the work in other laboratories. In February, 1931, Purves-Stewart dissociated himself from Miss Chevassut, because of her refusal in December, 1930, to repeat the original observations for the Medical Research Council. She did accept, however, premises and facilities offered by the Halley Stewart Trust, and 162 cases were treated there. The results in 69 of these cases were reviewed by Dr. F. M. R. Walshe, who concluded that patients so treated were worse off than if they had been left alone. By September, 1931, Miss Chevassut claimed that the specific organism could readily be maintained in subcultures on solid media. The Trustees, reasonably enough, wished to examine these cultures, but none were forthcoming. Finally in March, 1932, the Trustees had no alternative but to abandon the trial and close the small institute they had made available for this work. Subsequently Dr. B. Halley Stewart (*B.M.J.*, 1932, 2, 326) described how the organisms originally said to be present in 93% of cases of disseminated sclerosis were detected by their discoverer less and less often. Subcultures of the "specific organism" were also identified as pure cultures of the virus of bovine pleuropneumonia. Describing his uncongenial task, Dr. Halley Stewart mentioned that in her original paper on the subject Miss Chevassut had described her virus as bearing a striking resemblance to that of bovine pleuropneumonia.

Sir James Purves-Stewart was elected a Fellow of the Royal College of Physicians of London in 1906 and acted as examiner in medicine in 1904-8 and 1922-6. At annual meetings of the B.M.A. he served as secretary in 1912, vice-president in 1922, and president in 1931 of the Section of Neurology. He was a member of several American and Continental Societies and the recipient of many scientific

honours. He was always proud of his honorary rank of colonel, and at the age of 72 he contrived to serve in the Home Guard in the recent war, writing at that time his book *Over Military Age*. He made his home for many years of his retirement at the Belle Tout lighthouse on Beachy Head. Only last year he generously offered to present the lighthouse to the Eastbourne Corporation.

Purves-Stewart was very much of an individualist, and not free from the weaknesses common to lesser and greater men than himself. Among those who followed the same specialty in this country he occupied rather an isolated position. His enduring monument is his well-known and much used text-book, unique in neurological literature and of high value to those trying to master the most difficult of all medical arts, the diagnosis of diseases of the nervous system.

C. C. EASTERBROOK, M.D., F.R.C.P.Ed.

Dr. C. C. Easterbrook, who died in Edinburgh on June 5 at the age of 82, was for many years physician-superintendent of the Crichton Royal Institution, Dumfries.

Charles Cromhall Easterbrook was educated at George Watson's College, Edinburgh, and at Edinburgh University, where he graduated M.A. in 1887 and M.B., Ch.B. with first-class honours in 1892. He was a house-surgeon at the Royal Maternity Hospital and at the Royal Infirmary, house-physician at the Royal Infirmary and at the City Fever Hospital. He started his psychiatric career in 1894 under the late Sir Thomas Clouston, and for more than seven years he was on the staff of the Royal Edinburgh Mental Hospital at Morningside. He proceeded M.D. with honours in 1900 and became a member of the Royal College of Physicians of Edinburgh in the same year. He was elected a Fellow in 1903, a year after he had been appointed medical superintendent of the Ayr District Asylum. At Ayr he was responsible for considerable extensions to the hospital, and these included a new reception hospital and infirmary which he designed.

Dr. Easterbrook was appointed physician-superintendent of the Crichton Royal, Dumfries, in 1908, and held this appointment for 29 years, until his retirement in 1937. Under his leadership the Crichton not only retained its position among the foremost of psychiatric institutions but enhanced its reputation.

The Crichton had grown very considerably under his predecessor Dr. Rutherford, and one of Dr. Easterbrook's earliest tasks was to put before his board of directors a plan for the future development of the institution, aimed at making possible an ideal classification of the patients and, incidentally, nearly doubling the bed accommodation. The last building of the scheme he submitted as far back as 1909 was not completed until 1938. The directors did him the honour of naming this building after him, and Easterbrook Hall will remain a fitting memorial to his lifelong devotion to the mental invalid. The operating theatre and x-ray room, departments for hydrotherapy, physiotherapy, and occupational therapy, a swimming-pool, gymnasium, concert hall, café, library, and even a hair-dressing saloon all show the foresight of the man who planned all these things so many years ago. He was to a large extent his own architect, and in his buildings he incorporated all that he had found best in the Continental mental hospitals and clinics. Dr. Easterbrook made many contributions to the literature, and in 1925 he delivered the Morison Lectures to the Royal College of Physicians of Edinburgh, choosing as his subject "Mental Invalids." After his retirement in 1937, as a labour of love he compiled the *Chronicle of the Crichton Royal*, a comprehensive review of the growth and activities of the hospital throughout the century from its inauguration in 1837.

Dr. Easterbrook married in 1905 Ann Elliot Thomson, daughter of the late William Thomson, of Clovenstone, Selkirkshire, and she survives him with a son and daughter.

Professor R. J. A. Berry writes: The death, after a long crippling illness bravely borne to the end, of Dr. C. C. Easterbrook has deprived the mental service of Scotland of one of its great personalities.

His memory will last, I take it, as long and even longer than the Easterbrook Hall at the Crichton Royal Institution. But it is not for his work that I lament his passing. It is rather for those personal qualities which so endeared him to contemporaries who knew him as intimately as I did. On Jan. 19, 1900, there met together at 21, Heriot Row, Edinburgh, and for the first time, seven young Edinburgh medical graduates, who then and there formed themselves into a small literary club which they termed the Heptagon. Meeting at each others' houses during the winter session, it was the duty of the host to provide the mental and physical pabulum for the evening, the whole bonded and cemented together by the best of friendships. Charlie's death confronts the writer with the melancholy fact that of the original seven members he is now the only survivor. But there must surely be some who have memories of Andrew Balfour, J. W. Dowden, C. C. Easterbrook, J. S. Fowler, C. B. Ker, and A. Logan Turner. It was Balfour, the Sir Andrew of a later day but then known to us as "Beefy," who read the first of the Heptagon papers on Graham's *The Social Life of Scotland in the Eighteenth Century*. And now Charles Easterbrook, too, has gone.

Dr. ISAAC FLETCHER died at his home in Workington, Cumberland, on May 28, at the age of 85. He was born at Seaton, close to the town of Workington where he practised for sixty years. He graduated M.B., Ch.B. at Glasgow in 1890, took the D.P.H., and soon settled down to a long life in general practice. He always worked hard, but he crowded many other interests into what little spare time he had. He was essentially a family man, and was very happy to see his five sons carrying on the best traditions of the medical and dental professions, while his daughter formed the last link in a strongly united family circle. As would be expected, his hobbies were directly concerned with the welfare of others: he was an exceptionally keen worker in the St. John Ambulance Brigade, a Rotarian, and a Freemason, and he reached the highest ranks in all these brotherhoods. He was, too, a life-long teetotaler and non-smoker, and never ceased to support the temperance cause. Dr. Isaac Fletcher had little time to spend on games, but he was a keen Rugby Union footballer as a young man, and he ultimately became life president of the Cumberland Rugby League. He was not a big man physically but kept his trim figure all through his life. He was no motorist, and cycled his rounds practically up to the last. His capacity for life in all its aspects was immense—for example, in the first world war he looked after three practices, acted as school medical officer, and sat on recruiting boards. He practised for many years in the days when the G.P. had to deal with everything which came his way; major surgery, obstetric emergencies, and anaesthetics were all part of his daily routine. He was an artist in the use of chloroform, and his records with that anaesthetic will stand comparison surprisingly well with those of its modern counterparts. An outstandingly able example of the old type of doctor giving devoted and excellent service to the community, Dr. Isaac Fletcher was a kindly man, and his colleagues never hesitated to turn to him for help. A wise man, too, his counsel on any problem was worth having, and the dividing line between right and wrong was clear as crystal to him. The crowded church and the hosts of mourners at the graveside showed how great was the affection and respect felt for a man who had long outlived his generation, and yet died in the midst of a community which loved him and which will miss him as no other man in Workington could be missed.—A. G. A.

Medico-Legal

USE OF TITLE M.D.

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

Section 40 of the Medical Act, 1858, does not forbid practice by the unqualified, but attempts to enable the public to distinguish between qualified and unqualified practitioners. It prescribes penalties for the offence of wilfully and falsely using certain well-recognized titles, of which doctor of medicine is one, or any description implying that the user is registered under the Act. Doubt had always existed until recently whether a practitioner who has the degree of doctor of medicine of a reputable foreign university but is not on the British Medical Register commits an offence if he uses that title. When a recent prosecution brought the question before the High Court for decision, the Lord Chief Justice considered it so important that he convened a full King's Bench Divisional Court of five judges to hear it argued.

Dr. William Luftig was originally Austrian, and obtained the degree of M.D. of Berlin University in 1913. He said that he became a British subject by naturalization in 1938 and practised in London and Northampton and from 1944 in Brighton, where he specialized in ophthalmology. He originally used on his plate the description "M.D. Berlin," but after he had received threatening letters and had had swastikas painted on his house he adopted the abbreviation "BLN." He had written four books in English on eye diseases, and in these he is described as "William Luftig, M.D.," with the addition underneath in small lettering of the words "Graduate of the University of Berlin." He was not on the British Register, although he could have applied for registration under the Defence (General) Regulations, 1939. Mr. Thomas Stanley Younghusband, on behalf of the Medical Defence Union, preferred an information against him before the Brighton justices alleging that on May 25, 1948, and subsequently, he falsely used the title of doctor of medicine and the description M.D., thereby implying that he was registered under the Act of 1858. The justices held that no offence against Section 40 had been committed and that the use of the letters M.D. BLN did not imply that he was registered. The prosecutor appealed to the High Court.

The case for the prosecution, argued by Mr. Cecil Havers, K.C., was that Dr. Luftig was not a doctor of medicine within the meaning of the Act, and that, if that were so, he had contravened the section by wilfully and falsely using the letters M.D. after his name; that the use of those letters implied that he was registered under the Act of 1858 and that, as he was not, that use constituted a similar contravention of Section 40; that the initials BLN were unknown in this country as an abbreviation for Berlin and there was no evidence that they were so known elsewhere; that BLN by itself was meaningless and implied that Dr. Luftig held a separate degree so described, and that M.D. stood alone and meant that he was an English doctor of medicine registered under the Act. Mr. Havers submitted that it was unlawful for anyone to use the letters M.D. unless he was a registered medical practitioner or possessed a qualification entitling him to be registered. It would not have been sufficient to avoid an offence if Dr. Luftig had used the full word Berlin after the M.D. Alternatively, there would have been no offence in his description of himself had he not engaged in the practice of medicine.

Mr. D. E. Evans, who appeared for Dr. Luftig, submitted that the true construction of Section 40 was that it prohibited the use wilfully and falsely of any of the specified well-known descriptions by someone who had no right or title or claim to them. That was not so in this case, for Dr. Luftig held the qualification of a recognized foreign university. If a man had a genuine degree in medicine of a well-known university he committed no offence under the Act if he described himself as M.D., even if he did not add any indication such as "Berlin" or "New York," for he had said nothing that was false. Dr. Luftig had used the letters BLN in order to avoid drawing unnecessary attention to his former nationality. His motive was not related to extending his practice or to defrauding the public in relation to his right to practise.

The Court's Judgment

The court reserved its judgment for a week, and the Lord Chief Justice, reading it, said that there was no doubt that the justices had considered that the diploma produced by Dr. Luftig was a diploma granted by a genuine university. The term "doctor" was now commonly used to mean any medical practitioner, but when it was used in conjunction with some particular branch of learning it meant one who in any faculty had attained to the highest degree conferred by a university. A person who described himself as a doctor of medicine represented that he had had that degree conferred on him by a university as the result of competent examination. The courts would know how to handle an imposture consisting of the use of the description doctor of medicine on the strength of a piece of parchment and a hood bought from some commercial concern. The Medical Act of 1886, providing for reciprocity with foreign universities, did not apply in the present case because it had never been applied by Order in Council to Germany. Much of the difficulty surrounding the present question came from the opening words of Section 40: "Any person who shall wilfully and falsely pretend to be. . . . Other statutes concerning other professions, such as those of a solicitor or a dentist, did not contain the words "wilfully and falsely." If Mr. Havers's contention that the title "doctor of medicine" could only be used by a registered person was right, it would be an offence for the Regius Professor of Medicine at one of our great universities, who might not have taken steps to be registered because he had no intention of practising, to describe himself as a doctor of medicine. Counsel had also submitted alternatively that the Act at least prevented a man from using the title unless he was qualified to be registered; but the Court could find no words in the Act to support that contention. A man could be registered only if he possessed certain qualifications; but if he used a title which would imply that he was registered, he would commit an offence if he were not in fact registered, however qualified he might be.

The full court had been convened particularly because the judgments in the earlier case of *Jutson v. Barrow* (1939) contained some dicta which appeared to conflict with earlier authorities which had not then been cited to the court. *Jutson's* case seemed to contain an absolute prohibition against the use of the description "doctor of medicine" by an unregistered person who had a genuine doctorate; but that case was distinguishable from the present one, as that practitioner had been medically unqualified besides being unregistered. The earlier cases before *Jutson v. Barrow* represented an unbroken line of authority from 1860 to 1899 to the effect that to commit an offence against Section 40 the defendant must have acted wilfully and falsely; that it was for the justices to decide whether he had done so; and, also, that he did not commit an offence if he honestly believed that he was within his rights in describing himself as he did. He must, of course, have a reasonable ground for his belief. The presence or absence of the "guilty mind" must be tested on ordinary principles and in the light of common sense.

Dr. Luftig had a genuine degree of doctor of medicine conferred by a foreign university. There was therefore no reason why he should not use that title, and the justices had been amply justified in finding that he did not use it wilfully and falsely. If Dr. Luftig described himself as "M.D. Berlin," then, clearly, on the authorities, he was entitled to do so and committed no offence; he was describing himself as what he was, and the addition of the word "Berlin" showed that he was not claiming to be possessed of one of the degrees mentioned in the Act, and, therefore, did not represent that he was registered. The real difficulty in the case was his use of the abbreviation "BLN." The authorities, however, obliged the court to hold that it was for the justices to decide whether, in so doing, he had acted falsely and wilfully, and they must be taken to have found that he did not so act.

The justices had further found that the description "M.D., BLN" did not imply that Dr. Luftig was registered. They might have decided that point the other way, and the court hoped that Dr. Luftig would not in future use that abbreviation. As there was some evidence on which the justices could find that Dr. Luftig had not acted wilfully or falsely, it followed that the appeal must be dismissed. The cases were in a

ANNOUNCING

*Aureomycin Hydrochloride**Lederle*

AUREOMYCIN HYDROCHLORIDE *Lederle* gives promise of being one of the most versatile antibiotics yet discovered. It is a potent antibiotic against many Gram-negative and Gram-positive organisms and against primary atypical pneumonia. AUREOMYCIN has been found useful in the control of infections caused by penicillin-resistant Gram-positive

cocci (especially staphylococci), and infections caused by coli-ærogenes bacteria. It is also highly specific against rickettsial infections. AUREOMYCIN has been used successfully against infections that have become resistant to penicillin, streptomycin, or sulphonamides, and in patients who exhibit severe and uncontrollable sensitivity to these latter drugs.

ADVANTAGES

Aureomycin exhibits the following advantages:—Essentially non-toxic (excepting allergy) . . . Unlikely to produce fastness in pathogenic organisms . . . Effective against many organisms previously insusceptible to chemo-therapy . . . Available in oral . . . and topical ophthalmic dosage forms.

CAPSULES: Vials of 16 capsules each containing 250 mg.

OPHTHALMIC: Vials of 25 mg. with dropper assembly; solution prepared by adding 5 cc. of distilled water.

LEDERLE LABORATORIES DIVISION

Cyanamid Products Ltd

BRETTENHAM HOUSE · LANCASTER PLACE · W.C.2

★
new

**ORAL TREATMENT
FOR
SCHISTOSOMIASIS**

The discovery of 'Nilodin' is an important advance in the field of tropical medicine. The advantages of this new compound are such that it promises to become the drug of choice in the treatment of *Schistosoma hæmatobium* infestation.

- 90 per cent cure rate has been obtained*
- Hæmoturlo ceases within 48 hours
- Course of treatment only 3 to 6 days
- Hospitalisation unnecessary
- Patients rapidly rendered non-infective
- Low toxicity
- Mass treatment of communities possible for the first time
- Effective orally

'Nilodin' is also effective to a lesser degree in the treatment of *S. mansoni* infestation. The compound is issued as 200 mgm. compressed, enteric-coated products, in bottles of 30 for individual treatment and 500 for mass treatment.

* Lancet, 1949, I, 344



'NILODIN'

1-DIETHYLAMINOETHYLAMINO-4-METHYLTHIOXANTHONE HYDROCHLORIDE



Further information available from —

BURROUGHS WELLCOME & CO. (THE WELLCOME FOUNDATION LTD.) LONDON

48120H

local antihistamine therapy with

'ANTHISAN' CREAM

trade mark

brand

ANTIHISTAMINIC The local application of 'Anthisan' Cream in the palliative treatment of skin manifestations of allergic and sensitization reactions is justified by its ability to neutralize the local effects of histamine by reducing oedema and relieving pruritus. The outstanding value of 'Anthisan' administered systemically is clearly established and, in appropriate cases, combined local and systemic treatment would appear to be the most promising method of obtaining speedy relief of symptoms.

ANTIPRURITIC The powerful local

analgesic action of 'Anthisan' has suggested the local application of the Cream in various dermatoses characterized by intense pruritus, but not necessarily of allergic origin, and there is clinical confirmation of its value in such cases.

OUR MEDICAL INFORMATION DIVISION,
WILL BE PLEASED TO SUPPLY A COPY OF
THE MEDICAL BOOKLET 'ANTHISAN'
ON REQUEST

'Anthisan' Cream (2 per cent. mepyramine
maleate) is supplied in 1 oz.
collapsible tubes and
16 oz jars



manufactured by

MAY & BAKER LTD

distributors PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD., DAGENHAM

**B.M.A. EXHIBITION
HARROGATE**
June 27th—July 1st
see the **M&B** exhibit
on **STAND No. 66**

complete fog, and their Lordships thought the time had come when the position might be clarified by further legislation

Comment

The most difficult element in this important case was, of course, the absence of a clear prohibition against practice by an unregistered person, and the presence in its place, in Section 40, of the prohibition against the use of titles suggesting registration, with the requirement of proof of a guilty intent. The Court's decision settles a question which has been perplexing the profession and their legal advisers for the best part of a century, but it also legalizes the use of a variety of titles conferred by reputable foreign universities without specifying their source. What, also, is the position if a practitioner calls himself M.D. on the strength of a doctorate conferred by a Dominion university which is reputable enough but the medical qualifications of which the General Medical Council will not for the moment accept for registration, perhaps because the teaching or the examinations do not come up to the Council's standards? Will a court be asked to say that use of the title M.D. conferred during the period of the Council's disapproval infringes the Act although one conferred at another time is registrable?

It is probably too much to hope that Parliament will find time for the legislation suggested by the Court or that if it did it would restrict the practice of medicine to registered persons, but much trouble would be saved if it would remove the requirement "wilfully and falsely" and make the use of an unregistered title unlawful irrespective of motive. Regius professors of medicine, presumably, could safely be left to look after themselves.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on June 4 the following degrees were conferred

D.M.—P. S. Buckley, *E. H. Brown
B.M.—P. S. Buckley

* In absence

UNIVERSITY OF WALES

The following candidates at the Welsh National School of Medicine have satisfied the examiners at the examination indicated

TUBERCULOUS DISEASES DIPLOMA—J. I. Briggs, A. R. Corrado, K. B. Gore, *E. H. Horton, S. C. Laha, *D. R. Lewis, A. W. E. Moreira, D. R. Nagpal, K. Z. Nowak, B. F. X. Scallan, S. D. Sharma, M. H. Sherif, N. M. Sinha, *J. M. Smith

* With distinction

UNIVERSITY OF LEEDS

W. K. J. Walls, M.B., Ch.B., has been appointed Lecturer in Anatomy in the University

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At a meeting of the Council of the College held on June 9, with Lord Webb-Johnson, President, in the chair, the Honorary Medal of the College was presented to Mr. Arthur Sims, Professor F. Wood Jones, and Professor W. E. Gye.

A Certificate of Honourable Mention for his Jacksonian Essay was presented to Mr. C. G. Roh.

The following were co-opted to the Council for the year 1949-50, representing the branches of practice indicated in parentheses: Dr. H. Guy Dain (General Practice), Mr. J. M. Wyatt (Gynaecology and Obstetrics), Mr. V. E. Negus (Oto-laryngology), Mr. A. D. Marston (Anaesthetics), Mr. J. H. Doggart (Ophthalmology), Professor R. V. Bradlaw (Dental Surgery), Mr. B. W. Windeyer (Radiology).

Dr. H. D. Ross was appointed as Lecturer in Pathology in the College.

Diplomas of Fellowship were granted to the following successful candidates

C. W. F. Burnett, W. H. J. de W. de Wytt, R. D. Ewing, G. W. V. Greig, J. M. M. Drew, P. H. J. Hayes, H. W. Jackson, B. D. Stutter, E. N. Owen, Mary Savory, J. R. Hudson, G. R. Fisk, H. M. Jamison, J. P. Jackson, W. H. W. Jayne, E. P. Kempsey, R. T. Hinde, P. A. L. Roberts, M. Hershman, H. P. Jones, M. Bates, R. C. Bell, D. H. C. Harland, C. K. K. Smith, J. H. Peacock, P. H. Wood, P. B. Counsell, D. H. Teasdale, Wilks, T. L. Schofield, T. O. Candler, J. H. L. Ferguson, T. G. Harvey, G. C. Lloyd Roberts, H. O. Thomas, H. Davis, M. P. Pick, H. Hassall, T. B. Smith, C. H. Barnett, N. G. McGure, J. L. Wakeham, R. E. Connor, M. R. Williams, R. D. de Vere, D. H. Woodhead, C. H. de Boer,

W. H. Lonsdale, F. W. P. Dixon, W. Herschell, W. G. Schulze, D. J. Waterston, T. D. Kelly, A. P. Sandrasaga, J. R. Frylark, K. C. McKeown, A. Y. Mason, J. E. Buck, P. K. Duraiswami, F. B. Korkus, W. R. McKechnie, J. A. B. Thomas, J. D. Hallissy, K. Harrison, J. R. Magarey, D. M. Morrissey, C. J. Ruston, G. R. Yarwood, W. R. Carwell, B. M. Hay, F. L. Herbert, J. D. Sidey, S. C. F. Stephenson, F. R. Zadik, H. K. Bouma, H. L. Brunow, T. C. H. Davies, K. N. Kashyap, A. I. Lichter, G. C. McKenna, N. S. Rao, E. A. Turner, A. G. A. Albers, A. Glass, N. C. Newton, H. I. Rees, C. R. E. Stephens, C. Balasubramaniam, S. de C. Barclay, G. G. Ferguson, J. B. Foster, N. A. Fowler, H. W. Gosland, D. MacK. Hamilton, L. A. Jacobs, E. L. H. Jones, H. H. Mirza, D. W. H. Ruddick, W. A. Wilson, G. Y. Akrawi, W. Burnett, O. O. Cowpe, I. D. Henderson, E. R. Leclutier, W. J. S. Melvin, A. F. Robinson, F. Robinson, P. J. M. van Merit, D. J. Wurth, D. Yassa, I. F. Barwell-Clarke, N. K. Connolly, M. Friedman, J. C. Frew, N. S. Hooton, S. Konar, J. M. Langham, D. M. McG. Portley, J. H. Saunders, Barbara F. Smith, M. R. Stanley, J. K. Wait, A. R. Ancombe, P. F. Boreham, R. Brearley, J. E. Crnichley, R. B. Lynn, S. Sen.

Diplomas of Membership were granted to Eleanor H. Barrington, Thelma W. Dafforn, and S. N. Mathur.

Dr. C. W. Freeman (U.S.A.), Colonel J. L. Bernier (U.S.A.), Dr. R. Ahmed (Calcutta), Dr. N. N. Bery (Delhi), Dr. V. M. Desai (Bombay), and Dr. H. P. Moolganonkar (Bombay) were elected Fellows in Dental Surgery.

A Diploma in Tropical Medicine and Hygiene was granted jointly with the Royal College of Physicians of London to Y. G. Abdelal.

Diplomas in Medical Radio-diagnosis, in Medical Radiotherapy, and in Anaesthetics were granted jointly with the Royal College of Physicians of London as follows

DIPLOMA IN MEDICAL RADIO-DIAGNOSIS—D. H. Bodger, P. Cliff, J. F. Donerty, P. K. D. Edmunds, A. Giordano, T. Griffiths, P. K. Haldar, D. J. Harries, B. A. Harrison, Hung-Chun Ho, G. T. Holroyd, G. A. MacDonald, J. P. MacLaughlin, H. F. March, T. L. C. Pratt, S. P. Robson, F. G. M. Ross, J. Rubin, Jean V. Sheach, J. A. Shiers, G. M. Sinclair, D. S. Singh, C. C. Smith, R. S. Smith, P. H. D. Stone, Z. L. Szur, R. J. S. Walker, A. S. Whitehead, F. B. Wright.

DIPLOMA IN MEDICAL RADIO-THERAPY—J. G. D. Bell, W. H. Bond, I. F. J. Churchill Davidson, L. Cohen, W. J. Green, S. Kramer, Marjorie S. Mullin, R. F. Parfitt, J.

DIPLOMA IN ANAESTHETICS—D. C. Adamson, T. D. Ap Ivor, Asnes W. Baker, D. K. Ballingall, D. Beaton, F. W. Chippindale, H. A. Condon, Margaret R. Connolly, Elizabeth S. N. Fenton, E. N. S. Fry, K. B. Glynn, J. J. Hargaden, C. B. Holland, C. D. T. James, R. D. Lewis, O. L. Lewis, S. Lipton, W. G. G. Loyal, L. E. McDonnell, W. G. McEwen, B. H. McGurk, E. S. Macbell, H. G. Middleton, B. G. P. Oakenfull, N. P. Read, M. E. Samrah, R. G. Sykes, J. E. Tees, J. G. Warnock, H. Y. Wisbart.

The following hospitals were recognized under paragraph 23 of the F.R.C.S. regulations: Bromley Hospital (Senior and junior house-surgeon), Cirencester Memorial Hospital (Senior house-surgeon), (until June, 1950), Farnborough Hospital (Registrar to ear, nose, and throat unit), Central Middlesex Hospital (Surgical registrar otolaryngology).

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

The following have been admitted as Fellows of the College: Honor. M. Purser, J. A. O'Sullivan, S. P. Dundon, B. G. Alton, B. Mayne.

The following have been admitted as Members of the College: W. L. Burrows, C. P. Dempsey, R. S. Garewal, J. B. Lyons, M. A. Majekodunmi, B. E. Swain, J. M. Taylor, E. L. Wilson, M. B. Conlon (*in absentia*).

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At a meeting of the Council of the College held on May 23, with the President, Sir William Gilharr, in the chair, the following were elected to Council to fill vacancies caused by retirement, statutory and otherwise. As representatives of the Fellows: Professor O. Donel Thornley, D. Browne (Dublin), Mr. George Frederick Gibberd (London), Professor Hilda Nora Lloyd (Birmingham), Mr. John Eric Stacey (Sheffield). As representatives of the Members: Mr. Gavin Boyd (Belfast), Leslie Bonthron Patrick (Sheffield).

The following were admitted to Fellowship of the College: Doris C. Bates, R. B. Charlton, K. M. K. Duff, M. D. A. Evans, J. D. S. Flew, B. Gilbert, J. W. Johnstone, W. I. C. Morris, Margaret M. Nolan, C. K. Vartan, W. Waddell, R. G. Worcester.

The following were admitted to Membership of the College: G. McG. Barr, A. C. Barthels, D. W. Bentinck, B. Bhattacharya, D. K. Black, Kathleen M. Bower, Muriel Brighton, C. H. Brown, J. M. Buchanan, D. P. Cocks, H. J. A. Conte-Mendoza, E. Cope, S. E. Craig, F. A. L. da Cunha, F. B. Davidson, J. Dei, F. Denny, N. S. Devi, C. J. Dewhurst, Kathleen A. Dru Drury, J. G. Dumoulin, J. M. Duncan, L. T. El Badn, B. H. Ellis, H. R. England, I. B. Faris, B. J. Frankenberg, J. S. Fraser, W. K. Frewen, H. G. Furnell, L. W. Gall, G. B. Gibson, L. S. Glass, Cecile Greig, G. T. H. Harris, E. I. Holloway, C. G. Irwin, W. H. Laird, R. G. Law, Silvia C. Lewin, Ethna W. Little, L. E. Lotmer, R. L. Lunt, J. G. McCarroll, H. A. McCredie, J. A. McGhie, J. F. McInerney, R. M. McIntosh, I. D. Macintyre, A. A. McKirdy, A. T. McNeil, D. S. Mathews, G. Mitchell, J. E. E. Morgan, N. F. Morris, N. Noble, A. F. Pearson, H. E. Pellew, H. K. Porter, D. A. Ranasinghe, B. C. M. Read, J. S. Reid, W. A. Robson, E. S. Rogers, J. K. Russell, H. Sayeed, C. R. Slumming, D. F. Smith, R. B. C. Stevenson, A. S. Subramani, J. Suchet, B. M. Sutherland, Eleanor Tennant, Mary E. Tighe, Mary U. Wilkin, E. O. Williams, E. G. Zacks.

No. 22

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 4.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included), (b) London (administrative county), (c) Scotland (d) Eire. (e) Northern Ireland

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county) (c) The 16 principal towns in Scotland, (d) The 13 principal towns in Eire (e) The 10 principal towns in Northern Ireland

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever Deaths	27	1	14	3	—	42	6	20	2	1
Diphtheria Deaths	93	9	40	1	4	166	17	36	13	4
Dysentery Deaths	99	7	48	—	1	95	18	64	—	—
Encephalitis lethargica, acute Deaths	—	—	—	—	—	—	—	1	—	—
Erysipelas Deaths	—	—	27	7	2	—	—	34	11	8
Infective catarrh or diarrhoea under 2 years Deaths	20	3	4	34	—	33	3	8	12	—
Measles Deaths	9,773	1083	457	236	172	10,824	818	195	162	74
Opportunism neonatorum Deaths	28	1	7	1	—	58	7	5	—	—
Paratyphoid fever Deaths	7	1	—	2(B)	—	2	—	1(B)	1(B)	—
Pneumonia influenza Deaths (from influenza)	493	23	6	5	5	479	19	3	6	2
Pneumonia, primary Deaths	15	—	—	—	—	3	—	—	—	—
Pneumonia, primary Deaths	140	22	180	27	4	175	31	180	51	7
Polio encephalitis, acute Deaths	—	—	—	—	—	1	—	—	—	—
Polio myelitis, acute Deaths	13	1	5	—	—	21	4	1	2	—
Puerperal fever Deaths	—	—	7	—	—	—	2	14	—	—
Puerperal pyrexia Deaths	85	7	2	—	—	130	7	12	—	—
Relapsing fever Deaths	—	—	—	—	—	—	—	—	—	—
Scarlet fever Deaths	1,242	90	174	72	36	1,547	107	257	37	36
Smallpox Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever Deaths	4	—	—	—	1	1	—	—	4	—
Typhus fever Deaths	—	—	—	—	—	—	—	—	—	—
Whooping-cough* Deaths	2,178	111	129	164	73	3,207	243	51	96	19
Deaths (0-1 year) Infant mortality rate (per 1,000 live births)	254	34	33	21	9	298	45	49	25	17
Deaths (excluding stillbirths) Annual death rate (per 1,000 persons living)	4,505	671	562	159	101	4,218	682	617	174	120
Live births Annual rate per 1,000 persons living	7,607	1268	1008	464	245	7,924	1252	952	456	293
Stillbirths Rate per 1,000 total births (including stillborn)	190	25	30	—	—	187	19	34	—	—

* Measles and whooping cough are not notifiable in Scotland, and the returns are therefore an approximation only

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

|| Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Typhoid Fever at Fulham

Five cases of typhoid fever are now known to have occurred in Fulham M.B., in children between the ages of 4 and 14. The dates of onset were between May 29 and June 5. One patient, a girl aged 10, died. A few suspects admitted to hospital at about the same time have now proved to be free from infection. All five children were living close to each other in the south-east part of the borough and all have been shown to be infected with the same organism, Vi-phage Type D1. The usual inquiries have failed to bring to light a common aliment, although all are known to have eaten ice-cream from itinerant vendors about the presumed date of infection.

Discussion of Table

In England and Wales increases were reported in the notifications of measles 190 and dysentery 14. There was a decrease of 433 in the notifications of whooping-cough.

The largest increases in the incidence of measles were London 130 and Middlesex 98; the largest decreases were Kent 247, Yorkshire West Riding 116, and Derbyshire 92. The only notable change in the returns for scarlet fever was a decrease of 29 in Yorkshire West Riding. There was very little change in the notifications of diphtheria; a decrease of 5 in London was the largest variation. The chief feature of the notifications of whooping-cough was a decrease of 94 in Warwickshire.

Notifications of dysentery rose from 16 to 67 in Lancashire. The chief outbreaks in this county were Oldham C.B. 39, Liverpool C.B. 11, and Chadderton U.D. 11. A large outbreak of food poisoning with 161 cases was notified in Yorkshire West Riding, Bradford C.B.

In Scotland there were decreases in the notifications of measles 140, whooping-cough 34, and scarlet fever 15. There were increases in the incidence of diphtheria 17 and acute primary pneumonia 15. In the city of Glasgow the notifications of diphtheria and dysentery respectively were 12 and 10 above the totals for the preceding week.

In Eire the notifications of whooping-cough increased by 50, and the notifications of diarrhoea and enteritis decreased by 9. The rise in the incidence of whooping-cough was due to small outbreaks in the rural districts, notably Dublin, Cill Droichid No. 2 R.D., 21.

In Northern Ireland the largest variation in the returns of infectious diseases was a rise of 11 in the notifications of scarlet fever.

Week Ending June 11

Notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,090, whooping-cough 1,806, diphtheria 81, measles 9,249, acute pneumonia 416, cerebrospinal fever 28, acute poliomyelitis 17, dysentery 53, paratyphoid 24, and typhoid 9.

Medical News

Visitors to Colombia

Mr. Ronald W. Raven and Dr. Laurence H. Morris have recently returned from Colombia, where they spent five weeks in the university teaching hospitals of Bogota, Medellin, and Cartagena. Mr. Raven delivered a course of lectures on the surgical treatment of cancer and performed operations for this disease. Dr. Morris gave lectures and demonstrations on anaesthesia. This is the first occasion on which a British surgical mission has visited Colombia; the invitation was given by the National University. Mr. Raven was elected honorary professor of the National University. The honour was conferred at a special meeting of the Academic Council of the university at which the British Ambassador was present. The honorary professorship has been given on seven previous occasions, but not before to a British subject.

Analysis of Public Health Nursing

The Nuffield Provincial Hospitals Trust, which has been conducting a detailed job analysis of the work of hospital nurses, will conduct a similar investigation in the field of public health nursing. This includes health visitors, home nurses, school nurses, tuberculosis visitors and nurses, and clinic nurses. It does not include midwives. A pilot survey will be carried out in six areas in England and Wales and two in Scotland (in Dundee and Lanarkshire) to test the method of analysis, after which the survey will be extended to a large number of areas throughout the country.

New Journal for Industrial Nurses

A new quarterly journal entitled *Journal for Industrial Nurses* comes from the Nuffield Department of Occupational Health at the University of Manchester. It will help nurses working in factories and industrial areas to understand the hazards peculiar to industrial life. The first number includes an article on "The Nurse in Her Treatment-room," by Professor R. E. Lane, and an account of "Health Problems Incidental to Pottery Manufacture in North Staffordshire," by Dr. Andrew Meiklejohn. Dr. R. S. F. Schilling discusses "A University Department of Occupational Health."

Medical Visitor from Greece

Professor Charles Alexandridis, professor of clinical medicine in the University of Salonika, arrived in London on June 14 under the auspices of the British Council to observe progress in general clinical medicine in Britain and meet British specialists in tropical diseases and diseases of the heart and blood. Professor Alexandridis is a past President of the Medical Society of Salonika and a Fellow of the Royal Society of Tropical Medicine and Hygiene.

Anti-measles Serum

Doctors wanting to obtain anti-measles serum should not prescribe it on Form EC 10 but should apply to the nearest public health laboratory. The address of the laboratory if not known, can be obtained from the medical officer of health.

Holidays for Chemists

The Minister of Health considers that, where a chemist wants to take a holiday but is unable to provide a deputy in his absence, he should be able to go for a week or two during the summer season if a rota can be arranged with neighbouring chemists.

Council of the R.C.V.S.

The council of the Royal College of Veterinary Surgeons has been reconstituted in accordance with the Veterinary Surgeons Act, 1948. Professor T. Dalling, Chief Veterinary Officer at the Ministry of Agriculture, has been elected president of the College for 1949-50. The Act provides that there shall be 20 elected members who are members of the Royal College and who are elected by their fellow members outside the Republic of Ireland. It also provides for four people to be appointed by the Privy Council and two for each university in the United Kingdom which has a registrable veterinary degree, one of these two from each university must be a member of the Royal College. The Act also lays down transitional provisions pending the establishment of a registrable veterinary degree in the various universities.

Wills

Sir Edmund Ivens Spriggs, of Ruthin, Denbighshire, left £18,273. Dr. Andrew Messer, of Lemington, Northumberland, left £5,610. Dr. Eric St. George Gilmore, of Chorlton cum Hardy, Manchester, £3,082. Dr. Robert Everard Whitting, formerly of Oxted, Surrey, £6,975, and Dr. Alfred Eugene Martin, of Boreham Wood, Herts, £27,223.

COMING EVENTS**Alexander Simpson-Smith Lecture**

The Alexander Simpson-Smith Lecture for 1949 will be delivered under the auspices of the Institute of Child Health of the University of London by Professor Gordon Murray, Associate Professor of Surgery in the University of Toronto, at the Hospital for Sick Children, Great Ormond Street, London, W.C., on Monday, July 11 at 5 p.m., with Lord Webb-Johnson, P.R.C.S., in the chair. His subject is "The Artificial Kidney." Admission is by ticket only obtainable from the Dean of the Institute of Child Health at the hospital.

Prosser White Oration

The Prosser White Annual Oration of the St. John's Hospital Dermatological Society will be given at the Royal Society of Medicine (1, Wimpole Street, London, W.) on Wednesday, July 6, at 4.30 p.m., by Professor Marion B. Sulzberger, Professor of Dermatology and Syphilology of the New York Skin and Cancer Unit. His subject is "Allergy: A Dermatologist's Reminiscences and Speculations."

Royal Institute of Public Health and Hygiene

The Harben Medal for "eminent services rendered to the public health" will be presented to Lord Boyd Orr, F.R.S., and the Smith Award "to one recognized as having done the most noteworthy work in the discharge of his official duties" to Dr. M. T. Morgan, medical officer of health, Port of London Health Authority, at a meeting at the Institute (29 Portland Place, London, W.) on Thursday, July 21, at 3 p.m.

Urological Surgeons

The British Association of Urological Surgeons will hold its fifth annual meeting on June 30-July 3.

City and Hospitals Charity Contest

The City and Hospitals Charity Athletic Contest for the *Financial Times* Challenge Shield will be held at the University of London Sports Ground, Mootspur Park, Surrey, on July 9. The admission fee is 1s 6d. The proceeds will be devoted to charity.

Clinical Pathologists

The Association of Clinical Pathologists will hold its 42nd Scientific Meeting at the Department of Pathology, University College, Cork, on July 22 and 23.

Birmingham Region Consultants

A general meeting of all consultants and specialists in the Birmingham Region will take place on Saturday, June 25, at 2.15 p.m. at Nuffield House, Queen Elizabeth Hospital, Birmingham.

Commemoration Service

A special service has been arranged by the Indian Church Aid Association to be held at St. Margaret's, Westminster, on July 7 at 11.30 a.m. as a solemn act of commemoration and thanksgiving for the lives and work of many generations of British men and women who served in India in the various Indian Services, in the British and Indian Armies, in the work of the Church and missions, and in the field of trade and industry. Further information can be obtained from the secretary, Indian Church Aid Association, 5, Victoria Street, London, S.W. 1.

N.A.P.T. Jubilee

Jubilee celebrations to be held by the National Association for the Prevention of Tuberculosis will include a Commonwealth and Empire Health and Tuberculosis Conference at the Central Hall, Westminster, on July 5-8, 1949.

SOCIETIES AND LECTURES**Tuesday**

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—June 28, 5 p.m., "Background of Occupational Dermatoses" by Dr. R. M. B. MacKenna.

INSTITUTE OF UROLOGY—At St. Paul's Hospital, Endell Street, London, W.C., June 28, 11 a.m., "Granuloma Venereum and Lymphogranuloma Inguinale," by Dr. W. N. Mascall.

Wednesday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—June 29, 5 p.m., "Systemic Mycological Infections," by Dr. Clara Warren.

INSTITUTE OF UROLOGY—At St. Paul's Hospital, Endell Street, London, W.C., June 29, (1) 11 a.m., "Reiter's Syndrome" by Dr. A. H. Harkness, (2) 5 p.m., "A Survey of the Different Methods of Treatment available in Enlargement of the Prostate" by Mr. R. Oger Ward.

Thursday

CLINICAL SOCIETY OF THE ROYAL FREE HOSPITAL, Gray's Inn Road, London, W.C.—June 30, 5.15 p.m., "The Open Wound in Surgery and its Function," by Mr. Peter Essex-Lopresti. Visitors welcomed.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—June 30, 5 p.m., "Acne" by Dr. H. Corsi.

INSTITUTE OF UROLOGY—At St. Paul's Hospital, Endell Street, London, W.C., June 30, (1) 11 a.m., "Condylomata Acuminata" by Dr. A. H. Harkness, (2) 5 p.m., "Transvesical Operations on the Prostate," by Mr. W. K. Irwin.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, Keppel Street, W.C.—June 30, 3 p.m. Films "The African Schistosomiasis" (for instruction of medical profession) and "Still Waters" (for public education).

LONDON UNIVERSITY—At Institute of Neurology, National Hospital, Queen Square, London, W.C.—June 30, 5 p.m., "Rathke's Pouch Tumours" by Professor Geoffrey Jefferson, F.R.S.

ROYAL SOCIETY, Burlington House, Piccadilly, London, W.—June 30, 4.30 p.m., "The Rhythmic Action and Respiration of Nerve Cells." Croonian Lecture by Professor D. W. Bronk, Ph.D. (Philadelphia).

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—June 30, 4.30 p.m., "Neurology," lecture demonstration by Dr. D. J. Williams.

Friday

NORTH OF ENGLAND SOCIETY OF ANAESTHETISTS AND NEWCASTLE-UPON-TYNE OBSTETRICAL AND GYNAECOLOGICAL SOCIETY—At Royal Victoria Infirmary, Newcastle-upon-Tyne, July 1, 7.30 p.m. "Analgesia for Obstetrics" by Dr. Robert A. Hingson (Baltimore).

APPOINTMENTS

COYNE, W. J., M.D., F.R.C.P.I., D.P.H., D.P.M., Governor, Central Criminal Asylum, Dundrum, Co. Dublin.

SMITH, J. MACLEAN, M.B., F.R.F.P.S., Fellow in the Department of Medicine, Johns Hopkins Hospital, Baltimore, 5, Maryland, U.S.A.

THOMAS, H. ORISHOLOMI, M.B., F.R.C.S., Lecturer, Department of Surgery, University College, Ibadan, Nigeria.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Penicillin Enhancement Factor

Q.—My clinical experience has been that the new crystalline pure penicillin is not so effective as the sodium salt which preceded it. Is this the general view and, if so, why?

A.—There are several different penicillins with a common nucleus but with different side-chains. Up to 1944 most of that produced commercially was in the form of penicillin G; thereafter purer compounds appeared which contained a larger proportion of the less active penicillin K. The amorphous penicillin seems to contain impurities which enhance its effect *in vitro* and in animal experiments. These substances are heat-stable, and are together known as the "enhancement factor"; they are, of course, absent from crystalline penicillin G. Many clinicians have entertained suspicions similar to those of the questioner, but careful clinical trials have not shown that crystalline penicillin combined with enhancement factor is more effective than crystalline penicillin alone.

Cremor Sulphanilamidi et Sulphathiazoli, N.W.F.

Q.—The National [War] Formulary, 1947, contained a valuable antiseptic cream—cremor sulphanilamidi et sulphathiazoli. Is there any valid reason for its omission from the National Formulary, 1949? How can sulphanilamide and sulphathiazole cream be prescribed in future unless the prescription is written in full? Incidentally, what justification is there for the new cremor proflavinae? There seems to be more than a suspicion that oily preparations of proflavine are useless as bacteriostatic preparations.

A.—The National Formulary contains no sulphonamide cream because the balance of evidence is unfavourable to the local use of this group of drugs. There is, indeed, little satisfactory evidence that they are effective, but definite evidence that they may give rise to toxic reactions. The current view in the U.S.A. is summarized in the statement in *New and Non-official Remedies*, 1948:

"Experience gained in World War II seems to indicate that the use of crystalline sulphonamides and of sulphonamide ointments, creams, lotions, etc., as topical agents was not very successful in the management of wound infection or in treatment of infections of the skin or mucous membrane. The routine use of sulphonamides as topical applications in wounds, burns, and in superficial infections is therefore to be discouraged."

Sulphonamides locally applied may be harmful, since they may produce sensitization reactions in the skin if they are used for more than a few days. Once this has occurred it may prove impossible to give the same or even a different sulphonamide by mouth or locally without inducing a generalized eruption. Sulphathiazole is particularly liable to give rise to this form of sensitization.

[The preparation cremor proflavinae replaces the emulsio acriflavinae, B.P.C., which is popular mainly because it does not cause dressings to adhere to abraded surfaces. Garrod and Keynes (*British Medical Journal*, 1937, 2, 1286) state of the emulsio acriflavinae, B.P.C., that "it has no demonstrable action whatever." The cremor proflavinae, N.F., though it contains the less toxic substance proflavine, is nevertheless still an oil-in-water emulsion, and, as the question suggests, the active drug will tend to remain in solution in the oily phase where it cannot exert much antiseptic activity. Wood (*Pharm. J.*, 1939, 1, 327) has pointed out that emulsions of the water-in-oil type have far greater antiseptic activity in laboratory tests, and describes methods for making such preparations. The cremor aminacrinae, N.F., could be used as an application to wounds, ulcers, and burns, though it is intended primarily as an obstetric cream for application to the hands. The aminacrine is non-staining and is presented in a glycerin-jelly base.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Ackner.—On June 11, 1949, at Bromley, Kent, to Jean (née Marley), wife of Dr. Brian Ackner, a son

Clynton Reed.—On May 29, 1949, at Military Families Hospital, Moascar, M.E.L.F., to Jean Neilson (née Roy), wife of Lieutenant Colonel J. Clynton Reed, O.B.E., R.A.M.C., a son

Cox.—On June 9, 1949, at 29 British Military Hospital, Hanover, to Dr. Irene, wife of Captain John Cox, R.A.M.C., a son—Jonathan Michael.

Ismay.—On June 3, 1949, in London, to Solange (née de la Motte), wife of Dr. D. G. Ismay, a daughter

Laurance.—On June 9, 1949, at Weekley Rise, Kettering, to Audrey (née Kidner), the wife of Dr. Bernard M. Laurance, a son.

Rainer.—On June 10, 1949, at Bristol, to Iris, wife of E. H. Rainer, F.R.C.S., a second daughter—Madeleine Dorothy

Tallaek.—On June 4, 1949, at the Government Hospital, Welis, Pemba, Zanzibar, to Joyce, wife of Dr. R. J. K. Tallaek, Colonial Medical Service, a daughter

MARRIAGES

Milo-Turner—Burne.—On June 10, 1949, at St. Bartholomew's Church, Penn., Gilbert Milo-Turner, M.B., Ch.B., D.R.C.O.G., Tamworth, Staffs, to Felicity Mary Burne, S.R.N., "Wayford" Coalway Avenue, Wolverhampton.

Richards—Tighe.—On June 4, 1949, at St. Paul's Church, Sketty, Swansea, Denis George Blackwood Richards, M.R.C.P., to Mary Elizabeth Tighe, M.R.C.O.G.

DEATHS

Elliott.—On June 10, 1949, Charles Norton Gavin Elliott, L.R.C.P. & S. Ed., L.R.I.P.S. Glas., formerly of Old Portsmouth, and of Histon, Denmead, Hants

Johnston.—On June 4, 1949, at Kendal, George Ainslie Johnston, M.D., F.R.C.S.I., of Old House, Ambleside, Westmorland

Macaulay.—On June 6, 1949, at Hawthornbank, Selkirk, Scotland, Thomas Symington Macaulay, M.D., F.R.F.P.S., D.T.M. & H., aged 67.

MacDonald.—On June 5, 1949, at 20, Brislington Hill, Bristol, William Forbes MacDonald, M.D., C.M.

McGrath.—On June 2, 1949, at 230, Kingston Road, Staines, Middlesex, John Joseph McGrath, M.D., D.P.H., formerly of Surbiton, Surrey.

Nicholls.—On June 3, 1949, at Clairfaye, Seaton, Devon, Thomas Burtonshaw Nicholls, M.B., Ch.B., Lieutenant-Colonel, R.A.M.C. (ret.).

Routh.—On June 6, 1949, at 141, Durlough Road, Bridgwater, Somerset, Randolph Henry Felix Routh, M.R.C.S., L.R.C.P., aged 87.

Salkeld.—On June 7, 1949, at 36, Dean Park Road, Bournemouth, Charles Salkeld, M.B., B.S., aged 81.

Sharp.—On June 6, 1949, suddenly, on Okchampton golf course, Christopher James Lewen Sharp, M.C., M.B., B.Ch.

Slatery.—On June 10, 1949, at "The Shanty," Totnes, Devon, James Beary Slatery, M.D.

Southey.—On May 30, 1949, William George Southey, M.B., B.S., D.P.H., of 44, Wellowgate, Grimsby, Lines

The need for the greatest possible economy in the running of the hospital services was emphasized by the Rt. Hon. Arthur Woodburn, M.P., Secretary of State for Scotland, when he met the chairmen of the five Scottish regional hospital boards and of the boards of management in the four Northern and Eastern Regions in St. Andrew's House, Edinburgh, recently. Mr. Woodburn added, however, that the Government had no intention of cutting down on essential services—such as the provision of beds and nurses. If a thing was absolutely necessary it should be provided. He had no doubt that hospitals were already being run economically and that charges of gross extravagance were unjustified. People who thought, perhaps naturally, that the cost of hospital service was enormous forgot that, apart from the recent necessary increase in salaries, the vast bulk of hospital expenditure was not new. It was not his intention to issue any specific instructions on how economies were to be effected. The boards of management, as the people on the spot, would know best what developments could be postponed and what services spared. But, especially in view of the recent increases in nurses' salaries, he had to ask the boards to take a second look at their services and see if anything could be cut down. Real economies were more likely to come from small savings here and there throughout the Service than from any one spectacular cut. He thanked the boards for the excellent work they had done. It was a measure of their success that, despite the natural tendency to criticize public bodies, the only point of serious criticism about the hospital service had been its popularity and hence its cost. In the course of general discussion it was said that while relationships were good there was not enough contact between regional hospital boards and boards of management. A plea for more round-the-table conferences was advanced. Various chairmen argued that everything possible was being done to secure economies, but a great deal of lee-way had to be made up, particularly in view of the neglect during the war years.

EXAMEN—LIVER EXTRACT IS STANDARDISED

IN TERMS OF THE ANTI-ANAEMIC FACTOR (vitamin B₁₂)

The isolation in Glaxo Laboratories of the pure crystalline anti-anaemic factor has provided a standard by which the potency of liver extracts can be precisely expressed. Examen, in addition to receiving clinical trial on each batch, is now standardised microbiologically. Its potency is —*

12

MICROGRAMS OF ANTI-ANAEMIC FACTOR (B₁₂) IN ONE CC.

the amount ample to give optimum response during fourteen days in pernicious anaemia in relapse.

1cc. ampoules (boxes of 3 & 6) 5cc. vials (boxes 1 & 5)

**Nature* (1948) 162, 141



GLAXO LABORATORIES LTD., Greenford, Middlesex, England

A New Curarising Agent

The curarising action of decamethonium iodide (bistrimethylammonium decane di-iodide or C 10) was reported in *Nature*, 1948, 162, 810.

On the basis of tests on laboratory animals it was demonstrated that this compound has a powerful action in blocking transmission at neuromuscular junctions. This action spares the respiration and is not associated with a marked liberation of histamine.

Preliminary reports of the action of this compound on human subjects, published in the *Lancet*, 1949, 1, 22, indicated the clinical potentialities of this synthetic neuromuscular blocking agent for producing muscular relaxation during anaesthesia or convulsive therapy.

This compound is now available under the name EULISSIN and is supplied in ampoules containing 5 mg. in 2.5 c.c. in boxes of 6, 12 and 100 ampoules.

Eulissin is not antagonized by neostigmine but an antidote, when needed, is available in ANTILUSIN (pentamethonium iodide or C 5).

EULISSIN

TRADE MARK

Sterile Solution of decamethonium iodide.

Further particulars available on application to.

ALLEN & HANBURY LTD. LONDON E.C.2

Stimulant action in emergency

Anacardone (Injection of Nikethamide B.D.H.) should be at hand in the surgery and in the doctor's bag ready for immediate use.

Nikethamide B.D.H. exerts a rapid stimulatory effect on the respiratory and vasomotor centres thus raising the depth and rate of respiration and improving the blood supply to the heart in acute collapse.

Anacardone is available in ampoules as Injection of Nikethamide B.P. and as a 25 per cent. solution, flavoured, for oral administration.

ANACARDONE

Trade Mark
(INJECTION OF NIKETHAMIDE B.D.H.)

Details of dosage and other relevant information on request
MEDICAL DEPARTMENT
THE BRITISH DRUG HOUSES LTD. LONDON N 1
Phone: Clerkenwell 2000 Grams: Tetradome Telex London
And E.36

Varicose Ulcer of Long Duration Healed by Elastic Compression Therapy

CASE HISTORY: E. S. Housewife aged 72 years. Varicose ulcer of 27 years duration upon antero-lateral aspect of lower 1/3 left leg. (Fig. 1.)

TREATMENT: June 21st 1948: Area of ulcer 56 sq. cms. Elastoplast applied as follows:—

No dressing to ulcer. Stirrup from head of fibula along lateral side of leg, under sole and up medial aspect of leg to level of tibial tubercle. Long strip from tibial tubercle along anterior surface to base of toes. Elastoplast applied as continuous circular turns from base of toes to tibial tubercle enclosing heel, each turn overlapping the preceding one by 2/3 of its width. (Fig. 2). One and a half bandages were required and were applied as tightly as possible by hand. Patient instructed to perform normal household duties.

PROGRESS: June 28th, 1948: Area 56 sq. cms. Ulcer base clean. Odour far less objectionable. Elastoplast reapplied as before. Patient seen at fortnightly intervals. Area of ulcer calculated at each visit. Elastoplast re-applied as before.

July 21st, 1948: Area 30 sq. cms. Odourless.

September 1st, 1948: Area 7 sq. cms.

November 3rd, 1948: Area 1/2 sq. cm.

November 24th, 1948: Ulcer healed. Total duration of treatment 22 weeks. (Fig. 3).

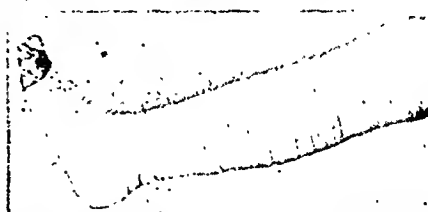
FURTHER TREATMENT: December, 1948: Elastic stocking supplied.

February, 1949: Juxtafemoral ligation and retrograde injection of left internal saphenous vein.

The details and illustrations above are of an actual case. T. J. Smith & Nephew Ltd., of Hull, manufacturers of Elastoplast, publish this instance—typical of many in which their products have been used with success.

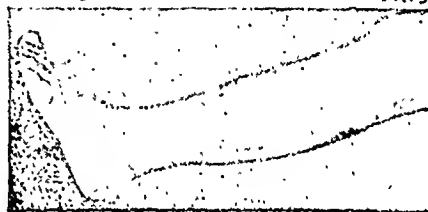


Fig. 1



Above Fig. 2

Below Fig. 3



ENGLISH X-RAY FILM

STANDARD

The fine definition which this film is capable of giving, and its ability to batch consistency, make it highly suitable for Radiography of the chest regions. Radiographs on "Standard" X-Ray film are remarkable for their clearness and complete absence of fog.

RADOS (NON SCREEN)

— a fast film widely recognised for the fully graduated image which it gives. Greatly preferred for all orthopaedic work where perfect bone detail is essential. Its suitability for all types of equipment is assured by a really exceptional latitude in exposure

FOR MAXIMUM DIAGNOSTIC VALUE

Distributors:

BARNET ENSIGN ROSS LTD. LONDON. E. 17

BMJ(4)

BAYER

The Steadying Hand of 'PROMINAL' Trade Mark In Epilepsy

Of first importance to the epileptic is a drug which will enable the patient to live normally and usefully.

Under 'Prominal' therapy, fits are effectively suppressed, while the patient remains alert and able to carry on with his usual occupation.

The dose varies between 1½ and 9 grains daily, and is adjusted to the individual need. When 'Prominal' is used to replace 'Luminal,' the change-over should be gradual.

Available in tablets of ½, 1 and 3 grains.

Medical literature will be gladly sent upon request

'PROMINAL' may be obtained under the name of 'PROMITONE' overseas

BAYER PRODUCTS LIMITED
AFRICA HOUSE, KINGSWAY, W.C.2. HOL-8730

In justification of the admission of the cremor proflavinae to the *National Formulary* it should be pointed out that the objections to it are based entirely on *in vitro* bacteriological studies. Many dermatologists are convinced of its activity as an antiseptic in clinical practice, and its inclusion in the *Formulary* was decided on only after approval by a committee of dermatologists.

Diphtheria Immunization

Q.—What boosting dose of diphtheria immunizing material should be given to boys entering a boarding-school at the age of 12 to 14? Please discuss the following groups: (a) those immunized in infancy but not since; (b) those immunized in infancy and given a boosting dose at 5 years but none since; (c) those given only primary immunization at the age of 5 to 7 years. What material is recommended?

A.—Boys of 12 to 14 entering a boarding-school with a variety of histories of previous artificial immunizations, to which must be added some degree of latent immunization, present a problem somewhat similar to that of student nurses entering hospital. It is necessary to find out what proportion of them are immune, irrespective of previous history, and this can best be done by Schick-testing all new entrants. Those who are Schick-positive should be given one dose of diphtheria prophylactic—for example, 0.2 ml. A.P.T.—if they have been previously immunized, and two doses of 0.3 ml. A.P.T., at a month's interval, if they have not; those who are Schick-negative may be left alone or given a single injection of 0.2 ml. T.A.F.

Difficulty arises in the case of boys in whom a pseudo-reaction with the control material occurs. They will usually give a severe local and sometimes constitutional reaction to any diphtheria prophylactic, and the best course is to leave them alone and to carry out another Schick test three to six months later. Of the three groups mentioned in the question, most of the boys who were immunized in infancy and had a booster dose at 5 years should be Schick-negative, since the booster dose has a decidedly stimulating effect on antibody production. Some authorities will recommend a booster dose for all three groups, irrespective of the Schick reaction; but, if this were done, some severe reactions, which would no doubt create a bad impression among the other boys and the parents, may be expected. T.A.F. is probably the prophylactic of choice at present for a booster dose, and a small amount—for example, 0.2 ml.—will suffice.

Senility and Testamentary Capacity

Q.—A man of 80 died of senility in a home for the aged, where he had been resident for a year. During this time he made a will, legally correct and duly witnessed by a solicitor and a male nurse, leaving the residue of his property to his son and only small legacies to his three daughters. The latter feel that this was not their father's intention, and that they should contest the will on the grounds of the testator's senility. What is their position?

A.—The will in this case could be successfully challenged only if the daughters can satisfy the court that their father, at the time he made the will, was unable, owing to senility, to understand what he was doing. The court would probably not accept the general proposition that senility is always progressive and does not admit of "lucid intervals"; on the contrary, it is common knowledge that the mental powers of senile patients, at least in the early stages of the disorder, may fluctuate considerably. It is recorded of Sir William Blizard, F.R.S. (*Brit. J. Surg.*, July, 1920, p. 4), that he died at the age of 92 of senile decay, but that he continued on the surgical staff of the London Hospital until the age of 91, and was actually engaged in his ordinary duties as an examiner at the Royal College of Surgeons only a week before his death. The court would presume that the testator had sound testamentary capacity unless the contrary is proved by evidence. The daughters should seek such evidence, which might be provided by the doctor in charge of the home in which their father was living at the time he made the will. The particular points on which the doctor should express an opinion are: whether the testator understood that all his children had a reasonable expectation of a fair share of the estate, and whether he had any reasonable grounds for leaving the bulk of it to the son to the exclusion of the daughters.

It was held in *Cartwright v. Cartwright* (1793, 1 Phill. 90; quoted with commentary by Kitchin, *Legal Problems in Medical Practice*, 1936, p. 143) that where the making of a will appeared to be "a rational act rationally done" the will should be upheld, even though the testator had manifested undoubted signs of mental disorder before and after making it. Any evidence relating to the testator's state of mind at the time he made the will should be considered, including that of the solicitor and the male nurse who witnessed the document; inquiry should also be made about whether the testator suffered from any delusions relating to the daughters—for instance, whether, without reasonable cause, he thought them unfit to inherit; or falsely believed them to be already properly provided for.

Protein Shock Therapy

Q.—What is the usual intravenous dose of T.A.B. for protein shock therapy? What is the usual period between doses and, regarding anaphylactic reaction, what is the longest period observed between widely separated doses when the phenomenon has little chance of developing? For instance, if a patient received this form of T.A.B. a year ago, and now an intradermal skin test produces a marked reaction, does this contraindicate a repetition of intravenous therapy?

A.—The usual dose of T.A.B. given intravenously is 25 million organisms initially, and subsequent doses are increased by 50 million organisms up to a maximum of 500 million. The usual interval between doses is 4 to 7 days. The dosage is not absolute and is varied to suit the patient. If the initial dose does not cause a reaction, then the second dose is given on the following day; while if the reaction is too severe, the same or a smaller dose is given subsequently. Anaphylactic reactions have not been recorded following this form of treatment. A positive skin reaction does not contraindicate further injections of T.A.B. Protein shock therapy with T.A.B. is, of course, not completely free from risk, and deaths have been recorded, but not from anaphylactic reaction.

Eggs in Water-glass

Q.—Is any detrimental effect attributable to the use of water-glass as a preservative for eggs when these are used in the treatment of duodenal ulcer? Is there any reliable alternative?

A.—No detrimental effect is attributable to the preservation of eggs by water-glass for any person well or ill, and so far as is known the nutritive value of eggs so preserved is not significantly reduced. The water-glass fills the porous parts of the shell but does not penetrate the egg membrane. It makes the egg air-tight and thus prevents oxidation and deterioration. Water-glass is the best known egg preservative for domestic use. Other methods extensively used on a commercial scale are treatment with mineral oil and cold storage.

Falling Hair

Q.—Two years ago a young woman's hair became thin on the frontal half of the crown of the head. The condition has not altered since; the scalp looks healthy with only a minimum amount of dandruff. Concurrently with the fall of hair she gained 2 stones (12.7 kg.); she now weighs 9½ stones (60.3 kg), and her weight remains stationary. There is no other apparent glandular abnormality. Ultra-violet irradiation of the scalp has had no effect. What other treatment do you suggest?

A.—Treatment in this case depends on the particular diagnosis. It is presumed that the fall of hair was not associated with any acute inflammation of the skin (such as erysipelas) or with any acute illness at the onset; that there is no present disease, especially about accessory nasal sinuses; and that the condition is not merely one of trichotillomania. The latter is a hysterical habit of pulling and breaking the hair and has an emotional basis. The probable cause in this case is endocrine, and further investigations along this line would seem to be indicated, especially in relation to the pituitary. The condition is certainly not a local disease of hair or scalp.

If hirsuties were an additional feature, this case might be one of the adreno-genital syndrome, in which there is an excessive secretion of androgens, and the woman loses the hair of the head along the same lines as men normally do, while at the

same time there is an increased growth of hair on the face and body. Should hirsuties not be present the symptomatology does not fit into any well-defined endocrinopathy. However, a weight-reducing diet, together with thyroid and the inunction of oestrogens locally, might prove of benefit. (See also "Any Questions?" March 19, 1949, p. 510.)

Refrigeration of Foodstuffs

Q.—What are the public health regulations, if any, in regard to refrigeration of foodstuffs? Are there any types of refrigeration plant which are unsuitable for the cold storage of fresh meat?

A.—There are no public health regulations concerned with the refrigeration of foodstuffs. A local authority can, if it likes, provide cold storage if it sets up a municipal slaughterhouse or market; a laboratory which examines milk must also have suitable cold-storage accommodation for keeping certain samples. A food trader is at liberty to keep food in cold storage or not as he thinks fit. The temperatures employed and the type of plant—as, for example, those with through ventilation and those charged with carbon-dioxide gas—depend on the particular article of food dealt with and the purpose for which it is being frozen or stored. There are no commercial types of plant which are unsuitable for the cold storage of fresh meat, though those with through ventilation may cause some shrinkage and loss of weight of the meat.

Necrobiosis Lipoidica

Q.—A woman aged 24 has necrobiosis lipoidica—confirmed by biopsy—covering an area of about 2 square inches (12.9 cm.) over the middle third of the tibia. Is there any treatment?

A.—Necrobiosis lipoidica was originally thought to be limited to diabetics, but it has since been shown that this is true only in 90% of cases. It is, however, worth noting that this skin disease may precede the onset of diabetes mellitus by years or months. In the absence of evidence to the contrary, it is assumed that the patient in question is one of the 10% who are not diabetic. There is no specific treatment for necrobiosis lipoidica; the condition often appears to be self-limited, and the lesions commonly disappear leaving white scars. If ulceration or secondary infection takes place this complication will require conventional treatment. In diabetics careful control of the metabolic disorder is essential.

Dieting and Birth Weights

Q.—Can dieting by an expectant mother have any effect on the weight of the baby at birth?

A.—Under normal conditions there is no correlation between the birth weight of the baby and the maternal diet, or between birth weight and the maternal gain in weight, in pregnancy. Since the foetus is parasitic, diet restriction within reason does not result in small babies, nor does overeating produce large babies. The only circumstance which will affect the baby is severe and prolonged maternal starvation, and even then the birth weight of the child is not always significantly reduced.

Dry Grass Dust

Q.—Is the dust which arises when grass is baled out of a grass-drying machine, if inhaled over a long period, likely to be detrimental to the health of the operator? Could it affect the lungs or cause dermatitis?

A.—The term "grass" embraces any plant of the order Gramineae. It must be assumed that the inquiry is concerned with dust evolved during the baling of ordinary meadow grass from British fields. No cases of respiratory or skin disease through the breathing or handling of the dust from British grasses have been traced in the literature. However, it is well known that some persons are allergic to pollen, which may be the cause of hay-fever. Some of the grasses which by their pollen cause hay-fever are Bermuda grass (*Cynodon dactylon*), Johnson grass (*Sorghum halapense*), and Timothy grass (*Phleum pratense*). The handling of gramineous plants has been known to cause skin irritation in susceptible persons—a papular exanthem with itching, often accompanied by fever, which lasts between six and twelve hours. Rosniti mentions several

gramineous plants which have caused epidemic dermatitis. Twenty-five members of seven families suffered from erythema after having cut sorghum (Hoffer). The admixture of the dry dust of grasses with air may constitute an explosive hazard if exposed to a source of heat.

NOTES AND COMMENTS

Keloid.—Dr. H. P. PICKERILL (Wellington, New Zealand) writes: In "Any Questions?" (Feb. 26, p. 377) various forms of treatment for keloid are discussed. There should be, and is, only one form of satisfactory treatment for this condition—namely, excision and grafting. Excision alone is often unsatisfactory if there is any introduction of tension. Remnants of keloid remaining also seem to induce recurrence. It is necessary to excise widely and deeply, just as though a locally malignant tumour was being dealt with. Radiation sometimes produces a reduction in the size of a keloid, but never its obliteration with an acceptable cosmetic and functional result. Radiation, moreover, leaves the tissues in a very unsatisfactory condition for subsequent plastic surgery. Very large keloids can be treated by excision and replacement by a whole thickness or thick split skin graft, care being taken that in the latter case due allowance is made for subsequent contraction. A post-operative period of immobilization in extreme flexion for extensor surfaces, followed by massage and passive movements, will practically always give good functional and cosmetic results. It would save patients much disappointment if plastic surgery were always considered first instead of as a last resort in the treatment of keloid.

Pig as Vector of Ascaris.—Professor R. T. LEIPER (Director of the Commonwealth Bureau of Agricultural Parasitology, St. Albans) writes: In "Any Questions?" (April 23, p. 735) it is correctly stated that the pig strain of *Ascaris lumbricoides* does not normally develop to maturity in man. That embryonated eggs from pig faeces hatch in the human intestine and the larvae migrate through the lungs was demonstrated experimentally by Koino in 1922, although in the human intestine they failed to develop further. Similarly embryonated eggs of the human strain of *Ascaris lumbricoides* hatch in the intestine of the pig and migrate through the lungs. It cannot therefore be maintained either that the pig "plays a part in the dissemination of eggs of *Ascaris lumbricoides* which have been ingested previously with human faeces" or that there is no risk from the use of manure from pigs naturally infested with *Ascaris lumbricoides*. The differential diagnosis of the bronchial irritation, spastic cough, and pulmonary which accompany the migration of ascaris larvae of the human strain is very difficult, depending as it does on the discovery of the larva in the sputum, and has seldom been made even in countries where massive infections occur. No one has yet claimed to have diagnosed a case in this country. But it does not follow that bronchial or pulmonary symptoms due to the swallowing of embryonated eggs of either pig or human strain do not occur here.

Warning to Hospitals.—Dr. JULIUS BURNFORD (London, W.1) writes: During the past two or three months I have received case reports on a man by name Leonard Bradford, age 41, giving an address at Vauxhall Bridge Road, or Vauxhall Road, Westminster, from five hospitals into which he got himself admitted, telling of a fit or attack of unconsciousness. He presents symptoms of diplopia; slurred speech; eccentric pupils; sometimes a spastic right limb, at others a coarse tremor. He says he was diagnosed as encephalitis at the West London Hospital two or three years ago, under me. After one, two, or three days when investigations are about to be made he discharges himself and reappears in another hospital with the same story. Reports have come to me from the Hammersmith Hospital; London Temperance Hospital; University College; Queen Mary's Hospital, Stratford; and within one week of the latter from the General Infirmary, Macclesfield. I have sent these to Scotland Yard, and the local police advise me that, on admission in future, the hospital concerned should inform the police and they could then deal with him. As I have not been active at the West London Hospital for ten years he can know nothing about me.

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Althology, Western, London*. ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Authors desiring REPRINTS should communicate with the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad. ADVERTISEMENTS should be addressed to the Advertisement Manager, B.M.A. House, Tavistock Square, London, W.C.1 (hours 9 a.m. to 5 p.m.). TELEPHONE: EUSTON 2111. TELEGRAMS: *Brilmedads, Western, London*. MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra, Western, London*. B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL

LONDON SATURDAY JUNE 25 1949

THE SECRETARY REPORTS

VISIT TO CANADA

Dr. Dain and I have just paid a flying visit to Canada to represent the Association at the first meeting of the Commonwealth Medical Conference held at Saskatoon, Saskatchewan. The conference was the outcome of a meeting held at B.M.A. House in September last at the suggestion of the Association. For many years there was a standing committee of the Association called "The Dominions, India, Colonies, and Dependencies Committee," although in recent years the committee dealt only with matters relating to the Colonies and Dependencies. At the Representative Body the committee was given a name more related to its actual work, "The Colonies and Dependencies Committee." The main subject of last year's conference was the consideration of the problem as to how best to establish a closer link between the medical associations of the Commonwealth, both those within the Association and those with which the Association is affiliated. Hitherto the link has consisted mainly of correspondence between secretaries, exchange of journals, and representation at congresses. The representation to congresses has usually been by practitioners who happened to be going to the place of meeting.

Among the suggestions made at last year's conference for closer liaison within the Commonwealth were social contacts, exchange of lecturers, fuller exchange of information, more inter-Commonwealth opportunities for postgraduate education and reciprocity within the Commonwealth. Eventually the conference drew up a list of proposals to submit to the various Commonwealth units, the more important of which were:

(1) That it is desirable to develop closer personal and professional relations through their national medical associations or units between the nations linked in the Commonwealth.

(2) That to this end an endeavour be made to hold a conference of representatives of the national medical associations or units once a year.

(3) That the first conference be held in Saskatoon, Canada, immediately prior to the council meeting of the Canadian Medical Association.

At the Saskatoon conference, which was presided over by the then President-Elect of the Canadian Medical Association, Dr. Jack Anderson, all parts of the Commonwealth were represented. Those attending were: Dr. William Magner, then President of the Canadian Medical Association; Dr. Harris McPhedran, Chairman of the General Council of the Canadian Medical Association; Dr. de Silva, President of the Ceylon Branch of the British Medical Association; Dr. P. J. Delaney, Secretary of the Medical Association of Eire; Dr. S. C. Sen, Honorary Secretary of the Indian Medical Association; Dr. Howard Drover, of Newfoundland; Dr. J. O. Mercer, Chairman of the Council of the British Medical Association, New Zealand; Dr. J. G. Hunter, General Secretary, Federal Council of the British Medical Association in Australia; Dr. N. Ahmed, President of the Pakistan Medical Association; Dr. A. H. Tonkin, Medical Secretary of the Medical Association of South Africa; Dr. E. S. Dismorr, Honorary Secretary of the Mashonaland Branch of the British Medical Association; Dr. Dain, and myself.

The cost of the conference was borne by the various associations or units represented, in proportion to their capacity to pay, this capacity being measured by their subscription income. This meant, of course, that the lion's share was borne by the Association.

Problems in the Commonwealth

This was the first time that representatives of a Commonwealth association and units had met together, and for this reason it was an historic occasion. But more than that it

was a remarkably successful and useful conference. The general plan at four of the six sessions was to begin with an authoritative statement on the Canadian position or attitude on a particular problem, and then to proceed to exchange ideas and experiences on the subject under discussion. Medical licensure, hospitalization services and problems, experimental health insurance schemes, medical care of veterans, health legislation, undergraduate and postgraduate medical education, the organization of a national medical association, and the future of medicine generally, were among the subjects discussed. We learnt a very great deal about the problems confronting the profession in the Commonwealth countries and their reaction to them, and we were able to dispel a great deal of misunderstanding about the position here. I propose to include in this column in the weeks ahead some summaries of the various contributions made to the conference.

Organized Medical Services

The Commonwealth Conference was immediately followed by the Annual Meeting of the Canadian Medical Association to which the Commonwealth representatives were invited. We were able to sit in during the meetings of the executive of the Canadian Medical Association, the equivalent of our Council, and to the two-day meeting of the General Council, which is the equivalent of our Representative Body. There were differences in the procedure, of course, but, at the same time, there was a strange similarity between the speeches, and those who made them, and the speeches and speakers at our own meetings. The subject which raised the most lively interest was the relationship between the profession and the State and the various ways of meeting what is clearly a growing public demand for organized health and medical services. The hulk of medical opinion in Canada would appear to be for what is called "voluntary contributed medical care," with the emphasis on the "voluntary." There is, however, a growing body of feeling in favour of accepting the compulsory insurance principle for those unable to make provision for themselves. There is general agreement that the costs of hospitalization, as it is called, should be the first to be met by organized provision, though a distinction is drawn between hospitalization which relates to accommodation only, and medical care which relates to the medical services rendered in hospital. In Saskatoon, for example, the Government contributes from taxation to the cost of hospitalization, the members of the hospital staff charging the patients direct for medical care. Canada is clearly anxious to learn from our own experiences, and the one lesson which they have drawn is that, whatever happens, the new order should come in by stages, with hospitalization as the first stage. I gained the impression that the cost of the Service here would, of itself, discourage Commonwealth Governments from proceeding to establish a comprehensive health service in one move.

I need hardly add that the hospitality of the Canadian Medical Association, the Government of Saskatoon, the University of Saskatoon, and, by no means least, the practitioners of Saskatoon was terrific. No president and his lady could have done more than did Dr. and Mrs. Jack Anderson to make the Commonwealth representatives welcome. For myself, I was dazzled by the signs of material wealth which are evident in Canada. Naturally there is a tendency to feel somewhat sorry for the old country, and it was part of the task of the two representatives from this country to remind our colleagues that the old country has a future as well as a past.

National Health Service

PRIVATE HOSPITAL PATIENTS

FORM OF UNDERTAKING

The Central Consultants and Specialists Committee has learnt of cases where patients who have agreed to receive hospital treatment privately have later tried to evade payment for the professional services they have received. Sometimes the specialist has been handicapped in pressing for his fee because there was no written undertaking by the patient.

The Association's solicitors have therefore prepared a model form of undertaking suitable for patients in "ceiling" and "no ceiling" beds.

The model form covers professional fees and maintenance charges. Where the hospital authority is unwilling to include an undertaking in respect of professional fees with the undertaking that it usually requires in respect of maintenance charges the form may be used by the specialist alone with the deletion of paragraph (a).

To Dr (Mr)

I, _____ of _____, request you to make arrangements for the treatment of _____ at _____ Hospital as a private patient.

The Sections of the National Health Service Act, 1946, referring to private patients, printed overleaf, have been brought to my notice. I agree to pay

(a) the charges for accommodation provided at the hospital in accordance with the scale in force at the time of the stay in hospital, and

(b)* the charges for services rendered by you or any other medical practitioner in accordance with the scale in force at the time of the stay in hospital,

OR

(c)* the charges for services rendered by you or any other medical practitioner, which I agree shall not be confined to the scale laid down by the Minister of Health under the National Health Service Act, 1946.

Witness

Signed

Date

*Strike out whichever is *not* required

ADMISSION TO MEDICAL LIST

APPEAL REJECTED

The appeal of a doctor to the Secretary of State for Scotland against the refusal of the Scottish Medical Practices Committee to admit him to the medical list for Ross and Cromarty was recently rejected. One of the questions at issue was whether a doctor appointed to that list should be able to speak Gaelic.

Dr Donald Macaskill had served as a locum tenens at Borve Outer Hebrides, for eighteen months, and applied to be appointed as medical officer in the district. There were also a number of other applicants. The appeal was presided over by Mr J G Leechman, KC. Witnesses from the district in support of Dr Macaskill suggested that a Gaelic-speaking doctor was necessary there. Others appearing for Dr Henderson held that Gaelic was unnecessary. Sir William Marshall, representing the Scottish Medical Practices Committee, said that the committee considered that in such a large and isolated area there should be an experienced practitioner, and the executive council had done right in appointing Dr Hector Henderson, of Fraserburgh, who was a practitioner with very wide experience. He emphasized that there was no reflection whatsoever made on Dr Macaskill, but, he said, Dr Henderson was a more experienced man.

The Secretary of State for Scotland rejected Dr Macaskill's appeal, and sustained the appointment of Dr Henderson.

¹ *Scotsman*, April 28, 1949.

² *Stornoway Gazette*, May 6, 1949.

³ *Scotsman*, June 1, 1949.

GENERAL-PRACTITIONER SPECIALISTS

Now that the deliberations of the regional review committees are becoming known, a large proportion of general practitioners practising also as specialists are finding themselves placed in the senior hospital medical officer grade. It is as well to remind these practitioners therefore of the appeal procedure now granted by the Ministry, following representations by the Joint Committee.

Appeals should be made before July 4, or, if the assessment of the review committee is not notified to the practitioner by that date, within 14 days of the receipt of notification. In the case of an appeal so made, any upward revision of status will apply retrospectively to July 5, 1948.

Apart from the possibility of upgrading on appeal, senior hospital medical officers will be free to apply for future specialist appointments and thus to regain or obtain specialist status by selection for the appointment in open competition by an advisory appointments committee. In addition, the Central Consultants and Specialists Committee has recommended that there should be a periodic review of senior hospital medical officers with a view to upgrading in appropriate cases.

Inquiries have been received from "downgraded" members of hospital staffs whether, in view of the retrospective application of the permanent terms, they will have to refund any part of the salary they have been receiving during the interim period. It is clear from the "Explanatory Memorandum" (*Supplement*, June 11, p 321) issued by the Ministry that, where the interim salary exceeds the salary to which the officer will be entitled retrospectively, regional boards should not attempt to recover the excess.

In some instances general-practitioner specialists have been notified that the review committee has not been able to place them in any grade, and in these cases the practitioners naturally are anxious about the continuance of their hospital work. It is likely, however, that in a substantial proportion of these cases the hospital authority will wish to retain the services of the practitioner, and indeed for the present may find it necessary to do so. Practitioners in this position are therefore reminded of the provisions of the Terms of Service relating to the engagement of general practitioners as "clinical assistants" or in other capacities at the rate of remuneration of £175 per half-day, and are advised to inquire of the board whether employment in this category will be offered.

HOSPITAL STAFF TERMS

The Ministry of Health has issued some small revisions of the "Terms and Conditions of Service of Hospital Medical and Dental Staff (England and Wales)," which appeared in the *Supplement* of June 11 (p 314). Among the more important are the following.

Section 12, para (b) "Boards or hospital management committees." Delete "or hospital management committees."

Section 16. In the last line of the first paragraph the word "services" should be "appointment." In the third line of the second paragraph "part-time" is deleted from before "consultant services," and the sentence should continue, "the board recognizes that it has a moral obligation to render the greatest possible assistance to the consultant with a view to his obtaining comparable work in another hospital."

Section 18, para (a) The word "holiday" is deleted from the heading "Annual Holiday Leave."

Section 18, para (e), sub-para (2) (c) "shall not exceed the officer's normal monthly salary" should be "shall not exceed the officer's normal salary for the period."

Section 18, para (e), sub-para (2) (d) After the words "The benefits" should be added "compensation payments and allowances."

Section 18, para (e), sub-para (2) (f) The first clause should read "For the purposes of calculation of allowance."

Section 18, para (e), sub-para (3) (f) The words "the sum refunded should not be recorded for the purposes of this scheme"

should be "the sum refunded should not count against the officer's sick leave entitlement."

Section 18, para. (e), sub-para. (3) (h). The following clause should be deleted: "... but without prejudice to the right of an officer whose employment is terminated by reason of permanent ill-health or infirmity to receive the period of notice provided by his contract of service."

Section 19, para. (d) (i). The words "Ordinary mileage allowance" should be "The appropriate mileage allowance under (c) above."

HEARD AT HEADQUARTERS

The Private Bed

The Dean of St. Paul's, who spoke the other day at St. Luke's Hostel for Clergy, remarked that a year or two ago he had to spend a considerable time in hospital as a patient. He had a private room. "In those days," said Dr. Matthews, "I was able to afford the sum required to have some little privacy in my illness, but I am not so sure whether I could afford it now, because, as usually happens when nationalization comes on the scene, prices have gone up, and the cost of that private room has almost doubled." He added that he did not know why this should be, and he was anxious about the large number of people of moderate means to whom privacy in illness is a thing as much to be desired as medical and nursing attention itself.

Whither Medicine Bottles?

If Sir Stafford Cripps wants to save money on the Health Service he might start with medicine bottles. Some millions are handed over to patients every year and each one costs the taxpayer between about a 1d. and 3d. Few ever find their way back to the chemist, yet probably most could be recovered if the patient were charged the cost of the bottle when he collected it and that sum were refunded if he returned it. Their fate at present is a mystery. Perhaps some patients drain the precious liquor eagerly and in an ecstasy of rejuvenation dash the bottle to the floor. Others no doubt throw them furtively into the dustbin. The worried may gradually accumulate them under the stairs, in the attic, or in a kitchen cupboard and occasionally allow a favoured visitor to glance over them, as others display their library. We have heard that in rural districts they are often to be seen early in the year being used for feeding lambs. At any rate, most people would be only too glad to return them to the chemist if they felt that their action would save a little money and help to restore the dollar balance.

Telling the Patient

An educated lady of our acquaintance recently had occasion to consult her doctor, who found that she had high blood pressure. Being "up" on this subject, and knowing all about systolic and diastolic and so on, she asked him, to tell her exactly what the reading was. He hesitated, and at first refused, but eventually yielded and told her exactly what the sphygmomanometer had recorded. She intimated that if he had not done so she would have refused to pay his fee. That might have opened up an interesting legal argument. The practitioner could surely claim that he was called in to treat the patient, and that it was in no way necessary to her treatment that she should be informed of diagnostic details, but whether that would avail in the county court is another question.

Medical Ethics

The Central Ethical Committee of the Association has carried out a useful task in bringing together ethical rules for doctors in extension and elaboration of those which form the subject of Warning Notices by the General Medical Council. Admittedly a practitioner's conduct cannot be regulated by formal rules; it would be deplorable if it could. The rules are rather illustrations of the general principles of behaviour which the good doctor will intuitively observe. One of the rules states that "the announcement of lectures to be given by a doctor should not in any way be laudatory of him." No doubt this

refers to the public advertisement of lectures; if the doctor is to be in peril because of a chairman's fulsome introduction of him it is a forbidding prospect.

Research Subsidies

Medical research in the United States proceeds on a scale which makes British laboratories envious. When Dr. Earle Moore, of Baltimore, lectured the other day to the Medical Society for the Study of Venereal Diseases he was asked how they managed to secure the large sums necessary to pursue the investigations he had described. Dr. Earle Moore confessed that venereal diseases is not a subject which attracts philanthropy. The philanthropist who subsidizes research into particular diseases generally chooses diseases from which he or his family are suffering or are liable to suffer. But the second world war made it apparent to the United States Government that venereal diseases affected the national economy, and now the Public Health Service is allocating about one million dollars a year for this research, appropriated through the Subcommittee on Venereal Diseases of the National Research Council and the Syphilis Study Section of the National Institute of Health. During the present year about 400,000 dollars is being spent by the Syphilis Study Section. One real danger in these researches, not limited to venereal diseases, was pointed out by Dr. Earle Moore—the danger that prophylaxis or treatment (by penicillin in the case of venereal diseases) may be so simplified as to become a routine and to turn the doctor into a mechanic. As he put it, the patient's needs are met only 10% by sticking a needle in his body; 90% of his need is for the physician's skill in dealing with the patient's problems and outlook.

Questions Answered

Superannuation

Q.—I have employed as a part-time assistant a doctor who has a small practice of his own near-by. He was with me before July 5, 1948, and then carried on having joined the N.H.S. himself. I was permitted to continue employing him as it was agreed that a principal could also act as an assistant. Should the 8% superannuation contribution towards his pension have been deducted from my remuneration cheque? Since he is a principal in his own right, should not the Ministry pay his 8%? The 6% contribution was also deducted from me, but this, I understand, is correct and can be claimed from the assistant.

*A.—*There are two separate contracts here. As a principal your colleague is under contract with the executive council, which is the "employing authority" for superannuation purposes. As a part-time assistant his contract is with you, and, in respect of the services he renders to your patients, you are the employing authority and are responsible for (a) recovery of the 6% of his remuneration for remission to the executive council, and (b) the employers' contribution of 8%.

Superannuation for Assistant

Q.—My salary as an assistant in general practice is £15 15s., less £3 3s. because I am required to "live in." Income-tax authorities tell me the £3 3s. is an allowable expense and tax is levied on £12 12s. per week. Do I pay superannuation on £12 12s. or £15 15s.?

*A.—*Remuneration on which superannuation is payable is defined as "all salary, wages, fees, and other payments paid or made to an officer as such for his own use, and includes the money value of any apartments, rations, or other allowances in kind appertaining to his employment." Superannuation is therefore payable on £15 15s.

Fees under Road Traffic Act

Q.—Has payment of medical fees under the Road Traffic Act been affected by the National Health Service?

*A.—*Notwithstanding the introduction of the National Health Service, medical fees may still be claimed under the Road Traffic Act.

THE GENERAL-PRACTITIONER CONSULTANT

BY

G. LOWE, M.B., F.R.C.S.Ed.*Honorary Surgeon, Tiverton and District Hospital*

AND

T. N. RUDD, M.D., M.R.C.P.*Honorary Physician, Tiverton and District Hospital*

The events of the last few months have focused the light of investigation upon the hospital service of the United Kingdom, the doctors who work in them, and the practitioners who send them cases. So far as the smaller hospitals are concerned the status and the manner of payment of the medical staffs are being carefully considered, while in the case of the larger non-teaching hospitals staffed by pure consultants the point at issue is whether it is undesirable to introduce gradually a system of full-time salaried consultants, with the probable end-result of the ultimate elimination of the part-time consultant, who is employed in the remainder of his time in private consulting practice.

But while these important decisions are being made general practitioners throughout the country are viewing with some disquiet certain tendencies in hospital practice which seem to lead to the exclusion of the G.P. from the case he has referred to hospital. They feel that once they send a case to hospital they lose all contact with it, fail to obtain progress reports from hospital officers, and at the end learn nothing of the results except through the patient's relatives, who, imagining that their doctor has been fully informed throughout, impute his ignorance to disinterest and blame him accordingly. Such doctors have found the hospital consultants inaccessible or not informed of the latest developments in acute cases, and report that housemen too often consider the inquiring G.P. a nuisance, so that the only source of information of their patient's progress is the ward sister. An alteration in the consultant's source of income may be partly to blame for this. When this was derived, as in the past, from private cases referred by G.P.s, consultants saw to it that the G.P. was kept in the picture. Now that the consultant is being paid largely by the State, the G.P. as a source of private work has fallen in importance.

While there are many hospitals whose medical staffs have impeccable manners, it is probable that this failure to keep the G.P. in the picture is occurring on an increasing scale, and that the problem should receive the attention of all honorary staff committees. Its importance is obvious, for the ultimate result of the hospital's work depends so much on the home doctor who has to carry out the after-care and treatment prescribed by the hospital consultant. The integration of medical practice, which should be the theme of the N.H.S., demands that hospital and family doctor shall work together, each giving the other his proper place in the national Service.

There is, however, one old-established link between general practice and the hospital consultant service whose future has been jeopardized by modern administrative tendencies and whose elimination from the nation's medical service could not fail to have far-reaching effects of an ill nature. This link is the general-practitioner specialist, whose position is still much misunderstood. There are about half as many of these as there are of full-time consultants. Much has been written of late for and against his retention. In a recent paper (Lowe and Rudd, 1948) it is stated: "However much or however little surgery any part-time surgeon may undertake, it will be readily agreed that the total volume of work undertaken by a specialist of this type is very considerable." We think this is indisputable, that it applies to part-time G.P. specialists in all departments, and that elimination of the G.P. specialist would have a considerable influence on the future of the smaller hospitals, almost entirely for the worse. This feeling will be shared by the general practitioners who sense already that many of the larger hospitals are "cumbered with much serving" and have lost the personal interest which views the patient in his permanent environment—i.e., his home and occupation. They view with some apprehension the possibility that the G.P. consultants will be displaced from their positions in favour of the resident

hospital specialist with no local interests, or the visiting junior from the larger centre some miles distant.

Source of G.P. Consultant

Before the problem of staffing the smaller and rural hospitals is examined the source of the G.P. consultant should be considered. Too often it is assumed by doctors whose experience has been confined to larger towns that the G.P. consultant is primarily a G.P. with a special medical interest, who "learns as he earns," whose specialist training and experience is inconsiderable, and who, now that specialist hospital contracts are being offered, "for their bellies' sake creep and intrude and climb into the fold" of consultant practice. It is vital that this point of view should be corrected. There are three means by which the G.P. consultant reaches his status:

(1) The man with postgraduate qualifications and experience, of registrar status, who enters general practice (usually for economic reasons), and who practises his specialty on the staffs of a smaller or larger hospital continuously from his entry into general practice, and who by his standard of work gains the confidence of the non-specialist G.P.s of the area. This method of practice has proved invaluable in absorbing the larger quantity of juniors of specialist status who have been unable to secure staff appointments to the larger hospitals.

(2) The man with G.P. qualifications who gained considerable experience in his specialty during his war service.

(3) The well-trained G.P. without postgraduate qualifications who has gained considerable skill in some specialty during his years as a G.P. and hospital doctor and who has supplemented this by postgraduate courses or other special studies. These are the "learn as you earn" class, a small body of men, many of whom are highly accomplished but who by the nature of things are most unlikely to be replaced once they have died out.

The bulk of G.P. consultants fall into Class (1) and fulfil the four generally acknowledged postulates for consultant status. To quote again from Lowe and Rudd (1948), these are:

- "(1) Specialist experience in the department concerned.
 - "(2) Postgraduate qualification of recognized standard in the specialty.
 - "(3) Recognition by other practitioners as being a specialist."
- to which must now be added:
- (4) Sufficient time continuing to be spent in sessional work in hospital to maintain his efficiency.

Between the cottage hospitals, with their open staffs of local G.P.s and the larger hospitals with their staffs of pure consultants there are a number of hospitals of intermediate size, often many miles distant from the large towns, which are at present staffed by G.P. specialists who fall into one of the groups set out above. Three methods of staffing these hospitals are apparent: (1) By G.P. consultants or specialists, as at present; (2) by full-time salaried specialists; (3) by visiting specialists from the staff of the next largest hospital. The pros and cons of these alternatives are set out below.

I. FULL-TIME SALARIED SPECIALIST STAFF

For: Such a staff may be more efficient than a G.P. consultant staff because there is no division of interests, the specialist or specialists being able to devote all their interests to hospital specialist duties.

Against: (i) Such staffing is uneconomic, as at most smaller hospitals it would not be possible to employ a resident specialist in each major department.

(ii) Such a service would be much less "personal" than a staff of G.P. consultants living among their own patients and feeling responsible for them. This lack of a "personal" service, so important in medicine, would be increased by the probable frequency of specialist staff changes leading to a lack of continuity.

(iii) The medical profession has already expressed itself as opposed to a full-time salaried service, of which this would be a beginning.

II. VISITING CONSULTANT STAFF

Derived from next larger centre, the routine duties being carried out by house-surgeons and house-physicians or alternatively by local G.P.s.

For: (i) Possible increased efficiency.

(ii) Improved liaison with the larger hospital centres.

Against: (i) As senior consultants are already either fully occupied in their own hospitals, and in domiciliary consultant work, or already work the maximum number of specialist sessions allowed by the

regional hospital board, duties in the peripheral hospitals would probably fall on less experienced junior men, who might have to be found and specially appointed for this work.

(ii) Unless these men had considerable G.P. experience they would be more likely to handle their patients as "cases" rather than as persons, and treat the disease rather than the patient. They would thus be less acceptable to the public than the local G.P. consultant, who has to live among his patients. A hospital with an impersonal approach soon loses its good reputation. All G.P.s know how difficult it is to induce patients to accept hospital treatment unless they have full confidence in the hospital.

(iii) Such appointments to smaller hospitals are likely to be for short terms, so that frequent change of specialist personnel is to be expected.

(iv) The suggested system does not solve the problem of surgical emergencies. To move the patient to the surgical team at a larger centre 15 or 20 miles distant is economic, but likely to be unpopular with patients who have the right to all reasonable medical or surgical treatment in their local hospitals. On the other hand, to bring the surgical team to the patient will often be difficult and may occasion considerable delay, to the patient's detriment.

III. STAFFING BY THE GENERAL-PRACTITIONER CONSULTANT

Against: (i) The principal argument against the G.P. consultant is the fact that he does not spend all his time working in his specialty, so that he may not be quite so efficient as his colleague who works full-time therein.

(ii) The other arguments against him have been set out elsewhere (Lowe and Rudd, 1948), and include unevenness of standards, charges that he undertakes work beyond his capacity, and that, being overburdened with duties of a non-specialist nature, he is unable to keep abreast of advances in his department.

The answers to these objections and the arguments in favour of the G.P. consultant on the staff of smaller hospitals are set out last, as it is hoped to show that this method of staffing is likely to be the most satisfactory alternative in rural areas and smaller country towns.

For: (i) The G.P. consultant is relatively more responsible to his patients and is more readily blamed by them if something goes wrong. He has to live with his mistakes and therefore not take unnecessary risks involving adverse results or death, but he must maintain the confidence on which depends the reputation by which he earns his living. He must therefore "pass on" all doubtful cases or call in more skilled assistance.

(ii) He has his own team on the spot for dealing with surgical emergencies at any time, day or night.

(iii) He is more acceptable to local residents, who tend to trust him because they know him.

(iv) He is almost bound to give more personal service than the young full-time specialist who has no roots in the place; he will usually stay longer—perhaps a lifetime—in the locality.

(v) He inspires the standard of local general practice and thereby strengthens the foundation of the whole medical service.

(vi) The ranks of the G.P. consultant provide a satisfying professional life for the surplus practitioners with higher qualifications who are unable to obtain consultant appointments to the larger hospitals.

(vii) The good G.P. consultant is popular with the local practitioners, for, being a G.P. himself, he understands their particular difficulties and is more approachable than the pure consultant, whom they feel disinclined to worry about problems which may, or may not, be trifling.

(viii) If he is a junior with no great amount of experience of handling patients the stern discipline of general practice, with all the personal responsibility it entails, will keep him on the right lines, so that as the years pass he will steadily become a better doctor, with a more mature opinion, instead of only being a better technician.

In fine, it is suggested that competence and efficiency are not the sole possession of any one branch of the profession, and that the humanizing effect of living close in the patient may at least counterbalance any degree of technique that the G.P. consultant loses through not being wholly employed in his specialty. What he loses in technique he gains in being able to treat the patient as a whole person and not viewing him just as an example of a disease. These points taken together form a very considerable argument in favour of the staffing of hospitals of intermediate size, in selected areas, by general-practitioner consultants.

Certain limitations are, of course, inherent in such a plan. Clearly, the scope of the G.P. consultant and the number of techniques he practises will be narrower than that of the pure

consultant. But within his own field his standard of practice should reach the average of consulting work elsewhere. In all techniques beyond his competence he will co-operate with specialists at higher levels. His other duties must be so balanced that his specialist work does not suffer because of his G.P. commitments. For this reason an association of G.P. consultants in group medical practice would appear to be highly desirable. A report of such an association appeared under the title of "A Medical Group Practice" in the *Lancet* (1948). It is felt that any narrowing of scope inherent in G.P. specialization is offset by the broadening of outlook produced by his G.P. interests.

Surplus Specialists

Apart from the arguments set out above there is the, at present unsolved, problem of using the surplus young doctors of high qualifications and considerable hospital experience who fail to secure appointments at the larger hospitals. There were, for example, 78 candidates for a recent appointment of assistant surgeon to a large non-teaching hospital, while the large entries for the Primary F.R.C.S. (there were 450 at a recent examination) suggests that the supply of young surgeons is not falling off in spite of growing waiting-lists for in-patients and hospital out-patients. Further consultants cannot be appointed in numbers sufficient to deal with these until all hospital departments have expanded considerably, and this expansion cannot occur for 10 to 15 years.

Meanwhile, senior consultants, with too few beds, are tending to appoint registrars as their first assistants, appointments which are bound to be "blind-alley" employments for the great majority of those who accept them, since each consultant may employ in his lifetime eight or ten registrars, only one of whom can succeed him. Examination results for the London M.R.C.P. and the English F.R.C.S. suggest that only 20% of the successful candidates are likely to obtain consultant appointments, while a period spent as a first assistant is unlikely to improve the prospects considerably. What is to be the fate of the unsuccessful 80% of Fellows and Members?

The present time is critical not only for the future of our smaller hospitals, on which depend so many lives in the country area, but also for the future of the highly qualified younger medical men, who would normally be ornaments of their profession. If the economic situation is to deny them hospital employment in the larger centres, three courses only are open:

(1) They can be appointed, to the small hospital over the heads of the present G.P. consultants, who far surpass them in experience of medicine and patients.

(2) They can be encouraged to sacrifice their ambitions and become general practitioners without any ability to practise the specialty they have begun to study.

(3) They can be encouraged to enter general practice as G.P. consultants, with recognized status, preferably to work in group practice round a hospital centre.

The objections to the first two alternatives are very obvious and very real. A busy profession dealing daily with life and death has no need to be impeded by the bitterness which either of these would cause. The third is put forward as the ideal solution by a group of part-time consultants who have found a sense of achievement in this method of practice, who are very well aware of its difficulties and drawbacks, but who are convinced that these obstacles can be overcome, to the great advantage of the patient, whose welfare is the alpha and omega of the Hippocratic tradition.

REFERENCES

- Lancet*, 1948, 2, 740.
Lowe, G., and Rudd, T. N. (1948). *British Medical Journal*, 2, 24.

TRADE UNION MEMBERSHIP

The following is a list of local authorities which are understood to require employees to be members of a trade union or other organization:

Metropolitan Borough Councils.—Fulham, Hackney, Poplar.

Non-Country Borough Councils.—Dartford, WallSEND.

Urban District Councils.—Denton, Droylsden, Houghton-le-Spring, Huyton-with-Roby, Redditch (restricted to new appointments), Tyldesley.

PLANNING AND WELFARE

SIR JAMES ROSS'S LECTURES ON THE N.H.S.

A series of three lectures on the National Health Service was delivered in May at the London School of Economics and Political Science by Sir James S. Ross, until lately Regional Officer for Health Services, Ministry of Health. The lectures were designed for students of public administration and social science. Professor T. H. Marshall, C.M.G., presided at the opening lecture.

The Historical Background

In his first lecture Sir James Ross began by speaking of his privilege in addressing a university audience in the school whose former director, now Lord Beveridge, in 1942 finally established the place of a comprehensive health service in the social framework of this country. He said that in giving these lectures he had two things in mind—a study in social welfare, and a study in planning and administrative method. He described the National Health Service as part of a thorough reconstruction of our social services and at the same time necessarily a new venture in public administration. Its roots were in the past, but it brought about far-reaching changes in general organization, in the scheme of authorities, and in the method of their appointment and procedure. He asked his audience to think of the Service as something which had a well-knit argument running through it—a service flexible in use and one that could be developed, admitting of alteration in the light of experience.

The Act itself he described as the mandate and the general plan, needing to be supplemented on a large scale by regulation and administrative action. The more detail that was put into an Act of this pioneering character the more was the general discretion of administrators fettered and the greater the hindrance in adjustment to developing needs.

The health provision for this country had fine traditions and a great record, but these were not enough. He quoted from one of the *Hospital Surveys*, 1941-5: "The evacuation of our cities and the findings of our medical recruiting boards have laid bare such a mass of preventable disability, under-nourishment, and poor development that we are ashamed." Statistics showed what the facts were and what could be done. The cost of ill-health in money and national resources was estimated. The inadequacy of the provision was made apparent.

The four main pillars of social welfare, each of them essential to the stability of the others, were education, health, social security, and production. By health was meant not only the study and treatment of, for example, cancer but the planning for health as a positive policy. Notwithstanding the great work of our hospitals, nursing services, voluntary associations, public health service, and general practitioner service, the inadequacy of health provision remained. The general practitioner service had not nearly met the needs of the people. The condition of their teeth was bad beyond words, and there was a wide range of other needs—for the eyes, for rheumatism, tuberculosis, cancer.

Recent Reforms

The Act, as Lord Beveridge had said, first removed completely the economic barrier between sick persons and the best possible treatment for them, and it set up for the first time a true Ministry of Health, a national authority with the duty and power of attacking disease as a national enemy. The lecturer proceeded to a brief review of social history since the beginnings of the social revolution forty years ago, and mentioned the coming of National Health Insurance, local authority health services, the work of voluntary agencies of all kinds, including district nursing associations, the great progress in clinical medicine, the extensions of voluntary hospitals, the rise of the great municipal hospitals following the Local Government Act, 1929, the growth of hospital contributory schemes, and the shaping towards a national scheme of health service, as witnessed in the reports of the British Medical Association on "A General Medical Service for the Nation" and the report of the Sankey Commission on voluntary hospitals.

The pace of reform quickened during the second world war. In 1941 the Beveridge Committee was set up to survey the whole range of social insurance and allied services. In 1942 came the Draft Interim Report of the Medical Planning Commission, set

up by the British Medical Association—a most valuable and reasoned study—and in the same year the Beveridge report, followed a few months later by the acceptance of the Beveridge plan in principle by the Government of the day, including its basic assumption of a comprehensive medical service for all. In February, 1944, the Coalition White Paper appeared, and the Bill was introduced in March, 1946, followed by lengthy debates in both Houses.

Sir James Ross then proceeded, with the aid of an organization chart, to give an account of the structure of the Service. He said that the Minister now had high constitutional responsibility; he was answerable to Parliament for the efficiency of the Service and for the husbandry of its heavy expenditure. This had to be secured through hundreds of authorities, manned by some 13,000 voluntary members, to whom was given the fullest possible administrative discretion and initiative, particularly in the field of hospital administration. He explained the constitution and purpose of the Central Health Services Council and the standing advisory committees. He then dealt in outline with the three sets of regional and other local authorities and with the argument for the regional hospital boards and hospital management committees. Perhaps the most critical factor in the organization was the necessary interaction, in respect of policy, planning, and local practice, between the different sets of authorities.

General Factors in Health Administration

In his second lecture Sir James Ross, approaching the subject as a student of the Service from within, discussed the collective obligations of the authorities and the conditions under which they worked. He bade his audience think of the sheer magnitude and complexity of the task before them. The happiness and welfare of some 45 millions of human beings were involved. What were the resources available?

There were shortages of every kind—in buildings and personnel. Notwithstanding the splendid heritage of the past into which the Service had entered, there were professional shortages. New staffs had had to be found and tried out; new procedures had to be created. All the elements concerned had to learn to work smoothly together, and over a wide range close interworking had to be established. There was an expectancy abroad. It was not only mothers who were "expectant," but fathers and grandfathers. Democracy demanded as did no other form of society that the citizens should understand their institutions and their problems. A common misunderstanding about the Service was amusingly illustrated by the remark of a lady who told her doctor ten days before the appointed day, "Make no mistake; I am going into hospital on July 5. I know my rights."

It was not only the fact that the cost of illness arising as a result of specialization was beyond the purse of the average person. The question was: Could the nation afford it? How much could it afford? Clinical advice was well ahead of their capacity to use it. Perhaps the biggest health factor the Government had to face was the ageing of the population. In 1901 there were in this country 857,000 people of 64 and upwards. In 1948 the number was 4,643,000, and by 1965 the total was expected to reach 5,400,000; 12% of the entire population would be over 64. This meant a greatly increased burden on the community, first because of the higher sickness rate attaching to the elderly, and secondly because of the need in some way to keep these old people fit to earn their living for a further period of years. Here the lecturer commended a small pamphlet, *Matters of Life and Death*, published by the General Register Office, 1948 (H.M. Stationery Office, 1948, 6d.), not only for its information but for its inspiration.

Finally, medicine was working out new lines of strategy and tactics in treatment, not only in the closer interrelation of physical and mental treatment, and on the new balance between individual and social medicine, but on some quite specific points, such, for example, as the development of out-patient departments in the larger hospitals into primary means of diagnosis and treatment by specialists. Another outstanding change was in the hospital treatment of the aged and infirm—that is to say, the endeavour to make people who would otherwise remain chronically ill for the rest of their lives walk again on their own good legs after a stay of a few weeks in hospital. Again, there was the question of a quicker turnover of patients. These

questions would in large measure condition and determine the plans and practice prevailing in the future.

Sir James Ross then went on to describe the hospital and specialist service, the working of the 14 regional hospital boards each with 20 or 30 or perhaps 50 hospital management committees in its area. Alongside these were the teaching hospitals administered independently by boards of governors of their own. All this was an original and courageous contribution to the health service of the future. He discussed the reasons which had made this revolutionary change of ownership and management necessary.

He dealt also with the mental health services, the new mandate under which local health authorities were proceeding, the plans for health centres, and the place of the nursing profession in the National Health Service.

Family Practitioner Services

In his third and final lecture Sir James Ross discussed in particular family practitioner services. Describing first the executive councils, he said that such councils existed in each county or county borough (unless there was a link-up of adjoining areas). A council consisted of a chairman and 24 members—12 lay and 12 professional. Of the lay members, 8 were appointed by the local authority and 4 by the Minister. The professional element consisted of 7 doctors, 3 dentists, and 2 pharmacists. The widest consultations had been made regarding suitable chairmen to start with, and care was taken to avoid arbitrary action and to consult democratic opinion in setting up these important bodies.

The executive councils were the heirs at law of the old insurance committees, but with wider duties and a larger professional element. Alongside them were the local professional bodies in each area, all recognized in the body of the Act itself. The actual working of these councils was through committees. There was no separate representation of interests. It was stressed at the beginning, "Please forget where you come from." The idea was that each member was there to contribute his experience to the solution of common problems.

Finance of General Medical Services

The provision of £102 million included £2 million for administration, £40.5 million for the general medical practitioner service, and £19 million for pharmaceutical, £28.5 million for dental, and £12.5 million for ophthalmic services. Thus the doctors and their prescriptions cost not quite £60 million. The Service included now over 18,000 general practitioners (principals), and more than 40 millions of the population were on their lists. The system rested upon free choice of doctor and of patient. All proper and necessary treatment was afforded short of treatment calling for the application of special skill or experience of a degree or kind which general practitioners as a class could not reasonably be expected to possess. The assurance was given that there would not be two qualities of service but one uniform quality throughout the country. It was true that since the Service started there had been many trivial calls on doctors, but there had been also many cases of illness hitherto undisclosed. The heavy strain on the doctors, with their crowded surgeries, was acknowledged. The public must learn forbearance and common sense. This was a real test of the quality of our people.

Doctors were distributed unequally. In Richmond, for example, there was one doctor for every 1,400 people, and in South Shields one for every 4,000. For the better regulation of this a Medical Practices Committee had been constituted, six of whose eight members were doctors. There was an inducements fund amounting to £200,000 to encourage doctors to practise in less favourable areas. He described also the subsidy system obtaining in the Highlands and Islands, and the mileage payments. Another important central body was the tribunal to deal with such disciplinary matters as inevitably arose in the administration of the Service. Its chairman was appointed by the Lord Chancellor.

The provisions of the amending Bill recently published were mentioned, and the way in which it met the fears of doctors with regard to the possible imposition of a State salaried service. The medical profession was still exercised about the financial aspect and was claiming a much higher betterment factor. Another matter for consideration was whether the capitation

fee should be graded, with a higher rate for the first 1,000 persons on the list. The important thing was to ensure a high standard of general medical practice. This was the keystone of the arch.

The maternity medical service involved the provision of a special list of general-practitioner obstetricians. About 55% of doctors had their names on that list. The expectant mother might choose any doctor from that list, and a midwife would be engaged in the usual way. The essence of this service depended upon the two working together harmoniously.

Nearly 900,000 old people were wearing glasses who had never had their eyes tested before, and about 2,000,000 had had no test for over five years.

General Finance, Priorities, Standards

Dealing with the finance of the Service, Sir James Ross said that the original estimate in 1946 was simply a shot in dim light. He gave the figures for 1949-50. The inevitability of the rise in estimates was generally admitted. What about economies in administration? It had been truly said that we want a science of medical economics. There were some basic items of expenditure which were not in question. Beyond these essentials what were the priorities in the long view?

In some things nothing but the highest standards could be afforded. It was not possible, for example, to economize on the standards of teaching hospitals. What other services can manage on less costly standards and scope? The immediate problems were not of supply but of allocation and use. "We have got to get the maximum healing power from the resources available. There is hardly any element in the health services in respect of which we could not do with a great many more facilities than we have at hand."

In conclusion, he referred again to the new outlook on the question of the aged and infirm, and spoke in terms of high appreciation of the report of the Special Committee of the B.M.A., *The Care and Treatment of the Elderly and Infirm* (1947, 3d.), only urging that instead of the ugly word "geriatrics" the beautiful Greek word "eugia" be used.

Two other typical problems for lay administrators were those of rheumatism, representing a loss to industry of something like £40 million a year, and tuberculosis. He emphasized the need for a continuance of voluntary service. Any person of good will could find immediate work to do in connexion with the health and welfare organization. The voluntary associations should get together in their own districts and ask the medical officer of health what part in the Service they could best play on a voluntary basis.

FACULTY OF OPHTHALMOLOGISTS.

At the Faculty's Council meeting on April 29 the following officers were elected for 1949-50: President, Mr. Frank W. Law; Vice-President, Mr. J. J. Healy; Honorary Secretary, Mr. J. H. Daggart; Honorary Treasurer, Mr. A. B. Nutt.

It was learnt that the practice of referring patients from the hospital clinics to the Supplementary Ophthalmic Service did not meet with the approval of the authorities. It was agreed to write to the Ministry stating that the Faculty did not approve of this practice, but until more assistance, technically and financially, was received towards the progress of the permanent service there did not appear to be any alternative. It was also decided to point out that the prescriptions of the patients seen in hospital must be made up in the hospital, otherwise there would be no saving financially.

The draft handbook for ophthalmic medical practitioners and ophthalmic opticians, together with the comments of the Ophthalmic Group Committee, was considered. The Ophthalmic Group Committee's comments were approved, but it was felt that it should be illegal for an optician to prescribe glasses for any case which had been referred back to the general practitioner. It was decided to recommend to the Ophthalmic Group Committee that representatives from the committee and the Faculty should discuss this point with the Ministry, and the chairman of the Group Committee and Mr. Law were nominated to act in this capacity.

At the suggestion of the Ministry of Health a Committee of Referees is to be set up to deal with matters arising from

certainly not be a "strike," but merely his unwillingness to buy from us something (services) on terms which everybody would concede are wholly reasonable from our point of view.

It may be argued that we are going against the Government in demanding this. Such is not the case. Suppose we were a contracting firm approached to build a colossal undertaking for the Government. Would our contract state exactly what we were to be paid for the job, or would it leave to the Minister concerned the right to reduce our price at his will? Would any business firm sign a contract on such terms? Certainly not. Very well; why should we be asked to? And if asked to, why should we be such fools as to agree?

There is one further amendment which I urge all consultants and specialists to insert before signing, and to insist upon before taking up duties. It deals with the tenure of the appointment, or, put in another form, the right of determination of the contract. According to the Minister's proposals a consultant who considers that his appointment is being terminated unfairly by a board shall be entitled to appeal, but that appeal must be completed before the board's decision to terminate the appointment is carried into effect. This gives to the boards an advantage which is quite unfair.

If they were to give a specialist a month's notice he might have time to get his appeal dealt with in that time. If three months' notice was given there should certainly be time. But suppose that in order to prevent the specialist from making his appeal the board summarily dismisses him, at the same time covering themselves from any action for wrongful dismissal by paying him a month's salary in lieu of notice, then he cannot appeal—at least so it would appear.

For that reason I again most strongly urge every consultant and specialist in the country to refuse to enter into contract with the Minister until the contract is so worded as to secure (except perhaps in such cases as drunkenness, drug-addiction, and such-like) that due notice shall be given by either party of its intention to determine the contract, and I would suggest three months as being a reasonable period for this purpose. It is significant that the explanatory memorandum which follows the Minister's proposals in the *Supplement* of June 11 (p. 321) states that "boards will be entitled to expect reasonable notice to be given them by any officer who wishes to resign his appointment." It omits all reference to the equal entitlement on the part of the officer to expect reasonable notice of the board's wish to terminate his appointment. Some wording in the exchange of letters is essential to secure the establishment of this right.

Time probably does not permit any centrally directed action from Tavistock Square. Previous experience of the non-militancy of the central hierarchy of the B.M.A. fails to reveal any spirit which would direct such action even if time did permit. It therefore rests with individual consultants to protect themselves in the manner I have suggested. But individual action is weak. Only concerted action is strong. Let, therefore, every hospital staff throughout the country meet to discuss this. Let groups of staffs agree whether or not the points I have brought to light are worth insisting upon. If groups of hospitals covering wide areas act together, and if sufficient such areas act in similar vein, then we must inevitably bring the Minister to realize that a contract is not only a bilateral thing, but also that he is a buyer and we are the sellers, and we hold the market.

We have the additional advantage that he is not the only buyer. We can sell either to him (and through him to the ultimate consumer—the patient), or we can sell to the consumer direct. If he wants to corner the market let him realize that he can do so only by buying on our terms. It is simple commerce.

Lastly, let us not forget that we did not invite the Minister to assume the role of the medical middleman. It is a self-assumed role, and it is for him to succeed or fail on his own merits—not on ours. But if he is not the only buyer for our wares, we are most emphatically the only seller from whom he can seek that which he must have, which he must buy—viz., the professional skill, experience, and knowledge necessary for the operation of the hospital services of the National Health Service. The future of the specialists is therefore in their own hands. Are they going to throw it away?—I am, etc.,

Penzance, Cornwall.

GEOFFREY MYERS.

Supply of Cars

SIR,—I have been instructed by the East Yorkshire Branch Council to write to you regarding the results obtained in East Yorkshire from an inquiry into the delivery of new cars to doctors. A questionnaire was sent to all members, and so far 114 replies have been received, some half-dozen replies being in duplicate, covering assistants' cars, so that, taking into consideration retired doctors and men not essentially requiring cars, there has been a response indicative of the interest in the matter.

Briefly, the results are as follows:

(1) 76 doctors state that they possess post-war cars. Of these 76, no fewer than 12 state quite unprompted that they have only recently received delivery after a wait of several years, while five doctors wish to comment favourably on their treatment by distributors.

(2) 38 doctors possess unsuitable cars (with a few exceptions pre-war models) and have had others on order for varying periods (three months to three years) without delivery.

Of these 38, 17 have been supported by a B.M.A. letter of recommendation; of these 17, all but two possess pre-war cars, with the lowest mileage 46,000 and the highest 250,000. Several are using borrowed cars. A similar state of affairs holds good for the remaining 21 who have not appealed for help, some of whom state that their cars are on their last legs.

It is difficult to give an impression of the results without perusal of the replies, but there is obviously widespread dissatisfaction with the state of affairs. I have received several bitter letters and more acid comments on the subject of "priority." There is, for instance, the case of a consulting surgeon here, on call in emergency to hospitals as far afield as Bridlington and Driffield (30 miles). He is running a 1936 Ford 8 with completed mileage of over 60,000. He has had a car ordered since May, 1946, has had a B.M.A. priority recommendation for over a year, and has appealed to the distributors, and I think the makers, without the slightest effect. No comment is required here.

It may be argued that in the past doctors have spoiled their own priority, but this can only apply to men not in the Forces during the war—and not to all of them surely—and that those demobilized after January, 1946, were left at the mercy of the second-hand market or in the hands of a sympathetic dealer.—I am, etc.,

W. M. GIBSON,
East Yorks Branch Council.

SIR,—Dr. R. S. Nicholson's letter (*Supplement*, May 14, p. 272) prompts me to relate my own experience.

My old car had done 83,000 miles in ten years and was fast wearing out in spite of heavy repair bills. My new car, ordered in December, 1946, was not even in sight. In November, 1948, I wrote to the B.M.A. giving all required particulars duly certified, and I was shortly informed by a motor firm that as my name was on the B.M.A. sponsored list they would do their best to expedite delivery.

On April 8 I took delivery of the first of a certain type of car to be seen in the county; the main agents had not even had one for demonstration. Naturally I was sincere in my thanks to the B.M.A. and to the firm for their help and consideration.—I am, etc.,

Willington, Sussex.

E. VENN CLAYDON.

Supplementary Ophthalmic Service

SIR,—I was very pleased to read Dr. James H. Mellotte's letter (*Supplement*, March 26, p. 167). It is of considerable importance, for two definite factions are rapidly developing among ophthalmologists. There is the small but influential group who are entrenched in hospital appointments—often multiple—and who have long held monopolies over large populations and seek to maintain them. They appear to regard the Supplementary Service as a menace to their private practices and are seeking to discredit it. Where they have centres they are able to create waiting-lists, some of the people on which may be expected to tire of waiting and to make private appointments.

On the other hand, the younger men in practice, the general practitioner ophthalmologists as well as whole-time ophthalmologists who have not got hospital appointments, welcomed

Each side is tending to regard the other as the sort of fifth wheel, and as the divergence between the two groups is more marked, definite split into bitterly opposing camps may develop. This is the time when action on behalf of the cause may have good results, but action must be now, while the full record of the facts mentioned—I am etc

Libertarian Worker. I am etc WASH

Fees for Vaccination and Immunization

SIR.—In view of the complete lack of interest in the negotiations on payment for the above service since the fact that no fees for them have been received since July 1948 the Norfolk Local Medical Committee has recommended all doctors in its area to continue these services but to retain the record cards and not send them to the local health authority until a satisfactory agreement has been reached. The committee hopes that other local medical committees will take similar action in this matter. I am, etc.

JOHN SAWELLI
 Hon. Secretary
 Norfolk Island Medical Committee

Hospital Registrars

SIR—The grading of the hospital registrars with the current modifications in establishments is obviously necessary and inevitable, but if it is to take effect all over the country at a more or less synchronous date (as it appears it will) a large-scale "general post" must occur, with considerable transient unemployment.

As a whole the registrar group have but the smallest margin between income and inescapable expenditure (a large proportion being ex-Service, married, and with families) and even short periods of unemployment prove very heavy.

The Association, in its negotiations could greatly ease our position if it would arrange for the change over to be staggered so that all hospitals throughout a region over a period of several months. The prolongation of the ex Service training scheme, which in some areas is being very suddenly withdrawn would also form an invaluable buffer against a hardship which with thoughtful and unhurried organization need not prove inevitable—I am, etc

los vich

NICOLAS MALFESSON

Assistantships

STR—“Half the world does not know how the other half
ves” is true of the medical profession. As one who has lately
nished with the slavery of “assistantship” I can well under
and the views and growing volume of protests—almost
mounting to revolutionary agitation for emancipation—from
us under privileged class of our profession

Assistant,' Fiat Lux,' etc., have done their utmost to direct the searchlight on this unhappy state. Let the 'Big Jerthas' of the profession, whose roars alone over the years have dominated the whole scene consider the working conditions of the assistants.

It seems to me that A B C (*Supplement*, May 28, p. 300) was in that very small class who served their assistantship under practising Christian principals or close relations. To state that 'I know of no principal who pays less than £7:0 plus house and often a car allowance' is proof of his ignorance of how other principals behave. Please permit me, Sir, to state a few facts for his benefit.

Early in the last war my close friend qualified. He answered an advertisement for £350 all found and car provided. After he interviewed the salary became £300. His circumstances forced him to take it, but he left after six months.

I qualified after him. I was rejected for the Services. It was a year before I obtained a post. My prospective principal was a squadron leader. He informed me that his practice was fairly large and included Post Office Public Assistance, Labour Exchange, and National Fire Service appointments, along with part of another doctor's practice who was in the Service. He asked what I wanted. With the knowledge of my friends' earlier experience and my own financial position then I

cautiously pumped for £400 inclusive of everything. He offered me £500 all found, and car provided. Coupled with this are the most encouraging remarks to carry on the practice.

I would mine and not to overwork

Most reluctantly, and for personal reasons unconnected with the relationship, which was good, I had to leave. My relationship with his patients was very happy and he has since written to thank me again for my services during the war. We parted on the best of terms. He offered me his services if ever I needed them for my advancement.

Next I obtained an assistantship on exactly the same terms. My principal's wife was a model of a hostess. The whole environment in the home was conducive to happiness, and I settled down happily. Night work was one in four months. Occasion arose when he started to violate the terms of our agreement. I took two independent legal opinions on the matter before I called his attention to the fact. For this impertinence I got the sack.

Shortly afterwards I got another assistantship at very slightly higher pay I held this for over four years. Here, although I had been used to hard work, I had to work harder still. There were numerous night calls, and visits averaged for the whole year around 20-25 a day, seven days a week, except my holidays. Patients arrived at 7.30 a.m. and 3.30 p.m. for 9 a.m. and 5 p.m. surgeries respectively. Long and arduous hours were put in and at the end of the day one was mentally and physically exhausted. I had been there over two years when the increased capitation fee was made retrospective, and he netted £1,000 clear. Not a penny was offered me.

After four years' service, when the appointed day was looming large on the horizon, he magnanimously proposed sale of partnership. He was anxious to get things settled before July 5 1948, and prevent anyone else coming into the area. Thus it was merely business and not in recognition of service. Although I had one increment over those years, I never came up to the ideal of "ABC". The practice was over 7,000 and the income was nearly £5,000. I declined the offer. Fairly enough, he admitted the increase in practice since I went there. In fairness to him also I ought to mention that he worked very hard. It must have been a shock to "ABC" to hear from their new partner the opinion of assistants of the principals. The assistant's remedy as he proposed is not as clear as all that.

In the different industries the unions, especially since the war, have done so much for the protection of their members. The sceptre of strike so often used is not available to the doctors. May we entertain the fervent hope that with these exposures those "haves" will henceforth behave decently to the "have nots"? It is not envy but elementary justice that is called for.

Concluding, Sir, may I plead with the B.M.A. indirectly to protect the assistants and locums looking for work through the Bureau? By requesting principals to supply the certified number of patients on their lists the prospective employee doctor will be able to judge for himself what he is in for—I am, etc.

Ex ASSISTANT

National Service Officers

SIR,—It was with considerable interest that we read in the Supplementary Annual Report of the Council of the B.M.A. (Supplement, May 28, p. 293) that the Council has taken up with the Ministry of Defence and Service Departments the fact that the increased marriage allowances paid to serving officers does not apply to national service officers called up after Jan. 1, 1947. We feel that this gross example of discrimination should be more widely known.

Surely the increased cost of living is felt by all members of the community, perhaps most of all by the young newly wed and those with young children, who in many cases are having to live in accommodation grossly inadequate at what one can only call exploited rentals. And yet these, we, are the people who are not to benefit

It would be interesting to know just how many officers are affected by this refusal of the extra 6s a day (taxable) or rather how much the Exchequer benefits by it, also just what number of married national service officers over the age of 25 there are in corps other than the R.A.M.C. We in

and while we appreciate the efforts of the Council on our behalf we deplore the apparent apathy on this matter among our fellow officers of the corps.—I am, etc.,

JOHN H. H. OLIVER,
Lieut., R.A.M.C.

K. E. JEFFERSON,
Capt., R.A.M.C.

Locally Recruited C.M.S. Officers

SIR.—Dr. Oladele A. Ajose (*Supplement*, June 4, p. 310) suggests equal pay for officers of the Colonial Medical Service, whether patriate or expatriate. This I agree with, provided the salaries are in relation to the economies of the Colony concerned.

Present basic salaries in most cases are as much as the individual Colonies will be able to afford when health and welfare services are fully developed. However, no European medical officers could be recruited on the basic salary alone, and would require their salaries to be made up by expatriation allowances. But these allowances should be paid by the Colonial Office from United Kingdom funds under the Colonial Development and Welfare Acts, and have nothing to do with the finances of the individual Colonies. This would avoid locally recruited officers complaining that Europeans are paid more by the Colonies than they are, and might help to unify the Colonial Medical Service.

Incidentally, how many locally recruited medical officers belong to the Colonial Medical Service? Most of them, I believe, are not liable to transfer outside the Colony in which they have been recruited, and therefore are not part of the unified service.—I am, etc

P. Q.

B.M.A. LIBRARY

The following books have been added to the Library:

- A.M.A. Interns' Manual. 1948.
Austin, R. G.: Aids to Physical Chemistry. Second edition. 1948.
Bick, E. M.: Source Book of Orthopaedics. Second edition. 1948.
Binkhorst, C. D.: Toxoplasmosis. 1948.
Bowley, A. H.: Natural Development of the Child. Third edition. 1948.
British Medical Association: Proceedings of the Annual Meeting. 1948. 1949.
Bunnell, S.: Surgery of the Hand. Second edition. 1948.
Caldwell, N.: General Elementary Science: for students of chiropody. 1948.
Chavasse, P. H.: Advice to a Mother on the Management of Her Children. Eleventh edition revised by C. C. H. Chavasse. 1948.
Cholerton, M.: Some Aspects of Oculo-refractive Technique. 1948.
Clarke, H. T., Johnson, J. R., and Robinson, Sir R. (Editors): The Chemistry of Penicillin. 1949.
Cooper, E. A., and Nicholas, S. D.: Aids to Biochemistry. Fourth edition. 1948.
Cowie, A. T.: Pregnancy Diagnosis Tests: a review (Commonwealth Agricultural Bureaux Joint Publication No. 13). 1948.
Cuthbert, A.: Housewife Baby Book. 1948.
DeGowin, E. L., Hardin, R. C., and Alsever, J. B.: Blood Transfusion. 1949.
Gates, O., and Warren, S.: Handbook for the Diagnosis of Cancer of the Uterus by the Use of Vaginal Smears. Second edition. 1948.
Griffith, E. F.: Morals in the Melting Pot. 1948.
Johnson, B. K.: Practical Optics. Second edition. 1947.
Johnson, T. A. (Editor): Management of Common Gastro-intestinal Diseases. 1948.
Judd, A. R.: Diseases of the Chest. 1947.
Karsner, H. T., and Koletsky, S.: Calcific Disease of the Aortic Valve. 1947.
Katz, D.: Psychological Atlas. 1948.
Kleiner, S.: Human Biochemistry. Second edition. 1948.
Knight, R., and Knight, M.: Modern Introduction to Psychology. 1948.
Konorski, J.: Conditioned Reflexes and Neuron Organization. Translated from the Polish MS. by S. Garry. 1948.
Kopetzky, S. J.: Deafness, Tinnitus, and Vertigo. 1948.
Leigh, M. D., and Belton, M. K.: Pediatric Anesthesia. 1948.

ANNUAL MEETING POST OFFICE

For the British Medical Association's meeting at the Royal Hall, Harrogate, Yorkshire, from June 24 to July 1, the G.P.O. has provided a temporary post office in the Royal Hall Annexe for the sale of stamps and postal orders, and acceptance of telegrams, registered letters, and parcels. Nine exchange lines fitted with multi-coin boxes have been installed for the delegates.

Association Notices

ELECTION OF MEMBERS OF THE COUNCIL BY THE GROUPED AFRICAN BRANCHES

The following is the result of the voting for the election of a Member of Council by the Grouped African Branches for 1949-52:

L. R. Broster (London)	86 votes
P. C. C. Garnham (Farnham Common)	225 votes (Elected)
No. of voting papers issued	1,104
No. returned	312
Spoiled papers	1

CHARLES HILL,
Secretary

Diary of Central Meetings

JULY

- 7 Thurs. Radiologists Group Committee, 2 p.m.
8 Fri. Venerologist Group Conference, 2.30 p.m.
19 Tues. Pharmacopoeia Subcommittee, 2 p.m.
27 Wed. Committee on the Postgraduate Education of General Practitioners, 2 p.m.

Branch and Division Meetings to be Held

MID-ESSEX DIVISION.—At Chelmsford and Essex Hospital, Sunday, July 3, 10 a.m. Mr. M. D. Sheppard: "Urinary Obstruction and the Significance of Haematuria."

Meetings of Branches and Divisions

METROPOLITAN COUNTIES BRANCH

The 91st annual general meeting of the Metropolitan Counties Branch was held at Association House, London, on June 7. Mr. A. M. A. Moore, the retiring president, was in the chair during the first part of the meeting, and was followed by Dr. C. G. Martin.

The report of the Branch Council showed that the membership of the Branch was 7,396, an increase of 463 on the year. The report, with the financial statement, and the report of the Branch representatives on the Central Council were received and adopted.

The following nominations were accepted for 1949-50: president-elect, Dr. Frank Gray; vice-presidents, Miss Beatrice-Turner, Dr. A. E. French, Dr. A. Ricketts, and Dr. J. B. Mason, with Dr. J. W. McCarthy and Dr. A. H. Weston as hon. secretaries, and Dr. D. F. Hutchinson as treasurer.

Dr. C. G. Martin, president of the Branch, was then inducted and delivered an interesting address on the Port of London. He traced the history of the port from the earliest times, the great commercial development of the sixteenth and seventeenth centuries, the opening of the first docks (in the modern sense of the term) at the beginning of the nineteenth century, and the advent, in 1908, of the Port of London Authority. The present-day Port of London comprised the tidal Thames from Teddington to the Nore—60 miles of busy waterway—an estate of more than 4,000 acres, and nearly 45 miles of deep-sea quays for berthing ocean-going vessels. The Port of London was the second passenger port of the United Kingdom. He also touched on the war story of the port and the formation of the river emergency service of motor launches and river hospital ships manned by volunteers, with a staff of doctors and nurses, to deal with riverside casualties. Finally, he remarked on the medical side of the port work, including the examination of employees and the training of first-aid personnel. The health conditions on in-coming ships were watched by the Port of London Health Department—a department of the City Corporation. Vessels were boarded at Gravesend according to the reports which they telegraphed to this health authority before entering the river. In 1947, out of 6,850 vessels arriving from foreign ports, 1,503 were boarded; 183 cases of communicable diseases were reported on 125 of the vessels during the voyage, and of this number 96 were landed in the port.

In order that vessels on foreign service might be boarded and inspected when necessary, the master of the vessel approaching the port must ascertain the health of all persons on board and fill in and sign a declaration of health. If the vessel had come from ports in Asia or Central or South America or a number of other places the master must send a wireless message stating the time he would arrive off Gravesend, or, if he had no wireless, he must report to the North Foreland, and would then be boarded.

Dr. Martin was warmly thanked for his address. He stated that if a suitable number of members of the Branch formed a party the Port of London Authority would place their yacht *St. Katherine* at the party's disposal for a tour of the Royal Docks as their guests.

Correction

In the map of N. Ireland (*Supplement*, June 18, p. 334) Co. Armagh was mistakenly labelled Co. Monaghan.

BRITISH MEDICAL JOURNAL

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION



Edited by
HUGH CLEGG, M.A., M.B., F.R.C.P.

VOLUME I, 1949
JANUARY TO JUNE

LIST OF ILLUSTRATIONS

PHOTOGRAPHURE PLATES		PAGE			PAGE
Blood Changes in Luminizers (Ethel Browning)	facing	439	Hyperinsulinism due to Islet cell Adenoma (W. G. Duncan Murray)		521
Endometriosis of Groin (G. E. Moloney)	inset between 438 and	439	Hypertension, Lumbo-dorsal Sympathectomy in (J. C. Harland and F. d'Abreu)		1019
Eosinophilic Xanthomatous Granuloma with Honeycomb Lung (T. Parkinson)	facing	1030	— of Renal Origin in Rats following Choline Deficiency in Early Life (W. Stanley Harroft and Charles H. Best)		423
Fistula, Arteriovenous of Lung (T. D. Beddard)	facing	1031	Illness in General Practice (John Pemberton)		306
Hepatitis, Infective, and Portal Cirrhosis (K. Damodaran)	facing	1031	Infant Mortality (W. J. Martin)		438
Hypertension of Renal Origin in Rats following Choline Deficiency in Early Life (W. Stanley Harroft and Charles H. Best)	facing	438	Influenza, Outbreak of, in the Army (D. G. Milne and J. D. Cruickshank)		571
Hypertension Severe Lumbo-dorsal Sympathectomy in (J. C. Harland and F. d'Abreu)	facing	1030	In Prison of Idiocy (Sir Henrice Ogilvie)		648
— with Recovery after Nephrectomy (A. Ian L. Maitland)	inset between 438 and	439	Intermenstrual Pain ("Mittelschmerz") and Time of Ovulation (P. L. Krohn)		801
Jenner, Edward (E. Ashworth Underwood)	facing	439	Intervertebral Disk, Infected, after Lumbar Puncture (L. L. Bromley and others)		132
Lungs, Disseminated Ossification of (H. M. Lawson)	facing	439	Jenner, Edward (E. Ashworth Underwood)		881
Plasmocytoma Solitary of Bone (H. Holden)	inset between 438 and	439	Leukaemia, Chronic Myeloid Unusual Case of (R. A. Russell Taylor)		940
Pneumonia Acute in Beryllium-worker (G. Riddell Royston)	facing	1031	— Lymphoblastic, Treated with Urethane (D. Pullen)		137
Pulmonary Haemorrhage Acute Idiopathic (Leslie Nanckievil)	facing	439	Lightning Strike Death from, with Multiple Injuries (D. A. Skan)		666
— Lesions in Rheumatoid Arthritis (D. G. Lyles and P. N. Swift)	inset between 438 and	439	Liver Needle Biopsy of with Special Reference to Modified Gillman Technique (Richard Terry)		657
Rodent Ulcer (Sir Cecil Wakeley and Peter Childs)	facing	747	Meningitis, Surgical Aspects of (Sir Hugh Cairns)		969
Tuberculous Bronchopneumonia in Childhood Streptomycin Treatment of (R. McLaren Todd)	facing	746	Meningitis, Sir Frederick		913
ILLUSTRATIONS IN THE TEXT			Metatarsus Quintus Valgus (Horace Davies)		664
Abortus Febr. Treatment with Sulphonamides and Blood Transfusion (C. Romer)	1035		Midwifery, Primitive (Kathleen Vaughan)		498
Air Travel Medical Fitness for (Sir Harold Whittingham and others)	603		Mind and the Skin (I. B. Sneddon)		472
Anaemia Aplastic following Neocarphenamine (F. Dudley Hart and J. G. Humble)	1120		Oral Intubation, Aid to (R. R. Macintosh)		28
— Nutritional Macrocytic in Temperate Zones (J. Rubie and C. D. Calnan)	1079		Oro-tracheal Introducer (J. G. Bourne)		586
Anesthetic Apparatus for Infants (D. F. Rees)	111		Osteitis Fibrosa Dissecta (D. J. MacRae)		389
— Simple Portable (R. L. Soper)	405		"Paludrine" (Proguanil), Intravenous (R. N. Chaudhuri and H. Chakravarti)		91
Aneurysm Arteriovenous, Case of (T. J. Danaraj)	1124		Pancreatic Tissue, Heterotopic, in Ileum causing Intussusception (A. A. MacKelfie)		928
Anuria (J. F. Heggie)	151		"Parspec" Oxygen Tent (G. M. Komrower)		454
Bone, John Wardle	728		Placenta, Retained and Post-partum Haemorrhage (H. L. Sheehan)		849
Boyle-Davis Gag Improved Jack for (Terence Banham)	360		Prostatectomy, "Third Ureter" in (A. Wilfrid Adams)		809
Bronchial Suction Catheter (J. L. Griffin)	1000		Psychrometers, Sling and Assmann Nomograms for (J. B. de Veir)		527
Bronchus Left Lower-lobe Rupture of, with Recovery (A. W. Fawcett)	482		P.T.A.P. Present Position (Lewis B. Holt and Guy Bousfield)		695
Cancer of Uterine Cervix Incidence of (R. G. Maliphant)	978		Purves-Stewart, Sir James		1142
Carcinoma, Basal-cell (Rodent Ulcer), with Special Reference to Lesions on Neck, Trunk and Limbs (Sir Cecil Wakeley and Peter Childs)	737		Pyuria, Abacterial producing Bilateral Urteric Stenosis (N. N. Gupta)		1083
Catheters, Grading of (J. A. Carr)	1104		Resuscitator Portable (B. G. B. Lucas)		541
Charcot's Disease of Cervical Spine (Philip E. J. Cutting)	311		Retractors Nested, Set of (Sir Henrice Ogilvie)		864
Diathermy Prong Forceps (A. Wilfrid Adams)	631		Scwell, Sir Sidney		824
Ear-rings, Injury Caused by (C. Somerville-Large)	780		Sex Hormones, Use of, in Therapeutics (P. M. F. Bishop)		165
Electric Automatic Computing Machines (M. H. A. Newman)	1133		Shoulder-harness (H. J. Manockjee Cursetjee)		779
Electrocardiography, Unipolar Lead, Switch and Wiring Circuit for (A. G. Barritt)	770		Skull Closure by Acrylic Plates (E. A. Turner and G. Foster)		619
Embolism, Cerebral, following Contusion of Heart (Gerald Parsons Smith and Denis Williams)	10		Spleen and Splenectomy (Ronald Bodley Scott)		1063
Endometrial Biopsy Curette (Ernst Friedmann)	150		Spriggs, Sir Edmund		286
Enteritis Necroticans due to <i>Clostridium welchii</i> type F (J. Zeissler and L. Rassfeld-Sternberg)	267		Stress Incontinence, Operation for Treatment of (Wilfred Shaw)		1070
Femoral Canal Method of Closing (Arthur Webb-Jones)	351		Suction, Continuous - New Hydrodynamic Method (J. A. Carr)		1136
Fibrillation Thyrotoxic Auricular, Treated with Thiouracil (J. F. Goodwin)	895		Sugar in Urine or Milk, Simple Colorimetric Method for Estimating (Salah el-Dewi)		899
Fracture Cough in Late Pregnancy (J. W. Paulley and others)	135		Surgeon in Industry (Sir H. Ernest Griffiths)		255
— of Ribs (Raymond C. Cohen)	133		Surgeons in Residence New Development at Lincoln's Inn Fields		903
Gas Gangrene, Endogenous Complicating Carcinoma of Colon (A. L. Wyman)	266		Surgical Suction Pump, New (David Aiken)		1094
Gastrectomy Partial Some Aspects of (John Hosford)	929		Televised Operations - Demonstration at Guy's Hospital		909
Haemangiomas and Melanoma (Norman C. Tanner)	110		Temperature Regulation, Normal, in Young Men (Samson Wright)		610
— with Special Reference to Chronic Peptic Ulcer (D. C. Lewin and Sidney Truelove)	383		Terminal Phalanx, "Minor" Injury of (F. I. Powell)		618
Hemolytic Disease of the Newborn Criteria of Severity (P. L. Mollison and Mark Cutbush)	123		Tetany following Removal of Parathyroid Adenoma with Bone Disease Finally Alleviated with Calciferol (Nancy S. Conway)		14
Hale-White Sir William	414		Tonsillitis, Streptococcal, Nasal Carriers and (G. T. Cook and D. Munro-Ashman)		345
Hay-fever Plants British Phenology of (H. A. Hyde)	897		Tuberculosis, Congenital, Case of (J. W. Jordan and H. Spencer)		217
Hepatitis Infective and Portal Cirrhosis (K. Damodaran)	1032		Tuberculous Bronchopneumonia in Childhood, Streptomycin Treatment of (R. McLaren Todd)		741
			— Meningitis Early Diagnosis and Review of Treatment with Streptomycin (J. Rubie and A. F. Mohun)		338
			Typhoid Treated with Chloromycetin (F. Murgatroyd)		851
			Ulcer Peptic, in Glasgow (R. A. Jamieson and others)		298
			Urine Retention of (E. W. Riches)		887
			Vaginal Dilators (W. McKim H. McCullagh)		723
			Venous Thrombosis and Anticoagulants (K. P. Ball and H. O. Hughes)		560
			Woodberry Down Health Centre, Model of L.C.C. Scheme		191

INDEX TO VOLUME I FOR 1949

READERS in search of a particular subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate headings—for example Brain and Cerebral; Heart and Cardiac; Liver and Hepatic; Renal and Kidney; Cancer and Carcinoma; Child and Infant; Gout and Thyroid. Subjects dealt with under various main headings in the JOURNAL have been set out in alphabetic order under their respective headings—for example, "Annotations," "Correspondence," "Leading Articles," "Obituary," "Reviews," etc. Original Articles are indicated by the letter (O).

A

- ASSETT, P. H.: Proguanil in the Sudan 413
- Abdomen: *The Diagnosis of the Acute Abdomen in Rhyme* (Zeta) 2nd ed., 714
- Abdominal pain in cardiovascular disease, 835
- ABEL, John: Breast-feeding, 154
- ASELY, A. M. P. (and others): *Les Facteurs Vasculaires et Endocriniens de L'Affectivité* 141
- Abortion: psychiatric indications for (annotation), 469; correspondence, 590, 683, 727—Death following, 1004
- threatened, 163, 292
- Aborus fever: Treatment of, 194—Treatment with sulphonamides and transfusion (C. Romer), 1035 (O)
- infection treated with "aurocomycin" (J. F. Galone), 1037
- Acarophobia, 472
- Accidents: In the home, 362—Regional orthopaedic accident service (G. R. Girdlestone), 720—Cumulative accidents (medico-legal), 960
- Acetylsalicylic acid, safe dose of 735 1104
- Achylrhoea following gastro-enteritis 196
- Adenoiditis, inheritance of (annotation) 402
- Adenoma, agonal (book review), 1039
- Adenoma, viroform in treatment of, 839
- Aene necrosis, viroform in treatment of, 838
- Acting as an aid to therapy in a neurosis clinic (Maxwell Jones), 756 (O)
- Actinomycosis of rectum and colon, 406
- Adair, Frank: Surgery, radiation and hormones in treatment of breast cancer, 631
- ADAMS, A. Wilfrid: Malignant tumour of small intestine, 283 325—Diathermy progs forceps, 631, 870; correspondence, 780, 911—A "third ureter" in prosta ectomy, 803; correspondence, 958, 1096—Perforation of gastric carcinoma, 868
- ADDIS, Thomas: *Glomerular Nephritis. Diagnosis and Treatment*, 668
- Addison, Viscount (annotation), 1132
- Adenoma: Tetany following removal of parathyroid adenoma with bone disease finally alleviated with calciferol (Nancy S Conway), 14 (O)
- islet-cell, hyperinsulinism due to: A cure, with metabolic studies before and after operation (W. G. Duncan Murray), 521 (O); correspondence, 680
- Adiposity, 421
- ADKINS, G. E.: Cough fracture in pregnancy 681
- ADLER, Alexandra: *Guiding Human Misfits*, 530
- Gerhard: *Studies in Analytical Psychology*, 713
- Adoption Bill, 725
- Adrenaline: The sympathetic transmitter (leading article), 715
- Adrenals: Excretion products of cortical activity, 168
- Age Is Opportunity, 1126
- Ageing: See Genitales
- Aiken, David: Diathermy progs forceps, 780, 1138—New surgical pump, 1094
- AINSWORTH, D. S. (and others): *Individual Sports for Women*, 2nd ed., 1085
- Air travel: Medical fitness for (Sir Harold Whittingham and others), 603 (O) (corrected, 790); leading article, 623; correspondence, 1053
- Health regulations for, 682
- AIN, J.: *A Companion in Surgical Studies*, 945
- AITKEN, J. T.: Rheumatoid arthritis and ruptured tendons, 71
- ALDERSON, E.: Surgery at the Front, 1139
- Alderton, John Michael, obituary notice of, 828
- Alexandre, Charles Braxton Mooring, estate of, 599
- ALEXANDER, D. A.: *Cum Natis*, 1035
- ALLAN, J. G. U. O.: Lymphoblastic leukaemia, 286
- ALLEN, Clifford: The McNaughten rules, 31—Sexual offenders, 547
- F. M. B.: Some practical problems of tuberculosis in childhood, 747 (O)
- F. R. Kinkade: Carcinoma of cervix, 457
- ALGERY
- Algeria: rheumatic fever, and nephritis (leading article) 21; correspondence, 194, 237
- Annual fee, 968
- Fluorescent light, 644
- Food: Testuz for food sensitivity, 463
- Granuloma annulare, 464
- Hay fever: Phenology of British bay fever plants and its significance to allergists (H. A. Hyde), 897 (O)
- Pelvic allergy, 659
- Penicillin sensitivity, 414
- Phyto-ophthodermatitis (H. E. Belfragner), 984 (O)
- Sulobonamides, sensitivity to, 1062
- ALLISON, J. F. T.: Unusual case of twins, 412
- Alopecia areata, 475
- Aluminium monostearate and procaine penicillin: Use in children (John L. Emery and others), 1110 (O), annotation, 1130
- Amblyopia, home-cured tobacco and, 163, 254, 510
- Ambulance transport in rural areas, 1053
- American Review of Soviet Medicine: publication suspended, 678
- Amethocaine hydrochloride: severe toxic effects when used for bronchoscopy (C. A. Jackson), 99 (O); correspondence, 197, 235, 324, 367, 457
- Argino-acids, essential, 689
- Amnesia: Simulated amnesia for identity treated by electrically induced epilepsy (R. E. Hemphill and J. R. Stuart) 938 (O); correspondence, 1097
- Prognosis of hysterical amnesia, 1076
- AMOROSO, E. C. (and others): Research in renal disease, 1007
- AMSLER, M. (and others): *Lehrbuch der Augenheilkunde*, 760
- AMULEE, Lord: Treating the aged sick at home, 545
- Amputation stumps and phantom limbs, painful: Treatment by repeated percussion to stump neuromata (W. Ritchie Russell), 1024 (O); annotation, 1132
- Anaemia: Contraindications to air travel, 604—And diaphragmatic hernia (A. D. Coudonius), 505 (O); correspondence, 1097—Splenectomy in, 1064
- aplastic, following neoparsphenamine (F. Dudley Hart and J. G. Humble), 1120 (O)
- congenital haemolytic: the "haemolytic" crisis (annotation), 228
- nutritional macrocytic, in temperate zones (J. Rubie and C. D. Calnan), 1079 (O)
- pernicious: Glossitis in Addisonian pernicious anaemia: Effect of synthetic vitamins of the B complex (Alexander Brown), 704 (O); annotation, 1088
- ANÆSTHESIA:
- Amethocaine hydrochloride, idiosyncrasy to, 957
- Agoura us: For infants (D. F. Rees), 111—Simple portable (R. L. Soper), 405
- Book reviews, 853, 945, 991
- Boyle-Davis gag, improved jack for (Terence Banham), 360
- Chloroform in labour, 642
- Deaths, anaesthetic, 408
- Explosions (medico-legal), 117; correspondence, 244
- Ludwig's angina anaesthesia in, 31, 153, 324
- Oral intubation, and so (R. R. Macintosh) 28
- Oro-tracheal tube introducer (J. G. Bourne), 556
- Oxford vaporizer in the hands of midwives (P. S. A. Heyworth), 441
- Problems of, 413
- Resuscitator, portable (B. G. B. Lucas), 541
- Sonol: For caesarean section, 114 153, 244, 283, 323, 409, 413—With amethocaine hydrochloride, 194
- Surface, bronchography without, 324, 454
- Tubal intubation, apnoea on, 919
- Anal margin, basal-cell carcinoma (rodent ulcer) in, 738
- ANALGESIA:
- Amethocaine hydrochloride: Severe toxic effects when used for bronchoscopy (C. A. Jackson), 99 (O); correspondence, 197, 235, 324, 367, 457
- Brachial-plexus block, 636
- Budal analgesia, 233
- Childbirth, analgesia in (Parliamentary debates), 459, 549—Statistics, 597—Notes on, 637, 685
- Dental, reaction to, 690
- Surface analgesics: Overdose of, 197, 282, 454—Bronchography and, 324, 413 454, 725
- Trilete: Self administered, 364, 454, 546—In labour: report of R.C.O.G. (F. Neon Reynolds), 537; correspondence, 634, 642—In the Oxford vaporizer, 547
- Anatomy: Atlas of Anatomy, 577, 778, 957—*Ellis's Anatomy*, 667—General anatomy, microscopic anatomy, or histology (H. A. Harris), 769
- ANDERSON, A. F.: Caudal analgesia, 233
- Arthur, obituary notice of, 77
- W. A. D. (editor): *Pathology*, 1126
- ANDREWS, G. W. S. (and J. MILLER): *Penicillin and Other Antibiotics*, 811
- M. C.: Temperature recording, 31
- T. G. (editor): *Methods of Psychology*, 854
- W. H. H. (and B. G. MAGEAITH): Proguanil and falciparum malaria, 545
- Androgens: Technique of administration and dosage, 165—Protein-anabolic effect of, 168—Their effect on fibro-adenosis, 751
- Aneurysm, arteriovenous, case of (T. J. Danaraj), 1124
- dissecting, extra thoracic pain to, 835
- Angina of effort, 879—Pectoris, 421—Extrathoracic pain in, 834
- Animal experiments, 369
- ANNEAR, Doreen H.: Pain in childbirth, 958
- Annotations:
- Abortion, psychiatric indications for, 469
- Academic salary, 403
- Acondroplasia, inheritance of, 402
- Addison Viscount, 1132
- Antihyrotic factor of liver, 145
- "Antryade," 63
- Arsenical toxicity, 25
- Arterius, temporal, 627
- Association, British Medical: Foreign corresponding members, 553
- Australia's declining birth rate, 459
- Bladder distension, autonomic responses to, 859
- Bone grafts, 230
- and the engineer, 449
- Breast, disease of, 108
- Cancer: Morbidity, 535—Of cervix, 996
- Chloramphenicol, syn bute (chloromycetin), 672
- And cholera, 950
- Cirrhosis and colitis, 189
- Clubbing of fingers, 223
- Dawson Williams Memorial, 450
- Death at birth, 64
- Disease prevention, world programme of, 65
- "Dogger Bank" ich, 358
- Dupuytren's contracture, 673
- Electronic brain, 1039
- Embolism, arterial, 318
- Enjoying the country, 535
- Erythema nodosum, aetiology of, 183
- "Eye bank" established, 1131
- Filariasis, prophylaxis of, 145
- Fish poison ng, 317
- Fractures: Cough fracture of the ribs, 145
- Haemochromatosis, excretions, 534
- "Haemolytic" crisis 228
- Hemostatics absorbable 1044
- Heart: Brus re of, 23—Pregnancy and heart disease 78—Cardiac pain in women, 490
- Congenital heart disease: a new approach, 717
- Heat and blood flow, 230

- Annotations (continued):**
 Hepatitis of hyperthermia, 279
 Heroin, dangers of 107
 Honours New Year, 63—The King honours surgeon 583—The King's doctors honoured 859—Birthday, 1090
 Hormones and enzymes, 627
 Hospital Lock 948
 — patient aftercare of, 358
 Hospitals Association British, 718
 House warming 25
 Hygiene behind the bar, 765
 Hypertensinase 449
 Industrial wastes 24
 Influenza Is influenza epidemic? 448
 Insulin Production of, 146—Mode of action of 402
 Intervertebral disk lesions experimental, 1043
 Jaundice in pregnancy 278
 Joslin Dr Elliott P 1090
 Laboratory tests reliability of 766
 Lighting, prophylactic artificial 277
 Liver antihistotoxic factor of 145
 Lupus vulgaris chemotherapy in 316
 Master minds 23
 Meat inspection 146
 Melanoma of the choroid 766
 Meningitis tuberculous 357
 Microscopy advances in 581
 Mileage fund increase of 109
 Norton's metatarsalgia 858
 National Formulary 278
 Neomycin 765
 Noma treatment of 816
 Nuffield Hospitals Trust, 318
 Osteoid osteoma 403
 Pain in phantom limbs 1132
 Penicillin procaine 1130
 Pertussis treatment of 24
 Phaeochromocytoma 1131
 Physical training adaptations in 190
 Plague in Calcutta 1089
 Pneumonia present day 108
 Polyneuritis acute infective 950
 Posture and the circulation 859
 Pregnancy And heart disease 278—Jaundice in 278—Stillbirth therapy in 814—And the thyroid gland 996
 Prematurity risks of 357
 Prostatic hypertrophy benign, 1131
 Radiation and lymphocytes 816
 Respiration artificial and the circulation, 583 — paradoxical control of 908
 Rheumatic fever prevention of recurrences, 279
 Rheumatism New centres, 188—Climate and 1045
 Rheumatoid arthritis, muscle biopsy in, 815
 Ringworm of scalp 536
 Rorschach test doctors take the, 1090
 Royal Society 997—Fellows of 536
 Safety in cars 719
 Sickbed treated in hospitals, 109
 Skin Protection of, from irritants 277—Treatment of pyococcal dermatoses, 858
 Specialists' contracts 908
 Staphylococci resistant 64
 Streptomycin and the labyrinth, 1043
 Syringe sterilization, 317
 Testosterone as a treatment for prematurity 189
 Tongue sore 1088
 Too solid flesh, 857
 Town planning and health, 138
 Toxoplasmosis, 718
 Tropical medicine jubilee, 582
 Tuberculosis Para-aminosalicylic acid in, 190—Streptomycin in, 907—Necropsies and tuberculous infection, 907
 United States of America: Proposed health service, 764
 University students, selection of, 949
 Uveal pigment, hypersensitivity to, 229
 Vena cava inferior ligation of 671
 Venereal diseases Treatment of gonococcal vulvo-vaginitis, 719—Gonorrhoea in war, 815—Medico-social work in V.D. clinics, 1044
 Vitamins Pressure cooking and, 582—Tongue in vitamin B deficiency, 672—Vitamin E, 949
 Voluntary societies and the State, 1045
- Anopheles eradication in Cyprus (Horace Shelley and Mehmed Aziz) 767**
 Antibiotics effect of on *Pf. whitmori*, 310
 Antibody formation, 421
 Anticoagulant drugs Therapeutic action of, 26; correspondence 156—Venous thrombosis and (K. P. Ball and H. O. Hughes), 560 (O); leading article, 579
 — therapy, 463
 Antihistamine drugs, 588—In treatment of acute nephritis (John Craig and others) 6 (O); leading article, 21; correspondence, 194, 198—In treatment of nausea and vomiting due to streptomycin (J. R. Bignall and John Crofton), 13 (O)—And erythroblastosis 194
 "Anticyde" (annotation), 63—Use in Africa, 250
 Anuria, 151, 282, 453, 548—Treatment of, 236, 453—After sulphamides, 555
 Aorta: Pain in embolic or thrombotic occlusion, 835
 Aphonia, hysterical, prognosis of, 1076
 Apley, John (and John M. Naisbitt): *The Clinical Apprentice*, 141
- Apnoea on tracheal intubation, 919**
 Appleton, A. B. (and others): *Surface and Rodological Anatomy*, 3rd ed., 51
 Appointments, 79, 91, 120, 204, 205, 252, 329, 330, 376, 419, 461, 508, 549, 552, 553, 600, 641, 642, 688, 734, 828, 830, 879, 918, 966, 1016, 1060, 1148
 Arab refugees, 590
 Arcus senilis, 736
 Argyria 1018
 Arms, basal-cell carcinoma (rodent ulcer) on, 739
 Armstrong, Cedric Whitfield, obituary notice of 458
 — Harold K.: Routine medical examinations, 1140
 — Miss P.: Child care, 629
 ARNAUD Jacques (and others): *L'Exploration de la Fonction Respiratoire*, 1125
 ARNOTT, W.: Spontaneous amputation of cervix 157
 Arsenical toxicity (annotation) 25; correspondence 284
 Arteries: Case of ruptured spleen and torn superior mesenteric artery (Walter Thompson), 183
 Arteriosclerosis: And essential hypertension, 793—Chemical sympathectomy for, 1028
 Arteritis, temporal (annotation), 627
 Artery, mandibular (inferior dental), ligation of (H. P. Pickering), 527
 Arthritis, liver infections in 12
 — osteo-, treatment of, 917
 — rheumatoid: And ruptured tendons, 71—Pulmonary lesions in (D. G. Leys and P. N. Swift) 434 (O)—A new compound E treatment (leading article), 812; correspondence, 1004, 1007, 1050—Muscle biopsy in (a notation), 815—Treatment by vasodilatation, 867—Vaccine treatment of, 867
 Arthroplasty, cup, 509
 Artificial insemination and legitimacy, 550; correspondence 590
 — limbs, 1012
 Ascaris, pig as vector of, 737, 1150
 ASCHAN G. K.: *Aero-otitis Media and Aero-sinusitis*, 578
 ASCOLI, Maurizio: Erythrocytic forms of malaria parasite, 237
 ASHER, Richard: Specialization, 587
 ASHLEY, Anne: Adoption of children, 725, 1098
 Asphyxia, lobeline and, 254
 Association, American Medical: *Interns' Manual* 141
 — Public Health: *Diagnostic Procedures for Virus and Rickettsial Diseases*, 352
 — British Hospitals (annotation), 718
- ASSOCIATION, BRITISH MEDICAL:**
 Foreign Corresponding members (annotation) 583
 Leeds Branch: Retention of urine (E. W. Riches), 887 (O)
 Libel actions by B.M.A. settled, 36
 Proceedings of the Annual Meeting, 1948, 530, 620
 Psychological Medicine Group: Mental hospital records, 538
 Trust Fund (leading article), 354
- Association, British Paediatric: Visit of Swedish paediatricians, 862**
 — of the British Pharmaceutical Industry: Annual dinner, 965
 — of Clinical Pathologists: Scientific meeting, 407
 — Diabetic: Diabetic fertility, maternal mortality, and foetal loss rate (J. A. L. Gilbert and D. M. Dunlop), 48 (O)—Pregnancy complicated by diabetes mellitus (H. H. Fournier Barnes and M. E. Morgans), 51 (O); leading article, 62
 — Family Planning, 790—Medical conference, 540
 — Hospitals Savings: Retirement of general secretary, 526
 — of Independent Hospitals: Formation and objects of, 829
 — Irish Medical Schools and Graduates: General meeting 917
 — Leeds Regional Psychiatric: Inaugural meeting, 363
 — of Medical Records Officers: New journal starts, 964
 — Medical, of South Africa: 37th Annual Congress, 197
 — National, for Mental Health: Conference, 628
 — Royal Medico-Psychological: Psychiatric aspects of infant feeding (Richard H. Dobbs), 863
 — President elect ed, 1014
 — to air travel, 605—Treatment of, 736
- Athlete's foot, 164**
 ATKINS, H. J. B.: Cancer of breast, 632—Effect of endocrines on fibro-adenosis, 750 (O); correspondence, 911
 ATKINSON, H. F. (and others): Relation of *Staph. pyogenes* to dental caries 54 (O)
 Atrophy, progressive muscular, testosterone in, 206
 "Aurocymycin": Leading article on, 763—Case of abortus infection treated with (J. F. Galpin), 1037
- AUSTIN, R. G.: Aids to Physical Chemistry**, 2nd ed., 578
 Australia: The N.H.S. Act in, 275—Decline in birth rate (annotation), 459
 Awards, 161, 203, 329, 552
 AYER, A. A.: *The Anatomy of Semprothecus Entellus*, 854
 Ayer's disease, silicosis, and pulmonary blastomycosis (Sir Henry Tidy), 977 (O)
 AYMAN D.: *Arterial Hypertension* 530
 AZIZ, Mehmed (and Horace Shelley): *Anopheles eradication in Cyprus*, 767
- B**
- BACHARACH, A. L.: Nutrition and fertility, 543**
 BACHMAN, George W. (and Lewis Merian): *The Issue of Compulsory Health Insurance*, 313
 BACHMEYER A. C. and HARTMAN, G. (editors): *Hospital Trends and Developments, 1940-46*, 578
 Back, basal-cell carcinoma (rodent ulcer) on, 737
- BACTERIOLOGY**
 Book reviews, 397, 992
Clostridium welchii in endogenous gas gangrene complicating carcinoma of colon (A. L. Wyman), 266 (O); leading article, 276—*C. welchii* infection of the eye (Jean Stuart), 272—*C. welchii* and gas embolism, 292
 — type F: Enteric necroticisms due to (J. Zeissler and L. Rassfeld-Sternberg), 267 (O) (corrected 332); Toxins of (C. L. Oakley), 269 (O); Recovery of, from preserved cultures (C. Dieckmann), 270 (O); Origin of infection (E. Hahn), 271 (O); Occurrence in normal stools (E. Hahn), 271 (O); leading article, 276
 "Coliform," use of the term, 820
 Friedlander's bacillus, rhinitis caused by, 116
Pleurella whitmori: Afebrile cases of melioidosis (R. Green and D. S. Mankikar), 308 (O)
 Staphylococci in the newborn: their coagulase production and resistance to penicillin and streptomycin (G. Martyn), 710 (O)
 — penicillin-resistant frequency of (A. Vourekla and W. Howard Hughes), 395 (O); correspondence 591, 725, 1002
 — resistant (annotation), 64; correspondence, 151
Staph. pyogenes: Relation of, to dental caries (E. Matthews and others), 54 (O)—Penicillin-resistant *Staph. pyogenes*: their carriage in healthy adults (T. D. M. Martin and J. E. M. Whitehead), 173 (O)
 Streptococcal tonsillitis nasal carriers and (G. T. Cook and D. Munro-Ashman), 345 (O); leading article, 355
 Streptococcus: continuing streptococcal disease (leading article), 144; correspondence, 241
 T. duttoni, transmission of, 501
- Bacteriophage and antibiotics (A. Gratta), 860, 11**
 BAILEY, Hamilton: *Demonstrations of Physical Signs in Clinical Surgery*, Part III, 11th ed., 225; Part IV, 11th ed. 668—(And R. J. McNeill Love): *A Short Practice of Surgery*, 8th ed., 353, 668
 BAIN, CURTIS (and Terence East): *Recent Advances in Cardiology*, 4th ed., 184
 — W. A.: Antihistamine drugs, 588—(And J. L. Broadbent): Death following neostigmine, 1137
 BALL, K. P.: Vitamin E in heart disease, 409—(And H. O. Huoties): Venous thrombosis and anticoagulants, 560 (O); leading article, 579
 BALLANCE, G. A.: Early diagnosis of tuberculosis, 235
 BALLANTINE, Duncan (and F. L. ROBERTSHAW): Spinal anaesthesia in caesarean section, 153
 Ballet-dancing, 463
 BANHAM, Terence: Improved jack for Boyle-Davis gag 360
 Banitt's syndrome, splenectomy in, 1069
 BARBER, Mary: Resistant staphylococci, 151
 Barbiturates, prescription of, 195, 325, 728—Excretion of, 377—"Benadryl" and, 464
 BAROOR, A. Buchanan (and others): Medical fitness for air travel, 603 (O) (corrected, 790); leading article, 623; correspondence, 1053
 Barclay, Alfred Ernest, obituary notice of, 823
 — Gordon A.: Infected hands treated with systemic penicillin, 175 (O); leading article, 187; correspondence, 455, 499
 BARKER, E. A. (and S. G. LEE): Taking children's temperatures, 284
 — G. B.: Injuries to superior longitudinal sinus, 1113 (O)
 BARLOW, Anne L.: Curare in treatment of tetanus 31
 BARNARD, W. G. (and others): An unfortunate precedent, 774
 BARNES, A. E. (and others): *National Formulary* 452
 — Josephine: Minor gynaecological conditions, 540—*Gynaecological Histology*, 902
 BARNES, H. H. Fournier (and M. E. MORGANS): Pregnancy complicated by diabetes mellitus, 51 (O); leading article, 62

- SARRETT, N. R. (and Raymond DALEY): Method of increasing lung blood supply in cyanotic congenital heart disease, 699 (O); annotation, 717
- SARRETT, A. G.: Switch and wiring circuit for unipolar lead electrocardiography, 770
- SAITFELD, S. P.: Diabetic coma, 724
- SALTON, Betsy: *And Now to Live Again* 313
— Mary (and others): *Sterility and Impaired Fertility, Pathogenesis, Investigation, and Treatment*, 2nd ed., 352
- SARRETT, H. H.: An unfortunate precedent, 819
- SATLOW, A. A.: Fat intolerance, 602
- BATTY, R. J.: *Enuresis or Bed-wetting* 2nd ed., 225
- BAUER, Louis Hopewell: *Private Enterprise or Government in Medicine*, 104
- BAUWENS, P.: Hear and blood flow, 367
- BAXTER, V. Torry: Anaesthesia in Ludwig's angina, 153
- BAWELL, L. E. (and F. R. WINTON): *Human Physiology*, 3rd ed., 621
- 3 C C. vaccination, 736
- BEACI, Frank A.: *Hormones and Behaviour* 4
- Survey of Interrelationships between Endocrine Secretions and Patterns of Overt Response 484
- BEATTIE, A. Davis: Physiological basis of vagotomy, 607 (D); correspondence, 726
- J. M. (and W. E. C. DICKSON): *A Textbook of Pathology, General and Special* vols. 1 and 2, 5th ed., 761
- N.: Spinal anaesthesia and caesarean section 114; correspondence, 194, 283, 323
- W. M.: Emergency abdominal operations 631
- BEAUMONT, G. E.: *Medicine, Essentials for Practitioners and Students*, 5th ed., 443
- BECKLE, H. C.: *Psychiatry*, 811
- Bees-stings, 1061
- BECK, *The 1948 Year*, 53
- BEET, E. *ibid.*, 501
- BEETHAM, Kenneth W.: Treatment of basal-cell carcinoma, 955
- BEGER, H.: *Leitfaden der bakteriologischen Trinkwasseruntersuchung*, 2nd ed., 60
- BEIL, Howard: Occurrence of convulsions during treatment with caliciferol, 139
- Belladonna liniment causing mydriasis, 194
- BEJLINGSER, H. E.: Phyto-photo-dermatitis, 984 (O)
- "Benadryl" and barbiturates, 464
- Bequest-Jones, William James, obituary notice of, 150
- BENTIN, W.: *Frauenheilkunde*, 578
- BENTLEY, F. J.: Tuberculosis in the family, 365
- BERO, C. Charles: Physiology of orgasm, 868
- R. E.: *Pollis and its Problems*, 811
- BERGHOFF, E.: *Max Neuburger*, vol. 3, 621
- Bertin, Notes on the Blockade, 1948, 829
- BERNE, E.: *The Mind in Action*, 1126
- BERNHUM, Bertram M.: *A Surgeon's Domain*, 992
- Berry, Noel William, estate of, 204
- R. J. A.: Tribute to C. C. Easterbrook, 114
- W. T. C. (and others): Diet, haemoglobin values, and blood pressures of Olympic athletes, 300 (O); corrected, 378
- BEHRMAN, D. S. (and others): Chemoprophylaxis of experimental filariasis in cotton-rat, 130 (D); annotation, 145
- BEST, A. M.: Proguanil and blackwater fever, 324
- Charles H. (and W. Stanley HARTKORT): Hypertension of renal origin in rats following more than one week of choline deficiency in early life, 423 (D); leading article, 435
- BETTELLE, F. R.: *Skin Diseases in General Practice*, 1126
- BEVERIDGE, J. B. (and others): Diet, haemoglobin values, and blood pressures of Olympic athletes, 300 (D); corrected, 378
- Bejer Memorial Lecture: In praise of idleness (Sir Henrice De Linc), 145 (O)
- Chai, Kasagoro Somanishi, obituary notice of, 77
- CHALL, J. R. (and John CROFTON): Antihistamine drugs in treatment of nausea and vomiting due to streptomycin, 13 (O)
- Chilharzias: Ayerza's disease, silicosis, and pulmonary hilarziasis (Sir Henry Tidy), 977 (O)
- CHICKERST, C. D.: Tokoplasmosis, 313
- CHINNE, George G.: Strain and paralysis poliomyelitis, 589
- Chromochromy: Book reviews, 483, 1040
- Chology: Tracer elements in biological research (F. A. Paneth), 359
- Chopsy: Needle biopsy of liver, with special reference to a modified Gullman technique (Richard Terry), 637 (D); correspondence, 820
- CHICH, C. Albin (editor): *Emergencies in Medical Practice*, 224
- CHICHER-REY, H.: *Essen und Wissen*, 2nd ed., 484
- CHIKHAUSER, H.: *Fortschritte der Tuberkuloseforschung und Behandlungen*, vol. 2, 854
- CHISHAM, P. M. D.: Use of sex hormones in therapeutics, 165 (D)
- CHLACKER, C. P.: Mental stress in the future, 406
- Mental hospital records, 538
- CHLACK, W. K.: *Malaria, With Special Reference to the African Forms*, 810
- Blackley, Frederick John, estate of, 641
- Blackwater fever, proguanil and, 324
- BLACKWOOD, William (and others): *Atlas of Neuropathology* 944
- Bladder: Autonomic responses to distension of (annotation), 859
- Blake, Valero me Henry, obituary notice of, 247
- BLASMEYER, Noro American, 859
- Blaney, William, obituary notice of, 116
- Blindness, prevention of: Book review, 60—Award for, 687
- hysterical, prognosis of, 1076
- BLOOD:
- Blood-clot and haemostasis 878
- Circula ion: Artificial respiration and (annotation), 583—Posture and (annotation) 859
- Cord blood of normal infants and those with haemolytic disease, 123
- Flow, beat and (annotation), 230; correspondence, 367
- Haemoglobin: Values in normal infants and in those with haemolytic disease 125—Diet, haemoglobin values, and blood pressures of Olympic athletes (W. T. C. Berry and others), 300 (O); corrected, 378
- Leukemia: Contradictions to air travel, 604—chronic myeloid, unusual case of (R. A. Russell Taylor) 940 (O)
- lymphoblastic, treated with urethane (D. Pullen), 137 (D); correspondence, 286
- Levels, meat ration and: investigation of Indian soldiers in Persia and Iraq, 1944 (Geoffrey F. Taylor and others), 219 (D)
- Luminizing industry: Blood changes in luminizers using radioactive material (Eibel Brunning), 421 (O); correspondence, 546
- Lymphocytes, radiation and (annotation) 816
- Omentis fibrosa disseminata, blood changes in, 391
- P factor: Agglutinin anti-P in pregnancy: report on 2 cases (I. Dunsford), 15 (O)
- Plasma: Relative viscosity in rheumatic disease, 818
- Pressure: Alternating orthostatic hypotension and hyperthyroidism of probable hypophysial-hypothalamic origin (F. Vega Diaz), 169 (O)—Diet, haemoglobin values, and blood pressures of Olympic athletes (W. T. C. Berry and others), 300 (O); corrected, 378—High frequency diathermy for hypertension, 331—Hypertension of renal origin in rats follows less than one week choline deficiency in early life (W. Stanley Hartkort and Charles H. Best), 423 (O)—Severe hypertension with recovery after oophorectomy (A. Jan L. Maudland), 426 (O); leading article, 445—Readings at altitude, 789—Hypertens on a stress disease, 650—Pathogenesis of essential hypertension (F. H. Smurk), 791 (O); leading article, 813—Lumbo-dorsal sympathectomy in severe hypertension (J. C. Harland and P. d'Abreu), 1019 (O)
- Prothrombin: Estimation of, 156—Technique for cootent estimations, 564
- Rh factor (Alexander S. Wiener), 404—And pregnancy, 42, 164, 464—Rhesus testing in pregnancy, 155
- Supply: Influence on peptic ulcer, 603
- Transfusion: Severe renal failure after administration of apparently compatible blood (A. C. Buchanan and John Wallace), 660 (D); correspondence, 870, 1002—To CO poisoning, 963—Treatment of abortion fever with sulphonamides and (C. Romer), 1035 (D)
- BLOOM, W. (editor): *Histopathology of Irradiation from External and Internal Sources*, 992
- BLOMBERG, E. F.: Vaccine lymph, 1018
- Board, Central Midwives: Annual report, 93—Election of chairman and vice-chairman, 733
- Conjoint in Scotland: Pass lists, 505
- Boeck's sarcoidosis, 510
- BOGERT, L. J.: *Nutrition and Physical Fitness*, 992
- BOLAND, Tim: Classical caesarean section, 242—Obstetrics in Great Britain and Ireland, 633
- BOLDEN, H. E. A. (and others): An unfortunate precedent, 774
- Bone disease: Tetany following removal of parathyroid adenoma with bone disease: finally alleviated with calciferol (Nancy S. Conway), 14 (D)
- grafts (annotation), 230
- BONE, John Wadde, obituary notice of, 723
- Bones and the engineer (annotation), 459
- BONSER, Georgina M.: Melanin-forming epidermal tumours, 407
- BOULET, P.: *Venus de Serpents et Amurens*, 20
- BORING, E. G. and others (editors): *Foundations of Psychology*, 992
- Borland, Hugh Howe, obituary notice of, 247
- BORG, W. D.: *Population Trends and Policies*, 1126
- BOSTOCK, Michael: Second thoughts on proguanil, 192
- BOUCHER, C. A.: Accidents in the home, 362
- Boulton, Norman John, estate of, 1059
- BOURKE, J. D.: Caudal analgesia, 233
- BOURNE, Geoffrey: Marxist genetics, 28, 363—An introduction to *Cardiology*, 353—An unfortunate precedent, 955
- J. G.: Oro-tracheal tube introducer, 556
- W. A.: Amethocaine hydrochloride, 367—An unfortunate precedent, 1052
- BOUSFIELD, Guy (and Lewis B. HOLY): P.T.A.P. The present position, 695 (O); leading article, 715 (corrected, 963)
- BOUTOUKINE-YOUNG, H. J.: Nephrocalcinosis infantum with hyperbromatemia acidosis, 181 (O)
- BOWEN, D. H.: Expulsion of vaccine lymph from capillary tubes, 818
- BOWER, G. H. (editor): *Shaw on Vivisection*, 1126
- BOWLEY, Amatha: Toilet training of children, 662
- A. H.: *The Natural Development of the Child*, 3rd ed., 225—Modern Child Psychology 854
- BOYDE, H. C.: Health centres, 496
- BRADFORD, E. J. G.: Illness in general practice, 410
- Mark: Ambulance transport in rural areas, 1053
- BRAID, Frances: Disteis fibrosa disseminata, 500
- Brain: Approach to frontal lobe, 193, 285, 411, 780, 913—Spontaneous subarachnoid haemorrhage in infancy due to angioma of cerebellum (P. T. Bray and W. Davies), 481—Traumatic changes in, after delivery (B. Brumer), 542
- electronic (annotation), 1059
- tumours, contraindications to air travel, 604
- BRAY, R. T.: Treatment of basal-cell carcinoma, 911
- BRAMWELL, J., Crighton (and others): An unfortunate precedent, 774
- BRANSBY, E. R. (and others): Diet, haemoglobin values, and blood pressures of Olympic athletes, 300 (O); corrected, 378
- BRASH, J. C.: *Cunningham's Manual of Practical Anatomy*, vol. 1, 11th ed., 714
- BRATER, E.: Diparol in Parkinsonism, 821
- BRAY, P. T.: Diagnosis of tuberculous meningitis, 235—(and W. DAVIES). Spontaneous subarachnoid haemorrhage in infancy due to angioma of the cerebellum, 481
- BRAYBROOK-NORMAN, Jobo C.: Vaccine lymph, 959
- Bread: Mineral oils in, 73—Vitamins in, 685
- Bread: Plasma-cell mastitis case with bilateral involuement (Max Cutler), 94 (D): Two common non-malignant conditions: clinical features of cystic disease and pain syndrome (David H. Patey), 96 (O); annotation, 103; correspondence, 194, 363 545—Effect of endocrines on fibroadenosis (H. J. B. Atkins), 750 (O); correspondence, 911
- Bread-feeding, 1140—Book review, 59—correspondence, 72, 154
- BREASTS: Sex hormones and, 168—Painful breasts due to subilestrol, 1103
- BREED, Robert S. (and others): *Bergey's Manual of Determinative Bacteriology*, 6th ed., 397
- BRENTANO, L.: *Ways to Better Hearing*, 761
- BREYER, J. (and L. NEGRE): *Vaccination par le B.C.G. par Scarifications Cutanées*, 2nd ed., 620
- BRYAN, A.: *Eden and Holland's Manual of Obstetrics*, 5th ed., 398
- BRIDGES, W. G.: Ocular filariasis, 500
- BRILL, A. A.: *Lectures on Psychoanalytic Psychiatry*, 140
- British Journal of Urology: editorial charges, 787
- Pharmacopoeia, 1948, correspondence, 452
- BROADBENT, J. L. (and W. A. BAIRN): Death following neostigmine, 1137
- Walker: Antihistamine drug treatment of acute aphthous, 193
- BROCK, R. C.: Bronchography and surface analgesia, 454
- BRODAL, A.: *Neurological Anatomy in Relation to Clinical Medicine*, 484
- BROMFIELD, R. J.: Reliability of laboratory tests, 112
- Bromidrosis 41
- BROMLEY, L. L. (and others): Infected intervertebral disk after lumbar puncture, 132 (O); correspondence, 283
- Bronchial suction catheter (U. L. Griffin), 1000
- Bronchitic conditions: Contraindications to air travel 605
- Bronchography and surface analgesia, 324, 413, 454.
- Bronchopneumonia, tuberculous, in childhood streptomycin treatment of (R. McLaren Todd), 741 (D); leading article, 764
- Bronchospasm: Severe toxic effects of amethocaine hydrochloride when used for bronchospasm (C. A. Jackson), 99 (D); correspondence, 197, 235, 324, 367, 457
- BROOK, J.: Case of rupture of left lower-lobe bronchus with recovery (A. W. Farwell), 482
- BROOKE, C. O. S. B.: Health centres, 496
- E. B.: Treating the aged sick at home, 408
- (and J. P. WEDDALL): Economical use of hospital bed and of nurse, 491
- BROOKS, W. D. W. (and others): An unfortunate precedent, 774
- BROSTER, L. R.: Steroid metabolism and frontal lobes 14
- BROWER, B.: Traumatic changes in brain after delivery, 542
- BROWN, Alexander: Glissitis in Addisonian pernicious anaemia: effect of synthetic vitamins of the B complex, 704 (D); annotation, 1083—Stomatocoele and glossitis after ileocecostomy: effect of synthetic vitamins of the B complex, autolysed yeast and liver extract, 1073 (O); annotation, 1058

- BROWN, C. Metcalfe: Research in public health, 998
 — Marjorie: Psychiatric social workers, 629
 — R. Christie: Tribute to R. L. Dodds, 245—*Reproduction and Survival*, 991, correspondence, 1098
 BROWNE Denis: Rights of inventors, 366
 — O'Donel: *A Manual of Practical Obstetrics* 2nd ed., 853
 BROWNING, Ethel: Blood changes in luminizers using radioactive material, 428 (O); correspondence, 546
 Bruce John, estate of, 641
 — Robert Tennant, obituary notice of, 684
 Brucella infection, persistent symptoms of, 254 1104
 Bruce-Porter, Sir Henry Edwin Bruce, estate of, 40
 BRYCE-SMITH, R.: Overdose of surface analgesics 454
 BUCHAN, A. C. (and John WALLACE) Severe renal failure after administration of apparently compatible blood, 660 (O); correspondence, 870, 1002
 BUCHANAN, A. R.: *Functional Neuro-Anatomy*, 313
 — J. C. R. (editor) *A Guide to Pacific Island Diets*, 668
 — M. F. G. (and others) Instruction of medical student in paediatrics—an insight into family practice 601 (O); correspondence, 1006 1138
 Buck Arthur Herbert, obituary notice of, 637
 Buddica wood burning 831
 BULL, G. M. Renal lesions associated with pregnancy 281
 Bullmore, Edward Augustus, estate of, 599
 Burges Richard estate of, 918
 BURNFORD, Julius: Warning to hospitals, 1150
 Burns, mustard gas Treatment of skin lesions caused by mustard gas (D. C. Sinclair), 476 (O)
 — superficial treatment of, 643
 BUROS, O. K. (editor) *The Third Mental Measurements Yearbook* 811
 BURROUGHS, A. E. Home-cured tobacco and amblyopia, 510
 BURROW, T. *The Neurosis of Man*, 714
 BURTON-BROWN, Jean R. C. (and John A. SHEPHERD) Rupture of liver associated with parturition 941 (O)
 BUTTERS, Andrew G. Partial gastrectomy 1097
 BYRD, O. E. *Health Instruction Yearbook* 668
 BYRNE, Kevin Cause of rib fractures, 832

C

- CADBURY, H. J. *George Fox's Book of Miracles*, 398
 CADMAN Ewan F. B. Bronchography without surface anaesthesia 324
 Caesarean section See Obstetrics
 CAIGER Herbert (and L. Haden GUEST): The deaf-blind, 775
 CAIRNS Sir Hugh Surgical aspects of meningitis, 969 (O); leading article 993
 Calciferol Tetany following removal of parathyroid adenoma with bone disease finally alleviated with calciferol (Nancy S. Conway), 14 (O)—Occurrence of convulsions during treatment with (Howard Bell), 139
 Calcium chloride and gluconate, intravenous, 735
 Calculi in a paraplegic, 377, 644
 CALDWELL, N. *General Elementary Science for Students of Chirapady* 398
 CALMAN C. D. (and I. RUBIN) Nutritional macrocytic anaemia in temperate zones, 1079 (O)
 CALVERT Walker Dystocia after amputation of cervix 58 1097, correspondence, 157, 241, 501, 823—Ectopia vesicae, 282
 CAMBRAY, P. G. (and G. G. B. BRIGGS) *Official History of the War Organization of the British Red Cross Society and the Order of St John of Jerusalem* 945, leading article, 947
 Cameron, Donald Hugh estate of, 1059
 — H. C.: *Joseph Lister The Friend of Man*, 313
 — John, estate of, 120
 — Norman: *The Psychology of Behaviour Disorders. A Biopsical Interpretation*, 901
 CAMPBELL, A. M. G. Disseminated sclerosis, 1052
 CANCER
 Basal-cell carcinoma (rodent ulcer), with special reference to lesions on neck, trunk, and limbs (Sir Cecil Wakeley and Peter Childs), 737 (O); 747; correspondence, 865, 911, 955, 1001
 Blood test for cancer, 733
 Breast: Long-term research 632—Carcinoma of male breast 196
 Cervix, carcinoma of, 58, 156, 457, 501, 823, 978, 996 1097
 Colon Intussusception due to carcinoma of, 195
 — Endogenous gas gangrene complicating carcinoma of (A. L. Wyman), 266 (O); leading article, 276
 Gastric carcinoma Perforation as first manifestation (Louis A. Ives), 758, correspondence, 866
 H II in malignant disease 958
 Ileus, chronic, caused by malignant invasion of posterior abdominal wall (R. S. Handley), 891 (O)
 Intestines: Malignant tumour of small intestine (F. J. C. Matthews), 138, correspondence, 283, 325
 Lung: Deep x rays for oat-cell carcinoma, 643
 Morbidity (annotation), 535
 Pelvis, malignant deposit in 968
 Propagation of mouse tumours by means of dried tissue (W. E. Gye), 511 (O); leading article, 531; correspondence, 632 679, 1052
 Semina testis, subcutaneous and, 690
 Sex hormones and cancer, 165
 Stomach, resectable carcinoma of, 772, 1096
 Uterine cancer, parity and 789
 — cervix, incidence of cancer of (R. G. Mahabir), 978 (O); annotation, 996; correspondence, 1095
 Cancer oris Among African natives (Donald Mackay), 223; correspondence, 367—In an infant, 1051
 CARLAN, J. P.: Creeping eruption and intestinal strongyloidiasis 396
 Carbuncle of kidney 456
 Carcinoma, See Cancer
 Carcinac, See Heart
 Cardiovascular diseases: Contraindications to air travel 604—Extrathoracic pain in (J. L. Lovibond), 833 (O)
 Care and skill (leading article), 669
 CARLOW Sir Ernest Rock (and J. Paterson ROSS): *British Surgical Practice* vol. 4, 313; vol. 5, 761
 — Esther: Tuberculous at the crossroads, 165
 CARLSON, N. R.: Antimicrobial dermatitis in infants, 378
 CARR, J. A.: Grading of catheters, 1104—Continuous suction, a new hydrodynamic method, 1136
 CARREL, A.: *Man the Unknown* 104
 CARROLL, Denis (and J. D. W. FRASER): A clinic under the N.H.S., 366
 Cars safety in (annotation), 719
 CARTER, A. Bartham Prognosis of certain hysterical symptoms, 1076 (O)
 Catalepsy, 4
 CATES, H. A.: *Primary Anatomy*, 811
 Catheters: Grading of, 879, 1104—Bronchial suction (J. L. Griffin), 1000—Sterilizing gum-elastic catheters 1103
 CAWADIAS, A. P.: An unfortunate precedent, 910
 Cawston, Frederick Gordon, obituary notice of, 871
 Central nervous system, senile deterioration of (Trevor H. Howell), 56 (O); correspondence, 155
 Cephalin-cholesterol flocculation test, 1104
 Cervix See Gynecology
 Chadborn Charles Nugent, obituary notice of, 458
 CHAKRAVARTI, H. (and R. N. CHAUDHURI): Intravenous "paludrine" (proguanil), 91 (O); leading article 106; correspondence, 192, 324, 775, 956
 CHALMERS, A. K. (and others): Diet haemoglobin values, and blood pressures of Olympic athletes, 300 (O) (corrected, 378)
 — J. A.: Purpura complicating pregnancy, 197—Dried plasma for domiciliary midwifery, 1139
 — J. D. (and others): Antihistamine drug treatment of acute nephritis, 6 (O); leading article, 21; correspondence, 194, 198, 237
 CHAMBERLAIN, G. B.: Case of spontaneous rupture of uterus, 483
 CHANORA, M.: Water-potassium test in epilepsy, 880
 Chapman, Edward Seymour, obituary notice of, 415
 CHAPPELL, Gwenneth M. (and Audrey M. HAMILLTON): Effect of pressure cooking on vitamin C content of vegetables, 574 (O); annotation, 582; correspondence, 822, 958
 Charcot's disease of cervical spine (Philip E. J. Cuttner), 311
 CHARRRY, R.: *Chirurgie Moderne de la Hanche*, 60
 CHAUDHURI, R. N. (and H. CHAKRAVARTI): Intravenous "paludrine" (proguanil), 91 (O); leading article, 106; correspondence, 192, 324, 775, 956
 Cheirophylax, 475—T. A. B. in 82—Vioform in treatment of, 841—Hereditary, 913 1007
 Chemical factors in peptic ulcer, 608
 Chemist and Druggist Year Book, 1949, 353
 Chemistry, clinical (book review), 1125
 Chemoprophylaxis of experimental filariasis in cotton rat (W. E. Kershaw and others), 130 (O); annotation, 145
 Chemotherapy: In lupus vulgaris (annotation), 316
 —Book review, 530—Of acute otitis media, 422, 556
 CHIESSER, Eustace: Cogs in a machine, 325—Psychiatric indications for abortion, 727—*Grow Up and Live*, 1085
 Chest wall, basal-cell carcinoma (rodent ulcer) in, 437
 CHIHUTANI, P. N. (and others): Meat ration and blood levels: investigation of Indian soldiers in Persia and Iraq, 1944, 219 (O)
 CHILDREN:
 Adoption, 725, 912, 1098
 Africa, child welfare in, 637
 Book reviews, 225, 667, 713 714
 Breath-holding attacks, 4
 Bronchopneumonia, tuberculous, in children streptomycin treatment of (R. McLaren Todd), 741 (O); leading article, 764
 CHILDREN (continued):
 Development: Child development study, 26
 Diabetes mellitus in children and need for hostels (P. Henderson), 478 (O)
 Duodenal ulcer, perforated, in a boy, 196
 Feeding difficulties in a small child, 783
 Health service for children (Helen Mackay), 768
 Heart: Long-term cardiac observation of children (R. Kemball Price), 515 (O); leading article, 534; correspondence, 682
 Hospitals: Children in hospital, 863
 Ilyosine hydrobromide for children, 832
 Ketonuria in a child with cirrhosis of liver (G. T. Rutherford), 480 (O)
 Memory: Ill children remember, 502
 Myopic school-children, 602
 Nephritis acute: Antihistamine drug treatment of (John Craig and others), 6 (O); leading article, 21; correspondence, 194, 198, 237
 Ovarian cysts, twisted, in children (G. Gordon Crowe), 102
 Penicillin: Use of procaine penicillin in children (J. L. Emery and others), 845 (O); correspondence, 1054—With a.m.m. um monostearate (J. L. Emery and others), 1110 (O); annotation, 1130
 Problems of childhood, 862
 Schick test in young children, 206
 Temperature recording, 503, 547—Taking children's temperatures, 284, 457, 547, 683
 Tetanus in a child (N. N. Iovtch-Tereschenko), 58
 Tuberculosis in childhood: some practical problems (F. M. B. Allen), 747 (O)
 Urthral obstruction, chronic (R. J. Last), 179 (O)
 Chills, vitamin K and, 464
 CHILDS, Peter (and Sir Cecil WAKELEY): Basal cell carcinoma (rodent ulcer), with special reference to lesions on neck, trunk, and limbs 737 (O); 747; correspondence, 865, 911, 955, 1001
 Chironod, see, register of, 1014
 Chloramphenicol, synthetic (chloromycetin) (annotation), 672—And cholera (annotation), 950
 Chloromycetin: Typhoid treated with (F. Murtagh), 851 (O)—Treatment of a chronic typhoid carrier with (C. A. Rumball and L. G. Moore), 943; annotation, 950
 —synthesized, 599
 Cholecystitis, acute, differentiated from subacute pancreatitis, 568
 Cholera, chloramphenicol (chloromycetin) and (annotation), 950
 CHOLERTON, M.: *Some Aspects of Oculo-Refractive Technique*, 398
 Choeristoma, 41, 464
 CHRISTIAN, H. A.: *Bright's Disease*, 668
 CHRISTIE, R. V. (and others): An unfortunate precedent, 774
 CHRISTOPHER, Frederick: *Minor Surgery*, 6th ed., 714
 Chronic sick in mental hospitals, 1057
 CHURCHILL, Stella: Manual difficulty, 540
 Cinchocaine, 283
 Circumcision, female, 250
 Cirrhosis: And colitis (annotation), 189—Ketonuria in a child with (G. T. Rutherford), 480 (O)—portal, infective hepatitis and (K. Damedaran), 1033 (O); leading article, 1042; correspondence, 1095
 —xanthomatous bilary, 734
 Civatte's poikiloderma 690
 CLANCY, W. J.: Rhesus-testing in pregnancy, 155
 CLARK, E. Malcolm: Carcinoma of cervix, 501
 —F. le Gros: Food, health, and education, 866
 —N. S. (and others): Antihistamine drug treatment of acute nephritis, 6 (O); leading article, 21; correspondence, 194, 198, 237
 —W. M.: *Topics in Physical Chemistry*, 530
 CLARK-KENNEY, A. E.: *Medicine*, vol. 2, 1085
 CLARKE, L. T.: Cinchocaine, 283
 —T. A.: Infective ear disease, 111, 366
 Classification of disease: Sixth revision of the International List, 771
 Claudication, intermittent, intravenous saline in, 831
 Claustrophobia, 602
 Clayton Thomas Morrison, obituary notice of, 638
 Cleft lip, 253
 —palate neglected, 122
 CLEGG, H. W. (and others): The relation of Staph. pyogenes to dental caries, 54 (O)
 CLIFTON, C. E. (and others) (editors): *Annual Review of Microbiology*, vol. 2, 274
 Clinical records, value of, 548
 Clowes, Norton Burroughs, obituary notice of, 595
 Clubbed fingers, significance of (W. P. U. Jackson), 216 (O); annotation, 228
 CLUTTON-BROCK, J.: Death following neosignine, 1007
 Cl welchii See Bacteriology
 CLYNE, D. G. Wilson: Spinal-anaesthesia for caesarean section, 283—Classical caesarean section, 323
 Coagulase production of staphylococci in the newborn and their resistance to penicillin and streptomycin (G. Martyn), 710 (O)
 Coates, Foster, obituary notice of, 783
 COOKE, A. D.: Syndrome of diaphragmatic hernia and anaemia 805 (O); correspondence, 1097

OFFEN, Stephen: Curare-modified E.C.T., 1050
 OHEN, Sir Henry: Specialization, 587; correspondence, 910—Lipodosis and xanthomatosis, 77
 —Raymond C.: Cough fracture of ribs, 133, association, 145; correspondence, 241, 651—(And M. C. WILLIAMS): Tuberculous infection of infants, 322
 OKE, Harry: Treatment of rheumatoid arthritis, 1050
 OLDREY, Eric: Treatment of simple ganglion, 32, 239
 O'S. PERCIVAL PASLEY, estate of, 204
 OLUS, curiosis and (anastomosis), 159
 —ulcerative, sulphamides in, 659
 OLSIE, Lionel, obituary notices of, 34, 117, estate of, 1015
 OLIVE, Royal of Obstetricians and Gynaecologists: Honorary Fellows elected, 329, 416—Members: elected, 416, 685; admitted, 1145—Diplomas awarded, 416, 784—Report on uric acid as analgesic to labour (F. Neon Reynolds), 537—Appointments: 655—Fellows: elected, 655, admitted, 1145—Prize awarded, 685—Members of Council elected, 1145
 —of Physicians of Edinburgh: Fellows elected, 873—Diplomas of membership conferred, 873
 —of Ireland: Members admitted, 458, 1145—Hoo, Fellowship conferred, 731—Licentiate admitted, 731—The Oration, 731—Fellows admitted, 1145
 COLLEGE, ROYAL, OF PHYSICIANS OF LONDON:
 Diplomas granted, 249, 961
 Fellows elected, 961
 Licentiate to practice conferred, 249, 961
 Members elected, 249, 961
 Nomenclature of Disease (Joint Committee), 7th ed., 443
 Representatives elected, 249, 961
 Unfortunate precedent (leading article), 717; correspondence, 774, 819, 865, 910, 955, 1003, 1052
 COLLEGE, ROYAL, OF SURGEONS OF EDINBURGH: Fellows admitted, 78—Fellows elected, 288—Diplomas of membership conferred, 288
 —in Ireland: Fellowships received, 634
 COLLEGE, ROYAL, OF SURGEONS OF ENGLAND:
 Appointments, 1145
 Besley Prize: Awarded, 784—Presented, 961
 Bradshaw Lecturer, 784
 Council meeting, 37, 249, 372, 505, 961, 1145—Members co-opted, 1145
 Diplomas granted jointly with R.C.P., 38, 249, 505, 784, 961, 1145
 Emeritus professor elected, 505
 Examiners: Members of Court elected, 372, 784
 Faculty of Anaesthetists: First annual general meeting, 159—Fellows elected, 249—Anniversary Dinner, 552
 Fellowship: Diplomas granted, 37, 1145—Fellows admitted, 961
 —Honorary: Fellows admitted, 249, 961—Fellows elected, 639, 784
 Fellows in Dental Surgery: Diplomas granted, 38, 961
 —ad eundem, 372
 Hallett Prize, 372
 Honorary Medal awarded, 961
 Hospitals recognized, 30, 372, 505, 784, 961, 1145
 Huettner Diner, 319
 —Lecture: Occupational diseases of the lens and retina (Joseph Milton), 392 (O)
 —Oration: John Hunter the observer (H. S. Souttar), 379 (O); correspondence, 498
 —Professors elected, 37
 —Professorships awarded, 505
 Imperial Cancer Research Fund Lecture: Propagation of mouse tumours by means of dried tissue (W. E. Gye), 511 (O); leading article, 531; correspondence, 632, 679, 1052
 Jacksonian Prize: Awarded, 784—Presented, 961
 —Certificate of Honourable Mentee presented, 1145
 Jenner Bicentenary Meeting: Jenner and his impact on medical science (Sir Edward Mellanby), 921 (O); correspondence, 1001
 John Hunter Medal and Prize: Awarded, 784—Presented, 961
 Lecherne Scholarship awarded, 505, 961
 Lister, Oration: The mind of mechanical man (Geoffrey Jefferson), 1105 (O); leading article, 1129
 Lumleian Lectures: Clinical and social problems of epilepsy (F. J. Nairn), 1 (O) 43 (O); leading article, 61; correspondence, 197, 411
 Mackenzie Mackinnon Research Fellowships awarded, 37
 Membership: Diplomas granted, 38, 249, 372, 961, 1145
 Representatives on other bodies, 372, 505
 Residence, surgeons in, at Lincoln's Inn Fields, 903
 COLLEGES, ROYAL: Joint Board to consider post-graduate medical education, 917, 952
 COLUYS, D. H.: Pathological tests in rheumatic disease 518

COLLIS, Edgar L.: Cotton-dust disease, 155
 Colonic obstruction, false, Ogilvie's syndrome of: a case with post-mortem findings (J. A. Dunlop), 158 (O)
 Colorimetric method, simple, for estimating sugar in urine or milk (Salab el-Dew), 899 (O)
 COLT, G. H.: Treatment of simple ganglion, 112
 Comedomatosis, 71, 194
 CONFERD, John: *Health the Unknown: The Story of the Peckham Experiment*, 20
 Commission, Royal on Capital Punishment: Membership and terms of reference, 828
 Committee, Exchange Control Medical Advisory, 555
 —on Radioactive Substances Chairman and members, 917
 Conference, International of Physicians: National trial of B.C.G. (leading article), 624
 Congo, Belgian: Gammeaxene and mosquito control in (G. Davidson), 101 (O)
 Congress, International, on Population and World Resources: *Transactions*, 1943, 1035
 Conjunctivitis, m. n. g. c. c. (U. D. A. Gray and R. A. Lambert), 17 (O)
 COPE, H. F. (editor): *Current Therapy*, 1949, 502
 CORTAL, Andrew, obituary notice of, 594
 CONNER, John Richard Tarrant, obituary notice of, 549, 633, estate of, 966
 CONRAD, K. K.: Pain in childbirth: statistical analysis, 333 (O) leading article, 356; correspondence, 497, 634
 Contraceptives: chemical, effect of, 1104
 Convulsions, 463, 920—Occurrence of convulsions during treatment with calofol (Howard Bell), 139
 CONWAY, Nancy S.: Tetany following removal of parathyroid adenoma with bone disease finally alleviated with calofol 14 (O)
 COVEYER, Sir J. (editor): *Textbook of Medicine*, 9th ed. 1055
 COOK, D. Uter, 104
 COOK, F. (and E. W. MARTIN): *Remington's Practice of Pharmacy*, 9th ed., 20
 —G. T. (and D. M. GARDNER): Nasal carriers and streptococcal tonsillitis, 345 (O); leading article, 355
 —James: Pain in childbirth, 781, 1053
 COOKSON, Henry Anstey, obituary notice of, 1055
 —M. A. (and J. B. M. COPECK): Mineral salts to bread, 73
 Coombs test for haemolytic disease of the newborn, 124
 COOPER, E. A. (and S. D. NICHOLAS): *Aids to Biochemistry*, 4th ed., 530
 —E. R. A. Human Histology. *A Guide for Medical Students*, 2nd ed., 902
 —J. F. Clinic under the N.H.S., 366
 COPE, R. W.: Self-administered nitrate analgesia, 454
 —Zachary: Acunomyocosis of rectum and colon, 406
 COPEMAN, W. S. C.: Physiotherapy, 241—Aetiology of erythema nodosum, 282
 COOPER, A. C.: *An Introduction to Clinical Ophthalmology*, 667
 COPECK, J. B. M. (and M. A. COOKSON): Mineral oils to bread, 73
 COLETTE, C. E.: *A Surgeon's Guide to Local Anaesthesia*, 104
 Corned beef, handling of, 822
 CORNER, Beryl D.: Death at birth, 242
 —G. W. (editor): *The Autobiography of Benjamin Rush*, 443
 Corrections, 42, 82, 114, 161, 164, 292, 332, 378, 416, 464, 544, 548, 602, 690, 786, 790, 876, 963
 Correspondence:
 Abortion: Psychiatric indications to, 590, 683, 727—"Death following abortion," 1004
 —threatened, simulating ectopic gestation, 1139
 Abusus fever, treatment of, 194
 Achlorhydria following gastro-enteritis, 196
 Adoption of children, 725, 912, 1093
 Aged sick, treating the, at home, 545—Care of the elderly, 1093
 Air travel: Health regulations for, 632—Medical fitness for, 1053
 Allergy, rheumatic fever, and nephritis, 237
 Ambulance transport in rural areas, 1033
 Amphetamine hydrochloride, 235, 367, 457—Idiosyncrasy to, 957
 Amnesia, persistent, 1097
 Anaesthesia: In Ludvig's anaemia, 31, 153, 324
 —spinal: For caesarean section, 153, 233, 323, 409—With cinchocaine hydrochloride, 194
 Anaesthetic explosions, 244
 —problems, 413
 Anaemia in childhood, 637
 —brachial-plexus block, 636
 —spinal, and caesarean section, 114, 244
 —trilene: Self-administered, 364, 454, 546—In Oxford vapour test, 547—In labour, 634
 Anaesthetics, surface, overdose of, 197, 232, 454
 Anatomy, living, 778, 957
 Animal experiments, 369
 Anthrax poisoning, 1093
 Antihistamine drugs and erythroblasts, 194
 Anura, 151, 252, 548—Treatment of, 236, 454
 Antibiotics, 590
 Atrial tachycardia, 254

Correspondence (continued):
 Arthritis, rheumatoid: And ruptured tendons, 71
 —Treatment by vasodilatation, 867—Vaccina treatment of, 867—Treatment of, 1004, 1050
 Asplasia, medical, 279
 Atelactasia, post-operative, 1049
 Barbiturates, prescription of, 325, 723
 B.C.G., 778, 868—Vaccination in Finland, 636
 Belladonna liniment causing mydriasis, 194
 Blood changes in leukaemia, 546
 Bread, mineral oils in, 73
 Breast, cancer of, 632
 Breast-feeding, 72, 154, 1140
 Bronchography and surface anaesthesia, 324, 454, 725
 Cancerous, 367
 Carbuncle of kidney, 456
 Carcinoma: Of cervix, 156, 457, 501, 1095—Of colon: metastases due to, 195—Of male breast, 196—Basal-cell, treatment of, 665, 911, 955, 1001—Gastric, perforation of, 868—Of stomach, resectable, 1056
 Cervical stenosis after forceps delivery, 242
 Cervix: Carcinoma of, 156, 457, 501, 1095—Spontaneous amputation of, 157, 501—Dyscoia after amputation of, 241, 823, 1097—Cancer of, 1095
 Chetopompholyx, hereditary, 913, 1007
 Childbirth, natural, and sympathetomina, 958
 Children: 11 children remember, 502—Child welfare in Africa, 637—Observation of children's hearts, 682—Adoption of, 725, 912—Paediatrics and family practice, 1066, 1138
 Cinchocaine, 233
 Clinical record, value of, 548
 Cogs in a machine, 325, 457
 "Coliform," use of term, 520
 "Comedomatosis," 71
 Corned beef, handling of, 822
 Cotton-dust disease, 155
 Curare in treatment of tetanus, 31
 Curare-modified E.C.T., 869, 957, 1003, 1050
 Death blind, 775
 Death at birth, 242
 Dental cases, 325
 Desoxy cortone, lethal danger of, 679
 Diabetic coma, 632, 724
 Diabetes, pensions for, 151
 Diathermy pronos forceps, 780, 870, 911, 1138
 Dissected scleritis, diet in, 870
 Dracunculiasis, 74
 Dysentery in South Persia, 781
 Ear disease, infective, 311, 193, 237, 366
 Ear-naz, injury caused by, 280
 Electrotherapy and stainless steel sutures, 456
 Endometriosis and fibro-adenoma, 911
 Epi-episy and focal behaviour, 197, 411
 Erythema nodosum, aetiology of, 282
 Fallopian tube, resection of, 866
 Fibrosis, 71, 411, 499, 634
 Filariasis, ocular, 500
 First aid, technique, 780
 Fish poisoning, 475
 Fluorides and dental caries, 29, 255
 Food, health, and education, 866
 Fractures: Cough fracture of ribs, 241—Cough fracture in pregnancy, 241, 631—Causes of rib fracture, 236, 414
 Frontal lobe, approach to, 193, 235, 411, 780, 913
 Ganglions, simple, treatment of, 32, 112, 239, 414
 Gastroenteritis, 1097
 Genetics, Marxist, 23, 193, 363
 Gestation period, 455
 —period, prolonged, 116
 Gout, lithium ionization for, 157
 HIV in malignant disease, 958
 Haematemesis, 590
 Haemolytic disease of the newborn, 234, 264
 Heart: Cardiac arrest, 195—Ventricular in heart disease, 409—Pharmacology of failing heart, 592
 —Repetitive auricular flutter, 778
 Heat and blood flow, 367
 Hepatitis: Pre-suppurative amoebic, 31, 156—Amoebic, 779—Infective, and portal cirrhosis, 1095
 Hernia, diaphragmatic, and anaemia, 1097
 —femoral, 32
 —irreducible umbilical, in pregnancy, 725
 Herpes: Danger of, 240—Dose of, 776, 912
 Herpes zoster, 75—Recurrent, in a baby, 821—And varicella in same patient, 1052
 Hip-joint, dislocation of, 457
 History, official, of the 1939-45 war, 453
 Hospital, delayed admission to, 631
 —beds, height of, 632
 —patient, aftercare of, 502, 635
 —Frances Tabak Memorial, 957
 Hospitality for overseas visitors, 775
 House numbers, 159
 Humanitarian Oration, 493
 Hypernatremia due to ureteric adenoma, 680
 Illness in general practice, 410
 India, medical books in, 244
 Infections, unusual, in infants, 1051
 Infantile marriage, treatment of, 71
 Influenza: Is it epidemic? 633—Veruzo and, 821, 929
 Intermittent, artificial, 590, 726
 Invertin, rights of, 366

Correspondence (continued):

- Indoeycitis, vitamin A in, 637
 Intervertebral disk, 725, 820
 Jaundice, syringe-transmission, 114
 Jenner and medical science, 1001
 Kidney: Renal lesions associated with pregnancy, 548—Research in renal disease, 910, 1007, 1137
 Laboratory tests, reliability of, 1138
 Leprosy, Robert the Bruce and, 457
 Leukaemia, lymphoblastic, 286
 Liver, needle biopsy of, 820
 Lock Hospital, 1004, 1096, 1141
 Lumbar puncture, infected disk after, 283
 M'Naghten rules, 31, 115
 Malaria parasite, exo-erythrocytic forms of, 237
 Ma aya Branch of B.M.A. and R.M.B.F., 70
 Mallet finger, 30, 113, 155
 Manganese therapy, 157
 Marriage guidance by doctors, 1141
 —neurosis, 635, 776, 822
 Master minds, 115, 198
 Mastitis, plasma-cell, 194, 363, 545
 Measles and whooping-cough, 116, 198
 Medical Association of South Africa, meeting of, 197
 —examinations, routine, 870, 1007, 1140
 —journals for German doctors, 781, 959
 Memory, mechanism of, 285
 Meningitis, tuberculous, 777—Diagnosis of, 75, 195, 235, 364, 498
 Meningococcal septicaemia: Fulminating, 633—Thymus in, 681
 Mental hospitals, reform of, 1006
 Midwifery: Primitive, 498—Dried plasma for domestic use, 1005, 1098, 1139
 Milk standards, 502
 Miliatiles correct, 72, 243, 368
 Mind and the skin, 636
 Morton's metatarsalgia, 1005
 Myelitis, fatal, after antibrucella vaccine, 1140
National Formulary, 452
 —Health Service, clinic under, 243, 366
 Neostigmine, death following, 1007, 1137
 Nephritis in textile workers, 32, 114—Anti-histamine drug treatment of acute, 198
 Nuffield Hospitals Trust, 410
 Nurses and nursing aids, 683
 Obstetrics: Classical caesarean section, 156, 242, 323, 409, 414, 545—In Great Britain and Ireland, 633—"Cord round the neck," 1140
 Occupational diseases of lens and retina, 497, 545
 —therapy, 546, 591—And physiotherapy, 548
 Oesophagus perforations of, 1095
 Ogilvie's syndrome, 1137
 Orgasm, physiology of, 593, 868, 1052
 O Russia! O Mores! 33
 Osteitis fibrosa disseminata, 500
 Pain in childbirth, 497, 634, 781, 869, 958, 1053
 Painless childbirth—a suggestion, 497, 727
 Parkinsonism dipareol in, 778, 821
 Pelvic congestion, strong corsets and, 324
 Penicillin Dosage schedules, 30—Procaine penicillin 75, 116, in children, 1054—Sensitivity to, 240, 414—Oral reactions to, 367, 411, 498—Infected finger treated with, 455—In influenza, 499—And the infected hand, 499—Resistant staphylococci 591, 725, 1002
 Perichondrium in vascular surgery, 72
 Phenytoin, soluble, toxicity of, 75
 Physiotherapy, 241
 Plain words on dimensional lesions, 116
 Pneumonia lobar crisis in, 325
 Pneumothorax refills, self-administered, 113
 Podophyllin therapy, complication of, 780
 Poliomyelitis, paralytic strain and, 589
 Polycyrtitis, acute "infective," 1049
Precedent, an unfortunate, 774, 819, 865, 910, 955, 1003, 1052
 Pressure cooking, 822, 958
 Proguanil: Second thoughts on, 192, 589, 774—And blackwater fever, 324—In the Sudan, 413—And falciparum malaria, 545—Malaria prophylaxis with, 956
 Proof-readers' disease, 33
 Prostatectomy: Puncture, 545—Continuous irrigation in, 958, 1096
 Proteins, significance of, in nutrition, 150
 Prothrombin, estimation of, 156
 Psychiatric indications for abortion, 590, 683, 727
 Psychiatry and broadcasting, 193
 —Social, Institute of, 548
 Public health, danger to, 911
 Pulchems, 244, 410
 Purpura complicating pregnancy, 73, 197
 Radiography, mass: Screening aid for, 157—Yearly re-examination by, 636
 Rectum, perforations of, 1095
 Respiration, paradoxical, control of, 1051
 Rhesus-testing in pregnancy, 155
 Rhinias caused by Friedländer's bacillus, 116
 Sarcoma, transmission of, by dried tissue, 679
 Sclerosis, disseminated, 1052
 Senile deterioration of C.N.S., 155
 Sexual offenders, 547
 Shoulder-harness, 779, 913
 Smallpox contacts, 776, 912
 Specialization, 368, 592, 781
 Spectacles, surgeons', clouding of, 75, 198
 Spermatosis, 957
 Spleen, calcified cyst of, 74, 196

Correspondence (continued):

- Spondylitis, ankylosing, 455, 546, 591, 633, 912
 —Treatment with cortical extract, 1007
 Staphylococci: Resistant, 151—Penicillin-resistant, 591, 725, 1002
 Statistics and health education, 680, 866, 956
 Steroid metabolism and frontal lobes, 74
 Streptococcal disast, continuing, 241
 Struggle to survive, 1098
 Surgery at the Front, 1139
T. duttoni, transmission of, 501
 Temperature recording, 33, 75, 157, 413, 503, 823
 Temperatures, children's, taking, 284, 457, 547, 683
 Tetanus: Cure in treatment of, 31—Treatment of, 668
 Therapeutic controls, 1054
 Thiosemicarbazone, 1005, 1140
 Thymoma simulating laryngeal diphtheria, 911
 Transfus on compatibility tests, 870, 1002
 Tuberculosis: Delayed diagnosis of, 29
 —Whither, 70, 152, 321, 365, 369, 412, 593, 634, 777—Early diagnosis of, 235, 591, 681, 683
 —Co-ordination of services, 322—Mantoux-negative nurses, 322—Infection of infants, 322
 —In the family, 365—At the crossroads, 365—Diagnosis of, 322
 —Cow's milk and, 955—In industry, 1049
 Tumour agents, 632, 1052
 —malignant, of small intestine, 283, 325
 Twins: Unusual case of, 412—Survival of a premature twin, 781
 Ulcer, duodenal, perforated, in a boy, 196
 Vaccination, compulsory, and of, 33, 243
 Vaccine lymph, 959
 Vagotomy, physiological basis of, 726
 Varicose veins, treatment of, 412, 500, 635, 822, 869, 1005, 1141
 Veins, retaining patency of, 74, 286
 Vesico-vaginal fistula, 455, 682
 What is normal? 682, 779
 Whooping-cough and measles, 116, 198
 Women war captives in Russia, 1139

- Corsets, strong, and pelvic congestion, 324
 Cotton-wool disease, 155
 Cough fracture of ribs (R. C. Cohen), 133 (O)—In late pregnancy (J. W. Paulcy and others), 135 (O); annotation on, 145; correspondence, 241, 681
 Council, American National Health: Annual meeting, 876
 —Central, for Health Education: Health propaganda, 860

COUNCIL, MEDICAL RESEARCH:

- Alexander Pigott Wernher Memorial Trust Fund, 1047
 Analgesia: Committee to promote research into home analgesia, 876
 Blood Transfusion Research Committee, 641
 Carcinogenic Action of Mineral Oils, Committee on, 375
 Secretary of (leading article), 995
 Spectrographic Research Unit at London Hospital, 828
 Travelling Fellowships, 678
 Tuberculosis in industry: Epidemiological study (Alice Stewart and J. P. W. Hughes), 926 (O); leading article, 946; correspondence, 1049

Council National, for the Unmarried Mother and her Child: *Directory of Homes and Hostels*, 932
 —on Pharmacy and Chemistry of the American Medical Association: *New and Non-official Remedies*, 1943, 811

COURT, S. D. M. (and F. J. W. MILLER): Paediatrics and family practice, 1006

COURT, A.: Zoster and varicella in same patient, 1052

COUTIS, Francis James Henderson, obituary notice of, 369

COVELL, G.: Second thoughts on proguanil, 192 (—And others): "Palodrine" (proguanil) in prophylaxis and treatment of malarial infections caused by a West African strain of *P. falciparum*, 88 (O) (corrected, 292); leading article, 106; correspondence, 192, 324, 545, 589, 775, 956COWAN, A.: *Refraction of the Eye*, 3rd ed., 761

—Adrian: Sensitivity to penicillin, 240

—Ellen: Painless childbirth, 727

COWDRY, E. V.: *Laboratory Technique in Biology and Medicine*, 2nd ed., 20

COWELL, Sibert Forrest Antrobus, obituary notice of, 199

COWIE, Alfred T.: *Pregnancy Diagnosis Tests: A Review*, 760

COX, Alfred: Tribute to John Wardle Bone, 729

—G. Lissant: Whither tuberculosis? 322

—H. T.: Punctate prostaticitis, 386 (O); correspondence, 545

CRAIG, Charles Franklin: *Laboratory Diagnosis of Protozoan Diseases*, 2nd ed., 944

—J. Donaldson (and others): Infected intervertebral disk after lumbar puncture, 132 (O); correspondence, 283

—John (and others): Antihistamine drug treatment of acute neuritis, 6 (O); leading article, 21; correspondence, 194, 198, 237

—John D.: Treatment of rheumatoid arthritis, 1004

- CRAIG, W. S. (and others): Instruction of medical student in paediatrics—an insight into family practice, 801 (O); correspondence, 1006, 1138
 CRANMER, J. L. (editor): *Science News*, 20, 1055
 Cramps, spasmodic, 254
 CRAWFORD, J. H.: Anaesthetic problems, 413—Dose of heroin, 776
 Creeping eruption and intestinal strongyloidiasis (J. P. Caplan) 396
 CRER, W. Sayle: Treatment of simple ganglion, 112
 CRIV, F. A. E.: *Measurements of the Public Health*, 274, 991—Official history of the 1939–45 war, 453—Public and Personal Hygiene, 902
 CRILE, G. jun.: *Practical Aspects of Thyroid Disease*, 761
 CRITCHLEY, MacDonald: *Sir William Gowers*, 945
 CROFTON, John (and J. R. B. GALL): Antihistamine drugs in treatment of nausea and vomiting due to streptomycin, 13 (O)
 Crohn's disease, 407
 CROWAR, Colin D. L.: Plasma-cell mastitis, 363
 Cross, Edward John, estate of, 641
 —W. G.: Oral reactions to penicillin, 171 (O), 498; correspondence, 367, 411
 CROSSE, V. Mary: *The Premature Baby*, 2nd ed., 443
 CROVSEN, Harry Sturgeon (and Robert James): *Operative Gynaecology*, 6th ed., 273
 CROWE, G. Gordon: Twisted ovarian cysts in children, 102
 CROWTHER, J. G.: *Science in Liberated Europe*, 811
 CRUIKSHANK, J. D. (and D. G. MILNE): Report on outbreak of influenza in the Army, 571 (O)
 COLLIS, W.: *Your Body and the Way it Works*, 1085
 Cummings, Stevenson Lyle: Obituary notice of, 1054
 —*Tuberculosis in History*, 1126
 Cundell, Harold Juler, obituary notice of, 594
 Curare: In treatment of tetanus, 31—Death from, 421
 Curare-modified electric convulsion therapy in cases with physical disease (Peter D. W. Shepherd and David C. Watt), 752 (O); correspondence, 869, 957, 1003, 1050
 Curo, Francis Henry Swindon, estate of, 1059
 CURL, Adam: Toilet training of children, 862
 Curling's ulcer, case of (L. W. Jayesura and A. T. H. Mandan), 1124
 CURR, J. F.: Penicillin and infected hand, 499
 CURRAN, D. (and the late E. GUTTMANN): *Psychological Medicine*, 484
 Currie, John Ronald, obituary notice of, 782
 CURRY, S. H.: Hereditary cherompholyx, 913
 CURSTJEE, H. J. Manockjee: Shoulder-harness, 779
 CURTIS, F. J.: Teaching first aid, 780
 CUTLER, Marie (and P. L. MOLLISON): Haemolytic disease of the newborn: criteria of severity, 123 (O), 364, leading article, 142; correspondence, 234
 CUTIBERT, A.: *Housewife Baby Book*, 443
 CUTIBERTSON, D. P.: Significance of proteins in nutrition, 150
 —Hugh: Home-cured tobacco, 254
 CUTLER, Max: Plasma-cell mastitis—case with bilateral involvement, 94 (O); annotation, 108; correspondence, 194, 363, 545
 CUTTINO, Philip E. J.: Case of Charcot's disease of cervical spine, 311
 —Windor C.: *Manual of Clinical Therapeutics*, 2nd ed., 902
 Cyprus: Anopheles eradication in (Horace Shelley and Mehmed Aziz), 767
 CYRIAX, James: Ankylosing spondylitis, 633—Treatment of rheumatoid arthritis, 1050
 Cyst, calcified, of spleen, 74, 196
 Cysts, bilateral pulmonary, 919
 Cystectomy, total (B. R. Sworn), 221 (O)

D

D'ABREU, A. J.: Treatment of simple ganglion, 240

—F. (and J. C. HARLANO): Lumbo-dorsal sympathetomy in severe hypertension, 1019 (O)

DAIL-IVERSEN, E. (editor): *Twenty-third Meeting of the Northern Surgical Association*, 621

DALE, Sir Henry: Par-tine research, 203

DALEY, Sir Allen: Tribute to Sir Frederick Menzies, 914—Research in public health and the N.H.S., 998

—Raymond (and N. R. BARRETT): Method of increasing lung blood supply in cyanotic congenital heart disease, 699 (O); annotation, 717

DALI Salvador: *The Secret Life of Salvador Dali*, 313

DALZELL-WARD, A. J.: Infective ear disease, 112

Dainagas for a doctor (medico-lega), 730

DAMODARAN, K.: Infective hepatitis and portal cirrhosis, 1033 (O); leading article, 1042; correspondence, 1095

DAMPIER, Sir W. C.: *A History of Science*, 4th ed., 313

DANARAI, T. J.: Case of arteriovenous aneurysm, 1124

Dangerous Drugs Regulations (1948), 374

DAUBNEY, C. G. (and others): Diet, haemoglobin values, and blood pressures of Olympic athletes, 300 (O); corrected, 378

- DAVEY, D. G. : Relation of "anticyde" to problem of ischaemic disease, 1046
- Frank (and Michael Smith) : Malaria prophylaxis with proguanil, 956
- DAVISON, G. : "Gammexane" and mosquito control in Belgian Congo, 101 (O)
- L. S. P. (and T. M. Wilson) : Ehrlich-aldehyde test for urobilinogen 884 (O)
- Maurice : Specialization 587
- DAVIES, Dewi. : Acute porphyria and associated electrolyte changes, 846 (O); corrected, 968
- G. L. : Care of the elderly, 1698
- Horace : Metastasis quinitis salinis, 664 (O)
- J. P. H. : Shoulder-harness, 913
- W. (and P. T. Bray) : Spontaneous subarachnoid haemorrhage in infancy due to angioma of cerebellum, 481
- Wyndham : Psychiatric social workers, 629
- DAVIS, Sir Robert H. : *Breathing in Irrespirable Atmospheres, and, in Some Cases, also Under Water*, 184
- DAVISON, M. H. Armstrong : Spinal analgesia with cinchocaine hydrochloride, 194—Amecho-caine hydrochloride, 236—(And others) "Myalgine" in treatment of tetanus 616 (O); correspondence, 868
- DAVSON, H. : *Physiology of the Eye* 185
- DAWES, Dorothy E. (and Gull Lindh Muller) : *Introduction to Medical Science*, 2nd ed. 274
- Dawson Williams Memorial (annotation), 490
- DAY, L. F. : Chemotherapy of acute otitis media, 556
- Deaf-blind, 775
- DEAN, Geoffrey : Disseminated sclerosis in South Africa; its relation to swayback disease and suggested treatment, 842 (O); correspondence, 1052
- R. F. A. : Women war captives in Russia, 691 (O); correspondence, 1139
- Deane, Archibald, estate of, 829
- Death at birth (annotation), 64; correspondence, 242
- DEASO, J. E. : Treatment of abortion fever 194
- DEBIE, R. (and others) : *Les Acquisitions Médicales Récentes*, 945
- DEBRUNNER, H. : *Lumbolgin*, 2nd ed. 185
- DE GOES, P. : *Estudios sobre la Inmunidade Cruzada*, 945
- DE ILLYES, G. : *Surgical Urology*, 2 vols 59
- DELAUNY, Jean. : Pharmacological explorations of personality 842
- DEMPSTER, G. O. L. : Fish poisoning, 775
- DEHOLM-YOUNG, Hilda M. : Late menopause, 736
- DENT, R. V. (and Peter Turner) : Three cases of fulminating meningococcal septicaemia, with one recovery, 524 (O); correspondence, 633 681
- Denitis Register, 1949, 902
- Dermatitis, atrophic, in infants, 164, 378
- facialis, 472
- herpetiformis, viroform treatment, 842
- phyto-photo (H. E. Bellinger), 984 (O)
- psoriatic, viroform treatment, 839
- seborrhoeic, 475—Viroform treatment, 841
- Dermatology : "Dogger Bank itch" (annotation), 358, 598—Mind and the skin (I. B. Sneddon), 472 (O); correspondence, 636
- de Mott, Frank Phil P. Gilbert, obituary notice of, 415
- DE SOLDERHOFF, Richard : Trilene as analgesic in labour, 634
- Desoxycurium : Lethal danger of overdosage, 679
- DEUTSCH, A. : *The Mentally Ill in America*, 2nd ed., 902
- DEVINE, Sir Hugh and John : *The Surgery of the Colon and Rectum*, 19
- d'Herville, Felix, obituary notice of, 782
- Dhobie itch, 331
- DIABETES MELLITUS :
Coma : Treated with and without early administration of glucose (J. Lee and others), 565 (O)
— Treated with 56,000 units of insulin (J. G. H. Sheppard), 576; correspondence, 632, 724
Contra-indications in air travel, 604
Incidence in children and need for hostels (P. Henderson), 478 (O)
Insulin : Production of (annotation), 146—Sensitivity, 164—Mode of action (annotation), 402
Nocturnal frequency in a diabetic, 1017
Obesity, maternal, large babies, and diabetics (J. A. L. Gilbert), 702 (O)
Pensions for diabetics, 151
Pregnancy : Diabetic fertility, maternal mortality, and foetal loss rate (J. A. L. Gilbert and D. M. Dunlop), 48 (O)—Complicated by diabetes mellitus (H. H. Fouracre Barnes and M. E. Morgans), 51 (O); leading article, 62
Ravens and allowances for diabetics, 419
- Diagnosis, acute for negligence in, 549, 595
- Diathermy, short-wave, 602
- prong forceps (A. Wilfrid Adams), 611; correspondence, 780 911
- DICKS, Henry V. : *Clinical Studies in Psychopathology. A Contribution to the Aetiology of Neuritic Illness*, 2nd ed., 760
- Dixon, George Alexander, obituary notice of, 505
- Discomorol : Discussion at Medical Society of London, 26; correspondence, 156—Death following treatment with (medico-legal), 783
- Dictionary, German-English Medical (Schoenewald) 902
- DIETTER, R. : *Peau*, 274
- DIECKMANN, C. : Recovery of *Clostridium welchii* type F from preserved cultures, 270 (O); leading article, 276
- Dieneostral, 510
- Diet See Nutrition
- Die etics for Student Nurses, 902
- Diparcol, use of in Parkinsonism (R. S. Duff), 613 (O); correspondence, 778, 821
- Diphtheria : Combined pertussis vaccine and diphtheria prophylaxis, 163—Schick test in young children, 206—P.T.A.P. : present position (Lewis B. Holt and Guy Bousfield), 695 (O); leading article, 715; corrected, 968
- Immunization, 253—Status, 437, 505—Some questions 1149
- Disabled Persons (Employment) Act, psychiatric patients and (A. Harris and Mary A. Lane), 982 (O); leading article, 994
- Disinfectant, by Mr. Harold Dodd, 736
- Disease prevention world programme of (annotation), 65
- Dislocation of hip-joint at "rugger" (R. Salisbury Woods) 272
- DOBBS, B. M. Willmott. : *Obstetrics and Gynaecology* 225
- DOBBS, Richard H. : Psychiatric aspects of infant feeding 863
- Dono Harold : *Deslamer*, 736
- DODOS E. C. : Study of urinary steroids, 408
- Robert Leslie obituary notice of, 245
- T. C. (and others) : *Atlas of Neuropathology* 944
- DOCK, William (and I. Snapper) : *Advances in Internal Medicine*, 761
- DOGART, James Hamilton : *Ocular Signs in Slit-lamp Microscopy*, 353, 1126
- "Dogger Bank itch" (annotation), 358; correspondence, 598
- DOUGLAS, G. H. : Pressure-cooker as sterilizer, 254—Pressure cooking, 958
- DOVALSON, Malcolm : Cancer of cervix, 1095
- DOVNAV, L. F. : Marriage neurosis, 776
- DOUGLAS, C. G. (and the late J. G. PRIESTLEY) : *Human Physiology*, 141
- DOUTHWAITE, A. H. : Cough fracture of ribs, 1039
- DOW, G. S. Neilson : Infected finger treated with penicillin, 455
- DOWLING, H. F. : *The Acute Bacterial Diseases*, 1039
- DOXIADIS, S. A. : Rh factor and pregnancy, 164
- Dracunculiasis, 74
- Dreams, alarming, in the aged, 555
- Drugs, dangerous : Care of, 78—Memorandum on D.D.A. and Regulations, 102—Dangerous drugs in car (medico-legal), 684
- DU BOIS E. F. : *Fever and the Regulation of Body Temperature* 945
- DUBOS, R. J. (editor) : *Bacterial and Mycotic Infections of Man*, 761
- DUCK, E. F. : Faecal myelitis after anurabic accide, 1140
- DUFF, R. S. : Use of diparcol in Parkinsonism, 613 (O); correspondence, 778, 821
- DURK, H. L. : Tribute to Lucien van Hoof, 158
- DURKE-ELDER, Sir W. S. : *Textbook of Ophthalmology*, vol. 4, 992
- DUNMER, F. H. M. : Cancer of cervix, 1095
- DUNN, D. M. (and J. A. L. GILBERT) : Diabetic fertility, maternal mortality, and foetal loss rate, 48 (O); leading article, 62—(And others) : *Notional Formulary*, 452—*Textbook of Medical Treatment*, 1085—(And C. P. STEWART) : *Clinical Chemistry in Practical Medicine*, 3rd ed., 1125
- J. A. : Osliet's syndrome of false colonic obstruction : case with post-mortem findings, 890 (O)
- DUNN, J. P. S. : Medical journals for German doctors, 781, 959
- DUNSFORD, I. : Agglutinin anti-P in pregnancy : report on two cases, 15 (O)
- Duodenal ulcer : A stress disease, 648
- perforated in boy, 196
- Duomycin. See Autocymon
- Dupuytren's contracture (annotation), 673
- DURANCE, J. D. : Fulminating meningococcal septicaemia, 633
- DURFORD, W. T. : Architecture of heal centres, 494—Health centres, 499; corrected, 544
- Dysentery in South Persia (Dan S. Stewart), 662 (O); correspondence, 781
- Dyspareunia, 1017
- Dysphasia after amputation of cervix, 241, 823, 1097
- EAST, Terence : *Failure of the Heart and Circulation*, 2nd ed., 578—*Cardiovascular Disease in General Practice*, 3rd ed. 1085—(And Curtis BAIRD) : *Recent Advances in Cardiology*, 4th ed., 184
- Easterbrook, Charles Cromhall, obituary notice of, 1143
- Eau-de-Cologne in migraine, 1103
- Eccleston, Richard Shatto Chambers, obituary notice of, 1008
- Ectopic gestation : Statistical and clinical review of 107 cases (J. S. MacVine and D. H. Lees), 263 (O); correspondence, 455—And future pregnancy, 644
- Eczema : Psychogenic factors in, 474—Vioform in treatment of, 841, 842
- Edlin, Herbert Ebenezer, obituary notice of, 637
- EDWARDS, C. : Clouding surgeons' spectacles, 198
- J. : Nutrition and fertility, 543
- EVANS, P. D. : Physiology of orgasm, 593, 1052
- Ehrlich's aldehyde test for urobilinogen (T. M. Wilson and L. S. P. Davidson), 884 (O)
- EICKHOFF, W. : *Die Pathologisch-Anatomischen Grundlagen der Allergie*, 1126
- ESSLER, K. R. (editor) : *Searchlights on Delinquency*, 902
- ELAM, John : Self-administered tritene analgesia, 46
- Elderly, care of the, 1098
- EL-DEW, Salah : Simple colorimetric method for estimating sugar in urine or milk, 659 (O)
- Electric automatic compounding machines (M. H. A. Newman), 1133
- convulsion therapy, curarar-modified, in cases with physical disease (Peter D. W. Shephard and David C. Watt), 752 (O); correspondence, 569, 957, 1003, 1050
- Electroencephalogram : Switch and wiring circuit for an bipolar lead C.C.G. (A. G. Barritt), 770
- Electro-encephalogram, 6
- Electrotherapy and stainless steel sutures, 456
- ELKELES, A. : Calcified cyst of spleen, 74
- ELLINGER, P. (and F. Mackenzie SHATTOCK) : Oral reactions to penicillin, 411
- ELLMAN, Philip : Limitations and difficulties of artificial pneumothorax 320—Tribute to Professor L. C. Cummins, 1055—(And F. Parkes WEBER) : "Sjögren's disease with dryness of bronchial mucosa and uncertain lung lesion, 304 (O)
- ELMAN, Robert : Significance of proteins in nutrition, 150
- ELIAS, M. J. : *Housing and the Family*, 103
- EMBLIN, Norman : 5,000 consecutive deliveries without a maternal death due to pregnancy, 260 (O); corrected, 602; correspondence, 637
- EMERY, J. L. (and others) : Use of procaine penicillin in children, 845 (O); correspondence, 1054—Use in children of procaine penicillin with aluminum monostearate, 1110 (O); annotation, 1130
- Embolism, arterial (annotation), 318
- cerebral, following constriction of heart (Gerald Parsons-Smith and Denis Williams), 10 (O); annotation, 23; correspondence, 778
- gas, Cl. Welch and, 292
- simultaneous, in both arms (I. V. Fiddan), 480 (O); correspondence, 636
- EMMENS, C. W. : *Principles of Biological Assay*, 353
- Emphysema : Contra-indications to air travel, 605
- Encyclopaedia, British, of Medical Practice, 1126
- Endometriosis : Effect of, on fibro-adenosis (H. J. B. Atkins), 750 (O); correspondence 911
- Endocrinology : Books on, 234, 501—Heart in endocrine disease (Willam Evans), 360
- Endometriosis of groin—report of three cases (G. E. Mooney), 435 (O)
- Endometrial biopsy curette (E. Friedmann), 150
- ENGEL, S. : Tuberculous meningitis, 499
- ENGLISH, O. : Surgeon (and Gerald H. I. Pearson) : *Emotional Problems of Living*, 59
- Enjoying the country (annotation), 526
- Enteritis necroticans due to *Clostridium welchii* type F (J. Zussler and L. Rassfeld-Sternberg), 267 (O); corrected, 332; leading article, 276
- Enteroptosis, 82
- Enzymes : Hypertensinase (annotation), 449—And hormones (annotation), 627
- EPIDEMIOLOGICAL NOTES :
Annual report for England and Wales, 160
Births, future, 461
Cancer, tuberculosis, and maternal mortality, 876
Deaths : analysis for 1947, 1013
Food-poisoning, 1013—At Boston, 203
Infant mortality, stillbirths, and abortions, 656
Infectious diseases in 1948, 119
Influenza, 160, 251, 259, 328, 374, 418 461, 506, 554, 595, 640—Epidemic in Italy, 37—In England and Wales, 119
Inoculation Of travellers, 119—Minimum age for, 119
Notifications : correction, 786—Dunn's first quarter, 827
Paratyphoid fever, 1101
Polymyositis in Mammals, 119
Population, future trends of, 827
Quarterly returns : Eire, 60, 1014—England and Wales, 60, 785—Northern Ireland, 161, 916—Scotland, 666
Registrar-General's review for 1946, 554; Provisional figures for 1948, 640

EPIDEMIOLOGICAL NOTES (continued):

- Sickness and diarrhoea at Chatham, 39
Scotland, health in 1948, 641
Smallpox, 640, 732, 776, 785, 827, 876, 916, 964, 1101
Typhoid fever: At Crowthorne, 827, 876, 916—
Onset at Fulham, 1101, 1146
Vital statistics for 1948 203—For Scotland, 461
Yellow fever in Panama, 461

Epidemiology: Infectious diseases and vital statistics, 39, 80, 118, 160, 202, 250, 289, 329, 374, 418, 461, 506, 554, 598, 640, 686, 732, 786, 827, 875, 916, 964, 1013, 1058, 1100, 1146

Epidemiophytosis pustular, viroform in treatment of, 839

Epilepsy: Clinical and social problems of (F. J. Nattrass), 1 (O), 43 (O), leading article, 61; correspondence, 197—And focal behaviour, 197, 411—Hereditary influence of, 291—Water pitressin test in, 291, 880—Review of book on, 577—Contraindications to air travel, 604

Epsom College Royal Medical Foundation of Appeal, 26—Centenary Register, 464—Pensions, scholarships and grants, 953

ERDEL, A.: Pulmonary tuberculosis complicated by amoebic hepatitis 18

Erskine Alexander McConnell, obituary notice of, 369, corrected, 416

Erythema nodosum aetiology of (annotation), 188, correspondence, 282

Erythrocytosis, chemical sympathectomy for, 1028

Eserine and pilocarpine 331

ESZENYI-HALASY, M.: Histamine headache 1121 (O)

EVANS, D. T. R.: Vesico-vaginal fistula, 455

—F. A. Cough fracture in late pregnancy, 241

—P. R. C. Diaphragmatic hernia and anaemia, 1097

—William Cordiology 104, 164—Heart in endocrine disease 360—Cordiography, 529

EVE, F. C. Observation of children's hearts 682

EWEN, J. H. Aids to Psychology 3rd ed., 854

F

Faculty Royal of Physicians and Surgeons of Glasgow Fellows admitted, 118, 416, 684, 873

FAITHFULL, T.: Letters to Morgagni, 854—A Handbook of Self Analysis, 854

Family troubles (book review), 398

Fanconi's syndrome: Diagnosis and treatment, 81

FARRAO, H.: Rhinitis caused by Friedländer's bacillus, 116

Fat intolerance, 164, 378, 602

Fats vegetable, and gallstone formation, 122

FAWCETT, A. W.: Case of rupture of left lower-lobe bronchus with recovery 482

Federation World for Mental Health: Articles of Association 120

Feet: Tender swellings of, 642

FEEL, J. N.: Spinal anaesthesia for caesarean section 283

FELTON, Tim Entwistle obituary notice of, 35

FERRISSON, Robert S. C.: Dysocia after amputation of arm 241

Fertility: Treatment of infertile marriage, 71—Hormone treatment of infertility, 82—Book reviews 273, 352—Infertility 790

FESSLER, A. (and R. Sharpe FRANCE): Successfully operated case of membranous occlusion of anus in 17th century, 1048

FEVERS

Abortus: Treatment of, 194—Treatment with sulphonamides and blood transfusion (C. Remet) 1035 (O)

Blackwater pox and 324

Malta: Persistent symptoms in brucella infection 254

Rheumatic: Alergy and nephritis (leading article), 21, correspondence, 194, 237—Prevention of recurrences (annotation), 279

Typhoid: And pregnancy, 464—Successful treatment of carrier with penicillin and sulphamerazine (C. A. Rumball and L. G. Moore) 615 (O)—Treated with chloromycetin (F. Murgatroyd) 851 (O)—Inoculation against, 876—Treatment of chronic carrier with chloromycetin (C. A. Rumball and L. G. Moore), 943, annotation, 940

Undulant, and milk regulations, 509

FEYSTER, F.: Über Neurome und Neuro-Fibromatose nach Untersuchungen am Menschlichen Vascularmusculatur 20

FFREY, Geoffrey: Infective ear disease 193

Fibrillation, myotonic auricular, treated with thiouracil (J. F. Goodwin) 895 (O)

Fibroid: Effect of endocrines on (H. J. B. Atkins) 750 (O) correspondence, 911

Fibrosis, 71, 411, 499, 634

FLOIDAY, J. V.: Simultaneous embolism in both arms, 450 (O) correspondence, 636

FIELD, C. Elaine: Amethocaine hydrochloride 236

Filans's, experimental, chemoprophylaxis of, in cotton-rat (W. E. Kershaw and others), 130 (O); annotation, 145

—ocular, 500

Fingers: Mallet finger, 30, 113, 155—Significance of 'cubbing' (W. P. U. Jackson), 216 (O); annotation, 228—'Minor' injury of terminal phalanx (F. I. Powell), 618 (O)—Sulphamycin in finger infections (J. Bradley Watson and others), 1081 (O)

FINLAISON, F. H.: Cervical stenosis after forceps delivery, 242

Finland B.C.G. vaccination in, 616

FINN, Nathan: Prescription of barbiturates, 195, 728

FINNEY, John M., Jun.: Johns Hopkins School of Surgery, 231

First aid, teaching, 780

FISCHER, F. P. (and others): Documenta Ophthalmologica, vol. 2, 165

Fish: Core of the Trawler Fish, 898

Fish-poisoning (annotation), 317; correspondence, 498, 775

FISHL, L.: Thiosemicarbazide, 1005

FISHER, J. W.: Modern Methods of Mental Treatment, 225

—Reginald: Diagnosis of early pulmonary tuberculosis, 591

Fits, hysterical, prognosis of 1076

FITZPATRICK, P. E.: Diagnosis of tuberculous meningitis, 75

FLACK, I. Harvey: Lawson Tait, 1845-99, 1094

FLENNING, G. B. (and S. GRAHAM): Notes on Infant Feeding, 3rd ed., 225

—James B.: Breast-fed ing 1140

FLESCHE, J.: Psicopatologia della Vito Instintivo, 353

Fletcher, Isaac, obituary notice of, 1143

—J. M.: Fluorides and dental caries, 285

—Roy T.: Pulcems: new system of medical classification, 83 (O), 410, leading article, 105; correspondence, 244

FLEURY, P. (and J. COURTOIS): Les Diastoses, 274

Flour, agnized, 202

FLYNN, J. E. (editor): Blood Clothing and Allied Problems, 443

Foetus: Epilepsy and focal behaviour, 197—Absorption of dead foetus, 292

Forgie, William Edward, obituary notice of, 245

FOLLEY, S. J.: Nutrition and female fertility, 543

Folliculitis in various areas, treated with viroform, 838

FOLSON, J. K.: The Family and Democratic Society, 668

FOOD

Bread: Mineral oils in, 73—Vitamins in, 685

Cornd beef, handling of, 822

Eggs in water-glass, 1149

Fat intolerance, 164, 378, 602

Fats, vegetable, and gallstone formation, 122

Fish: Core of the Trawler's Fish, 898

Fish-poisoning (annotation), 317; correspondence, 498, 775

Flour, agnized, 202

Food, health, and education, 866

Hygiene behind the bar (annotation), 765

Ice-cream, cooling of, 687

Meat: Inspection (annotation), 146—Meat ration and blood levels: investigation of Indian soldiers in Persia and Iraq, 1944 (Geoffrey F. Taylor and others), 219 (O)

Mineral Oil in Food Order, 1949, 663

Rations, special, for invalids, 915

Refrigeration, 1149

Tea, washing soda in, 736

Vegetables: Effect of pressure cooking on vitamin C content (Gweneth M. Chappell and Audrey M. Hamilton), 574 (O); annotation, 582; correspondence, 822, 958

Foot, basal-cell carcinoma (rodent ulcer) on, 738

FOOT, N. Chandler: Identification of Tumors. Essential Gross and Microscopic Pathologic Features Systematically Arranged for Easier Identification, 19

FOOTE, R. Rowden: Treatment of varicose veins, 635

FORBES, G. B.: Penicillin-resistant staphylococci, 591

—Robert: Artificial insemination, 590

Forces, diathermy preng (A. Wilfrid Adams), 631; correspondence, 780, 870, 911, 1138

Foreign body, oesophageal, in baby (G. A. Moulden), 759

FORSSANDER, C. A.: Carcinoma of cervix, 457

Forster, Arthur Graham Foljambe, estate of 966

FOSTER, G. (and E. A. TURNER): Skull closure by acrylic plates, 619

FOSTER-CARTER, A. F. (and G. S. TODD): Bronchography and surface analgesia, 725

FOULKES, S. H.: Introduction to Group-Analytic Psychotherapy, 1039

FOWLER, A. W.: Retaining patency of veins 74

Fracture, collar-bone: Shoulder-harness, 779, 913

—cough, of ribs (Raymond C. Cohen), 133 (O); in late pregnancy (J. W. Paulley and others), 135 (O); annotation, 145; correspondence, 241, 681

—neck of femur (leading article), 580

—rib, causes of, 286, 414, 832

Fragilis ossium, inheritance of, 602

Frain, William John, obituary notice of, 35

FRANCE, R. Sharpe (and A. FESSLER): Successfully operated case of membranous occlusion of anus in 17th century, 1048

FRANK, S. L.: Temperature recording, 75

FRANKEL, Eric (and D. Ling STEVENSON): Treatment of rheumatoid arthritis by vasodilatation 567

FRANKLIN, Kenneth J.: Renal "shunt" mechanism in rabbits, 282—Effects of anoxia on renal clearances, 361—(And others): Research in renal disease, 1007

FRASIER, C. N. (and Li HUNG CHUNG): Racial Variations in Immunity to Syphilis, 621

FREAR, D. E. H.: A Catalogue of Insecticides and Fungicides, vol. 2, 443

FREEDMAN, Bernard: Temperature recording, 413

FREETH, H. D.: Theraised abortion simulating ectopic gestation, 1159

FREUD, Anna: Children in hospital, 863

FRIEDMAN, R.: The Story of Scabies, vol. 1, 945

FRIEDMAN, Ernst: Endometrial biopsy curette 150

FRIEL, A. R.: Zinc Ions in Ear, Nose, and Throat Work, 1126

FROESCHL, Emil (editor): Twentieth Century Speech and Voice Correction, 397

Frontal lobes, steroid metabolism and, 74

FULTON, J. F.: Aviation Medicine in its Preventive Aspects, 398

Fund, King Edward's Hospital: Recent gifts, 161

—Oliver Memorial, 375

—Royal Medical Benevolent: Malaya Branch of B.M.A., 70

Furunculosis, viroform in treatment of, 839

G

GABRIEL, W. B.: The Principles and Practice of Rectal Surgery, 4th ed., 141

GADD, H. W.: Synopsis of the British Pharmacopoeia, 15th ed., 141

Gallbraith, James John, obituary notice of, 415

GALLOP, E.: Therapeutic controls, 1054

Gall-stone colic differentiated from subacute pancreatitis, 568

—formation, vegetable fats and, 122

GALPINE, J. F.: Abortus infection treated with "autocombin", 1037

"Gammexane" and mosquito control in Belgian Congo (G. Daydon), 101 (O)

Ganglion, simple, treatment of, 32, 112, 239, 414, 690

GARDNER, Eric K.: Anaesthesia in Ludwig's angina, 153

GARTSIDE, V. O. B.: Danger to public health, 911

Gas gangrene, endogenous, complicating carcinoma of colon (A. L. Wyman), 266 (O); leading article, 276

GASKELL, H. S.: Vertigo and influenza, 959

Gastroctomy, 649—Post-gast ectomy diet, 967

—partial, some aspects of (I. Hosford), 929 (O), correspondence, 1049, 1097

Gastro-enteritis: Achlorhydria following, 196—Col form flora in, 407

GELLNER, Lisa: Taking children's temperatures, 547

Genetics: Marxist genetics, 28, 195, 368—Dictionary of (book review), 944

Genito-urinary diseases: Contraindications to air travel, 604

Geriatics: Senile deterioration of central nervous system (Trevor H. Howell), 56 (O); correspondence, 155—Problem of ageing: basic difficulties of research (V. Korenchinsky), 66—Treating the aged sick at home (E. B. Brooke), 408; correspondence, 545—Alarming dreams in the aged, 555—Care of the elderly, 1098, 1134—Senility and testamentary capacity, 1149

GERLIS, L. M.: Ogilvie's syndrome, 1137

GIBBON, Norman: Haematemesis, 590—Calculi in a paraplegic, 644

GIBBS, W. T.: Carcinoma of male breast, 196

GIBSON, H. J.: Relative viscosity of blood plasma in rheumatic disease, 818

Giddiness, transient, 968

GIGLIOLI, George: Malaria, Filariasis, and Yellow Fever in British Guiana, 483

GILBERT, J. A. L.: Association of maternal obesity, large babies, and diabetes 702 (O)—(And D. M. DUNLOP): Diabetic fertility, maternal mortality, and foetal loss rate, 48 (O); leading article, 62

—N. C.: Pain in childb rth, 497

GILES, C.: Coliform flora in gastro enteritis, 407

Gill, Alexander Wilson, estate of, 599

Gilmore, Eric St George, estate of, 1147

GILPIN, Archibald (and others): An unfortunate precedent, 774

GILROY, A. B.: Malaria Control by Coastal Swamp Drainage in West Africa, 810

GISSANE, William: Mallet finger, 155

GLASER, H.: Das Weibild der Medizin von Heute, 621

GLAUNER, H. R.: Die Indikationen zur Röntgen- und Radium-Bestrahlung, 104

- LEDHILL, Raymond C.: Senile deterioration of CNS 155
- LEES, P.: Approach to frontal lobe 193 760
- LIOSIOS and Steatorrhea after ileocolostomy: effect of synthetic vitamins of B complex, auto-lyzed yeast, and liver extract (Alexander Brown), 1073 (O); annotation, 1088
- in Addisonian pernicious anaemia: effect of synthetic vitamins of the B complex (Alexander Brown), 704 (O); annotation on 1088
- LICKMAN, Laurie: Self-administered pneumothorax cuffs, 113
- LOOBY, B. (and A. J. McCall) Transfusion compatibility tests, 870
- LOWAN, N.: *Mycoetes and Practical Mycology* 225
- Oral reactions to penicillin 367
- LOD, H. (editor): *Cornell Conference on Therapy* vol. 3, 902
- LOBLATT, H.: The Renal Origin of Hypertension 668
- LODMANN, Franz: *Voluntary Medical Care Insurance in the United States*, 810
- OLDWATER, S. S.: On Hospitals, 811
- OLIGHER, J. C.: Perforations of oesophagus 1095
- OLLANZ, Victor: Arab refugees 590
- OROTHOCA in war (annotation), 815
- OOD, Christopher Frank, obituary notice of 198
- M. G.: Fibrosis, 411—Treatment of rheumatoid arthritis, 1051
- OODALL, Archibald: Plasma-cell mastitis 194
- OODHART, C. E. D. H.: Amethocaine hydrochloride, 457
- OODWIN, J. F.: Thyrotoxic auricular fibrillation treated with thioracil, 895 (O)
- ORDON-TAYLOR, Sir Gordon: Tribute to Owen W. Richards, 960
- OUT: Lithium ionization for gout, 157—Treatment of, 832
- OVAN, A. D. Telford: "Rapid" rat test for pregnancy 332
- OWERS, vasovagal attack of (Michael Jefferson), 852
- PAHAM, E. A. (editor): *Yearbook of General Surgery*, 1948, 714
- S. H.: Diagnosis of early pulmonary tuberculosis, 681
- PANT, John B.: Social medicine, 630
- John Vemys, obituary notice of, 249
- PARANOMIA, 464, 920
- eosinophilic, ranthomous, with honeycomb lungs (Thomas Parkinson), 1029 (O)
- PARANOMIA of large intestine, 406
- PARANOMIA, role of infection in (Kenneth Robertson), 799 (O)
- PARANOMIA, dry, 1150
- PARANOMIA, A.: Bacteriophage and anubiosis, 860
- PARANOMIA, F.: Statistics and health education, 680, 936
- Frank: Doctors working together, 495
- I. D. A. (and R. A. Lambert): Meningococcal conjunctivitis, 17 (O)
- Oliver: Diparcol in Parkinsonism 778
- PARANOMIA, R. (and D. S. MANKINAR): Afebrile cases of melioidosis, 308 (O)
- PARANOMIA, Raymond (editor): *The Practice of Endocrinology*, 901
- PARANOMIA, L.: Procaine penicillin 75
- PARANOMIA, F. L. (editor): *Techniques in Physiology*, 274
- PARANOMIA, Major: Medicine of Macrobius, 954
- Jenner and medical science, 1001
- PARANOMIA, Sir R.: *Gods and Men*, 902
- PARANOMIA, A. H.: Is influenza epidemic? 683
- PARANOMIA, Norman, obituary notice of, 1099
- PARANOMIA, H.: *Conférences Cliniques de Médecine Infantile*, 1126
- PARANOMIA, J. L.: Bronchial suction catheter, 1000
- PARANOMIA, Alwyn: Thymoma simulating laryngeal diphtheria, 759
- Edward F.: *Morals in the Melting Pot*, 141—*The Childless Marriage: Its Cause and Cure*, 352
- PARANOMIA, E. R. (and others): Streptomycin in finger infections, 1081 (O)
- Sir H. E. E. The surgeon in industry, 255 (O); correspondence, 725, 820
- PARANOMIA, Philip Newman, obituary notice of, 684
- PARANOMIA-PEACE, Mrs. Z. C.: Occupational therapy and physiotherapy, 548
- PARANOMIA, Ruth E.: *Health Teaching in Schools*, 141, 1125
- PARANOMIA, J. (and others): *Symposium de Hematologia y Hemoterapia*, 1948, 902
- PARANOMIA, H. E. E. (and Herbert CAIGER) The deaf-blind, 775
- PARANOMIA, British Medical (leading article), 625
- PARANOMIA, bleeding, 41, 206
- PARANOMIA, J. A.: An introduction to Pharmacology and Therapeutics, 8 h ed., 398
- PARANOMIA, N. N.: Abacterial pyuria producing bilateral renal stenosis, 1083
- PARANOMIA, Ernst: Convulsions, 920
- PARANOMIA, A. T.: *The Story of Human Birth* 484
- PARANOMIA, Mostly Memories, 1126
- PARANOMIA, R. Frank: Routine medical examinations, 1087
- PARANOMIA, W. E.: Propagation of mouse tumours by means of dried tissue 511 (O); leading article, 511; correspondence, 632, 679, 1052
- GYNAECOLOGY.
- Book reviews, 273, 577, 902
- Cervix. Dysplasia after amputation of (Walter Calvert), 58, correspondence, 157, 241, 823
- 1697—Carcinoma of, 156, 457, 501—Spontaneous amputation of, 157, 501
- uterine, incidence of cancer of (R. G. Mallipant), 978 (O); annotation, 996, correspondence, 1075
- Dyspareunia, 735
- Endometrial biopsy curette (Ernst Friedmann) 150
- Fallopian tube, resection of 866
- Intermenstrual pain ("Mittelschmerz") and time of ovulation (P. L. Krohn), 803 (O)
- Menopause, oestrogen at, 1061
- Menorrhagia, oestrogen therapy of 736, 920
- Menstrual history and sexual feelings of women war captives in Russia, 694
- Menstruation At age 56, 602—Skin eruption associated with 253—Late menopause, 736—Precipitating or delaying, 1061
- Ovarian cysts, twisted, in children (G. Gordon Crowe) 102
- Ovary virgine tumours of, 407
- Pre-menstrual tension state 331
- Sex hormones, 166
- Uterine cancer, parity and, 789
- Uterus. Innervation of, 377—Retroversion of, 510
- Vaginal dilators (W. McKim H. McCullagh) 150
- Vaginae, amoebic (N. C. Sen) 808 (O)
- diptheritic (J. G. Thurston), 272
- Vesico-vaginal fistula, 455 682
- Vulvovaginitis, gonococcal, treatment of (annotation), 719
- See also Obstetrics
- Gynaecomastia testosterone in, 880
- H
- H 11 in malignant disease, 958
- Hadden, William Edward, obituary notice of, 458
- HADDON, G. Crohn's disease, 437
- HADDEMA: And melanoma (Norman C. Tanner), 110—With special reference to chronic peptic ulcer (D. C. Lewin and Sidney Trueblood), 383 (O); leading article, 400; correspondence, 590
- Haematomata, spontaneous circumferential report and review of two cases (K. Whittle Marrow), 1118 (O)
- Haemochromatosis, exogenous (annotation), 534
- Haemoglobin values 125, 360
- Haemolytic crisis (annotation), 228
- disease of the newborn: criteria of severity (P. L. Morrison and Marie Cuthbert), 123 (O); leading article, 142; correspondence, 234, 364
- Haemorrhage, spontaneous intra-abdominal (A. L. Woolf and H. R. Thompson), 572 (O)
- subarachnoid, in infancy due to anoma of cerebellum (P. T. Bray and W. Davies), 481
- subarachnoid, 510, 879
- Haemorrhoids: acute idiopathic pulmonary (Leslie Mackenzie), 431 (O)
- Haemostatics, absorbable (annotation) 1044
- HAIR, E.: Origin of *Cl. welchii* type F infection, 271 (O)—Occurrence of *Cl. welchii* type F in normal stools 271 (O); leading article, 276
- HAIR, J. E.: Smallpox contacts, 912
- HAIR, Trichorhexes nodosa, 41—Cold permanent waving, 206—Faling, 510, 11-9—Green staining of, 967
- HAIR, Norman: "Death following abortion," 1004
- HAIR, Frederick, obituary notice of 871
- HAIR, David, obituary notice of 326
- HAIR-White, Sir William, obituary notices of, 414, 458; estate of, 966
- HALL, Donald George, obituary notice of, 729
- G. F. M.: Thyruis in meningococcal septicemia, 681
- James S.: Breast-feeding, 72
- S. Barton: *Psychological Aspects of Clinical Medicine*, 945
- Stephen: Whether tuberculosis? 70—Tuberculosis in industry, 1049
- HALLT, Geoffrey St. J.: Perforation of gastric carcinoma, 863
- HALLIDAY, J. L.: Psychosocial medicine, 443
- HALLUX, 332
- HANLEY, Trevan: Fibrosis, 71
- HANLEY, J. M.: Midwives correct, 72 368
- P. (and others): *National Formulary*, 452
- HAMILTON, Audrey M. (and Gwereth M. Chappell): Effect of pressure cooking on vitamin C content of vegetables, 574 (O); annotation, 582; correspondence, 822, 958
- Gordon: *Psychotherapy in Child Guidance*, 667
- HAMMOND, J.: Physiology of reproduction in relation to nutrition 543
- HANCOCK, P. E. Thompson: Amethocaine hydrochloride, 236
- HANDLEY, R. S.: Chronic ileus caused by malignant invagination of posterior abdominal wall, 891 (O)
- W. Sampson: Carcinoma of cervix, 156
- Hands: Infected, treated with systemic penicillin (Gordon A. Barlett), 17 (O); lead ed. article, 187; correspondence, 455, 459—Basal-cell carcinoma (rodent ulcer) on, 739—Pain in, in cardiovascular disease, 834
- HANSCHELL, H. M.: Treatment of varicose veins, 500, 869
- HANSEN, I. B. Fabricius: *Investigations on Agonal Acids*, 1039
- HARDING, W. G.: Tuberculous meningitis, 498
- HARDY, R.: Spread of tuberculosis by books, 1062
- HARGREAVES, A.: Psychiatric indications for abortion, 653
- Betty (and T. N. A. JEFFCOATE): Further experiences with ethynyl oestradiol in suppression of lactation, 664 (O)
- HARKER, Thomas Henry, estate of, 120
- HARLAND, J. C. (and F. d'ABRU) Lumbo-dorsal sympathectomy in severe hypertension, 1019 (O)
- HARNETT, William George, obituary notice of, 416
- HARPER, Alex R.: Infective ear disease, 237
- HARRIS, A. (and Mary A. LANE): Psychiatric patients and Disabled Persons (Employment) Act, 982 (O); leading article, 994
- H. A.: General anatomy, microscopic anatomy, or histology? 769—Living anatomy, 957
- Noel: Treatment at family planning clinics, 540—(And Julian Snow) Insulin of Social Psychiatry, 548
- R. S. (and K. V. THYMAN) (editors): *Vitamins and Hormones*, vol. 5, 353
- HARRISON, L. W.: Overdose of surface anaesthetics, 282
- HART, F. Dudley: Ankylosing spondylitis, 633—(And J. G. HUMBLE) Aplastic anaemia following neoplasms, 1120 (O)
- Frank (and A. J. WALDEGRAVE): *A Study of Hospital Administration. Studies in Public Administration*, 667
- P. M. d'ARCY: Clinical aspect of chemotherapy of tuberculosis, 232
- HARTROFT, W. Stanley (and Charles H. BEST): Hypertension of renal origin in rats following less than one week of choline deficiency, in early life, 423 (O); leading article, 445
- HARTSILVER, J.: Diagnosis of phthisis in general practice, 778
- HARTSTON, W.: Statistics and health education, 1005
- HARVEY, R. Simpson: Treatment of varicose veins, 1005
- Wm. Clune (and Harry Hill) *Milk Products*, 621
- HASSIN, G. B.: *Histopathology of the Peripheral and Central Nervous Systems*, 3rd ed., 484
- HAUGHTON, J. W.: Treatment of varicose veins, 1141
- HAUWITZ, F. *Fortschritt der Biochemie*, 1938-47, 1040
- HAUSER, G.: *Eat and Grow Beautiful*, 714
- HAY, James R. W.: End of compulsory vaccination, 33
- Hay-fever plants, British, phenology of, and its significance to allergists (H. A. Hyde), 897 (O)
- HAYWARD-BUTT, J. T.: Self-administered thence analgesia, 364
- HAZARD, H. A.: Chemical sympathectomy, 1026 (O)
- Headache, in cardiovascular disease, 833
- histamine (M. Eszenyi-Hayasi), 1121 (O)
- HAIR, F. (and N. L. RUBY) *Recent Advances in Respiratory Tuberculosis*, 4 h ed., 185
- F. R. G.: Artificial pneumothorax for outpatients, 319
- HEATH, C. B.: Ankylosing spondylitis, 546—An unfortunate accident, 819
- Healey, Frederick Henry, estate of 829
- Health education, strategy of, 538; correspondence, 680
- national: Cogs in a machine, 325, 457
- Service for children (Helen Mackay), 768
- teaching (book review), 1125
- HEART
- Abscess pectus, 421
- Auricular fibrillation in the elderly, 643 1018
- Book reviews, 184, 529
- Brus ng of heart (annotation), 23
- Bund e-branch block and hypertension, 1018
- Cardiac arrest, 195
- on in women (annotation), 490
- Cardiovascular disease, extrathoracic pain in (J. L. Lovibond), 833 (O)
- Children: Long-term cardiac observation of children (R. Kemball Price), 515 (O); leading article, 534; correspondence, 682
- Coogan tal: Method of increasing lung blood supply in cyanotic congenital heart disease (N. R. Barrett and Raymond Daley), 659 (O); annotation, 717
- Confusion of, followed by cerebral embolism (Gerald Parsons-Smith and Denis Williams), 10 (O); annotation, 23; correspondence, 773
- Coronary occlusion and local heat therapy 1662
- thrombosis: Treated with anti-coagulant drugs (leading article), 579—Pain after 1017
- Unusual case of (M. D. Mire), 1123
- Endocardial disease, heart in (William Evans), 360
- Extrastasis, 1061
- Failure: Pharmacology of failing heart, 592
- Fibrillation, thyrotoxic auricular treated with thioracil (J. F. Goodman), 895 (O)

HEART (continued)

- Mitral stenosis, disseminated ossification of lungs in association with (H. M. Lawson) 433 (O)
 Pregnancy heart disease and (annotation), 278
 Rate. Diurnal variation of body temperature and heart rate 612—Effects of hot bath, exercise, exposure to cold, 612 613
 Vitamin E in heart disease, 409, 688
- Heat and blood flow (annotation), 230; correspondence 367
 Heating domestic. House warming (annotation), 25
 HEATON, T. G. *Artificial Pneumothorax in Pulmonary Tuberculosis* 2nd ed., 398
 Heels painful nodules on 1018
 HEFFERNAN, L. W. Threatened abortion 292
 HEFFERNAN, Patrick. *Whitaker tuberculosis?* 365
 HEGGIE, J. F. Anuria, 151, 453—Kidney in cortical necrosis, 282
 HEISCH, R. B. Human louse in transmission of *Treponema duttoni* in nature 17 (O); correspondence 501
 Hemiplegia galvanism in, 122
 Hemivertebra 555
 HEMPHILL, R. E. (and J. R. STUART): Simulated amnesia for identity treated by electrically induced epilepsy 938 (O); correspondence 1097
 Hemsted, Edmund Spencer estate of 687
 Henderson, John obituary notice of 1099
 —P. Incidence of diabetes mellitus in children and need for hostels 478 (O)
 HENRIET, A. T. *The Biology of Bacteria* 3rd ed. 811
 HENRY, George W. *Sex Variants: A Study of Homosexual Patterns* 620
 —John Rea estate of 1015
 —T. A. *The Plant Alkaloids* 4th ed., 811
 Heparin Discussion at Medical Society of London 26; correspondence 156
 Hepatitis amoebic 779—Pulmonary tuberculosis complicated by (A. Erdet) 18—Pre-suppurative, 31 156
 —of hyperthermia (annotation) 279
 —infective 331—And portal cirrhosis (K. Danodiari) 1033 (O); leading article 1042; correspondence 1095
 HEPLER, O. E. *Manual of Clinical Laboratory Methods* 4th ed. 668
 HERBUT, P. A. *Surgical Pathology* 811
 HERDMAN, N. A. *Milchreue correct* 243
 Heredity. Case of inherited spina bifida (W. G. Mills) 139—Hereditary influence of epilepsy 291
 —Risk of inherited defects, 378—Inheritance of achondroplasia (annotation) 402—Inheritance of Werdnig Hoffmann paralysis 880—Inheritance of renal calculi 1018
 HERFORD, Mary. Pain in childbirth 634
 —M. E. M. Routine medical examination 870
 HERN, K. M. *Physical Treatment of Injuries of the Brain and Allied Nerve Disorders* 185
 HERNANAN JOHNSON, F. Ankylosing spondylitis 456 591 690
 Hernia review of books on 273 992
 —diaphragmatic and anaemia syndrome of (A. D. Codrington) 805 (O); correspondence, 1097
 —femoral 32
 —irreducible umbilical in pregnancy 728
 —serosal perforation of stomach in (H. Simmons) 808
 —umbilical 601
 Heron. Dangers of (annotation) 107; correspondence 240—Dangerous symptoms after injections of (Cranston Walker) 619; correspondence, 776, 912
 Herpes simplex vaccination for 332
 —zoster 75—In a baby 821 1051—Vioform in treatment of, 839—Penile 968—Treatment with liver extract (H. S. Gaskell), 1037 (O)—And varicella in same patient, 1052
 HERTZBERG, G. *The Achievements of BCG Vaccination* 621
 HERZHEIMER, H. G. J. Antihistamine drugs 588
 HESS, P. *Routen- und Radlumbbehandlung*, 578
 Heit, Geoffrey Seecombe obituary notice of, 871
 HEWER, C. Lingion. Infected disk after lumbar puncture 283; correspondence 725
 HEWITT, R. M. (and others) (editors). *Collected Papers of the Mayo Clinic and the Mayo Foundation* vol. 39, 621
 Hey Wilson, H. Diathermy prong forceps, 911
 HEYWORTH, P. S. A. Oxford vaporizer in hands of midwives 441
 HICKEY, B. Brendan. Cancer oris, 367
 HIGGINS, T. Twistington: Tribute to R. C. Hutchinson 117
 Hill, Charles (and John Woodcock). *The National Health Service*, 1125
 —K. R. Some observations on teaching of pathology in U.S.A. 674
 —T. Rowland. London Lock Hospital, 1141
 HIMS WORTH, H. P. Diabetic coma, 632
 HINOLEY SMITH, J. D. Continuing streptococcal disease 241
 Hip-joint dislocation of at "rigger" (R. Salisbury Woods) 272; correspondence 457
 Histamine headache (M. Eszenyi-Halasy), 1121 (O)
 Histology, review of books on 902
 HOCH, Paul H. (editor). *Failures of Psychiatric Treatment*, 577—(And Robert P. Knicker): *Epilepsy: Psychiatric Aspects of Convulsive Disorders*, 577
 Hodgson, Albert Ernest, obituary notice of, 246
 HOFBAUER, L. *Atemregelang als Heilmittel*, 104

- HOGARTH, R. G. *The Trent and I Go Wandering By Stories of over fifty years of my life in Nottingham*, 274, 355
 HOGEMAN, O. *Clearance Tests in Renal Disorders and Hypertension*, 854
 HOLDEN, H. Solitary plasmacytoma of bone, 437 (O)
 HOLT, Lewis B. (and Guy BOUTFIELD): P.T.A.P. present position, 695 (O); leading article, 715; corrected, 968
 —L. R. Crisis in lobar pneumonia, 325
 Homosexual offenders, treatment of, 639
 Honours. New Year 68, annotation 63—The King honours. Professor Learmonth, 583—Birth-day honours, 1093; annotation, 1090—Royal Victorian Chain conferred, 1101
 HOOGSTRATEN, J. *In vitro* growth of leukaemic cells in healthy and leukaemic serum, 407
 Hope, Charles William Minelauz, obituary notice of, 825
 HORDER, Lord. *Whitaker medicine?* 557 (O)
 HORGAN, J. B. Tribute to Lionel Colledge, 117
 HORINO, F. O. *Klinische Infektionslehre*, 2nd ed., 714
 Hormones. Hormone treatment of infertility, 82
 —Use of sex hormones in therapeutics (P. M. F. Bishop), 165 (O)—And behaviour (book review), 484—And enzymes (annotation), 627
 HORN, J. S. Strain and paralytic poliomyelitis, 589
 HOSFORD, John. Treatment of simple ganglion 112—Some aspects of partial gastrectomy, 929 (O); correspondence, 1049 1097
 Hospital beds height of, 6 2
 —International Federation. First post-war Congress, 1135
 Hospitality for overseas visitors, 775
- HOSPITALS
 Administrative staff: statistics, 1012
 Admission delayed, to hospital (leading article) 532; correspondence, 691
 Beds. Unstaffed 328, 685—Unused 826
 Book reviews, 60 141, 667, 811
 Brompton Reports, vol. 16, 1947, 854—Centenary, 1014
 Chelsea Hospital for Women. Question in Parliament 202
 Closure likely, 917
 Economical use of hospital bed and of nurse (E. B. Brooke and J. P. Weichhall), 491
 Endowments Commission 785
 Fever hospitals, spread of infection in, 601
 Guy's. Dental school annual clinical meetings, 552
 Lock. Threat of closure (annotation), 948; correspondence, 1004, 1096 1141
 London Spectrographic Research Unit, 828
 Mental hospital records 538
 Middlesex Hospital Medical School: *Collected Papers, 1946-8*, 1085
 National, Queen Square: New radiographic department, 787
 Northern Ireland, hospital accommodation in, 551
 Nurses and nursing aides, 683
 Patients, aftercare of, 502, 635
 Princess Tsahai Memorial Hospital, 957
 Sickness treated in hospitals (annotation), 109
 Teaching hospitals in Scotland, 250
 Warning about a man named Bradford, 1150
- HOTTINGER, A. (and others). *Hungerkrankheit, Hungerodem, Hungerüberkulture*, 141
 HOUSDEN, Leslie George: *Handbook of Parent-craft*, 713
 House of Commons. The new House, 451
 —numbering, 198
 —warming (annotation), 25
 Housing and population (book review), 103
 How often are we ill? (leading article), 533
 HOWELL, C. A. Hinds: Case of thrombophlebitis migrans, 989
 —Trevor H.: Senile deterioration of central nervous system, 56 (O); correspondence, 155
 HUDSON, D. B.: *Understand Your Child*, 1085
 HUFFMAN, E. K.: *Manual for Medical Records Librarians*, 2nd ed., 185
 HUGGETT, A. St. G.: Malnutrition in pregnancy, 543
 HUGHES, H. O. (and K. P. BALL): Venous thrombosis and anaecogulans, 560 (O); leading article, 579
 —J. P. V. (and Alice STEWART). Tuberculosis in industry—an epidemiological study 926 (O); leading article, 946; correspondence, 1049
 —Mark: Cholestatoma 464
 —W. Howard (and A. VOUREKA): Frequency of penicillin-resistant staphylococci, 395 (O); correspondence, 591, 725, 1002
 HUMBLE, J. G. (and F. Dudley HART): Aplastic anaemia following neosarphenamine, 1120 (O)
 HUNT, Elizabeth: Leucoplakia and kraurosis vulvae, 42, 422
 —Thomas. Tribute to R. H. Miller, 76
 HUNTER, Alastair (and others): Repetitive auricular flutter, 778
 —D. (and others): *National Formulary*, 452
 —Donald (and others): An unfortunate precedent, 774
 —Samuel Robert, estate of, 1059

- Hunterian Oration. John Hunter the observer (H. S. Soutar) 379 (O); correspondence, 498
 Husband's winks, 504
 Hutchinson, Richard Cecil obituary notice of 117
 HYDE, H. A.: Pharmacology of British hay-fever plants and its significance to allergists, 897 (O)
 —The late William: Memorial window dedicated, 599
 Hygiene behind the bar (annotation), 765
 HYNES, M.: Normal iron reserves in man 408
 —Martin and Laurence MARTIN: *Clinical Endocrinology for Practitioners and Students*, 901
 Hyosclaf hydrobromide for children, 832
 Hyperidrosis, 475—Chemical sympathectomy for, 1027
 Hyperinsulinism due to islet-cell adenoma: cure with metabala studies before and after operation (W. G. Duncan Murray), 521 (O); correspondence, 680
 Hypersensitivity to uveal pigment (annotation), 229
 Hypertensinase (annotation) 449
 Hypertension. See Blood pressure
 Hyperthermia, hepatitis of (annotation), 279
 Hypnosis and suggestion in obstetrics (George Newbold), 900
 Hysteria: Prognosis of certain hysterical symptoms (A. Barham Carter) 1076 (O)
- I
- Ice-cream, cooling of, 687
 Idleness, in praise of (Sir Heneage Ogilvie), 645 (O)
 ILM, A. G., Religion and Psychotherapy, 854
 Ileocolostomy, statorrhoea and glossitis after (A. Brown), 1073 (O); annotation, 1088
 Ileus, chronic, caused by malignant invasion of posterior abdominal wall (R. S. Handley), 891 (O)
 ILGENFRITZ, Hugh C.: *Preoperative and Post-operative Care of Surgical Patients*, 854
 Illness in medical practice (John Pemberton), 306 (O); correspondence, 410
 Impetigo viiform in treatment of, 842
 —contagiosa, viiform in treatment of, 838
 —furfuraceous, viiform in treatment of, 839
 Incontinence stress, operation for treatment of (Wilfred Shaw), 1070 (O)
 India: Medical books in, 244—Prognosis and treatment of sprue (K. D. Keele), 986 (O)—Plague in Calcutta (annotation), 1089
- INDUSTRY
 Beryllium-worker acute pneumonitis in (G. R. ddel Royston) 1030 (O)
 Cotton-dust disease 155
 Eyes: Occupational diseases of lens and retina (Joseph Minton), 392 (O); correspondence 497, 545
 Graphite dust, exposure to, 689
 Health services, industrial, 1056
 Industrial Injuries Act: duty of employee to report accidents 396
 —wastes (annotation), 24
 Injuries, industrial: special hardship allowance 785
 Intestine, rupture of, due to non penetrating injury: unusual accidents from a mechanical saw (H. L. M. Roualle), 350 (O)
 Journal for Industrial Nurses, 1147
 Luminizing: Blood changes in luminizers using radioactive material (Ethel Browning), 421 (O); correspondence, 546
 Mallet finger 30, 113, 155
 Occupational diseases (leading article), 857
 Petrol-tank cleaners, unusual symptoms in (Indar Singh), 706 (O)
 Rehabilitation, industrial (leading article), 994—Unit at Leicester, 999
 Safety codes, 120
 Skin, protection of, from mineral oils, 1103
 Surgeon in (Sir H. Ernest Griffiths), 255 (O); correspondence, 725, 820
 Terpenes as industrial hazards, 790
 Textile workers, nephritis in, 32, 114
 Tuberculosis in industry—an epidemiological study (Alice Stewart and J. P. W. Hughes) 926 (O); leading article, 946; correspondence 1049
- INFANTS
 Anaesthetic apparatus (D. F. Rees), 111
 Asphyxia, neonatal, 242
 Brain, traumatic changes in, after delivery (B. Brouwer), 542
 Breast-feeding, 72 154, 1140—Review of book on, 59
 Dermatitis, ammoniacal, 164, 378
 Foreign body, oesophageal, in a baby (G. A. Moulden), 759
 Haemolytic disease of the newborn: criteria of severity (P. L. Mollison and Marie Cutbush) 123 (O); leading article, 142; correspondence 234, 364—Antihistamine drugs and, 194
 Haemorrhage, spontaneous subarachnoid, in infancy due to angioma of cerebellum (P. I. Bray and W. Davies), 481
 —subconjunctival, in a baby, 1104

- AST, R. J.: Chronic urethral obstruction in children, 179 (O)
- AVOINE, Dr.: *L'Anesthésie au Cyclopropane*, 992
- AWES, C. H. Wickham: Treatment of varicose veins, 412
- AWRENCE, R. D.: Pensions for diabetics, 151
- AWSON, H. M.: Disseminated ossification of lungs in association with mitral stenosis, 433 (O)
- Each, William John, obituary notice of, 247
- Leading Articles:**
- Air transport of sick and injured, 623
- Allergy, rheumatic fever, and nephritis, 21
- Amending Bill, 904
- Aureomycin, 763
- Australia, N.H.S. Act in, 275
- A3 nation, 993
- B.C.G. national trial of, 624
- Breach of faith, 762
- British Medical Guild, 625
- Budget and health, 671
- Cause for dissatisfaction, 186
- Childbirth: Relief of pain in 356—Natural 669
- Concerning holes and pegs, 105
- Consultants' terms, 1042
- Diabetes and pregnancy, 62
- Diphtheria prophylactics, 715
- Due care and skill, 669
- Enterus necroticans, 276
- Epilepsy, 61
- Fractures of neck of femur, 580
- Government's prerogative, 948
- Haemolytic disease of the newborn, 142
- Heart: Children's cardiac clinics, 534—Coronary thrombosis treated with anticoagulant drugs, 579
- Hepatic cirrhosis, treatment of, 1042
- Hospital, delayed admission to, 532
- How often are we ill? 533
- Hypertension in unilateral renal disease, 445
- essential, 813
- Industrial rehabilitation, 994
- International Sanitary Convention, 22
- Jenner and vaccination, 905
- King's health, 485
- Medical Research Council, Secretary of, 995
- statistics in the Army, 399
- Measles, surgery in treatment of, 993
- Mind, machine, and man, 1129
- National Health Service: Finance, 314—Cost and administration, 1086
- Neonatal mortality and morbidity, 444
- Occupational diseases, 856
- Penicillin for infected hand, 187
- Peptic ulcer bleeding: mortality of, 400
- Polomyelitis, paralytic, 488
- Population policy, 1127
- Precedent, an unfortunate, 717
- Prognosis—second thoughts on, 106
- Psychotherapy, group, 227
- Public health salaries, 401
- Radiotherapy, 906
- Remuneration in general practice, 447—Of specialists, 486—Of G.P.s, 626
- Rheumatoid arthritis, new treatment for, 812
- Sarcoma transmission by dried tissue, 531
- Sea-sickness prevention of, 855
- Sexual offenders, 446
- Sickness in England and Wales, 622
- Splenectomy indications for, 1087
- Streptococcal disease, continuing, 144
- tonsillitis spread of, 355
- Streptococcal disease in tuberculous bronchopneumonia, 764
- Sympathetic transmitter, 715
- Sympathectomy in peripheral vascular disease, 486
- Thrombosis, coronary treated with anticoagulant drugs, 579
- Trust Fund, 354
- Tsetse over Africa, 315
- Tuberculosis: Co-ordination of services, 216—In industry, 947
- Virus infections non-specific resistance to, 1041
- Voluntary action in war, 947
- Whitling down, 856
- Lecture Beyer Memorial: In praise of Idleness (Sir H. Osler), 645 (O)
- Chadwick: Health service for children (Helen Mackay), 768
- Imperial Cancer Research Fund: Propagation of mouse tumours by means of dried tissue (W. E. Gye), 511 (O), leading article, 531; correspondence, 632, 679, 1052
- Mackenzie: Industrial Health: The surgeon in industry (Sir H. E. Griffiths), 255 (O), correspondence, 725, 820
- Simpson-Smith Memorial: Haematemesis and melanosis (N. G. Tanner), 110
- Lectures, Hunterian: Johns Hopkins School of Surgery (I. M. Finney, Jun.), 231—Occupational diseases of lens and retina (J. Minton), 392 (O)
- Lumblin: Clinical and social problems of epilepsy (F. J. Nattrass), 1 (O), 43 (O), leading article, 61; correspondence, 197, 411
- University of London: Virus research and the virus problem (Pierre Léone), 359—Malaria as a world problem (B. G. Macgregor), 539—Surgical aspects of meningitis (Sir Hugh Cairns), 969 (O), leading article, 993
- LIE, J. (and others): Diabetic coma treated with and without early administration of glucose, 565 (O); correspondence, 632, 724
- R. W.: Tribute to William Susman, 248
- S. G. (and E. A. Barker): Taking children's temperatures, 284
- LEES, D. H. (and J. S. MacVINE): Statistical and clinical review of 107 cases of ectopic gestation, 263 (O); correspondence, 455—(And others): Cough fracture in late pregnancy, 135 (O), annotation, 145; correspondence, 241, 681
- Edwin Leonard, obituary notice of, 247
- Left-handed, teaching writing to, 831
- Legs: Basal-cell carcinoma (rodent ulcer) on, 738—Pain in in cardiovascular disease, 836
- LEIGH, M. D. (and M. K. BELTON): *Pediatric Anesthesia*, 714
- LEIPER, R. T.: Pig as vector of ascari, 1150
- LEITNER, S. J.: *Bone Marrow Biopsy*, 353
- St. J. (and R. M. STEINMAN): *Die primäre Tuberkulose bei Erwachsenen und Kindern und ihre Entwicklung*, 578
- LEMERRE, A. (and others): *Traité de Médecine*, vol. 1, 1039; vols. 7, 8, 9, 10, 1084
- LEPINE, Pierre: Virus research and the virus problem, 359
- Leprosy: 915—Mediaeval "leprosy," 320, 457—In Nigeria, 551—Manual of 810—London Exhibition of Leprosy in the British Empire, 952
- Lesions, dimensional, plain words on, 116
- Leucoplakia and kraurosis vulvae, 42, 164, 422, 790
- Leucorrhoea, 41
- Leukaemia, *Sle Blood*
- LE VAY, A. David: Physiology, 104—Mallet finger, 113
- LEVINE, S. Z. (and others) (editors): *Advances in Pediatrics*, 713
- LEWIN, D. C. (and Sidney TRUELOVE): Haematemesis with special reference to chronic peptic ulcer, 383 (O), leading article, 400; correspondence, 590
- LEWIS, Ivor: Surface analgesia for bronchoscopy, 454
- Sir T.: *Electrocardiography and Clinical Disorders of the Heart Beat*, 1085
- T. L. T.: Renal lesions in pregnancy, 282
- William Henry, estate of, 204
- LEYS, D. G. (and P. N. SWIFT): Pulmonary lesions following rheumatoid arthritis, 434 (O)
- LEYTON, Nevil: Penicillin in influenza, 499
- LIAN, C. (editor): *Médecine Pratique*, 104
- LIGMAN, E. (and C. K. FRIEDBERG): *Subacute Bacterial Endocarditis*, 2nd ed., 484
- Lichen hyperrophicus, viroform in treatment of, 842
- simpler, chronic, viroform in treatment of, 839
- LIEP, A. (editor): *The Commonsense Psychiatry of Dr. Adolf Meyer*, 313
- LIGGETT, S. W.: Spontaneous rupture of uterus in patient aged 76, 282
- Lighting, prophylactic artificial (annotation), 277
- Lightning stroke, death from, with multiple injuries (D. A. Skan), 666
- LILLINGSTON, Claude: B.C.G. vaccination in Finland, 636—Tribute to Dr. J. R. Connor, 638
- Lincus diamorphine, 733; correction, 876
- Linklater, George James Irvine, estate of, 1059
- Lip, cleft, 253
- Lipoidoses (Sir Henry Cohen), 774
- LISTER, M.: *The Young Student's Book of Child Care*, 1085
- Listian Oration: The mind of mechanical man (G. Jefferson), 1105 (O), leading article, 1129
- LIVER
- Antithyrotic factor of (annotation), 145
- Biopsy, needle, of liver, with special reference to modified Gillman technique (Richard Terry), 657 (O), correspondence, 820
- Cirrhosis: And colitis (annotation), 189—Ketouria in child with cirrhosis of liver (G. T. Rutherford), 480 (O)
- portal, infective hepatitis and (K. Damodaran), 1033 (O); leading article, 1042; correspondence, 1095
- Disease: contraindication to air travel, 604
- Extracis, 205—For herpes zoster (H. S. Gaskell), 1037 (O)—In steatorrhoea and glossitis after ileocolostomy (Alexander Brown), 1073 (O); annotation, 1088
- Injections in arthritis, 42
- Rupture of liver associated with parturition (Jean R. C. Burton-Brown and John A. Shepherd), 941 (O)
- LLOYD, B. (editor): *Science in Films*, 185
- Bertram Arthur, estate of, 507
- W. J.: Mallet finger, 30
- Loheline and asphyxia, 254
- LOCKHART, R. D.: *Living Anatomy*, 577, 778, 957
- LOESER, A. A.: Endocrines and fibro-adenosis, 911
- LOGAN, J. Stevenson: Institutional midwifery, 998
- Logie, John Moffat, obituary notice of, 77
- London: *Statistical Abstract* (1937-46), 234
- County Council: Woodberry Down scheme for health centre, 191; discussion at R.S.M., 494
- LOVO, Perrin H.: *A-B-C's of Sulfonamide and Antibiotic Therapy*, 530
- LOVEMORE, T. A.: *Medical Photography*, 4th ed., 1085
- LONSDALE, Kathleen: *Crystals and X-Rays*, 443
- LORAND, S. (editor): *Psycho Analysis Today*, 714—*Yearbook of Psychoanalysis*, vol. 3, 1947, 810
- LORD, O. B.: Whither tuberculosis? 369
- Louse, human, in transmission of *Trepanema duttoni* in nature (R. B. Hirsch), 17 (O); correspondence, 501
- LOVELL, Raymond (and C. B. TAYLOR): Use of the term "coliform," 820
- Robert G.: *Taking the Cure*, 60
- LOVINSON, J. L.: Extrathoracic pain in cardiovascular disease, 833 (O)
- LOWE, Francis: Pre-suppurative amoebic hepatitis, 31
- John: Second thoughts on prognostic, 589
- LUCAS, B. G. B.: Portable resuscitator, 541
- LUCK, J. Murray (editor): *Annual Review of Biochemistry*, 453
- LUBOVICH, A. M.: *The Child: An Adult's Problem*, 578
- Ludwig's angina, anaesthesia in, 31, 153, 324
- LUISADA, A. A.: *Heart: A Physiologic and Clinical Study of Cardiovascular Diseases*, 20
- Lumbar puncture, infected intervertebral disk after (L. L. Bromley and others), 132 (O); correspondence, 283
- Luminizers using radioactive material, blood changes in (L. Browning), 428 (O); correspondence, 546
- Lungs: Book on, 224—Nematodes and pulmonary lesions, 253—Disseminated ossification of, and mitral stenosis (H. M. Lawson), 433 (O)—Method of increasing blood supply to cyanotic congenital heart disease (N. R. Barrett and Raymond Daley), 699 (O), annotation, 717—Arteriovenous fistula of, 1038
- cysts, bilateral, 919
- honeycomb, eosinophilic xanthomatous granuloma with (Thomas Parkinson), 1029 (O)
- LUNN-ROCKCLIFFE, W. E. C.: Cow's milk and tuberculosis, 955
- Lupus erythematosus, 1103
- vulgaris, chemotherapy in (annotation), 316
- LYDON, F. L.: Arsenical toxicity, 284—(And others): Treatment of diagnosis of scalp by x-ray epilation without subsequent local application, 523 (O); annotation, 536; correction, 690
- LYLE, T. K. (and S. JACKSON): *Practical Orthoptics in the Treatment of Squint*, 3rd ed., 714
- Lymphadenoma: contraindication to air travel, 604
- Lymphocytes, radiation and, 816
- LYONS, W. R.: *Atlas of Peripheral Nerve Injuries*, 1085
- M**
- MACARTHUR, Sir William: "Mediaeval leprosy" in British Isles, 320; correspondence, 457
- MACBRYDE, Cyril Mitchell (editor): *Signs and Symptoms. Their Clinical Interpretation*, 19
- MCALL, A. J. (and B. GODWIN): Transfusion compatibility tests, 870
- MACCALMAN, D. R.: Official attitude towards mental health, 628
- McCANCE, R. A.: Renal clearances and their physiological significance, 361
- McCORMICK, V. O. (and J. N. P. MOORE): Curare-modified E.C.T., 957
- MCNEA, L. E.: *Chemical Urology*, 2nd ed., 313
- McCullagh, Charles Harold Walker, obituary notice of, 595
- W. McKim H.: Vaginal dilators, 723
- MCURDY, R. N. C.: Rb factor and pregnancy, 464
- MACDONALD, J.: Tribute to A. W. Wakefield, 504
- P. T. T.: House numbering, 198
- MACDOUGALL, A. A.: Taking children's temperatures, 457
- MCDWYER, A. D.: Temperature recording, 157—Allergy, rheumatic fever, and nephritis, 237
- MACE, D. R.: *Marriage Counsellings*, 274—*Marriage Crises*, 1085
- McGibbon, John, obituary notice of, 503
- McGOWAN, J. P.: Tumour agents, 632, 1052
- MACGOWN, J. C. (and others): Medical fitness for air travel, 603 (O); corrected, 790, leading article, 623; correspondence, 1053
- MACGREGOR, Alexander: Fluorides and dental caries, 29
- MACIA, J. J. P. (and P. V. MARCE): *Mononucleosis Infectiosa*, 621
- MACINTOSH, R. R.: Aid to oral intubation, 28—Death following injection of neostigmine, 852; correspondence, 1007, 1137
- MACKAY, Donald: Cancerous oris among African natives, 223; correspondence, 367
- Duncan Matheson, obituary notice of, 871
- Helen: Health service for children, 768

- MCKAY, James Murdoch, obituary notice of, 11.
MCKELVIE, A. : Heterophile pancreatic tissue, in the ileum causing intussusception, 523.
Mackenzie Industrial Health Lecture. The urban in industry (Sir H. Ernest Griffiths), 21 (O); correspondence, 725, 820.
McKENZIE, John : Dislocation of hip-joint, 45.
McKIE, E. C. (and I. MacKENZIE) : *Handbook of Surgery*, 434.
McLAHLAN, Ian : Handling of corned beef, 822.
McLEAN, N. F. : Infective hepatitis and portal cirrhosis, 1095.
MacLaren, Henry Colin obituary notice of, 618.
McLAHLAN, S. H. P. : Cord round the neck, 1140.
McLAHLIN, F. : Persistent amnesia, 1097.
McLAVY, W. S. : Delinquents in preventive psychiatry, 406.
McLEAN, Hector : Lobeline and asphyxia, 254.
McLEITCH, N. G. B. : Penicillin-resistance in pharyngococci, 725.
MacMahon, R. : *Tromp Royal*, 60.
McMINN, M. : Amethocaine hydrochloride, 236.
MacNAB, Ian : Subacute pancreatitis, 563 (O).
McNaghten rules, 31, 115.
McRAE, D. J. : Osteitis fibrosa disseminata, 389 (O); correspondence, 500.
MacVINE, J. S. (and D. H. LEES) : Statistical and clinical review of 107 cases of ectopic gestation, 263 (O); correspondence, 455.
McGRATH, G. : Malaria as world problem, 539.
McGRATH, W. H. (ANDREWS) : Proguanil and falciparum malaria, 545.
MAGURAN, W. H. B. : Deafness and uniusus, 644.
MAGGE, H. E. (and others) : Diet haemoglobin values and blood pressures of Olympic athletes, 300 (O); corrected, 378.
MANGOT, Rodney : *Abdominal Operations*, 2nd ed., 353.
Mann, George B. : *The Surgery of Abdominal Hernia*, 912.
MITLAND, A. Ian L. : Severe hypertension with recovery after nephrectomy, 426 (O), leading article, 445.
— Thomas Gwynne, estate of, 40.
Malaria : "Paludine" (proguanil) in prophylaxis and treatment of malarial infections caused by West African strain of *P. falciparum* (G. Covell and others), 68 (O); corrected, 292.—Intravenous "paludine" (R. N. Chaudhuri and H. Chakravarti), 91 (O); leading article, 106.—correspondence, 192, 324, 545, 589, 775, 956.—"Gammaxene" and mosquito control in Belgian Congo (G. Davidson), 101 (O).—Exo-erythrocytic forms of malaria parasite, 237.—DDT for mosquitoes, 483.—As world problem (B. G. Macgrath), 539.—Proguanil in prophylaxis and treatment, 585.—Campaign in Iran, 710.—Anopheles eradication in Cyprus (Horace Shelly and Mahmud Aziz), 767.—In Africa, 810.
MALHOTRA, C. L. : Whooping-cough and measles, 116.
Malignant disease. See Cancer.
MALLIK, K. : Tribute to K. S. Bhat, 77.
MALPANT, R. G. : Incidence of cancer of uterine cervix, 978 (O); annotation, 996, correspondence, 1095.
Mallet, Joan : Taking children's temperatures, 683.—(And others) : *Problems of Fertility in General Practice*, 273.
Mallet finger, 30, 113, 155.
MALMEJAO, J. : *Médecine de l'Aviation*, 1034.
MALONE, R. H. : Transfusion compatibility tests, 1003.
MALPAS, Percy : Classical caesarean section, 156.
Malaria fever : persistent symptoms in trucella infection, 254.
Manchester Paediatric Club : Measles, 362.
Mandelic acid, effects of, 967.
Manganese therapy, 157.
MANKIKAR, D. S. (and R. GREEN) : Afebrile cases of melioidosis, 308 (O).
MANCINELLA, P. : *L'Indirizzo Psicologico nello Studio della Personalità del Reo*, 104.
MARCHETTI, ANDREA (and others) : *The Epithelia of Woman's Reproductive Organs*, 577.
MARGULIES, H. H. : Prescription of barbiturates, 325.—Penicillin sensitivity, 414.
Markle Foundation, 965.
Marks, Urban, obituary notice of, 415.
Marriage of double first cousins, 556.
— guidance by doctors, 1141.
— infertile, treatment of, 71.
— neurosis, 635, 776, 822.
MARSDEN, A. T. H. (and L. W. JAYESURIA) : Case of Curling's ulcer, 1124.
MARSH, Frank : Dysentery in South Persia, 781.
MARSHALL, C. R. : Painless childbirth—a suggestion, 497.
— Francis Hugh Adam, obituary notice of, 257, 370.
MARTI, T. : *La Physiologie Post-Traumatique de l'Articulation*, 621.
Martin, Alfred Eugene, estate of, 1147.
— K. Whittle : Spontaneous circumferential haematoma : review and report of two cases, 1118 (O).
— Laurence (and Martin HYNES) : *Clinical Endocrinology for Practitioners and Students*, 501.
MARTIN, Rene (and Bernard SUREAU) : *Traité Moderne des Méningites purulentes aiguës*, 101.
— T. D. M. (and J. E. M. WHITEHEAD) : Carriage of penicillin resistant *Staph. pyogenes* in healthy adults, 173 (O).
— W. J. : Infant mortality, 438 (O); leading article, 444.
MARTIN-SCOTT, I. : Uniform in treatment of skin diseases, 837 (O), annotation, 858.
MARTYN, G. : Staphylococci in the newborn their coagulase production and resistance to penicillin and streptomycin, 710 (O).
Marxist agencies, 369.
MARVON, M. (and others) : "Paludine" (proguanil) in prophylaxis and treatment of malarial infections caused by a West African strain of *P. falciparum*, 68 (O) (corrected, 292); leading article, 106; correspondence, 192, 324, 545, 589, 775, 956.
MASSEY, A. (editor) : *Modern Trends in Public Health*, 398.
Master friends (annotation), 23; correspondence, 115, 198.
Mastitis plasma cell (M. Cullen), 94 (O).
MATTHEWS, Dorothy : Vitamin A for indocyclitis, 637.
— E. (and others) : Relation of *Staph. pyogenes* to dental caries, 54 (O).
— F. J. C. : Malignant tumour of small intestine, 138, correspondence, 253, 325.
MAWSON, S. R. : Infective disease, 237.
MAYER, C. F. (editor) : *Index-Catalogue of the Library of the Surgeon General's Office, United States Army*, Series 4, vol. 10, 714.
MAYO, E. : *The Social Problems of an Industrial Civilization*, 1055.
MEANS, J. H. : *The Thyroid and its Diseases*, 2nd ed., 761.
Measles : Whooping-cough and, 116, 198.—In children (Goodall-Jail), 253.—Notification of, 601.
Meat inspection, 146.—Meat ration and blood levels (G. F. Taylor and others), 219 (O).
Medical abstracts : Conference held by Unesco, 1091.
— Annual, 1948, 854.
— books in India, 244.
— classification. Pulemics, a new system (Roy T. Fletcher), 83 (O), leading article, 105, correspondence, 244.
— *Clinics of North America*, 274.
— *Directory, Irish, and Liverpool Year Book 1948-9*, 10th ed., 761.
— education : Academic salaries (annotation), 403.—Some observations on teaching of pathology in U.S.A. (K. R. Hill), 675.—Books on, 811.—Instruction of medical student in paediatrics, insight into family practice (W. S. Craig and others), 801 (O), correspondence, 1006, 1133.
— emergency, review of book on, 234.
— examination routine, 870, 1007, 1141.
— films : Gynaecological operations, 203.—Excision of intervertebral disks (J. E. A. O'Connell), 541.
— fitness for air travel (Sir Harold Whittingham and others), 603 (O) (corrected, 790) leading article, 623; correspondence, 1053.
— history : How did science begin? (review of book by Vesalius), 494.
— Insurance Agency : Annual meeting, 1094.
— journals for German doctors, 959.
— jurisprudence : Swirny prize awarded, 251.
— libraries, 1101.
— missions : C.M.S. celebrations, 678.
— officers of health, salaries of, 250.
— practice : Illness in (John Pemberton), 206 (O), correspondence, 410.—Rural practice in U.S.A. (book review), 442.
— Press : Anniversary dinner, 251.
MEDICAL PROFESSION :
Alien doctors, 875.
Irish qualifications, 875.
King's doctors honoured, 809.
Petrol for doctors, 505.
Registration in general practice (leading article), 447.
Rorschach test, doctors take (annotation), 1090.
Specialization, 368, 592.—Its value and abuse, 586; correspondence, 781.
Title M.D., use of (medico-legal), 1144.
Medical Register, 1949, 902.
— research : In America (book review), 140.—Part-time research (Sir Henry Dale), 203.—Annual experiments, 369.—Lad, Laura Memorial Trust grants and scholarships, 319, 1093.
— supernumeraries, 323.
Medicine : Book reviews, 140, 141, 274, 442, 1034.—Modern languages in service of (R. Whitehead), 146.—Value of clinical records, 543.—Whither? (Lord Horden), 557 (O).
— aviation : review of book on, 1034.
— history of, review of letters of Noah Webster, 312.
— occupational, review of book on, 154.
— private and State, review of book on, 104.
— social, review of books on, 103, 991.
— Tropical : Jubilee (Liverpool School of Tropical Medicine and London School of Hygiene and Tropical Medicine), 532.—London centre for, 826.
MEDICO-LEGAL :
Annoyance explosions, 117; correspondence, 244.
Breach of terms of service, 371.
C. m. l. a. n. e. s. a. c. e. n. d. i. c. s., 960.
Damages for doctor, 730.
Dangerous drugs in car, 634.
Death following abortion : verdict of misadventure, 825; correspondence, 1004.
— treatment with dioumoral, 783.
Disinfectant in milk : three unusual deaths, 1056.
Duration of aggravation, 153.
Gross negligence alleged, 1009.
Husband's suika, 504.
Libel actions by B.M.A. : settlement announced, 36.
Measles in hotel, 283.
Negligence by surgeon—loss of little finger, 872.—in diagnosis, 549, 595.
N.H.S. terms of service : doctor censured, 638.
Penalty under husband's suicide, 248.
Sedative, secret administration of, 1100.
Title M.D., use of, 1144.
Visceral transposition as defence, 77.
MEIGHAN, J. S. : Proof-readers' disease, 33.
Mehana, haematoma and (Norman C. Tait), 110.
Melanoma, 828.—Of choroid (annotation), 766.
MELENY, F. L. : *Treatise on Surgical Infection*, 1056.
Melioidosis, afebrile cases of (R. Green and D. S. Mankikar), 308 (O).
MELLANBY, Sir Edward : Jenner and his impact on medical science, 921 (O); correspondence, 1001.
Memory, mechanism of, 285.
Meningitis : Chemotherapy in (book review), 103.—Surgical aspects of (Sir Hugh Cairns), 599 (O); leading article, 593.
Menstrual Disorders, 75, 195, 235, 364.—Early diagnosis and review of treatment with streptomycin (I. Rubie and A. F. Mohan), 338 (O), annotation, 357; correspondence, 453, 777.—Treatment with streptomycin : experience in Scotland, 623.
Meningococcal conjunctivitis (J. D. A. Gray and R. A. Lambert), 17 (O).
MERRILL, J. : *The Science and Art of Joint Manipulation*, vol. 1, 2nd ed., 945.
— Z. : Pain in childbirth, 497.
MENNIGER, W. C. : *Psychiatry in a Troubled World*, 1125.
Menon, Elayadath Acharya, obituary notice of, 415.
Menstruation : At age 56, 602.—Skin eruption associated with, 253.—Menstrual history and sexual feelings of women war captives in Russia, 694.—Late menopause, 736.—Premature or delaying, 1061.
Mental disease : contraindications to air travel, 604.
— hospitals : Overcrowding in, 1012.—Chronic sick in, 1057.
— defective : Licensing of, from institutions, 337.—Waiting list for, 1053.
Menzies, Sir Frederick, obituary notice of, 913.
Mercury, absorption of, 879, 1022.
MEZIAN, Lewis (and George W. Bachman) : *The Issue of Compulsory Health Insurance*, 313.
Merrick, Robert Warren, estate of, 599.
Messier, Andrew estate of, 1147.
— Fred Master mends, 115.
Metabolism : Steroid metabolism and adrenal lobes, 74.—Hypertension due to steroid adrena : cure, with metabolic studies before and after operation (W. G. Dunbar Murray), 521 (O), correspondence, 630.
Metastasis, Morton's (annotation), 823, correspondence, 1005.
Metatarsus quintus valgus (Horace Davis), 664 (O).
METZGER, F. A. : *Neuroanatomy*, 2nd ed., 104.
MICHAEL-PHILLIPS, A. H. : Cases of rib fracture, 414.
Microscopy, advances in (annotation), 531.
— slit lamp (book review), 1126.
Microtomy : Frequent, 332.—Disturbed in disseminated sclerosis, 832.
M.D. s. v. e. s. recruitment and training of, 191.
Migraine and epilepsy, 5.
Mihara, Charles Henry, estate of, 507.
Milk : Standards, 502.—Undulant fever and milk separators, 509.—In Scotland, 875.—Simple chlorine method for estimating sugar in (Salah el-Dewi), 899 (O).—Three unusual deaths from disinfectant in milk (medico-legal), 1056.—(Special Designations) Bill, 283, 417, 874.
MILLER, Emmanuel : Preventive psychiatry and child guidance, 406.
— F. J. W. (and S. D. M. COURT) : Paediatrics and family practice, 1006.
— J. B. : Weather tuberculosis? 593.
— Ronald Henry, obituary notice of, 76.
Mildred's contract, 72, 243, 363.
MILLS, W. G. : Dried plasma for domiciliary midwifery, 1053.
MILNE, D. G. (and J. D. CRICKSHANK) : Report on outbreak of influenza in the Army, 571 (O).
— J. I. : Marriage neurosis, 776.
— M. D. : Unusual case of coronary thrombosis, 1123.

- MINCHIN, R. L. Haviland. Amoebic hepatitis, 779
- Mind and the skin (I. B. Sneddon), 472 (O), 690; correspondence, 636
- of mechanical nian (Geoffrey Jefferson) 1105 (O); leading article, 1129
- MINTON, Joseph. Occupational diseases of lens and retina 392 (O)
- MITCHELL, C. Marun: *The Shakespeare Circle* 185
- J. H. (editor): *The Medical Clinics of North America Chicago Number*, 854
- Mitral stenosis, disseminated ossification of lungs in association with (H. M. Lawson), 433 (O)
- MOHUN A. F. (and J. RUBIE): Tuberculous meningitis early diagnosis and review of treatment with streptomycin 378 (O), annotation, 357; correspondence 498, 777
- MOIR J. Chassar. Are females born co-twin with males sterile? 69—Classical caesarean section 409
- Mold George Henry Chavasse, obituary notice of 77
- MOLLISON, P. L. (and Marie CUTBUSH): Haemolytic disease of the newborn criteria of severity 123 (O) 364; leading article 142; correspondence, 234
- MOLONEY G. E. Endometriosis of groin report of three cases 435 (O)
- MONIER WILLIAMS, G. W. *Trace Elements in Food* 578
- MONRAD KROHN G. H. *The Clinical Examination of the Nervous System* 9th ed 353
- MONS W. *Principles and Practice of the Rorschach Personality Test* 184
- Mooney Herbert Charles estate of 204
- MOORE H. D. Continuous irrigation in prostaticectomy, 958
- J. N. P. (and V. O. McCORMICK). Curar-modified E.C.T. 957
- L. G. (and C. A. RUMBALL) Successful treatment of typhoid carrier with penicillin and sulphamerazine, 615 (O)—Treatment of chronic typhoid carrier with chloromycetin 943; annotation 950
- MORA F. B. *Cirugía de las Parálisis Espásticas*, 992
- MOREY G. W. Unusual case of frontal sinusitis 351
- MORGANS M. E. (and H. H. FOURACRE BARNES). Pregnancy complicated by diabetes mellitus, 51 (O); leading article, 62
- MORLEY John. Resectable carcinoma of stomach 772
- Morrison, Henry estate of, 918
- MORTENS, J. *Tuberculosis of the Knee-Joint*, 714
- MORTON R. S. Syringe-transmitted jaundice, 114 — William. Delayed admission to hospital, 681
- Morton's metatarsalgia (annotation) 858; correspondence 1004
- Moseley John Grimson obituary notice of, 369
- Mosquito control, "gamexane" and, in Belgian Congo (G. Davidson), 101 (O)
- Moss J. *Hadden's Health and Welfare Services Handbook*, 854
- MOTHERSOLE, R. D. Getting warm in bed, 690
- MOTT, F. D. (and M. I. ROEMER). *Public Health and Medical Care*, 442
- MOULDEN, G. A. Oesophageal foreign body in a baby, 759
- Mouth. Oral reactions to penicillin (W. G. Cross), 171 (O); correspondence 367, 411, 498
- MUHLBOCK, O. (and others). *Die Wieblichen Sexualhormone in der Pharmakotherapie*, 141
- MUIR, Ernest. *Manual of Leprosy* 810
- Mulinder, Edward Keith obituary notice of, 246
- MULLER, Gulli Lindh (and Dorothy E. DAWES). *Introduction to Medical Science*, 2nd ed, 274
- MULLER, R. W. *Über die Nierentuberkulose im Kindesalter*, 1126
- MUNRO-ASHMAN, D. (and G. T. COOK). Nasal carriers and streptococcal tonsillitis, 345 (O); leading article, 355
- MUROATROYD F. Typhoid treated with chloromycetin, 851
- MURLEY Reginald S.: Continuous irrigation in prostaticectomy, 1096
- MURRAY, D. Stark. *The Search for Health* 225
- E. Farquhar: Pregnancy and tuberculosis, 1047
- I. B.: *Some Common Psychosomatic Manifestations*, 530
- W. G. Duncan. Hyperinsulinism due to islet-cell adenoma: cure, with metabolic studies before and after operation, 521 (O); correspondence, 680
- W. P. Struggle to survive 1098
- MUSHIN, William W.: *Anaesthesia for the Poor Risk and Other Essays*, 945
- Mustard gas, treatment of skin lesions caused by (D. C. Sinclair), 476 (O)
- "Myasines" in treatment of tetanus (M. H. Armstrong Davidson and others), 616 (O); correspondence 569
- Mydriasis, belladonna liniment causing, 194
- Myxitis fatal, after antirabic vaccine, 1140
- MYERS, J. A. (and C. A. MCKINLAY) (editors): *The Chest and the Heart*, 313
- Myxoma, review of book on, 853
- NACHTSHEIM, H. (and H. KLEIN): *Abhandlungen der Deutschen Akademie der Wissenschaften zu Berlin* 60
- NAGLEY, M. M.: Thiosemicarbazone, 1140
- NABDOO, D. (and others): Diabetic coma treated with and without early administration of glucose 565 (O); correspondence, 632, 724
- NAYSH, F. Charlotte. *Breast Feeding. A Guide to the Natural Feeding of Infants*, 59; correspondence, 72, 154—Paediatrics and family practice, 1138—(And others): Instruction of medical student in paediatrics; insight into family practice, 801 (O); correspondence, 1006, 1138
- John M. (and John APLEY): *The Clinical Apprentice*, 141
- NANCYSEVILL, Leslie: Acute idiopathic pulmonary haemorrhoidosis 431 (O)
- NANSON, Eric M.: Cardiac arrest, 195—Post-operative atelectasis, 1049
- Narcolepsy, 4
- National Formulary, 452, 787; corrected, 876—Annotation on, 278
- health insurance. Last payment, 250
- NATIONAL HEALTH SERVICE
- Aftercare of hospital patient (annotation), 358; correspondence, 502
- Amending Bill, 38 418 leading article on, 904; second reading, 1010
- Australia N.H.S. Act ii 275
- Book: *The National Health Service*, 965, 1125
- Breach of faith (leading article), 762
- of terms of service, 171
- Broadmoor Criminal Lunatic Asylum, 687
- Budget and health (leading article), 671
- Capitation fee, 38
- Cardiff estimates 38
- Cause for dissatisfaction 186
- Clinic under the N.H.S. 243, 366
- Clinical details confidential 785
- Cops in a machine, 325 457
- Consultants and Specialists Awards Committee, 505
- terms (leading article), 1042
- Cost of, 38, 250—Cost of the National Health Service (Ffrang on Roberts), 293 (O); leading article, 314—Cost and administration of (leading article) 1086
- Criminal Justice Act, 1948, 363
- Dental estimates, 38, 202, 496, 1012
- Doctors' lists limited, 460
- Doctors redistributed 506
- Emergency cases beds for 685
- Estimates of expenditure 1949-50, 584
- Exchange Control Medical Advisory Committee, 460
- Eye tests (statistics), 915
- Foreigners and temporary residents, 417, 505, 731
- Government's prerogative (leading article), 948
- Health Centres: Woodberry Down Scheme (L.C.C.), 191, discussion at R.S.M., 494
- services under the Act (Health Congress of Royal Sanitary Institute), 998
- Hearing-aids (statistics), 915
- Homocopathy 875
- Hospital patients: Accumulation of insurance and pension benefits, 389
- services, need for economy in running, 1148
- Hospitals: Boards: revised estimates, 963
- Household remedies, 328
- How often are we ill? (leading article), 533
- Industrial health services, 1056
- Lifeboats 328
- Locumtenents, 685
- Medical laboratory technicians: salaries agreement, 1038
- Mileage Fund, increase of (annotation), 109
- Nursing problems (R. C. N. Conference), 541
- Out-patient clinics, 305
- Parliament: Debate on anomalies, 199—Debate on cottage hospitals, 201
- Patients, number of, 685
- Prescribing, public and private, 38
- Private practice, 785
- Refresher courses 288
- Remuneration: For temporary residents, 288—Of consultants, 418—Of general practitioners, 963; leading article, 626
- Rheumatism centres, new (annotation), 188—Note on Leeds Centre, 419
- Salaries of administrative and clerical staffs, 679
- Sight-testing: Fees for, 288—Policy on, 1057
- Single-handed doctor, 288
- Specialists: Remuneration of (leading article), 486—Contracts (annotation) 908
- Supplementary estimates, 327, 372; corrected 464
- Terms of service (medico-legal), 638
- Whittling down (leading article), 856
- X-ray film shortage, 460
- National Insurance Act: Maternity grants, 771
- Service: In the Forces, 202—Examination of men for, 598
- NATTAASS, F. J.: Clinical and social problems of epilepsy, 1 (O), 43 (O); leading article, 61
- correspondence, 197, 411
- NAUMANN, W.: *Funktionelle Duodermidialdiagnose im Röntgenbild*, 1126
- Nausea: Antihistamine drugs in treatment of nausea and vomiting due to streptomycin (J. R. Bignall and John Crofton), 13 (O)
- NEAME, Humphrey: Belladonna liniment causing mydriasis, 194
- Neck, basal-cell carcinoma (rodent ulcer) on, 738
- Necrobiosis lipoidica, 1150
- Necropsis and tuberculous infection (annotation) 907
- NEEDHAM, B. M. (and others): Diet, haemoglobin values, and blood pressures of Olympic athletes, 300 (O); corrected, 378
- Negligence by surgeon: loss of little finger (medico-legal), 672
- NEGRE L. (and J. BRETEY): *Vaccination par le B.C.G. par Scarifications Cutanées*, 2nd ed, 620
- NEGUS, V. E.: Tribute to Lionel Collidge, 34
- NEIL, J. H. and T. H.: *Eur. Nose, and Throat Nursing* 621
- NELSON, A.: *Introductory Botany*, 454
- Nematodes and pulmonary lesions, 253
- Neosphenamine: Tonic effect of 790—Aplastic anaemia following (F. Dudley Hart and J. G. Humble), 1120 (O)
- Nicomycin (leading article), 765
- Neostigmine, death following injection of (R. R. Macintosh), 852; correspondence, 1007, 1137
- Nephrectomy, severe hypertension with recovery after (A. I. L. Maidland), 426 (O); leading article, 445
- Nephritis in textile workers 32, 114
- acute, antihistamine drug treatment of (J. Craig and others), 6 (O); leading article, 21; correspondence, 194, 198, 237
- Neuralgia trigeminal 41
- Neurodermatitis, 472—Vioform in treatment of, 842
- NEUROLOGY
- Autonomic responses to bladder distension (annotation), 859
- Book reviews, 185, 1039
- Central nervous system, senile deterioration of (Trevor H. Howell), 26 (O); correspondence, 155
- Clinical approach to, 27
- Painful amputation stumps and phantom limbs: treatment by repeated percussion to stump neurotoma (W. Ritchie Russell), 1024 (O); annotation, 1132
- Peptic ulcer, influence of nerve supply on, 608
- Reorientations (Sir Charles Symonds), 679
- Subacute combined degeneration, 253
- Sympathectomy for asthma, 689
- chemical (H. A. Haxton) 1026 (O)
- lumbo-dorsal, in severe hypertension (J. C. Harland and F. d'Abrav), 1019 (O)
- Sympathetic transmitter (leading article), 715
- Sympathectomy, natural childbirth and, 958
- Uterus, innervation of, 377
- Vagotomy, physiological basis of (A. Davis Beattie), 607 (O); correspondence, 726
- Neuropathology for students (book review), 944
- Neurosis: Acting as aid to therapy in neurosis clinic (Maxwell Jones), 756 (O)
- Neutropenia, splenectomy in, 1067
- NEVIN, R. W.: Amoebic granuloma, 407
- NEWBERY, Barrett: Master minds, 198
- NEWBOLD, George: Hypnosis and suggestion in obstetrics, 900
- Newborn. See Infants
- NEWMAN, M. H. A.: Note on electric automatic computing machines, 1133
- P. P.: Approach to frontal lobe, 285
- NEWTON, I.: Health regulations for air travel, 682
- NEWMAN, P. H.: *Clinical Studies of Besnier's Prurigo*, 141
- NICOL, W. D. (and others): "Paludrine" (proguanil) in prophylaxis and treatment of malarial infections caused by West African strain of *P. falciparum*, 88 (O) (Corrected, 292); leading article, 106; correspondence, 192, 324, 545, 589, 775, 956
- NIEDERMAYER, A.: *Handbuch der speziellen Pasteralmedizin*, Part I, 443
- Nigeria, lepers in, 551
- NIGHTINGALE, H. J.: Treatment of simple ganglion, 414
- Nikethamide, indications for, 253
- NILSSON, F.: *Anaemia Problem in Rheumatoid Arthritis*, 530
- NIMALASURIA, A.: *Dietetics*, 185
- Nimmons, Robert, estate of, 204
- NOLAN, Margaret M.: Irreducible umbilical hernia in pregnancy, 728
- Noma, treatment of (annotation), 816
- Nomenclature: Cinchocaine, 283—Blood and marrow cells, 407—Use of term "coliform," 820
- Nomograms for sling and Assmann psychrometers (J. B. de V. Weir), 527 (O)
- NORRIS, C. T.: The McNaughten rules, 115—Artificial insemination, 726

Northern Ireland: Statistics of health services 963

NOVA ET VETERA:

Anatomy, general, microscopic anatomy, or histology? (H. A. Harris) 769
 Colourful Victorian (Charles Singer) 1094
 Macrobial medicine of (Major Greenwood), 954
 Successfully operated case of membranous occlusion of anus in seventeenth century (R. Sbarpe France and A. Fessler), 1048
 Twins: Are females born co-twin with males sterile? 69

Nuffield Hospitals Trust: Report (annotation) 318; correspondence, 410

Nurses: Statistics, 289—Economic use of (E. B. Brooke and J. P. Vetterhall), 491—Salaries, 641—And nursing aides, 683—Nurses Bill, 723 873
 962—Pay increased, 965

—Army memorial to, 1014

—student district, remuneration to 819

Nutrition: Significance of proteins, 150—Diet haemoglobin levels and blood pressures of Olympic athletes (W. T. C. Berry and others), 300 (O); corrected, 378—Book on 312—Hyper-tension of renal origin in rats following choline deficiency (W. Stanley Harrold and Charles H. Best), 423 (O); leading article, 445—Fertility and nutrition, 543

O

OAKLEY, C. L.: Tonsils of *Clostridium welchii* type F, 269 (O); leading article, 276
 —Wulfrid: Diabetic coma 724

Obesity: Too solid flesh (annotation), 857.

Obituary:

Alderton, John Michael, 828
 Anderson, Arthur, 77
 Armstrong, Cedric Whitefield, 458
 Barclay, Alfred Ernest, 823
 Bennett-Jones, William, 35
 Bhat, Kasaragod Somnath, 77
 Blake, Valentine Henry, 247
 Blayney, William, 116
 Bone, John Wardle, 728
 Borland, Hugh Hovatt, 247
 Bruce, Robert Tennant, 684
 Buck, Arthur Herbert, 637
 Cawston, Frederick Gordon, 871
 Chadborn, Charles Nugent, 458
 Chapman, Edward Seymour, 415
 Clayton, Thomas Morrison, 638
 Clowes, Norton Burroughs, 595
 Coates, Foster, 783
 Colledge, Lionel, 34 117
 Connal, Andrew, 594
 Conner, John Richard Tarrant, 549 638
 Cookson, Henry Astley, 1055
 Coult, Francis James Henderson, 369
 Cowell, Sibert Forrest Antrobus, 199
 Cummins, Stevenson Lyle, 1054
 Cundell, Harold Juler, 594
 Currie, John Ronald, 782
 de Smidt, Frank Philip, 415
 d'Herelle, Felix, 782
 Dickson, George Alexander, 504
 Dodds, Robert Leslie, 245
 Easterbrook, Charles Cromhall, 1143
 Edleston Richard Shafte Chambers, 1008
 Edlin Herbert Ebenezer, 637
 Erskine, Alexander McConnell, 370; corrected, 416
 Ferguson, Tom Entwistle, 35
 Fletcher, Isaac, 1143
 Foggie, William Edward, 245
 Fraun, William John, 35
 Galbraith James John, 415
 Good, Christopher Frank, 198
 Grant, John Wemyss, 249
 Grellier, Norman, 1099
 Grellier, Philip Newman, 684
 Hadden, William Edward, 458
 Haldin-Davis, Harold David, 326
 Halberstaedter, Ludwig, 871
 Hale-White, Sir William, 414, 458
 Hall, Donald George, 729
 Harnett, William George, 416
 Henderson John 1099
 Hett, Geoffrey Seacombe, 871
 Hodgson, Albert Ernest, 246
 Hope, Charles William Menclaus, 825
 Hutchinson, Richard Cecil, 117
 Ingram Alexander Gordon, 327
 Jamieson, Alexander Brown, 158
 Johnson, William 593
 Jones, Joseph, 1008
 Leach William John, 247
 Lees, Edwin Leonard, 247
 Leslie John, 1014
 McCullagh, Charles Harold Walker, 595
 McGibbon, John, 503
 Mackay, Duncan Matheson, 671
 —James Murdoch, 116
 MacLaren, Henry Colin, 618

Obituary (continued):

Marks Urban 415
 Marshall, Francis Hugh Adam, 287, correction 370
 Menon, Elayadath Achyuta, 415
 Menzies Sir Frederick Norton Kay, 913
 Miller Reginald Henry 76
 Mold George Henry Chavasse, 77
 Mosley, John Gimson 370
 Mulhner, Edward Keith 246
 Orpen Leander Joseph John 416
 Parsons, Christopher Thackray, 872
 Passmore, William Henry 246
 Pennefather Victor Damian, 637
 Phillips Evan William Monager Hubert 35, 117
 Purves-Stewart, Sir James, 1042
 Raw Stanley 158 247
 Rawlings Grahame Rugby, 246
 Reed, Thomas 458
 Rees Thomas Roger, 116
 Richards Hugh A. 287
 —Owen William 915, 960
 Riddell David 1008
 Riddoch George Keith 594
 Roberts Harry Trist 35
 Robinson Arthur 77
 Rogerson, Cuthbert Harry, 370
 Rust, James, 158
 Schmeigler Ernst 637
 Sewell Sir Sidney 824
 Shubik, Nancy Guendolyn 35
 Sinton, Frederick Ritchie 370
 Sorby Maurice 730
 Spriggs Sir Edmund Ivens, 266 326
 Steel Richmond 595
 Storey, Percy Arthur, 247
 Sullivan Harry Stack 499
 Susman William 76, 248
 Tamblach Sarvanamuttu 783
 Thomas Frank Griffith 782
 Twigg Donald Sarsenon 960
 Van Hoof Lucien Marie-Joseph Jean 34 118
 Vaughan-Sawyer Ethel, 503 595
 Vysick Arthur Hedley, 729
 Waecher Harold 783
 Waddy Frederick Henry 235
 Wakefield Arthur W., 504 549
 Watt John, 327
 Webb John Curtis 1099
 Wells Philip Hewer, 245
 West Watson, William Norman 914
 White Philip Bruce 594
 Whitehead Arthur Ernest 782
 Williams, Sir Frederic June 287
 Williams David Llewellyn, 959
 Willis James Robertson 1008
 Wilson, Louise Whitman, 247
 —Robert Scott 1008
 Wynne, Walter 684
 Young, William John, 246
 Zane Mavis Victoria, 327

OBSTETRICS:

Abdominal pregnancy, 422 1016
 Abortion, death following—verdict of misadventure (medico-legal), 825; correspondence 1004
 —threatened, simulating ectopic gestation, 1139
 Ambulation early after confinement, 688
 Analgesia in childbirth, 636 642 685—Caudal, 233—Self-administered triline, 364, 454
 —in Childbirth Bill 459 549
 Book reviews, 529, 853 1126
 Caesarean section: Spinal anaesthesia and 114, 153, 244, 283 323, 409 413—Classical operation, 156, 242, 323, 409 414, 545
 Childbirth painless 727
 Cord round the neck, 1140
 Delivery: 5 000 consecutive deliveries without maternal death due to pregnancy (Norman Enblich) 260 (O); corrected, 602; correspondence 637
 Discomforts of childbirth (Grandy Dick Read) 651 (O); leading article, 669; correspondence, 869, 958, 1053
 Dystocia after amputation of cervix (Walter Calvert), 58; correspondence, 157, 241, 823
 Forceps delivery, cervical stenosis after, 242
 Hypnosis and suggestion in obstetrics (George Newbold) 900
 Induction of labour, 690
 Ireland and Great Britain, obstetrics in, 633
 Lactation: Ethinyl oestradiol in suppression of (T. N. A. Jeffcoat and Betty Hargreaves), 664 (O); correspondence, 736—Concretion obstructing milk duct, 789
 Liver, rupture of associated with parturition (Jean R. C. Burton-Brown and John A. Shepherd) 441 (O)
 Maternal obesity large babies, and diabetes (J. A. L. Gilbert), 702 (O)
 Maternity packs and dressings 685
 Midwives, recruitment and training of 191
 Oxford vaporizer in hands of midwives (P. S. A. Heyworth), 441
 Pain in childbirth: Report of subcommittee of Medical Women's Federation, 333 (O); leading article 356; correspondence, 497, 634, 781, 958, 1053
 Placenta, retained, and post-partum haemorrhage (H. L. Sheehan), 849 (O)

OBSTETRICS (continued):

Plasma, dried, for domiciliary midwifery, 1005, 1098, 1139
 Primitive midwifery, 498
 Sympathectomia, natural childbirth and, 958
 Trilene as analgesic in labour, 634—Report of R C O G. (F. Neon Reynolds), 537
 Tubal mole, 1048
 Twins, unusual case of, 412
 Uterine action, incoordinate, in labour (T. N. A. Jeffcoat), 544
 Uterus, spontaneous rupture of (G. B. Chamberlain), 482
 Occupational therapy, review of book on, 397
 correspondence, 546, 548, 591
 Ootum, Doris: Mental hospital records, 539
 Oedema, sacral, 920
 Oesophageal stricture, 920
 Oesophagus: Spontaneous perforation; surgical repair with recovery (John Schofield), 348 (O)
 —Treatment of perforations: report of 3 cases (Leslie J Temple), 935 (O); correspondence, 1095
 Oestradiol, ethinyl in suppression of lactation (T. N. A. Jeffcoat and Betty Hargreaves), 664 (O); correspondence, 736
 Oestrogen estimation, 81
 Oestrogens: Technique of administration and dosage 165—Effect on fibro-adenosis, 751—At menopause, 1061
 OGLIVIE, Sir Henage: In praise of idleness, 645 (O)—Set of nested retractors, 864—(And W. A. R. Thomson) (editors): *Early Recognition of Disease*, 902
 Ogilvie's syndrome of false colonic obstruction (J. A. Dunlop), 890 (O); correspondence, 1137
 Oils, mineral, in bread, 73
 Old age: contraindication to air travel, 604 *And See Geriatrics*
 Oldfield, J.: *The Mystery of Birth*, 530
 Oldmhall, Joyce: Occupational therapy, 591
 OLIVER, Raymond: Lock Hospital, 1004
 OLIVES, V. B.: *Osteopertosis Tuberculosis*, *Silificata*, 60
 O'MALLEY Charles Donald (and John B. de C. N. Saunders): *Andreas Vesalius Bruxellensis The Bloodletting Letter of 1539*, 494
 OPHTHALMOLOGY:
 Amblyopia, home-cured tobacco and, 163, 254
 510
 Blindness Book on prevention of, 60—Award for prevention of, 687
 Book review, 760
 Choroid melanoma of (annotation), 766
Clostridium welchii infection of eye (Jean Stuart) 272
 Conjunctivitis, meningocecal (J. D. A. Gray and R. A. Lambert), 17 (O)
 Corneal graft surgery, 457, 773
 "Eye bank" established (annotation), 1131
 Filariasis, ocular, 500
 Glaucoma: Simplex, 81—Acute, 773
 Haemorrhage, subconjunctival in baby, 1104
 Iridocyclitis, 919—Vitamin A for, 637
 Lenses, contact, for myopia and astigmatism, 659
 Mydriasis, belladonna imminent causing, 194
 Myopic school-children, 602
 Occupational diseases of lens and retina (Joseph Minton), 392 (O); correspondence, 497, 545
 Refraction, 773
 Retinal pigmentation, 422
 Retinitis pigmentosa, 122
 Uveal pigment, hypersensitivity to (annotation) 229
 Opium: Raw Opium Regulations (1948), 374
 Order Venerable, of Hospital of St John of Jerusalem: Promotions and appointments, 149 419
 Organs, physiology of, 593, 868, 1052
 ORLEY, A.: Pressure cooking, 822—*Neuro-radiology*, 1126
 Orpen, Leander Joseph John, obituary notice of 416
 ORR, H. W. *On the Contributions of Hugh Owen Thomas, Sir Robert Jones, and John Ridlon to Modern Orthopaedic Surgery*, 1126
 O Russia! O Mores! 33
 Orthopaedics: Bone grafts (annotation), 230—*Musculus gressorius* (Horace Davis), 664 (O)—Regional orthopaedic and accident service (G. R. Girdlestone), 720—Shoulder-harness, 779, 913
 OSBORN F.: *Our Plundered Planet*, 530
 Oster Club: 83rd meeting, 965
 OSMAN, A. A.: Treatment of amnia, 453—Research in renal disease, 910
 OSMUS Gerosa dusemman (D. J. MacRae), 369 (O); correspondence, 500
 Osteoarthritis, treatment of, 967
 Osteoid osteoma (annotation), 403
 Osteomyelitis in an infant, 1051
 OSTLER, Gordon: *Anaesthetics and the Patients*, 853—*Anaesthetics for Medical Students*, 992
 Otitis externa, violom in treatment of, 641
 —granulosa (Norman A. Funt), 959
 —media: acute, chemotherapy of, 422, 556
 Otolaryngology: Ear disease, 111, 193, 237, 366—Tinnitus, 331—Deafness and tinnitus, 378
 644—Rehabilitation of deaf (S. R. Silverman), 561—Streptomycin and the labyrinth, 1043

QVERTON, James : Topical use of vioform in dermatology 840 (O), annotation, 858, corrected, 968
Oxygen tents, "perspex" (G M Komrower) 953
Oxyuriasis, 798

P

P Agglutination and-P in pregnancy (I Dunsford) 15 (O)
Paediatrics : Instruction of medical student in insight into family practice (W S Craig and others) 801 (O); correspondence, 1006, 1138
PAGE, W Kayne, and O Shaughnessy : *Pulmonary Tuberculosis*, 2nd ed., 811
PAILLAS, J-E (and J BONNAL) : *Les Plaies du Cerveau* 854
Pain extrathoracic in cardiovascular disease (J L Lovibond) 833 (O)
— sciatic persistent, 292, 725
Painful amputation stumps and phantom limbs treatment by repeated percussion to stump neuromata (W. Ritchie Russell), 1024 (O), annotation 1132
Palestine : Israel's Beveridge plan 817
PALMER Edgar Herpes zoster, 75
Palsies contraindication to air travel 604
Paludrine See Proguanil
Pancreatic tissue, heterotopic in ileum causing intussusception (A A MacKelvie) 528
Pancreatic subacute (Ian Macnab) 568 (O)
Pancytopenia splenectomy in, 1068
PANETH F A Tracer elements in biological research 359
PANKHURST E Sylvia Princess Tshahi Memorial Hospital 957
Pantothenic acid deficiency and porphyria 848
PAPANICOLAOU, George N (and others) *The Epithelia of Woman's Reproductive Organs* 577
Para aminosalicylic acid in tuberculosis (annotation) 190
PARAF J (editor) *Etudes Chimiques sur la Tuberculose*, 60
Paralysis, hysterical prognosis of, 1076
— Weidning-Hoffmann inheritance of 380
Paraplegia, calcium in a 377, 644
PARAKORE, R H Anuria, 282 548
Parasitosis, occlusion of 472
Parathyroid Tetany following removal of parathyroid adenoma with bone disease finally alleviated with calciferol (Nancy S Conway) 14 (O)
PARFITT G J Aetiology of dental caries 232
— J B (and W E HERBERT) : *Operative Dental Surgery*, 6th ed., 353
PARKER, F P (editor) : *A Textbook of Clinical Pathology* 3rd ed., 20
— Frederic, Jun (and Henry JACKSON, jun) *Hodgkin's Disease and Allied Disorders*, 713
PARKINSON Thomas Eosinophilic xanthomatous granuloma with honeycomb lungs 1029 (O)
Parkinsonism Use of diparol in (R S Duff), 613 (O), correspondence 778 821
Parkinson's disease, 963

Parliament, Medical Notes in :

Anaesthesia in childbirth Second reading of Bill, 459 549—Statistics 597 685
Antirycide 250
Artificial limbs, 1012
Bread vitamins in, 685
Chelsea Hospital for Women 202
Circumcision, female, in Sudan, 250
Diphtheria immunization statistics 505
"Dogger Bank Itch," 598
Exchange Control Medical Advisory Committee, 460 551
Flour agerized 202
Homosexual offenders psychiatric treatment, 639
Hospital beds not in use 826
Industrial injuries special hardship allowance, 785
Insemination, artificial, 38—And legitimacy, 550
—A 1 D as criminal offence, 550
Leprosy : In Nigeria, 551—To become noninfectious 915
Lifeboats, 328
Medical officers of health, salaries of, 250
— profession : Irish qualifications, 875—Alien doctors, 875
— superintendent, 328
Mental hospitals : Overcrowding in, 1012—Chronic sick, in, 1057
Milk in Scotland, 875
— (Special Designations) Bill 288 ; Second reading, 417—Report Stage, 874
National Assistance Act "Handicapped Persons" Welfare Advisory Council 598
— Health Insurance : last payment 250

NATIONAL HEALTH SERVICE

Administrative staff, 1012
Amending Bill 33, 418, 1010
Basic salary, 199
Beds for emergency cases, 685
Capitation fee, 38
Cardiff doctors, 33
Clinical details confidential 793

Parliament, Medical Notes in (continued).
NATIONAL HEALTH SERVICE (continued)
Consultants and Specialists Awards Committee, 505

— remuneration 418
Cosis, 38, 250, 327, 372, 963
Cottage hospitals, 201
Debate on anomalies, 199
Dental estimates, 38 1012
Doctors redistributed, 506
Emergency dentistry 202
Eyes and ears, 915 1056
Fees for sight-testing, 288
Foreigners and temporary residents, 505, 731
Homoeopathy, 875
Hospital Endowments Commission, 785
Household remedies, 328
Industrial health services 1056
Limited lists 460
Locums, 685
Maternity packs and dressings, 685
Private practice, 785
Public and private prescribing, 38
Reciprocity, 731
Refresher courses 288
Remuneration for temporary residents 288
— of G P S, 963
Shortage of x-ray film, 940
Single-handed doctor, 288
Teaching hospitals in Scotland, 250
Too many patients, 327

National Service : Registrations for 1949, 202—

Examination of men, 598
Northern Ireland 1105 11 accommodation 551
—Health services in, 913
Nurses Bill, 873, 92
Nursing : staff statistics, 259, 328, 685
Parkinson's disease 963
Petrol for doctors 505
Port Health Regulations, 1057
Radioactive effluent 288
Railfairs, special, for invalids 915
Tropical diseases centre, 28, 826
Universities, grants to, 466
Vaccination, 785

PARSONS Alfred R Temperature recording, 412

—Resectable carcinoma of stomach, 1096
—Christopher Throckmold, obituary notice of, 872
—J. Herbert : Occupational diseases of lens and retina, 545
—Leonard G Haemolytic disease of the newborn, 234
PARSONS-SMITH, Gerald (and Denis WILLIAMS) : Cerebral embolism following contusion of heart, 10 (O), annotation 23—(And others) : Repetitive auricular flutter 778
PARTILLO, A V *Surgical Technique*, 1126
PASK, E A (and others) : "Myaselin" in treatment of tetanus 616 (O), correspondence, 868
Passmore, William Henry obituary notice of, 246
PATERSON, D (and A MONCRIEFF) (editors) : *Diseases of Children*, vol 2, 4th ed., 1085
—Raislin : *The Treatment of Malignant Disease by Radium and X-rays* 529

PATEY, David H Two common non-malignant conditions of breast : clinical features of cystic disease and pain syndrome 94 (O); annotation, 108—Plasma cell mastitis, 545

Pathogenesis of essential hypertension (F. H Smirk), 791 (O), leading article, 813
Pathology : Some observations on teaching of pathology in U.S.A. (K R Hill), 674—Pathology for students (book review), 944

Patient's view review of book on, 60
PAULEY, J W (and others) : Cough fracture in late pregnancy 135 (O), annotation, 145, correspondence 241, 681

PAYNE, Reginald T : An unfortunate precedent, 955

PEARCE, E : *Medical and Nursing Dictionary and Encyclopaedia*, 9th ed., 811

—J D W (and Denis CARROLL) : Clinic under the N H S, 366

PEARSON, A C (and others) : Cough fracture in late pregnancy 135 (O); annotation, 145; correspondence, 241 681

—Gerald H J (and O Spurgeon ENGLISH) : *Emotional Problems of Living*, 59

—S. Vere : Whither tuberculosis ? 152, 412
Peckham Health Centre (book review), 20

Pediculosis pubis, 920
PELTON, T : Spread of tuberculosis by books, 832

PELTON, W J (and J M. WISAN) (editors) : *Dentistry in Public Health*, 1126

Pelvic allergy 689
— congestion, strong corsets and, 324

PEMBERTON, John : Illness in medical practice, 306 (O); correspondence, 410

Pemphigus vulgaris, vioform in treatment of, 839

PENICILLIN : Children, use of procaine penicillin in (J L Emery and others) 845 (O)

— Dosage schedules, 30
— Enhancement factor, 1148

— Hands, infected treated with systemic penicillin (Gordon A Barclay), 175 (O); leading article, 187, correspondence, 455, 499

— Impure penicillin, non-specific effects of (J Ungar), 654 (O)

PENICILLIN (continued) :

Influenza, penicillin in, 499
Inhalations 919
Oral reactions to (W G Cross), 171 (O), correspondence, 367, 411, 498
Phthalylsulphathiazole, penicillin, antagonism, 734
Procaine penicillin, 75, 116—Use of, in children, with aluminium monostearate (John L Emery and others), 1110 (O); annotation, 1130
Sensitivity, 414
Snuff, penicillin-sulphathiazole, 1103
Staphylococci, penicillin-resistant, frequency of (A Vourcka and W. Howard Hughes), 395 (O); correspondence, 591, 725 1002
— In the newborn : their coagulase production and resistance to penicillin and streptomycin (G Maryn), 710 (O)
Staph. pyogenes : Carriage of penicillin-resistant *Staph. pyogenes* in healthy adults (T. D. M. Martin and J. E. M. Whitehead), 173 (O)
Syringes for procaine penicillin, sterilizing, 789
Typhoid : successful treatment of carrier with penicillin and sulphamerazine (C. A. Rumball and L. G. Moore), 615 (O)
Urinary reaction to 1016
Vaccine virus, penicillin and, 41

PENMAN, A. Clark : Idiosyncrasy to amethocaine hydrochloride 957

Pennefather, Victor Damlan, obituary notice of, 637

PENNY, W Maxwell : Vaccine treatment of rheumatoid arthritis, 867

Pension after husband's suicide, 248
Peptic ulcer. See Ulcers

Perichondrium in vascular surgery, 72
PERIGAL, A F : Tribute to W. G. Harnett 416

Perionychia, chronic, vioform in treatment of, 839
Peritoneoscopy, 601

PETITOMIS, pre-pubertal gonococcal (Michael Solomons and J F R. Withycombe), 990

Perniosis, chemical sympathectomy for, 1023
Persia, South, dysentery in (Ian S. Stewart), 662 (O); correspondence, 781

Personality, pharmacological explorations of (Jean Delay), 542

Pertussis See Whooping-cough
PESZCZYNSKI, Mieczyslaw : Women war captives in Russia, 1139

PETTER, G C : Cog-wheels, 457
Pethidine in labour 642

PETIT-DUTAILLIS (editor) : *Les Entrepreneurs de Bichat 1948 : Chirurgie-Specialités*, 274

Pell mal 82—Correct use of term, 2
Petroleum products and skin, 734

Phaeochromocytoma, bilateral (T. M. Reid and R. Salm), 1116 (O); annotation, 1131

Phenobarbitone, toxicity of, 832
Phenology of British hay-fever plants and its significance to allergists (H. A. Hyde), 897 (O)

Phenytion, soluble, toxicity of, 75
PHILIP, Peter W : Perforated duodenal ulcer in a boy, 196

—T. V. R. : Whither tuberculosis ? 777
Phillips, Evan William Mooger Hubert, obituary notices of, 35, 117

—R. (editor) : *The Belsen Trial*, 530

Physical training, adaptations to (annotation), 190
Physiological basis of apotamy (A. Davis Beattie), 607 (O); correspondence, 726

Physiology : Of orgasm 593, 868, 1052—Experiments on normal temperature regulation in young men (Samson Wright) 610 (O); correspondence, 823—For students (book review), 621

Physiotherapists, review of book on, 760
Physiotherapy, 241

Phyto-photo-dermatitis (H E. Bellringer), 984 (O)
PICKEN, R. M F : Tribute to D. Llewellyn Williams, 959

PICKERILL H P : Perichondrium in vascular surgery, 72—Ligation of mandibular (inferior dental) artery, 527—Keloid, 1150

PIERS, F : Granuloma annulare, 920—Keloid, 968
Pilocarpine and eserine, 331

Pinch, Albert Edwin Hayward, estate of, 641
PINCHER, Chapman : Mechanism of memory, 285

PINEY, A : An unfortunate precedent, 865—Safe doses of acetylsalicylic acid, 1104

PIRSON, K B : Control of paradoxical respiration, 1051

Pityriasis faciei simplex, vioform in treatment of, 841

Plague in Calcutta (annotation), 1089
Plasma : technique for estimating prothrombin content, 564

Plasmocytoma, solitary, of bone (H Holden), 437 (O)
PLATT, Robert : Nephritis in textile workers 32

PLESCH, J. : Pharmacology of failing heart, 592
Pleurisy : contraindication in air travel, 605
PLEWES, L W (and others) : Streptomycin in finger infections, 1081 (O)
Pneumonia : Present day pneumonia (annotation), 108—Contraindication for air travel, 605
— lobar, crisis in, 325
— pneumococcal, sulphonamides in, 689
Pneumonia, acute, in beryllium-worker (G Riddell Royston), 1030 (O)
Pneumothorax, effect of lying on, 605 643
— artificial : Self-administered refills, 113—Place of, in treatment of pulmonary tuberculosis, 319

- Podophyllin therapy, complications of,** 780
- POUL, W.: *Das Panaritium*, 621**
- Poikiloderma, Civatte's,** 690
- Poisoning, anthrax, 1098**
- **Arterial toxicity (annotation), 25; correspondence, 284**
- **carbolic, first aid for, 831**
- **coal-gas, blood transfusion in, 968**
- **derms, 464**
- **fish (annotation), 317; correspondence, 498, 775**
- POISSON List: Further amendments under Section 23 of Pharmacy and Poisons Act, 297**
- **Rules, 1949; consolidation of amendments, 676**
- Poliovirus: contraindications to air travel, 604**
- **paralytic: early symptoms and effect of physical activity on course of disease (W. Ritchie Russell), 465 (O); leading article, 488; correspondence, 589**
- POLOVOVSKI, M. (editor): *Exposés Annuels de Biochimie Médicale*, 9th series, 621**
- Polycunus, acute infective (annotation), 950**
- **correspondence, 1049**
- PONDER, E.: *Hemolysis and Related Phenomena*, 530**
- Population policy (leading article on Report of Royal Commission on Population), 1127**
- Porphyria, acute, and associated electrolyte changes (Dewi Davies), 846 (O); corrected, 968**
- Port health regulations, 1057**
- PORTER, R. M.: An unfortunate precedent, 819**
- Posture and circulation (annotation), 859**
- POSTER, Francis Marion: *Tuberculosis*, 483**
- POTTER, Lina M.: Tribute to Ethel Vaughan-Sawyer, 595**
- POWELL, F. I.: "Minor" injury of terminal phalanx, 618 (O)**
- POWER, John Hale: Spinal analgesia for caesarean section, 244**
- **Thomas D.: Epilepsy and foetal behaviour, 197**
- POYNTER, F. N. L. (editor): *The Selected Writings of William Clowes*, 398**
- PREGNANCY:**
- **Abdominal pressure, 422, 1016**
- **Abortion: Psychiatric indications for (annotation), 469; correspondence, 590, 683, 727—Death following, 1004**
- **threatened, 163, 292**
- **Agglutinin anti-P in pregnancy: report on two cases (I. Dunlop), 15 (O)**
- **Air travel: limiting factors and essential facilities, 605**
- **Cough fracture in late pregnancy (J. W. Paulley and others), 135 (O); annotation, 145; correspondence, 241, 681**
- **Diabetes mellitus: Diabetic fertility, maternal mortality, and foetal loss rate (J. A. L. Gilbert and D. M. Dunlop), 48 (O); pregnancy complicated by (H. H. Fourate Batns and M. E. Morgan), 51 (O); leading article, 62**
- **Diene and birth weights, 1150**
- **Ectopic gestation: statistical and clinical review of 107 cases (J. S. MacVine and D. H. Lees), 263 (O); correspondence, 455—And future pregnancy, 644**
- **Foetus, dead, absorption of, 292**
- **Gestation period, longest, 116**
- **Haemorrhage, spontaneous subperitoneal, 408**
- **Heart disease, pregnancy and (annotation), 278**
- **Hernia, irreducible umbilical, in pregnancy, 728**
- **Inoculation in, 919**
- **Jaundice in (annotation), 278**
- **Konsultoff test, 509**
- **Malnutrition in, 543**
- **Pylalism in, 736**
- **Purpura complicating, 73, 197**
- **Rh factor and, 42, 164, 464**
- **Rhesus-testing, 153**
- **Sex hormones in, 167**
- **Silboestrol therapy in (annotation), 814**
- **Sulbribs, repeated, 206**
- **Tests: "Rapid" rat test, 121, 332—Book on, 760**
- **Thyroid gland and (annotation), 996**
- **Thyroiditis and, 1018**
- **Tuberculosis and, 1047**
- **Typhoid and, 464**
- **Weight increase in, 831**
- Prematurity: Testosterone as treatment for, 189—Risk of, 357**
- PREPARATIONS AND APPLIANCES:**
- **Anaesthesia: Apparatus for infants (D. F. Rees), 111—Improved jack for Boyle Davis gag (Terence Banham), 360—Simple portable apparatus (R. L. Super), 405—Portable resuscitator (B. G. Lucas), 541**
- **Bronchial suction catheter (I. L. Griffin), 1000**
- **Diahermy prong forceps (A. Willard Adams), 631**
- **Electrocardiography: unipolar lead, switch and wiring circuit for (A. G. Barritt), 770**
- **Endometrial biopsy curette (Ernst Friedmann), 150**
- **Oral intubation, aid to (R. R. Macintosh), 23**
- **Oro-tracheal introducer (J. G. Bourne), 556**
- **"Perspex" oxygen tents (George M. Kromrower), 953**
- PREPARATIONS AND APPLIANCES (continued):**
- **Retractors, nested (Sir Henrice Olive), 864**
- **Suction, continuous, new hydrodynamic method (J. A. Carr), 1136**
- **pump, new surgical (David Aiken), 1094**
- **Vaccine lymph: expulsion from capillary tubes, 818**
- **Vaginal dilators (W. McKim H. McCullagh), 723**
- PRICE, R. Kemball: Long-term cardiac observation of children, 315 (O); leading article, 534, correspondence, 682**
- PRINCE, J. B.: *Hints on Prescribing Under the N.H.S. Act*, 902**
- PRINGLE, G. L. Kerr: Robert the Bruce and leprosy, 457**
- Proclialgia, iugarch, 789**
- Progestogens: technique of administration and dosage, 165**
- Prognosis: In malarial infections caused by W. African strain of *P. falciparum* (G. Covell and others), 88 (O); corrected, 292**
- **Intravenous (R. N. Chaudhri and H. Chakravarti), 91 (O); leading article, 106; correspondence, 192, 324, 545, 589, 775, 956—And blackwater fever, 324—In prophylaxis and treatment of malaria, 585—in the Sudan, 413**
- Proof-readers' disease, 33**
- Propylene glycol, inhalation of, 1103**
- Prostate, enlarged testes, error for, 121**
- Prostatectomy, third ureter in (A. Willard Adams), 809; correspondence, 958, 1096**
- **punch (H. T. Cox), 386 (O); correspondence, 545**
- Prostatic hypertrophy, benign (annotation), 1131**
- Protela shock therapy, 1149**
- Prothrombin: Estimation of 156—Technique for content estimations, 564**
- Protozoan diseases, review of book on, 944**
- PROWSE, W. Barrington: What is normal? 779**
- Prunus, psychogenic factor in, 473**
- **an, violon in treatment of, 839**
- Psoriasis: 475—And isobutanol, 644—Vioform in treatment of, 839, 842**
- Psychiatry: M. Naghien rules, 31, 115—And broadcasting, 193—Book reviews, 484, 577, 761, 811, 1006, 1085—Psychiatric indications for abortion (annotation), 469; correspondence, 590, 683, 727—Pharmacological explorations of personality, 542—Homosexual offenders, 639—Psychiatric patients and Disabled Persons (Employment) Act (A. Harris and Mary A. Lane), 982 (O); leading article, 994**
- **preventive, 406**
- Psycho-analysis: Book reviews, 140, 810—Duration of, 643**
- Psychobiology, review of book on, 901**
- Psychology: Book reviews, 59, 184, 620, 713, 714**
- **Marriage neurosis, 635, 776, 822**
- Psychoneurosis and neurosyphilis, 1017**
- Psychopathology, review of book on, 760**
- Psychotherapy: Books on group therapy, 312, 1039**
- **Leading article on group therapy, 227; correspondence, 548**
- Psychrometers, sling and Assmann, nomograms for (J. P. de V. Weir), 527 (O)**
- P.T.A.P.: present position (L. B. Holt and G. Bousfield), 83 (O); leading article, 715; corrected, 968**
- Pylalism in pregnancy, 736**
- Public health: International sanitary conventions (leading article) 22—Chadwick medals awarded 40—Town planning and health (annotation), 188**
- **Salaries (leading article), 401**
- Pulmetics: new system of medical classification (Roy T. Fletcher), 83 (O); leading article, 105; correspondence, 234, 410**
- PULLEN, D.: Lymphoblastic leukaemia treated with urethane, 137 (O); correspondence, 236**
- Pulling Herbert John, estate of, 829**
- Punishment: Home Office committee to review existing methods, 78**
- PURIT, Norman A.: Ointus externa granulosa, 959**
- PURCELL, F. M.: Specialization, 781**
- Purpura complicating pregnancy, 73, 197**
- Pure Stewart Sir James: obituary notice of, 1142**
- PUSKOV, M.: *Handbook of Midwifery*, 761**
- PYKE, David: What is normal? (sexual behaviour), 682**
- Pyuria, bacterial, producing bilateral ureteric stenosis (N. N. Gupta), 1033 (O)**
- QUESTIONS, NOTES, AND COMMENTS (continued):**
- **Abdominal reflex: absence of, 1017**
- **Abortion, threatened, 163, 292**
- **Acetylsalicylic acid, safe dose of, 735, 1104**
- **Adiposity, 421**
- **Alkyls: To fluorescent light, 644—Pelvic, 659**
- **Amoebiasis, esen, al, 659**
- **Anzina: Pectoris, 421—Of effort, 879**
- **Antibody formation, 421**
- **Anti-ovulatory therapy, 463**
- **Anuria and sulphuramides, 555**
- **Apnoea or tracheal intubation, 919**
- **Arcus senilis, 736**
- **Argyria, 1018**
- **Arthritis, liver injections in, 42**
- **Arthropathy, cup, 539**
- **Ascari, pig as vector of, 735, 1150**
- **Asthma: Symparabectomy for, 669—Treatment of, 736**
- **Athlete's foot, 164**
- **Ballet dancing, 463**
- **Barbiturates: Excretion of, 377—"Benadryl" and, 464**
- **Bee-stings, 1061**
- **Elastomycosis, North American, 879**
- **Blood-clot and haemostasis, 878**
- **Blood-pressure readings at altitude, 789**
- **Boeck's sarcoidosis, 510**
- **Breast milk, quinine in, 206**
- **Brucella infection: Persistent symptoms after 254—Treatment of chronic brucellosis, 1104**
- **Buddleia, burning, 831**
- **Burns, superficial, treatment of, 643**
- **Calcium chloride and gluconate, intravenous, 735**
- **Calculus: In a paraplegic, 377, 644—Inheritance of renal, 1018**
- **Cancer: Deep x rays for oat-cell carcinoma of lung, 643—Pain and uterine cancer, 789—Malignant deposit in pelvis, 968**
- **Carbolic poisoning, first aid for, 831**
- **Catheters: Grading of, 879, 1104—Sternizing gum-elastic catheters, 1103**
- **Cephalin-cholesterol flocculation test, 1104**
- **Chenopodiosphyl, T.A.B. in, 82**
- **Chilblains, vitamin K in, 464**
- **Chloroform: human touch, 422**
- **Cholesteatoma, 41, 464**
- **Currhosia, xanthomatous, hilar, 734**
- **Civatte's poikiloderma, 690**
- **Claudication, intermittent, intravenous saline in, 831**
- **Claustrophobia, 602**
- **Cleft lip, 253**
- **— palate, neglected, 122**
- **Ci welchii and gas embolism, 292**
- **Colitis, ulcerative, sulphonamides in, 669**
- **Contact lenses for myopia and astigmatism, 669**
- **Contraceptives, chemical, effects of, 1104**
- **Convulsions, 463, 920**
- **Coronaries, 42, 164, 292, 332, 378, 464, 602, 690, 790, 968**
- **Cramps, spasmodic, 254**
- **Curare, death from, 421**
- **Deafness and tinnitus, 378, 644**
- **Dermatitis, ammoniacal, in infants, 164, 378**
- **Derms poisoning, 464**
- **Diabetes, nocturnal frequency in, 1017**
- **Diahermy, short-wave, 602**
- **Dienoestrol, 510**
- **Diphtheria immunization, 253, 1149**
- **Disclaimer, 736**
- **Dreams, alarming in the aged, 555**
- **Dust, dry grass, 1150**
- **Dyspareunia, 735, 1017**
- **Ears, "hat," 788**
- **Eggs in water-glass, 1149**
- **Enteropositis, 82**
- **Epilepsy: Hereditary influence of, 291—Water-purifier test in, 291, 880**
- **Epsom College Centenary Register, 464**
- **Examine and placenta, 1018**
- **Family Planning Association, 790**
- **Fanconi's syndrome, 81**
- **Fats: Vegetable fats and gall-stone formation 122—Fat intolerance, 164, 378, 602—Allergy to animal fat, 968**
- **Feeding difficulties in a small child, 788**
- **Fluorides in prevention of dental caries, 82**
- **Foetus, dead, absorption of, 292**
- **Food sensitivity, testing for, 463**
- **Fractures, rib, cause of, 832**
- **Gall-stone formation, vegetable fats and, 122**
- **Galvanism in hemiplegia, 122**
- **Ganglion, 690**
- **Gastrostomy post-gastrostomy diet, 567**
- **Giddiness, trans cut, 968**
- **Glaucoma simplex, 81**
- **Gout, treatment of, 432**
- **Granuloma annulare, 464, 920**
- **Graphite dust, exposure to, 689**
- **Gums, bleeding, 41, 206**
- **Haemorrhage, subconjunctival, in a baby, 1104**
- **Hair: Cold permanent waving, 205—Falling 610, 1149—Green staining of, 567**
- **Hallux valgus, 332**
- **Heart: Aneurysmal fibrillation in the elderly, 643**
- **1018—Vitamin E in heart diet, 688—Pain after coronary thrombosis, 1017—Bundle-branch block and hypertension 1018—Extrasystoles 1061—Coronary occlusion and local heat therapy, 1062**
- **Heel: Tender swellings of, 642—Painful nodules on, 1018**
- **Hemiplegia, galvanism in, 122**
- **Hemivertebra, 555**
- **Hepatitis infective, 331**
- **Heredity: Risk of inherited defects, 378—And pulmonary tuberculosis, 555—Inheritance of fragilis osseum, 602—Of Werdnig-Hoffmann paralysis, 880—Of renal calculi, 1018**
- **Hernia, umbilical, 601**
- **Herpes simplex: Vaccination for recurrent, 332**
- **—Penile herpes or verruca, 968**
- **Hormone treatment in infertility, 82**

Questions, Notes, and Comments (continued).

- Horse-riding for the infirm, 880
 Hyoscine hydrobromide for a child, 832
 Hypertension, high-frequency diathermy for, 331
 Infection, spread of, in fever hospitals, 601
 Infertility, 790
 Inoculation against typhoid and tetanus, 878
 Insulin sensitivity, 164
 Invalid tricycle association, 122
 Iridocyclitis, 919
 Iron intravenous, 163
 Itch, dhotie, 331
 Keloid, 377, 556, 968, 1150
 Lactation, 736
 Left-handed, teaching writing to the, 831
 Leucoplakia and kraurosis vulvae, 42, 164, 422, 790
 Leucorrhoea, 41
 Liver extracts, 205
 — injections in arthritis, 42
 Lobeline and asphyxia, 254
 Lupus erythematosus, 1103
 Mandelic acid, effect of, 967
 Marriage of double first cousins, 556
 Measles notification of, 601
 Melanoma, 82
 Menstruation: Pre-menstrual tension state, 331
 — At age 56, 602, 736—Precipitating or delaying, 1061
 Mercury absorption of, 879, 1062
 Micturition: Frequent, 332—Disturbed, in disseminated sclerosis, 832
 Milk duct concretion obstructing, 789
 Myopic school-children, 602
 Necrobiosis lipoidica, 1150
 Nematodes and pulmonary lesions, 253
 Neoparsphenamine, tonic effect of, 790
 Neuralgia, trigeminal, 41
 Obstetrics: Repeated stillbirths, 206—Pethidine, triene, and chloroform in labour, 642—Early ambulation after confinement, 688—Induction of labour, 690
 Oesophageal stricture, 920
 Oestrogen estimation, 81
 — therapy: Of menorrhagia, 920—At menopause, 1061
 Osteoarthritis, treatment of, 967
 Otitis media acute, chemotherapy of, 422, 556
 Oxyuriasis, 790
 Pediculosis pubis, 920
 Penicillin: And vaccinia virus, 41—Penicillin-phthalylsulphathiazole antagonism, 734—Sterilizing syringes for procaine penicillin, 789—Inhalations: 919—Urinary reaction to, 1016
 Penicillin sulphathiazole snuff, 1103—Enhancement factor, 1148
 Peritoneoscopy, 601
 Pertussis prophylaxis and treatment, 509
 Petit mal, 82
 Phenobarbitone toxicity of, 832
 Pilocarpine and eserine, 331
 Pneumonia pneumococcal, sulphoamides in, 639
 Pneumothorax, effect of flying on, 642
 Pregnancy: Rh factor and, 42, 164, 464—“Rapid” rat test for, 121, 332—Threatened abortion, 163—Abdominal, 422, 1016—Typhoid and, 464—Konsuloff test, 509—Ectopic gestation and future pregnancy, 644—Parity and uterine cancer, 789—Weight increase in, 831—Inoculation in 919—Thyrototoxicosis and, 1018—Dieting and birth weights, 1150
 Pressure cooker as sterilizer, 121, 254
 Proctalgia fugax, 789
 Propylene glycol inhalation of, 1103
 Prostate: testosterone for prostatic enlargement, 121
 Protein shock therapy, 1149
 Psycho-analysis duration of, 643
 Pulmonary cysts, bilateral, 919
 Quinine in breast milk, 206
 Rectal bleeding in an infant, 464
 Refrigeration of foodstuffs, 1150
 Respiration at birth, 122, 880
 Respiratory infections, winter resorts for, 253
 Retinal pigmentation, 422
 Retinitis pigmentosa, 122
 Rh factor and oregnancy, 42, 164
 Russell viper venom, 122
 Sacral oedema, 920
 Salmonella, carriers of, 1017
 Sal volatile and eau-de-Cologne, 1103
 Schick test in young children, 206
 Sciatic pain, persistent, 292
 Sclerosis, disseminated: And vaccinadoid, 644—Disturbed micturition in, 832
 Scintilla and testimentary capacity, 1149
 Skin: Sterilization, 81, 332—Eruption associated with menstruation, 253—Mind and, 690—Petroleum products and, 734—Thickening of palmar skin, 735—Vitamin D and, 788—Resistant skin condition, 1062—Protection of, from microbial oils, 1103
 Spondylitis, ankylosing, 690
 Stilboestrol: And testicular swelling, 254—And dieneoestrol, 510—For osioriasis, 644—And seminoma testis, 690—Painful breasts due to, 1103
 Subacute combined degeneration, 253
 Subarachnoid haemorrhage, 510, 879
 Sulphonamides: sens. dity to, 1062—Cremor sulphadiazol et sulphaiazol, 1148

Questions, Notes, and Comments (continued).

- Tea washing-soda in, 716
 Teeth: Fluorides in prevention of dental caries, 82—“Dry socket,” 332—Reaction to dental analgesia, 690
 Terpenes as industrial hazards, 790
 Testes: subtesticular and testicular swelling, 254
 Testosterone: For prostate enlargement, 121—In progressive muscular atrophy, 206—In gynecomastia, 880
 Thoracoplasty, 878
 Threadworms, 967
 Thyroidectomy, indications for, 789
 Tinnitus, 331—Deafness and, 378, 644
 Tobacco, home-cured, and amblyopia, 163, 254, 510
 Toe-nail, softening, 463
 Transfusion: Of infected blood, 81—In CO poisoning, 968
 Trichorrhexis nodosa, 41
 Tuberculosis: In ex-Servicemen, 421—Spread by books, 601, 832, 1062
 — pulmonary: Ultra violet light and, 42—Graduated exercises in 205—Breathing exercises in, 205—Hereditry and, 555
 Ulcer, peptic, salt intake and, 1061
 Ultra-violet transparency, 1061
 Undulant fever and milk regulations, 509
 Urethritis, non-specific, 920
 Uterus: Inoculation of 377—Retroversion of, 510
 Vaccine: Combined pertussis and diphtheria prophylactic, 163—Vaccine lymph, 1018, 1062
 Vaccinia virus, penicillin and, 41
 Varicocele, 378
 Venereal diseases: Secondary syphilis, 82—Risk of contracting 463—I.D.E. test for, 643—Psychoneurosis and neurosyphilis, 1017
 Vitamins: K and chills, 464—E in heart disease, 688—D and the skin, 788
 Warmth: getting warm in bed, 690
 Warning to hospitalists, 1150
 Whooping-cough: Notification of, 601—Sero-logical diagnosis of, 831

Quinine in breast milk, 206

QUIRING D. P. Collateral Circulation, 902

R

- RAASCHOU, F. *Studies of Chronic Pyelonephritis*, 621
 Rabies: Surgical treatment of (W. B. Roaouee), 900—Fatal myelitis after antirabic vaccine, 1140
 RADCLIFFE, Walter: Pain in childhood, 497
 Radiation and lymphocytes (annotation), 816
 Radioactive effluent, 288
 Radioactivity: Tracer elements in biological research (F. A. Paneth), 359—Blood changes in luminizers using radioactive material (Ethel Browning), 428 (O); correspondence, 546
 Radiography, mass, screening aid for, 157
 Radiotherapy: Review of book on 529—Leading article on, 906
 Rajon, Cyril Alban, estate of, 40
 RAMSAY, Hugh: Why tuberculosis? 152
 RASHEVSKY, N.: *Mathematical Biophysics*, 1126
 RASSFELD-STERNBERG, L. (and J. ZETSSLER): Enteritis necroticans due to *Clostridium welchii* type F, 267 (O); leading article, 276; corrected, 332
 Raw Stanley, obituary notices of, 158, 247
 Rawlins, Grahame Rigby, obituary notice of, 246
 RAYMOND, V. (and A. VALLAUD): *Le Benzolisme*, 578
 READ, Granly Dick: Discomforts of childbirth, 651 (O); leading article, 669; correspondence, 869, 958, 1053
 Rectum, perforation of (I. D. T. Jones), 933 (O); correspondence, 1095
 Red Cross: Under revision, 768, 817—Safety zones, 860
 REEDY, D. V. S.: *The Beginnings of Modern Medicine in Madras*, 140—Medical books in India, 244
 Reed, Thomas, obituary notice of, 458
 REES, D. F.: Anaesthetic apparatus for infants, 111
 — E. Robert: Treatment of infertile marriage, 71
 — G. J. (and J. H. WAKELY): Amethocaine hydrochloride, 367
 — J. R.: Mental health, 628
 — Thomas Roger, obituary notice of, 116
 REESON, G. (and C. BEDEMAN): *Common Sense about Hair*, 714
 Reflex, abdominal, absence of, 1017
 REGENBOGEN, E.: *Diagnose und Therapeutische Eingriffe des Internisten*, 992
 REGOT, P.: *Immunization*, 1126
 Registrar-General: *Statistical Review, 1943*, 54
 Rehabilitation, 965
 REHFUSS, M. E. (and others): *A Course in Practical Therapeutics*, 714
 REICHWALD, M. B.: Delayed admission to hospital, 681
 REID, T. M. (and R. SALM): Bilateral pheochromocytoma, 1116 (O); annotation, 1131
 Reproduction and survival (book review), 991: correspondence, 1098

- Respiration: At birth, 122, 880—Irrespirable atmospheres (book review), 184—Effect of hot bath on, 612
 — artificial, and circulation (annotation), 533
 — paradoxical, control of (annotation), 903, correspondence, 1051
 Respiratory diseases: contraindication to air travel, 605; corrected, 790
 — Junction tests (book review), 1125
 Rest: In praise of idleness (Sir Hlangage Oghie), 645 (O)

Reviews of Books:

- Agonal Acidosis, Investigations on (I. B. Fabricius Hansen)—reviewed by N. F. MacLagan, 1039
 American Medical Research, Past and Present (Richard H. Shryock)—reviewed by L. J. Wits, 140
 Anaesthesia, Elementary (W. N. Kemp)—reviewed by C. Langton Hewer, 992
 — for the Poor Risk and Other Essays (William W. Muslin)—reviewed by C. Langton Hewer, 398, 945
 Anaesthetics and the Patient (Gordon Ostlere)—reviewed by C. Langton Hewer, 853
 Analytical Psychology, Studies in (Gerhard Adler) reviewed by E. A. Bennett, 714
 Anatomy, Ellis's (revised and edited by J. A. Kcen)—reviewed by H. A. Harris, 667
 — Living (R. D. Lockhart)—reviewed by H. A. Harris, 577
 Association, British Medical: Proceedings of the Annual Meeting, 1948—reviewed by R. Bodley Scott, 620
 Aviation: Médecine de l'Aviation (J. Malmejac)—reviewed by E. D. Dalziel Dickson, 1084
 Bacterial Diseases, The Acute (H. F. Dowling)—reviewed by T. Anderson, 1039
 Bacteriology, Determinative, Bergey's Manual of (Robert S. Breed and others) 6th ed.—reviewed by J. C. Cruickshank, 398
 — Zinsser's Textbook of, 9th ed. (revised by David T. Smith and others)—reviewed by L. P. Garrod, 992
 Biochemistry, Annual Review of (edited by J. Murray Luck and others), vol. 17—reviewed by F. J. Young, 483
 — Fortschritte der Biochemie, 1938-47 (F. Haurowitz)—reviewed by J. E. Page, 1040
 Breast Feeding, A Guide to the Natural Feeding of Infants (F. Charlotte Naish)—reviewed by Charles McNeil, 59
 Breathing in Irrespirable Atmospheres, and in Some Cases, also Under Water (Sir Robert H. Davis)—reviewed by K. W. Donald, 184
 Cardiology (William Evans)—reviewed by C. W. C. Bain, 529
 Cardiology, Recent Advances in (Terence East and Curtis Bain) 4th ed.—reviewed by K. Shirley Smith, 184
 Changing Disciplines, Lectures on the History, Method, and Motives of Social Pathology (John A. Ryle)—reviewed by F. A. E. Crew, 103
 Chemistry, Clinical, to Practical Medicine (C. P. Stewart and D. M. Dunlop), 3rd ed.—reviewed by N. F. MacLagan, 1025
 Childhood and After, Some Essays and Clinical Studies (Susan Isaacs)—reviewed by R. G. Gordon, 713
 Childless Marriage, Its Cause and Cure (Edward F. Griffith)—reviewed by T. N. A. Jeffcoat, 352
 Chiroprody, The Textbook of (Mrs. Swanson), 854
 Clinical Apperence, A Guide for Students of Medicine (John M. Naish and John Apley)—reviewed by R. Bodley Scott, 141
 — Therapeutics, Manual of (Windsor C. Cutling), 2nd ed., 902
 Colon and Rectum, Surgery of (Sir Hugh and John Devine)—reviewed by Norman C. Lake, 19
 Ear, Nose, and Throat, Symptoms, Diagnosis, Treatment (George D. Wolf)—reviewed by W. M. Mollison, 1084
 — Work, Zinc Ions in (A. R. Friel), 1126
 Eclampsia: Eclampsie et Eclampsisme (Henri Vignes)—reviewed by Wilfred Shaw, 853
 Emergencies in Medical Practice (edited by C. Allan Burch)—reviewed by R. Bodley Scott, 224
 Emotional Problems of Living (O. Spurgeon English and Gerald H. J. Pearson)—reviewed by Emanuel Miller, 59
 Endocrinology, Clinical for Practitioners and Students (Laurence Martin and Martin Hynes)—reviewed by Cuthbert Cope, 901
 — General (C. Donnell Turner)—reviewed by S. Leonard Simpson, 901
 — Lehrbuch der Inoceren Sekretion (F. Verzar)—reviewed by P. L. Krohn, 224
 — The Practice of (edited by Raymond Greene)—reviewed by Richard Asher, 901
 Epilepsy, Psychiatric Aspects of Convulsive Disorders (Paul H. Hoch and Robert P. Knight) Proceedings of the 36th Annual Meeting of the American Psychopathological Association, May, 1946—reviewed by Charles Symonds, 577

Reviews of Books (continued):

Epithelia of Woman's Reproductive Organs (George N. Papanicolaou and others)—reviewed by Josephine Barnes, 577.

Fertility, Problems of, in General Practice (Margaret Hadley Jackson and others)—reviewed by T. N. A. Jeffcoate, 272.

Fever and the Regulation of Body Temperature (E. F. Du Bois)—reviewed by J. S. H. Genetics, Dictionary of, Including Terms used in Cytology, Animal Breeding and Evolution (compiled by R. L. Knight)—reviewed by J. A. Fraser Roberts, 944.

Genito-Urinary Surgery, Textbook of (edited by H. P. Winsbury-White)—reviewed by Kenneth Walker, 140.

Group Therapy: The Practice of (edited by S. R. Slavson)—reviewed by J. D. Sutherland, 312.

Gynaecological Histology (Josephine Barnes)—reviewed by Wilfred Shaw, 902.

Gynecology, Operative (Harry Sturgeon Crossen and Robert James Crossen), 6th ed.—reviewed by Wilfred Shaw, 274.

Health Insurance Compulsory, Issue of (George W. Bachman and Lewis Meriam)—reviewed by Alfred Cox, 313.

—Teaching in Schools (Ruth E. Grout)—reviewed by R. G. Gordon, 1125.

—The Unknown (The Story of the Peckham Experiment (John Comerford)—reviewed by D. V. Hubble, 20.

Hernia, Abdominal, Surgery of (George B. Mau)—reviewed by Zachary Copc, 992.

—Anatomy, Etiology, Symptoms, Diagnosis, Differential Diagnosis, Prognosis and Treatment (Leigh A. Wilson)—3rd ed.—reviewed by Lambert Rogers, 773.

Histology, Human Guide for Medical Students (E. R. A. Cooper) 2nd ed.—reviewed by Geoffrey Hadfield, 902.

Hodgkin's Disease and Allied Disorders (Henry Jackson, jun. and Frederic Parker, jun.)—reviewed by Dorothy S. Russell, 713.

Hormones and Behaviour (A Survey of Interrelationships between Endocrine Secretions and Patterns of Overt Response (Frank A. Beach)—reviewed by Raymond Greene, 484.

Hospital Administration: A Study of, Studies in Public Administration (Frank Hart and A. J. Waldegrave)—reviewed by Horace Joulis, 667.

Hospitals (S. S. Goldwater)—reviewed by Andrew Topping, 811.

—British (A. G. L. Ives)—reviewed by E. Roek Carling, 60.

—Year Book, 1948, 141.

Housing and the Family (M. J. Elsas)—reviewed by J. M. Mackintosh, 103.

Impulsive Disorders: Experimentelle Triebdiagnostik (L. Szondi)—reviewed by O. L. Zangwill, 484.

Insects of Medical Importance: A Handbook for Identification of (John Smart), 2nd ed.—reviewed by R. M. Gordon, 442.

Insurance: Transactions of the Association of Life Insurance Medical Directors of America (edited by Harry E. Ungerleider), 55th annual meeting, vol. 30—reviewed by William Brockbank, 20.

—Voluntary Medical Care, in the United States (Frazz Goldmann)—reviewed by Alfred Cox, 810.

Leprosy, Manual of (Ernest Muir)—reviewed by Leonard Rogers, 810.

Lungs, Procedure in Examination of the, with Especial Reference to the Diagnosis of Tuberculosis (Arthur F. Kratzert), 3rd ed.—reviewed by J. G. Scadding, 224.

Malaria: With Special Reference in the African Forms (W. K. Blackie)—reviewed by S. R. Christophers, 810.

—Control by Coastal Swamp Drainage in West Africa (A. B. Gilroy)—reviewed by S. R. Christophers, 810.

—Filariasis, and Yellow Fever in British Guiana (Giovanni Giglioli)—reviewed by S. R. Christophers, 484.

Malignant Disease, Treatment of, by Radium and X Rays (Raislin Paterson)—reviewed by Frank Ellis, 529.

Medical Annual, 1948 (ed. by S. Henry Tidy and A. Rendle Short)—reviewed by R. Bodley Scott, 854.

—Research, American, Past and Present (Richard H. Shryock)—reviewed by L. J. Witts, 140.

—Science Introduction to (Gullis Lindh Muller and Dorothy E. Dawes), 2nd ed.—reviewed by L. P. R. Fourman, 274.

Medicine, Essentials for Practitioners and Students (G. E. Beaumont), 5th ed.—reviewed by J. Witts, 443.

—Internal, Advances in (William Dock and I. Snapper), vol. 2, 761.

—Modern, in Malaya, Beginnings of (D. V. S. Reddy)—reviewed by Rickard Christophers, 140.

—Private Enterprise or Government in (Louis Howpwell Bauer)—reviewed by Alfred Cox, 104.

—Taité de Médecine (A. Lemerle and others), vol. 1—reviewed by T. Anderson 1039; vols. 7, 8, 11, and 13—reviewed by R. Bodley Scott, 1054.

Reviews of Books (continued):

Meningitis: *Traitement Moderne des Méniniges, purulentes aigues* (René Martin and Bernard Surcau)—reviewed by L. P. Garrod, 105

Mental Deficiency (Amentia), *Textbook of* (A. F. Tredgold), 7th ed.—reviewed by L. S. Penrose, 811

Microscopy, *Slit Lamp Ocular Signs in* (James Hamilton Diggart)—reviewed by Sir Stewart Duke-Elder, 1126

Midwives, *Textbook for* (Walfred Shaw)—reviewed by J. Chassar Moir, 1126

Milk Products (William Clunie Harvey and Harry Milk), 2nd ed., 621

Mind, *Reach of the* (J. B. Rhine)—reviewed by Eliot Slater, 714

Myotonia, *Thomsen's Disease (Myotonia Congenita)*, *Paramyotonia*, and *Dystrophia Myotonica* (Eivind Thomsen), translation—reviewed by Macdonald Critchley, 853

National Health Service (Charles Hill)—reviewed by A. Cox, 1125

Neglected Child and his Family (Report of sub-committee of Women's Group on Public Welfare)—reviewed by R. E. Gordon, 225

Nervitis Generalis, *Diagnosis and Treatment* (Thomas Addis)—reviewed by Robert Platt, 668

Neurology, *Critical Studies in* (F. M. R. Walshe)—reviewed by W. Ruchie Russell, 1039

Neuropathology *Atlas of* (William Blackwood and J. C. Sommerville)—reviewed by Dorothy S. Russell, 944

Neuro-Vascular Syndrome Related to Vitamin Deficiency (Hendrick Smit skamp)—reviewed by Hugh S. Stannus, 853

Obstetrics *A Manual of Practical* (O'Donell Browne), 2nd ed.—reviewed by T. N. A. Jeffcoate, 853

— *Lehrbuch der Geburtshilfe* (Th. Koller), vols. 1 and 2—reviewed by Walfred Shaw, 529

Occupational Medicine and Industrial Hygiene (Rutherford T. Johnstone)—reviewed by Donald Hunter, 134

— *Therapy, Principles of* (edited by Helen S. Willard and Clare S. Spackman)—reviewed by Donald Stewart, 397

Ophthalmology: *Lehrbuch der Augenheilkunde* (edited by M. Amshel and others)—reviewed by Arnold Sorsby, 760

Parentcraft, *Handbook of* (Leslie George Jellison)—reviewed by Alan Moncreiff, 713

Pathology, *Essentials of* (Lawrence W. Smith and Edwin S. Gault), 3rd ed.—reviewed by Geoffrey Haddfield, 944

Pediatrics, *Advances in* (edited by S. Z. Levine and others), vol. 3—reviewed by Alan Moncreiff, 713

Physical Treatment of Injuries of the Brain and All the Nervous Disorders (K. M. Hern), 185

Physiology, *Human* (F. R. Winton and L. E. Bayliss), 2nd ed.—reviewed by A. Hemingway, 621

Physiotherapy: *The Growth of a Profession. Being the History of the Chartered Society of Physiotherapy 1894-1945* (Jane H. Wicksteed)—reviewed by W. S. C. Copeman, 760

Pregnancy Diagnostics Tests: *A Review* (Alfred T. Grew)—reviewed by F. A. E. Grew, 760

Proteins and Amino Acids in Nutrition (Medvin, Sahyun)—reviewed by D. P. Cuthbertson, 312

Protozoan Diseases, *Laboratory Diagnosis of* (Charles Franklin Craig), 2nd ed.—reviewed by L. E. N., 944

Psychiatric Treatment, *Failures in* (edited by Paul H. Hoch)—reviewed by Eliot Slater, 571

Psychiatry for the Pediatian (Hale F. Shurtlew)—reviewed by R. G. Gordon, 1085

Psychoanalysis, *The Yearbook of* (edited by S. L. Rand and others)—reviewed by Leonard Rogers, 810

Psychoanalytic Psychiatry, *Lectures on* (A. B. S. Brown)—reviewed by Edward Glover, 140

Psychology of Behaviour Disorders: *A Biosocial Interpretation* (Norman Cameron)—reviewed by Eliot Slater, 901

Psychopathology, *Clinical Studies in A Contribution to the Aetiology of Neurotic Illness* (Henry V. Dicks), 2nd ed.—reviewed by J. D. Sutherland, 761

Psychotherapy, *Group-Analytic, Introduction to* (S. Feri)—reviewed by T. Ferguson-Rodger, 1093

— in Child Guidance (Gordon Hamilton)—reviewed by R. G. Gordon, 667

Public Health Administration in the United States (Wilson G. Smilie), 3rd ed.—reviewed by R. T. Bevan, 352

— *Measurements of*, *Essays on Social Medicine* (F. A. E. Grew)—reviewed by Major Greenwood, 991

— and Medical Care (F. D. Nott and M. I. Roemer)—reviewed by William N. Pickles, 442

— *Problems, Practical* (Sir William Savage), 2nd ed., 1085

Reproduction and Survival (R. C. Brown)—reviewed by F. J. Brown, 991

Respiration: *L'Exploration de la Fonction Respiratoire* (Jacques Armand and others)—reviewed by J. G. Scadding, 1125

Reviews of Books (continued):

Rorschach Personality Test, Principles and Practice of the (W. Moos)—reviewed by Eliot Slater, 184

Sex Varias A Study of Homosexual Patterns (George W. Henry)—reviewed by Eliot Slater, 670

Shakespeare Cucle (C. Martin Mitchell)—reviewed by D. V. Hubble, 185

Signs and Symptoms Their Clinical Interpretation (ted by Cyril Mitchell MacBryde), 29

Sprission—reviewed by Sidney Truelove, 19

Skull, Sinuses, and Mastoids. A Handbook of Roentgen Diagnosis (Barton R. Young), 1040

Social Medicine, An Approach to (John D. Kershaw), 274

Speech and Voice Correction, Twentieth Century (edited by Emil Froeschels)—reviewed by C. Webster-Drought, 397

Sterility and Impaired Fertility. Pathogenesis, Investigation, and Treatment (Cedric Lane-Roberts and others), 2nd ed.—reviewed by T. N. A. Jeffcoat, 352

Sulfanamide and Antibiotic Therapy, A-B-C's of (Perrin H. Long)—reviewed by L. P. Garrod, 530

Surgeon's Domain (Bertram M. Bernheim), 992

Surgery, Genito-Urinary, Textbook of (edited by H. Webster-Whitty)—reviewed by Kenneth Walker, 140

— of the Colon and Rectum (Sir Hugh Devine and John Devine)—reviewed by Norman C. Lake, 19

— Klanc Chirurgie (Hans Kyrtzahn), 12th ed.—reviewed by Zachary Cooper, 530

— Minor (Frederic Christopher), 6th ed., 714

— Preoperative and Postoperative Care of Surgical Patients (Hugh C. Ilgenfritz)—reviewed by C. A. Pannett, 854

Surgical Urology (G. de llyés)—reviewed by David Aiken, 59

Taking the Cure (Robert G. Lovell)—reviewed by George Day, 61

That Which is Caesar's (H. G. Woodley)—reviewed by Edward Glover, 761

Trent and I Go Wandering By, Stones of over fifty years of my life in Nottingham (R. G. Hogarth)—reviewed by Alfred Cox, 353

Troubles of Children and Parents (the late Susan Isaac)—reviewed by R. G. Gordon, 393

Tuberculosis. A Discussion of Pathogenesis, Immunology Pathologic Physiology, Diagnosis, and Treatment (Francis Marion Pottinger)—reviewed by J. G. Scadding, 483

— Die primäre
— und Kindern un
Leitner and R.
W. Pagel, 578

Tumour Identification of Essential Gross and Microscopic Pathological Features Systematically Arranged for Easier Identification (N. Chandler Frost)—reviewed by Dorothy S. Russell, 19

Urology, Surgical (G. de llyés)—reviewed by David Aiken, 59

Vaccination par le BCG, par Scarifications Cutanées (L. Negre and J. Bretet), 2nd ed.—reviewed by G. S. Wilson, 620

Viral and Rickettsial Diseases, Diagnostic Procedures for (by various authors)—reviewed by C. H. Andrews, 32

Webster, Noah. Letters on Yellow Fever addressed to Dr. William Currie—reviewed by H. Harold Scott, 313

REYNOLDS, F. Neon: Triene as analgesic in labour; report of R.C.O.G. 537

Rb factor (A. S. Wenger). 404—And pregnancy, 42, 43, 46—Rhesus union in pregnancy, 155

Rheumatic disease, significance of pathological tests in, 818

— fever: Allergy and nephritis (leading article), 21; correspondence, 194, 237—Prevention of recurrences, 279

Rheumatism, climate and (annotation), 1045

Rheumatoid arthritis. See Arthritis

RHINE, J. B.: The Reach of the Mind, 714

Rhinus caused by Friedlander's bacillus, 116

Ribs, fracture of (causes of, 266, 414, 832

Rich, L. Smaller contacts, 912

Richards, Hugh A. obituary notice of, 257

— John A.: Trilene in Oxford vaporizer, 567

— Owen William, obituary notices of, 915, 960—correspondence, 1139

Richardson, Sir Benjamin Ward: Reminiscences and unpublished writings required, 556

RIEHS, E. W.: Retention of urine, 687 (O)

Ridolf, David, obituary notice of, 1003

Riddick, George S.: Obituary notice cf, 594

— J. W.: Femoral hernia, 32

Ringworm of scalp: Treatment by x-ray epilation without subsequent local application (F. L. Lydon and others), 523 (O); annotation, 536; correction, 690

RIVERS, T. M. (editor): Viral and Rickettsial Infections of Man, 398

ROCKLEE, W. B.: Surgical treatment of rabies, 600

Robb, T. M. (and others): Treatment of ringworm of scalp by x-ray epilation without subsequent local application, 523 (O); annotation, 536; correction, 690

— William Austen, estate of, 251

- ROBERTS, Ffrangcon : Cost of National Health Service, 293 (O); leading article, 314
 — Harry Trist, obituary notice of, 35
 — Philip Meredith, estate of, 120
 ROBERTSHAW, F. L. (and Duncan BALLANTINE) : Spinal anaesthesia in caesarean section, 153
 ROBERTSON, Atboll : Hunterian Oration, 498
 — Kenneth : Role of infection in granulopetula, 799 (O)
 — N. : Sex and Marriage, 578
 — P. A. M. : Treatment of basal-cell carcinoma, 1001
 ROBIN Ashley A. : O Russia! O Mores! 33
 Robinson Arthur, estate of, 918
 — Henry : Tribute to Sir William Hale-White, 458
 Rodent ulcer, with special reference to lesions on neck, trunk, and limbs (Sir Cecil Wakeley and Peter Childs), 737 (O); correspondence, 865, 911, 955, 1001
 RODGER, T. Ferguson : Mental hospital records, 539
 ROE, G. C. F. : Smallpox contacts, 776
 ROEMER M. I. (and F. D. MOTT) : Public Health and Medical Care, 442
 ROGERS, A. Talbot : Partnerships and health centres, 495
 Rogerson, Cuthbert Harry, obituary notice of, 369
 ROLLESTON, Christopher : Tribute to J. R. Wills, 1008
 ROLOFF, W. : Die Lungentuberkulose, 621
 ROMER C. : Treatment of abortus fevers with sulphonomides and blood transfusion, 1035 (O)
 Rorschach test, doctors take the (annotation), 1090
 ROSACA, psychogenic factors in, 474
 ROSE, H. M. : Marxist genetics, 195
 — L. M. (and others) : Use in children of procaine penicillin with aluminium monostearate, 1110 (O); annotation, 1130
 ROSEBURY, T. : Experimental Air-Borne Infection, 854
 ROSEFIELD, B. : Paediatrics and family practice, 1006
 ROSEN, Emanuel : End of compulsory vaccination, 243
 ROSS, C. D. : Diet in disseminated sclerosis, 870
 — James : Dangers of heroin, 240 776
 ROSSEL, R. : Zur Theorie des Typhus Abdominalis, 225
 ROTHENBURGH, F. : Whooping-cough and measles, 198
 ROUALLE, H. L. M. : Rupture of intestine due to non-penetrating injury, unusual accidents from a mechanical saw 350 (O)
 ROUTIER D. : Le Fond d'Œil des Hypertendus et des Cyanotés 60
 ROWLANOS, Dr : Analysis of 67 case records of women who became pregnant while suffering from pulmonary tuberculosis, 1047
 ROYDE, C. A. : Diabetic coma 724
 ROYSTON, G. Riddell : Acute pneumonitis in beryllium worker, 1030 (O)
 RUBENSTEIN I. H. : Contemporary Religious Jurisprudence, 60
 RUBIE, J. (and C. D. CALMAN) : Nutritional macrocytic anaemia in temperate zones 1079 (O)
 — (And A. F. MOUUN) : Tuberculous meningitis : early diagnosis and review of treatment with streptomycin, 338 (O); annotation, 357; correspondence, 498 777
 RUEPP, G. (editor) : Therapeutisches Taschenbuch, 60
 RUESCH, J. : Duodenal Ulcer, 945
 RUMBALL C. A. (and L. G. MOORE) : Successful treatment of typhoid carrier with penicillin and sulphamerazine, 615 (O)—Treatment of chronic typhoid carrier with chloromycetin, 943; annotation 950
 RUSBY, N. L. (and F. HEAR) : Recent Advances in Respiratory Tuberculosis, 4th ed., 185
 RUSSELL, C. Scott : Classical caesarean section, 323
 — G. L. : Artificial Insemination, 727
 — W. Ritchie : Paralytic poliomyelitis 465 (O); leading article, 488; correspondence, 589—Painful amputation stumps and phantom limbs : treatment by repeated percuss on to stump neuromata, 1024 (O); annotation, 1132
 Russia. See USSR.
 Rust James, obituary notice of, 158
 RUTHERFORD, Norman : Treatment of varicose veins, 822
 RUTISHAUSER, Armin : Lactation, 736
 RYLE, John A. : Changing Disciplines. Lectures on the History, Method, and Matters of Social Pathology, 103—Nuffield Hospitals Trust, 410

S

- Safety in cars (annotation), 719
 SALTEN Michelle : Proteins and Amino Acids in Nature on, 312
 SALM R. (and T. M. REID) : Bilateral phaeochromocytoma, 1116 (O); annotation, 1131
 Salza orella, carriers of, 1017
 Sal volatile, 1103

- SANCHIS-OLMOS, V. : Skeletal Tuberculosis, 854
 SANDLIS, G. M. : London Lock Hospital, 1096
 — T. Lindley : Congress of Medical Association of South Africa, 197
 SANDFORD, B. R. : Fish poisoning, 498
 — Hugh A. : Hospitality for overseas visitors, 775
 SANDLER, Bernard : Spermiolysis, 957—Marriage guidance by doctors 1141
 SARCOTJOSIS, Boeck's, 510
 SAUNDERS, John B. de C. M. (and Charles Donald O'MALLEY) : Andreas Vesalius Bruxellensis. The Bloodletting Letter of 1539 494
 — S. R. : Temperature recording, 503
 SAUNSBURY, P. (and others) : Relation of Staph. pyogenes to dental caries 54 (O)
 SAVAJO, Sir William : Practical Public Health Problems, 2nd ed., 1085
 SAYERS, W. J. Hastings : Horse-riding for the infirm, 880
 SCHNEER, B. T. : Comparative Physiology, 185
 SCHNEIDLER, K. : Penicillin in der Innere Medizin, 621
 SCHNEPERS, G. W. H. : Evolution of the Forebrain, 902
 Schick test in young children, 206
 SCHILD, H. : Types of asthma, 588
 SCHULLING, Richard : Nephritis in textile workers 114
 SCHMIDBERGER, Melitta : Clinic under the NHS, 243—Children in Need 484
 SCHMIDT, L. : Treatment of rheumatoid arthritis, 1004
 Schmiegelow, Ernst, obituary notice of, 637
 Sciatic pain, persistent, 292 725
 SCIUTO, J. A. : Estudio Clínico del Enfisema Pulmonar, 60
 Sclerosis, disseminated : And vaccination, 644—Disturbed micturition in, 832—In South Africa its relationship to swayback disease and suggested treatment (Geoffrey Dean), 842 (O); correspondence, 1652—Diet in, 870
 Scotland : Teaching hospitals in, 250—Milk, 875
 SCOTSOV F. H. : Calcified cyst of spleen, 196
 SCOTT, G. E. M. : Juvenile Rheumatism, 530
 — L. D. W. (and others) : Peptic ulcer in Glasgow : hospital survey, 298 (O)
 — Ronald Bodley : Spleen and splenectomy, 1063 (O); leading article 1087
 Sea-sickness, prevention of (leading article), 855
 Sedative, secret administration of (medico-legal), 1100
 Seminoma testis, stilboestrol and, 690
 SEN, N. C. : Amoebic vaginitis, 808 (O)
 Septic excretions viiform in treatment of, 839
 Septicaemia, fulminating meningococcal (Peter Turner and R. V. Dent), 524 (O); correspondence, 633, 681
 SERVICES :
 — Appointments, 159, 684, 1008, 1099
 — Awards, 684, 1008
 — Deaths, 249, 597, 828
 — Decorations, 159, 249, 327, 1057
 — Mentions in dispatches, 159, 873
 — North Persia Forces Memorial, 249
 — Statistical Report on the Health of the Army, leading article on, 399

- Sewell, Sir Sidney, obituary notice of, 824
 Sexual behaviour : what is normal? 682, 779
 — offenders (leading article), 447; correspondence, 547, 682, 779
 Shakespeare's son-in-law (book review), 185
 SHARMAN, Albert (and others) : Sterility and Impaired Fertility. Pathogenesis, Investigation, and Treatment, 2nd ed., 352
 SHARP, C. G. Kay : Clouding of surgeon's spectacles, 75
 SHATTOCK, F. Mackenzie (and P. ELLINGER) : Oral reactions to penicillin, 411
 SHAW B. H. : An unfortunate precedent, 1003
 — Wilfred : Operation for treatment of stress incontinence, 1070 (O)—A Textbook for Midwives, 1126
 SHEARER, Gavin : Second thoughts on progauil, 775
 SHEEHAN, H. L. : Retained placenta and post-partum haemorrhage, 849 (O)
 SHELLEY, Horace (and Mehmed AZIZ) : Anopheles eradication in Cyprus 767
 Shennan, Theodore, estate of, 829
 Shepard, Arthur Harold, estate of, 120
 SHEPHERD, John A. : Perforated gastric ulcer associated with subcapsular haemorrhage of spleen, 1082—(And Jean R. C. BURTON-BROWN) : Rupture of liver associated with parturition, 941 (O)
 — Peter D. W. (and David C. WATT) : Curare-modified electric convulsion therapy in cases with physical disease, 752 (O); correspondence, 869, 957 1003, 1050
 SHEPPARD, J. G. H. : Case of diabetic coma treated with 56 000 units of insulin, 576; correspondence, 632, 724
 SHIRKOW, J. O. : Child welfare in Africa, 637
 SHIRLAW, J. Thomson : Treatment of spondylitis with cortical extract, 1007
 SHIRLEY, Hale F. : Psychiatry for the Pedagogue, 1085
 SHORT, A. Rendle (and others) : Synopsis of Physiology, 4th ed., 60

- SHRYOCK, Richard H. : American Medical Research Past and Present, 140—The Development of Modern Medicine, 185
 Shubik, Nancy Gwendolyn, obituary notice of, 35
 SHUTE, D. C. : Infective ear disease, 193
 — P. G. (and others) : "Paludrine" (proguanil) in prophylaxis and treatment of malarial infections caused by West African strain of *P. falciparum* 88 (O) (corrected, 292); leading article, 106; correspondence, 192, 324, 545, 589, 775 956
 SICHER, K. : Ankylosing spondylitis, 455
 Sick and injured, air transport of (leading article) 623
 Sickness in England and Wales (leading article) 622
 Signs and symptoms (book review), 19
 Silicosis : Ascaris disease, silicosis, and pulmonary bilharziasis (Sir Henry Tidy), 977 (O)
 SILVERMAN, S. Richard : Rehabilitation of the deaf, 861
 SIM, M. : Psychiatry and broadening, 193
 SIMMONS, H. : Perforation of stomach in scrotal hernia, 808
 SIMONART, E. F. : La Denutrition de Guerre, 274
 SIMPSON, N. R. W. (and C. J. STEVENSON) : Analysis of 200 cases of ankylosing spondylitis 214 (O); correspondence, 455
 — S. Leonard : Specialization, 368, 587—Lethal danger of desoxy cortone overdosage, 679
 SINCLAIR, D. C. : Treatment of skin lesions caused by mustard gas, 476 (O)
 SINGER, Charles : How did science begin? 494—A colourful Victorian, 1094
 SINGH, Inder : Unusual symptoms in petrol-tank cleaners, 706 (O)
 Sinton, Frederick Ritchie, obituary notice of, 369
 Sinus, superior longitudinal, injuries to (G. B. Barker), 1113 (O)
 Sinusitis, frontal : unusual case (G. W. Morey), 351
 Sjogren's disease, with dryness of bronchial mucosa and uncertain lung lesion (Philip Eilman and F. Parkes Weber), 304 (O)
 SKAN, D. A. : Death from lightning stroke, with multiple injuries, 666
 Skill, due care and (leading article), 669
 Skin : Sterilization of, 81, 832—Protection of, from irritants (annotation), 277—Mind and (I. B. Sneddon), 472 (O), 690; correspondence, 636—Treatment of lesions caused by mustard gas (D. C. Sinclair), 476 (O)—Petroleum products and, 734—Thickening of palmar, 735—Vitamin D and, 788—Resistant skin condition, 1062—Protection from mineral oils, 1103
 — diseases : Viiform in treatment of (I. Martin-Scott), 837 (O). Topical use of viiform in dermatology (James Overton), 840 (O); annotation, 858; corrected, 968
 Skull closure by acrylic plates (E. A. Turner and G. Foster), 619
 SNEEDON, I. B. : The mind and the skin, 472 (O), 690; correspondence, 636
 SNOODEN, A. P. : Tribute to Hubert Phillips, 117
 SLAVSON, S. R. (editor) : The Practice of Group Therapy, 312
 SLEEMAN, C. (editor) : The Trial of Gossain Sadaichi, 185
 Sleeping-sickness : Tssets over Africa (leading article), 315
 SLEIGH, John : B.C.G., 868
 Smallpox : Deaths (status), 418—Contacts, 776, 911, 912—Port health regulations, 1057
 SMART, John : A Handbook for the Identification of Insects of Medical Importance, 2nd ed., 442
 SMILLIE, Wilson G. : Public Health Administration in the United States, 3rd ed., 352
 SMIRK, F. H. : Pathogenesis of essential hypertension, 791 (O); leading article, 813
 SMITH, A. : Technik der Mechanik, 761
 — David T. (and others) : Zinsser's Textbook of Bacteriology, 9th ed., 992
 — F. B. : Atypical (septicaemic) tuberculosis with agnucytosis, 407
 — Lieut.-Col. Henry, estate of, 829
 — J. F. : Morbid anatomy of uraemic cortical necrosis 281; correction, 548
 — J. Forest (and others) : An unfortunate precedent, 774
 — Lawrence W. (and Edwin S. GAULT) : Essentials of Pathology, 3rd ed., 944
 — Michael (and Frank DAVEY) : Malaria prophylaxis with proguanil, 956
 — O. Cager : Analgesia in childbirth, 637
 — P. E. (and W. M. COPIENHAVER) : Bailey's Textbook of Histology, 12th ed., 945
 — Sir S. (editor) : Taylor's Principles and Practice of Medical Jurisprudence, vol. 2, 10th ed., 761
 — W. E. (and others) : Peptic ulcer in Glasgow : hospital survey, 298 (O)—(And others) : Hog-stomach extract and casein hydrolysate in peptic ulcer, 519 (O)
 SMITHS, I. W. : Treatment of basal-cell carcinoma, 865
 SMITSKAMP, Hendrik : A Neuro-Vascular Syndrome Related to Vitamin Deficiency, 853
 SMITH, Linton : Treatment of subfertility, 540
 SNELL, W. E. : Mammoc-negative nurses, 322
 SNOW, Julian (and Noel HARRIS) : Institute of Social Psychiatry, 548

- SNYDER, F. F.: *Obstetric Analgesia and Anesthesia*, 761
- SOBYE, P.: *Heredity in Essential Hypertension and Nephrosclerosis*, 141
- Society of Anaesthetists: Use of sex hormones in therapeutics (P. M. F. Bshop), 165 (O) Meetings of Court of Assistants, 639—Elections, 639—Diplomas granted, 639—Honours conferred, 917
- Argentine, of Pathology: President elected, 876
- British Cardiac: 13th annual meeting, 1101
- Chelsea Clinical: Dinner meeting, 192—Insidious onset of disease, 363—Meeting, 679—Annual dinner, 917
- of the Chemical Industry: Chemotherapy of tuberculosis (Fine Chemicals Group), 232
- Devon and Exeter Medico-Chirurgical: Clinical approach to neurology, 27
- Edinburgh Obstetrical: Incoordinate uterine action in labour (T. N. A. Jeffcoat), 544
- for General Microbiology: Annual general meeting, 1014
- Harveian of London: Annual general meeting, 234; Buckston Browne Prize awarded, 204; presented, 234—Buckston-Browne—Gray-Hill Dinner, 1135
- Heberden: Case conference, 864
- Huntarian: Johns Hopkins School of Surgery (John M. Finney, jun.) 231—Annual dinner, 329—*Transactio*, vol. 6, 398—Gold Medal awarded, 552
- London County Medical: Hospital medicine, 149—Annual general meeting, 161
- Manchester Medical: Reorientations in neurology (Sir Charles Symonds), 679
- Medical Art: Exhibition, 952
- for the Care of the Elderly: Treating the aged sick at home (E. B. Brooke), 408; correspondence, 545—Conference, 863; correspondence, 1098
- of Edinburgh: Research (Sir Henry Dale), 203
- of London: Therapeutic action of anticonvulsants, 26; correspondence, 156—Anniversary dinner, 507
- of Medical Officers of Health: Tuberculosis at crossroads (C. O. Stallybrass), 207 (O); leading article, 226; correspondence, 321, 365—Accidents in the home, 362
- Newcastle-upon-Tyne Obstetrical and Gynaecological: Pregnancy and tuberculosis, 1047
- North of England Obstetrical and Gynaecological: Meetings, 282, 408, 819
- Nottingham Medico-Chirurgical: Some practical problems of tuberculosis in childhood (F. M. B. Allen), 747 (O)
- Nursing: Conference on puerperium and fertility, 543
- Ophthalmological of the United Kingdom: Annual Congress, 773
- Persian Gulf Medical: Medical Congress, 28
- Pharmaceutical, of Great Britain: *The Pharmaceutical Pocket Book*, 15th ed., 225—Officers elected, 1058
- for Relief of Widows and Orphans of Medical Men: Annual general meeting, 1036
- Royal: Fellows elected, 536—Announcement on May meeting, 997
- of Edinburgh: David Anderson-Berry Prize, 687—Fellows elected, 964
- SOCIETY, ROYAL, OF MEDICINE.
- Photographic unit, 1059
- Section of Endocrinology: Heart in endocrine disease (William Evans), 360
- Section of Epidemiology and State Medicine: Preventive psychiatry, 406—Health centres, 494; corrected, 544
- Section of Experimental Medicine: Evaluation of renal clearances, 361—Antihistamine drugs, 588
- Section of the History of Medicine: Mediaeval "leprosy" in British Isles, 320; correspondence, 457
- Section of Medicine: Place of artificial pneumothorax in treatment of pulmonary tuberculosis, 319—Specialization, 586; correspondence, 781
- Section of Neurology: Traumatic changes in brain after delivery (B. Brouwer), 542
- Section of Obstetrics and Gynaecology: Renal lesions associated with pregnancy, 281; correction, 548
- Section of Odontology: Aetiology of dental caries, 532
- Section of Paediatrics: Problems of childhood, 862
- Section of Physical Medicine: Significance of pathological tests in rheumatic disease, 818
- Section of Psychiatry: Pharmacological explorations of personality (Jean Delay), 542
- Section of Surgery: Surgery, radiation and hormones in treatment of breast cancer (Frank Astar), 631—Resectable cancer of stomach, 772
- Society, Royal Statistical: International statistics, 362
- St Mary's Hospital Medical: Discomfort of childbirth (Granville Dick Read), 651 (O).
- leading article, 669; correspondence, 869, 958, 1053
- for the Study of Addiction: Alcoholism as neurotic symptom, 864
- Royal Medical: Spleen and splenectomy (Ronald Bodley-Scott), 1063 (O); leading article, 1087
- Paediatric: Inaugural meeting, 819
- West Herts and Watford: Centenary dinner, 507
- London Medico-Chirurgical: Whither medicine? (Lord Horder), 537 (O)—Annual dinner, 965
- SOFFER, L. J.: *Diseases of the Adrenals*, 2nd ed., 945
- SOLOMONS, Bethel: Classical caesarean section, 545—Resection of Fallopian tube, 866
- Michael (and J. F. R. Wirthscombe): Prepubertal gonococcal penicillin, 990
- SOMERVILLE, L. G.: Injury caused by ear-nails, 780
- SOMERVILLE, J. C. (and others): *Atlas of Neuropathology*, 944
- Soni, Vil Raj, estate of, 1015
- SOPER, R. L.: Simple portable anaesthetic apparatus, 405
- SOPHIAN, John: Research in renal disease, 1137
- SPEER, Max: *Les Fondements de la Géographie Humaine*, vol. 2, 621
- Sorsby, Maurice, obituary notice of, 730
- SOUDVILLE, M.: *Traitément Chirurgical de l'Otopongiose*, 225
- SOUTTAR, H. S.: John Hunter the observer, 379 (O); correspondence, 498—*Physics and the Surgeon*, 621
- SPIETH, E. B.: *Principles and Practice of Ophthalmic Surgery*, 4th ed., 578
- Speech therapy review of book on, 397
- SPELTZ, S. R.: *The National Health Service Act, 1946*, 20
- SPEUCE, J. C.: Art of consultation in men's cases, 629
- SPENCER, H. (and J. W. Jordan): Case of congenital tuberculosis, 217 (O)
- S. J. G.: Curare modified E.C.T., 869
- Spermatolysis: cause of male sterility (Cafar Yildiran), 575 (O); correspondence, 957
- Spina bifida inherited (N. G. Mills), 139
- SPINA, J.-Jacques: Physiological basis of vagotomy, 726
- Spleen: Calcified cyst of, 74, 196—Case of ruptured spleen and torn superior mesenteric artery (Walter Thompson), 183—Subcapsular haemorrhage of associated with perforated gastric ulcer (John A. Shepherd), 1082—And splenectomy (R. Bodley-Scott), 1063 (O); leading article, 1087
- Splenectomy: spleen and (R. Bodley-Scott), 1063 (O); leading article, 1087
- Spontaneous treatment of, with cornual extract, 1007
- ankylosing, 546, 591, 633, 690, 912—Analysis of 200 cases (N. R. W. Simpson and C. J. Stevenson), 214 (O); correspondence, 455
- Springs, Sir Edmund Ivens, obituary notice of, 286, 326; estate of, 1147
- Sprue, prognosis and treatment of, in India (K. D. Keele), 986 (O)
- Sprue-like mouth and swelling of lips as manifestation of streptomyces sensitivity (A. W. S. Treveltham), 665
- STALLWORTH, John (and others): *Problems of Fertility in General Practice*, 273
- STALLYBRASS, C. O.: Tuberculosis at the crossroads, 207 (O); leading article, 226; correspondence, 321, 365
- STAMMERS, F. A. R.: Ectopic gestation, 455—Gastric cancer, 773
- STANGER, Kenneth: Pregnancy associated with bone and joint tuberculosis, 1048
- Staphylococci in the newborn: their coagulase production and resistance to penicillin and streptomycin (G. Martyn), 710 (O)
- penicillin-resistant frequency of (A. Vourekla and W. H. Hughes), 395 (O); correspondence, 591, 725, 1002
- resistant (annotation), 64; correspondence, 15
- Statusus and health education, 680, 566, 956
- Steniorrhoea and glossitis after ileocolostomy: effect of synthetic vitamins of B complex, autolysed yeast and liver extract (Alexander Brown), 1073 (O); annotation, 1058
- STEEL, M.: Aftercare of the hospital patient, 635—Richmond, obituary notice of, 595
- STENGER, B.: Tuberculous meningitis, 777
- STERNMAN, R. M. (and St. J. LEITER): *Die primäre Tuberkulose bei Erwachsenen und Kindern und ihre Entwicklung*, 578
- Stenosis, bilateral, urticaria, bacterial pyuria producing (N. N. Gupta), 1033
- STEPHANIDES, T. (and others): Treatment of ringworm of scalp by x-ray epilation without subsequent local application, 523 (O); annotation, 536; correction, 690
- STEPHENSON, M.: *Bacterial Metabolism*, 3rd ed., 484
- T.: *Incompatibility in Prescriptions*, 5th ed., 1065
- Sterility: Spermatolysis—a cause of male sterility (Cafar Yildiran), 575 (O); correspondence, 957
- Sterilizing: Pressure-cooker as sterilizer, 121, 254—Of syringes (annotation), 317
- skin before injection, 832
- STEIN, Edward S.: Plain words on dimensional lesions, 116
- STEVENSON, J. Russell: Electrotherapy and stainless steel sutures, 456
- STEVENSON, C. J. (and N. R. W. SIMPSON): Analysis of 200 cases of ankylosing spondylitis, 214 (O); correspondence, 455
- D. Lang (and Eric FRANKEL): Treatment of rheumatoid arthritis by vasodilatation, 867
- STEWART, Alice (and J. P. W. HUGHES): Tuberculosis in industry—epidemiological study, 926 (O); leading article, 946; correspondence, 1049
- Charles J.: Whether tuberculosis? 152
- C. P. (and D. M. DUNLOP): *Clinical Chemistry in Practical Medicine*, 3rd ed., 1125
- Sir Edward, estate of, 687
- Ian S.: Dysentery in South Persia, 662 (O); correspondence, 781
- Sheila M. (and others): Use of procaine penicillin in children, 845 (O); correspondence, 1054—(And others): Use in children of procaine penicillin with aluminium monostearate, 1110 (O); annotation, 1130
- Sublingual, 510—And testicular swelling, 254—Painful breasts due to, 1103
- Stillbirths, repeated, 206
- STOCKS, Percy: International statistics, 362
- Stomach, perforation of, in scrotal hernia (H. Simmons), 808
- Stomatitis, angular, violaceous in treatment of, 839
- STONE, D. G. H. (and others): Use of procaine penicillin in children, 845 (O); correspondence, 1054
- STONES, H. H.: Aetiology of dental caries, 232
- R. V.: Tribute to A. W. Wakefield, 549
- STOPES, Marie C.: Absorption of mercury, 1062—*Birth Control Today*, 9th ed., 1085
- Stores, Percy Arthur, obituary notice of, 247
- STRADLING, Peter: Delayed diagnosis of phthisis, 29
- Streptococcal disease, continuing (leading article), 144; correspondence, 241
- STREPTOMYCIN.
- Finger infections, streptomycin in (J. Bradley and others), 1081 (O)
- Labyrinth, streptomycin and (annotation), 1043
- Meningitis, tuberculous: Early diagnosis and a review of treatment with streptomycin (J. Rubie and A. F. Mohun), 333 (O); annotation, 357; correspondence, 498, 777—Experience in Scotland, 628
- Nausea and vomiting due to, treated with antihistamine drugs (J. R. Bignall and John Crofton), 13 (O)
- Royalties for Rutgers University, 917
- Sensitivity: Sprue-like mouth and swelling of lips as manifestation of streptomycin sensitivity (A. W. S. Treveltham), 665
- Staphylococci in the newborn: their coagulase production and resistance to penicillin and streptomycin (G. Martyn), 710 (O)
- Supplies: 685—Under Marshall Aid, 829, 961
- Tuberculosis in, 235—Annotation, 907—Streptomycin in treatment of (report of subcommittee of Standing Advisory Committee on Tuberculosis), 280
- Tuberculous bronchopneumonia in childhood, streptomycin treatment of (R. McLaren Todd), 741 (O); leading article, 764
- Stress diseases, 647
- Strongyloidiasis, intestinal, creeping eruption and (J. P. Caplan), 556
- STUART, Jean: *Clostridium welchii* infection of eye, 272
- J. R. (and R. E. HEMPHILL): Simulated amnesia for identity treated by electrically induced epilepsy, 938 (O); correspondence, 1097
- STRONG, Ellis: Psychiatric indications for abortion, 590
- STRINGS, C. C.: *Hematology*, 992
- Subacute combined degeneration, 253
- Suction, continuous: new hydrodynamic method (J. A. Carr), 1136
- Sugar estimation: simple colorimetric method of for urine or milk (Salah el-Dewi), 699 (O)
- Sullivan, Harry Szack, obituary notice of, 199
- SULPHONAMIDES.
- Abortus fever, treatment of, with sulphonamides and blood transfusion (C. Rorer), 1035 (O)
- Amnia after, 555
- Celitis, ulcerative, choice of sulphonamides in, 689
- Cremor sulphathiazole and sulphathazole, 1145
- Pharyngosulphathazole, penicillin, ampicillin, 734
- Pneumococcal pneumonia, choice of sulphonamides in, 689
- Sulphamerazine: Successful treatment of typhoid carrier with penicillin and sulphamerazine (C. A. Rumball and L. G. Moore), 615 (O)
- SUREAU, Bernard (and René MARTIN): *Traitement Moderne des Ménages paritaires agés*, 103

SURGERY :

- Air travel, post-operative, 604, 605
Anus, membranous occlusion of, successfully operated case of, in 17th century (R. Sharpe France and A. Fessler), 1048
Arterial surgery, heparin in, 27
Atelectasis, post-operative, 1049
Book reviews, 19, 140, 530, 714, 854
Carcinoma resectable, of stomach, 772
Corneal graft surgery, 457
Cup arthroplasty, 509
Cystectomy, total (B. R. Sworn), 221 (O)
Femoral canal, method of closing (Arthur Webb-Jones), 351
Fistula, vesico-vaginal, 455, 682
Frontal lobe, approach to, 193, 285, 411, 780, 913
Gastrectomy, 649—Post-gastrectomy diet, 967
—partial, some aspects of (John Horsford), 929 (O); correspondence, 1049, 1097
Ileocolostomy, steatorrhea and glossitis after: effect of synthetic vitamins of B complex, autolysed yeast and liver extract (Alexander Brown), 1073 (O); annotation 1088
Incontinence stress, operation for treatment of (Wilfred Shaw) 1070 (O)
Industry, surgeon in (Sir H. Ernest Griffiths), 255 (O); correspondence, 725, 820
Johns Hopkins School of Surgery (John M. Finney), 231
Meningitis, surgical aspects of (Sir Hugh Cairns), 969 (O); leading article, 993
Nephrectomy, severe hypertension with recovery after (A. Ian L. Matland), 426 (O); leading article, 445
Oesophagus : Spontaneous perforation, surgical repair with recovery (John Scholchfield), 348 (O)—Treatment of perforations: report of three cases (Leslie J. Temple), 935 (O); correspondence, 1095
Prostate : Punch prostatectomy (H. T. Cox), 386 (O); correspondence, 545—“Third ureter” in prostatectomy (A. Wilfred Adams), 809; correspondence 958, 1096
Rabies, surgical treatment of (W. B. Roantree), 900
Rectum, perforation of (J. D. T. Jones), 933 (O); correspondence, 1095
Retractors, set of nested (Sir Heneage Ogilvie), 864
Sinus, superior longitudinal injuries to (G. B. Barker), 1113 (O)
Skull closure by acrylic plates (E. A. Turner and G. Foster), 619
Spectacles, surgeons' clouding of, 75, 198
Spleen and splenectomy (Ronald Bodley Scott), 1063 (O); leading article, 1087
Stomach resectable carcinoma of (Alfred R. Parsons), 1096
Suction pump, new surgical (David Aiken), 1094
Sutures stainless steel, electrotherapy and, 456
Sympathectomy in peripheral vascular disease (leading article), 485
Televised operations demonstration at Guy's Hospital, 909
Thoracoplasty, 878
Thyroidectomy, indications for, 789
Vascular surgery, perichondrium in, 72
War : surgery at the front, 1139
- Surgeon in industry (Sir H. E. Griffiths), 255 (O); correspondence, 725, 820
Susman, William, obituary notices of, 76, 248
Sutherland, Francis Benjamin, estate of, 78
Sutton, David Carlyle estate of, 918
Sutures, stainless steel, electrotherapy and, 456
SWANSON, Mrs. *The Textbook of Chiropody*, 854
Swayback disease : relationship of disseminated sclerosis to, and suggested treatment (Geoffrey Dean), 842 (O); correspondence, 1052
SWIFT, P. N. (and D. G. LEYS). Pulmonary lesions following rheumatoid arthritis, 434 (O)
SWINNEY John : Punch prostatectomy, 545
SWIRE, M. E. : *A Handbook for the Assistant Nurse*, 484
SWORN, B. R. : Total cystectomy, 221 (O)
SWYER, G. M. : Nutrition and fertility, 543—Oestrogen therapy of menorrhagia, 920
Sycosis barbae, treated with viomycin, 838, 841
SYMONDS, Sir Charles : Rcorientations in (A. D. Codrington), 805 (O); correspondence, 1097
—Franconi's : diagnosis and treatment, 81
—Gowers's, 4
—Ogilvie's, of false colonic obstruction : case with post-mortem findings (J. A. Dunlop), 890 (O); correspondence, 1137
—orthostatic-hypotension, and hyperthyroidism, alteration of, of probable hypothalamic-hypothalamic origin (F. Vega Diaz), 169 (O)
Syphilis : Secondary, 82—1 D E test for, 643
Syntage sterilization (annotation), 317—For prostate penicillin, 789
SZONDI, L. : *Schicksalsanalyse*, 2nd ed., 141—*Experimentelle Triebdiagnostik*, 484
- TAIT, Margaret C. : Specialization, 592
TANNER, F. W. and F. W., jun. *Bacteriology*, 4th ed., 185
—Norman C. : Haematemeses and melaena, 110
—Amethocaine hydrochloride, 367—Radical resection of carcinoma of stomach, 772
TATERSALL, W. H. : Co ordination of tuberculosis service, 322
TAYLOR, C. B. (and Reginald Lovell) : Use of the term “coliform,” 820
—C. W. : Virilizing tumours of ovary, 407
—Geoffrey F. (and others) : Meat ration and blood levels : Investigation of Indian soldiers in Persia and Iraq, 1944, 219 (O)
—H. P. : *A Sheffield Portch Doctor*, 353
—R. A. Russell : Unusual case of chronic myeloid leukaemia 940 (O)
—W. Norman : B.C.G., 778
Tca, washing soda in, 736
Teeth : Fluorides and dental caries, 29, 82, 285—Relation of *Staphylococcus* to dental caries (E. Matthews and others), 54 (O)—Aetiology of dental caries, 232—Dental caries, 325—“Dry socket,” 332
Temperature : Taking children's temperatures, 284, 457, 683—Notes on experiments illustrating temperature regulation in young men (Samson Wright), 610 (O); correspondence, 823—Fever and regulation of body temperature (book review), 945
—recording, 33, 75, 17, 412, 503, 547
TEMPLE, Leslie J. : Treatment of perforations of oesophagus, 935 (O); correspondence, 1095
TERRY, Richard : Needle biopsy of liver, with special reference to modified Gillison technique, 657 (O); correspondence, 820
Testes : stilboestrol and testicular swelling, 254
Testosterone : For prostate enlargement, 121—As treatment for prematurity (annotation), 189—In progressive muscular atrophy, 206
Tetanus : Curare in treatment of, 31—Case of, in a child (N. N. Iovcz-Tereschenko), 58—“Myanesis” in treatment of (M. H. Armstrong Davison and others), 616 (O); correspondence, 868—Inoculation against, 878
Tetany following removal of parathyroid adenoma with bone disease : finally alleviated with calciferol (Nancy S. Conway), 14 (O)
Thambiah, Saravanamuttu, obituary notice of, 783
Therapeutic controls, 1054
THIEL, R. : *Atlas der Augenkrankheiten*, 5th ed., 992
Thigh, basal-cell carcinoma (rodent ulcer) of, 738
Thyroiditis in thyrotoxicosis (D. Vercel), 892 (O)
—Thyrototoxic arteriolar fibrillation treated with (J. F. Goodwin), 895 (O)
Thiosomecarbazone, 1005, 1140
THOMAS, E. V. Caryl. *An Introduction to Public Health*, 714
—Frank Griffith, obituary notice of, 782
—G. N. W. : Animal experiments, 369
—J. Ernest : Survival of premature twin, 781
—Rees : Mental hospital records, 539
—Rulus C. : Spinal anaesthesia for caesarean section, 323
—Sawle : Consultation in psychiatric practice, 629
THOMSEN, Elvind : *Myotonio Thomsen's Disease (Myotonia Congenita), Poronyotonia, and Dystrophio Myotonio* (translation), 853
THOMPSON, J. D. : Occupational therapy, 546
—Robert : Marriage neurosis, 822
—Walter : Case of ruptured spleen and torn mesenteric artery, 183
—W. E. : Dracontiasis, 74
THOMSON, H. R. (and A. L. WOLF) : Spontaneous intra-abdominal haemorrhage, 572 (O)
—the late Sir St. Clair (and V. E. NEGUS) : *Diseases of the Nose and Throat*, 5th ed., 274
—T. R. : Epsom College Centenary Register, 464
Thoracoplasty, 878
THORNTON, A. : *Athletic Injuries*, 3rd ed., 1085
THORNER, M. W. : *Psychiatry in General Practice*, 185
Threadworms, 967
Thrombocytopenia, splenectomy in, 1065
Thrombophlebitis migrans, case of (C. A. Hinds Howell), 989
Thrombosis, coronary, treated with anticoagulant drugs (leading article), 579
—venous, and anticoagulants (K. P. Ball and H. O. Hughes), 560 (O); leading article, 579
THROWER, W. R. : Milk standards, 503
THURSTON, J. G. : Diptheritic vaginitis, 272
Thymoma simulating laryngeal diphtheria (Alwyn Griffith), 759; correspondence, 910
Thymus gland in meningococcal septicaemia, 524, 681
Thyroid gland : Anti thyrototoxic factor of liver (annotation) 145—Alternating orthostatic hypertension and hyperthyroidism of probable hypothalamic-hypothalamic origin (F. Vega Diaz), 169 (O)—Pregnancy and (annotation), 996
Thyroidectomy, indications for, 789
- Thyrototoxicosis : A stress disease, 648—Thyroiditis (D. Vercel), 892 (O)—And pregnancy, 1018
Tidy, Sir Henry : Ayerza's disease, silicosis, and pulmonary bilharziasis, 977 (O)—(And A. Rend: SIKOT) (editors) : *The Medical Annual*, 1948, 854
Tinnitus, 331—Deafness and, 378, 644
TUPPETT, Sydney Gordon : Whither tuberculosis? 634
Tobacco, home-cured, and amblyopia, 163, 244, 510
TONTAS, Maurice : Anthrax poisoning, 1098
—N. : *Essentials of Dermatology*, 3rd ed., 761
TODD, G. S. (and A. F. FOSTER-CARTER) : Bronchography and surface analgesia, 725
—J. W. : *Rational Medicine*, 668
—R. McLaren : Streptomycin treatment of tuberculous bronchopneumonia in childhood, 741 (O); leading article, 764
Toe-nails : softening a nail, 463
TOLLEN, W. B. : *Irregular Discharge*, 443
Tongue in vitamin-B deficiency (annotation), 672
Tonsillitis, streptococcal, nasal carriers and (G. T. Cook and D. Munro-Ashman), 345 (O); leading article, 355
TOPPING, Andrew : Preventive services “played down” in N.H.S., 998
TORRENS, J. A. (and others) : Diabetic coma treated with and without early administration of glucose, 565 (O); correspondence, 632, 724
TORRIE, A. : Preventive psychiatry in the Army, 406
TOW, P. Macdonald. Approach to frontal lobe, 285
Town planning and health (annotation), 188
TOWNSEND, H. S. (and others) : Diet, haemoglobin values and blood pressures of Olympic athletes, 300 (O); corrected, 378
Toxoplasmosis (annotation), 718
TRABAUD, J. and J. R. : *Les Maladies de l'Appareil Cardio-Vasculaire et les Maladies du Sang*, vol. 4, 2nd ed., 992
Translusion : Retaining patency of veins, 74, 286—Of infected blood (potentially malarious and syphilitic donors), 81
TRAPOZZANO, V. R. (editor) : *A Comprehensive Review of Dentistry*, 992
TRAUT, Herbert F. (and others) : *The Epithelia of Woman's Reproductive Organs*, 577
TREDGOLD, A. F. : *A Textbook of Mental Deficiency (Amnesia)*, 7th ed., 811
TRELEASE, S. F. : *The Scientific Paper*, 761
Tremor, hysterical, prognosis of, 1076
Treponema duttoni, human louse in transmission of, in nature (R. B. Heisch), 17 (O); correspondence, 501
TREVATIASEN, A. W. S. : Sprue-like mouth and swelling of lips as manifestation of streptomycin sensitivity, 665
Trichoullomania, 472
TRINCAO, C. : *Síndroma Anémico do Kola-Azor*, 104
TRINICK, R. H. : Antihistamine drugs and erythroblastosis, 194
Tropical diseases centre, 328
TRUELOVE, Sidney (and D. C. LEWIN) : Haematemeses with special reference to chronic peptic ulcer, 383 (O); leading article, 400; correspondence, 590
TRUETA, Joseph : *An Atlas of Traumatic Surgery*, 761—(And others) : Research in renal disease, 1007
TRUOX, R. C. (and C. E. KELLNER) : *Detailed Atlas of the Head and Neck*, 668
Trypanosomiasis, control of : insecticides and anticyde (D. G. Davey), 1046
TSCHERNE, E. : *Sexual hormonotherapie*, 274
Tsches over Africa (leading article), 315
- TUBERCULOSIS :
Air travel contraindication for, 605
B.C.G., 778, 868—National trial of (leading article), 624—In Finland, 636
Book reviews, 483, 578, 620
Bronchopneumonia tuberculous, in childhood : Streptomycin treatment of (R. McLaren Todd), 741 (O); leading article, 764
Chemotherapy of (Fine Chemicals Group of the Society of Chemical Industry), 232
Children : Some practical problems of tuberculosis in childhood (P. M. B. Allen), 747 (O)
Congenital, case of (J. W. Jordan and H. Spencer), 217 (O)
Co-ordination of services (leading article), 226; correspondence, 321
Cow's milk and, 955
Diagnosis : Early diagnosis, 235, 591, 681—Delayed diagnosis, 29—Diagnosis in general practice, 778
Exercises : Graduated, 205—Breathing, 205
Ex-Servicemen, tuberculosis in, 421
Family, tuberculosis in the, 365
Hereditary and pulmonary, 555
Histology of the tuberculous lesion, 748
Industry : Tuberculosis in industry—an epidemiological study (Alice Stewart and J. P. W. Hughes), 926 (O); leading article, 946; correspondence, 1049
Infection : Mode of infection in infants and children, 747

TUBERCULOSIS (continued):

- Locum register for tuberculosis work, 1058
Meningitis, tuberculous: Diagnosis, 75, 195, 235
364—Early diagnosis and a review of treatment with streptomycin (J. Rubie and A. F. Mohan)
338 (O); annotation, 357; correspondence, 498, 777—Treatment with streptomycin (Scotland), 628
Mortality, 209, 210
Necropses and tuberculous infection (annotation), 907
Para-aminosalicylic acid in (annotation) 190
Pneumothorax, artificial: Self-administered refills 113—Place of, in treatment of pulmonary tuberculosis, 319
Pregnancy and, 1047
Pulmonary complicated by amoebic hepatitis (A. Erdel), 18
Septicaemic, with agranulocytosis (a new syndrome) 407
Spread by books, 601, 832, 1062
Statistics: Ministry statement, 493
Streptomycin: Report of subcommittee of the Standing Advisory Committee on Tuberculosis 250—Annotation on, 907
Tuberculosis at the crossroads (C. O. Stallibrass) 207 (O); leading article, 226, correspondence 321, 365
Vaccination 211
Whether tuberculosis? 70, 152, 365, 412, 593, 634, 777
X-ray examinations in Switzerland 943

- TUMOURS: Review of book on diagnosis of 19—Malignant forming epidermal 407—Contraindication to air travel, 605. See also Cancer
TURNER, C. Donnell: General Endocrinology 901
—E. A. (and G. FOSTER): Skull closure by acrylic plates, 619
—G. Grey: Occupational diseases of the lens and retina, 497—Perforations of oesophagus and of rectum, 1095
—Peter (and R. V. DENT): Three cases of fulminant meningococcal septicaemia with one recovery, 524 (O); correspondence 633, 681
—R. W. D.: Needle biopsy of liver 820
—W. C.: Intussusception due to carcinoma of colon, 195
TURN, J. (editor): Atomic Energy Year Book, 902
TWISS, Donald Sargensoo: obituary notice of 960
Twins: Are females born co-twin with males sterile? (J. Chassard Mout), 69
Typhoid: See Fevers

U

- URMA, C.: Classical caesarean section, 414—Ectopic gestation, 455—Spontaneous amputation of cervix, 501
Ulcer, Curling's, case of (L. W. Jayesuna and A. T. H. Marsden), 1124
—duodenal: Perforated, in a boy, 196—A stress disease, 648
—gastric: Differentiation of subacute pancreatitis from perforated gastric ulcer, 568 (O)—Perforated, associated with subcapsular haemorrhage of spleen (John A. Shepherd), 1082
—peptic: Hospital survey in Glasgow (R. A. Jamieson and others), 298 (O)—Haematemesis with special reference to chronic peptic ulcer (D. C. Lewin and Sidney Truelove), 383 (O); leading article, 400; correspondence, 590—Hog-skin extract and casein hydrolysate in (A. W. Kay and others), 519 (O)—Contraindications to air travel, 604—Aetiology of, 607—The ulcer diathesis, 607—Salt intake and, 1061
—rodent, with special reference to lesions on neck, trunk, and limbs (Sir Cecil Wakeley and Peter Chalk), 737 (O); correspondence, 865, 911, 955, 1001
—skin, simple, treated with vioform, 839
ULRICI, H.: Der proktische Arze und die Tuberkulose, 274
Ultra-violet rays, loss of transparency, 1061
—Umbilical region: Basal-cell carcinoma (rodent ulcer) in, 737
UNDERWOOD, E. Ashworth: Edward Jenner: the man and his work, 881 (O); leading article, 505
Undulant fever and milk regulations, 509
UNGAR, J.: Non-specific effects of impure penicillin, 654 (O)
UNGERLEIDER, Harry E. (editor): Transactions of the Association of Life Insurance Medical Directors of America, vol. 30, 20
United States of America: Public Health in (book review), 352—Some observations on teaching of pathology in (K. R. Hull), 674—Pollution control 687—Proposed health service, 764—State medicine in (book review), 810
University of Aberdeen: Appointments, 505—Degrees conferred, 654
—Bristol: Pass lists, 37, 78, 283, 960—Appointment, 784—New Chair established, 754

- University of Cambridge: Degrees conferred, 36, 248, 372, 458, 552, 826, 960, 1057—Appointments, 36, 458, 500, 552—Pinsent-Darwin student to be elected 36; awarded, 826—Pass lists, 36, 416—Elections, 248—Regulations for degrees, 505
—William Dana Professor of Biochemistry elected 573—Honorary degrees conferred, 1014
—Dublin: Pass lists, 37, 597—Degrees conferred, 37
—Durham: Pass lists, 37—Degrees conferred, 118—Appointments, 597
—Edinburgh: Dinner in honour of School of Medicine of Royal Colleges, 36—Medical degrees conferred 37—Diplomas granted, 37
—Glasgow: Degrees conferred, 248, 960
—gran s, 460
—Hebrew of Jerusalem: Medical School in Jerusalem opened—the University's new Faculty, 1046
—Leeds: Appointments, 78, 372, 597—Prize in Practical Anatomy endowed 372—Pass lists, 639
—Liverpool: Pass lists 159, 639, 1014

- UNIVERSITY OF LONDON: Appointments 118, 159, 328, 416, 597, 731, 873
Degrees conferred, 684
Honorary degree conferred, 159
Hospitals recognized, 416
Lecture: Virus research and the virus problem (Pierre Lepine), 359
Pass lists, 78, 118, 159, 416, 731, 784, 960, 1057
Paul Philip Reithinger Prize awarded, 416
Professor of Chemical Pathology title conferred 37
—Neuropathology title conferred, 328
—Pathology title conferred 37
Readership title conferred, 118
Resignation 873
Scholarships awarded, 372
Teachers recognized, 159, 328, 416
William Julius Mickle Fellowship awarded 873, 876

- University of Manchester: Pass lists 37, 597, 873
—Appointments, 78, 248, 253, 552
—Otago Medical School: Proceedings, 1949, 1126
—Oxford: Degrees conferred 248, 288, 505, 960, 1145—Travelling scholarship awarded, 731
—St Andrews: Pass lists, 159—New Chairs to be established 731
—Sheffield: Appointments, 416, 1014—Pass lists 673—Resignation, 1014
—Students, selection of (annotation), 949
—Wales: Pass lists, 248, 1145
Urethane, lymphoblastic leukaemia treated with (D. Pullen), 137 (O); correspondence, 286
Urethra chronic obstruction in children (R. J. Last), 179 (O)
Urethritis non-specific, 920
Urine: Methods of studying urinary steroids 408
—Retention (E. W. Ruchel), 887 (O)—Simple colorimetric method for estimating sugar in (Salah el-Dew), 899 (O)
Urobilinogen, Ehrlich's aldehyde test for (T. M. Wilson and L. S. P. Davidson), 884 (O)
Urology: Surgical urology (book review), 59—Chronic urethral obstruction in children (R. J. Last), 179 (O)—Non-specific urethritis, 920
Uroicuria, 474
U.S.S.R.: American Review of Soviet Medicine suspended, 678—Women war captives in (R. F. A. Dean), 691 (O)—The Situation in Biological Sciences (Proceedings of Lenin Academy of Agricultural Sciences), 811
Uterus: Innervation of, 377—Retroversion of, 510
Uveal pigment, hypersensitivity to (annotation), 229

V

- Vaccination: End of compulsory, 33, 243—Disseminated sclerosis and, 644—Statistics, 785
Vaccine lymph expulsion of, from capillary tubes, 818, 959, 1018, 1062
—treatment of rheumatoid arthritis, 867
Vaccinia virus penicillin and, 41
Vagina: vaginal dilators (W. McKim H. McCullagh), 723
Vaginitis amoebic (N. C. Sen), 808 (O)
—diphtheric (J. G. Thurston), 272
Vagotomy: Physiological basis of (A. Davis Beattie), 607 (O); correspondence, 726—For peptic ulcer, 648
VALENTINE, F. C. O.: Diagnosis of tuberculous meningitis, 195
—Max: Approach to frontal lobe, 411, 913
VALLEY-RADOT, P. (and others): Pathologie Médicale, 313
VAN DE WERFF, J. Th.: Biological Reactions Caused by Electric Currents and by X Rays, 395
van Hoof, Lucien-Marie-Joseph-Jean, obituary notices of, 34, 158
Vandella and herpes zoster in same patient, 1052
Vancocle, 378
Varicose veins, treatment of, 412, 500, 635, 822, 869, 1005, 1141
Vascular disease, peripheral, sympathectomy in (leading article), 485

- Vasodilatation, treatment of rheumatoid arthritis by, 567
Vasovagal attack of Gowers, clinical note on (Michael Jefferson), 852
VALHOGN, Kathleen: Primitive midwifery, 498—Pain in childbirth, 869
VAUGHAN SAWYER, Ethel, obituary notices of, 503, 595
Veins, retaining patency of, 74, 286
Vena cava, inferior, ligation of (annotation) 671
VENEREAL DISEASES: Contracting, risk of, 463
Gonorrhoea in war (annotation), 815
Medico-social work in V.D. clinics (annotation) 1044
Neurisyphils, psychoneurosis and, 1017
Penicillin, pre-pubertal gonococcal (Michael Solomons and J. F. R. Vandycombe), 990
Syphilis: Secondary, 82—I.D.E. test for, 643

- Venous insufficiency, chemical sympathectomy for 1028
VEREL, D.: Thiazacil in thyrotoxicosis, 892 (O)
VERING, F.: Zur Hygiene der Arbeit, 225
Vertebrate, penile 968
VERSA, F.: Lehrbuch der Inneren Sekretion, 224
Verugo: Parnysmal, 5—And influenza, 821, 959
VEXAR, F. (editor): Höherklima-Forschungen des Basler Physiologischen Institutes, 2nd ed., 141
Vickers, Anthony A.: Blood changes in lemnizis, 546
VIGNES, Henri: Edampure et Edampure, 853
Vincent, Herbert Edmund, estate of 599
—N. Aidan: Anaesthetic explosions, 244
VINE, Joseph: Achlorhydria following gastroenteritis, 196
—"Vioform" in treatment of skin diseases (I. Marun-Scott), 837 (O); topical use of vioform in dermatology (James Overton), 840 (O) footrotted, 968; annotation, 853
Viper venom, Russell, 122
Virus disease: Diagnosis of (book review), 352—Virus research and the virus problem (Pierre Lepine), 359
—infectious, non-specific resistance to (leading article), 1041
Visceral transposition as a defence (medico-legal) 77
Visick, Arthur Hedley, obituary notice of, 729

VITAMINS:

- A for indocytosis, 637
B: Tongue in B deficiency (annotation), 672—Glossitis in Addisonian pernicious anaemia effect of synthetic vitamins of the B complex (Alexander Brown), 704 (O); annotation, 1038
—Scleroderma and glossitis after ileocolostomy effect of synthetic B complex, autolysed yeast and liver extract (Alexander Brown), 1073 (O); annotation, 1058
Book review, 852
Bread, vitamin in, 685
C: Effect of pressure cooking on vitamin C content of vegetables (Gweneth M. Chappell and Audrey M. Hamilton), 574 (O); annotation, 582, correspondence, 822, 958
D and the skin, 788
E in heart disease 409, 658—Annotation on, 949—International Conference on, 951
K and children, 464

- VOGLER, P. (and G. HASENPFUG): Das Gesundheitswesen in der Bauplanung Berlin, 60
Voluntary action in war (leading article), 947
—secretary and the State (annotation), 1045
Vomiting: Antiemetic drugs in treatment of nausea and vomiting due to streptomycin (J. R. Bignall and John Crofton), 13 (O)
—bacterial prognosis of, 1076
VOYCEKA, A. (and W. Howard Hughes): Frequency of penicillin-resistant staphylococci, 395 (O); correspondence, 591, 725, 1002
Vulvovaginitis, gonococcal, treatment of (annotation), 719

W

- Wacher, Harold, obituary notice of, 783
Waddy, Frederick Henry, obituary notice of, 35
Wakfield, Arthur W., obituary notices of, 504, 549
WALKLEY, Sir Cecil (editor): Modern Treatment Year Book, 1949, 945—(And Peter Childs) Basal-cell carcinoma (rodent ulcer) with special reference to lesions on neck, trunk, and limbs, 737 (O); correspondence, 865, 911, 955, 1001
WALKLEY, J. H. (and G. J. REES): Amethocaine hydrochloride, 567
WALDEGRAVE, A. J. (and Frank Hart): A Study of Hospital Administration. Studies in Public Administration, 667
WALFORD, Peter A.: Verugo and influenza, 821
WALKER, Cranston: Tribute to Arthur Robinson 77—Dangers symptoms after injections of heroin (d. amorphine), 619, 912; correspondence 776

- WALKER, James : Chemotherapy of tuberculosis, 232
— Kenneth : *Thomson - Walker's Genito-Urinary Surgery*, 3rd ed., 185—(And others) : *Problems of Fertility in General Practice*, 273—(And others) : *Sterility and Impaired Fertility, Pathogenesis, Investigation, and Treatment*, 2nd ed., 352—(And E. B. STRAUSS) : *Sexual Disorders in the Male*, 3rd ed., 443
- WALL, C. W. : *The Value of Neurosis*, 854
- WALLACE, John (and A. C. BUCHAN) : Severe renal failure after administration of apparently compatible blood, 660 (O); correspondence, 870, 1002
— William : Dental caries, 325
- WALLACE-JONES, H. : *An Elementary Atlas of Cardiology*, 104
- WALLIS, Hugh R. E. : Breast-feeding, 154
- WALSHE, F. M. R. : The clinical approach to neurology, 27—*The Structure of Medicine and its Place Among the Sciences*, 484—*Critical Studies in Neurology*, 1039—Acute "infective" polyneuritis, 1049
- WALTHER, H. E. : *Krebsmetastasen*, 353
- WALTON, A. : Nutrition and fertility, 543
- WAR : Official history of the 1939-45 war, 453—Women war captives in Russia (R. F. A. DEAN), 691 (O); correspondence, 1139—Gonorrhoea in war (annotation), 815—Wounded and sick prisoners (Draft Red Cross Conventions), 817—Surgery at the front, 1139
- WARD, A. B. (and others) : "Myxasus" in treatment of tetanus, 616 (O); correspondence, 868
— F. Godsalve : Ankylosing spondylitis, 912
- WARFIELD, F. : *There's No Need to Slout*, 578
- WARKENTIN, J. (and J. D. LANGE) : *Physician's Handbook*, 313
- Warm in bed, 690
- Water-piressus test in epilepsy, 291, 880
- WATKINS, A. G. : Children in hospital, 863
- WATSON, J. B. (and others) : Streptomycin in finger infections, 1081 (O)
— Leigh F. : *Henna*, 3rd ed., 273
- WATT, David C. (and Peter D. W. SHEPHERD) : Curare-modified electric convulsion therapy in cases with physical disease 752 (O); correspondence, 869, 957, 1063, 1050
— John : obituary notice of, 327
- WINDAY, O. : Strong corsets and pelvic congestion, 324
- WAY, Stanley : Leucoplakia and kraurosis vulvae, 164, 790
- WAYNE, E. J. (and others) : *The National Formulary*, 452—Use in children of procaine penicillin with aluminium monostearate, 1110 (O); annotation, 1130
- WEBB, A. M. (editor) : *The Natsweiler Trial*, 1126
— John Curtis : obituary notice of, 1099
- WEBB-JOHNSON, Lord : Malaya Branch of B.M.A. and R.M.B.F., 70
- WEBB-JONES, Arthur : Method of closing the femoral canal, 351
- WEBER, F. Parkes (and Philip ELLMAN) : Sjogren's disease with dryness of bronchial mucosa and uncertain lung lesion, 304 (O)—Hereditary cheilopompholyx, 1007
- WEBSTER, Noah : *Letters on Yellow Fever addressed to Dr William Currie*, 312
- WEINBERGER, M. : Temperature recording, 75
- WELBOURN, Esther H. : Diagnosis of tuberculous meningitis, 364
- Wells, Philip Hewer, obituary notice of, 245
— S. M. : Prolonged gestation period, 116
- Wenyon Charles Morley estate of, 78
- Werdnig-Hoffmann paralysis, inheritance of, 880
- WEST, H. F. : Ankylosing spondylitis, 633
— John Weir, estate of, 966
— Ranyard : Antihistamine drugs, 588
- West-Watson, William Norman, obituary notice of, 914
- WESTERMARK, N. : *Roenigen Studies of the Lungs and Heart*, 668
- WHITELY, David : Procaine penicillin, 116
- Wheaton Samuel Walton estate of, 251
- White Philip Bruce, obituary notice of, 594
- Whitehead, Arthur Ernest : obituary notice of, 782
— J. E. M. (and T. D. M. MARTIN) : Carriage of penicillin-resistant *Staph. pyogenes* in healthy adults, 173 (O)
- WHITEHEAD, Raymond : Modern languages in the service of medicine, 146
- WHITELY, M. A. (editor) : *Thorpe's Dictionary of Applied Chemistry*, 945
- WHITESIDE, C. T. H. : Dried plasma for domiciliary midwifery, 1005
- WHITTET, T. D. (editor) : *Pharmacopoeia of the University College Hospital*, 1949, 902
- WHITING, Robert, Esq., estate of, 1147
- WHITTINGHAM, Sir Harold (and others) : Medical fitness for air travel, 603 (O) (corrected, 790); leading article, 623; correspondence, 1053
- WHITTY, C. W. M. : An unfortunate precedent, 819
- Whooping-cough : Treatment of pertussis (annotation), 24—And measles, 116, 198—Combined pertussis vaccine and diphtheria prophylaxis, 163—Prophylaxis and treatment, 509—Notification of, 601—Serological diagnosis of, 831
- WICKSTEE, Jane H. : *The Growth of a Profession, Being the History of the Chortered Society of Physiotherapy, 1894-1945*, 760
- WIENER, Alexander S. : The Rh factor, 404
— N. : *Cybernetics*, 1126
— R. A. Kilgour : Carbuncle of kidney, 456
- WIESNER, B. P. (and others) : *Sterility and Impaired Fertility, Pathogenesis, Investigation, and Treatment*, 2nd ed., 352
- WILKINSON, M. C. (and Raymond C. COHEN) : Tuberculous infection of infants, 322
- WILLAN, R. J. : *Tribute to Stanley Raw*, 247
- Willans, Sir Frederic Jeune, obituary notice of, 287
- WILLARD, Helen S. (and Clare S. SPACKMAN) (editors) : *Principles of Occupational Therapy*, 397; correspondence, 546, 548, 591
- Williams, David Llewelyn, obituary notice of, 959
— Denis (and Gerald PARSONS-SMITH) : Cerebral embolism following contusion of heart, 10 (O); annotation, 23—(And others) : Repetitive auricular flutter, 778
— Percy Glyn Savours, estate of, 251
— R. J. : *A Textbook of Biochemistry*, 2nd ed., 274
— R. T. (editor) : *The Biochemical Reactions of Chemical Warfare Agents*, 20
— T. Pearce : Tribute to R. H. Miller, 76
- Williamson, George, estate of, 1015
— J. (and others) : Chemoprophylaxis of experimental filariasis in the cotton-rat, 130 (O); annotation, 145
- Willis, Eugene Leeson, estate of, 78
— John H. : Anaesthesia in Ludwig's angina, 31, 324
- Wills, James Robertson, obituary notice of, 1008
- WILNER, R. A. Kilgour : Treatment of simple ganglion, 240
- WILSON, A. Cyril : Taking children's temperature, 284
— D. : Overdose of surface analgesia, 197
— J. Greenwood : Aftercare of the hospital patient, 502
— Louise Whitman Farnam, obituary notice of, 247
— Robert Scott, obituary notice of, 1008
— T. M. (and L. S. P. DAVISON) : Ehrlich's aldehyde test for urobilinogen, 884 (O)
- WILTON, T. N. P. : Ametocaine hydrochloride, 235
- WINSBURY-WHITE, H. P. (editor) : *Textbook of Genito Urinary Surgery*, 140
- WINTERBOTTOM, E. H. : Curare-modified E.C.T., 957
- WINTERNITZ, Max : Auricular fibrillation in the elderly, 1018
- WINTON, F. R. (and L. E. BAYLISS) : *Human Physiology*, 3rd ed., 621
- WISE, A. R. J. : *Your Hospital Heritage and Future*, 854
- WITHEYCOMBE, J. F. R. (and Michael SOLOMONS) : Pre-pubertal gonococcal peritonitis, 990
- WITMER, H. L. (editor) : *Pediatrics and the Emotional Needs of the Child*, 811
- WITTS, L. J. : Height of hospital beds, 632
- WOERENMAN, M. W. : *Atlas of Human Anatomy*, vol. 1, 313
- WOLF, George D. : *Ear, Nose, and Throat. Symptoms, Diagnosis, Treatment*, 1084
- WOLFF, G. : *Childhood Mortality from Rheumatism and Heart Diseases*, 945
— P. O. : *La Marhuona en lo America Lat*, 714
- WOLLASTON, Dr. : Pregnancy and tuberculosis—controlled investigations, 1047
- Women war captives in Russia (R. F. A. DEAN), 691 (O); correspondence, 1139
- Women's Group on Public Welfare : *The Neglected Child and his Family*, 225
- WOOD, E. A. : Diagnosis of early pulmonary tuberculosis, 683
— Paul : Effects of heparin and dicoumarol in 100 cases, 26; correspondence, 156
- WOODCOCK, John (and Charles HILL) : *The National Health Service*, 1125
- WOODHOUSE, M. C. : Fibrositis, 634
- WOODLEY, H. G. : *That Which is Caesar's*, correspondence, 1006
- WOODS, R. Salisbury : Dislocation of hip—"rigger", 272
- WOOLF, A. L. (and H. R. THOMSON) : Intraneural abdominal haemorrhage, 572 (O)
- WOOLMAN, A. M. : Natural childbirth—sympatheticotonia, 958
- WORRALL, R. L. : *Energy and Matter*, 530
- WRIGHT, Dickson : Heparin in arterial surgery—Specialization, 586
— M. D. : Fat intolerance, 378
— Samson : Notes on experiments illustrating normal temperature regulation in young men, 610 (O); correspondence, 823
- WYANT, Gordon M. : Brachial-plexus block anaesthesia, 636
- WYMAN, A. L. : Endogenous gas gangrene complicating carcinoma of colon; report of case 266 (O); leading article, 276
- Wynne, Walker, obituary notice of, 684
- WYNN-WILLIAMS, N. : Amethocaine hydrochloride, 235

X

- X rays : Ringworm of scalp treated by x-irradiation without subsequent local application (F. L. LYDON and others), 523 (O); annotation, 536; correction, 690
- Xanthomatosis (Sir Henry Colten), 774

Y

- Yeast, autolysed : Stomatorrhoea and glossitis after ileocolostomy—effect of synthetic vitamins of B complex, autolysed yeast, and liver extract (Alexander Brown), 1073 (O); annotation, 1088
- YEREMITCH, Risto : *A Bibliography of Serbian Medical Literature, 1757-1918*, 443
- YILDIRAN, Cafer : Spermatolysis—a cause of male sterility, 575 (O); correspondence, 957
- YOUNG, Barton R. : *Skull, Sinuses, and Mosaids. A Handbook of Roentgen Diagnosis*, 1040
- F. H. : Place of artificial pneumothorax in treatment of pulmonary tuberculosis, 319
- James : Renal lesions associated with pregnancy, 281—Fibrositis, 499
- Sir Robert : Specialization, 586
- William John, obituary notice of, 246

Z

- Zane, Mavis Victoria, obituary notice of, 327
- ZEISSLER, J. (and L. RASSFELD STERNBERG) : Enteritis necroticans due to *Clostridium welchii* type F, 267 (O); leading article, 276; corrected, 332
- ZIMMER, E. A. : *Die Durchleuchtungstechnik der Thoraxorgane*, 992
- H. R. : *Hindu Medicine*, 1085
- ZWEIFACH, B. W. (and E. SHORR) (editors) : *Factors Regulating Blood Pressure*, 443

KEY TO DATES AND PAGES

The following table, giving a key to the date of issue and the page numbers of the *BRITISH MEDICAL JOURNAL* and *SUPPLEMENT* in the first volume for 1949, may prove convenient to readers in search of a reference.

Serial No	Date of Issue	Journal Pages	Supplement Pages
4591	Jan. 1	1- 42	1- 10
4592	" 8	43- 82	11- 20
4593	" 15	83- 122	21- 30
4594	" 22	123- 164	31- 42
4595	" 29	165- 206	43- 54
4596	Feb. 5	207- 254	55- 66
4597	" 12	255- 292	67- 80
4598	" 19	293- 332	81- 90
4599	" 26	333- 378	91-118
4600	Mar. 5	379- 422	119-126
4601	" 12	423- 464	127-146
4602	" 19	465- 510	147-158
4603	" 26	511- 556	159-170
4604	April 2	557- 602	171-218
4605	" 9	603- 644	219-228
4606	" 16	645- 690	229-236
4607	" 23	691- 736	237-252
4608	" 30	737- 790	253-260
4609	May 7	791- 832	261-268
4610	" 14	833- 880	269-272
4611	" 21	881- 920	273-284
4612	" 28	921- 968	285-302
4613	June 4	969-1018	303-312
4614	" 11	1019-1062	313-330
4615	" 18	1063-1104	331-354
4616	" 25	1105-1150	355-366

BRITISH MEDICAL JOURNAL

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

SUPPLEMENT

containing

Reports on the Work of the Association

Health Service News

General Medical Council

Meetings of Branches and Divisions

Service Appointments

Correspondence, etc.

VOLUME I, 1949

Published at the Office of the British Medical Association, Tavistock Square, London, W
Printed by Fisher, Knight & Co., Ltd., Gainsborough Press, St. A.